

SHAW  
**STAINLESS**  
**& ALLOY**  
**PIPING**  
*Since 1979*

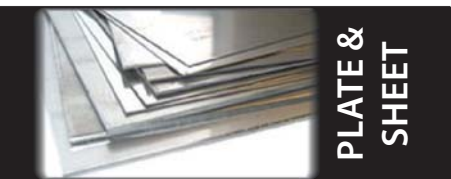
***REFERENCE***  
***CATALOG***



**PIPE & TUBE**



**ANGLE & BAR**



**PLATE & SHEET**



**WELD FITTINGS**



**TH & SW FITTINGS**



**NIPPLES**



**FLANGES**



**CAM & GROOVE**



**VALVES**



**SANITARY FITTINGS & TUBE**

**Services**.....A.1  
**Specifications**.....A.2

*Pipe*.....1  
*Tube*.....2  
*Square Tube*.....11  
*Rectangular Tube*.....11

*Angle*.....12  
*Channel*.....13  
*Round Bar*.....14  
*Hex Bar*.....15  
*Square Bar*.....15  
*Flat Bar*.....16

*Plate*.....17  
*Sheet*.....18

*Weld Fittings*.....19  
*Weights*.....29

*Threaded Fittings*.....32  
*Socket Weld Fittings*.....32

*Nipples*.....39

*Pipe Flanges*.....40  
*Plate Flanges*.....44  
*Ductile Iron Backups*.....45  
*Angle Rings*.....46

*Cam & Groove Fittings*.....47

*Valves*.....48

*Sanitary Clamp Fittings*.....49  
*Sanitary Weld Fittings*.....68  
*Sanitary Bevel Seat Fittings*.....81  
*Sanitary E-Line Fittings*.....92  
*Unpolished Tube Fittings*.....106  
*Sanitary Tube*.....113

# TABLE OF CONTENTS

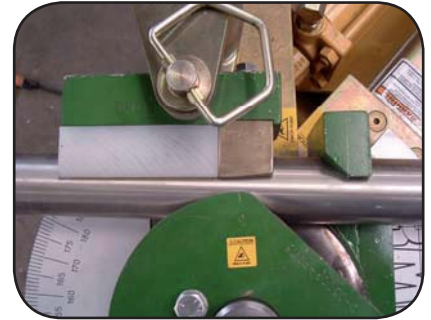
# SHAW STAINLESS



POLISHING



THREADING



BENDING



SAW CUTTING



LASER CUTTING



GROOVING



PIPE FABRICATION



WELDING



CUSTOM FABRICATION

**SPECIFICATIONS CHART**

Grade	Pipe	Tube	Fittings	Flanges	Plate	Bar	Forgings	UNS No.
Stainless 304	A312	A213/249/269	A403	A182 F304	A240	A276/479	A182	S30400
Stainless 316	A312	A213/249/269	A403	A182 F316	A240	A276/479	A182	S31600
Stainless 410	A268	A213/249/269	A815	A182 F410	A240	A276/479	A182	S41000
Stainless 317	A312	A213/249/269	A403	A182 F317	A240	A276/479	A182	S31700
Stainless 310	A312	A213/249/269	A403	A182 F310	A240	A276/479	A182	S31000
Stainless 321	A312	A213/249/269	A403	A182 F321	A240	A276/479	A182	S32100
Stainless 347	A312	A213/249/269	A403	A182 F347	A240	A276/479	A182	S34700
Stainless 254 SMO	A312	A213/249/269	A403	A182 F254	A240	A/SA182 A/SA479 A/SA276 A/SA193	A/SA182	S31254
Alloy 20	B/SB729	B/SB729	B/SB366	B/SB462 B16.5	B/SB463	B/SB462 B/SB473	B/SB462	N08020
Duplex 2205	A/SA790.	A/SA789	A/SA182 A/SA815	A/SA479 A/SA182	A/SA240	A/SA182 A/SA479 A/SA276 A/SA193	A/SA182	S31803/S32205
Hastelloy C276	B/SB619 B/SB622	SB-622/SB-516/SB-626	SB-366	B/SB574 B/SB564 B16.5	B/SB575	B/SB574 B/SB564	B/SB-564 B/SB462	N10276
Alloy 200/201	B/SB161	B/SB161 B/SB163	B/SB366	B/SB160 B/SB564 B16.5	B/SB162	B/SB160 B/SB564	B/SB564	N02200/N02201
Alloy 400	B/SB165	B/SB165	B/SB366	B/SB164 B/SB564 B16.5	B/SB127	B/SB164 B/SB564 QQ-N-281D	SB-564	N04400
Alloy 600	B/SB167	B/SB167	B/SB366	B/SB166 B/SB564 B16.5	B/SB168	B/SB166 B/SB564	B/SB564	N06600
Alloy 625	B/SB444 B705	B/SB444	B/SB366	B/SB444 B/SB564 B16.5	B/SB443	B/SB446 B/SB564	B/SB564	N06625
Alloy 800H/HP	B/SB407	SB-407/SB-829/SB-515/SB-751	B/SB366	B/SB446 B/SB564 B16.5	B/SB409	B/SB408 B/SB564	B/SB564	N08810/N08811
Alloy 825	B/SB423	B/SB423	B/SB366	B/SB425 B/SB564 B16.5	B/SB424	B/SB425 B/SB564	B/SB564	N08825
Carbon Steel	A53		A234 WPB	A105	A36		A105	
Carbon Steel	A106B		A234 WPB	A105	A36		A105	
Carbon Steel	A106C		A234 WPB	A105	A36		A105	
Low Temp C.S. Gr. 1	A333 GR. 1	A334 GR. 1	A420 WPL1/6	A350 LF2		A516	A350 LF2	
Low Temp C.S. Gr. 3	A333 GR. 3	A334 GR. 3	A420 WPL3	A350 LF3		A516	A350 LF3	
Low Temp C.S. Gr. 6	A333 GR. 6	A334 GR. 6	A420 WPL6	A350 LF2		A516	A350 LF2	
Cr-Mo Grade 5	A335 P5	A213 T5	A234 WP5	A182 F5		A387 GRADE 5	A182 F5	
Cr-Mo Grade 9	A335 P9	A213 T9	A234 WP9	A182 F9		A387 GRADE 9	A182 F9	
Cr-Mo Grade 11	A335 P11	A213 T11	A234 WP11	A182 F11		A387 GRADE 11	A182 F11	
Cr-Mo Grade 22	A335 P22	A213 T22	A234 WP22	A182 F22		A387 GRADE 22	A182 F22	
Cr-Mo Grade 91	A335 P91	A213 T91	A234 WP91	A182 F91		A387 GRADE 91	A182 F91	

Nominal Pipe Size	Outside Diameter (inches)	Pipe Schedules															DBL XXH	
		5S	5	10S	10	20	30	40S/STD	40	60	80S/XH	80	100	120	140	160		
1/8	0.405		.035 .1383	.049 .1863	.049 .1863			.068 .2447	.068 .2447		.095 .3145	.095 .3145					Wall Weight	
1/4	0.540		.049 .2570	.065 .3297	.065 .3297			.088 .4248	.088 .4248		.119 .5351	.119 .5351						
3/8	0.675		.049 .3276	.065 .4235	.065 .4235			.091 .5676	.091 .5676		.126 .7388	.126 .7388						
1/2	0.840	.065 .5383	.065 .5383	.083 .6710	.083 .6710			.109 .8510	.109 .8510		.147 .1088	.147 .1088				.187 1.304	.294 1.714	
3/4	1.050	.065 .6838	.065 .6838	.083 .8572	.083 .8572			.113 1.131	.113 1.131		.154 1.474	.154 1.474				.218 1.937	.308 2.441	
1	1.315	.065 .8678	.065 .8678	.109 1.404	.109 1.404			.133 1.679	.133 1.679		.179 2.172	.179 2.172				.250 2.844	.358 3.659	
1 1/4	1.660	.065 1.107	.065 1.107	.109 1.806	.109 1.806			.140 2.273	.140 2.273		.191 2.997	.191 2.997				.250 3.765	.382 5.214	
1 1/2	1.900	.065 .1274	.065 .1274	.109 2.085	.109 2.085			.145 2.718	.145 2.718		.200 3.631	.200 3.631				.281 4.859	.400 6.408	
2	2.375	.065 1.604	.065 1.604	.109 2.638	.109 2.638			.154 3.653	.154 3.653		.218 5.002	.218 5.022				.344 7.462	.436 9.029	
2 1/2	2.875	.083 2.475	.083 2.475	.120 3.531	.120 3.531			.203 5.793	.203 5.793		.276 7.661	.276 7.661				.375 10.01	.552 13.70	
3	3.500	.083 3.029	.083 3.029	.120 4.332	.120 4.332			.216 7.576	.216 7.576		.300 10.25	.300 10.25				.438 14.32	.600 18.58	
3 1/2	4.000	.083 3.472	.083 3.472	.120 4.937	.120 4.937			.226 9.109	.226 9.109		.318 12.51	.318 12.51					.636 22.85	
4	4.500	.083 3.915	.083 3.915	.120 5.613	.120 5.613			.237 10.790	.237 10.790		.337 14.98	.337 14.98	.438 19.00			.531 22.51	.674 27.54	
4 1/2	5.000							.247 12.54			.355 17.61							
5	5.563	.109 6.349	.109 6.349	.134 7.770	.134 7.770			.258 14.62	.258 14.62		.375 20.78	.375 20.78	.500 27.04			.625 32.96	.750 38.55	
6	6.625	.109 7.585	.109 7.585	.134 9.289	.134 9.289			.280 18.97	.280 18.97		.432 28.57	.432 28.57	.562 36.39			.719 43.35	.864 53.16	
7	7.625							.301 23.54			.500 38.04						.875 63.08	
8	8.625	.109 9.914	.109 9.914	.148 13.40	.148 13.40	.250 22.36	.277 24.70	.322 28.55	.322 28.55	.406 35.64	.500 43.39	.500 43.39	.594 50.95	.719 60.71	.812 67.76	.906 74.79	.875 72.42	
9	9.625							.342 33.91			.500 48.75							
10	10.75	.134 15.190	.134 15.190	.165 18.65	.165 18.65	.250 28.04	.307 34.24	.365 40.48	.365 40.48	.500 54.74	.500 54.74	.594 64.33	.719 76.93	.844 89.20	1.000 104.1	1.125 115.6	1.000 104.1	
11	11.75							.375 45.56			.500 60.06							
12	12.75	.156 21.070	.165 22.180	.180 24.16	.180 24.16	.250 33.38	.330 43.77	.375 49.56	.406 53.52	.562 73.15	.500 65.42	.688 88.63	.844 107.3	1.000 125.5	1.125 136.7	1.312 160.3	1.000 125.5	
14	14.00	.156 23.070		.188 27.73	.250 36.71	.312 45.61	.375 54.57	.375 54.57	.438 63.44	.594 85.05	.500 72.09	.750 106.1	.938 130.9	1.093 150.8	1.250 170.2	1.406 189.1		
16	16.00	.165 27.900		.188 31.75	.250 42.05	.312 52.27	.375 62.58	.375 62.58	.500 82.77	.656 107.5	.500 82.77	.844 136.6	1.031 164.8	1.219 192.4	1.438 223.6	1.594 245.3		
18	18.00	.165 31.43		.188 35.76	.250 47.39	.312 58.94	.375 82.15	.375 70.59	.562 104.70	.750 138.2	.500 93.45	.938 170.90	1.156 208.00	1.375 244.10	1.562 274.20	1.781 308.50		
20	20.00	.188 39.78		.218 48.05	.250 52.73	.375 78.60	.500 104.10	.375 78.60	.594 123.10	.812 166.40	.500 104.10	1.031 208.90	1.281 256.10	1.500 296.40	1.750 341.10	1.969 379.20		
24	24.00	.218 55.37		.250 63.41	.250 63.41	.375 96.42	.562 140.70	.375 94.62	.688 171.30	.969 234.40	.500 125.50	1.219 296.60	1.531 367.40	1.812 429.40	2.062 483.10	2.344 542.10		
26	26.00			.312 85.60	.500 136.17			.375 102.63			.500 136.17							
28	28.00			.312 92.26	.500 146.85	.625 182.73		.375 110.64										
30	30.00	.250 79.43		.312 98.93	.312 98.93	.500 157.53	.625 196.06	.375 118.65			.500 157.53							
32	32.00			.312 105.59	.500 168.21	.625 209.43		.375 126.66	.688 230.08		.500 168.21							
34	34.00			.312 112.25	.500 178.89	.625 222.78		.375 134.67	.688 244.77		.500 178.89							
36	36.00			.312 118.92		.625 236.13		.375 142.68	.750 282.35		.500 189.57							
40	40.00							.375 158.70			.500 210.93							
44	44.00							.375 174.72			.500 232.29							
48	48.00							.375 190.74			.500 253.65							
															Weight Factor for Other Alloys			
															Carbon Steel		0.993	
															Alloy 600		1.074	
															Alloy 800		1.025	
															Hastalloy C276		1.129	
															Duplex 2205		0.997	
															Weight per Foot = (Diameter - Wall) x (Wall x 10.68)			

# TUBE

# STAINLESS & ALLOY PIPING REFERENCE CATALOG

OD	WALL	ID	WT / FT	304/L	316/L	OD	WALL	ID	WT / FT	304/L	316/L
<b>1/16"</b>	.010	.043	.0057	S-AP	S-AP	<b>1/4"</b>	.028	.194	.0664	S-AP	S-AP
(0.063")	.012	.039	.0065	S-AP	-	(0.250")	.035	.180	.0804	W-BA*	W-BA*
	.016	.031	.0080	S-AP	S-AP		.035	.180	.0804	S-AP	S-AP
	.020	.023	.0092	S-AP	S-AP		.035	.180	.0804	-	S-BA*
	.028	.007	.0105	S-AP	-		.049	.152	.1052	W-BA*	W-BA*
							.049	.152	.1052	S-AP	S-AP
<b>3/32"</b>	.020	.054	.0158	S-AP	-		.058	.134	.1189	S-AP	-
(0.094")	.028	.038	.0197	S-AP	-		.065	.120	.1284	W-BA*	W-BA*
							.065	.120	.1284	S-AP	S-AP
<b>1/8"</b>	.010	.105	.0123	S-AP	S-AP		.083	.084	.1480	S-AP	S-AP
(0.125")	.012	.101	.0145	S-AP	-		.095	.060	.1573	S-AP	S-AP
	.016	.093	.0186	S-AP	S-AP						
	.020	.085	.0224	W-BA*	W-BA*	<b>5/16"</b>	.016	.281	.0508	S-AP	-
	.020	.085	.0224	S-AP	S-AP	(0.313")	.020	.273	.0626	W-BA*	W-BA*
	.028	.069	.0290	W-BA*	W-BA*		.020	.273	.0626	S-AP	S-AP
	.028	.069	.0290	S-AP	S-AP		.028	.257	.0852	W-BA*	W-BA*
	.032	.061	.3180	S-AP	-		.028	.257	.0852	S-AP	S-AP
	.035	.055	.0336	W-BA*	W-BA*		.035	.243	.1039	W-BA*	W-BA*
	.035	.055	.0336	S-AP	S-AP		.035	.243	.1039	S-AP	S-AP
	.049	.027	.0398	S-AP	S-AP		.049	.215	.1382	W-BA*	W-BA*
							.049	.215	.1382	S-AP	S-AP
<b>5/32"</b>	.016	.125	.0239	S-AP	-		.065	.183	.1722	W-BA*	W-BA*
(0.157")	.020	.117	.0290	S-AP	-		.065	.183	.1722	S-AP	S-AP
	.028	.101	.0383	S-AP	-		.083	.147	.2039	S-AP	-
	.035	.087	.0452	W-BA*	-		.095	.123	.2212	S-AP	-
	.035	.087	.0452	S-AP	-						
	.049	.059	.0560	S-AP	-						
<b>3/16"</b>	.010	.168	.0190	S-AP	S-AP	<b>3/8"</b>	.010	.355	.0390	S-AP	-
(0.188")	.016	.156	.0294	S-AP	S-AP	(0.375")	.016	.343	.0613	S-AP	S-AP
	.020	.148	.0359	W-BA*	W-BA*		.020	.335	.0758	W-BA*	W-BA*
	.020	.148	.0359	S-AP	S-AP		.020	.335	.0758	S-AP	S-AP
	.028	.132	.0478	W-BA*	W-BA*		.028	.319	.1038	W-BA*	W-BA*
	.028	.132	.0478	S-AP	S-AP		.028	.319	.1038	S-AP	S-AP
	.035	.118	.0572	W-BA*	W-BA*		.035	.305	.1271	W-BA*	W-BA*
	.035	.118	.0572	S-AP	S-AP		.035	.305	.1271	S-AP	S-AP
	.049	.090	.0727	W-BA*	-		.035	.305	.1271	-	S-BA*
	.049	.090	.0727	S-AP	S-AP		.049	.277	.1706	W-BA*	W-BA*
	.065	.058	.0854	S-AP	S-AP		.049	.277	.1706	S-AP	S-AP
							.049	.277	.1706	-	S-BA*
<b>1/4"</b>	.010	.230	.0256	W-BA*	-		.065	.245	.2152	W-BA*	W-BA*
(0.250")	.010	.230	.0256	S-AP	S-AP		.065	.245	.2152	S-AP	S-AP
	.012	.226	.0305	S-AP	-		.083	.209	.2588	S-AP	S-AP
	.016	.218	.040	S-AP	S-AP		.095	.185	.2841	S-AP	S-AP
	.020	.210	.0491	W-BA*	W-BA*		.120	.135	.3268	S-AP	S-AP
	.020	.210	.0491	S-AP	S-AP						
	.028	.194	.0664	W-BA*	W-BA*	<b>7/16"</b>	.020	.398	.0892	S-AP	-
						(0.438")	.028	.382	.1225	W-BA*	S-AP
							.035	.368	.1505	W-BA*	W-BA*

Size Continued On Next Page

Size Continued On Next Page

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed  
 \* = Item commonly stocked as domestic and / or DFARS compliant

OD	WALL	ID	WT / FT	304/L	316/L	OD	WALL	ID	WT / FT	304/L	316/L	
<b>7/16"</b> (0.438")	.035	.368	.1505	S-AP	S-AP	<b>5/8"</b> (0.625")	.020	.585	.1292	S-AP	S-AP	
	.049	.340	.2036	W-BA*	W-BA*		.028	.569	.1785	W-BA*	W-BA*	
	.049	.340	.2036	S-AP	S-AP		.028	.569	.1785	S-AP	S-AP	
	.065	.308	.2589	W-BA*	W-BA*		.035	.555	.2205	W-BA*	W-BA*	
	.065	.308	.2589	S-AP	S-AP		.035	.555	.2205	S-AP	S-AP	
	.083	.272	.3147	S-AP	-		.049	.527	.3014	W-BA*	W-BA*	
	.095	.248	.3475	S-AP	S-AP		.049	.527	.3014	S-AP	S-AP	
	.120	.198	.4069	S-AP	-		.058	.509	.3512	W-BA*	-	
<b>1/2"</b> (0.500")	.016	.468	.0827	S-AP	-	.058	.509	.3512	S-AP	-		
	.020	.460	.1025	W-BA*	W-BA*	.065	.495	.3888	W-BA*	W-BA*		
	.020	.460	.1025	S-AP	S-AP	.065	.495	.3888	S-AP	S-AP		
	.028	.444	.1411	W-BA*	W-BA*	.083	.459	.4805	W-BA*	W-BA*		
	.028	.444	.1411	S-AP	S-AP	.083	.459	.4805	S-AP	S-AP		
	.035	.430	.1738	W-BA*	W-BA*	.095	.435	.5377	S-AP	S-AP		
	.035	.430	.1738	S-AP	S-AP	.120	.385	.6472	S-AP	S-AP		
	.035	.430	.1738	-	S-BA	.134	.357	.7027	S-AP	-		
	.049	.402	.2360	W-BA*	W-BA*	.156	.313	.7814	S-AP	S-AP		
	.049	.402	.2360	S-AP	S-AP	.188	.249	.8774	SMT-AP	SMT-AP		
	.049	.402	.2360	-	S-BA*	<b>11/16"</b> (0.688")	.035	.618	.2441	S-AP	-	
	.058	.384	.2738	S-AP	-		.049	.590	.3344	W-BA*	-	
	.065	.370	.3020	W-BA*	W-BA*		.049	.590	.3344	S-AP	-	
	.065	.370	.3020	S-AP	S-AP		.065	.558	.4325	S-AP	-	
	.065	.370	.3020	S-BA*	S-BA*		.120	.448	.7273	S-AP	-	
	.083	.334	.3696	W-BA*	-		<b>3/4"</b> (0.750")	.020	.710	.1559	S-AP	S-AP
	.083	.334	.3696	S-AP	S-AP			.028	.694	.2159	W-BA*	W-BA*
	.095	.310	.4109	S-AP	S-AP			.028	.694	.2159	S-AP	-
	.109	.282	.4552	S-AP	-	.035		.680	.2673	W-BA*	W-BA*	
	.120	.260	.4870	S-AP	S-AP	.035		.680	.2673	S-AP	S-AP	
.134	.232	.5238	S-AP	-	.049	.652		.3668	W-BA*	W-BA*		
.156	.188	.5731	S-AP	S-AP	.049	.652		.3668	S-AP	S-AP		
.188	.124	.6264	SMT-AP	SMT-AP	.049	.652		.3668	-	S-BA		
<b>9/16"</b> (0.563")	.028	.507	.160	S-AP	W-BA*	.058	.634	.4280	S-AP	-		
	.035	.493	.1974	W-BA*	-	.065	.620	.4755	W-BA*	W-BA*		
	.035	.493	.1974	S-AP	S-AP	.065	.620	.4755	S-AP	S-AP		
	.049	.465	.2690	W-BA*	-	.065	.620	.4755	-	S-BA*		
	.049	.465	.2690	S-AP	S-AP	.083	.584	.5913	W-BA*	W-BA*		
	.065	.433	.3457	W-BA*	-	.083	.584	.5913	S-AP	S-AP		
	.065	.433	.3457	S-AP	S-AP	.095	.560	.6646	W-BA*	W-BA*		
	.083	.397	.4250	-	-	.095	.560	.6646	S-AP	S-AP		
	.095	.373	.4743	W-BA*	-	.109	.532	.7462	S-AP	S-AP		
	.095	.373	.4743	S-AP	-	.120	.510	.8074	S-AP	S-AP		
	.120	.323	.5671	S-AP	-	.134	.482	.8816	S-AP	S-AP		
	.188	.187	.7519	SMT-AP	SMT-AP	.156	.438	.9897	S-AP	S-AP		
<b>5/8"</b> (0.625")	.020	.585	.1292	W-BA*	-	.188	.374	1.1280	SMT-AP	SMT-AP		
						.250	.250	1.3350	SMT-AP	SMT-AP		

Size Continued On Next Page

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed  
 \* = Item commonly stocked as domestic and / or DFARS compliant

OD	WALL	ID	WT / FT	304/L	316/L	OD	WALL	ID	WT / FT	304/L	316/L
<b>13/16"</b>	.035	.743	.2908	W-BA*	-	<b>1-1/16"</b>	.035	.993	.3841	S-AP	-
(0.813")	.035	.743	.2908	S-AP	-	(1.063")	.065	.933	.6925	S-AP	-
	.049	.715	.3996	S-AP	-						
	.065	.683	.5189	S-AP	-	<b>1-1/8"</b>	.020	1.085	.2294	S-AP	-
						(1.125")	.035	1.055	.4074	W-BA*	W-BA*
<b>7/8"</b>	.028	.819	.2533	S-AP	-		.035	1.055	.4074	S-AP	-
(0.875")	.035	.805	.3140	W-BA*	W-BA*		.049	1.027	.5631	W-BA*	W-BA*
	.035	.805	.3140	S-AP	S-AP		.049	1.027	.5631	S-AP	S-AP
	.049	.777	.4323	W-BA*	W-BA*		.065	.995	.7359	W-BA*	W-BA*
	.049	.777	.4323	S-AP	S-AP		.065	.995	.7359	S-AP	S-AP
	.065	.745	.5623	W-BA*	W-BA*		.083	.959	.9237	W-BA*	-
	.065	.745	.5623	S-AP	S-AP		.083	.959	.9237	S-AP	-
	.083	.709	.7021	W-BA*	W-BA*		.095	.935	1.0450	W-BA*	-
	.083	.709	.7021	S-AP	S-AP		.095	.935	1.0450	S-AP	-
	.095	.685	.7914	W-BA*	-		.120	.885	1.2880	W-BA*	-
	.095	.685	.7914	S-AP	S-AP		.120	.885	1.2880	S-AP	S-AP
	.120	.635	.8676	W-BA*	W-BA*		.188	.749	1.8810	SMT-AP	SMT-AP
	.120	.635	.8676	S-AP	S-AP		.250	.625	2.3360	SMT-AP	SMT-AP
	.156	.563	1.1980	S-AP	-						
	.188	.499	1.3790	SMT-AP	SMT-AP	<b>1-3/16"</b>	.035	1.118	.4310	S-AP	-
	.250	.375	1.6690	SMT-AP	-	(1.188")	.065	1.058	.7792	S-AP	-
<b>1"</b>	.020	.960	.2093	W-BA*	-	<b>1-1/4"</b>	.028	1.194	.3654	S-AP	-
(1.000")	.020	.960	.2093	S-AP	S-AP	(1.250")	.035	1.180	.4542	W-BA*	W-BA*
	.028	.944	.2907	W-BA*	W-BA*		.035	1.180	.4542	S-AP	S-AP
	.028	.944	.2907	S-AP	S-AP		.049	1.152	.6285	W-BA*	W-BA*
	.035	.930	.3607	W-BA*	W-BA*		.049	1.152	.6285	S-AP	S-AP
	.035	.930	.3607	S-AP	S-AP		.065	1.120	.8226	W-BA*	W-BA*
	.049	.902	.4977	W-BA*	W-BA*		.065	1.120	.8226	S-AP	S-AP
	.049	.902	.4977	S-AP	S-AP		.083	1.084	1.0340	W-BA*	W-BA*
	.058	.884	.5841	S-AP	-		.083	1.084	1.0340	S-AP	S-AP
	.065	.870	.6491	W-BA*	W-BA*		.095	1.060	1.1720	W-BA*	W-BA*
	.065	.870	.6491	S-AP	S-AP		.095	1.060	1.1720	S-AP	S-AP
	.065	.870	.6491	-	S-BA*		.109	1.032	1.3280	S-AP	S-AP
	.083	.834	.8129	W-BA*	W-BA*		.120	1.010	1.4480	W-BA*	W-BA*
	.083	.834	.8129	S-AP	S-AP		.120	1.010	1.4480	S-AP	S-AP
	.095	.810	.9182	W-BA*	W-BA*		.156	.938	1.8230	S-AP	S-AP
	.095	.810	.9182	S-AP	S-AP		.188	.874	2.1320	SMT-AP	SMT-AP*
	.109	.782	1.0370	W-BA*	W-BA*		.250	.750	2.670	SMT-AP	SMT-AP
	.109	.782	1.0370	S-AP	S-AP		.313	.624	3.1320	SMT-AP	-
	.120	.760	1.1280	W-BA*	W-BA*		.375	.500	3.5040	SMT-AP	SMT-AP
	.120	.760	1.1280	S-AP	S-AP						
	.134	.732	.1240	S-AP	S-AP	<b>1-3/8"</b>	.035	1.305	.5009	W-BA*	-
	.156	.688	1.4060	S-AP	S-AP	(1.375")	.035	1.305	.5009	S-AP	-
	.188	.624	1.630	SMT-AP	SMT-AP		.049	1.277	.6939	W-BA*	W-BA*
	.250	.500	2.0030	SMT-AP	SMT-AP		.049	1.277	.6939	S-AP	S-AP
	.313	.374	2.2960	SMT-AP	-		.065	1.245	.9094	W-BA*	W-BA*

*Size Continued On Next Page*

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed  
 \* = Item commonly stocked as domestic and / or DFARS compliant



OD	WALL	ID	WT / FT	304/L	316/L	OD	WALL	ID	WT / FT	304/L	316/L
<b>1-3/8"</b> (1.375")	.065	1.245	.9094	S-AP	S-AP	<b>1-3/4"</b> (1.750")	.035	1.680	.6411	W-BA*	-
	.083	1.209	1.1450	S-AP	-		.035	1.680	.6411	S-AP	S-AP
	.095	1.185	1.2990	W-BA*	-		.049	1.652	.8902	W-BA*	-
	.095	1.185	1.2990	S-AP	S-AP		.049	1.652	.8902	S-AP	S-AP
	.120	1.135	1.6080	W-BA*	-		.065	1.620	1.170	W-BA*	W-BA*
	.120	1.135	1.6080	S-AP	S-AP		.065	1.620	1.170	S-AP	S-AP
	.188	.999	2.3830	SMT-AP	SMT-AP*		.083	1.584	1.4780	W-BA*	-
	.250	.875	3.0040	SMT-AP*	SMT-AP		.095	1.560	1.6790	W-BA*	W-BA*
<b>1-1/2"</b> (1.500")	.375	.625	4.0050	SMT-AP	-	.095	1.560	1.6790	S-AP	-	
	.035	1.430	.5476	W-BA*	W-BA*	.109	1.532	1.910	S-AP	-	
	.035	1.430	.5476	S-AP	S-AP	.120	1.510	2.0890	W-BA*	W-BA*	
	.049	1.402	.7593	W-BA*	W-BA*	.120	1.510	2.0890	S-AP	S-AP	
	.049	1.402	.7593	S-AP	S-AP	.188	1.374	3.1360	SMT-AP	SMT-AP*	
	.065	1.370	.9962	W-BA*	W-BA*	.250	1.250	4.0050	SMT-AP	SMT-AP	
	.065	1.370	.9962	S-AP	S-AP	.313	1.124	4.8040	SMT-AP	-	
	.083	1.334	1.2560	W-BA*	W-BA*	.375	1.000	5.5070	SMT-AP	SMT-AP	
	.083	1.334	1.2560	S-AP	S-AP	.500	.750	6.6750	SMT-AP*	SMT-AP*	
	.095	1.310	1.4260	W-BA*	W-BA*	<b>1-7/8"</b> (1.875")	.035	1.805	.6878	W-BA*	-
	.095	1.310	1.4260	S-AP	S-AP		.049	1.777	.9556	S-AP	-
	.109	1.282	1.6190	W-BA*	W-BA*		.065	1.745	1.2570	W-BA*	-
	.109	1.282	1.6190	S-AP	S-AP		.065	1.745	1.2570	S-AP	S-AP
	.120	1.260	1.7690	W-BA*	W-BA*		.095	1.685	1.8060	S-AP	-
	.120	1.260	1.7690	S-AP	S-AP		.120	1.635	2.2490	S-AP	-
	.134	1.232	1.9550	W-BA*	-		.188	1.499	3.3870	SMT-AP	SMT-AP
	.134	1.232	1.9550	S-AP	S-AP		.250	1.375	4.3390	SMT-AP	SMT-AP
	.156	1.188	2.2390	S-AP	S-AP		.375	1.125	6.0070	SMT-AP	-
.188	1.124	2.6340	SMT-AP	SMT-AP*	<b>2"</b> (2.000")		.035	1.930	.7345	W-BA*	W-BA*
.250	1.000	3.3380	SMT-AP	SMT-AP*			.035	1.930	.7345	S-AP	-
.313	.874	3.9680	SMT-AP*	-			.049	1.902	1.0210	W-BA*	W-BA*
.375	.750	4.5060	SMT-AP	SMT-AP		.049	1.902	1.0210	S-AP	S-AP	
.437	.626	4.9710	SMT-AP	-		.065	1.870	1.3430	W-BA*	W-BA*	
.500	.500	5.340	SMT-AP*	-		.065	1.870	1.3430	S-AP	S-AP	
<b>1-5/8"</b> (1.625")	.035	1.555	.5943	W-BA*	-	.083	1.834	1.6990	W-BA*	W-BA*	
	.049	1.527	.8248	W-BA*	-	.083	1.834	1.6990	S-AP	S-AP	
	.049	1.527	.8248	S-AP	S-AP	.095	1.810	1.9330	W-BA*	W-BA*	
	.065	1.495	1.0830	W-BA*	W-BA*	.095	1.810	1.9330	S-AP	S-AP	
	.065	1.495	1.0830	S-AP	S-AP	.109	1.782	2.2010	W-BA*	W-BA*	
	.083	1.459	1.3670	W-BA*	-	.109	1.782	2.2010	S-AP	S-AP	
	.095	1.435	1.5520	S-AP	-	.120	1.760	2.4090	W-BA*	W-BA*	
	.120	1.385	1.9290	W-BA*	W-BA*	.120	1.760	2.4090	S-AP	S-AP	
	.120	1.385	1.9290	S-AP	S-AP	.134	1.732	2.670	S-AP	-	
	.188	1.249	2.8850	SMT-AP	SMT-AP	.156	1.688	3.0720	S-AP	S-AP	
	.250	1.125	3.6710	SMT-AP	SMT-AP*	.188	1.624	3.6380	SMT-AP	SMT-AP	
	.375	.875	5.0060	SMT-AP	SMT-AP*	.250	1.500	4.6730	SMT-AP	SMT-AP*	
					.313	1.374	5.6390	SMT-AP	SMT-AP		

Size Continued On Next Page

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed  
 \* = Item commonly stocked as domestic and / or DFARS compliant

# TUBE

## STAINLESS & ALLOY PIPING REFERENCE CATALOG

OD	WALL	ID	WT / FT	304/L	316/L	OD	WALL	ID	WT / FT	304/L	316/L
<b>2"</b>	.375	1.250	6.5080	SMT-AP	SMT-AP*	<b>2-1/2"</b>	.095	2.310	2.440	S-AP	-
(2.000")	.500	1.000	8.010	SMT-AP*	SMT-AP*	(2.500")	.120	2.260	3.050	W-BA*	W-BA*
	.625	.750	9.1780	SMT-AP*	SMT-AP*		.120	2.260	3.050	S-AP	S-AP
							.156	2.188	3.0950	W-BA*	-
<b>2-1/8"</b>	.035	2.055	.7940	W-BA*	-		.188	2.124	4.6420	SMT-AP	SMT-AP*
(2.125")	.049	2.027	1.0860	W-BA*	-		.250	2.000	6.0080	SMT-AP	SMT-AP*
	.049	2.027	1.0860	S-AP	-		.313	1.874	7.3110	SMT-AP	-
	.065	1.995	1.430	W-BA*	-		.375	1.750	8.5110	SMT-AP	SMT-AP
	.065	1.995	1.430	S-AP	S-AP		.500	1.500	10.680	SMT-AP	SMT-AP
	.095	1.935	2.060	S-AP	-		.625	1.250	12.520	SMT-AP	SMT-AP
	.120	1.885	2.570	W-BA*	-		.750	1.000	14.010	SMT-AP	SMT-AP
	.120	1.885	2.570	S-AP	S-AP	<b>2-5/8"</b>	.065	2.495	1.7770	W-BA*	W-BA*
	.188	1.749	3.8890	SMT-AP	SMT-AP	(2.625")	.065	2.495	1.7770	-	S-AP
	.250	1.625	5.0060	SMT-AP*	SMT-AP*		.095	2.435	2.5670	S-AP	-
	.375	1.375	7.0090	SMT-AP	SMT-AP*		.120	2.385	3.210	S-AP	S-AP
	.500	1.125	8.6780	SMT-AP*	-		.188	2.249	4.8930	SMT-AP	SMT-AP
<b>2-1/4"</b>	.035	2.180	.8280	W-BA*	-		.250	2.125	6.3410	SMT-AP	-
(2.250")	.049	2.152	1.1520	W-BA*	-		.375	1.875	9.0010	SMT-AP	SMT-AP
	.049	2.152	1.1520	S-AP	-		.500	1.625	11.350	SMT-AP	SMT-AP
	.065	2.120	1.5170	W-BA*	W-BA*	<b>2-3/4"</b>	.049	2.652	1.1990	W-BA*	-
	.065	2.120	1.5170	S-AP	S-AP	(2.750")	.049	2.652	1.1990	S-AP	-
	.083	2.084	1.9210	W-BA*	W-BA*		.065	2.620	1.8640	W-BA*	W-BA*
	.120	2.010	2.730	W-BA*	W-BA*		.065	2.620	1.8640	S-AP	W-BA*
	.120	2.010	2.730	S-AP	S-AP		.083	2.584	2.3640	S-AP	-
	.188	1.874	4.1440	SMT-AP	SMT-AP		.120	2.510	3.3710	W-BA*	W-BA*
	.250	1.750	5.3450	SMT-AP*	SMT-AP*		.120	2.510	3.3710	S-AP	S-AP
	.313	1.624	6.4720	SMT-AP	-		.188	2.374	5.1440	SMT-AP	SMT-AP
	.375	1.500	7.5090	SMT-AP	SMT-AP		.250	2.250	6.6750	SMT-AP	SMT-AP*
	.500	1.250	9.3450	SMT-AP	SMT-AP*		.375	2.000	9.5120	SMT-AP	SMT-AP*
	.625	1.000	10.850	SMT-AP*	SMT-AP*		.500	1.750	12.020	SMT-AP*	SMT-AP*
<b>2-3/8"</b>	.049	2.277	1.2170	S-AP	-		.625	1.500	14.180	SMT-AP*	SMT-AP*
(2.375")	.065	2.245	1.6040	S-AP	S-AP		.750	1.250	16.020	SMT-AP*	SMT-AP*
	.083	2.209	2.0320	W-BA*	-	<b>2-7/8"</b>	.065	2.745	1.9510	S-AP	-
	.083	2.209	2.0320	S-AP	-	(2.875")	.120	2.635	3.5310	S-AP	S-AP
	.095	2.185	2.3130	S-AP	-		.188	2.499	5.40	SMT-AP	-
	.188	1.999	4.3910	SMT-AP	SMT-AP*		.250	2.375	7.0090	SMT-AP	-
	.250	1.875	5.6740	SMT-AP	SMT-AP		.375	2.125	10.010	SMT-AP	SMT-AP
	.375	1.625	8.010	SMT-AP	SMT-AP	<b>3"</b>	.049	2.902	1.5440	W-BA*	W-BA*
<b>2-1/2"</b>	.035	2.430	.9214	W-BA*	-	(3.000")	.065	2.870	2.0370	W-BA*	W-BA*
(2.500")	.049	2.402	1.2830	W-BA*	W-BA*		.065	2.870	2.0370	S-AP	S-AP
	.049	2.402	1.2830	S-AP	-		.083	2.834	2.5860	W-BA*	W-BA*
	.065	2.370	1.690	W-BA*	W-BA*		.083	2.834	2.5860	S-AP	S-AP
	.065	2.370	1.690	S-AP	S-AP		.095	2.810	2.9470	S-AP	-
	.083	2.334	2.1430	W-BA*	W-BA*						

Size Continued On Next Page

Size Continued On Next Page

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed

\* = Item commonly stocked as domestic and / or DFARS compliant

OD	WALL	ID	WT / FT	304/L	316/L	OD	WALL	ID	WT / FT	304/L	316/L	
<b>3"</b> (3.000")	.109	2.782	3.3650	W-AP*	W-AP*	<b>3-1/2"</b> (3.500")	.625	2.250	19.190	SMT-AP*	SMT-AP*	
	.109	2.782	3.3650	-	S-AP		.750	2.000	22.030	SMT-AP*	SMT-AP*	
	.120	2.760	3.6910	W-BA*	W-BA*		1.000	1.500	26.70	SMT-AP*	SMT-AP*	
	.120	2.760	3.6910	S-AP	S-AP		<b>3-3/4"</b> (3.750")	.120	3.510	4.6520	S-AP	S-AP
	.156	2.688	4.7380	S-AP	-			.188	3.374	7.1510	SMT-AP*	SMT-AP*
	.188	2.624	5.6460	SMT-AP	SMT-AP*			.250	3.250	9.3450	SMT-AP	SMT-AP*
	.250	2.500	7.3430	SMT-AP	SMT-AP*			.375	3.000	13.520	SMT-AP	SMT-AP*
	.313	2.374	8.9820	SMT-AP	SMT-AP			.500	2.750	17.360	SMT-AP*	SMT-AP*
	.375	2.250	10.510	SMT-AP	SMT-AP			.625	2.500	20.860	SMT-AP*	SMT-AP*
	.500	2.000	13.350	SMT-AP*	SMT-AP*			.750	2.250	24.030	SMT-AP*	SMT-AP*
	.625	1.750	15.850	SMT-AP*	SMT-AP*			1.000	1.750	29.370	SMT-AP*	SMT-AP*
.750	1.500	18.020	SMT-AP*	SMT-AP*	<b>4"</b> (4.000")	.065		3.870	2.7320	W-BA*	W-BA*	
1.000	1.000	21.360	SMT-AP*	SMT-AP*		.065		3.870	2.7320	S-AP	S-AP	
<b>3-1/8"</b> (3.125")	.065	2.995	2.1240	S-AP		-		.083	3.834	3.4720	W-BA*	W-BA*
	.120	2.885	3.8510	S-AP		-	.083	3.834	3.4720	S-AP	S-AP	
	.188	2.749	5.8970	SMT-AP		SMT-AP	.120	3.760	4.9730	W-BA*	W-BA*	
	.250	2.625	7.6760	SMT-AP		SMT-AP	.120	3.760	4.9730	S-AP	S-AP	
	.375	2.375	11.010	SMT-AP*		-	.134	3.732	5.5330	W-BA*	-	
	.500	2.125	14.020	SMT-AP*		-	.156	3.688	6.4040	W-BA*	-	
<b>3-1/4"</b> (3.250")	.049	3.152	1.6770	W-BA*		-	.156	3.688	6.4040	S-AP	-	
	.065	3.120	2.2110	W-BA*		-	.188	3.624	7.6540	SMT-AP	SMT-AP*	
	.065	3.120	2.2110	S-AP		-	.250	3.500	10.010	SMT-AP	SMT-AP*	
	.109	3.032	3.6570	W-BA*	-	.313	3.374	12.340	SMT-AP	-		
	.120	3.010	4.0110	W-BA*	-	.375	3.250	14.520	SMT-AP*	SMT-AP*		
	.120	3.010	4.0110	S-AP	S-AP	.500	3.000	18.690	SMT-AP	SMT-AP*		
	.188	2.874	6.1480	SMT-AP*	SMT-AP	.625	2.750	22.530	SMT-AP*	SMT-AP*		
	.250	2.750	8.0180	SMT-AP	SMT-AP	.688	2.624	24.340	SMT-AP	-		
	.375	2.500	11.510	SMT-AP	SMT-AP	.750	2.500	26.030	SMT-AP*	SMT-AP*		
	.500	2.250	14.690	SMT-AP*	SMT-AP*	.875	2.250	29.20	SMT-AP*	-		
	.625	2.000	17.520	SMT-AP*	SMT-AP*	1.000	2.000	32.040	SMT-AP*	SMT-AP*		
	.750	1.750	20.030	SMT-AP*	SMT-AP*	1.250	1.500	36.710	SMT-AP*	-		
	<b>3-3/8"</b> (3.375")	.065	3.245	2.2980	S-AP	-	<b>4-1/4"</b> (4.250")	.065	4.120	2.9050	S-AP	-
.250		2.875	8.3440	SMT-AP*	-	.120		4.010	5.2930	S-AP	S-AP	
<b>3-1/2"</b> (3.500")	.065	3.370	2.3850	W-AP*	W-BA*	.156	3.938	6.8210	S-AP	-		
	.065	3.370	2.3850	S-AP	S-AP	.188	3.874	8.1560	SMT-AP	SMT-AP		
	.083	3.334	3.0290	W-BA*	W-BA*	.250	3.750	10.680	SMT-AP	SMT-AP		
	.083	3.334	3.0290	S-AP	-	.313	3.624	13.160	SMT-AP	-		
	.120	3.260	4.3320	W-BA*	-	.375	3.500	15.520	SMT-AP	SMT-AP		
	.120	3.260	4.3320	S-AP	-	.500	3.250	20.030	SMT-AP*	SMT-AP*		
	.188	3.124	6.650	SMT-AP*	SMT-AP*	.625	3.000	24.20	SMT-AP*	SMT-AP*		
	.250	3.000	8.6780	SMT-AP	SMT-AP*	.750	2.750	28.040	SMT-AP*	SMT-AP*		
	.375	2.750	12.520	SMT-AP	SMT-AP*	1.000	2.250	34.710	SMT-AP*	-		
	.500	2.500	16.020	SMT-AP*	SMT-AP*	<b>4-1/2"</b> (4.500")	.065	4.370	3.0790	W-AP*	-	

Size Continued On Next Page

Size Continued On Next Page

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed  
 \* = Item commonly stocked as domestic and / or DFARS compliant

OD	WALL	ID	WT / FT	304/L	316/L	OD	WALL	ID	WT / FT	304/L	316/L
<b>4-1/2"</b>	.065	4.370	3.0790	W-BA*	-	<b>5-1/2"</b>	.120	5.260	6.8950	S-AP	-
(4.500")	.065	4.370	3.0790	S-AP	-	(5.500")	.250	5.000	14.020	SMT-AP*	SMT-AP*
	.083	4.334	3.9150	W-AP*	-		.375	4.750	20.530	SMT-AP*	SMT-AP*
	.120	4.260	5.6130	S-AP	S-AP		.500	4.500	26.730	SMT-AP*	SMT-AP*
	.188	4.124	8.6580	SMT-AP	SMT-AP		.625	4.250	32.540	SMT-AP	-
	.250	4.000	11.350	SMT-AP*	SMT-AP*		.750	4.000	38.050	SMT-AP*	SMT-AP*
	.375	3.750	16.520	SMT-AP*	SMT-AP*		.875	3.750	43.220	SMT-AP*	-
	.438	3.624	19.00	SMT-AP	-		1.000	3.500	48.060	SMT-AP*	SMT-AP*
	.500	3.500	21.360	SMT-AP*	SMT-AP*		1.250	3.000	56.790	SMT-AP*	-
	.625	3.250	25.870	SMT-AP*	SMT-AP*		1.500	2.500	64.080	SMT-AP*	SMT-AP*
	.750	3.000	30.040	SMT-AP*	SMT-AP*						
	.875	2.750	33.880	SMT-AP*	-	<b>5-3/4"</b>	.120	5.510	7.2220	W-AP*	-
	1.000	2.500	37.380	SMT-AP*	SMT-AP*	(5.750")	.250	5.250	14.690	SMT-AP*	SMT-AP*
	1.250	2.000	43.430	SMT-AP*	-		.375	5.000	21.530	SMT-AP*	-
							.500	4.750	28.040	SMT-AP*	SMT-AP*
<b>4-3/4"</b>	.120	4.510	5.9340	S-AP	S-AP		.750	4.250	40.050	SMT-AP*	-
(4.750")	.188	4.374	9.1680	SMT-AP	SMT-AP		1.000	3.750	50.730	SMT-AP*	-
	.250	4.250	12.020	SMT-AP*	SMT-AP*						
	.375	4.000	17.520	SMT-AP*	SMT-AP*	<b>6"</b>	.065	5.870	4.120	W-AP*	-
	.500	3.750	22.070	SMT-AP*	SMT-AP*	(6.000")	.083	5.834	5.2450	W-AP*	W-AP*
	.625	3.500	27.530	SMT-AP*	SMT-AP*		.109	5.782	6.8580	W-AP*	W-AP*
	.750	3.250	32.040	SMT-AP*	SMT-AP*		.120	5.760	7.5360	W-AP*	W-AP*
	.875	3.000	36.210	-	SMT-AP*		.120	5.760	7.5360	S-AP	S-AP
	1.000	2.750	40.050	SMT-AP*	SMT-AP*		.134	5.732	8.4030	W-AP*	-
							.134	5.732	8.4030	S-AP	-
<b>5"</b>	.065	4.870	3.4260	W-AP*	-		.188	5.624	11.670	W-AP*	W-AP*
(5.000")	.083	4.834	4.3590	W-AP*	W-AP*		.188	5.624	11.670	SMT-AP*	SMT-AP*
	.120	4.760	6.2540	W-AP*	W-AP*		.250	5.500	15.350	W-AP*	-
	.120	4.760	6.2540	S-AP	S-AP		.250	5.500	15.350	SMT-AP*	SMT-AP*
	.188	4.624	9.6620	SMT-AP	SMT-AP		.375	5.250	22.530	SMT-AP*	SMT-AP*
	.250	4.500	12.680	SMT-AP*	SMT-AP*		.500	5.000	5.00	SMT-AP*	SMT-AP*
	.375	4.250	18.520	SMT-AP*	SMT-AP*		.625	4.750	35.880	SMT-AP*	SMT-AP*
	.500	4.000	24.030	SMT-AP*	SMT-AP*		.750	4.500	42.050	SMT-AP*	SMT-AP*
	.625	3.750	29.230	SMT-AP*	SMT-AP*		.875	4.250	47.890	SMT-AP*	-
	.750	3.500	34.040	SMT-AP*	SMT-AP*		1.000	4.000	53.40	SMT-AP*	SMT-AP*
	1.000	3.000	42.720	SMT-AP*	SMT-AP*		1.250	3.500	63.410	SMT-AP*	-
	1.250	2.500	50.060	SMT-AP*	SMT-AP*		1.500	3.000	72.090	SMT-AP*	SMT-AP*
	1.500	2.000	56.070	SMT-AP*	SMT-AP*						
<b>5-1/4"</b>	.120	5.010	6.5750	S-AP	-	<b>6-1/4"</b>	.120	6.010	7.8560	-	S-AP
(5.250")	.250	4.750	13.350	SMT-AP	SMT-AP*	(6.250")	.250	5.750	16.020	SMT-AP*	-
	.375	4.500	19.520	SMT-AP*	SMT-AP*		.375	5.500	23.530	SMT-AP*	SMT-AP*
	.500	4.250	25.370	SMT-AP*	SMT-AP*		.500	5.250	30.710	SMT-AP*	SMT-AP*
	.625	4.000	30.870	SMT-AP*	SMT-AP*		.750	4.750	44.060	SMT-AP*	SMT-AP*
	.750	3.750	36.050	SMT-AP*	SMT-AP*		1.000	4.250	56.070	-	SMT-AP*
	1.000	3.250	45.390	SMT-AP*	SMT-AP*						
						<b>6-1/2"</b>	.250	6.000	16.690	SMT-AP*	SMT-AP*
						(6.500")	.375	5.750	24.530	SMT-AP*	-

*Size Continued On Next Page*

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed

\* = Item commonly stocked as domestic and / or DFARS compliant

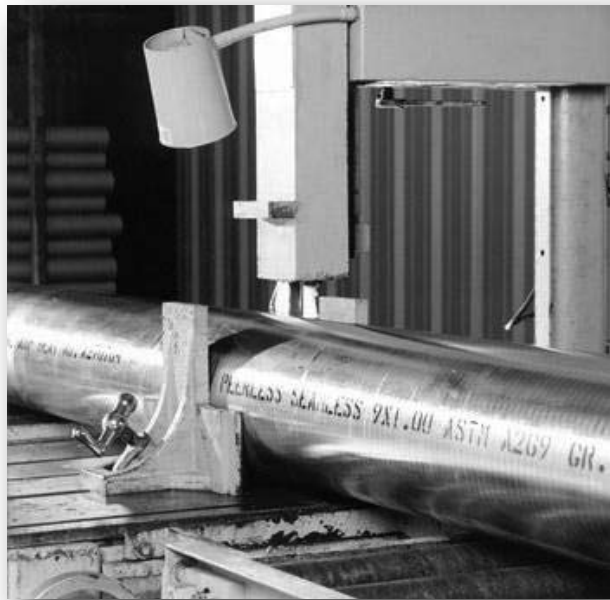
OD	WALL	ID	WT / FT	304/L	316/L	OD	WALL	ID	WT / FT	304/L	316/L
<b>6-1/2"</b> (6.500")	.500	5.500	32.040	SMT-AP*	SMT-AP*	<b>8"</b> (8.000")	.625	6.750	49.230	SMT-AP*	SMT-AP*
	.625	5.250	39.220	SMT-AP*	-		.750	6.500	58.070	SMT-AP*	SMT-AP*
	.750	5.000	46.060	SMT-AP*	SMT-AP*		1.000	6.000	74.760	SMT-AP*	SMT-AP*
	1.000	4.500	58.740	SMT-AP*	SMT-AP*		1.250	5.500	90.110	-	SMT-AP*
	1.250	4.000	70.150	SMT-AP*	-		1.500	5.000	104.130	SMT-AP*	SMT-AP*
	1.500	3.500	80.10	SMT-AP*	SMT-AP*		2.000	4.000	128.160	SMT-AP*	SMT-AP*
<b>6-3/4"</b> (6.750")	.250	6.250	17.360	SMT-AP*	-	<b>8-1/4"</b> (8.250")	.500	7.250	41.390	SMT-AP	-
	.375	6.000	25.530	SMT-AP*	SMT-AP*		.750	6.750	60.080	SMT-AP*	-
	.500	5.750	33.380	SMT-AP*	SMT-AP*	<b>8-1/2"</b> (8.500")	.250	8.000	22.030	SMT-AP	-
	.750	5.250	48.060	SMT-AP*	-		.375	7.750	32.570	SMT-AP*	-
	1.000	4.750	61.410	SMT-AP*	SMT-AP*		.500	7.500	42.720	SMT-AP*	SMT-AP*
<b>7"</b> (7.000")	.188	6.624	13.680	SMT-AP	-	.750	7.000	62.080	SMT-AP*	SMT-AP*	
	.250	6.500	18.020	SMT-AP*	SMT-AP*	1.000	6.500	80.10	SMT-AP*	SMT-AP*	
	.375	6.250	26.530	SMT-AP*	SMT-AP*	1.500	5.500	112.250	SMT-AP*	-	
	.500	6.000	34.710	SMT-AP*	SMT-AP*	<b>9"</b> (9.000")	.120	8.760	11.40	W-AP*	-
	.750	5.500	50.060	SMT-AP*	SMT-AP*		.250	8.500	23.360	SMT-AP	SMT-AP
	1.000	5.000	64.00	SMT-AP*	SMT-AP*		.375	8.250	34.540	W-AP*	-
	1.250	4.500	76.760	SMT-AP*	-		.500	8.000	45.390	SMT-AP*	SMT-AP*
	1.500	4.000	88.110	SMT-AP*	SMT-AP*		.750	7.500	66.080	SMT-AP*	SMT-AP*
2.000	3.000	106.80	SMT-AP*	-	1.000		7.000	85.440	SMT-AP*	SMT-AP*	
<b>7-1/4"</b> (7.250")	.375	6.500	27.560	SMT-AP*	-	1.500	6.000	120.150	SMT-AP*	SMT-AP*	
	.500	6.250	36.050	SMT-AP	SMT-AP*	2.000	5.000	149.520	SMT-AP*	SMT-AP*	
	1.000	5.250	66.750	-	SMT-AP	<b>9-1/2"</b> (9.500")	.250	9.000	24.70	SMT-AP	-
<b>7-1/2"</b> (7.500")	.120	7.260	9.4710	W-AP*	-		.375	8.750	36.580	SMT-AP*	-
	.250	7.000	19.360	SMT-AP*	SMT-AP*		.500	8.500	48.060	SMT-AP*	SMT-AP*
	.375	6.750	28.540	SMT-AP*	SMT-AP*		.750	8.000	70.090	SMT-AP*	SMT-AP*
	.500	6.500	37.380	SMT-AP*	SMT-AP*		1.000	7.500	90.780	SMT-AP*	SMT-AP*
	.750	6.000	54.070	SMT-AP*	SMT-AP*	<b>10"</b> (10.000")	.120	9.760	12.670	W-AP*	W-AP*
1.000	5.500	69.420	SMT-AP*	SMT-AP*	.134		9.732	14.120	W-AP*	-	
1.500	4.500	96.210	SMT-AP*	SMT-AP*	.188		9.624	19.70	SMT-AP	-	
<b>7-3/4"</b> (7.750")	.375	7.000	29.560	SMT-AP	-		.250	9.500	26.030	SMT-AP	SMT-AP
	.500	6.750	38.720	SMT-AP*	-		.375	9.250	38.550	W-AP*	-
<b>8"</b> (8.000")	.065	7.870	5.5080	W-AP*	W-AP*	.375	9.250	38.550	SMT-AP	-	
	.083	7.834	7.0180	W-AP*	-	.500	9.000	50.730	-	W-AP*	
	.109	7.782	9.1860	W-AP*	W-AP*	.500	9.000	50.730	SMT-AP	SMT-AP	
	.120	7.760	10.10	W-AP*	W-AP*	.750	8.500	74.090	W-AP*	-	
	.120	7.760	10.10	S-AP	S-AP	1.000	8.000	96.120	W-AP*	W-AP*	
	.188	7.624	15.690	SMT-AP	-	<b>10-1/2"</b> (10.500")	.250	10.000	27.360	W-AP*	-
	.250	7.500	20.690	SMT-AP	SMT-AP*		.250	10.000	27.360	SMT-AP	-
	.375	7.250	30.540	SMT-AP*	SMT-AP*		.500	9.500	53.40	W-AP*	-
	.500	7.000	40.050	SMT-AP*	SMT-AP*		.500	9.500	53.40	SMT-AP	-

Size Continued On Next Page

Size Continued On Next Page

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed  
 \* = Item commonly stocked as domestic and / or DFARS compliant

OD	WALL	ID	WT / FT	304/L	316/L
<b>10-1/2"</b> (10.500")	1.000	8.500	101.460	W-AP*	-
<b>11"</b> (11.000")	.500	10.000	56.070	W-AP*	-
	.500	10.000	56.070	SMT-AP	-
	.750	9.500	82.190	W-AP*	-
	1.000	9.000	106.80	W-AP*	W-AP*
<b>12"</b> (12.000")	.120	11.760	15.230	-	W-AP*
	.134	11.732	16.980	W-AP*	-
	.188	11.624	23.720	SMT-AP	-
	.250	11.500	31.370	-	W-AP*
	.250	11.500	31.370	SMT-AP	W-AP*
	.375	11.250	46.560	W-AP*	-
	.375	11.250	46.560	SMT-AP	-
	.500	11.000	61.410	W-AP*	W-AP*
	.500	11.000	61.410	SMT-AP	-
<b>14"</b> (14.000")	.750	12.500	106.230	W-AP*	-
	1.000	12.000	138.970	W-AP*	-



**Cutting Capabilities**

When you need only a few feet, why pay for the whole length and inventory the drop?

Let us solve your problems. Our extensive inventory of stainless tubular products is at your disposal whether you need 3 inches or 3 feet.

**Cutting: Welded or Seamless Tubing**

- Outer Diameters (O.D.) : 3-3/8" thru 14".
- Walls: .065" to 1.000"
- Types: 304, 304L, 316, 316L

**Cutting: Seamless Mechanical Tubing**

- Outer Diameters (O.D.) : 1/2" thru 12".
- Walls: .188" to 2.000"
- Types: 304, 304L, 316, 316L

**Production Cutting**

- Size range, lengths and tolerances based on customer requirements
- Projects ranging from 1 to 100+ cuts

W = Welded, S = Seamless, SMT = Seamless Mechanical Tubing, AP = Annealed & Pickled, BA = Bright Annealed  
\* = Item commonly stocked as domestic and / or DFARS compliant

SQUARE TUBE					
OD (IN)		OD (IN)		WALL (IN)	WEIGHT (LBS)
1/2	x	1/2	x	.065	.385
5/8	x	5/8	x	.065	.495
3/4	x	3/4	x	.065	.606
3/4	x	3/4	x	.120	.950
1	x	1	x	.049	.634
1	x	1	x	.065	.827
1	x	1	x	.083	1.035
1	x	1	x	.120	1.321
1 1/4	x	1 1/4	x	.065	1.048
1 1/4	x	1 1/4	x	.083	1.317
1 1/4	x	1 1/4	x	.120	1.844
1 1/2	x	1 1/2	x	.065	1.270
1 1/2	x	1 1/2	x	.083	1.610
1 1/2	x	1 1/2	x	.120	2.255
1 1/2	x	1 1/2	x	.180	3.630
1 3/4	x	1 3/4	x	.083	1.880
1 3/4	x	1 3/4	x	.120	2.660
2	x	2	x	.065	1.710
2	x	2	x	.083	2.164
2	x	2	x	.120	3.068
2	x	2	x	.180	4.455
2	x	2	x	.188	4.460
2	x	2	x	.250	6.010
2 1/2	x	2 1/2	x	.120	3.884
2 1/2	x	2 1/2	x	.180	5.679
2 1/2	x	2 1/2	x	.250	7.650
3	x	3	x	.083	3.293
3	x	3	x	.120	4.700
3	x	3	x	.180	6.903
3	x	3	x	.188	6.900
3	x	3	x	.250	10.000
4	x	4	x	.120	6.260
4	x	4	x	.180	9.270
4	x	4	x	.188	9.270
4	x	4	x	.250	12.680
4	x	4	x	.375	18.475
5	x	5	x	.250	16.150
6	x	6	x	.180	14.247
6	x	6	x	.250	19.550
6	x	6	x	.375	27.660
8	x	8	x	.250	26.350
8	x	8	x	.375	38.890
10	x	10	x	.250	33.150

RECTANGULAR TUBE					
OD (IN)		OD (IN)		WALL (IN)	WEIGHT (LBS)
1/2	x	1	x	.065	.606
1/2	x	1 1/2	x	.065	.827
3/4	x	2	x	.065	1.158
1	x	1 1/2	x	.065	1.048
1	x	1 1/2	x	.120	1.929
1	x	2	x	.065	1.270
1	x	2	x	.083	1.600
1	x	2	x	.120	2.252
1	x	3	x	.065	1.711
1	x	3	x	.120	3.068
1 1/2	x	2	x	.065	1.490
1 1/2	x	2	x	.120	2.660
1 1/2	x	3	x	.065	1.932
1 1/2	x	3	x	.120	3.476
2	x	3	x	.120	3.884
2	x	3	x	.180	5.679
2	x	3	x	.250	7.650
2	x	4	x	.120	4.700
2	x	4	x	.180	6.903
2	x	4	x	.250	9.350
2	x	6	x	.120	6.332
2	x	6	x	.180	9.351
2	x	6	x	.250	12.750
3	x	4	x	.120	5.516
3	x	4	x	.180	8.127
3	x	4	x	.250	11.050
3	x	5	x	.180	9.270
3	x	5	x	.250	12.680
3	x	6	x	.180	10.520
3	x	6	x	.250	14.450
4	x	6	x	.180	11.900
4	x	6	x	.250	16.350
4	x	8	x	.250	18.770
4	x	10	x	.250	22.950
4	x	12	x	.250	26.350
6	x	8	x	.250	22.950
6	x	10	x	.250	26.350

<b>ANGLE</b>						
FLANGE (IN)		STEM (IN)		THICKNESS (IN)	WEIGHT/FT (LBS)	
	3/4	x	3/4	x	1/8	.59
1		x	1	x	1/8	.80
1		x	1	x	3/16	1.16
1		x	1	x	1/4	1.49
1	1/4	x	1 1/4	x	1/8	1.01
1	1/4	x	1 1/4	x	3/16	1.48
1	1/4	x	1 1/4	x	1/4	1.92
1	1/2	x	1 1/2	x	1/8	1.23
1	1/2	x	1 1/2	x	3/16	1.80
1	1/2	x	1 1/2	x	1/4	2.34
2		x	1	x	1/4	2.40
2		x	2	x	1/8	1.65
2		x	2	x	3/16	2.44
2		x	2	x	1/4	3.19
2		x	2	x	3/8	4.70
2	1/2	x	2 1/2	x	3/16	3.10
2	1/2	x	2 1/2	x	1/4	4.10
2	1/2	x	2 1/2	x	3/8	5.90
3		x	1 1/2	x	1/4	3.60
3		x	2	x	3/16	3.10
3		x	2	x	1/4	4.10
3		x	2	x	3/8	5.90
3		x	3	x	3/16	3.71
3		x	3	x	1/4	4.90
3		x	3	x	3/8	7.20
3		x	3	x	1/2	9.55
3	1/2	x	3 1/2	x	1/4	5.98
3	1/2	x	3 1/2	x	3/8	8.67
4		x	3	x	1/4	5.80
4		x	3	x	3/8	8.50
4		x	4	x	1/4	6.60
4		x	4	x	3/8	9.80
4		x	4	x	1/2	12.80
5		x	3	x	1/4	6.60
5		x	3	x	3/8	9.80
5		x	5	x	1/4	9.10
5		x	5	x	3/8	12.40
5		x	5	x	1/2	16.30
6		x	3	x	1/4	7.50
6		x	3	x	3/8	11.10
6		x	4	x	1/4	8.30
6		x	4	x	3/8	12.40
6		x	4	x	1/2	16.30
6		x	6	x	1/4	10.10
6		x	6	x	3/8	14.90
6		x	6	x	1/2	19.70
8		x	8	x	1/2	26.50



CHANNEL					
DEPTH (IN)	WEB THICKNESS (IN)		FLANGE WIDTH (IN)		WEIGHT (LBS)
1	x	1/8	x	1/2	.700
1 1/4	x	1/8	x	1/2	1.01
1 1/2	x	1/8	x	1/2	1.12
1 1/2	x	1/8	x	3/4	1.17
2	x	1/8	x	1	1.59
2	x	3/16	x	1	2.32
2	x	1/4	x	1	2.88

MC CHANNEL					
DEPTH (IN)	WEB THICKNESS (IN)		FLANGE WIDTH (IN)		
MC 3 x 3.5	x	3/16	x	1	3/8
MC 3 x 3.6	x	3/16	x	1	1/2
MC 3 x 4.9	x	1/4	x	1	1/2
MC 4 x 6.05	x	1/4	x	1	3/4
MC 4 x 6.5	x	1/4	x	2	
MC 6 x 10	x	1/4	x	3	
MC 6 x 14.4	x	3/8	x	3	
MC 8 x 13.7	x	1/4	x	4	
MC 8 x 19.7	x	3/8	x	4	

C CHANNEL					
DEPTH (IN)	WEB THICKNESS (IN)		FLANGE WIDTH (IN)		
C 3 x 4.1	x	.170	x	1.410	
C 4 x 5.4	x	.184	x	1.584	
C 4 x 7.25	x	.321	x	1.721	
C 5 x 6.7	x	.190	x	1.750	
C 5 x 9.0	x	.325	x	1.885	
C 6 x 8.2	x	.200	x	1.920	
C 6 x 10.5	x	.314	x	2.034	
C 6 x 13.0	x	.437	x	2.157	
C 8 x 11.5	x	.220	x	2.260	
C 8 x 13.75	x	.330	x	2.343	
C 8 x 18.75	x	.487	x	2.527	
C 10 x 15.3	x	.240	x	2.600	
C 10 x 20.0	x	.379	x	2.739	
C 10 x 25.0	x	.526	x	2.886	
C 10 x 30.0	x	.673	x	3.033	
C 12 x 20.7	x	.282	x	2.942	
C 12 x 25.0	x	.387	x	3.047	
C 12 x 30.0	x	.510	x	3.170	
C 15 x 33.9	x	.400	x	3.400	

<b>ROUND BAR</b>					
SIZE (IN)	WEIGHT (LBS)	SIZE (IN)	WEIGHT (LBS)	SIZE (IN)	WEIGHT (LBS)
1/16	.010	1 1/2	6.014	4 7/8	63.450
5/64	.016	1 9/16	6.526	5	66.820
3/32	.023	1 5/8	7.058	5 1/4	73.670
7/64	.032	1 11/16	7.604	5 1/2	80.860
1/8	.042	1 3/4	8.186	5 3/4	88.370
9/64	.053	1 13/16	8.773	6	96.120
5/32	.065	1 7/8	9.397	6 1/4	100.20
11/64	.079	2	10.690	6 1/2	104.30
3/16	.094	2 1/16	11.360	6 3/4	121.70
1/4	.167	2 1/8	12.070	7	130.80
9/32	.211	2 3/16	12.790	7 1/4	140.40
5/16	.261	2 1/4	13.530	7 1/2	150.20
11/32	.316	2 3/8	15.080	7 3/4	160.40
3/8	.376	2 1/2	16.710	8	170.90
7/16	.511	2 5/8	18.420	8 1/4	181.70
1/2	.668	2 11/16	19.290	8 1/2	192.90
9/16	.845	2 3/4	20.210	8 3/4	204.50
5/8	1.044	2 7/8	22.090	9	216.30
11/16	1.263	3	24.060	9 1/4	228.50
3/4	1.504	3 1/8	26.100	9 1/2	241.00
13/16	1.765	3 3/16	27.130	9 3/4	253.80
7/8	2.046	3 1/4	28.230	10	267.00
15/16	2.349	3 3/8	30.420	10 1/2	294.40
1	2.673	3 7/16	31.550	11	324.00
1 1/16	3.017	3 1/2	32.740	11 1/2	354.00
1 1/8	3.383	3 5/8	35.120	12	384.48
1 9/64	3.470	3 11/16	36.310	12 1/2	417.20
1 5/32	3.570	3 3/4	37.590	13	451.23
1 3/16	3.769	4	42.770	13 1/2	487.00
1 1/4	4.176	4 1/8	45.430	14	523.32
1 9/32	4.384	4 1/4	48.280	15	501.00
1 5/16	4.604	4 3/8	51.160	16	684.00
1 3/8	5.053	4 1/2	54.130		
1 7/16	5.523	4 3/4	60.310		

HEX BAR	
SIZE (IN)	WEIGHT (LBS)
1/8	.046
5/32	.072
3/16	.104
7/32	.140
1/4	.184
9/32	.232
5/16	.288
11/32	.348
3/8	.414
13/32	.486
7/16	.564
1/2	.736
9/16	.932
5/8	1.150
11/16	1.392
3/4	1.656
13/16	1.944
7/8	2.254
15/16	2.588
1	2.945
1 1/16	3.324
1 1/8	3.727
1 3/16	4.152
1 1/4	4.601
1 5/16	5.072
1 3/8	5.567
1 7/16	6.085
1 1/2	6.625
1 5/8	7.775
1 11/16	8.385
1 3/4	9.019
1 3/16	9.673
1 7/8	10.350
2	11.780
2 1/8	13.300
2 3/16	14.090
2 1/4	14.910
2 3/8	16.610
2 1/2	18.400
2 5/8	20.290
2 3/4	22.270
2 7/8	24.330
3	26.500
3 1/2	36.070
4	47.120

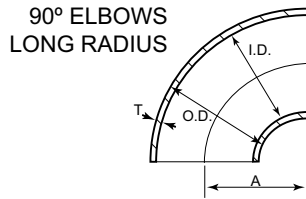
SQUARE BAR	
SIZE (IN)	WEIGHT (LBS)
1/8	.053
5/32	.083
3/16	.120
1/4	.213
5/16	.332
3/8	.479
7/16	.651
1/2	.851
9/16	1.076
5/8	1.329
11/16	1.607
3/4	1.913
13/16	2.245
7/8	2.606
15/16	2.988
1	3.403
1 1/16	3.840
1 1/8	4.303
1 3/16	4.795
1 1/4	5.313
1 5/16	5.857
1 3/8	6.428
1 1/2	7.650
1 5/8	8.980
1 3/4	10.410
1 7/8	11.950
2	13.600
2 1/8	13.353
2 1/4	17.210
2 3/8	19.180
2 1/2	21.250
2 3/4	25.720
3	30.600
3 1/2	41.650
4	54.400
4 1/2	68.850
5	85.000
5 1/2	102.900
6	122.400

<b>FLAT BAR</b>					
SIZE (IN)	WEIGHT (LBS)	SIZE (IN)	WEIGHT (LBS)	SIZE (IN)	WEIGHT (LBS)
1/8 x 1/2	.213	5/16 x 1 1/4	1.330	5/8 x 4	8.510
1/8 x 5/8	.266	5/16 x 2	1.600	5/8 x 5	10.640
1/8 x 3/4	.319	5/16 x 2 1/2	2.660	5/8 x 6	12.760
1/8 x 1	.425	5/16 x 3	3.190	3/4 x 1	2.552
1/8 x 1 1/4	.532	5/16 x 4	4.250	3/4 x 1 1/4	3.190
1/8 x 1 1/2	.638	3/8 x 1/2	.640	3/4 x 1 1/2	3.829
1/8 x 2	.851	3/8 x 3/4	.960	3/4 x 1 3/4	4.470
1/8 x 2 1/2	1.064	3/8 x 1	1.276	3/4 x 2	5.105
1/8 x 3	1.276	3/8 x 1 1/4	1.595	3/4 x 2 1/4	5.738
1/8 x 4	1.700	3/8 x 1 1/2	1.914	3/4 x 2 1/2	6.381
3/16 x 1/2	.320	3/8 x 1 3/4	2.233	3/4 x 3	7.657
3/16 x 3/4	.479	3/8 x 2	2.552	3/4 x 4	10.210
3/16 x 1	.638	3/8 x 2 1/2	3.191	3/4 x 6	15.310
3/16 x 1 1/4	.798	3/8 x 3	3.829	1 x 1 1/4	4.250
3/16 x 1 1/2	.957	3/8 x 4	5.105	1 x 1 1/2	5.105
3/16 x 1 3/4	1.117	3/8 x 6	7.657	1 x 1 3/4	5.960
3/16 x 2	1.276	1/2 x 3/4	1.280	1 x 2	6.806
3/16 x 2 1/2	1.595	1/2 x 1	1.702	1 x 2 1/4	7.65
3/16 x 3	1.914	1/2 x 1 1/4	2.127	1 x 2 1/2	8.508
3/16 x 4	2.550	1/2 x 1 1/2	2.552	1 x 3	10.210
3/16 x 6	3.825	1/2 x 1 3/4	2.980	1 x 3 1/2	11.910
1/4 x 1/2	.425	1/2 x 2	3.403	1 x 4	13.610
1/4 x 5/8	.531	1/2 x 2 1/2	4.254	1 x 5	17.020
1/4 x 3/4	.638	1/2 x 3	5.105	1 x 6	20.420
1/4 x 1	.851	1/2 x 3 1/2	5.950	1 1/4 x 1 1/2	6.381
1/4 x 1 1/4	1.064	1/2 x 4	6.806	1 1/4 x 2	8.510
1/4 x 1 1/2	1.276	1/2 x 5	8.508	1 1/4 x 2 1/2	10.640
1/4 x 1 3/4	1.489	1/2 x 6	10.210	1 1/4 x 3	12.760
1/4 x 2	1.702	5/8 x 3/4	1.595	1 1/4 x 4	17.020
1/4 x 2 1/2	2.127	5/8 x 1	2.127	1 1/2 x 2	10.210
1/4 x 3	2.130	5/8 x 1 1/4	2.660	1 1/2 x 2 1/2	12.760
1/4 x 3 1/2	2.950	5/8 x 1 1/2	3.191	1 1/2 x 3	15.300
1/4 x 4	3.403	5/8 x 1 3/4	3.719	1 1/2 x 4	20.400
1/4 x 5	4.250	5/8 x 2	4.254	1 1/2 x 6	30.600
1/4 x 6	5.105	5/8 x 2 1/2	5.320	2 x 2 1/2	17.000
5/16 x 3/4	.800	5/8 x 3	6.381	2 x 3	20.420
5/16 x 1	1.060	5/8 x 3 1/2	7.450	2 x 4	27.200

STAINLESS STEEL PLATE							
THICKNESS	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
DECIMAL	.187"	.250"	.312"	.375"	.500"	.625"	.750"
LBS / SQ FT	8.579	11.162	13.740	16.496	21.831	26.831	32.123
SIZE	PLATE WEIGHT (LBS)						
48" x 96"	274.53	357.18	439.87	527.87	693.22	858.59	1027.94
48" x 120"	343.16	446.48	549.84	659.84	866.52	1073.24	1284.92
48" x 144"	411.79	535.78	659.81	791.81	1039.82	1287.89	1541.90
48" x 240"	685.32	892.96	1099.68	1319.68	1733.00	2146.48	2569.84
60" x 120"	428.95	558.10	687.00	824.80	1083.15	1341.55	1606.15
60" x 144"	514.74	669.72	824.76	989.76	1299.78	1609.86	1927.38
60" x 240"	857.90	1116.20	1374.60	1649.60	2166.30	2683.10	3212.30
72" x 120"	514.74	669.72	824.76	989.76	1299.78	1609.86	1927.38
72" x 144"	617.69	803.66	989.71	1187.71	1559.74	1931.83	2312.86
72" x 240"	1029.48	1339.44	1648.52	1979.52	2599.56	3219.72	3854.76
96" x 240"	1372.64	1785.92	2199.36	2639.36	3466.08	4292.96	5139.68
THICKNESS	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
DECIMAL	1.00"	1.25"	1.50"	2.00"	2.50"	3.00"	4.00"
LBS / SQ FT	42.665	53.001	63.337	84.008	105.100	126.300	167.600
SIZE	PLATE WEIGHT (LBS)						
48" x 96"	1365.28	1696.03	2026.78	2688.26	3363.20	4041.60	5363.20
48" x 120"	1706.60	2120.04	2533.48	3360.32	4204.00	5052.00	6704.00
48" x 144"	2047.92	2544.05	3040.18	4032.38	5044.80	6062.40	8044.80
48" x 240"	3413.20	4240.08	5066.96	6720.64	8408.00	10104.00	13408.00
60" x 120"	2133.25	2650.05	3166.85	4200.40	5255.00	6315.00	8380.00
60" x 144"	2559.90	3180.06	3800.22	5040.48	6306.00	7578.00	10056.00
60" x 240"	4266.50	5300.10	6333.70	8400.80	10510.00	12630.00	16760.00
72" x 120"	2559.90	3180.06	3800.22	5040.48	6306.00	7578.00	10056.00
72" x 144"	3071.88	3816.07	4560.26	6048.58	7567.20	9093.60	12067.20
72" x 240"	5119.80	6360.12	7600.44	10080.96	12612.00	15156.00	20112.00
96" x 240"	6826.40	8480.16	10133.92	13441.28	16816.00	20208.00	26816.00

STAINLESS STEEL SHEET						
GAUGE	7	10	11	12	14	16
DECIMAL	0.187"	.134"	.120"	.105"	.075"	.060"
LBS / SQ FT	7.871	5.670	5.040	4.427	3.154	2.499
SIZE	SHEET WEIGHT (LBS)					
36" x 96"	-	136.08	120.96	106.25	75.70	59.98
36" x 120"	236.13	170.10	151.20	132.81	94.62	74.97
36" x 144"	-	204.12	181.44	159.37	113.54	89.96
48" x 96"	-	181.44	161.28	141.66	100.93	79.97
48" x 120"	314.84	226.80	201.60	177.08	126.16	99.96
48" x 144"	377.81	272.16	241.92	212.50	151.39	119.95
48" x 240"	-	453.60	403.20	354.16	252.32	199.92
60" x 96"	-	226.80	201.60	177.08	126.16	99.96
60" x 120"	393.55	283.50	252.00	221.35	157.70	124.95
60" x 144"	472.26	340.20	302.40	265.62	189.24	149.94
60" x 240"	-	567.00	504.00	442.70	315.40	249.90
72" x 120"	472.26	340.20	302.40	265.62	189.24	149.94
72" x 144"	-	408.24	362.88	318.74	227.09	179.93
72" x 240"	-	680.40	604.80	531.24	378.48	299.88
GAUGE	18	20	22	24	26	28
DECIMAL	.048"	.040"	.030"	.024"	.018"	.015"
LBS / SQ FT	2.016	1.491	1.231	.9870	.7476	.6342
SIZE	SHEET WEIGHT (LBS)					
36" x 96"	48.38	35.78	29.54	23.69	17.94	-
36" x 120"	60.48	44.73	36.93	29.61	22.43	19.03
36" x 144"	72.58	53.68	44.32	35.53	26.91	-
48" x 96"	64.51	47.71	39.39	31.58	23.92	-
48" x 120"	80.64	59.64	49.24	39.48	29.90	25.37
48" x 144"	96.77	71.57	59.09	47.38	35.88	-
48" x 240"	-	-	-	-	-	-
60" x 96"	80.64	-	-	-	-	-
60" x 120"	100.80	74.55	-	-	-	-
60" x 144"	120.96	89.46	-	-	-	-
60" x 240"	-	-	-	-	-	-
72" x 120"	-	-	-	-	-	-
72" x 144"	-	-	-	-	-	-
72" x 240"	-	-	-	-	-	-

**PLATE & SHEET**

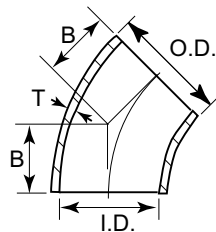


90° ELBOWS  
LONG RADIUS

NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	CENTER TO FACE (O.D.)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
			INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	
1/2	.840	1-1/2	.710	.065	.674	.083	.622	.109	.546	.147	1/2
3/4	1.050	1-1/8	.920	.065	.884	.083	.824	.113	.742	.154	3/4
1	1.315	1-1/2	1.185	.065	1.097	.109	1.049	.133	.957	.179	1
1-1/4	1.660	1-7/8	1.530	.065	1.442	.109	1.380	.140	1.278	.191	1-1/4
1-1/2	1.900	2-1/4	1.770	.065	1.682	.109	1.610	.145	1.500	.200	1-1/2
2	2.375	3	2.245	.065	2.157	.109	2.067	.154	1.939	.218	2
2-1/2	2.875	3-3/4	2.709	.083	2.635	.120	2.469	.203	2.323	.276	2-1/2
3	3.500	4-1/2	3.334	.083	3.260	.120	3.068	.216	2.900	.300	3
3-1/2	4.000	5-1/4	3.834	.083	3.760	.120	3.548	.226	3.364	.318	3-1/2
4	4.500	6	4.334	.083	4.260	.120	4.026	.237	3.826	.337	4
5	5.563	7-1/2	5.345	.109	5.295	.134	5.047	.258	4.813	.375	5
6	6.625	9	6.407	.109	6.357	.134	6.065	.280	5.761	.432	6
8	8.625	12	8.407	.109	8.329	.148	7.981	.322	7.625	.500	8
10	10.750	15	10.482	.134	10.420	.165	10.020	.365	9.750	.500	10
12	12.750	18	12.438	.156	12.390	.180	12.000	.375	11.750	.500	12

WELD FITTINGS

45° ELBOWS  
LONG RADIUS

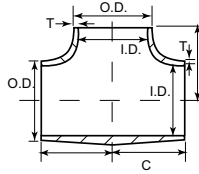


45° ELBOWS  
LONG RADIUS

NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	CENTER TO FACE (B)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
			INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	
1/2	.840	5/8	.710	.065	.674	.083	.622	.109	.546	.147	1/2
3/4	1.050	7/16	.920	.065	.884	.083	.824	.113	.742	.154	3/4
1	1.315	7/8	1.185	.065	1.097	.109	1.049	.133	.957	.179	1
1-1/4	1.660	1	1.530	.065	1.442	.109	1.380	.140	1.278	.191	1-1/4
1-1/2	1.900	1-1/8	1.770	.065	1.682	.109	1.610	.145	1.500	.200	1-1/2
2	2.375	1-3/8	2.245	.065	2.157	.109	2.067	.154	1.939	.218	2
2-1/2	2.875	1-3/4	2.709	.083	2.635	.120	2.469	.203	2.323	.276	2-1/2
3	3.500	2	3.334	.083	3.260	.120	3.068	.216	2.900	.300	3
3-1/2	4.000	2-1/4	3.834	.083	3.760	.120	3.548	.226	3.364	.318	3-1/2
4	4.500	2-1/2	4.334	.083	4.260	.120	4.026	.237	3.826	.337	4
5	5.563	3-1/8	5.345	.109	5.295	.134	5.047	.258	4.813	.375	5
6	6.625	3-3/4	6.407	.109	6.357	.134	6.065	.280	5.761	.432	6
8	8.625	5	8.407	.109	8.329	.148	7.981	.322	7.625	.500	8
10	10.750	6-1/4	10.482	.134	10.420	.165	10.020	.365	9.750	.500	10
12	12.750	7-1/2	12.438	.156	12.390	.180	12.000	.375	11.750	.500	12

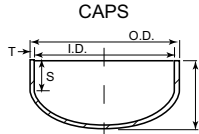
**STRAIGHT TEES**

STRAIGHT TEES



NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	CENTER TO END (C)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
			INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	
1/2	.840	1	.710	.065	.674	.083	.622	.109	.546	.147	1/2
3/4	1.050	1-1/8	.920	.065	.884	.083	.824	.113	.742	.154	3/4
1	1.315	1-1/2	1.185	.065	1.097	.109	1.049	.133	.957	.179	1
1-1/4	1.660	1-7/8	1.530	.065	1.442	.109	1.380	.140	1.278	.191	1-1/4
1-1/2	1.900	2-1/4	1.770	.065	1.682	.109	1.610	.145	1.500	.200	1-1/2
2	2.375	2-1/2	2.245	.065	2.157	.109	2.067	.154	1.939	.218	2
2-1/2	2.875	3	2.709	.083	2.635	.120	2.469	.203	2.323	.276	2-1/2
3	3.500	3-3/8	3.334	.083	3.260	.120	3.068	.216	2.900	.300	3
3-1/2	4.000	3-3/4	3.834	.083	3.760	.120	3.548	.226	3.364	.318	3-1/2
4	4.500	4-1/8	4.334	.083	4.260	.120	4.026	.237	3.826	.337	4
5	5.563	4-7/8	5.345	.109	5.295	.134	5.047	.258	4.813	.375	5
6	6.625	5-5/8	6.407	.109	6.357	.134	6.065	.280	5.761	.432	6
8	8.625	7	8.407	.109	8.329	.148	7.981	.322	7.625	.500	8
10	10.750	8-1/2	10.482	.134	10.420	.165	10.020	.365	9.750	.500	10
12	12.750	10	12.438	.156	12.390	.180	12.000	.375	11.750	.500	12

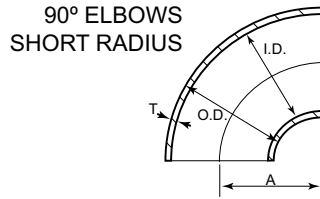
**CAPS**



NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	LENGTH (E) TANGENT LENGTH (S)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM. PIPE SIZE
			INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	
1/2	.840	E 1 S .74	.710	.065	.674	.083	.622	.109	.546	.147	1/2
3/4	1.050	E 1 S .68	.920	.065	.884	.083	.824	.113	.742	.154	3/4
1	1.315	E 1-1/2 S 1.10	1.185	.065	1.097	.109	1.049	.133	.957	.179	1
1-1/4	1.660	E 1-1/2 S 1.02	1.530	.065	1.442	.109	1.380	.140	1.278	.191	1-1/4
1-1/2	1.900	E 1-1/2 S .95	1.770	.065	1.682	.109	1.610	.145	1.500	.200	1-1/2
2	2.375	E 1-1/2 S .83	2.245	.065	2.157	.109	2.067	.154	1.939	.218	2
2-1/2	2.875	E 1-1/2 S .68	2.709	.083	2.635	.120	2.469	.203	2.323	.276	2-1/2
3	3.500	E 2 S 1.02	3.334	.083	3.260	.120	3.068	.216	2.900	.300	3
3-1/2	4.000	E 2-1/2 S 1.40	3.834	.083	3.760	.120	3.548	.226	3.364	.318	3-1/2
4	4.500	E 2-1/2 S 1.26	4.334	.083	4.260	.120	4.026	.237	3.826	.337	4
5	5.563	E 3 S 1.48	5.345	.109	5.295	.134	5.047	.258	4.813	.375	5
6	6.625	E 3-1/2 S 1.70	6.407	.109	6.357	.134	6.065	.280	5.761	.432	6
8	8.625	E 4 S 1.68	8.407	.109	8.329	.148	7.981	.322	7.625	.500	8
10	10.750	E 5 S 2.13	10.482	.134	10.420	.165	10.020	.365	9.750	.500	10
12	12.750	E 6 S 2.63	12.438	.156	12.390	.180	12.000	.375	11.750	.500	12

**WELD FITTINGS**

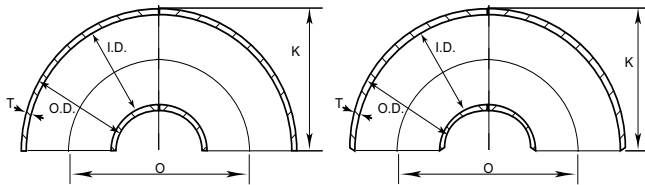




90° ELBOWS  
SHORT RADIUS

NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	CENTER TO FACE (A)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
			INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	
1	1.315	1	1.185	.065	1.097	.109	1.049	.133	.957	.179	1
1-1/4	1.660	1-1/4	1.530	.065	1.442	.109	1.380	.140	1.278	.191	1-1/4
1-1/2	1.900	1-1/2	1.770	.065	1.682	.109	1.610	.145	1.500	.200	1-1/2
2	2.375	2	2.245	.065	2.157	.109	2.067	.154	1.939	.218	2
2-1/2	2.875	2-1/2	2.709	.083	2.635	.120	2.469	.203	2.323	.276	2-1/2
3	3.500	3	3.334	.083	3.260	.120	3.068	.216	2.900	.300	3
3-1/2	4.000	3-1/2	3.834	.083	3.760	.120	3.548	.226	3.364	.318	3-1/2
4	4.500	4	4.334	.083	4.260	.120	4.026	.237	3.826	.337	4
5	5.563	5	5.345	.109	5.295	.134	5.047	.258	4.813	.375	5
6	6.625	6	6.407	.109	6.357	.134	6.065	.280	5.761	.432	6
8	8.625	8	8.407	.109	8.329	.148	7.981	.322	7.625	.500	8
10	10.750	10	10.482	.134	10.420	.165	10.020	.365	9.750	.500	10
12	12.750	12	12.438	.156	12.390	.180	12.000	.375	11.750	.500	12

180° RETURN BENDS  
LONG RADIUS

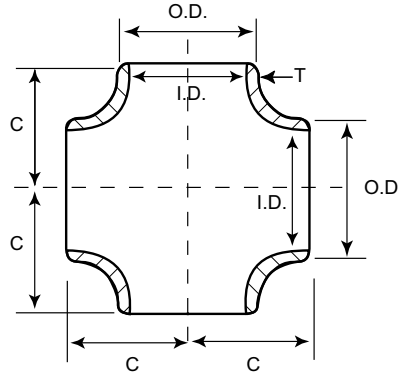


180° RETURN BENDS  
LONG RADIUS

NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	CENTER TO CENTER (O)	BACK TO FACE (K)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
				INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	
1/2	.840	3	17/8	.710	.065	.674	.083	.622	.109	.546	.147	1/2
3/4	1.050	2-1/4	1-11/16	.920	.065	.884	.083	.824	.113	.742	.154	3/4
1	1.315	3	2-3/16	1.185	.065	1.097	.109	1.049	.133	.957	.179	1
1-1/4	1.660	3-3/4	2-3/4	1.530	.065	1.442	.109	1.380	.140	1.278	.191	1-1/4
1-1/2	1.900	4-1/2	3-1/4	1.770	.065	1.682	.109	1.610	.145	1.500	.200	1-1/2
2	2.375	6	4-3/16	2.245	.065	2.157	.109	2.067	.154	1.939	.218	2
2-1/2	2.875	7-1/2	5-3/16	2.709	.083	2.635	.120	2.469	.203	2.323	.276	2-1/2
3	3.500	9	6-1/4	3.334	.083	3.260	.120	3.068	.216	2.900	.300	3
3-1/2	4.000	10-1/2	7-1/4	3.834	.083	3.760	.120	3.548	.226	3.364	.318	3-1/2
4	4.500	12	8-1/4	4.334	.083	4.260	.120	4.026	.237	3.826	.337	4
5	5.563	15	10-5/16	5.345	.109	5.295	.134	5.047	.258	4.813	.375	5
6	6.625	18	12-5/16	6.407	.109	6.357	.134	6.065	.280	5.761	.432	6
8	8.625	24	1-5/16	8.407	.109	8.329	.148	7.981	.322	7.625	.500	8
10	10.750	30	20-3/8	10.482	.134	10.420	.165	10.020	.365	9.750	.500	10
12	12.750	36	24-3/8	12.438	.156	12.390	.180	12.000	.375	11.750	.500	12

## STRAIGHT CROSSES

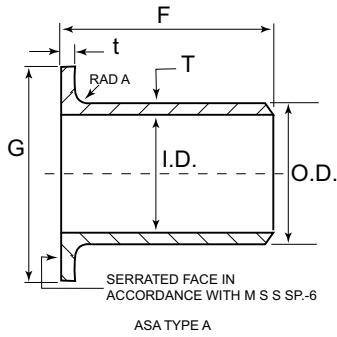
### STRAIGHT CROSSES



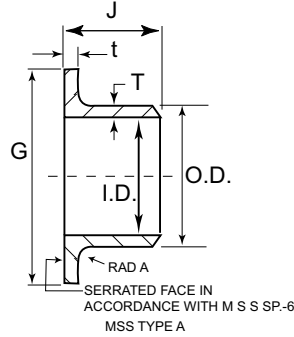
NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	CENTER TO END (B)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM. PIPE SIZE
			INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	
1	1.315	1-1/2	1.185	.065	1.097	.109	1.049	.133	.957	.179	1
1-1/4	1.660	1-7/8	1.530	.065	1.442	.109	1.380	.140	1.278	.191	1-1/4
1-1/2	1.900	2-1/4	1.770	.065	1.682	.109	1.610	.145	1.500	.200	1-1/2
2	2.375	2-1/2	2.245	.065	2.157	.109	2.067	.154	1.939	.218	2
2-1/2	2.875	3	2.709	.083	2.635	.120	2.469	.203	2.323	.276	2-1/2
3	3.500	3-3/8	3.334	.083	3.260	.120	3.068	.216	2.900	.300	3
3-1/2	4.000	3-3/4	3.834	.083	3.760	.120	3.548	.226	3.364	.318	3-1/2
4	4.500	4-1/8	4.334	.083	4.260	.120	4.026	.237	3.826	.337	4
5	5.563	4-7/8	5.345	.109	5.295	.134	5.047	.258	4.813	.375	5
6	6.625	5-5/8	6.407	.109	6.357	.134	6.065	.280	5.761	.432	6
8	8.625	7	8.407	.109	8.329	.148	7.981	.322	7.625	.500	8
10	10.750	8-1/2	10.482	.134	10.420	.165	10.020	.365	9.750	.500	10
12	12.750	10	12.438	.156	12.390	.180	12.000	.375	11.750	.500	12

STUB ENDS

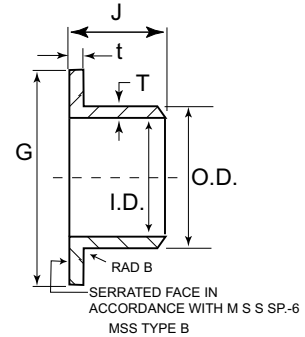
STUB ENDS



STUB ENDS



STUB ENDS

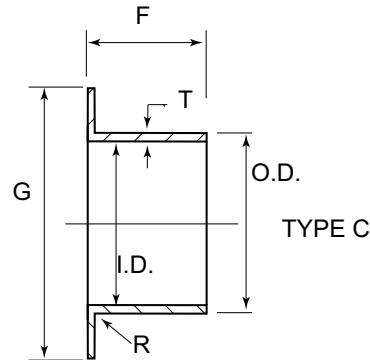


NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	DIAMETER (G)	LENGTH (F) SHORT	RADIUS		SCHEDULE 5S			SCHEDULE 10S			NOM. PIPE SIZE
				A	B	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	LAP THICKNESS (t)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	LAP THICKNESS (t)	
1/2	.840	1-3/8	2	1/8	1/32	.710	.065	.084	.674	.083	.095	1/2
3/4	1.050	1-11/16	2	1/8	1/32	.920	.065	.086	.884	.083	.097	3/4
1	1.315	2	2	1/8	1/32	1.185	.065	.093	1.097	.109	.120	1
1-1/4	1.660	2-1/2	2	3/16	1/32	1.530	.065	.095	1.442	.109	.124	1-1/4
1-1/2	1.900	2-7/8	2	1/4	1/32	1.770	.065	.097	1.682	.109	.126	1-1/2
2	2.375	3-5/8	2-1/2	5/16	1/32	2.245	.065	.100	2.157	.109	.130	2
2-1/2	2.875	4-1/8	2-1/2	5/16	1/32	2.709	.083	.130	2.635	.120	.156	2-1/2
3	3.500	5	2-1/2	3/8	1/32	3.334	.083	.134	3.260	.120	.161	3
3-1/2	4.000	5-1/2	3	3/8	1/32	3.834	.083	.167	3.760	.120	.165	3-1/2
4	4.500	6-3/16	3	7/16	1/32	4.334	.083	.140	4.260	.120	.169	4
5	5.563	7-5/16	3	7/16	1/16	5.345	.109	.168	5.295	.134	.186	5
6	6.625	8-1/2	3-1/2	1/2	1/16	6.407	.109	.175	6.357	.134	.194	6
8	8.625	10-5/8	4	1/2	1/16	8.407	.109	.187	8.329	.148	.218	8
10	10.750	12-3/4	5	1/2	1/16	10.482	.134	.221	10.420	.165	.245	10
12	12.750	15	6	1/2	1/16	12.438	.156	.249	12.390	.180	.260	12

NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	DIAMETER (G)	LENGTH (F)		RADIUS		SCHEDULE 40S			SCHEDULE 80S			NOM. PIPE SIZE	
			LONG	SHORT	A	B	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	LAP THICKNESS (t)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	LAP THICKNESS (t)		LENGTH (F) LONG
1/2	.840	1-3/8	3	2	1/8	1/32	.622	.109	.109	.546	.147	.147	3	1/2
3/4	1.050	1-11/16	3	2	1/8	1/32	.824	.113	.113	.742	.154	.154	3	3/4
1	1.315	2	4	2	1/8	1/32	1.049	.133	.133	.957	.179	.179	4	1
1-1/4	1.660	2-1/2	4	2	3/16	1/32	1.380	.140	.140	1.278	.191	.191	4	1-1/4
1-1/2	1.900	2-7/8	4	2	1/4	1/32	1.610	.145	.145	1.500	.200	.200	4	1-1/2
2	2.375	3-5/8	6	2-1/2	5/16	1/32	2.067	.154	.154	1.939	.218	.218	6	2
2-1/2	2.875	4-1/8	6	2-1/2	5/16	1/32	2.469	.203	.203	2.323	.276	.276	6	2-1/2
3	3.500	5	6	2-1/2	3/8	1/32	3.068	.216	.216	2.900	.300	.300	6	3
3-1/2	4.000	5-1/2	6	3	3/8	1/32	3.548	.226	.226	3.364	.318	.318	6	3-1/2
4	4.500	6-3/16	6	3	7/16	1/32	4.026	.237	.237	3.826	.337	.337	6	4
5	5.563	7-5/16	8	3	7/16	1/16	5.047	.258	.258	4.813	.375	.375	8	5
6	6.625	8-1/2	8	3-1/2	1/2	1/16	6.065	.280	.280	5.761	.432	.432	8	6
8	8.625	10-5/8	8	4	1/2	1/16	7.981	.322	.322	7.625	.500	.500	8	8
10	10.750	12-3/4	10	5	1/2	1/16	10.020	.365	.365	9.750	.500	.500	10	10
12	12.750	15	10	6	1/2	1/16	12.000	.375	.375	11.750	.500	.500	10	12

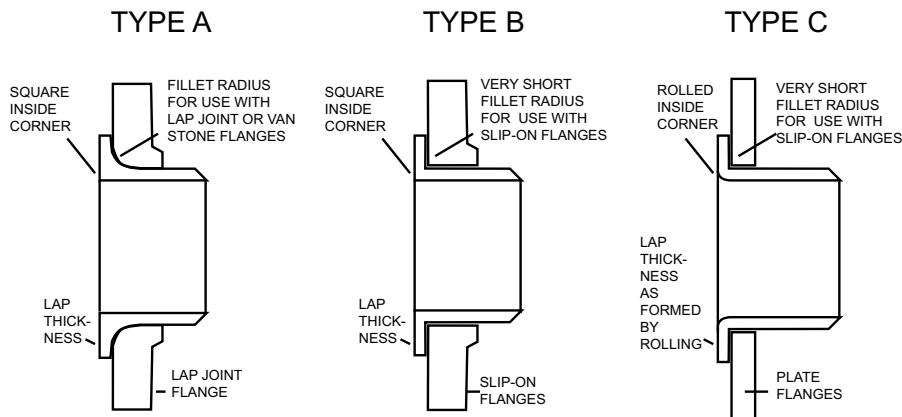
WELD FITTINGS

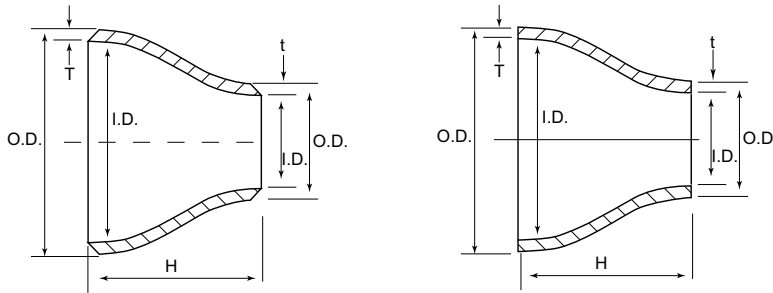
## STUB ENDS



WELD FITTINGS

NOM. PIPE SIZE	OUTSIDE DIAMETER (O.D.)	DIAMETER (G)	LENGTH (F)	RADIUS (R)	SCHEDULE 5S		SCHEDULE 10S		NOM. PIPE SIZE
					INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	INSIDE DIAMETER (I.D.)	WALL THICKNESS (T)	
1/2	.840	1-3/8	2	1/32	.710	.065	.674	.083	1/2
3/4	1.050	1-11/16	2	1/32	.920	.065	.884	.083	3/4
1	1.315	2	2	1/32	1.185	.065	1.097	.109	1
1-1/4	1.660	2-1/2	2	1/32	1.530	.065	1.442	.109	1-1/4
1-1/2	1.900	2-7/8	2	1/32	1.770	.065	1.682	.109	1-1/2
2	2.375	3-5/8	2-1/2	1/32	2.245	.065	2.157	.109	2
2-1/2	2.875	4-1/8	2-1/2	1/32	2.709	.083	2.635	.120	2-1/2
3	3.500	5	2-1/2	1/32	3.334	.083	3.260	.120	3
4	4.500	6-3/16	3	1/32	4.334	.083	4.260	.120	4
5	5.563	7-5/16	3	1/16	5.345	.109	5.295	.134	5
6	6.625	8-1/2	3-1/2	1/16	6.407	.109	6.357	.134	6
8	8.625	10-5/8	4	1/16	8.407	.109	8.329	.148	8
10	10.750	12-3/4	5	1/16	10.482	.134	10.420	.165	10
12	12.750	15	6	1/16	12.438	.156	12.390	.180	12





CONCENTRIC REDUCERS

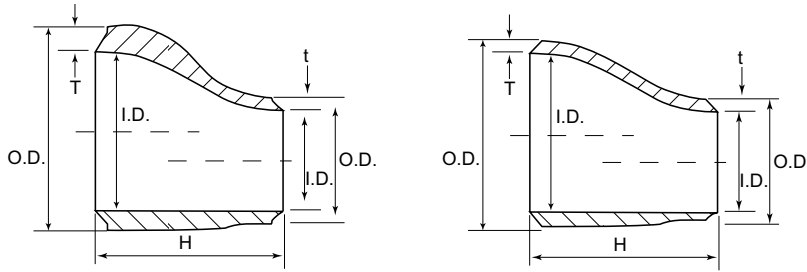
NOM. PIPE SIZE	OUTSIDE DIAMETER		LENGTH (H)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
	LARGE END (O.D.)	SMALL END (O.D.)		INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END -SE	WALL THICKNESS LARGE END -T SMALL END -t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END -SE	WALL THICKNESS LARGE END -T SMALL END -t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END -SE	WALL THICKNESS LARGE END -T SMALL END -t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END -SE	WALL THICKNESS LARGE END -T SMALL END -t	
3/4 x 3/8	1.050	.675	1-1/2	LE .920 SE .545	T .065 t .065	LE .884 SE .545	T .083 t .065	LE .824 SE .493	T .113 t .091	LE .742 SE .423	T .154 t .126	3/4 x 3/8
3/4 x 1/2	1.050	.840	1-1/2	LE .920 SE .710	T .065 t .065	LE .884 SE .674	T .083 t .083	LE .824 SE .622	T .113 t .109	LE .742 SE .546	T .154 t .147	3/4 x 1/2
1 x 3/8	1.315	.675	2	LE 1.185 SE .545	T .065 t .065	LE 1.097 SE .545	T .109 t .065	LE 1.049 SE .493	T .133 t .091	LE .957 SE .423	T .179 t .126	1 x 3/8
1 x 1/2	1.315	.840	2	LE 1.185 SE .710	T .065 t .065	LE 1.097 SE .674	T .109 t .083	LE 1.049 SE .622	T .133 t .109	LE .957 SE .546	T .179 t .147	1 x 1/2
1 x 3/4	1.315	1.050	2	LE 1.185 SE .920	T .065 t .065	LE 1.097 SE .884	T .109 t .083	LE 1.049 SE .824	T .133 t .113	LE .957 SE .742	T .179 t .154	1 x 3/4
1-1/4 x 1/2	1.660	.840	2	LE 1.530 SE .710	T .065 t .065	LE 1.442 SE .674	T .109 t .083	LE 1.380 SE .622	T .140 t .109	LE 1.278 SE .546	T .191 t .147	1-1/4 x 1/2
1-1/4 x 3/4	1.660	1.050	2	LE 1.530 SE .920	T .065 t .065	LE 1.442 SE .884	T .109 t .083	LE 1.380 SE .824	T .140 t .113	LE 1.278 SE .742	T .191 t .154	1-1/4 x 3/4
1-1/4 x 1	1.660	1.315	2	LE 1.530 SE 1.185	T .065 t .065	LE 1.442 SE 1.097	T .109 t .109	LE 1.380 SE 1.049	T .140 t .133	LE 1.278 SE .957	T .191 t .179	1-1/4 x 1
1-1/2 x 1/2	1.900	.840	2-1/2	LE 1.770 SE .710	T .065 t .065	LE 1.682 SE .674	T .109 t .083	LE 1.610 SE .622	T .145 t .109	LE 1.500 SE .546	T .200 t .147	1-1/2 x 1/2
1-1/2 x 3/4	1.900	1.050	2-1/2	LE 1.770 SE .920	T .065 t .065	LE 1.682 SE .884	T .109 t .083	LE 1.610 SE .824	T .145 t .113	LE 1.500 SE .742	T .200 t .154	1-1/2 x 3/4
1-1/2 x 1	1.900	1.315	2-1/2	LE 1.770 SE 1.185	T .065 t .065	LE 1.682 SE 1.097	T .109 t .109	LE 1.610 SE 1.049	T .145 t .133	LE 1.500 SE .957	T .200 t .179	1-1/2 x 1
1-1/2 x 1-1/4	1.900	1.660	2-1/2	LE 1.770 SE 1.530	T .065 t .065	LE 1.682 SE 1.442	T .109 t .109	LE 1.610 SE 1.380	T .145 t .140	LE 1.500 SE 1.278	T .200 t .191	1-1/2 x 1-1/4
2 x 3/4	2.375	1.050	3	LE 2.245 SE .920	T .065 t .065	LE 2.157 SE .884	T .109 t .083	LE 2.067 SE .824	T .154 t .113	LE 1.939 SE .742	T .218 t .154	2 x 3/4
2 x 1	2.375	1.315	3	LE 2.245 SE 1.185	T .065 t .065	LE 2.157 SE 1.097	T .109 t .109	LE 2.067 SE 1.049	T .154 t .133	LE 1.939 SE .957	T .218 t .179	2 x 1
2 x 1-1/4	2.375	1.660	3	LE 2.245 SE 1.530	T .065 t .065	LE 2.157 SE 1.442	T .109 t .109	LE 2.067 SE 1.380	T .154 t .140	LE 1.939 SE 1.278	T .218 t .191	2 x 1-1/4
2 x 1-1/2	2.375	1.900	3	LE 2.245 SE 1.770	T .065 t .065	LE 2.157 SE 1.682	T .109 t .109	LE 2.067 SE 1.610	T .154 t .145	LE 1.939 SE 1.500	T .218 t .200	2 x 1-1/2
2-1/2 x 1	2.875	1.315	3-1/2	LE 2.709 SE 1.185	T .083 t .065	LE 2.635 SE 1.097	T .120 t .109	LE 2.469 SE 1.049	T .203 t .133	LE 2.323 SE .957	T .276 t .179	2-1/2 x 1
2-1/2 x 1-1/4	2.875	1.660	3-1/2	LE 2.709 SE 1.530	T .083 t .065	LE 2.635 SE 1.442	T .120 t .109	LE 2.469 SE 1.380	T .203 t .140	LE 2.323 SE 1.278	T .276 t .191	2-1/2 x 1-1/4
2-1/2 x 1-1/2	2.875	1.900	3-1/2	LE 2.709 SE 1.770	T .083 t .065	LE 2.635 SE 1.682	T .120 t .109	LE 2.469 SE 1.610	T .203 t .145	LE 2.323 SE 1.500	T .276 t .200	2-1/2 x 1-1/2
2-1/2 x 2	2.875	2.375	3-1/2	LE 2.709 SE 2.245	T .083 t .065	LE 2.635 SE 2.157	T .120 t .109	LE 2.469 SE 2.067	T .203 t .154	LE 2.323 SE 1.939	T .276 t .218	2-1/2 x 2
3 x 1	3.500	1.315	3-1/2	LE 3.334 SE 1.185	T .083 t .065	LE 3.260 SE 1.097	T .120 t .109	LE 3.068 SE 1.049	T .216 t .133	LE 2.900 SE .957	T .300 t .179	3 x 1
3 x 1-1/4	3.500	1.660	3-1/2	LE 3.334 SE 1.530	T .083 t .065	LE 3.260 SE 1.442	T .120 t .109	LE 3.068 SE 1.380	T .216 t .140	LE 2.900 SE 1.278	T .300 t .191	3 x 1-1/4
3 x 1-1/2	3.500	1.900	3-1/2	LE 3.334 SE 1.770	T .083 t .065	LE 3.260 SE 1.682	T .120 t .109	LE 3.068 SE 1.610	T .216 t .145	LE 2.900 SE 1.500	T .300 t .200	3 x 1-1/2
3 x 2	3.5	2.375	3-1/2	LE 3.334 SE 2.245	T .083 t .065	LE 3.260 SE 2.157	T .120 t .109	LE 3.068 SE 2.067	T .216 t .154	LE 2.900 SE 1.939	T .300 t .218	3 x 2
3 x 2-1/2	3.5	2.875	3-1/2	LE 3.334 SE 2.709	T .083 t .083	LE 3.260 SE 2.635	T .120 t .120	LE 3.068 SE 2.469	T .216 t .203	LE 2.900 SE 2.323	T .300 t .276	3 x 2-1/2
3-1/2 x 1-1/4	4	1.66	4	LE 3.834 SE 1.530	T .083 t .065	LE 3.760 SE 1.442	T .120 t .109	LE 3.548 SE 1.380	T .226 t .140	LE 3.364 SE 1.278	T .318 t .191	3-1/2 x 1-1/4
3-1/2 x 1-1/2	4	1.9	4	LE 3.834 SE 1.770	T .083 t .065	LE 3.760 SE 1.682	T .120 t .109	LE 3.548 SE 1.610	T .226 t .145	LE 3.364 SE 1.500	T .318 t .200	3-1/2 x 1-1/2

WELD FITTINGS

**CONCENTRIC REDUCERS (CONT.)**

NOM. PIPE SIZE	OUTSIDE DIAMETER		LENGTH (H)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
	LARGE END (O.D.)	SMALL END (O.D.)		INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END-SE	WALL THICKNESS LARGE END -T SMALL END-t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END-SE	WALL THICKNESS LARGE END -T SMALL END-t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END-SE	WALL THICKNESS LARGE END -T SMALL END-t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END-SE	WALL THICKNESS LARGE END -T SMALL END-t	
3-1/2 x 2	4.000	2.375	4	LE 3.834 SE 2.245	T .083 t .065	LE 3.760 SE 2.157	T .120 t .109	LE 3.548 SE 2.067	T .226 t .154	LE 3.364 SE 1.939	T .318 t .218	3-1/2 x 2
3-1/2 x 2-1/2	4.000	2.875	4	LE 3.834 SE 2.709	T .083 t .083	LE 3.760 SE 2.635	T .120 t .120	LE 3.548 SE 2.469	T .226 t .203	LE 3.364 SE 2.323	T .318 t .276	3-1/2 x 2-1/2
3-1/2 x 3	4.000	3.500	4	LE 3.834 SE 3.334	T .083 t .083	LE 3.760 SE 3.260	T .120 t .120	LE 3.548 SE 3.068	T .226 t .216	LE 3.364 SE 2.900	T .318 t .300	3-1/2 x 3
4 x 1-1/2	4.500	1.900	4	LE 4.334 SE 1.770	T .083 t .065	LE 4.260 SE 1.882	T .120 t .109	LE 4.026 SE 1.610	T .237 t .145	LE 3.826 SE 1.500	T .337 t .200	4 x 1-1/2
4 x 2	4.500	2.375	4	LE 4.334 SE 2.225	T .083 t .065	LE 4.260 SE 2.157	T .120 t .109	LE 4.026 SE 2.067	T .237 t .154	LE 3.826 SE 1.939	T .337 t .218	4 x 2
4 x 2-1/2	4.500	2.875	4	LE 4.334 SE 2.709	T .083 t .083	LE 4.260 SE 2.635	T .120 t .120	LE 4.026 SE 2.469	T .237 t .203	LE 3.826 SE 2.323	T .337 t .276	4 x 2-1/2
4 x 3	4.500	3.500	4	LE 4.334 SE 3.334	T .083 t .083	LE 4.260 SE 3.260	T .120 t .120	LE 4.026 SE 3.068	T .237 t .216	LE 3.826 SE 2.900	T .337 t .300	4 x 3
4 x 3-1/2	4.500	4.000	4	LE 4.334 SE 3.834	T .083 t .083	LE 4.260 SE 3.760	T .120 t .120	LE 4.026 SE 3.548	T .237 t .226	LE 3.826 SE 3.364	T .337 t .318	4 x 3-1/2
5 x 2	5.563	2.375	5	LE 5.345 SE 2.245	T .109 t .065	LE 5.295 SE 2.157	T .134 t .109	LE 5.047 SE 2.067	T .258 t .154	LE 4.813 SE 1.939	T .375 t .218	5 x 2
5 x 2-1/2	5.563	2.875	5	LE 5.345 SE 2.709	T .109 t .083	LE 5.295 SE 2.635	T .134 t .120	LE 5.047 SE 2.469	T .258 t .203	LE 4.813 SE 2.323	T .375 t .276	5 x 2-1/2
5 x 3	5.563	3.500	5	LE 5.345 SE 3.334	T .109 t .083	LE 5.295 SE 3.260	T .134 t .120	LE 5.047 SE 3.068	T .258 t .216	LE 4.813 SE 2.900	T .375 t .300	5 x 3
5 x 3-1/2	5.563	4.000	5	LE 5.345 SE 3.834	T .109 t .083	LE 5.295 SE 3.760	T .134 t .120	LE 5.047 SE 3.548	T .258 t .226	LE 4.813 SE 3.364	T .375 t .318	5 x 3-1/2
5 x 4	5.563	4.500	5	LE 5.345 SE 4.334	T .109 t .083	LE 5.295 SE 4.260	T .134 t .120	LE 5.047 SE 4.026	T .258 t .237	LE 4.813 SE 3.826	T .375 t .337	5 x 4
6 x 2-1/2	6.625	2.875	5-1/2	LE 6.407 SE 2.709	T .109 t .083	LE 6.357 SE 2.635	T .134 t .120	LE 6.065 SE 2.469	T .280 t .203	LE 5.761 SE 2.323	T .432 t .276	6 x 2-1/2
6 x 3	6.625	3.500	5-1/2	LE 6.407 SE 3.334	T .109 t .083	LE 6.357 SE 3.260	T .134 t .120	LE 6.065 SE 3.068	T .280 t .216	LE 5.761 SE 2.900	T .432 t .300	6 x 3
6 x 3-1/2	6.625	4.000	5-1/2	LE 6.407 SE 3.834	T .109 t .083	LE 6.357 SE 3.760	T .134 t .120	LE 6.065 SE 3.548	T .280 t .226	LE 5.761 SE 3.364	T .432 t .318	6 x 3-1/2
6 x 4	6.625	4.500	5-1/2	LE 6.407 SE 4.334	T .109 t .083	LE 6.357 SE 4.260	T .134 t .120	LE 6.065 SE 4.026	T .280 t .237	LE 5.761 SE 3.826	T .432 t .337	6 x 4
6 x 5	6.625	5.563	5-1/2	LE 6.407 SE 5.345	T .109 t .083	LE 6.357 SE 5.295	T .134 t .134	LE 6.065 SE 5.047	T .280 t .258	LE 5.761 SE 4.813	T .432 t .375	6 x 5
8 x 3-1/2	8.625	4.000	6	LE 8.407 SE 4.334	T .109 t .083	LE 8.329 SE 4.260	T .148 t .120	LE 7.981 SE 4.026	T .322 t .237	LE 7.625 SE 3.826	T .500 t .337	8 x 3-1/2
8 x 4	8.625	4.500	6	LE 8.407 SE 4.334	T .109 t .083	LE 8.329 SE 4.260	T .148 t .120	LE 7.981 SE 4.026	T .322 t .237	LE 7.625 SE 3.826	T .500 t .337	8 x 4
8 x 5	8.625	5.563	6	LE 8.407 SE 5.345	T .109 t .109	LE 8.329 SE 5.295	T .148 t .134	LE 7.981 SE 5.047	T .322 t .258	LE 7.625 SE 4.813	T .500 t .375	8 x 5
8 x 6	8.625	6.625	6	LE 8.407 SE 6.407	T .109 t .109	LE 8.329 SE 6.357	T .148 t .134	LE 7.981 SE 6.065	T .322 t .280	LE 7.625 SE 5.761	T .500 t .432	8 x 6
10 x 4	10.750	4.500	7	LE 10.482 SE 4.334	T .134 t .083	LE 10.420 SE 4.260	T .165 t .120	LE 10.020 SE 4.026	T .365 t .237	LE 9.750 SE 3.826	T .500 t .337	10 x 4
10 x 5	10.750	5.563	7	LE 10.482 SE 5.345	T .134 t .109	LE 10.420 SE 5.295	T .165 t .134	LE 10.020 SE 5.047	T .365 t .258	LE 9.750 SE 4.813	T .500 t .375	10 x 5
10 x 6	10.750	6.625	7	LE 10.482 SE 6.407	T .134 t .109	LE 10.420 SE 6.357	T .165 t .134	LE 10.020 SE 6.065	T .365 t .280	LE 9.750 SE 5.761	T .500 t .432	10 x 6
10 x 8	10.750	8.625	7	LE 10.482 SE 8.407	T .134 t .109	LE 10.420 SE 8.329	T .165 t .148	LE 10.020 SE 7.981	T .365 t .322	LE 9.750 SE 7.625	T .500 t .500	10 x 8
12 x 5	12.750	5.563	8	LE 12.438 SE 5.345	T .156 t .109	LE 12.390 SE 5.295	T .180 t .134	LE 12.000 SE 5.047	T .375 t .258	LE 11.750 SE 4.813	T .500 t .375	12 x 5
12 x 6	12.750	6.625	8	LE 12.438 SE 6.407	T .156 t .109	LE 12.390 SE 6.357	T .180 t .134	LE 12.000 SE 6.065	T .375 t .280	LE 11.750 SE 5.761	T .500 t .432	12 x 6
12 x 8	12.750	8.625	8	LE 12.438 SE 8.407	T .156 t .109	LE 12.390 SE 8.329	T .180 t .148	LE 12.000 SE 7.981	T .375 t .322	LE 11.750 SE 7.625	T .500 t .500	12 x 8
12 x 10	12.750	10.750	8	LE 12.438 SE 10.482	T .156 t .134	LE 12.390 SE 10.420	T .180 t .165	LE 12.000 SE 6.065	T .375 t .365	LE 11.750 SE 9.750	T .500 t .500	12 x 10

**WELD FITTINGS**



ECCENTRIC REDUCERS

NOM. PIPE SIZE	OUTSIDE DIAMETER		LENGTH (H)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
	LARGE END (O.D.)	SMALL END (O.D.)		INSIDE DIAMETER (I.D.) LARGE END - LE SMALL END - SE	WALL THICKNESS LARGE END - T SMALL END - t	INSIDE DIAMETER (I.D.) LARGE END - LE SMALL END - SE	WALL THICKNESS LARGE END - T SMALL END - t	INSIDE DIAMETER (I.D.) LARGE END - LE SMALL END - SE	WALL THICKNESS LARGE END - T SMALL END - t	INSIDE DIAMETER (I.D.) LARGE END - LE SMALL END - SE	WALL THICKNESS LARGE END - T SMALL END - t	
3/4 x 3/8	1.050	.675	1-1/2	LE .920 SE .545	T .065 t .065	LE .884 SE .545	T .083 t .065	LE .824 SE .493	T .113 t .091	LE .742 SE .423	T .154 t .126	3/4 x 3/8
3/4 x 1/2	1.050	.840	1-1/2	LE .920 SE .710	T .065 t .065	LE .884 SE .674	T .083 t .083	LE .824 SE .622	T .113 t .109	LE .742 SE .546	T .154 t .147	3/4 x 1/2
1 x 3/8	1.315	.675	2	LE 1.185 SE .545	T .065 t .065	LE 1.097 SE .545	T .109 t .065	LE 1.049 SE .493	T .133 t .091	LE .957 SE .423	T .179 t .126	1 x 3/8
1 x 1/2	1.315	.840	2	LE 1.185 SE .710	T .065 t .065	LE 1.097 SE .674	T .109 t .083	LE 1.049 SE .622	T .133 t .109	LE .957 SE .546	T .179 t .147	1 x 1/2
1 x 3/4	1.315	1.050	2	LE 1.185 SE .920	T .065 t .065	LE 1.097 SE .884	T .109 t .083	LE 1.049 SE .824	T .133 t .113	LE .957 SE .742	T .179 t .154	1 x 3/4
1-1/4 x 1/2	1.660	.840	2	LE 1.530 SE .710	T .065 t .065	LE 1.442 SE .674	T .109 t .083	LE 1.380 SE .622	T .140 t .109	LE 1.278 SE .546	T .191 t .147	1-1/4 x 1/2
1-1/4 x 3/4	1.660	1.050	2	LE 1.530 SE .920	T .065 t .065	LE 1.442 SE .884	T .109 t .083	LE 1.380 SE .824	T .140 t .113	LE 1.278 SE .742	T .191 t .154	1-1/4 x 3/4
1-1/4 x 1	1.660	1.315	2	LE 1.530 SE 1.185	T .065 t .065	LE 1.442 SE 1.097	T .109 t .109	LE 1.380 SE 1.049	T .140 t .133	LE 1.278 SE .957	T .191 t .179	1-1/4 x 1
1-1/2 x 1/2	1.900	.840	2-1/2	LE 1.770 SE .710	T .065 t .065	LE 1.682 SE .674	T .109 t .083	LE 1.610 SE .622	T .145 t .109	LE 1.500 SE .546	T .200 t .147	1-1/2 x 1/2
1-1/2 x 3/4	1.900	1.050	2-1/2	LE 1.770 SE .920	T .065 t .065	LE 1.682 SE .884	T .109 t .083	LE 1.610 SE .824	T .145 t .113	LE 1.500 SE .742	T .200 t .154	1-1/2 x 3/4
1-1/2 x 1	1.900	1.315	2-1/2	LE 1.770 SE 1.185	T .065 t .065	LE 1.682 SE 1.097	T .109 t .109	LE 1.610 SE 1.049	T .145 t .133	LE 1.500 SE .957	T .200 t .179	1-1/2 x 1
1-1/2 x 1/4	1.900	1.660	2-1/2	LE 1.770 SE 1.530	T .065 t .065	LE 1.682 SE 1.442	T .109 t .109	LE 1.610 SE 1.380	T .145 t .140	LE 1.500 SE 1.278	T .200 t .191	1-1/2 x 1/4
2 x 3/4	2.375	1.050	3	LE 2.245 SE .920	T .065 t .065	LE 2.157 SE .884	T .109 t .083	LE 2.067 SE .824	T .154 t .113	LE 1.939 SE .742	T .218 t .154	2 x 3/4
2 x 1	2.375	1.315	3	LE 2.245 SE 1.185	T .065 t .065	LE 2.157 SE 1.097	T .109 t .109	LE 2.067 SE 1.049	T .154 t .133	LE 1.939 SE .957	T .218 t .179	2 x 1
2 x 1-1/4	2.375	1.660	3	LE 2.245 SE 1.530	T .065 t .065	LE 2.157 SE 1.442	T .109 t .109	LE 2.067 SE 1.380	T .154 t .140	LE 1.939 SE 1.278	T .218 t .191	2 x 1-1/4
2 x 1-1/2	2.375	1.900	3	LE 2.245 SE 1.770	T .065 t .065	LE 2.157 SE 1.682	T .109 t .109	LE 2.067 SE 1.610	T .154 t .145	LE 1.939 SE 1.500	T .218 t .200	2 x 1-1/2
2-1/2 x 1	2.875	1.315	3-1/2	LE 2.709 SE 1.185	T .083 t .065	LE 2.635 SE 1.097	T .120 t .109	LE 2.469 SE 1.049	T .203 t .133	LE 2.323 SE .957	T .276 t .179	2-1/2 x 1
2-1/2 x 1-1/4	2.875	1.660	3-1/2	LE 2.709 SE 1.530	T .083 t .065	LE 2.635 SE 1.442	T .120 t .109	LE 2.469 SE 1.380	T .203 t .140	LE 2.323 SE 1.278	T .276 t .191	2-1/2 x 1-1/4
2-1/2 x 1-1/2	2.875	1.900	3-1/2	LE 2.709 SE 1.770	T .083 t .065	LE 2.635 SE 1.682	T .120 t .109	LE 2.469 SE 1.610	T .203 t .145	LE 2.323 SE 1.500	T .276 t .200	2-1/2 x 1-1/2
2-1/2 x 2	2.875	2.375	3-1/2	LE 2.709 SE 2.245	T .083 t .065	LE 2.635 SE 2.157	T .120 t .109	LE 2.469 SE 2.067	T .203 t .154	LE 2.323 SE 1.939	T .276 t .218	2-1/2 x 2
3 x 1	3.500	1.315	3-1/2	LE 3.334 SE 1.185	T .083 t .065	LE 3.260 SE 1.097	T .120 t .109	LE 3.068 SE 1.049	T .216 t .133	LE 2.900 SE .957	T .300 t .179	3 x 1
3 x 1-1/4	3.500	1.660	3-1/2	LE 3.334 SE 1.530	T .083 t .065	LE 3.260 SE 1.442	T .120 t .109	LE 3.068 SE 1.380	T .216 t .140	LE 2.900 SE 1.278	T .300 t .191	3 x 1-1/4
3 x 1-1/2	3.500	1.900	3-1/2	LE 3.334 SE 1.770	T .083 t .065	LE 3.260 SE 1.682	T .120 t .109	LE 3.068 SE 1.610	T .216 t .145	LE 2.900 SE 1.500	T .300 t .200	3 x 1-1/2
3 x 2	3.500	2.375	3-1/2	LE 3.334 SE 2.245	T .083 t .065	LE 3.260 SE 2.157	T .120 t .109	LE 3.068 SE 2.067	T .216 t .154	LE 2.900 SE 1.939	T .300 t .218	3 x 2
3 x 2-1/2	3.500	2.875	3-1/2	LE 3.334 SE 2.709	T .083 t .083	LE 3.260 SE 2.635	T .120 t .120	LE 3.068 SE 2.469	T .216 t .203	LE 2.900 SE 2.323	T .300 t .276	3 x 2-1/2
3-1/2 x 1-1/4	4.000	1.660	4	LE 3.834 SE 1.530	T .083 t .065	LE 3.760 SE 1.442	T .120 t .109	LE 3.548 SE 1.380	T .226 t .140	LE 3.364 SE 1.278	T .318 t .191	3-1/2 x 1-1/4
3-1/2 x 1-1/2	4.000	1.900	4	LE 3.834 SE 1.770	T .083 t .065	LE 3.760 SE 1.682	T .120 t .109	LE 3.548 SE 1.610	T .226 t .145	LE 3.364 SE 1.500	T .318 t .200	3-1/2 x 1-1/2

WELD FITTINGS

**ECCENTRIC REDUCERS (CONT.)**

**WELD  
FITTINGS**

NOM. PIPE SIZE	OUTSIDE DIAMETER		LENGTH (H)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		NOM PIPE SIZE
	LARGE END (O.D.)	SMALL END (O.D.)		INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END-SE	WALL THICKNESS LARGE END -T SMALL END-t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END-SE	WALL THICKNESS LARGE END -T SMALL END-t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END-SE	WALL THICKNESS LARGE END -T SMALL END-t	INSIDE DIAMETER (I.D.) LARGE END -LE SMALL END-SE	WALL THICKNESS LARGE END -T SMALL END-t	
3-1/2 x 2	4.000	2.375	4	LE 3.834 SE 2.245	T .083 t .065	LE 3.760 SE 2.157	T .120 t .109	LE 3.548 SE 2.067	T .226 t .154	LE 3.364 SE 1.939	T .318 t .218	3-1/2 x 2
3-1/2 x 2-1/2	4.000	2.875	4	LE 3.834 SE 2.709	T .083 t .083	LE 3.760 SE 2.635	T .120 t .120	LE 3.548 SE 2.469	T .226 t .203	LE 3.364 SE 2.323	T .318 t .276	3-1/2 x 2-1/2
3-1/2 x 3	4.000	3.500	4	LE 3.834 SE 3.334	T .083 t .083	LE 3.760 SE 3.260	T .120 t .120	LE 3.548 SE 3.068	T .226 t .216	LE 3.364 SE 2.900	T .318 t .300	3-1/2 x 3
4 x 1-1/2	4.500	1.900	4	LE 4.334 SE 1.770	T .083 t .065	LE 4.260 SE 1.682	T .120 t .109	LE 4.026 SE 1.610	T .237 t .145	LE 3.826 SE 1.500	T .337 t .200	4 x 1-1/2
4 x 2	4.500	2.375	4	LE 4.334 SE 2.225	T .083 t .065	LE 4.260 SE 2.157	T .120 t .109	LE 4.026 SE 2.067	T .237 t .154	LE 3.826 SE 1.939	T .337 t .218	4 x 2
4 x 2-1/2	4.500	2.875	4	LE 4.334 SE 2.709	T .083 t .083	LE 4.260 SE 2.635	T .120 t .120	LE 4.026 SE 2.469	T .237 t .203	LE 3.826 SE 2.323	T .337 t .276	4 x 2-1/2
4 x 3	4.500	3.500	4	LE 4.334 SE 3.334	T .083 t .083	LE 4.260 SE 3.260	T .120 t .120	LE 4.026 SE 3.068	T .237 t .216	LE 3.826 SE 2.900	T .337 t .300	4 x 3
4 x 3-1/2	4.500	4.000	4	LE 4.334 SE 3.834	T .083 t .083	LE 4.260 SE 3.760	T .120 t .120	LE 4.026 SE 3.548	T .237 t .226	LE 3.826 SE 3.364	T .337 t .318	4 x 3-1/2
5 x 2	5.563	2.375	5	LE 5.345 SE 2.245	T .109 t .065	LE 5.295 SE 2.157	T .134 t .109	LE 5.047 SE 2.067	T .258 t .154	LE 4.813 SE 1.939	T .375 t .218	5 x 2
5 x 2-1/2	5.563	2.875	5	LE 5.345 SE 2.709	T .109 t .083	LE 5.295 SE 2.635	T .134 t .120	LE 5.047 SE 2.469	T .258 t .203	LE 4.813 SE 2.323	T .375 t .276	5 x 2-1/2
5 x 3	5.563	3.500	5	LE 5.345 SE 3.334	T .109 t .083	LE 5.295 SE 3.260	T .134 t .120	LE 5.047 SE 3.068	T .258 t .216	LE 4.813 SE 2.900	T .375 t .300	5 x 3
5 x 3-1/2	5.563	4.000	5	LE 5.345 SE 3.834	T .109 t .083	LE 5.295 SE 3.760	T .134 t .120	LE 5.047 SE 3.548	T .258 t .226	LE 4.813 SE 3.364	T .375 t .318	5 x 3-1/2
5 x 4	5.563	4.500	5	LE 5.345 SE 4.334	T .109 t .083	LE 5.295 SE 4.260	T .134 t .120	LE 5.047 SE 4.026	T .258 t .237	LE 4.813 SE 3.826	T .375 t .337	5 x 4
6 x 2-1/2	6.625	2.875	5-1/2	LE 6.407 SE 2.709	T .109 t .083	LE 6.357 SE 2.635	T .134 t .120	LE 6.065 SE 2.469	T .280 t .203	LE 5.761 SE 2.323	T .432 t .276	6 x 2-1/2
6 x 3	6.625	3.500	5-1/2	LE 6.407 SE 3.334	T .109 t .083	LE 6.357 SE 3.260	T .134 t .120	LE 6.065 SE 3.068	T .280 t .216	LE 5.761 SE 2.900	T .432 t .300	6 x 3
6 x 3-1/2	6.625	4.000	5 1/2	LE 6.407 SE 3.834	T .109 t .083	LE 6.357 SE 3.760	T .134 t .120	LE 6.065 SE 3.548	T .280 t .226	LE 5.761 SE 3.364	T .432 t .318	6 x 3-1/2
6 x 4	6.625	4.500	5 1/2	LE 6.407 SE 4.334	T .109 t .083	LE 6.357 SE 4.260	T .134 t .120	LE 6.065 SE 4.026	T .280 t .237	LE 5.761 SE 3.826	T .432 t .337	6 x 4
6 x 5	6.625	5.563	5 1/2	LE 6.407 SE 5.345	T .109 t .083	LE 6.357 SE 5.295	T .134 t .134	LE 6.065 SE 5.047	T .280 t .258	LE 5.761 SE 4.813	T .432 t .375	6 x 5
8 x 3-1/2	8.625	4.000	6	LE 8.407 SE 3.834	T .109 t .083	LE 8.329 SE 3.760	T .148 t .120	LE 7.981 SE 3.548	T .322 t .226	LE 7.625 SE 3.364	T .500 t .318	8 x 3-1/2
8 x 4	8.625	4.500	6	LE 8.407 SE 4.334	T .109 t .083	LE 8.329 SE 4.260	T .148 t .120	LE 7.981 SE 4.026	T .322 t .237	LE 7.625 SE 3.826	T .500 t .337	8 x 4
8 x 5	8.625	5.563	6	LE 8.407 SE 5.345	T .109 t .109	LE 8.329 SE 5.295	T .148 t .134	LE 7.981 SE 5.047	T .322 t .258	LE 7.625 SE 4.813	T .500 t .375	8 x 5
8 x 6	8.625	6.625	6	LE 8.407 SE 6.407	T .109 t .109	LE 8.329 SE 6.357	T .148 t .134	LE 7.981 SE 6.065	T .322 t .280	LE 7.625 SE 5.761	T .500 t .432	8 x 6
10 x 4	10.750	4.500	7	LE 10.482 SE 4.334	T .134 t .083	LE 10.420 SE 4.260	T .165 t .120	LE 10.020 SE 4.026	T .365 t .237	LE 9.750 SE 3.826	T .500 t .337	10 x 4
10 x 5	10.750	5.563	7	LE 10.482 SE 5.345	T .134 t .109	LE 10.420 SE 5.295	T .165 t .134	LE 10.020 SE 5.047	T .365 t .258	LE 9.750 SE 4.813	T .500 t .375	10 x 5
10 x 6	10.750	6.625	7	LE 10.482 SE 6.407	T .134 t .109	LE 10.420 SE 6.357	T .165 t .134	LE 10.020 SE 6.065	T .365 t .280	LE 9.750 SE 5.761	T .500 t .432	10 x 6
10 x 8	10.750	8.625	7	LE 10.482 SE 8.407	T .134 t .109	LE 10.420 SE 8.329	T .165 t .148	LE 10.020 SE 7.981	T .365 t .322	LE 9.750 SE 7.625	T .500 t .500	10 x 8
12 x 5	12.750	5.563	8	LE 12.438 SE 5.345	T .156 t .109	LE 12.390 SE 5.295	T .180 t .134	LE 12.000 SE 5.047	T .375 t .258	LE 11.750 SE 4.813	T .500 t .375	12 x 5
12 x 6	12.750	6.625	8	LE 12.438 SE 6.407	T .156 t .109	LE 12.390 SE 6.357	T .180 t .134	LE 12.000 SE 6.065	T .375 t .280	LE 11.750 SE 5.761	T .500 t .432	12 x 6
12 x 8	12.750	8.625	8	LE 12.438 SE 8.407	T .156 t .109	LE 12.390 SE 8.329	T .180 t .148	LE 12.000 SE 7.981	T .375 t .322	LE 11.750 SE 7.625	T .500 t .500	12 x 8
12 x 10	12.750	10.750	8	LE 12.438 SE 10.482	T .156 t .134	LE 12.390 SE 10.420	T .180 t .165	LE 12.000 SE 6.065	T .375 t .365	LE 11.750 SE 9.750	T .500 t .500	12 x 10



WELD FITTING WEIGHTS

PIPE SIZE	LONG RADIUS 90° ELBOWS	LONG RADIUS 45° ELBOWS	LONG RADIUS 180° BENDS	SHORT RADIUS 90° ELBOWS	STRAIGHT TEES	STRAIGHT CROSSES	45° LATERALS	CAPS	STUB ENDS	
									MSS SHORT LENGTH	TYPE C SHORT LENGTH
STAINLESS STEEL – SCHEDULE 5S										
1/2	.12	.06	.21	–	.19	.25	–	.08	.14	.07
3/4	.13	.06	.30	–	.22	.29	–	.11	.18	.13
1	.19	.12	.53	.17	.40	.50	.85	.18	.25	.16
1-1/4	.31	.19	1	.31	.75	.93	1.16	.20	.39	.19
1-1/2	.38	.25	1.28	.43	.95	1.18	1.48	.22	.41	.25
2	.64	.31	2.1	.63	1.20	1.49	2.22	.36	.71	.38
2-1/2	1.50	.75	3.58	1.25	2.15	2.66	3.97	.50	.95	.70
3	2.00	1.06	5.3	1.75	3.40	4.21	5.10	.86	1.23	.88
3-1/2	2.62	1.16	6.55	2.35	5.50	6.82	6.60	1.20	1.63	–
4	3.31	1.66	12.00	3.12	7.20	8.92	7.59	1.25	1.90	1.38
5	6.50	3.25	13.00	4.94	13.00	16.12	13.77	2.00	2.80	2.06
6	10.00	5.00	20.00	7.75	17.20	21.32	17.14	2.75	3.88	2.75
8	17.30	8.65	35.00	15.44	31.00	38.44	25.68	4.50	5.90	3.88
10	32.00	16.00	64.00	27.40	55.00	68.20	44.98	9.50	8.90	7.48
12	51.00	25.50	102.00	35.00	83.00	102.00	77.71	14.00	15.30	15.00
STAINLESS STEEL – SCHEDULE 10S										
1/2	.14	.07	.26	–	.21	.28	–	.09	.16	.11
3/4	.15	.07	.41	–	.28	.37	–	.12	.21	.15
1	.30	.19	.75	.23	.63	.72	1.38	.19	.35	.23
1-1/4	.50	.25	1.26	.38	1.10	1.26	1.87	.28	.49	.33
1-1/2	.69	.38	1.75	.49	1.50	1.72	2.43	.31	.56	.48
2	1.13	.56	3.13	.81	1.87	2.15	3.66	.38	.94	.80
2-1/2	1.88	1.06	5.88	1.36	3.10	3.56	5.66	.56	1.25	.96
3	2.69	1.38	9.81	2.17	3.90	4.48	7.29	.88	1.60	1.20
3-1/2	3.75	1.66	10.50	3.05	5.88	6.76	9.45	1.25	1.90	–
4	4.75	2.38	13.60	3.79	7.63	8.77	10.91	1.44	2.40	2.00
5	8.00	4.00	16.00	6.12	13.45	15.46	16.83	2.25	3.25	2.63
6	12.00	6.00	24.00	9.15	17.80	20.47	20.91	3.00	4.75	3.25
8	23.50	11.75	47.00	17.63	34.50	39.67	34.69	5.50	7.10	6.19
10	43.00	21.50	86.00	35.00	59.00	67.85	55.17	10.80	11.30	9.46
12	60.00	30.00	120.00	40.00	87.00	100.00	84.67	14.40	18.00	16.07

WELD  
FITTINGS

**WELD FITTING WEIGHTS**

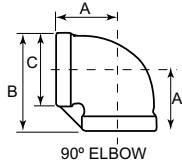
**WELD  
FITTINGS**

PIPE SIZE	LONG RADIUS 90° ELBOWS	LONG RADIUS 45° ELBOWS	LONG RADIUS 180° BENDS	SHORT RADIUS 90° ELBOWS	STRAIGHT TEES	STRAIGHT CROSSES	45° LATERALS	CAPS	STUB ENDS	
									MSS SHORT LENGTH	ANSI LONG LENGTH
STAINLESS STEEL – SCHEDULE 40S										
1/2	.18	.09	.34	–	.23	.31	–	.10	.19	.26
3/4	.19	.09	.50	–	.38	.40	–	.13	.26	.36
1	.35	.25	.76	.26	.65	.65	1.68	.28	.38	.68
1-1/4	.56	.38	1.66	.45	1.31	1.32	2.39	.38	.55	.97
1-1/2	.88	.50	2.33	.63	1.90	1.91	3.20	.50	.69	1.20
2	1.56	.88	4.38	1.13	2.83	2.86	5.14	.60	1.35	2.25
2-1/2	3.00	1.69	7.75	2.25	4.85	4.90	9.41	1.00	1.77	3.40
3	4.81	2.38	12.83	3.31	7.30	7.37	12.85	1.56	2.50	4.65
3-1/2	6.25	3.13	15.6	4.54	9.00	9.09	17.54	2.25	3.58	5.89
4	9.19	4.60	24.50	6.88	11.63	11.74	21.22	2.69	4.13	6.83
5	15.13	7.57	31.00	11.63	20.75	20.95	32.03	4.06	6.15	11.88
6	24.00	12.00	48.00	17.50	24.25	24.49	43.25	7.12	7.88	15.18
8	47.50	23.75	95.00	37.60	46.10	46.56	74.87	12.50	13.38	23.81
10	85.00	42.50	170.00	63.00	78.00	78.78	117.00	20.30	22.20	39.50
12	131.00	65.50	262.00	80.00	137.00	138.00	176.00	28.80	31.50	48.50
STAINLESS STEEL – SCHEDULE 80S										
1/2	.23	.12	.43	–	.30	.40	–	.11	.25	.34
3/4	.25	.12	.69	–	.45	.50	–	.14	.35	.47
1	.48	.31	1.38	.38	.85	.86	2.47	.29	.64	.88
1-1/4	.88	.50	2.50	.63	1.50	1.51	3.78	.39	.76	1.26
1-1/2	1.13	.63	3.00	.88	2.25	2.27	5.33	.54	.88	1.49
2	2.00	1.13	6.21	1.55	3.50	3.53	7.92	.75	1.59	3.05
2-1/2	4.00	2.19	9.70	2.88	6.90	6.97	13.77	1.12	2.17	4.40
3	6.56	3.31	17.18	4.20	9.80	9.90	19.18	1.87	3.51	6.50
3-1/2	8.80	4.40	22.00	5.35	12.00	12.12	26.11	2.50	4.56	7.75
4	13.63	6.82	34.30	9.06	17.00	17.17	33.46	3.54	5.90	9.65
5	21.13	10.56	43.00	16.10	25.00	25.25	50.80	5.63	7.67	16.33
6	36.00	18.00	72.00	26.00	30.00	30.30	80.99	10.00	11.92	22.63
8	73.00	36.50	146.00	54.80	62.00	62.62	137.00	16.38	19.63	34.12
10	114.00	57.00	228.00	99.80	110.00	111.00	197.00	27.30	31.50	54.00
12	175.00	87.50	350.00	125.00	185.00	187.00	267.00	36.60	34.98	64.50

PIPE SIZE	CONCENTRIC		REDUCING OUTLET TEES	PIPE SIZE	CONCENTRIC		REDUCING OUTLET TEES	PIPE SIZE	CONCENTRIC		REDUCING OUTLET TEES
	ECCENTRIC REDUCERS				ECCENTRIC REDUCERS				ECCENTRIC REDUCERS		
STAINLESS STEEL SCHEDULE 5S			STAINLESS STEEL SCHEDULE 5S			STAINLESS STEEL SCHEDULE 5S					
3/4 x 1/2	.17	.20		3 x 1	0.7	2.85		6 x 2	3.03	14	
1 x 3/8	.16	.34		3 x 1-1/4	0.7	2.89		6 x 2-1/2	3.18	14.48	
1 x 1/2	.17	.35		3 x 1-1/2	0.78	2.93		6 x 3	3.33	14.62	
1 x 3/4	.17	.36		3 x 2	0.83	2.99		6 x 3-1/2	3.39	14.79	
1-1/4 x 1/2	.21	.64		3 x 2-1/2	0.9	3.06		6 x 4	3.41	15.13	
1-1/4 x 3/4	.22	.66		3-1/2 x 1-1/2	0.99	4.67		6 x 5	3.6	15.48	
1-1/4 x 1	.22	.68		3 1/2 x 2	1.06	4.73		8 x 3	4.55	26.04	
1-1/2 x 1/2	.23	.81		3-1/2 x 2-1/2	1.17	4.84		8 x 3-1/2	4.65	26.35	
1-1/2 x 3/4	.24	.82		3-1/2 x 3	1.2	4.95		8 x 4	4.76	26.66	
1-1/2 x 1	.25	.83		4 x 1-1/2	1.05	6.05		8 x 5	4.87	27.28	
1-1/2 x 1-1/4	.27	.85		4 x 2	1.21	6.12		8 x 6	5.05	27.9	
2 x 3/4	.33	1.02		4 x 2-1/2	1.28	6.19		10 x 4	8.34	46.75	
2 x 1	.37	1.03		4 x 3	1.34	6.33		10 x 5	8.62	47.3	
2 x 1-1/4	.40	1.05		4 x 3-1/2	1.38	6.48		10 x 6	8.82	48.4	
2 x 1-1/2	.41	1.08		5 x 2	2.33	10.92		10 x 8	9.17	49.5	
2-1/2 x 1	.56	1.83		5 x 2-1/2	2.55	11.05		12 x 5	13.72	70.55	
2-1/2 x 1-1/4	.64	1.85		5 x 3	2.64	11.18		12 x 6	14.01	71.38	
2-1/2 x 1-1/2	.67	1.89		5 x 3-1/2	2.71	11.44		12 x 8	14.45	73.04	
2-1/2 x 2	.70	1.93		5 x 4	2.76	11.7		12 x 10	15.03	74.7	
STAINLESS STEEL SCHEDULE 10S			STAINLESS STEEL SCHEDULE 10S			STAINLESS STEEL SCHEDULE 10S					
3/4 x 1/2	0.22	0.25		3 x 1	1.03	3.27		6 x 2	3.3	14.5	
1 x 3/8	0.21	0.54		3 x 1-1/4	1.03	3.31		6 x 2-1/2	3.35	14.95	
1 x 1/2	0.27	0.55		3 x 1-1/2	1.13	3.35		6 x 3	4.01	15.13	
1 x 3/4	0.29	0.56		3 x 2	1.21	3.43		6 x 3-1/2	4.2	15.31	
1-1/4 x 1/2	0.35	0.95		3 x 2-1/2	1.3	3.51		6 x 4	4.31	15.66	
1-1/4 x 3/4	0.39	0.97		3-1/2 x 1-1/2	1.46	4.99		6 x 5	4.45	16.02	
1-1/4 x 1	0.39	0.99		3-1/2 x 2	1.57	5.05		8 x 3	6.25	29	
1-1/2 x 1/2	0.37	1.27		3-1/2 x 2-1/2	1.72	5.17		8 x 3-1/2	6.48	29.32	
1-1/2 x 3/4	0.39	1.29		3-1/2 x 3	1.77	5.29		8 x 4	6.64	29.67	
1-1/2 x 1	0.43	1.32		4 x 1-1/2	1.5	6.4		8 x 5	6.79	30.36	
1-1/2 x 1-1/4	0.46	1.35		4 x 2	1.73	6.48		8 x 6	7.04	31.05	
2 x 3/4	0.56	1.59		4 x 2-1/2	1.83	6.56		10 x 4	10.43	50.15	
2 x 1	0.62	1.6		4 x 3	1.92	6.71		10 x 5	10.78	50.74	
2 x 1-1/4	0.67	1.64		4 x 3-1/2	1.98	6.86		10 x 6	11.03	51.92	
2 x 1-1/2	0.69	1.68		5 x 2	2.83	11.29		10 x 8	11.46	53.1	
2-1/2 x 1	0.83	2.63		5 x 2-1/2	3.09	11.43		12 x 5	16.07	73.95	
2-1/2 x 1-1/4	0.95	2.66		5 x 3	3.2	11.56		12 x 6	16.38	74.82	
2-1/2 x 1-1/2	0.98	2.73		5 x 3-1/2	3.28	11.83		12 x 8	16.91	76.56	
2-1/2 x 2	1.03	2.79		5 x 4	3.29	12.1		12 x 10	17.6	78.3	
STAINLESS STEEL SCHEDULE 40S			STAINLESS STEEL SCHEDULE 40S			STAINLESS STEEL SCHEDULE 40S					
3/4 x 1/2	0.31	0.34		3 x 1	1.81	6.13		6 x 2	8.25	20.32	
1 x 3/8	0.33	0.56		3 x 1-1/4	1.86	6.2		6 x 2-1/2	8.37	20.37	
1 x 1/2	0.34	0.57		3 x 1-1/2	2.07	6.28		6 x 3	8.77	26.32	
1 x 3/4	0.36	0.59		3 x 2	2.2	6.42		6 x 3-1/2	8.93	20.85	
1-1/4 x 1/2	0.49	1.12		3 x 2-1/2	2.38	6.57		6 x 4	8.99	21.34	
1-1/4 x 3/4	0.49	1.15		3-1/2 x 1-1/2	2.76	7.65		6 x 5	9.48	21.82	
1-1/4 x 1	0.49	1.17		3-1/2 x 2	2.97	7.74		8 x 3	13.5	38.72	
1-1/2 x 1/2	0.5	1.61		3-1/2 x 2-1/2	3.25	8.97		8 x 3-1/2	14.1	39.18	
1-1/2 x 3/4	0.52	1.63		3-1/2 x 3	3.35	9.1		8 x 4	14.44	39.64	
1-1/2 x 1	0.58	1.67		4 x 1-1/2	3	9.76		8 x 5	14.78	40.56	
1-1/2 x 1-1/4	0.62	1.71		4 x 2	3.47	9.88		8 x 6	15.31	41.49	
2 x 3/4	0.8	2.4		4 x 2-1/2	3.66	10		10 x 4	23.19	66.3	
2 x 1	0.89	2.43		4 x 3	3.84	10.23		10 x 5	23.96	67.08	
2 x 1-1/4	0.96	2.49		4 x 3-1/2	3.97	10.4		10 x 6	24.52	68.64	
2 x 1-1/2	0.99	2.54		5 x 2	5.55	17.43		10 x 8	25.48	70.2	
2-1/2 x 1	1.42	4.12		5 x 2-1/2	6.07	17.68		12 x 5	33.48	116	
2-1/2 x 1-1/4	1.61	4.17		5 x 3	6.29	17.84		12 x 6	34.13	118	
2-1/2 x 1-1/2	1.67	4.27		5 x 3-1/2	6.45	18.26		12 x 8	35.24	120	
2-1/2 x 2	1.76	4.36		5 x 4	6.57	18.67		12 x 10	36.67	123	
STAINLESS STEEL SCHEDULE 80S			STAINLESS STEEL SCHEDULE 80S			STAINLESS STEEL SCHEDULE 80S					
3/4 x 1/2	0.4	0.4		3 x 1	2.39	8.23		6 x 2	10	25	
1 x 3/8	0.42	0.73		3 x 1 1/4	2.51	8.33		6 x 2-1/2	10.88	25.2	
1 x 1/2	0.44	0.75		3 x 1 1/2	2.66	8.43		6 x 3	12.15	25.5	
1 x 3/4	0.49	0.76		3 x 2	2.85	8.62		6 x 3-1/2	12.67	25.8	
1-1/4 x 1/2	0.52	1.29		3 x 2-1/2	3.28	8.82		6 x 4	13.14	26.4	
1-1/4 x 3/4	0.56	1.32		3-1/2 x 1-1/2	3.69	10.2		6 x 5	13.79	27	
1-1/4 x 1	0.59	1.35		3-1/2 x 2	3.87	10.32		8 x 3	17.01	52.08	
1-1/2 x 1/2	0.68	1.91		3-1/2 x 2-1/2	4.21	10.56		8 x 3-1/2	17.61	52.7	
1-1/2 x 3/4	0.71	1.93		3-1/2 x 3	4.46	10.8		8 x 4	20.36	53.32	
1-1/2 x 1	0.74	1.98		4 x 1-1/2	4.18	14.28		8 x 5	21.32	54.56	
1-1/2 x 1-1/4	0.8	2.02		4 x 2	4.31	14.45		8 x 6	22.32	55.8	
2 x 3/4	1.11	2.97		4 x 2-1/2	4.83	14.62		10 x 4	27.68	93.5	
2 x 1	1.18	3.01		4 x 3	5.14	14.96		10 x 5	31.4	94.6	
2 x 1-1/4	1.27	3.08		4 x 3-1/2	5.33	15.3		10 x 6	32.61	96.8	
2 x 1-1/2	1.3	3.15		5 x 2	7.25	21		10 x 8	34.34	99	
2-1/2 x 1	1.92	5.86		5 x 2-1/2	7.93	21.25		12 x 5	42.78	157	
2-1/2 x 1-1/4	1.98	5.93		5 x 3	8.55	21.5		12 x 6	44.42	159	
2-1/2 x 1-1/2	2.07	6.07		5 x 3-1/2	8.8	22		12 x 8	46.06	163	
2-1/2 x 2	2.26	6.21		5 x 4	9.11	22.5		12 x 10	47.7	166	

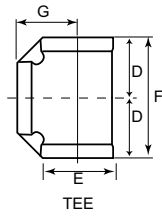
WELD  
FITTINGS

**150 LB. 90° ELBOW**



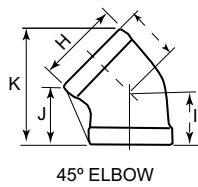
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.527	0.614	0.730	0.845	1.000	1.187	1.750	1.937	2.250	2.687	3.062	3.812
B	1.055	1.229	1.460	1.690	2.000	2.375	3.500	3.874	4.500	5.374	6.124	7.624
C	0.715	0.850	1.020	1.200	1.460	1.765	2.240	2.540	3.070	3.580	4.130	—
Wt. Per Each	2 OZ.	3 OZ.	4 OZ.	5 OZ.	7 OZ.	10 OZ.	24 OZ.	32 OZ.	50 OZ.	67 OZ.	108 OZ.	179 OZ.

**150 LB. TEE**



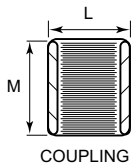
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
D	0.690	0.813	0.950	1.120	1.302	1.500	1.750	1.937	2.250	2.687	3.062	3.812
E	0.700	0.855	1.019	1.205	1.460	1.775	2.240	2.540	3.070	3.580	4.190	—
F	1.381	1.626	1.900	2.240	2.605	3.000	3.500	3.874	4.500	5.374	6.124	7.624
G	0.517	0.617	0.722	0.850	1.020	1.187	1.750	1.930	2.240	2.720	3.070	3.813
Wt. Per Each	2 OZ.	3 OZ.	4 OZ.	6 OZ.	10 OZ.	15 OZ.	33 OZ.	38 OZ.	64 OZ.	112 OZ.	150 OZ.	248 OZ.

**150 LB. 45° ELBOW**



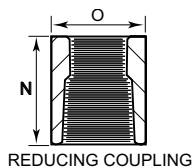
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
H	0.700	0.840	1.015	1.195	1.475	1.765	2.070	2.360	2.870	3.500	4.170	—
I	0.595	0.655	0.755	0.810	0.915	1.015	1.312	1.437	1.687	1.937	2.187	2.625
J	0.835	0.955	1.030	1.065	1.185	1.270	—	—	—	—	—	—
K	1.310	1.530	1.715	1.895	2.185	2.480	—	—	—	—	—	—
Wt. Per Each	1 OZ.	2 OZ.	3 OZ.	4 OZ.	6 OZ.	9 OZ.	14 OZ.	17 OZ.	34 OZ.	64 OZ.	83 OZ.	151 OZ.

**150 LB. COUPLING**



Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
L	.750	.750	.875	1.062	1.312	1.562	1.937	2.187	2.750	3.562	4.250	5.250
M	1.250	1.375	1.500	1.562	1.625	1.937	2.000	2.125	2.500	2.875	3.187	3.687
Wt. Per Each	1 OZ.	1 OZ.	1.5 OZ.	2.5 OZ.	4 OZ.	5 OZ.	8 OZ.	11 OZ.	23 OZ.	52 OZ.	73 OZ.	131 OZ.

**150 LB. REDUCING COUPLING**

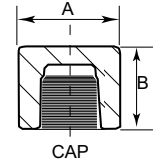


Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
N	—	1.375	1.500	1.312	1.500	1.687	1.937	2.125	2.500	3.250	3.687	4.375
O	—	.750	.875	1.062	1.312	1.562	1.937	2.187	2.750	3.562	4.312	5.375
Wt. Per Each	—	—	—	—	—	—	—	—	—	—	—	—

**TH & SW  
FITTINGS**

150 LB. CAP

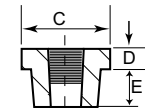
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	.750	.750	.875	1.062	1.312	1.562	1.937	2.187	2.750	3.562	4.312	5.375
B	.750	1.000	1.000	1.000	1.125	1.312	1.375	1.437	1.562	1.812	1.937	2.187
Wt. Per Each	-	1 OZ.	1.5 OZ.	2.5 OZ.	4 OZ.	6 OZ.	9.5 OZ.	12 OZ.	21 OZ.	34 OZ.	61 OZ.	104 OZ.



CAP

150 LB. HEX BUSHING

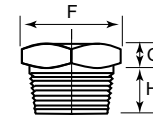
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
C	-	.625	.687	.875	1.062	1.437	12.812	2.000	2.500	3.000	3.500	4.625
D	-	.125	.187	.187	.250	.250	.375	.375	.437	.500	.500	.500
E	-	.500	.562	.562	.750	.812	.875	.937	1.000	1.187	1.250	1.625
Wt. Per Each	-	-	-	-	-	-	-	-	-	-	-	-



HEX BUSHING

150 LB. HEX HEAD PLUG

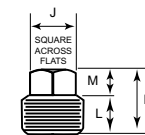
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
F	.437	.625	.687	.875	1.062	1.437	1.812	2.000	2.500	3.000	3.500	4.625
G	.250	.250	.312	.312	.375	.375	.562	.625	.687	.750	.812	1.250
H	.562	.625	.687	.750	.937	1.000	1.000	1.000	1.062	1.312	1.375	1.500
Wt. Per Each	1 OZ.	1.5 OZ.	2 OZ.	2.5 OZ.	4 OZ.	7.5 OZ.	15 OZ.	20 OZ.	41 OZ.	-	-	-



HEX HEAD PLUG

150 LB. SQUARE HEAD PLUG

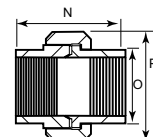
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
J	.281	.375	.437	.562	.625	.812	.937	1.125	1.312	1.500	1.687	1.750
K	.625	.687	.812	.937	1.187	1.375	1.499	1.562	1.687	1.874	2.125	2.187
L	.375	.437	.500	.562	.625	.750	.812	.812	.875	1.062	1.125	1.187
M	.250	.250	.312	.375	.562	.625	.687	.750	.812	.812	1.000	1.000
Wt. Per Each	-	.5 OZ.	1 OZ.	2 OZ.	3.5 OZ.	6 OZ.	10 OZ.	14 OZ.	22 OZ.	-	-	-



SQUARE HEAD PLUG

150 LB. UNION

Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
N	1.187	1.437	1.540	1.800	1.875	2.000	2.330	2.800	3.000	3.750	4.125	4.375
O	.625	.765	.906	1.020	1.312	1.500	1.910	2.220	2.656	3.120	3.906	5.125
P	1.000	1.125	1.312	1.500	1.800	2.000	2.500	2.970	3.630	4.375	5.375	6.750
Wt. Per Each	-	2.5 OZ.	4 OZ.	5 OZ.	9 OZ.	10 OZ.	16 OZ.	30 OZ.	35 OZ.	90 OZ.	147 OZ.	264 OZ.

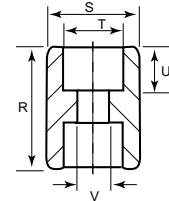


UNION

TH & SW  
FITTINGS

**3000 LB. SOCKET WELD COUPLING**

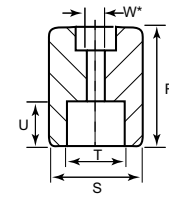
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
R	r	1.000	1.125	1.375	1.500	1.750	1.875	2.000	2.500
S	-	.875	1.000	1.250	1.500	1.750	2.250	2.500	3.000
T	-	.555	.690	.855	1.065	1.330	1.675	1.915	2.406
U	-	.375	.438	.500	.563	.625	.688	.750	.875
V	-	.379	.508	.637	.839	1.064	1.395	1.625	2.082
Wt. Per Each	-	2 oz.	4 oz.	4 oz.	6 oz.	9 oz.	14 oz.	23 oz.	27 oz.



3000 lb. SOCKET WELD COUPLING

**3000 LB. SOCKET WELD REDUCING COUPLING**

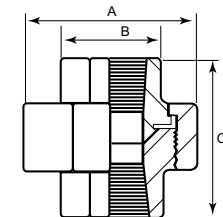
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
R	-	1.000	1.125	1.375	1.500	1.750	1.875	2.000	2.500
S	-	.875	1.000	1.250	1.500	1.750	2.250	2.500	3.000
T	-	.555	.690	.855	1.065	1.330	1.675	1.915	2.406
U	-	.375	.438	.500	.563	.625	.688	.750	.875
W*	*The I.D. of Reducing Coupling is that same size to which the reduction is made.								
Wt. Per Each	-	2 oz.	4 oz.	4 oz.	6 oz.	9 oz.	14 oz.	23 oz.	27 oz.



3000 lb. SOCKET WELD REDUCING COUPLING

**3000 LB. SCREWED UNION**

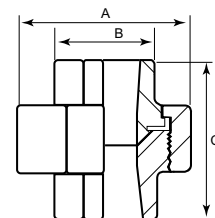
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
A	-	1.375	1.562	1.813	2.203	2.578	3.078	3.453	4.078
B	-	.765	.953	1.140	1.390	1.703	2.078	2.328	2.890
C	-	1.640	1.828	1.953	2.265	2.515	2.828	3.078	3.453
Wt. Per Each	-	8 oz.	8 oz.	13 oz.	21 oz.	28 oz.	40 oz.	56 oz.	84 oz.



3000 lb. SCREWED UNION

**3000 LB. SOCKET WELD UNION**

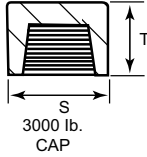
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
A	-	Note: Same Dimensions as Screwed Union							
B	-								
C	-								
Wt. Per Each	-	9 oz.	9 oz.	11 oz.	20 oz.	27 oz.	39 oz.	55 oz.	82 oz.



3000 lb. SOCKET WELD UNION

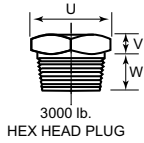
**TH & SW FITTINGS**

3000 LB. CAP



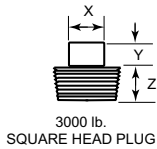
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
S	.750	.750	.875	1.125	1.375	1.750	2.250	2.500	3.000
T	1.000	1.000	1.000	1.250	1.438	1.625	1.750	1.750	1.875
Wt. Per Each	.5 oz.	1 oz.	oz.	4 oz.	5 oz.	8 oz.	16 oz.	26 oz.	50 oz.

3000 LB. HEX HEAD PLUG



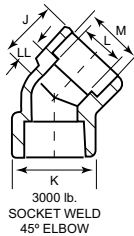
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
U	.437	.625	.687	.875	1.062	1.437	1.812	2.000	2.500
V	.250	.250	.312	.312	.375	.375	.562	.625	.687
W	.562	.625	.687	.750	.937	1.000	1.000	1.000	1.062
Wt. Per Each	1 oz.	1.5 oz.	2 oz.	2.5 oz.	4 oz.	7.5 oz.	15 oz.	20 oz.	41 oz.

3000 LB. SQUARE HEAD PLUG



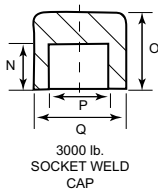
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
X	.281	.375	.437	.562	.625	.812	.937	1.125	1.312
Y	.250	.250	.312	.375	.562	.625	.637	.750	.812
Z	.625	.687	.812	.937	1.187	1.375	1.499	1.562	1.687
Wt. Per Each	.5 oz.	.5 oz.	1 oz.	2 oz.	3.5 oz.	6 oz.	10 oz.	14 oz.	22 oz.

3000 LB. SOCKET WELD 45° ELBOW



Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
J	-	.688	.750	.938	1.062	1.188	1.250	1.563	1.875
K	-	.875	1.000	1.312	1.500	1.812	2.188	2.438	2.969
LL	-	.313	.313	.438	.500	.563	.688	.813	1.000
Wt. Per Each	-	3 oz.	4 oz.	7 oz.	11 oz.	17 oz.	26 oz.	33 oz.	54 oz.

3000 LB. SOCKET WELD CAP

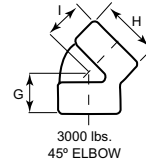


Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
N	-	.375	.438	.500	.563	.625	.688	.750	.875
O	-	.563	.641	.750	.844	.938	1.063	1.188	1.375
P	-	.555	.690	.855	1.065	1.330	1.675	1.915	2.406
Q	-	.875	1.000	1.250	1.500	1.750	2.250	2.500	3.000
Wt. Per Each	-	1.5 oz.	2 oz.	4 oz.	6 oz.	8 oz.	21 oz.	24 oz.	37 oz.

TH & SW  
FITTINGS

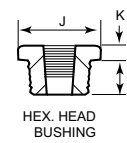
**3000 LB. 45° ELBOW**

Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
G	.970	.970	1.200	1.420	1.450	1.575	1.950	2.375	2.532
H	1.050	1.050	1.315	1.505	1.890	2.285	2.505	3.020	3.312
I	1.860	1.860	2.130	2.620	2.835	3.190	3.680	4.395	4.764
Wt. Per Each	5 oz.	5 oz.	8 oz.	13 oz.	22 oz.	35 oz.	26 oz.	65 oz.	66 oz.



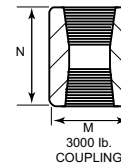
**HEX HEAD BUSHING**

Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
J	—	.625	.687	.875	1.062	1.437	1.812	2.000	2.500
K	—	.125	.187	.187	.250	.250	.375	.375	.437
L	—	.500	.562	.562	.750	.812	.875	.937	1.000
Wt. Per Each	—	—	—	—	—	—	—	—	—



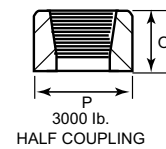
**3000 LB. COUPLING**

Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
M	.750	.750	.875	1.125	1.375	1.750	2.250	2.500	3.000
N	1.250	1.375	1.500	1.875	2.000	2.375	2.625	3.125	3.375
Wt. Per Each	2 oz.	3 oz.	4 oz.	5 oz.	7 oz.	10 oz.	25 oz.	35 oz.	50 oz.



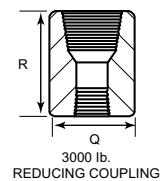
**3000 LB. HALF COUPLING**

Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
O	.625	.688	.750	.938	1.000	1.188	1.313	1.563	1.688
P	.750	.750	.875	1.125	1.375	1.750	2.250	2.500	3.000
Wt. Per Each	1 oz.	1.5 oz.	2 oz.	2.5 oz.	3.5 oz.	5 oz.	12.5 oz.	17.5 oz.	25 oz.



**3000 LB. REDUCING COUPLING**

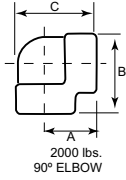
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Q	.750	.750	.875	1.125	1.375	1.750	2.250	2.500	3.000
R	1.250	1.375	1.500	1.875	2.000	2.375	2.625	3.125	3.375
Wt. Per Each	2 oz.	3 oz.	4 oz.	5 oz.	7 oz.	10 oz.	25 oz.	35 oz.	50 oz.



**TH & SW  
FITTINGS**

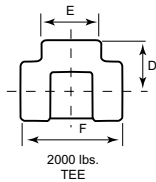


2000 LB. 90° ELBOW



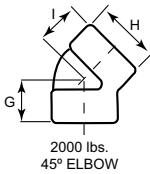
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
A	.620	.620	.780	.900	1.035	1.200	1.420	1.670	1.990
B	.900	.900	1.085	1.330	1.570	1.860	2.200	2.485	3.000
C	1.242	1.242	1.560	1.800	2.070	2.400	2.840	3.340	3.980
Wt. Per Each	3 OZ.	3 OZ.	5 OZ.	9 OZ.	13 OZ.	20 OZ.	30 OZ.	43 OZ.	63 OZ.

2000 LB. TEE



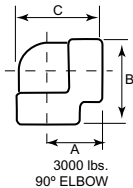
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
D	.670	.670	.790	.920	1.050	1.220	1.450	1.630	1.950
E	.875	.875	1.040	1.330	1.585	1.870	2.280	2.490	3.070
F	1.740	1.740	2.095	2.325	2.655	3.080	3.550	4.080	4.800
Wt. Per Each	4 OZ.	4 OZ.	7 OZ.	10 OZ.	15 OZ.	25 OZ.	40 OZ.	55 OZ.	88 OZ.

2000 LB. 45° ELBOW



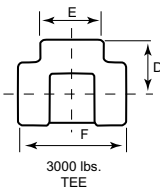
Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
G	1.585	1.585	1.800	1.125	2.385	2.775	3.465	3.475	4.665
H	.885	.885	1.010	1.310	1.525	1.810	2.270	2.460	3.040
I	.091	.091	1.000	1.085	1.125	1.330	1.600	1.700	2.250
Wt. Per Each	3 oz.	3 oz.	4 oz.	7 oz.	9 oz.	14 oz.	28 oz.	29 oz.	55 oz.

3000 LB. 90° ELBOW



Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
A	.800	.800	.900	1.050	1.250	1.470	1.630	1.970	2.130
B	1.700	1.700	1.320	1.565	1.870	2.245	2.520	3.010	3.315
C	1.590	1.590	1.800	2.100	2.490	2.930	3.265	3.935	4.265
Wt. Per Each	6 oz.	6 oz.	10 oz.	16 oz.	25 oz.	41 oz.	53 oz.	97 oz.	112 oz.

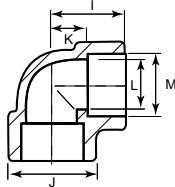
3000 LB. TEE



Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
D	.962	.962	1.192	1.315	1.525	1.782	2.015	2.437	2.530
E	1.130	1.130	1.355	1.500	1.880	2.295	2.500	3.015	3.320
F	1.925	1.925	2.385	2.630	3.050	3.565	4.030	4.875	5.160
Wt. Per Each	8 oz.	8 oz.	14 oz.	17 oz.	32 oz.	55 oz.	65 oz.	109 oz.	118 oz.

TH & SW  
FITTINGS

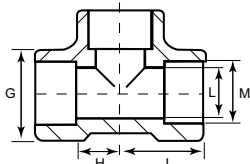
**3000 LB. SOCKET WELD 90° ELBOW**



3000 lb.  
SOCKET WELD  
90° ELBOW

Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
L	—	.812	.969	1.125	1.312	1.500	1.750	2.000	2.375
J	—	.875	1.000	1.312	1.500	1.812	2.188	2.438	2.969
K	—	.438	.531	.625	.750	.875	1.062	1.250	1.500
L	—	.379	.508	.637	.839	1.064	1.395	1.625	2.082
M	—	.555	.690	.855	1.065	1.330	1.675	1.915	2.406
Wt. Per Each	—	3 oz.	5 oz.	9 oz.	13 oz.	21 oz.	29 oz.	43 oz.	69 oz.

**3000 LB. SOCKET WELD TEE**



3000 lb.  
SOCKET WELD  
TEE

Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
G	—	.875	1.000	1.312	1.500	1.812	2.188	2.438	2.969
H	—	.438	.531	.625	.750	.875	1.062	1.250	1.500
I	—	.812	.969	1.125	1.312	1.500	1.750	2.000	2.375
Wt. Per Each	—	4 oz.	7 oz.	11 oz.	15 oz.	27 oz.	35 oz.	47 oz.	76 oz.

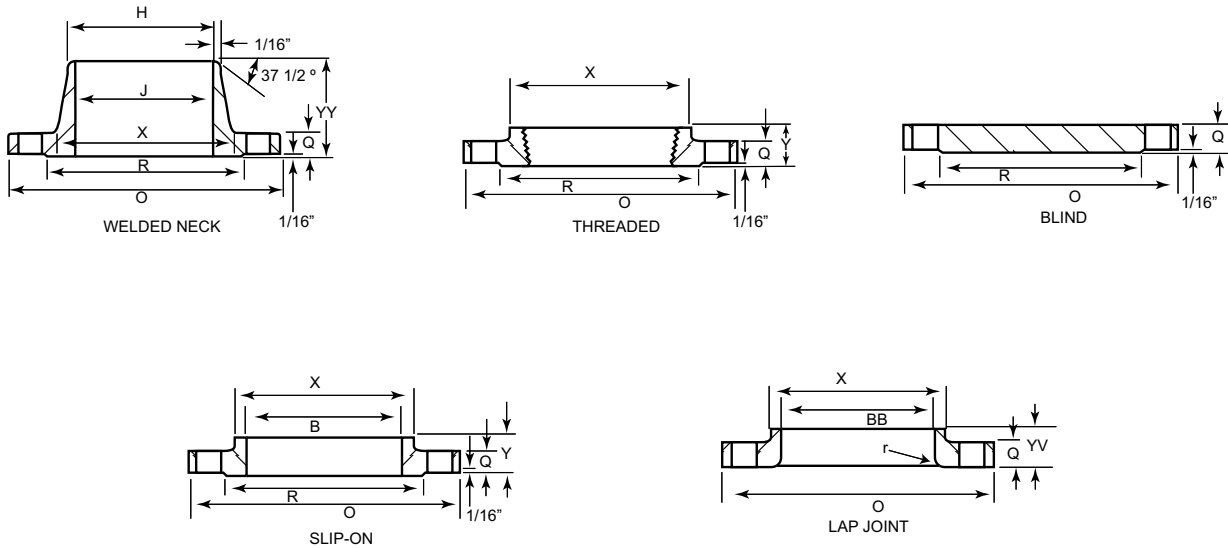
**TH & SW  
FITTINGS**



STAINLESS STEEL NIPPLES									
STD NIPPLE WEIGHT (LBS) CWT - MULTIPLY BY 1.3 FOR XH									
NOMINAL PIPE SIZE	CLOSE LENGTH	CLOSE	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
1/8	3/4	1.2	2.6	3.6	4.8	5.8	6.8	7.8	8.6
1/4	7/8	2.5	4.4	6.0	7.6	9.2	10.2	13.0	14.0
3/8	1	3.4	6.0	7.8	10.0	12.2	15.0	17.6	19.6
1/2	1 1/8	5.6	8.0	11.6	14.8	18.2	21.6	25.2	28.6
3/4	1 3/8	9.6	11.2	15.8	19.8	24.2	28.8	32.0	38.0
1	1 1/2	14.8	-	22.0	25.2	35.6	39.6	47.0	52.6
1 1/4	1 5/8	22.5	-	32.0	40.0	48.5	60.0	61.5	71.5
1 1/2	1 3/4	29.5	-	32.0	46.5	56.0	68.0	79.5	91.0
2	2	40.0	-	-	61.5	71.0	93.0	107.0	122.5
2 1/2	2 1/2	73.0	-	-	-	95.0	135.0	145.0	179.5
3	2 5/8	119.0	-	-	-	148.5	167.5	206.0	237.5
4	2 7/8	194.4	-	-	-	200.0	-	298.8	362.5
STD NIPPLE WEIGHT (LBS) CWT - MULTIPLY BY 1.3 FOR XH									
NOMINAL PIPE SIZE	5	5 1/2	6	7	8	9	10	11	12
1/8	10.6	11.2	12.0	14.6	16.4	18.9	20.6	22.4	24.6
1/4	15.4	18.0	20.2	22.4	26.8	29.8	35.2	38.4	42.0
3/8	22.2	23.0	26.4	32.4	35.0	39.2	47.6	50.6	51.8
1/2	31.6	35.8	38.6	47.4	52.0	59.0	66.2	73.4	79.8
3/4	42.6	46.6	52.4	64.5	72.5	81.5	91.0	99.0	109.0
1	62.4	66.0	77.4	88.5	100.5	115.0	128.0	150.0	154.5
1 1/4	80.5	94.0	97.0	117.0	139.0	171.0	201.0	221.1	230.0
1 1/2	99.5	109.5	127.0	137.0	165.0	197.0	207.0	233.0	243.0
2	137.0	155.0	166.5	194.6	220.0	260.0	290.0	319.0	346.0
2 1/2	204.0	216.0	237.5	285.0	315.0	354.6	405.0	445.5	510.0
3	267.0	295.0	317.0	396.6	450.0	505.0	595.0	600.0	680.0
4	367.5	452.5	443.8	505.0	595.0	700.0	755.0	830.5	925.0

NIPPLES

**ASA 150 LB. FORGED FLANGES**



NOM. PIPE SIZE	COMMON DIMENSIONS						WELDING NECK			SLIP-ON THREADED	SLIP-ON	LAP JOINT•		
	O	Q*	R	X	NUMBER & DIAM. OF BOLT HOLES+	BOLT CIRCLE	YY*	H	J**	Y*	B	r	YV	BB
1/2	3-1/2	7/16	1-3/8	1-3/16	4-5/8	2-3/8	1-7/8	0.84	0.62	5/8	0.88	1/8	5/8	0.9
3/4	3-7/8	1/2	1-11/16	1-1/2	4-5/8	2-3/4	2-1/16	1.05	0.82	5/8	1.09	1/8	5/8	1.11
1	4-1/4	9/16	2	1-15/16	4-5/8	3-1/8	2-3/16	1.32	1.05	11/16	1.36	1/8	11/16	1.38
1-1/4	4-5/8	5/8	2-1/2	2-5/16	4-5/8	3-1/2	2-1/4	1.66	1.38	13/16	1.7	3/16	13/16	1.72
1-1/2	5	11/16	2-7/8	2-9/16	4-5/8	3-7/8	2-7/16	1.9	1.61	7/8	1.95	1/4	7/8	1.97
2	6	3/4	3-5/8	3-1/16	4-3/4	4-3/4	2-1/2	2.38	2.07	1	2.44	5/16	1	2.46
2-1/2	7	7/8	4-1/8	3-9/16	4-3/4	5-1/2	2-3/4	2.88	2.47	1-1/8	2.94	5/16	1-1/8	2.97
3	7-1/2	15/16	5	4-1/4	4-3/4	6	2-3/4	3.5	3.07	1-3/16	3.57	3/8	1-3/16	3.6
3-1/2	8-1/2	15/16	5-1/2	4-13/16	8-3/4	7	2-13/16	4	3.55	1-1/4	4.07	3/8	1-1/4	4.1
4	9	15/16	6-3/16	5-5/16	8-3/4	7-1/2	3	4.5	4.03	1-5/16	4.57	7/16	1-5/16	4.6
5	10	15/16	7-5/16	6-7/16	8-7/8	8-1/2	3-1/2	5.56	5.05	1-7/16	5.66	1/2	1-7/16	5.69
6	11	1	8-1/2	7-9/16	8-7/8	9-1/2	3-1/2	6.63	6.07	1-9/16	6.72	1/2	1-9/16	6.75
8	13-1/2	1-1/8	10-5/8	9-11/16	8-7/8	11-3/4	4	8.63	7.98	1-3/4	8.72	1/2	1-3/4	8.75
10	16	1-3/16	12-3/4	12	12-1	14-1/4	4	10.75	10.02	1-15/16	10.88	1/2	1-15/16	10.92
12	19	1-1/4	15	14-3/8	12-1	17	4-1/2	12.75	12	2-3/16	12.88	1/2	2-3/16	12.92

Flanges conform to ASA B16.5.

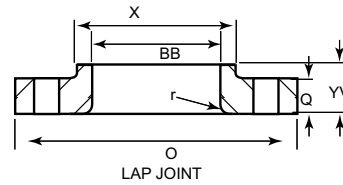
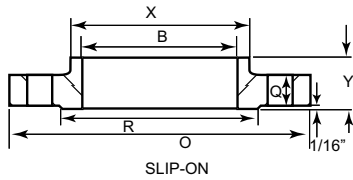
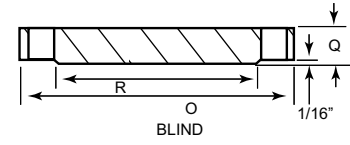
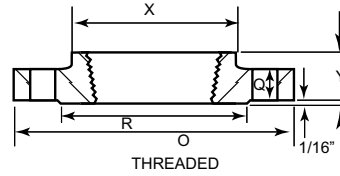
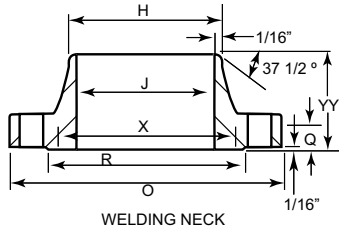
\*1/16 raised face is included in thickness Q and length through hub Y, YY

\*\*Unless otherwise specified Welding Neck Flanges in sizes 12" and smaller are bored to dimensions as listed to correspond to Schedule 40S pipe. Special bores on application. Sizes 14" and larger—bore to be specified by purchaser.

+Bolt holes are 1/8" larger in diameter than recommended bolt.

•Lap Joint Flanges in sizes 10" through 24" are stocked to Y dimensions. Lap Joint Flanges with hub dimensions as listed available on special order.

ASA 300 LB. FORGED FLANGES



NOM. PIPE SIZE	COMMON DIMENSIONS						WELDING NECK			SLIP-ON THREADED	SLIP-ON	LAP JOINT*		
	O	Q*	R	X	NUMBER & DIAM. OF BOLT HOLES+	BOLT CIRCLE	YY*	H	J**	Y*	B	r	YV	BB
1/2	3-3/4	9/16	1-3/8	1-1/2	4-5/8	2-5/8	2-1/16	0.84	0.62	7/8	0.88	1/8	7/8	0.9
3/4	4-5/8	5/8	1-11/16	1-7/8	4-3/4	3-1/4	2-1/4	1.05	0.82	1	1.09	1/8	1	1.11
1	4-7/8	11/16	2	2-1/8	4-3/4	3-1/2	2-7/16	1.32	1.05	1-1/16	1.36	1/8	1-1/16	1.38
1-1/4	5-1/4	3/4	2-1/2	2-1/2	4-3/4	3-7/8	2-9/16	1.66	1.38	1-1/16	1.7	3/16	1-1/16	1.72
1-1/2	6-1/8	13/16	2-7/8	2-3/4	4-7/8	4-1/2	2-11/16	1.9	1.61	1-3/16	1.95	1/4	1-3/16	1.97
2	6-1/2	7/8	3-5/8	3-5/16	8-3/4	5	2-3/4	2.38	2.07	1-5/16	2.44	5/16	1-5/16	2.46
2-1/2	7-1/2	1	4-1/8	3-15/16	8-7/8	5-7/8	3	2.88	2.47	1-1/2	2.94	5/16	1-1/2	2.97
3	8-1/4	1-1/8	5	4-5/8	8-7/8	6-5/8	3-1/8	3.5	3.07	1-11/16	3.57	3/8	1-11/16	3.6
3-1/2	9	1-3/16	5-1/2	5-1/4	8-7/8	7-1/4	3-3/16	4	3.55	1-3/4	4.07	3/8	1-3/4	4.1
4	10	1-1/4	6-3/16	5-3/4	8-7/8	7-7/8	3-3/8	4.5	4.03	1-7/8	4.57	7/16	1-7/8	4.6
5	11	1-3/8	7-5/16	7	8-7/8	9-1/4	3-7/8	5.56	5.05	2	5.66	7/16	2	5.69
6	12-1/2	1-7/16	8-1/2	8-1/8	12-7/8	10-5/8	3-7/8	6.63	6.07	2-1/16	6.72	1/2	2-1/16	6.75
8	15	1-5/8	10-5/8	10-1/4	12-1	13	4-3/8	8.63	7.98	2-7/16	8.72	1/2	2-7/16	8.75
10	17-1/2	1-7/8	12-3/4	12-5/8	16-1-1/8	15-1/4	4-5/8	10.75	10.02	2-5/8	10.88	1/2	3-3/4*	10.92
12	20-1/2	2	15	14-3/4	16-1-1/4	17-3/4	5-1/8	12.75	12	2-7/8	12.88	1/2	4*	12.92

Flanges conform to ASA B16.5.

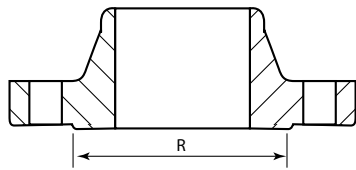
\*1/16 raised face is included in thickness Q and length through hub Y, YY

\*\*Unless otherwise specified Welding Neck Flanges in sizes 12" and smaller are bored to dimensions as listed to correspond to Schedule 40S pipe. Special bores on application. Sizes 14" and larger-bore to be specified by purchaser.

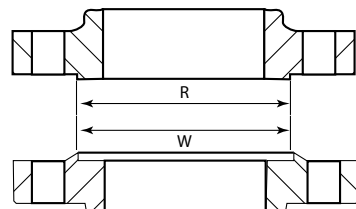
+Bolt holes are 1/8" larger in diameter than recommended bolt.

•Lap Joint Flanges in sizes 10" through 24" are stocked to Y dimensions. Lap Joint Flanges with hub dimensions as listed available on special order.

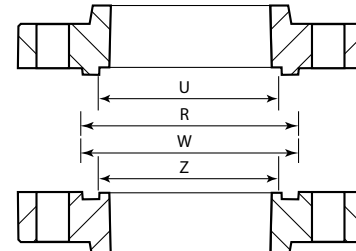
**AMERICAN STANDARD FLANGE FACINGS**



RASED FACE



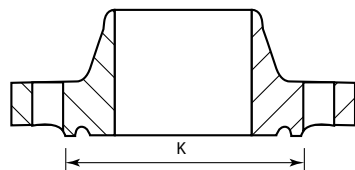
LARGE MALE AND FEMALE



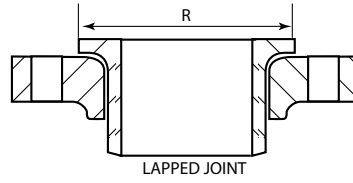
LARGE TONGUE AND GROOVE



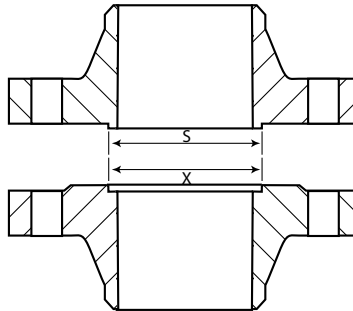
FLAT FACE



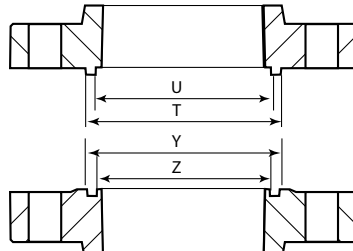
RING JOINT



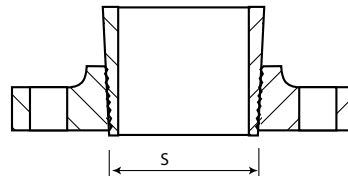
LAPPED JOINT



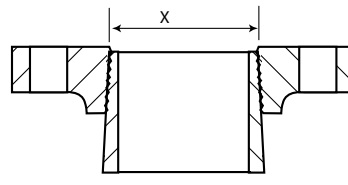
SMALL MALE AND FEMALE



SMALL TONGUE AND GROOVE



SMALL MALE AND FEMALE



SMALL MALE AND FEMALE

WEIGHTS - ASA 150 LB. FORGED FLANGES

RATING	NOMINAL PIPE SIZE	WELDING NECK	SLIP-ON	THREADED	LAP JOINT	BLIND
150 POUND ASA FLANGES	1/2	2	1	1	1	2
	3/4	2	1-1/2	1-1/2	1-1/2	2
	1	2-1/2	2	2	2	2
	1-1/4	2-1/2	2-1/2	2-1/2	2-1/2	3
	1-1/2	4	3	3	3	3
	2	6	5	5	5	4
	2-1/2	10	8	8	8	7
	3	11-1/2	9	10	9	9
	3-1/2	12	11	12	11	13
	4	16-1/2	13	13	12	17
	5	21	15	15	13	20
	6	26	17	19-1/2	18	27
	8	42	28	30	28	47
	10	54	40	41	36	67
	12	88	61	65	60	123
	14	114	83	85	77	139
	16	142	106	93	104	187
	18	165	109	120	146	217
20	197	148	155	159	283	
24	268	204	210	195	415	

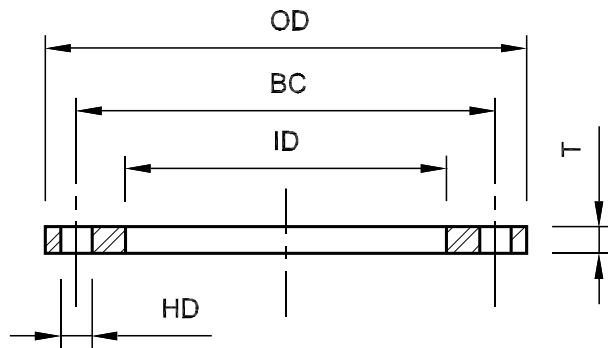
WEIGHTS - 300 LB. FORGED FLANGES

RATING	NOMINAL PIPE SIZE	WELDING NECK	SLIP-ON	THREADED	LAP JOINT	BLIND
300 POUND ASA FLANGES	1/2	2	1-1/2	1-1/2	1-1/2	2
	3/4	3	2-1/2	2-1/2	2-1/2	3
	1	4	3	3	3	4
	1-1/4	5	4-1/2	4-1/2	4-1/2	6
	1-1/2	7	6-1/2	6-1/2	6-1/2	7
	2	8	7	7	7	8
	2-1/2	12	10	10	10	12
	3	18	13	14	14-1/2	16
	3-1/2	20	16	16	16	21
	4	26-1/2	23-1/2	24	24	28
	5	36	29	31	26	37
	6	45	36	36	38	48
	8	69	56	56	55	79
	10	100	77	80	88	122
	12	142	113	110	139	183
	14	206	159	164	184	241
	16	249	210	220	234	315
	18	306	253	280	305	414
20	369	307	325	375	515	
24	519	490	490	530	800	

FLANGES

**304L & 316L STAINLESS STEEL**

- Dimensions are given in inches.
- All plate flanges are flat face.
- Lap joint application (as back-up) for use with flat or angle type face rings can be furnished upon request.
- Drilling is 150# class.



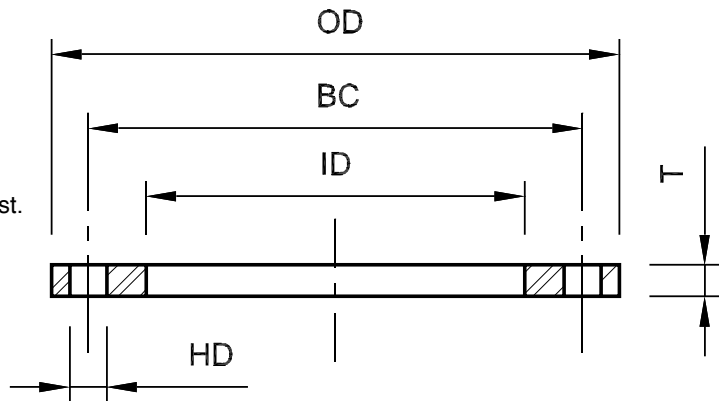
NOMINAL PIPE SIZE	LBS	ID	OD	T (PLATE FLG)	T (SS BU FLG)	BC	HD	BOLT SIZE	NUMBER OF BOLT HOLES
1/2	1.10	.880	3 1/2	1/2	1/2	2 3/8	5/8	1/2	4
3/4	1.40	1.090	3 7/8	1/2	1/2	2 3/4	5/8	1/2	4
1	2.00	1.360	4 1/4	1/2	1/2	3 1/8	5/8	1/2	4
1 1/4	2.30	1.700	4 5/8	1/2	1/2	3 1/2	5/8	1/2	4
1 1/2	2.30	1.950	5	1/2	1/2	3 7/8	5/8	1/2	4
2	3.30	2.440	6	1/2	1/2	4 3/4	3/4	5/8	4
2 1/2	4.60	2.940	7	1/2	1/2	5 1/2	3/4	5/8	4
3	4.90	3.570	7 1/2	1/2	1/2	6	3/4	5/8	4
4	6.70	4.570	9	1/2	1/2	7 1/2	3/4	5/8	8
5	7.40	5.660	10	1/2	1/2	8 1/2	7/8	3/4	8
6	8.40	6.720	11	1/2	1/2	9 1/2	7/8	3/4	8
8	12.00	8.720	13 1/2	1/2	1/2	11 3/4	7/8	3/4	8
10	18.80	10.880	16	5/8	5/8	14 1/4	1	7/8	12
12	27.30	12.880	19	5/8	5/8	17	1	7/8	12
14	33.60	14.140	21	5/8	5/8	18 3/4	1 1/8	1	12
16	48.40	16.160	23 1/2	3/4	5/8	21 1/4	1 1/8	1	16
18	68.00	18.180	25	3/4	3/4	22 3/4	1 1/4	1 1/8	16
20	75.60	20.200	27 1/2	1	3/4	25	1 1/4	1 1/8	20
24	95.50	24.250	32	1	1	29 1/2	1 3/8	1 1/4	20
30	126.00	30.250	38 3/4	1	1	36	1 3/8	1 1/4	28
36	211.00	36.250	46	1 1/4	1 1/4	42 3/4	1 5/8	1 1/2	32

**FLANGES**



**DUCTILE IRON**

- Dimensions are given in inches.
- Prime Painted or Hot Dipped Galvanized.
- OD and drilling are 150# class.
- Sizes larger than 36" are available upon request.
- Stainless steel is available upon request. See page 22 for thicknesses.
- Domestic flanges 2" through 24" are available upon request.

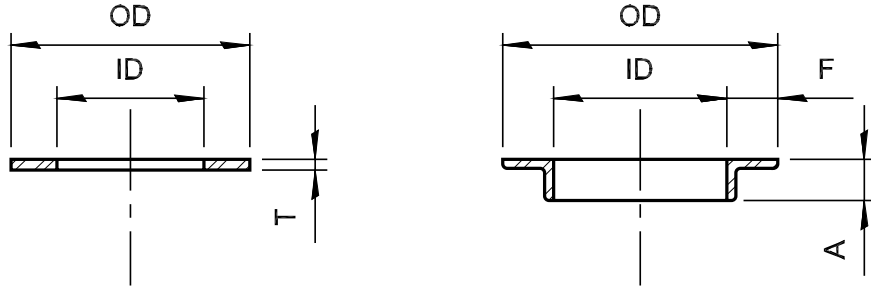


NOMINAL PIPE SIZE	STYLE	LBS	ID	OD	T	BC	HD	BOLT SIZE	NUMBER OF BOLT HOLES
1/2	FFR	1.10	1.000	3 1/2	1/2	2 3/8	5/8	1/2	4
	AFR	1.00	1.250						
3/4	FFR	1.40	1.180	3 7/8	1/2	2 3/4	5/8	1/2	4
	AFR	1.30	1.440						
1	FFR	1.60	1.440	4 1/4	1/2	3 1/8	5/8	1/2	4
	AFR	1.50	1.690						
1 1/4	FFR	1.90	1.810	4 5/8	1/2	3 1/2	5/8	1/2	4
	AFR	1.80	2.060						
1 1/2	FFR	2.20	2.060	5	1/2	3 7/8	5/8	1/2	4
	AFR	2.00	2.250						
2	FFR	2.90	2.630	6	1/2	4 3/4	3/4	5/8	4
	AFR	2.70	2.880						
2 1/2	FFR	4.20	3.130	7	1/2	5 1/2	3/4	5/8	4
	AFR	4.10	3.380						
3	FFR	4.60	3.750	7 1/2	1/2	6	3/4	5/8	4
	AFR	4.40	4.000						
4	FFR	6.20	4.750	9	9/16	7 1/2	3/4	5/8	8
	AFR	5.90	5.000						
5	FFR	6.80	5.750	10	5/8	8 1/2	7/8	3/4	8
	AFR	6.50	6.060						
6	FFR	7.60	6.880	11	5/8	9 1/2	7/8	3/4	8
	AFR	7.30	7.250						
8	FFR	10.90	8.880	13 1/2	5/8	11 3/4	7/8	3/4	8
	AFR	10.20	9.250						
10	FFR	20.00	11.000	16	5/8	14 1/4	1	7/8	12
	AFR	18.80	11.440						
12	FFR	28.50	13.000	19	3/4	17	1	7/8	12
	AFR	26.70	13.630						
14	FFR	31.10	14.250	21	3/4	18 3/4	1 1/8	1	12
	AFR	28.60	14.880						
16	FFR	42.70	16.250	23 1/2	3/4	21 1/4	1 1/8	1	16
	AFR	40.40	16.880						
18	FFR	46.20	18.250	25	7/8	22 3/4	1 1/4	1 1/8	16
	AFR	41.60	18.880						
20	FFR	62.80	20.250	27 1/2	7/8	25	1 1/4	1 1/8	20
	AFR	59.30	20.880						
24	FFR	89.00	24.250	32	1	29 1/2	1 3/8	1 1/4	20
	AFR	83.50	24.880						
30	FFR	119.00	30.250	38 3/4	1	36	1 3/8	1 1/4	28
	AFR	112.00	30.880						
36	FFR	201.00	36.250	46	1 1/4	42 3/4	1 5/8	1 1/2	32
	AFR	190.00	36.880						









**FLANGES**

## 316L STAINLESS STEEL

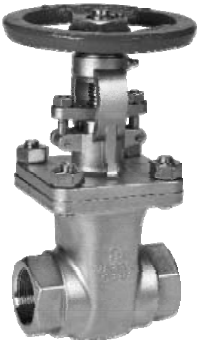
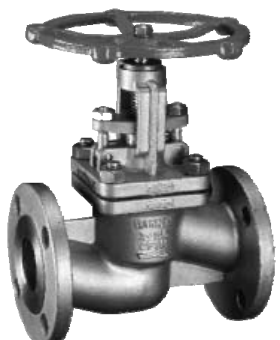


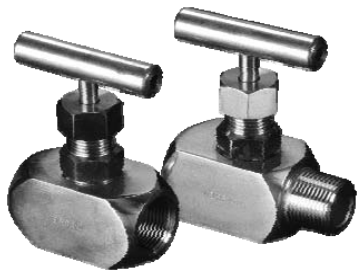
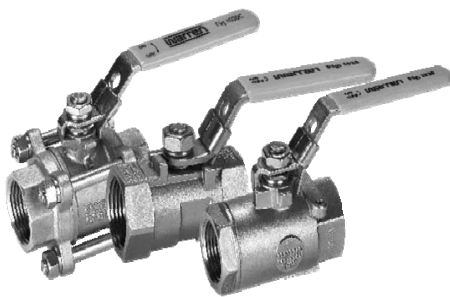
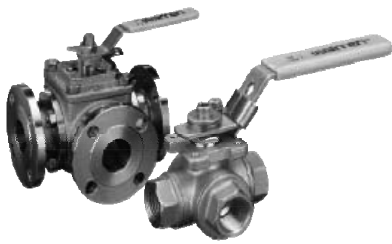
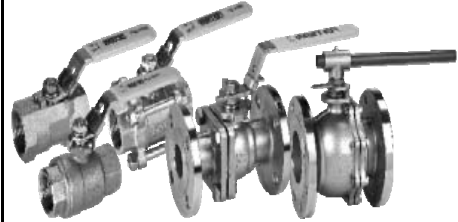
- Dimensions are given in inches.



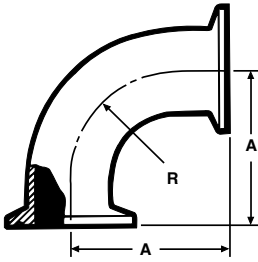
NOMINAL PIPE SIZE	ID	FLAT FACE RINGS				ANGLE FACE RINGS				
		T 10GA (.140)		T 1/4" (.250)		T	F	A	OD	LBS
		OD	LBS	OD	LBS					
1/2	.875	1.688	.05	-	-	1/8	3/8	1/2	1.625	.10
3/4	1.070	2.000	.07	-	-	1/8	1/2	1/2	2.000	.13
1	1.335	2.500	.09	-	-	1/8	9/16	1/2	2.500	.20
1 1/4	1.688	2.500	.11	-	-	1/8	1/2	1/2	2.750	.22
1 1/2	1.920	3.000	.17	-	-	1/8	5/8	7/16	3.180	.26
2	2.400	4.000	.32	-	-	1/8	11/16	7/16	3.810	.36
2 1/2	2.895	4.500	.35	-	-	1/8	3/4	1/2	4.500	.51
3	3.550	5.000	.38	-	-	1/8	3/4	3/4	5.000	.70
4	4.550	6.250	.59	-	-	1/8	7/8	3/4	6.250	.90
5	5.610	7.500	.81	-	-	9/64	1	1	7.680	1.30
6	6.650	8.620	.95	-	-	9/64	1	1	8.650	1.50
8	8.690	10.750	1.20	-	-	3/16	1	1	10.650	2.90
10	10.840	12.750	1.50	-	-	3/16	1 1/4	1 1/4	13.270	4.60
12	12.840	14.750	2.60	-	-	1/4	1 1/2	1 1/2	15.780	8.40
14	14.090	-	-	17.060	5.30	1/4	1 1/2	1 1/2	17.060	9.40
16	16.090	-	-	19.060	6.00	1/4	1 1/2	1 1/2	19.060	10.80
18	18.125	-	-	21.060	6.70	1/4	1 1/2	1 1/2	21.060	11.50
20	20.125	-	-	23.090	7.40	1/4	1 1/2	1 1/2	23.090	13.00
24	24.125	-	-	27.090	8.80	1/4	2	2	28.090	21.10
30	30.160	-	-	34.090	14.70	1/4	2	2	34.090	25.90
36	36.160	-	-	40.090	17.40	1/4	2	2	40.090	30.90

<b>CAM &amp; GROOVE FITTINGS</b>	
AVAILABLE IN SIZES 1/2" - 6"	
 <p>TYPE A - ADAPTER FEMALE THREAD</p>	 <p>TYPE B - COUPLER MALE THREAD</p>
 <p>TYPE C - HOSE SHANK COUPLER</p>	 <p>TYPE D - COUPLER FEMALE THREAD</p>
 <p>TYPE E - HOSE SHANK ADAPTER</p>	 <p>TYPE F - ADAPTER MALE THREAD</p>
 <p>TYPE DC - DUST CAP</p>	 <p>TYPE DP - DUST PLUG</p>

**CAM & GROOVE**

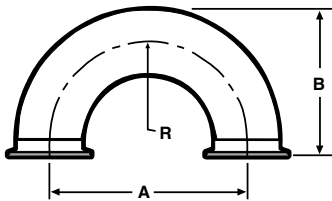
VALVES					
					
<b>GATE VALVES</b>		<b>GLOBE VALVES</b>		<b>CHECK VALVES</b>	
SIZES	1/2" - 36"	SIZES	1/2" - 12"	SIZES	1/2" - 24"
PRESSURES	150, 300, 600, 900 & 1500	PRESSURES	150, 300, 600, 900 & 1500	PRESSURES	150, 300, 600, 900 & 1500
ENDS	FLANGED & BUTTWELD	ENDS	FLANGED & BUTTWELD	ENDS	FLANGED & BUTTWELD
					
<b>Y-PATTERN STRAINERS</b>		<b>NEEDLE GLOBE VALVES</b>		<b>WAFER CHECK VALVES</b>	
SIZES	1/4" - 2"	SIZES	1/8" - 1"	SIZES	1 1/2" - 36"
PRESSURES	150, 800 & 800	PRESSURES	6000 & 10000	PRESSURES	150
ENDS	THREADED, FLANGED & SOCKETWELD	ENDS	THREADED	ENDS	FLANGED
					
<b>BALL VALVES</b>		<b>3-WAY BALL VALVES</b>		<b>CONTRACTOR SERIES</b>	
SIZES	1/4" - 4"	SIZES	1/2" - 6"	SIZES	1/4" - 4"
PRESSURES	800 - 1000 - 1500 - 2000	PRESSURES	150 - 1000	PRESSURES	150 - 800 - 1000
PORTS/PCS	FULL & REDUCED / 1-PC, 2-PC & 3-PC	PORTS	FULL PORT, L PORT & T PORT	PORTS	FULL & REDUCED
ENDS	THREADED & SOCKETWELD	ENDS	THREADED & FLANGED	ENDS	THREADED, FLANGED & SOCKETWELD

**EG2C - 90° ELBOW**



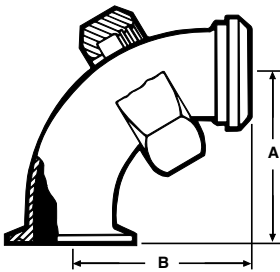
Size Tube OD	A	R
1	2.000	1.500
1 1/2	2.750	2.250
2	3.500	3.000
2 1/2	4.250	3.750
3	5.000	4.500
4	6.625	6.000
6	9.875	9.000
8	12.937	12.000

**EG2WU - CLAMP 180° U-BEND**



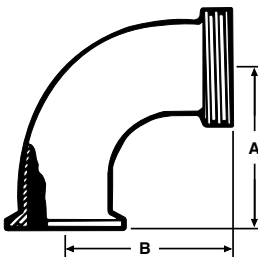
Size Tube OD	A	B	R
1/2	1.500	1.500	0.750
3/4	2.250	2.000	1.125
1	3.000	2.500	1.500
1 1/4	3.750	3.000	1.875
1 1/2	4.500	3.500	2.250
2	6.000	4.500	3.000
2 1/2	7.500	5.500	3.750
3	9.000	6.500	4.500
4	12.000	8.625	6.000
6	18.000	12.875	9.000

**EG2FPR - 90° ELBOW**



Size Tube OD	A	B
1	2.000	2.875
1 1/2	2.750	2.968
2	3.500	3.718
2 1/2	4.250	4.593
3	5.000	5.406
4	6.625	7.218

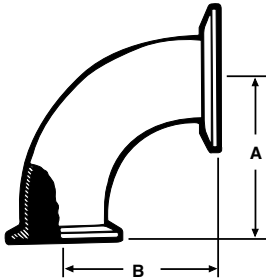
**EG2FTR - 90° ELBOW**



Size Tube OD	A	B
1	2.000	2.187
1 1/2	2.750	2.968
2	3.500	3.718
2 1/2	4.250	4.593
3	5.000	5.406
4	6.625	7.218

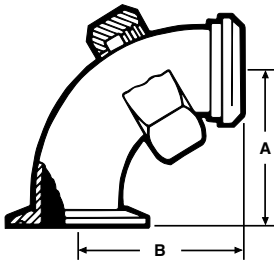
**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

## EG2C31CC - 90° REDUCING ELBOW (Non-Tapered)



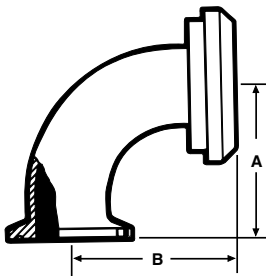
Size Tube OD	A	B
2 x 1	2.000	2.000
2 x 1 1/2	2.750	2.750
2 1/2 x 1 1/2	2.750	2.750
2 1/2 x 2	3.500	3.500
3 x 1 1/2	2.750	2.750
3 x 2	3.500	3.500
3 x 2 1/2	4.250	4.250
4 x 2 1/2	4.250	4.375
4 x 3	5.000	5.125
6 x 4	6.625	6.875

## EG231-FPR 90° REDUCING ELBOW (Non-Tapered)



Size Tube OD	A	B
2 x 1	2.000	2.187
2 x 1 1/2	2.750	2.968
2 1/2 x 1 1/2	2.750	2.968
2 1/2 x 2	3.500	3.718
3 x 1 1/2	2.750	2.968
3 x 2	3.500	3.718
3 x 2 1/2	4.250	4.593
4 x 2 1/2	4.375	4.593
4 x 3	5.125	5.406

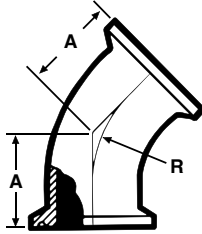
## EG2C31PR - 90° REDUCING ELBOW (Non-Tapered)



Size Tube OD	A	B
2 x 1	2.000	2.250
2 x 1 1/2	2.750	3.000
2 1/2 x 1 1/2	2.750	3.031
2 1/2 x 2	3.500	3.781
3 x 1 1/2	2.750	3.593
3 x 2	3.500	3.843
3 x 2 1/2	4.250	4.593
4 x 2 1/2	4.250	4.687
4 x 3	5.000	5.437

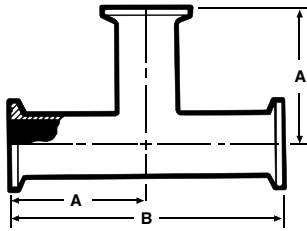
Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.

**EG2K - 45° ELBOW**



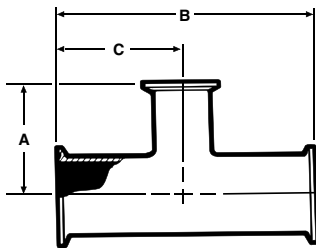
Size Tube OD	A	R
1	1.125	1.500
1 1/2	1.437	2.250
2	1.750	3.000
2 1/2	2.062	3.750
3	2.375	4.500
4	3.125	6.000
6	4.625	9.000
8	5.312	12.000

**EG7 - TEE**



Size Tube OD	A	B
1	2.375	4.750
1 1/2	2.750	5.500
2	3.500	7.000
2 1/2	3.500	7.000
3	3.750	7.500
4	4.500	9.000
6	8.875	17.750
8	9.937	19.875

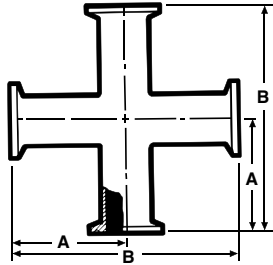
**EG7R - REDUCING TEE**



Size Tube OD	A	B	C
1 1/2 x 1	1.875	4.312	2.156
2 x 1	2.125	5.125	2.562
2 x 1 1/2	2.406	5.125	2.562
2 1/2 x 1 1/2	2.656	5.687	2.843
2 1/2 x 2	2.812	5.687	2.843
3 x 1 1/2	2.906	6.187	3.093
3 x 2	3.062	6.187	3.093
3 x 2 1/2	3.093	6.187	3.093
4 x 2	3.593	8.125	4.062
4 x 2 1/2	3.593	8.125	4.062
4 x 3	3.593	8.125	4.062
6 x 3	6.125	13.000	6.500
6 x 4	6.250	13.000	6.500

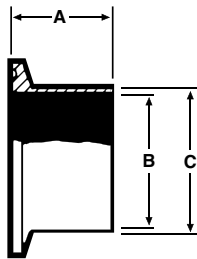
**Note:** One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.

**EG9 - CROSS**



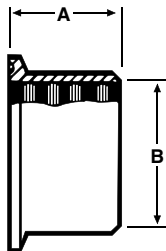
Size Tube OD	A	B
1	2.375	4.750
1 1/2	2.750	5.500
2	3.500	7.000
2 1/2	3.500	7.000
3	3.750	7.500
4	4.500	9.000
6	8.875	17.340

**EG14AM7 - WELDING FERRULE**



Size Tube OD	A	B	C
1/2	2.000	0.370	0.500
3/4	2.000	0.620	0.750
1	1.125	0.870	1.000
1 1/2	1.125	1.370	1.500
1 1/4	1.125	1.120	1.250
2	1.125	1.870	2.000
2 1/2	1.125	2.370	2.500
3	1.125	2.870	3.000
4	1.125	3.834	4.000
5	1.500	4.782	5.000
6	1.500	5.780	6.000
8	1.500	7.782	8.000
10	1.500	9.732	10.000
12	1.500	11.732	12.000

**EG14R - RECESSLESS FERRULE (Expanding)**

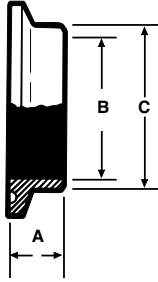


Size Tube OD	A	B
1	0.687	1.000
1 1/2	1.125	1.500
2	1.312	2.000
2 1/2	1.375	2.500
3	1.437	3.000
4	1.500	4.000

**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

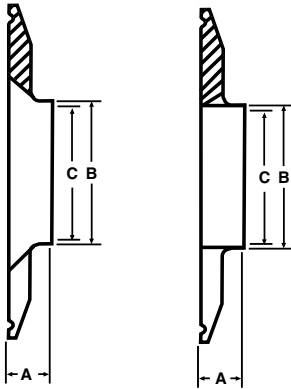


**EG2CS - SHORT WELDING FERRULE**



Size Tube OD	A	B
1/4	0.500	0.120
3/8	0.500	0.245
1/2	0.500	0.370
5/8	0.500	0.495
3/4	0.500	0.620
1	0.500	0.870
1 1/4	0.500	1.120
1 1/2	0.500	1.370
2	0.500	1.870
2 1/2	0.500	2.370
3	0.500	2.870
4	0.625	3.834
5	0.750	4.780
6	0.875	5.780
8	0.937	7.782
10	0.937	9.732
12	0.937	11.732

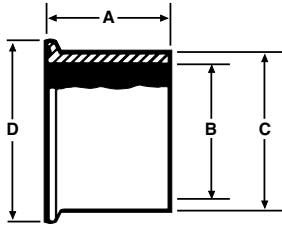
**EG2CS31D / EG2CS31 - SHORT REDUCING CLAMP FERRULES**



Size Tube OD	A	B	C
1 x 1/2	0.500	0.500	0.370
1 x 3/4	0.500	0.750	0.620
1 1/2 x 1	0.500	1.000	0.870
2 x 1	0.500	1.000	0.870
2 x 1 1/2	0.500	1.500	1.370
2 1/2 x 1 1/2	0.500	1.500	1.370
2 1/2 x 2	0.500	2.000	1.870
3 x 1	0.500	1.000	0.870
3 x 1 1/2	0.500	1.500	1.370
3 x 2	0.500	2.000	1.870
3 x 2 1/2	0.500	2.500	2.370
4 x 1 1/2	0.625	1.500	1.370
4 x 2	0.625	2.000	1.870
4 x 2 1/2	0.625	2.500	2.370
4 x 3	0.625	3.000	2.870
6 x 4	0.870	4.000	3.834

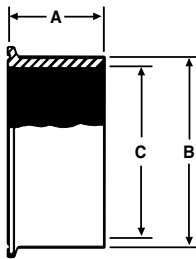
**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

## EG14W - TANK WELDING FERRULE



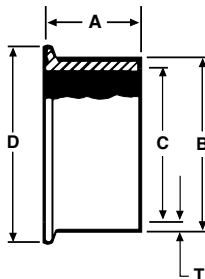
Size Tube OD	A	B	C	D
1	1.625	0.870	1.160	1.984
1 1/2	1.625	1.370	1.676	1.984
2	1.750	1.870	2.192	2.516
2 1/2	1.750	2.370	2.708	3.047
3	1.812	2.870	3.224	3.579
4	2.125	3.834	4.256	4.682
6	4.250	5.782	6.500	6.570

## EG14W-C6L - ASME CODED TANK FERRULE



Size Tube OD	A	B	C
1	1.625	1.160	0.870
1 1/2	1.625	1.676	1.370
2	1.750	2.192	1.870
2 1/2	1.750	2.708	2.370
3	1.812	3.224	2.870
4	2.125	4.256	3.834
6	4.250	6.500	5.782

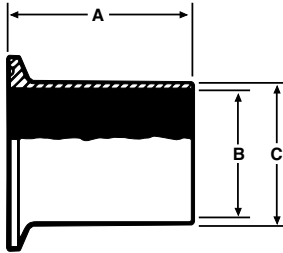
## EG14WSL-C6L - ASME CODED TANK FERRULE LONG



Size Tube OD	A	B	C	D	Nom. Wall (T)
1	2.500	1.160	0.870	1.984	0.129
1 1/2	2.500	1.676	1.370	1.984	0.153
2	2.500	2.192	1.870	2.516	0.161
2 1/2	3.500	2.708	2.370	3.047	0.169
3	4.500	3.224	2.870	3.579	0.177
4	4.500	4.256	3.834	4.682	0.211
6	6.250	6.500	5.782	6.570	0.359

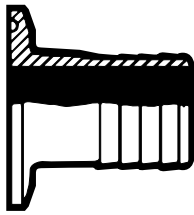
**Note:** One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.

**EG14WL - TANK WELDING FERRULE**



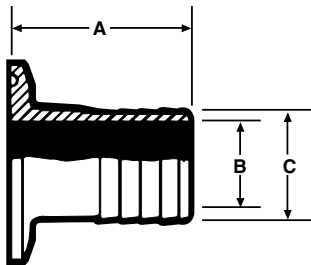
Size Tube OD	A	B	C
1	3.000	0.870	1.000
1 1/2	3.000	1.370	1.500
2	3.000	1.870	2.000
2 1/2	3.000	2.370	2.500
3	4.000	2.870	3.000
4	4.000	3.834	4.000
6	6.000	5.782	6.000
8	6.000	7.782	8.000
10	6.000	9.730	10.000
12	6.000	11.730	12.000

**EG14RT - RUBBER HOSE ADAPTER**



Size Tube OD	
1/2	CONTACT US FOR DIMENSIONS
3/4	
1	
1 1/4	
1 1/2	
2	
2 1/2	
3	
4	
6	

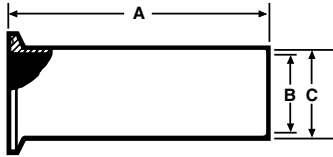
**EG14RT - RUBBER HOSE ADAPTER REDUCER (T316L)**



Size Tube OD	A	B	C
1 x 1/2	2.000	0.370	0.500
1 x 3/4	2.000	0.620	0.750
1 1/2 x 1 1/4	3.500	1.120	1.250
2 x 1	3.500	0.870	1.000
2 x 1 1/2	3.500	1.370	1.500
2 1/2 x 2	3.500	1.870	2.000
3 x 2	3.500	1.870	2.000
3 x 2 1/2	3.500	2.370	2.500
4 x 2 1/2	3.625	2.370	2.500
4 x 3	3.625	3.870	3.000

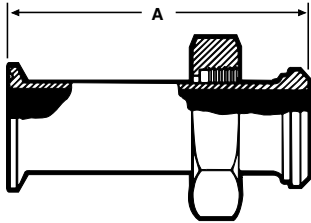
**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

## EG14HT - TYGON HOSE ADAPTER



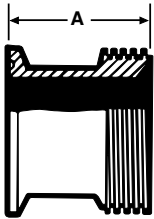
Size Tube OD	A	B	C
1	4.500	0.870	1.000
1 1/2	4.500	1.370	1.500
2	4.500	1.870	2.000
2 1/2	4.500	2.370	2.500
3	4.500	2.870	3.000
4	4.625	3.834	4.000

## EG17PR - ADAPTER



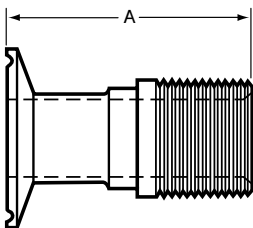
Size Tube OD	A
1	2.500
1 1/2	2.625
2	2.625
2 1/2	2.875
3	2.875
4	2.875

## EG17TR - ADAPTER



Size Tube OD	A
1	1.187
1 1/2	1.187
2	1.218
2 1/2	1.343
3	1.437
4	2.125

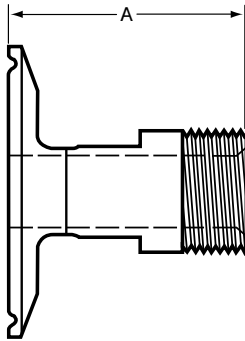
## EG21 - MALE ADAPTER (N.P.T. Pipe Threads)



Size Tube OD	A
1	2.875
1 1/4	2.875
1 1/2	2.875
2	2.937
2 1/2	3.437
3	3.625
4	3.812
6	4.875

Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.

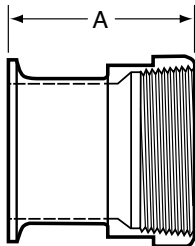
**EG21-6L - MALE ADAPTER REDUCING (T316L)**



Size Tube OD	A
3/4 x 1/2	2.125
1 x 1/2	2.125
1 x 3/4	2.125
1 1/2 x 1/2	2.125
1 1/2 x 3/4	2.125
1 1/2 x 1 1/4	2.250
2 x 1	2.250
2 x 1 1/4	2.250
2 x 1 1/2	2.250
2 1/2 x 1 1/2	2.250
2 1/2 x 2	2.312
3 x 1 1/2	2.250
3 x 2	2.312
3 x 2 1/2	2.812
4 x 2	2.312
4 x 2 1/2	2.812
4 x 3	3.000
6 x 4	3.062

Sanitary end dimension listed first.

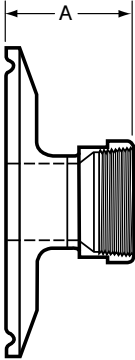
**EG22 - FEMALE ADAPTER (N.P.T. Pipe Threads)**



Size Tube OD	A
1	2.250
1 1/4	2.500
1 1/2	2.562
2	2.562
2 1/2	2.750
3	2.937
4	3.750

**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

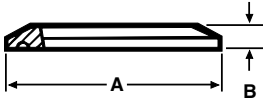
**EG22 - FEMALE ADAPTER REDUCING (T316L)**



Size Tube OD	A
3/4 x 1/2	1.625
1 x 1/2	1.625
1 x 3/4	1.625
1 1/2 x 1/2	1.625
1 1/2 x 3/4	1.625
1 1/2 x 1 1/4	2.560
2 x 1	1.625
2 x 1 1/4	1.927
2 x 1 1/2	1.937
2 1/2 x 1 1/2	1.937
2 1/2 x 2	1.937
3 x 1 1/2	1.937
3 x 2	1.937
3 x 2 1/2	2.125
4 x 2	2.062
4 x 2 1/2	2.250
4 x 3	2.437

Sanitary end dimension listed first.

**EG16A - SOLID END CAP**



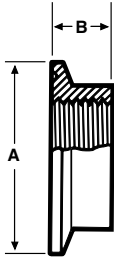
Size Tube OD	A	B
1/2 & 3/4	0.992	0.200
1 & 1 1/2	1.984	0.250
2	2.516	0.250
2 1/2	3.047	0.250
3	3.579	0.250
4	4.682	0.312
5	5.692	0.385
6	6.570	0.437
8	8.570	0.437
10	10.570	0.562
12	12.570	0.625

1 1/2" caps are used on both 1" and 1 1/2" lines.

3/4" caps are used on both 1/2" & 3/4" lines.

**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

**EG23B-6L - CLAMP THERMOMETER CAPS (T316L)**



Size Tube OD	A	B
*1	1.984	0.625
1 1/2	1.984	0.625
2	2.516	0.625
2 1/2	3.047	0.625
3	3.579	0.625
4	4.682	0.625

\*STD - 1/2 FNPT. All others 3/4" FNPT

Note: Other tap sizes are available.

**GASKETS**



Gasket Materials	Part Number	Flange Type
Buna N	EG40	EG40F
EPDM	EG40E	EG40FE
Teflon	EG40T	
Viton®	EG40V	EG40FV
Silicone	EG40S	EG40FS
TEF-Steel	EG40TS	

**Envelope Type**

Teflon with EPDM Filler

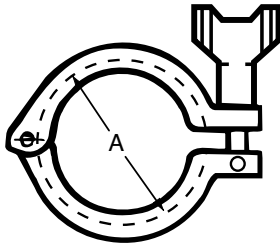
EG40GR

Teflon with Viton Filler

EG40GRV

Available in 1/2" to 12" sizes.

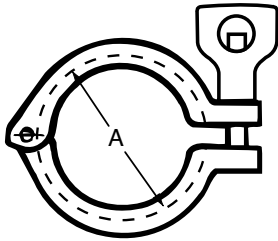
**13MHHM - HEAVY DUTY CLAMP**



Size Tube OD	A
3/4	1.125
1 1/2	2.122
2	2.654
2 1/2	3.185
3	3.717
4	4.820
5	5.817
6	6.695
8	8.695
10	10.695
12	12.695

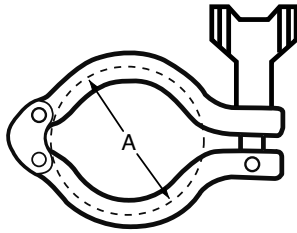
Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.

**13MHHM-H - HEAVY DUTY CLAMP (Wing nut With Hole)**



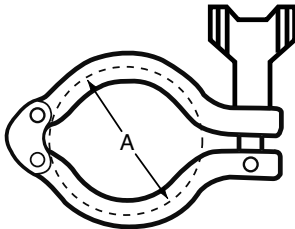
Size Tube OD	A
3/4	1.125
1 & 1 1/2	2.122
2	2.654
2 1/2	3.185
3	3.717
4	4.820
5	5.817
6	6.695
8	8.695
10	10.695
12	12.695

**13MHHMD - DOUBLE HINGED HEAVY DUTY CLAMP**



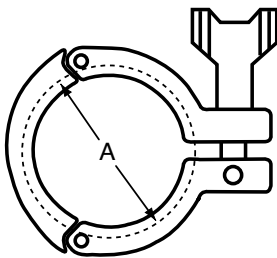
Size Tube OD	A
1 1/2	2.122
2	2.654
2 1/2	3.185
3	3.717
4	4.820

**13MHHMD - H - DOUBLE HINGED HEAVY DUTY CLAMP**



Size Tube OD	A
1 1/2	2.122
2	2.654
2 1/2	3.185
3	3.717
4	4.820

**13MHHS - THREE PIECE HEAVY DUTY CLAMP**

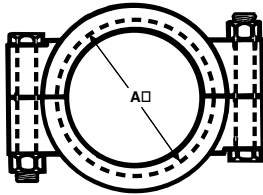


Size Tube OD	A
1 1/2	2.122
2	2.654
2 1/2	3.185
3	3.717
4	4.820

**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

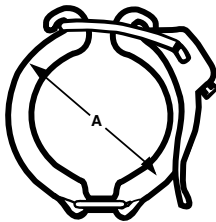


**13MHP - HIGH PRESSURE CLAMP**



Size Tube OD	A
3/4	1.125
1 1/2	2.046
2	2.578
2 1/2	3.110
3	3.640
4	4.744
6	6.632

**EG13 - HINGED CLAMP - (Light Duty)**



Size Tube OD	A
1 1/2	2.142
2	2.653
2 1/2	3.205
3	3.740
4	4.803

**\*PSI SERVICE RATINGS FOR SANITARY STAINLESS STEEL CLAMPS**

Size Tube OD	13MHM / 13MHM - H		13MHMD / 13MHMD - H	
	@70°F	@250°F	@70°F	@250°F
3/4"	1500	1200		
1 1/2"	500	250	500	250
2"	450	250	450	250
2 1/2"	400	200	400	200
3"	350	150	350	150
4"	200	125	200	125
5"	175	100		
6"	150	75		
8"	100	50		
10"	40	30		
12"	30	25		

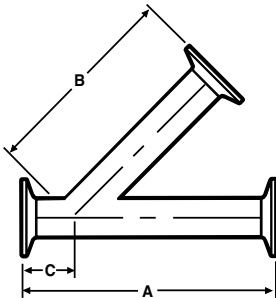
Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.

### \*PSI SERVICE RATINGS FOR SANITARY STAINLESS STEEL CLAMPS

Size Tube OD	13MHHS		13MHP		EG13	
	@70°F	@250°F	@70°F	@250°F	@70°F	@250°F
3/4"			1500	1200		
1 1/2"	600	300	1500	1200	150	125
2"	550	275	1000	800	150	125
2 1/2"	450	225	1000	800	150	125
3"	350	160	1000	800	150	125
4"	250	150	1000	800	150	125
5"						
6"			300	200		
8"						
10"						
12"						

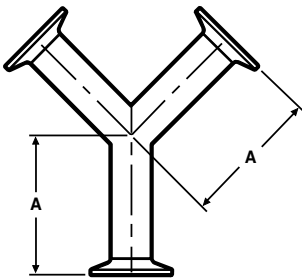
\*Service ratings are based upon hydrostatic tests using Standard Molded Buna-N gasket material with proper expansion of fer-ules, joint assembly, and the absence of shock pressure. All ratings systems are dependent upon related components in the system and proper installation.

### EG28A - 45° CLAMP LATERAL



Size Tube OD	A	B	C
1	7.000	5.500	1.500
1 1/2	8.375	6.687	1.687
2	9.625	7.625	2.125
2 1/2	11.125	9.000	2.000
3	11.750	9.375	2.375
4	14.062	11.375	2.687
6	18.875	15.375	4.375

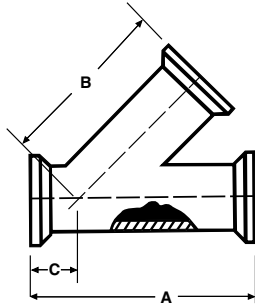
### EG28B - CLAMP TRUE Y



Size Tube OD	A
1	3.500
1 1/2	3.500
2	4.500
2 1/2	5.500
3	6.500
4	8.625
6	8.875

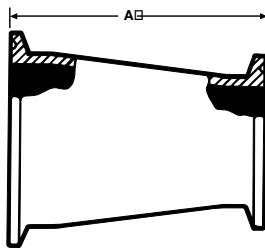
Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.

**EG28RA - 45° CLAMP REDUCING LATERAL**



Size Tube OD	A	B	C
1 1/2 x 1	8.375	5.062	1.375
2 x 1	9.625	5.500	1.625
2 x 1 1/2	9.625	5.500	1.625
2 1/2 x 1	11.125	6.875	2.125
2 1/2 x 1 1/2	11.125	6.875	2.125
2 1/2 x 2	11.125	6.875	2.125
3 x 1	11.750	8.250	2.500
3 x 1 1/2	11.750	8.250	2.500
3 x 2	11.750	8.250	2.500
3 x 2 1/2	11.750	8.250	2.500
4 x 1	14.062	10.000	3.000
4 x 1 1/2	14.062	10.000	3.000
4 x 2	14.062	10.000	3.000
4 x 2 1/2	14.062	10.000	3.000
4 x 3	14.062	10.000	3.00

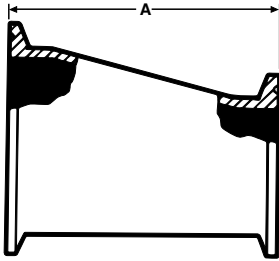
**EG31CC - CONCENTRIC REDUCER**



Size Tube OD	A
3/4 x 1/2	2.000
1 x 1/2	2.000
1 x 3/4	2.000
1 1/2 x 1/2	3.000
1 1/2 x 3/4	3.000
1 1/2 x 1	3.000
1 1/2 x 1 1/4	2.000
2 x 1	5.000
2 x 1 1/4	2.000
2 x 1 1/2	3.000
2 1/2 x 1	7.000
2 1/2 x 1 1/2	5.000
2 1/2 x 2	3.000
3 x 1 1/2	7.000
3 x 2	5.000
3 x 2 1/2	3.000
4 x 2	9.125
4 x 2 1/2	7.125
4 x 3	5.125
6 x 3	6.875
6 x 4	7.000

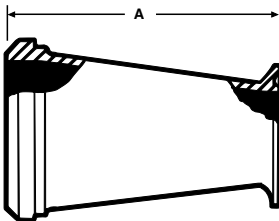
**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

**EG32CC - ECCENTRIC REDUCER**



Size Tube OD	A
3/4 x 1/2	2.000
1 x 1/2	3.000
1 x 3/4	2.000
1 1/2 x 1/2	5.000
1 1/2 x 3/4	4.000
1 1/2 x 1	3.000
1 1/2 x 1 1/4	2.000
2 x 1	5.000
2 x 1 1/4	2.000
2 x 1 1/2	3.000
2 1/2 x 1	7.000
2 1/2 x 1 1/2	5.000
2 1/2 x 2	3.000
3 x 1 1/2	7.000
3 x 2	5.000
3 x 2 1/2	3.000
4 x 2	9.125
4 x 2 1/2	7.125
4 x 3	5.125
6 x 3	6.875
6 x 4	7.000

**EG31PC - ADAPTER REDUCER (Concentric)**

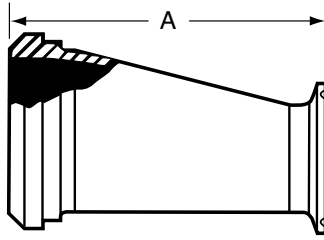


Size Tube OD	A
*1 1/2 x 1	3.187
2 x 1	5.218
2 x 1 1/2	3.218
2 1/2 x 1 1/2	5.343
2 1/2 x 2	3.343
3 x 2	5.437
3 x 2 1/2	3.437
4 x 2 1/2	7.500
4 x 3	5.500

\*Hex nut furnished

**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

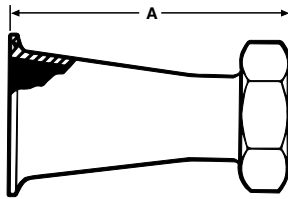
**EG32PC - ADAPTER REDUCER (Eccentric)**



Size Tube OD	A
*1 1/2 x 1	3.187
2 x 1	5.218
2 x 1 1/2	3.218
2 1/2 x 1 1/2	5.343
2 1/2 x 2	3.343
3 x 2	5.437
3 x 2 1/2	3.437
4 x 2 1/2	7.500
4 x 3	5.500

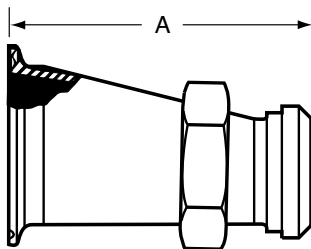
\*Hex nut furnished

**EG31CP - ADAPTER REDUCER (Concentric)**



Size Tube OD	A
1 1/2 x 1	3.875
2 x 1	5.875
2 x 1 1/2	4.000
2 1/2 x 1 1/2	6.000
2 1/2 x 2	4.000
3 x 2	6.000
3 x 2 1/2	4.250
4 x 2 1/2	8.378
4 x 3	6.378

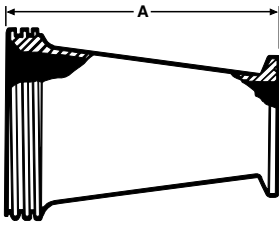
**EG32CP - ADAPTER REDUCER (Eccentric)**



Size Tube OD	A
1 1/2 x 1	3.875
2 x 1	5.875
2 x 1 1/2	4.000
2 1/2 x 1 1/2	6.000
2 1/2 x 2	4.000
3 x 2	6.000
3 x 2 1/2	4.250
4 x 2 1/2	8.378
4 x 3	6.378

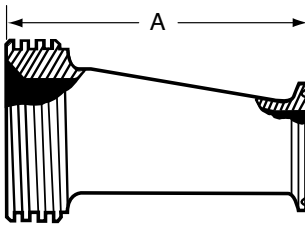
**Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.**

**EG31TC - ADAPTER REDUCER (Concentric)**



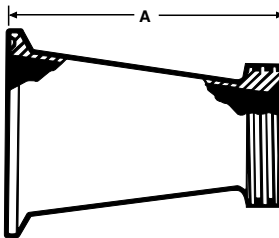
Size Tube OD	A
1 1/2 x 1	3.187
2 x 1	5.218
2 x 1 1/2	3.218
2 1/2 x 1 1/2	5.343
2 1/2 x 2	3.343
3 x 2	5.437
3 x 2 1/2	3.437
4 x 2 1/2	7.500
4 x 3	5.500

**EG32TC - ADAPTER REDUCER (Eccentric)**



Size Tube OD	A
1 1/2 x 1	3.187
2 x 1	5.218
2 x 1 1/2	3.218
2 1/2 x 1 1/2	5.343
2 1/2 x 2	3.343
3 x 2	5.437
3 x 2 1/2	3.437
4 x 2 1/2	7.500
4 x 3	5.500

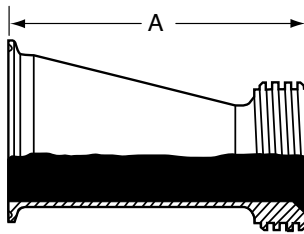
**EG31CT - ADAPTER REDUCER (Concentric)**



Size Tube OD	A
1 1/2 x 1	3.187
2 x 1	5.187
2 x 1 1/2	3.187
2 1/2 x 1 1/2	5.187
2 1/2 x 2	3.218
3 x 1 1/2	7.187
3 x 2	5.218
3 x 2 1/2	3.343
4 x 2	9.343
4 x 2 1/2	7.468
4 x 3	5.562

Note: One inch fittings take 1 1/2" clamps.  
Fractional fittings take 3/4" clamps.

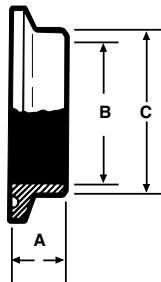
**EG32CT - ADAPTER REDUCER (Eccentric)**



Size Tube OD	A
1 1/2 x 1	3.187
2 x 1	5.187
2 x 1 1/2	3.187
2 1/2 x 1 1/2	5.187
2 1/2 x 2	3.218
3 x 1 1/2	7.187
3 x 2	5.218
3 x 2 1/2	3.343
4 x 2	9.343
4 x 2 1/2	7.468
4 x 3	5.562

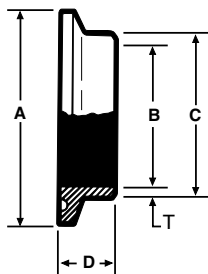
**CLAMP FITTINGS SCHEDULE 5 & 10**

**EG2CS-5-6L - FERRULE**



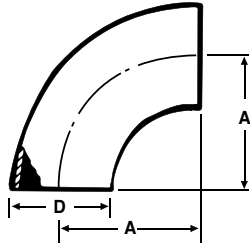
Size Pipe	A	B	C	Nom. Wall
1	0.500	1.185	1.315	0.065
1 1/2	0.500	1.770	1.900	0.065
2	0.500	2.245	2.375	0.065
2 1/2	0.500	2.709	2.875	0.083
3	0.500	3.334	3.500	0.083
4	0.625	4.334	4.500	0.083

**EG2CS-10-6L - FERRULE**



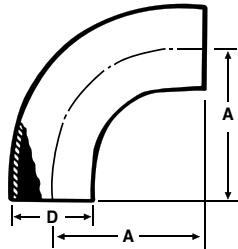
Size Pipe	A	B	C	D	Nom. Wall
1/2	1.984	0.674	0.840	0.500	0.083
3/4	1.984	0.884	1.050	0.500	0.083
1	1.984	1.097	1.315	0.500	0.109
1 1/2	2.516	1.682	1.900	0.500	0.109
2	3.047	2.157	2.375	0.500	0.109
2 1/2	3.579	2.635	2.875	0.500	0.120
3	4.125	3.260	3.500	0.500	0.120
4	5.125	4.260	4.500	0.625	0.120

## 2WCL - 90° ELBOW SHORT TANGENT



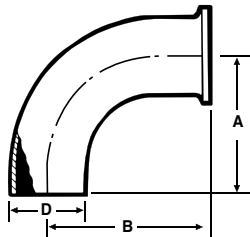
Size Tube OD	A	D	Nom. Wall
1	1.500	1.000	0.065
1 1/4	1.875	1.250	0.065
1 1/2	2.250	1.500	0.065
2	3.000	2.000	0.065
2 1/2	3.750	2.500	0.065
3	4.500	3.000	0.065
4	6.000	4.000	0.083
6	9.000	6.000	0.109
8	12.000	8.000	0.109

## E2S - 90° ELBOW



Size Tube OD	A	D	Nom. Wall
1	2.062	1.000	0.065
1 1/2	2.937	1.500	0.065
2	4.062	2.000	0.065
2 1/2	5.187	2.500	0.065
3	6.312	3.000	0.065
4	8.312	4.000	0.083

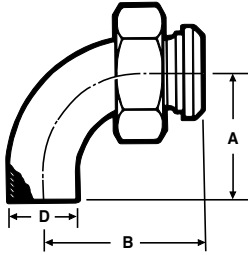
## E2C - 90° ELBOW



Size Tube OD	A	B	D	Nom. Wall
1	2.062	2.562	1.000	0.065
1 1/2	2.935	3.437	1.500	0.065
2	4.062	4.562	2.000	0.065
2 1/2	5.187	5.687	2.500	0.065
3	6.312	6.812	3.000	0.065
4	8.312	8.937	4.000	0.083
6	9.000	9.875	6.000	0.109

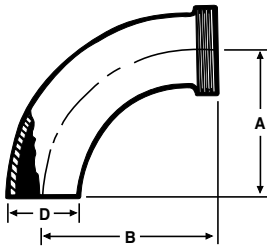


**E2F - 90° ELBOW**



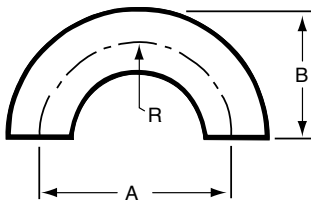
Size Tube OD	A	B	D	Nom. Wall
1	2.062	2.750	1.000	0.065
1 1/2	2.937	3.656	1.500	0.065
2	4.062	4.781	2.000	0.065
2 1/2	5.187	6.031	2.500	0.065
3	6.937	7.218	3.000	0.065
4	8.937	9.531	4.000	0.083

**E2T - 90° ELBOW**



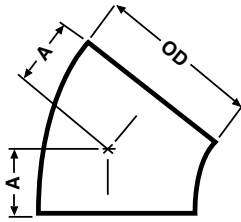
Size Tube OD	A	B	D	Nom. Wall
1	2.062	2.750	1.000	0.065
1 1/2	2.937	3.656	1.500	0.065
2	4.062	4.781	2.000	0.065
2 1/2	5.187	6.031	2.500	0.065
3	6.937	7.218	3.000	0.065
4	8.937	9.531	4.000	0.083

**E2WU - 180° U BEND**



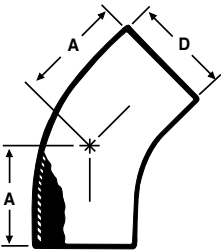
Size Tube OD	A	B	C	R	Nom. Wall
1/2	1.500	1.000	0.500	0.750	0.065
3/4	2.250	1.500	0.750	1.125	0.065
1	3.000	2.000	1.000	1.500	0.065
1 1/4	3.750	2.500	1.250	1.875	0.065
1 1/2	4.500	3.000	1.500	2.250	0.065
2	6.000	4.000	2.000	3.000	0.065
2 1/2	7.500	5.000	2.500	3.750	0.065
3	9.000	6.000	3.000	4.500	0.065
4	12.000	8.000	4.000	6.000	0.083
6	18.000	12.000	6.000	9.000	0.109

### E2WK - 45° ELBOW SHORT TANGENT



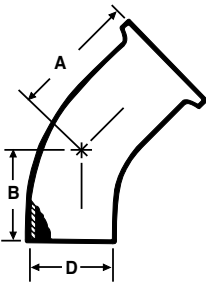
Size Tube OD	A	Nom. Wall
1/2	0.312	0.065
3/4	0.468	0.065
1	0.625	0.065
1 1/4	0.781	0.065
1 1/2	0.937	0.065
2	1.250	0.065
2 1/2	1.562	0.065
3	1.875	0.065
4	2.500	0.083
6	3.750	0.109
8	5.000	0.109

### E2KS - 45° ELBOW



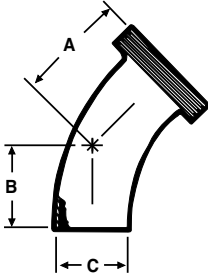
Size Tube OD	A	D	Nom. Wall
1	1.187	1.000	0.065
1 1/2	1.625	1.500	0.065
2	2.312	2.000	0.065
2 1/2	3.000	2.500	0.065
3	3.687	3.000	0.065
4	4.812	4.000	0.083

### E2KC - 45° ELBOW



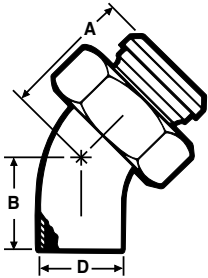
Size Tube OD	A	B	D	Nom. Wall
1	1.687	1.187	1.000	0.065
1 1/2	2.125	1.625	1.500	0.065
2	2.812	2.312	2.000	0.065
2 1/2	3.500	3.000	2.500	0.065
3	4.187	3.687	3.000	0.065
4	5.437	4.812	4.000	0.083
6	6.625	6.000	6.000	0.109

**E2KT - 45° ELBOW**



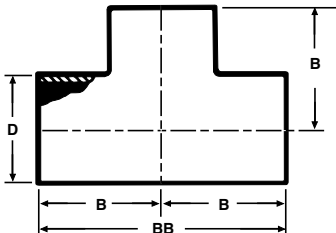
Size Tube OD	A	B	C	Nom. Wall
1	1.875	1.187	1.000	0.065
1 1/2	2.343	1.625	1.500	0.065
2	3.031	2.312	2.000	0.065
2 1/2	3.843	3.000	2.500	0.065
3	4.593	3.687	3.000	0.065
4	6.031	4.812	4.000	0.083

**E2KP - 45° ELBOW**



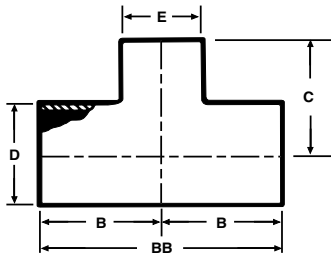
Size Tube OD	A	B	D	Nom. Wall
1	1.875	1.187	1.000	0.065
1 1/2	2.343	1.625	1.500	0.065
2	3.031	2.312	2.000	0.065
2 1/2	3.843	3.000	2.500	0.065
3	4.593	3.687	3.000	0.065
4	6.031	4.812	4.000	0.083

**E7WWW - TEE**



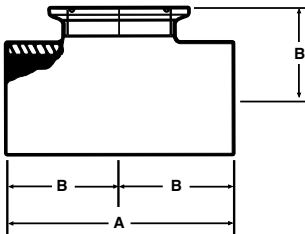
Size Tube OD	B	BB	D	Nom. Wall
1	1.125	2.250	1.000	0.065
1 1/4	2.250	4.500	1.250	0.065
1 1/2	1.656	3.312	1.500	0.065
2	2.062	4.125	2.000	0.065
2 1/2	2.343	4.687	2.500	0.065
3	2.593	5.187	3.000	0.065
4	3.437	6.875	4.000	0.083
6	5.625	11.250	6.000	0.109
8	7.000	14.000	8.000	0.109

**E7RWWW - REDUCING TEE**



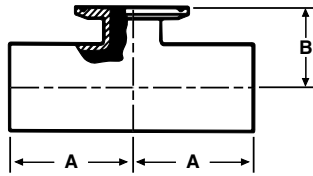
Size Tube OD	B	BB	C	D	E	Nom. Wall
1 1/2 x 1	1.656	3.312	1.375	1.500	1.000	0.065
1 1/2 x 1 1/4	2.250	4.500	2.250	1.500	1.250	0.065
2 x 1	2.062	4.125	1.906	2.000	1.000	0.065
2 x 1 1/2	2.062	4.125	1.906	2.000	1.500	0.065
2 1/2 x 1	2.343	4.681	3.125	2.500	1.000	0.065
2 1/2 x 1 1/2	2.343	4.687	3.125	2.500	1.500	0.065
2 1/2 x 2	2.343	4.687	2.312	2.500	2.000	0.065
3 x 1	2.593	5.189	2.906	3.000	1.000	0.065
3 x 1 1/2	2.293	5.189	2.906	3.000	1.500	0.065
3 x 2	2.593	5.187	2.562	3.000	2.000	0.065
3 X 2 1/2	2.593	5.187	2.562	3.000	2.500	0.065
4 x 1 1/2	3.437	6.875	4.906	4.000	1.500	0.083 x 0.065
4 x 2	3.437	6.875	5.062	4.000	2.000	0.083 x 0.065
4 x 2 1/2	3.437	6.875	5.093	4.000	2.500	0.083 x 0.065
4 x 3	3.437	6.875	5.093	4.000	3.000	0.083 x 0.065
6 x 2	5.625	11.250	5.625	6.000	2.000	0.109 x 0.065
6 x 3	5.625	11.250	5.625	6.000	3.000	0.109 x 0.065
6 x 4	5.625	11.250	5.625	6.000	4.000	0.109 x 0.083

**E7WWCS - SHORT CLAMP BRANCH TEE**



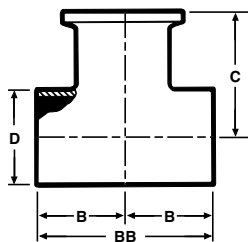
Size Tube OD	A	B	Nom. Wall
1	4.250	2.125	.065
1 1/2	4.750	2.375	.065
2	5.750	2.875	.065
2 1/2	6.250	3.125	.065
3	6.750	3.375	.065
4	8.250	4.125	.083
6	11.250	5.625	.109

**E7RWWCS - REDUCING SHORT CLAMP BRANCH TEE**



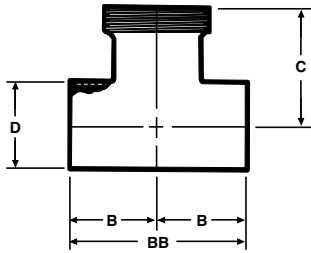
Size Tube OD	A	B	Nom. Wall
3/4 x 1/2	2.000	1.000	0.065
1 x 1/2	2.120	1.120	0.065
1 x 3/4	2.120	1.120	0.065
1 1/2 x 1/2	2.370	1.370	0.065
1 1/2 x 3/4	2.370	1.370	0.065
1 1/2 x 1	2.370	1.370	0.065
2 x 1/2	2.870	1.620	0.065
2 x 3/4	2.870	1.620	0.065
2 x 1	2.870	1.620	0.065
2 x 1 1/2	2.870	1.620	0.065
2 1/2 x 1/2	3.120	1.870	0.065
2 1/2 x 3/4	3.120	1.870	0.065
2 1/2 x 1	3.120	1.870	0.065
2 1/2 x 1 1/2	3.120	1.870	0.065
2 1/2 x 2	3.120	1.870	0.065
3 x 1/2	3.370	2.120	0.065
3 x 3/4	3.370	2.120	0.065
3 x 1	3.370	2.120	0.065
3 x 1 1/2	3.370	2.120	0.065
3 x 2	3.370	2.120	0.065
3 x 2 1/2	3.370	2.120	0.065
4 x 1/2	4.120	2.620	0.083
4 x 3/4	4.120	2.620	0.083
4 x 1	4.120	2.620	0.083
4 x 1 1/2	4.120	2.620	0.083
4 x 2	4.120	2.620	0.083
4 x 2 1/2	4.120	2.620	0.083
4 x 3	4.120	2.620	0.083
6 x 4	5.630	3.750	0.109

**E7WWC - TEE WELD X WELD X CLAMP**



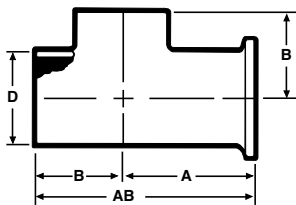
Size Tube OD	B	BB	C	D	Nom. Wall
1	1.125	2.250	1.625	1.000	0.065
1 1/2	1.656	3.312	2.156	1.500	0.065
2	2.062	4.125	2.562	2.000	0.065
2 1/2	2.343	4.687	2.843	2.500	0.065
3	2.593	5.187	3.093	3.000	0.065
4	3.625	7.250	4.656	4.000	0.083
6	5.625	11.250	6.500	6.000	0.109

### E7WWT - TEE WELD X WELD X THREAD



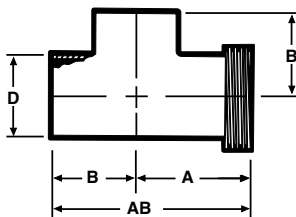
Size Tube OD	B	BB	C	D	Nom. Wall
1	1.125	2.250	1.812	1.000	0.065
1 1/2	1.656	3.312	2.375	1.500	0.065
2	2.062	4.125	2.781	2.000	0.065
2 1/2	2.343	4.687	3.187	2.500	0.065
3	2.593	5.187	3.500	3.000	0.065
4	3.625	7.250	4.656	4.000	0.083

### E7WCW - TEE WELD X CLAMP X WELD



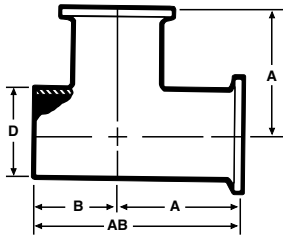
Size Tube OD	A	B	AB	D	Nom. Wall
1	1.625	1.125	2.750	1.000	0.065
1 1/2	2.156	1.656	3.812	1.500	0.065
2	2.562	2.062	4.625	2.000	0.065
2 1/2	2.843	2.343	5.187	2.500	0.065
3	3.093	2.593	5.687	3.000	0.065
4	4.250	3.625	7.875	4.000	0.083
6	6.500	5.625	12.125	6.000	0.109

### E7WTW - TEE THREADED ONE END - WELD X THREAD X WELD



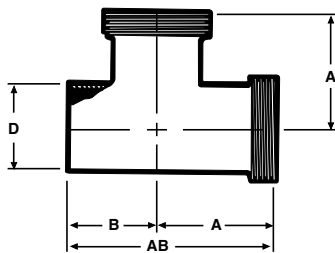
Size Tube OD	A	B	AB	D	Nom. Wall
1	1.812	1.125	2.937	1.000	0.065
1 1/2	2.375	1.656	4.031	1.500	0.065
2	2.781	2.062	4.843	2.000	0.065
2 1/2	3.187	2.343	5.531	2.500	0.065
3	3.500	2.593	6.093	3.000	0.065
4	4.656	3.625	8.281	4.000	0.083

**E7WCC - TEE WELD X CLAMP X CLAMP**



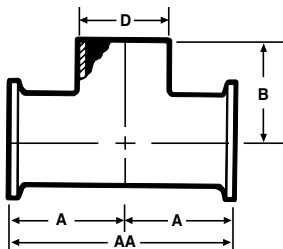
Size Tube OD	A	B	AB	D	Nom. Wall
1	1.625	1.125	2.750	1.000	0.065
1 1/2	2.156	1.656	3.812	1.500	0.065
2	2.562	2.062	4.625	2.000	0.065
2 1/2	2.843	2.343	5.187	2.500	0.065
3	3.093	2.593	5.687	3.000	0.065
4	4.250	3.625	7.875	4.000	0.083
6	6.500	5.625	12.125	6.000	0.109

**E7WTT - TEE WELD X THREAD X THREAD**



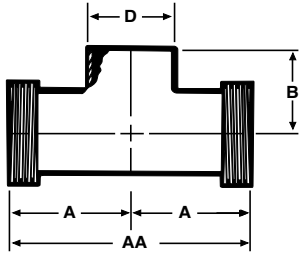
Size Tube OD	A	B	AB	D	Nom. Wall
1	1.812	1.125	2.937	1.000	0.065
1 1/2	2.375	1.656	4.031	1.500	0.065
2	2.781	2.062	4.843	2.000	0.065
2 1/2	3.187	2.343	5.531	2.500	0.065
3	3.500	2.593	6.093	3.000	0.065
4	4.656	3.625	8.281	4.000	0.083

**E7CCW - TEE CLAMP X CLAMP X WELD**



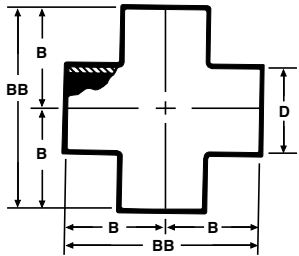
Size Tube OD	A	AA	B	D	Nom. Wall
1	1.625	3.250	1.125	1.000	0.065
1 1/2	2.562	4.312	1.656	1.500	0.065
2	2.562	5.125	2.062	2.000	0.065
2 1/2	2.843	5.687	2.343	2.500	0.065
3	3.093	6.187	2.593	3.000	0.065
4	4.250	8.500	3.625	4.000	0.083
6	6.500	13.000	5.625	6.000	0.109

### E7TTW - TEE THREAD X THREAD X WELD



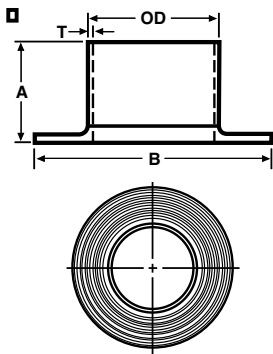
Size Tube OD	A	AA	B	D	Nom. Wall
1	1.812	3.625	1.125	1.000	0.065
1 1/2	2.375	4.750	1.656	1.500	0.065
2	2.781	5.562	2.062	2.000	0.065
2 1/2	3.187	6.375	2.343	2.500	0.065
3	3.500	7.000	2.593	3.000	0.065
4	4.656	9.312	3.625	4.000	0.083

### E9WWW - CROSS



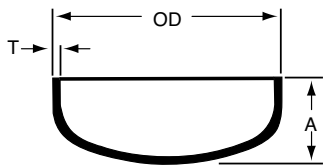
Size Tube OD	B	BB	D	Nom. Wall
1	1.125	2.250	1.000	.065
1 1/2	1.656	3.312	1.500	.065
2	2.062	4.125	2.000	.065
2 1/2	2.343	4.687	2.500	.065
3	2.593	5.187	3.000	.065
4	3.437	6.875	4.000	.083
6	5.625	11.250	6.000	.109

### E14WA - TYPE A STUB END WITH GROOVES



Size Tube OD	A	B	Nom. Wall ( T )
1/2	1.375	1.625	0.065
3/4	1.375	1.687	0.065
1	1.625	2.000	0.065
1 1/4	1.625	2.500	0.065
1 1/2	1.750	2.875	0.065
2	1.500	3.625	0.065
2 1/2	2.000	4.125	0.065
3	2.000	5.000	0.065
4	2.625	6.187	0.083
6	3.000	8.500	0.109

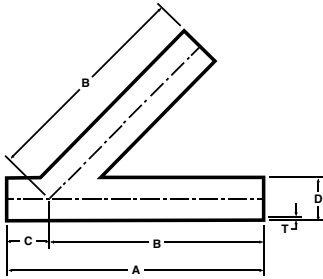
### E16W - WELD CAP



Size Tube OD	A	Nom. Wall ( T )
1	0.375	0.065
1 1/4	0.500	0.065
1 1/2	0.562	0.065
2	0.750	0.065
2 1/2	1.000	0.065
3	1.250	0.065
4	1.500	0.083
6	2.000	0.109

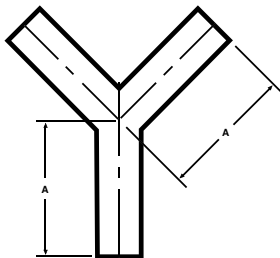


**E28WA - 45° LATERAL**



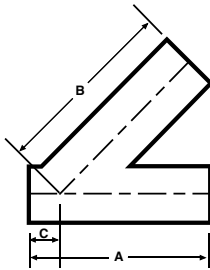
Size Tube OD	A	B	C	D	Nom. Wall (T)
1	6.000	5.000	1.000	1.000	0.065
1 1/2	7.375	6.187	1.187	1.500	0.065
2	8.625	7.125	1.500	2.000	0.065
2 1/2	10.125	8.500	1.625	2.500	0.065
3	10.750	8.875	1.875	3.000	0.065
4	12.812	10.750	2.062	4.000	0.083
6	18.000	14.500	3.500	6.000	0.109

**E28WB - TRUE Y**



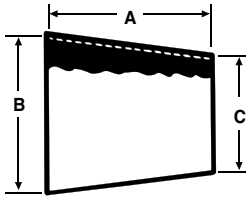
Size Tube OD	A	Nom. Wall
1	3.000	0.065
1 1/2	3.000	0.065
2	4.000	0.065
2 1/2	5.000	0.065
3	6.000	0.065
4	8.000	0.083
6	8.000	0.109

**E28RWA - 45° REDUCING LATERAL**



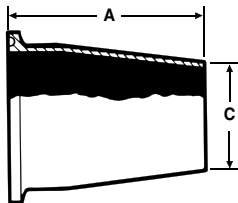
Size Tube OD	A	B	C	Nom. Wall
1 1/2 x 1	7.375	6.187	1.187	0.065
2 x 1	8.625	7.125	1.625	0.065
2 x 1 1/2	8.625	7.125	1.625	0.065
2 1/2 x 1	10.125	8.500	1.500	0.065
2 1/2 x 1 1/2	10.125	8.500	1.500	0.065
2 1/2 x 2	10.125	8.500	1.500	0.065
3 x 1	10.750	8.875	1.875	0.065
3 x 1 1/2	10.750	8.875	1.875	0.065
3 x 2	10.750	8.875	1.875	0.065
3 x 2 1/2	10.750	8.875	1.875	0.065
4 x 1	12.812	10.750	2.062	0.083 x .065
4 x 1 1/2	12.812	10.750	2.062	0.083 x .065
4 x 2	12.812	10.750	2.062	0.083 x .065
4 x 2 1/2	12.812	10.750	2.062	0.083 x .065
4 x 3	12.812	10.750	2.062	0.083 x .065

**E31WW - CONCENTRIC REDUCER**



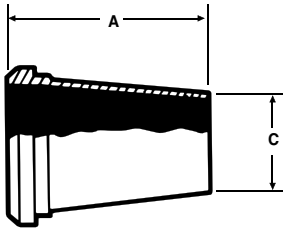
Size Tube OD	A	B	C	Nom. Wall
3/4 x 1/2	*	0.750	0.500	0.065
1 x 1/2	*	1.000	0.500	0.065
1 x 3/4	*	1.000	0.750	0.065
1 1/2 x 1/2	*	1.500	0.500	0.065
1 1/2 x 3/4	*	1.500	0.750	0.065
1 1/2 x 1	2.000	1.500	1.000	0.065
1 1/2 x 1 1/4	1.000	1.500	1.250	0.065
2 x 1	4.000	2.000	1.000	0.065
2 x 1 1/4	3.000	2.000	1.250	0.065
2 x 1 1/2	2.000	2.000	1.500	0.065
2 1/2 x 1 1/2	4.000	2.500	1.500	0.065
2 1/2 x 2	2.000	2.500	2.000	0.065
3 x 1 1/2	6.000	3.000	1.500	0.065
3 x 2	4.000	3.000	2.000	0.065
3 x 2 1/2	2.000	3.000	2.500	0.065
4 x 2	8.000	4.000	2.000	0.083 x .065
4 x 2 1/2	6.000	4.000	2.500	0.083 x .065
4 x 3	4.000	4.000	3.000	0.083 x .065
6 x 2	5.500	6.000	2.000	0.109 x .065
6 x 3	5.500	6.000	3.000	0.109 x .083
6 x 4	5.500	6.000	4.000	0.109 x .083

**E31CW - CONCENTRIC REDUCER CLAMP X WELD**



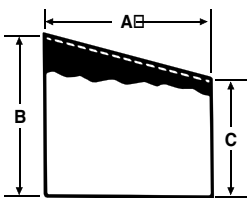
Size Tube OD	A	C	Nom. Wall
1 1/2 x 1	2.500	1.000	0.065
2 x 1 1/2	2.500	1.500	0.065
2 1/2 x 1 1/2	4.500	1.500	0.065
2 1/2 x 2	2.500	2.000	0.065
3 x 2	4.500	2.000	0.065
3 x 2 1/2	2.500	2.500	0.065
4 x 2	8.625	2.000	0.065
4 x 2 1/2	6.625	2.500	0.065
4 x 3	4.625	3.000	0.065
6 x 4	6.375	4.000	0.083

**E31PW - CONCENTRIC REDUCER PLAIN BEVEL X WELD**



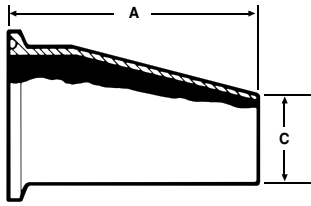
Size Tube OD	A	C	Nom. Wall
1 1/2 x 1	2.687	1.000	0.065
2 x 1 1/2	2.718	1.500	0.065
2 1/2 x 1 1/2	4.843	1.500	0.065
2 1/2 x 2	2.843	2.000	0.065
3 x 2	4.937	2.000	0.065
3 x 2 1/2	2.937	2.500	0.065
4 x 2	9.000	2.000	0.065
4 x 2 1/2	7.000	2.500	0.065
4 x 3	5.000	3.000	0.065

**E32WW - ECCENTRIC REDUCER**



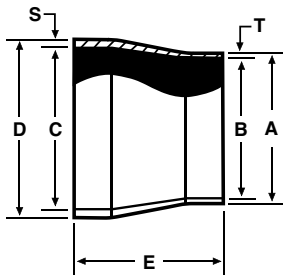
Size Tube OD	A	B	C	Nom. Wall
3/4 x 1/2	*	0.750	0.500	0.065
1 x 1/2	*	1.000	0.500	0.065
1 x 3/4	*	1.000	0.750	0.065
1 1/2 x 1/2	*	1.500	0.500	0.065
1 1/2 x 3/4	*	1.500	0.750	0.065
1 1/2 x 1	2.000	1.500	1.000	0.065
1 1/2 x 1 1/4	1.000	1.500	1.250	0.065
2 x 1	4.000	2.000	1.250	0.065
2 x 1 1/4	3.000	2.000	1.250	0.065
2 x 1 1/2	2.000	2.000	1.500	0.065
2 1/2 x 1 1/2	4.000	2.500	1.500	0.065
2 1/2 x 2	2.000	2.500	2.000	0.065
3 x 2	4.000	3.000	2.000	0.065
3 x 2 1/2	2.000	3.000	2.500	0.065
4 x 2	8.000	4.000	2.000	0.083 x .065
4 x 2 1/2	6.000	4.000	2.500	0.083 x .065
4 x 3	4.000	4.000	3.000	0.083 x .065
6 x 2	5.500	6.000	2.000	0.109 x .065
6 x 3	5.500	6.000	3.000	0.109 x .083
6 x 4	5.500	6.000	4.000	0.109 x .083

**E32CW - ECCENTRIC REDUCER CLAMP X WELD**



Size Tube OD	A	C	Nom. Wall
1 1/2 X 1	2.500	1.000	0.065
2 x 1 1/2	2.500	1.500	0.065
2 1/2 x 1 1/2	4.500	1.500	0.065
2 1/2 x 2	2.500	2.000	0.065
3 x 2	4.500	2.000	0.065
3 x 2 1/2	2.500	2.500	0.065
4 x 2	8.625	2.000	0.065
4 x 2 1/2	6.625	2.500	0.065
4 x 3	4.625	3.000	0.065
6 x 4	6.375	4.000	0.083

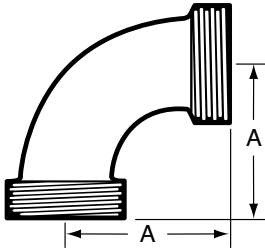
**E17WW-6L - TUBE X PIPE ADAPTER**



Size Tube OD	A	B	SCH5 C	SCH10 C	SCH40 C	D
1/2	0.500	0.370	0.710	0.674	0.622	0.840
3/4	0.750	0.620	0.920	0.884	0.824	1.050
1	1.000	0.870	1.185	1.097	1.049	1.315
1 1/2	1.500	1.370	1.770	1.682	1.610	1.900
2	2.000	1.870	2.245	2.157	2.067	2.375
2 1/2	2.500	2.370	2.709	2.635	2.469	2.875
3	3.000	2.870	3.334	3.260	3.068	3.500
4	4.000	3.834	4.334	4.260	4.026	4.500
6	6.000	5.782	6.407	6.357	6.065	6.625

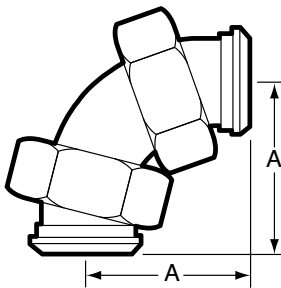
Size Tube OD	E	T	SCH5 S	SCH10 S	SCH40 S
1/2	1.000	0.065	0.065	0.083	0.109
3/4	1.000	0.065	0.065	0.083	0.113
1	1.000	0.065	0.065	0.109	0.133
1 1/2	1.500	0.065	0.065	0.109	0.145
2	1.500	0.065	0.065	0.109	0.154
2 1/2	1.500	0.065	0.083	0.120	0.203
3	2.000	0.065	0.083	0.120	0.216
4	2.000	0.083	0.083	0.120	0.237
6	3.000	0.109	0.109	0.134	0.280

**2C - 90° ELBOW THREADED**



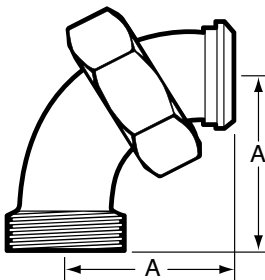
Size Tube OD	A
1	2.187
1 1/2	2.937
2	3.718
2 1/2	4.593
3	5.437
4	7.000

**2E - 90° ELBOW BEVEL SEAT WITH 13H NUT**



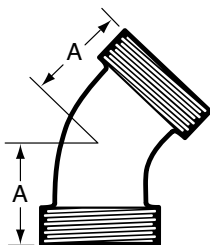
Size Tube OD	A
1	2.000
1 1/2	2.875
2	3.718
2 1/2	4.843
3	5.906
4	8.062

**2F - 90° ELBOW THREADED X 13H NUT**



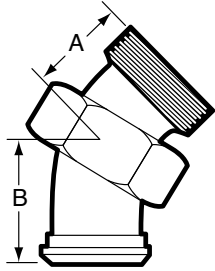
Size Tube OD	A
1	2.000
1 1/2	2.875
2	3.718
2 1/2	4.843
3	5.906
4	8.062

**2K - 45° ELBOW THREADED**



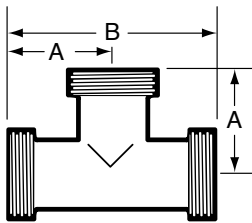
Size Tube OD	A
1	2.000
1 1/2	2.312
2	2.687
2 1/2	3.250
3	3.750
4	4.500

**2P - 45° ELBOW 13H NUT X THREAD**



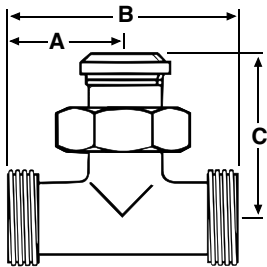
Size Tube OD	A	B
1	1.312	2.000
1 1/2	1.625	2.437
2	1.937	2.750
2 1/2	2.375	3.312
3	2.812	3.625
4	3.500	4.250

**7 - TEE ALL ENDS THREADED**



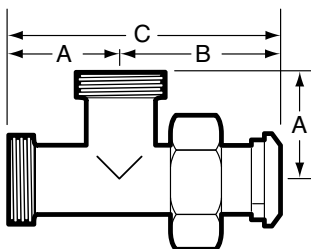
Size Tube OD	A	B
1	1.812	3.625
1 1/2	2.375	4.750
2	2.781	5.437
2 1/2	3.187	6.375
3	3.500	7.000
4	4.656	9.312

**7A - TEE THREADED X THREADED X 13H NUT**



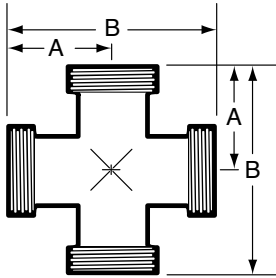
Size Tube OD	A	B	C
1	1.812	3.625	2.500
1 1/2	2.375	4.750	3.125
2	2.781	5.437	3.562
2 1/2	3.187	6.375	4.062
3	3.500	7.000	4.312
4	4.656	9.312	5.375

**7B - TEE THREADED X 13H NUT X THREADED**



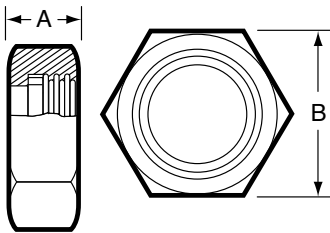
Size Tube OD	A	B	C
1	1.182	2.500	4.313
1 1/2	2.375	3.125	5.500
2	2.781	3.562	6.343
2 1/2	3.187	4.062	7.250
3	3.500	4.312	7.812
4	4.656	5.375	10.031

**9 - CROSS THREADED**



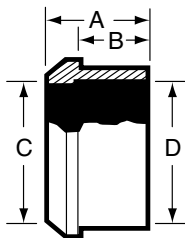
Size Tube OD	A	B
1	1.812	3.625
1 1/2	2.375	4.750
2	2.781	5.437
2 1/2	3.187	6.375
3	3.500	7.000
4	4.656	9.312

**13H - HEX UNION NUT**



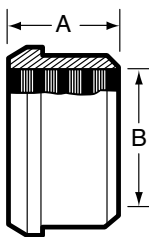
Size Tube OD	A	B
1	0.906	1.812
1 1/2	0.968	2.406
2	1.062	3.000
2 1/2	1.187	3.593
3	1.281	4.187
4	1.500	5.437

**14 - PLAIN RECESSED FERRULE (T316L Material Only)**



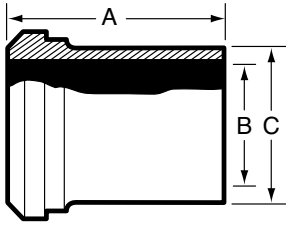
Size Tube OD	A	B	C	D
1	0.750	0.500	0.870	1.000
1 1/2	0.875	0.625	1.370	1.500
2	0.968	0.687	1.870	2.000
2 1/2	1.062	0.750	2.370	2.500
3	1.125	0.812	2.870	3.000
4	1.250	0.812	3.834	4.000

**14R - PLAIN RECESSLESS FERRULE (Expanding)**



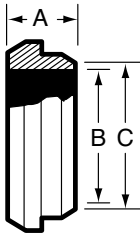
Size Tube OD	A	B
1	0.750	1.000
1 1/2	1.125	1.500
2	1.312	2.000
2 1/2	1.375	2.500
3	1.437	3.000
4	1.500	4.000

## 14A - PLAIN WELDING FERRULE



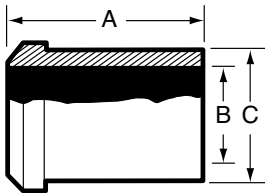
Size Tube OD	A	B	C
1	1.375	0.870	1.000
1 1/2	1.500	1.370	1.500
2	1.500	1.870	2.000
2 1/2	1.750	2.370	2.500
3	1.750	2.870	3.000
4	1.750	3.834	4.000

## 14PR - SHORT PLAIN WELDING FERRULE



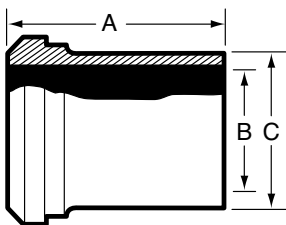
Size Tube OD	A	B	C
1	0.687	0.870	1.000
1 1/2	0.687	1.370	1.500
2	0.718	1.870	2.000
2 1/2	0.843	2.370	2.500
3	0.937	2.870	3.000
4	1.000	3.834	4.000

## 14W - TANK WELDING PLAIN FERRULE



Size Tube OD	A	B	C
1	2.375	0.870	1.156
1 1/2	2.531	1.370	1.671
2	2.781	1.870	2.187
2 1/2	3.062	2.370	2.703
3	3.531	2.870	3.218
4	4.312	3.834	4.250

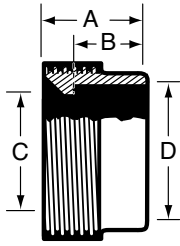
## 14WL - LONG PLAIN WELDING FERRULE



Size Tube OD	A	B	C
1	2.000	0.870	1.000
1 1/2	2.250	1.370	1.500
2	2.500	1.870	2.000
2 1/2	2.750	2.370	2.500
3	3.000	2.870	3.000
4	4.000	3.834	4.000

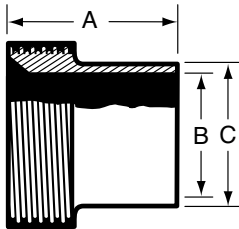


**15 - THREADED RECESSED FERRULE (T316L Material Only)**



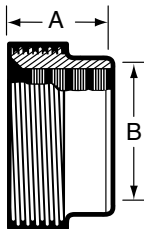
Size Tube OD	A	B	C	D
1	1.187	0.500	0.870	1.000
1 1/2	0.875	0.625	1.370	1.500
2	1.031	0.687	1.870	2.000
2 1/2	1.125	0.750	2.370	2.500
3	1.250	0.812	2.870	3.000
4	1.375	0.937	3.834	4.000

**15A - THREADED WELDING FERRULE**



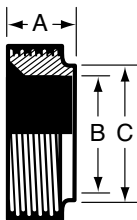
Size Tube OD	A	B	C
1	1.375	0.870	1.000
1 1/2	1.500	1.370	1.500
2	1.500	1.870	2.000
2 1/2	1.750	2.370	2.500
3	1.750	2.870	3.000
4	1.750	3.834	4.000

**15R - THREADED RECESSLESS FERRULE (Expanding)**



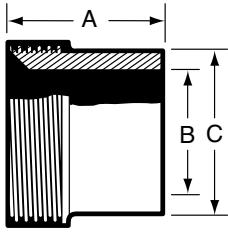
Size Tube OD	A	B
1	0.812	1.000
1 1/2	1.125	1.500
2	1.375	2.000
2 1/2	1.500	2.500
3	1.625	3.000
4	1.625	4.000

**15TR - SHORT THREADED WELDING FERRULE**



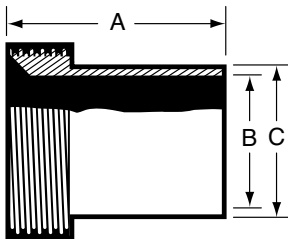
Size Tube OD	A	B	C
1	0.687	0.870	1.000
1 1/2	0.687	1.370	1.500
2	0.718	1.870	2.000
2 1/2	0.843	2.370	2.500
3	0.937	2.870	3.000
4	1.000	3.834	4.000

## 15W - TANK WELDING FERRULE



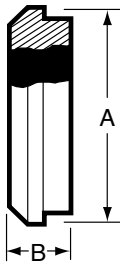
Size Tube OD	A	B	C
1	1.500	0.870	1.250
1 1/2	1.625	1.370	1.750
2	1.750	1.870	2.312
2 1/2	1.750	2.370	2.875
3	1.812	2.870	3.375
4	2.125	3.834	4.250

## 15WL - LONG WELDING FERRULE



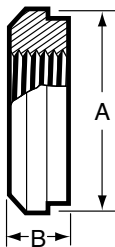
Size Tube OD	A	B	C
1	2.000	0.870	1.000
1 1/2	2.250	1.370	1.500
2	2.500	1.870	2.000
2 1/2	2.750	2.370	2.500
3	3.000	2.870	3.000
4	4.000	3.834	4.000

## 16A - PLAIN CAP



Size Tube OD	A	B
1	1.312	0.468
1 1/2	1.843	0.562
2	2.375	0.625
2 1/2	2.906	0.656
3	3.437	0.718
4	4.500	0.812

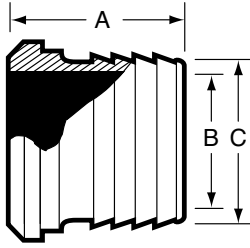
## 23B - TAPPED THERMOMETER CAP



Size Tube OD	A	B
*1	1.312	0.468
1 1/2	1.843	0.562
2	2.375	0.625
2 1/2	2.906	0.656
3	3.437	0.718
4	4.500	0.812

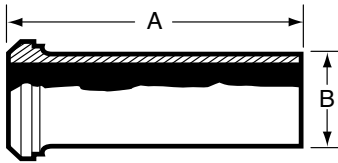
\*1" Standard 1/2" FNPT. All others 3/4".

**14AHR - RUBBER HOSE ADAPTER**



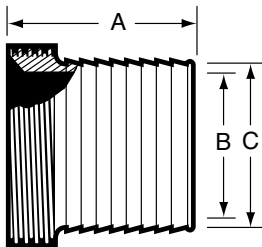
Size Tube OD	A	B	C
1	1.687	0.870	1.000
1 1/2	1.687	1.370	1.500
2	2.312	1.870	2.000
2 1/2	2.343	2.370	2.000
3	3.500	2.870	3.000
4	4.000	3.834	4.000

**14AHT - TYGON HOSE ADAPTER**



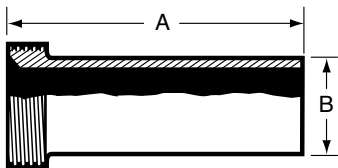
Size Tube OD	A	B
1	4.687	1.000
1 1/2	4.718	1.500
2	4.718	2.000
2 1/2	4.843	2.500
3	4.906	3.000
4	5.218	4.000

**15AHR - THREADED RUBBER HOSE ADAPTER**



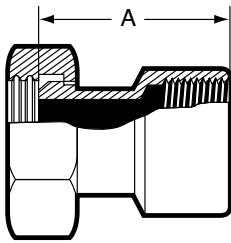
Size Tube OD	A	B	C
1	1.687	0.870	1.000
1 1/2	1.687	1.370	1.500
2	2.312	1.870	2.000
2 1/2	2.343	2.370	2.000
3	3.500	2.870	3.000
4	4.000	3.834	4.000

**15AHT - THREADED TYGON HOSE ADAPTER**



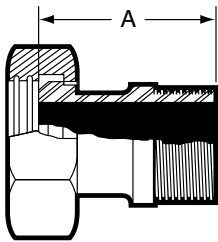
Size Tube OD	A	B
1	4.687	1.000
1 1/2	4.718	1.500
2	4.718	2.000
2 1/2	4.843	2.500
3	4.906	3.000
4	5.218	4.000

### 14-22 - ADAPTER 13H NUT X FNPT



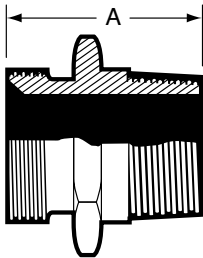
Size Tube OD	A
1	2.500
1 1/2	2.937
2	2.937
2 1/2	3.375
3	3.562
4	3.750

### 14-19 - ADAPTER 13H NUT X MNPT



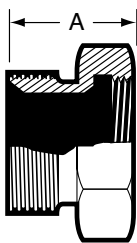
Size Tube OD	A
1	3.125
1 1/2	3.250
2	3.312
2 1/2	4.062
3	4.250
4	4.312

### 21 - ADAPTER ACME THREAD X MNPT



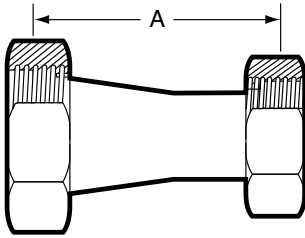
Size Tube OD	A
1	2.437
1 1/2	2.437
2	2.531
2 1/2	3.156
3	3.406
4	3.593

### 22 - ADAPTER ACME THREAD X FNPT



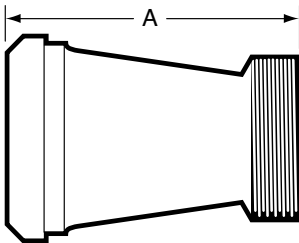
Size Tube OD	A
1	1.937
1 1/2	2.156
2	2.156
2 1/2	2.468
3	2.718
4	3.031

**31-14F - CONCENTRIC REDUCER 13H X 13H**



Size Tube OD	A
1 1/2 x 1	4.062
2 x 1	6.093
2 x 1 1/2	4.218
2 1/2 x 1 1/2	6.343
2 1/2 x 2	4.343
3 x 2	6.437
3 x 2 1/2	4.687
4 x 2 1/2	8.750
4 x 3	6.750

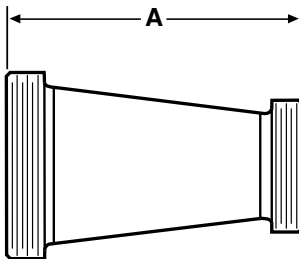
**31-15F - CONCENTRIC REDUCER PLAIN BEVEL X THREAD**



Size Tube OD	A
*1 1/2 x 1	3.375
2 x 1	5.406
2 x 1 1/2	3.406
2 1/2 x 1 1/2	5.531
2 1/2 x 2	3.562
3 x 2	5.656
3 x 2 1/2	3.781
4 x 2 1/2	7.843
4 x 3	5.937

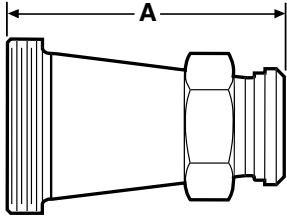
\*Hex Nut included.

**31TT - CONCENTRIC REDUCER THREAD X THREAD**



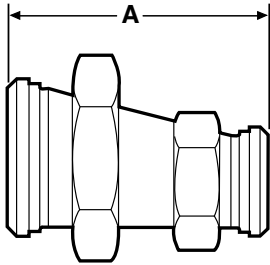
Size Tube OD	A
1 1/2 x 1	3.375
2 x 1	5.406
2 x 1 1/2	3.406
2 1/2 x 1 1/2	5.531
2 1/2 x 2	3.562
3 x 2	5.656
3 x 2 1/2	3.781
4 x 2 1/2	7.843
4 x 3	5.937

**31TP - CONCENTRIC REDUCER THREAD X 13H NUT**



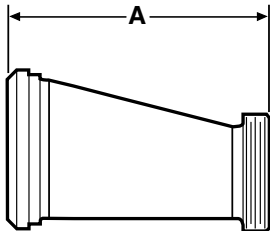
Size Tube OD	A
1 1/2 x 1	4.062
2 x 1	6.093
2 x 1 1/2	4.218
2 1/2 x 1 1/2	6.343
2 1/2 x 2	4.343
3 x 2	6.437
3 x 2 1/2	4.687
4 x 2	10.500
4 x 2 1/2	8.750
4 x 3	6.750

**32-14F - ECCENTRIC REDUCER 13H NUT X 13H NUT**



Size Tube OD	A
1 1/2 x 1	4.062
2 x 1	6.093
2 x 1 1/2	4.218
2 1/2 x 1 1/2	6.143
2 1/2 x 2	4.343
3 x 2	6.437
3 x 2 1/2	4.687
4 x 2	10.500
4 x 2 1/2	8.750
4 x 3	6.750

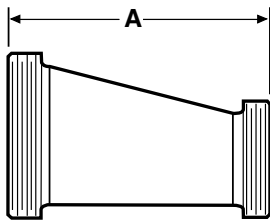
**32-15F - ECCENTRIC REDUCER PLAIN BEVEL X THREAD**



Size Tube OD	A
*1 1/2 x 1	3.375
2 x 1	5.406
2 x 1 1/2	3.406
2 1/2 x 1 1/2	5.531
2 1/2 x 2	3.562
3 x 2	5.656
3 x 2 1/2	3.781
4 x 2	9.718
4 x 2 1/2	7.843
4 x 3	5.937

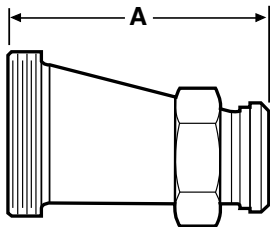
\*Hex Nut included.

**32TT - ECCENTRIC REDUCER THREAD X THREAD**



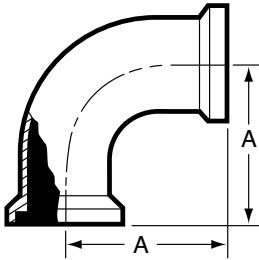
Size Tube OD	A
1 1/2 x 1	3.375
2 x 1	5.406
2 x 1 1/2	3.406
2 1/2 x 1 1/2	5.531
2 1/2 x 2	3.562
3 x 2	5.656
3 x 2 1/2	3.781
4 x 2	9.718
4 x 2 1/2	7.843
4 x 3	5.937

**32TP - ECCENTRIC REDUCER THREAD X 13H NUT**



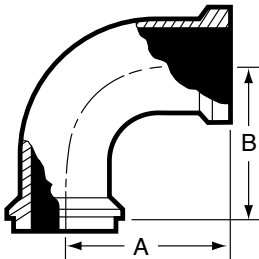
Size Tube OD	A
1 1/2 x 1	4.062
2 x 1	6.093
2 x 1 1/2	4.218
2 1/2 x 1 1/2	6.343
2 1/2 x 2	4.343
3 x 2	6.437
3 x 2 1/2	4.687
4 x 2	10.500
4 x 2 1/2	8.750
4 x 3	6.750

**E2CI - 90° ELBOW FEMALE X FEMALE**



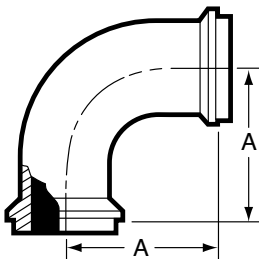
Size Tube OD	A
1	2.281
1 1/2	3.182
2	4.031
2 1/2	4.906
3	5.718
4	7.343
6	10.125

**E2FI - 90° ELBOW MALE X FEMALE**



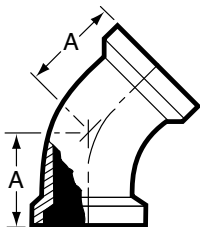
Size Tube OD	A	B
1	2.281	2.093
1 1/2	3.187	3.000
2	4.031	3.781
2 1/2	4.906	4.593
3	5.718	5.406
4	7.343	7.031
6	10.125	9.187

**E2EI - 90° ELBOW MALE X MALE**



Size Tube OD	A
1	2.093
1 1/2	3.000
2	3.781
2 1/2	4.593
3	5.406
4	7.031
6	9.187

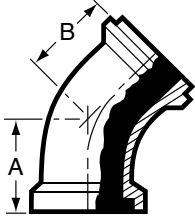
**E2KI - 45° ELBOW FEMALE X FEMALE**



Size Tube OD	A
1	1.406
1 1/2	1.875
2	2.281
2 1/2	2.718
3	3.093
4	3.843
6	4.875

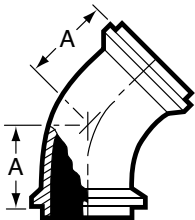


**E2PI - 45° ELBOW FEMALE X MALE**



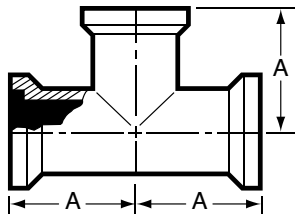
Size Tube OD	A	B
1	1.406	1.218
1 1/2	1.875	1.687
2	2.281	2.031
2 1/2	2.718	2.406
3	3.093	2.781
4	3.843	3.531
6	4.875	4.562

**E2HI - 45° ELBOW MALE X MALE**



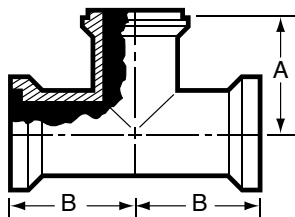
Size Tube OD	A
1	1.218
1 1/2	1.687
2	2.031
2 1/2	2.406
3	2.781
4	3.531
6	4.562

**E7I - TEE ALL ENDS FEMALE**



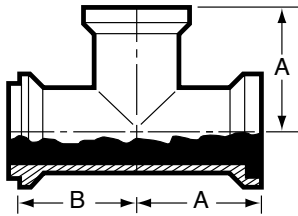
Size Tube OD	A
1	1.875
1 1/2	2.593
2	3.062
2 1/2	3.468
3	3.812
4	4.968
6	6.750

**E7AI - TEE FEMALE X FEMALE X MALE**



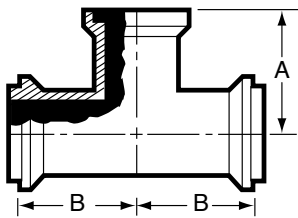
Size Tube OD	A	B
1	1.687	1.875
1 1/2	2.406	2.593
2	2.812	3.062
2 1/2	3.156	3.468
3	3.500	3.812
4	4.656	4.968
6	6.437	6.750

**E7BI - TEE MALE X FEMALE X FEMALE**



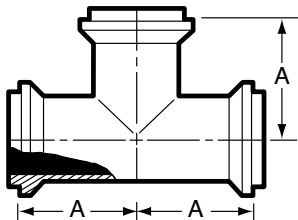
Size Tube OD	A	B
1	1.875	1.687
1 1/2	2.593	2.406
2	3.062	2.812
2 1/2	3.468	3.156
3	3.812	3.500
4	4.968	4.656
6	6.750	6.437

**E7EI - TEE MALE X MALE X FEMALE**



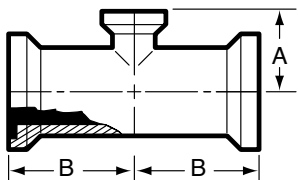
Size Tube OD	A	B
1	1.875	1.687
1 1/2	2.593	2.406
2	3.062	2.812
2 1/2	3.468	3.156
3	3.812	3.500
4	4.968	4.656
6	6.750	6.437

**E7HI - TEE ALL ENDS MALE**



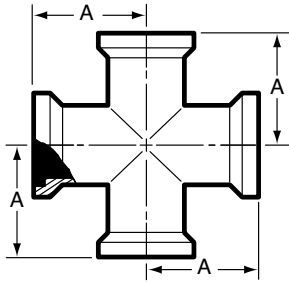
Size Tube OD	A
1	1.687
1 1/2	2.406
2	2.812
2 1/2	3.156
3	3.500
4	4.656
6	6.437

**E7RI - REDUCING TEE ALL ENDS FEMALE**



Size Tube OD	A	B
1 1/2 x 1	2.156	2.593
2 x 1	3.093	4.031
2 x 1 1/2	2.718	3.062
2 1/2 x 1 1/2	4.156	4.000
2 1/2 x 2	3.312	3.500
3 x 2	3.562	3.812
3 x 2 1/2	3.750	3.812
4 x 2	5.031	5.218
4 x 2 1/2	4.906	5.218
4 x 3	4 3/84 29/32	5.218
6 x 3	6.843	6.750
6 x 4	6.968	6.750

**E9I - CROSS ALL ENDS FEMALE**



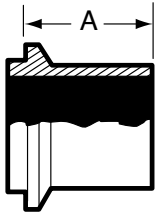
Size Tube OD	A
1	1.875
1 1/2	2.593
2	3.062
2 1/2	3.468
3	3.812
4	4.968
6	6.750

**E14WI - SHORT MALE WELDING FERRULE**



Size Tube OD	A
1	0.593
1 1/2	0.750
2	0.781
2 1/2	0.843
3	0.906
4	1.031
6	0.812

**E14WLI - LONG MALE WELDING FERRULE**



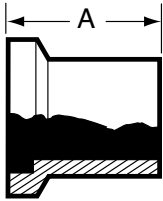
Size Tube OD	A
1	1.563
1 1/2	1.843
2	2.062
2 1/2	2.187
3	2.375
4	2.687
6	3.812

**E15WI - SHORT FEMALE WELDING FERRULE**



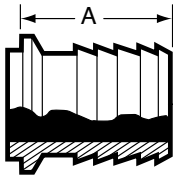
Size Tube OD	A
1	0.781
1 1/2	0.937
2	1.031
2 1/2	1.156
3	1.218
4	1.343
6	1.125

**E15WLI - LONG FEMALE WELDING FERRULE**



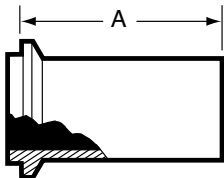
Size Tube OD	A
1	1.750
1 1/2	2.031
2	2.312
2 1/2	2.500
3	2.687
4	3
6	4

**E14HRI - MALE RUBBER HOSE ADAPTER**



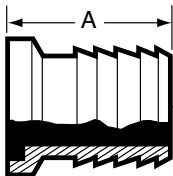
Size Tube OD	A
1	3.562
1 1/2	3.750
2	3.750
2 1/2	3.812
3	3.875
4	4.062
6	8.812

**E14HTI - MALE TYGON HOSE ADAPTER**



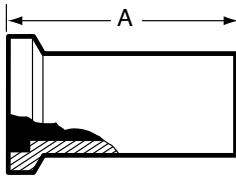
Size Tube OD	A
1	4.062
1 1/2	4.281
2	4.500
2 1/2	4.812
3	5.062
4	5.187

**E15HRI - FEMALE RUBBER HOSE ADAPTER**



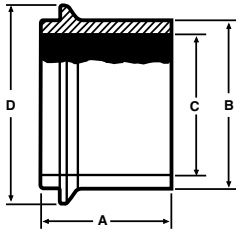
Size Tube OD	A
1	3.750
1 1/2	3.937
2	4.062
2 1/2	4.125
3	4.187
4	4.375
6	9.125

**E15HTI - FEMALE TYGON HOSE ADAPTER**



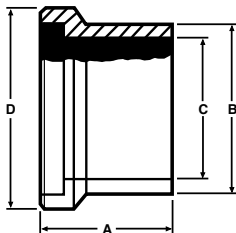
Size Tube OD	A
1	4.250
1 1/2	4.468
2	4.750
2 1/2	5.125
3	5.375
4	5.500

**E14WHI - MALE WELD FERRULE**



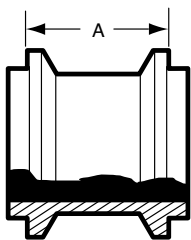
Size Tube OD	A	B	C	D
1	1.625	1.160	0.870	2.000
1 1/2	1.625	1.687	1.370	2.008
2	1.750	2.250	1.870	2.648
2 1/2	1.750	2.708	2.370	3.317
3	1.812	3.313	2.870	3.868
4	2.125	4.250	3.834	4.882

**E15WHI - FEMALE WELD FERRULE**



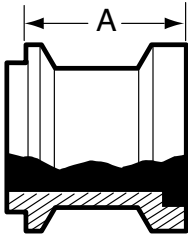
Size Tube OD	A	B	C	D
1	1.625	1.160	0.870	2.000
1 1/2	1.625	1.687	1.370	2.008
2	1.750	2.250	1.870	2.648
2 1/2	1.750	2.708	2.370	3.317
3	1.812	3.313	2.870	3.868
4	2.125	4.250	3.834	4.882

**E17-14I-14I - ADAPTER BOTH ENDS MALE**



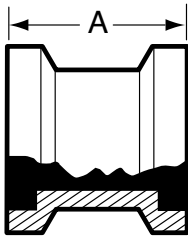
Size Tube OD	A
1	1.187
1 1/2	1.500
2	1.562
2 1/2	1.687
3	1.812
4	2.062
6	1.625

**E17-14I-15I - ADAPTER MALE X FEMALE**



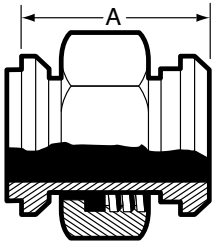
Size Tube OD	A
1	1.375
1 1/2	1.687
2	1.812
2 1/2	1.937
3	2.125
4	2.375
6	1.937

**E17-15I-15I - ADAPTER BOTH ENDS FEMALE**



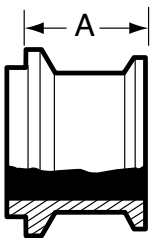
Size Tube OD	A
1	1.562
1 1/2	1.875
2	2.062
2 1/2	2.312
3	2.437
4	2.687
6	2.250

**E17-14I-14-ADAPTER MALE X 13H NUT**



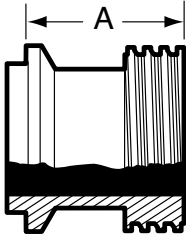
Size Tube OD	A
1	1.968
1 1/2	2.250
2	2.250
2 1/2	2.562
3	2.687
4	2.812

**E17-14I-14MP - ADAPTER MALE X CLAMP**



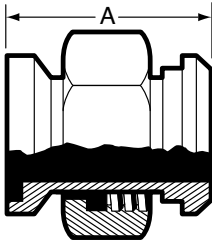
Size Tube OD	A
1	1.093
1 1/2	1.250
2	1.250
2 1/2	1.312
3	1.406
4	1.656
6	1.687

**E17-14I-15 - ADAPTER MALE X ACME THREAD**



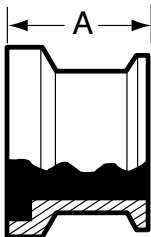
Size Tube OD	A
1	1.031
1 1/2	1.468
2	1.500
2 1/2	1.687
3	1.812
4	2.062

**E17-15I-14 - ADAPTER FEMALE X 13H NUT**



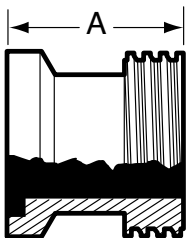
Size Tube OD	A
1	2.156
1 1/2	2.437
2	2.500
2 1/2	2.875
3	3.000
4	3.093

**E17-15I-14MP - ADAPTER FEMALE X CLAMP**



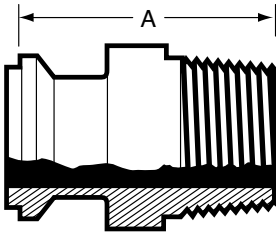
Size Tube OD	A
1	1.281
1 1/2	1.437
2	1.500
2 1/2	1.625
3	1.718
4	1.968
6	2.000

**E17-15I-15 - ADAPTER FEMALE X ACME THREAD**



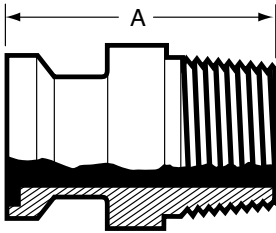
Size Tube OD	A
1	1.562
1 1/2	1.656
2	1.750
2 1/2	2.000
3	2.125
4	2.375

**E21I-14I - ADAPTER MALE X MNPT**



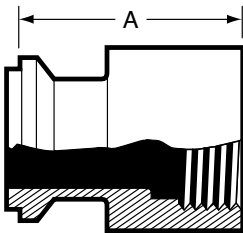
Size Tube OD	A
1	2.343
1 1/2	2.500
2	2.593
2 1/2	3.125
3	3.406
4	3.593
6	4.812

**E21I-15I - ADAPTER FEMALE X MNPT**



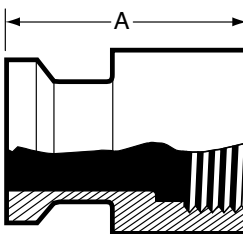
Size Tube OD	A
1	2.531
1 1/2	2.687
2	2.843
2 1/2	3.437
3	3.718
4	3.906
6	5.125

**E22I-14I - ADAPTER MALE X FNPT**



Size Tube OD	A
1	1.687
1 1/2	2.187
2	2.218
2 1/2	2.437
3	2.718
4	3.031

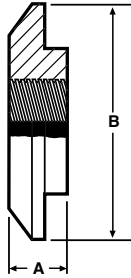
**E22I-15I - ADAPTER FEMALE X FNPT**



Size Tube OD	A
1	1.906
1 1/2	2.375
2	2.468
2 1/2	2.781
3	3.031
4	3.343



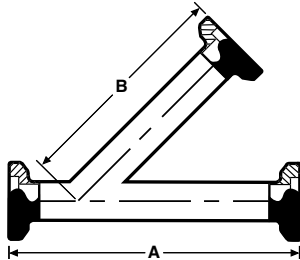
**E23BI - THERMOMETER CAP**



Size Tube OD	A	B
*1	0.500	2.000
1 1/2	0.500	2.000
2	0.562	2.625
2 1/2	0.750	3.312
3	0.750	3.875
4	0.750	4.875

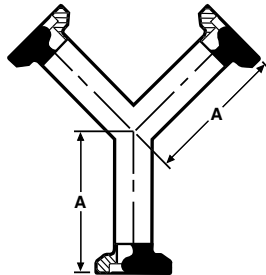
\*STD 1/2" FNPT. All others 3/4" FNPT.

**E28AI - LATERAL ALL ENDS FEMALE**



Size Tube OD	A	B
1	7.562	5.781
1 1/2	9.250	7.125
2	10.687	8.156
2 1/2	12.437	9.656
3	13.187	10.093
4	15.500	12.093
6	19.125	15.625

**E28BI - TRUE Y ALL ENDS FEMALE**



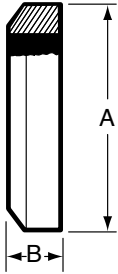
Size Tube OD	A
1	3.781
1 1/2	3.937
2	5.031
2 1/2	6.156
3	7.218
4	9.343
6	9.125

**E16AI-14I - MALE END CAP**



Size Tube OD	A	B
1	2.000	0.500
1 1/2	2.000	0.500
2	2.625	0.562
2 1/2	3.312	0.750
3	3.875	0.750
4	4.875	0.750
6	7.500	0.875

**E16AI-15I - FEMALE END CAP**



Size Tube OD	A	B
1	2.000	0.500
1 1/2	2.000	0.500
2	2.625	0.687
2 1/2	3.312	0.750
3	3.875	0.750
4	4.875	0.750
6	7.500	0.750

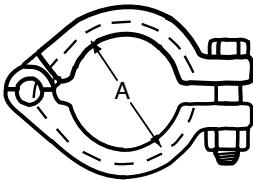
**GASKETS**



Gasket Materials	Part Number
Buna N	E40IH
EPDM	E40IE
Teflon	E40IT
Viton®	E40IV
Silicone	E40IS

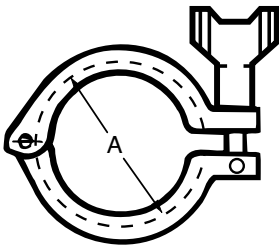
Available in 1" to 6" sizes.

**E13IU - BOLTED CLAMP**



Size Tube OD	A
1	2.122
1 1/2	2.122
2	2.800
2 1/2	3.500
3	4.060
4	5.000
6	7.625

**E13IS - HEAVY DUTY CLAMP**



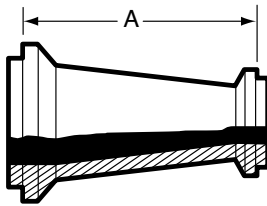
Size Tube OD	A
1	2.122
1 1/2	2.122
2	2.800
2 1/2	3.500
3	4.060
4	5.000
6	7.625

**\*PSI SERVICE RATINGS FOR SANITARY STAINLESS STEEL CLAMPS**

Size Tube OD	E13IU		E13IS	
	@70°F	@250°F	@70°F	@250°F
1" & 1 1/2"	500	250	500	250
2"	450	250	450	250
2 1/2"	400	200	400	200
3"	350	150	350	150
4"	200	125	200	125
6"	150	75	150	75

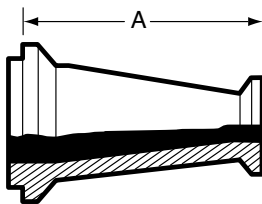
\*Service ratings are based upon hydrostatic tests using Standard Molded Buna-N gasket material with proper expansion of ferrules, joint assembly, and the absence of shock pressure. All ratings systems are dependent upon related components in the system and proper installation.

**E31I-14I - CONCENTRIC REDUCER MALE X MALE**



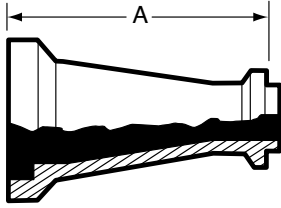
Size Tube OD	A
1 1/2 x 1	3.343
2 x 1	5.375
2 x 1 1/2	3.500
2 1/2 x 1 1/2	5.593
2 1/2 x 2	3.562
3 x 1 1/2	7.656
3 x 2	5.625
3 x 2 1/2	3.750
4 x 2	9.812
4 x 2 1/2	7.875
4 x 3	5.937
6 x 3	7.218
6 x 4	7.343

**E31I-14I-15I - CONCENTRIC REDUCER MALE X FEMALE**



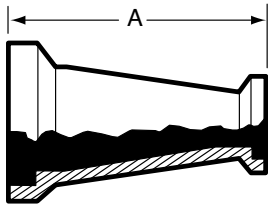
Size Tube OD	A
1 1/2 x 1	3.531
2 x 1	5.562
2 x 1 1/2	3.718
2 1/2 x 1 1/2	5.781
2 1/2 x 2	4.875
3 x 1 1/2	7.843
3 x 2	5.937
3 x 2 1/2	4.062
4 x 2	10.062
4 x 2 1/2	8.187
4 x 3	6.250
6 x 3	7.406
6 x 4	7.875

**E31I-15I-14I - CONCENTRIC REDUCER FEMALE X MALE**



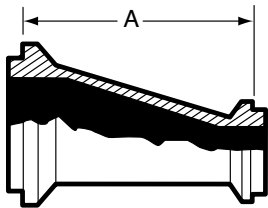
Size Tube OD	A
1 1/2 x 1	3.531
2 x 1	5.625
2 x 1 1/2	3.781
2 1/2 x 1 1/2	5.906
2 1/2 x 2	3.937
3 x 1 1/2	7.968
3 x 2	6.000
3 x 2 1/2	4.062
4 x 2	10.125
4 x 2 1/2	8.187
4 x 3	6.250
6 x 3	7.531
6 x 4	7.656

**E31I-15I - CONCENTRIC REDUCER BOTH ENDS FEMALE**



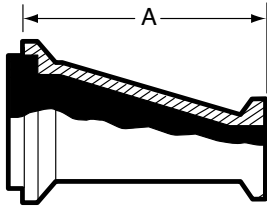
Size Tube OD	A
1 1/2 x 1	3.718
2 x 1	5.812
2 x 1 1/2	3.968
2 1/2 x 1 1/2	6.093
2 1/2 x 2	4.187
3 x 1 1/2	8.156
3 x 2	6.250
3 x 2 1/2	4.375
4 x 2	10.375
4 x 2 1/2	8.500
4 x 3	6.562
6 x 3	7.843
6 x 4	7.968

**E32I-14I - ECCENTRIC REDUCER MALE X MALE**



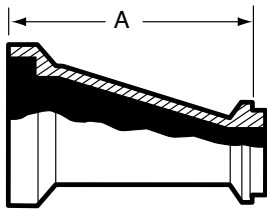
Size Tube OD	A
1 1/2 x 1	3.343
2 x 1	5.375
2 x 1 1/2	3.500
2 1/2 x 1 1/2	5.593
2 1/2 x 2	3.562
3 x 1 1/2	7.656
3 x 2	5.625
3 x 2 1/2	3.750
4 x 2	9.812
4 x 2 1/2	7.875
4 x 3	5.937
6 x 3	7.218
6 x 4	7.968

**E32I-14I-15I - ECCENTRIC REDUCER MALE X FEMALE**



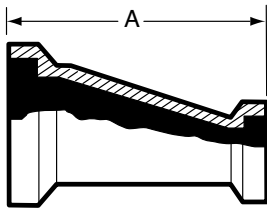
Size Tube OD	A
1 1/2 x 1	3.531
2 x 1	5.562
2 x 1 1/2	3.718
2 1/2 x 1 1/2	5.781
2 1/2 x 2	4.875
3 x 1 1/2	7.843
3 x 2	5.937
3 x 2 1/2	4.062
4 x 2	10.062
4 x 2 1/2	8.187
4 x 3	6.250
6 x 3	7.406
6 x 4	7.875

**E32I-15I-14I - ECCENTRIC REDUCER FEMALE X MALE**



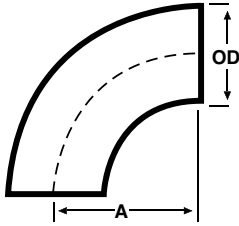
Size Tube OD	A
1 1/2 x 1	3.531
2 x 1	5.625
2 x 1 1/2	3.781
2 1/2 x 1 1/2	5.906
2 1/2 x 2	3.937
3 x 1 1/2	7.968
3 x 2	6.000
3 x 2 1/2	4.062
4 x 2	10.125
4 x 2 1/2	8.187
4 x 3	6.250
6 x 3	7.531
6 x 4	7.656

**E32I-15I - ECCENTRIC REDUCER BOTH ENDS FEMALE**



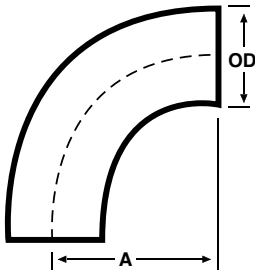
Size Tube OD	A
1 1/2 x 1	3.718
2 x 1	5.812
2 x 1 1/2	3.968
2 1/2 x 1 1/2	6.093
2 1/2 x 2	4.187
3 x 1 1/2	8.156
3 x 2	6.250
3 x 2 1/2	4.375
4 x 2	10.375
4 x 2 1/2	8.500
4 x 3	6.585
6 x 3	7.687
6 x 4	8.000

### V2WC - 90° ELBOW LESS TANGENTS



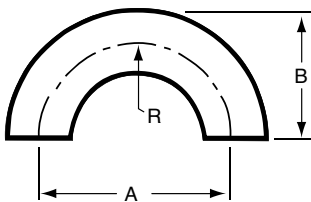
Size Tube OD	A	Nom. Wall
1/2	0.750	0.065
3/4	1.125	0.065
1	1.500	0.065
1 1/4	1.875	0.065
1 1/2	2.250	0.065
2	3.000	0.065
2 1/2	3.750	0.065
3	4.500	0.065
4	6.000	0.083
6	9.000	0.109
8	12.000	0.109

### V2S - 90° ELBOW WITH TANGENTS



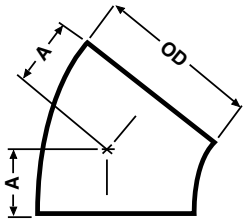
Size Tube OD	A	Nom. Wall
1	2.062	0.065
1 1/2	2.937	0.065
2	4.062	0.065
2 1/2	5.187	0.065
3	6.312	0.065
4	8.312	0.083

### V2WU - 180° U BEND



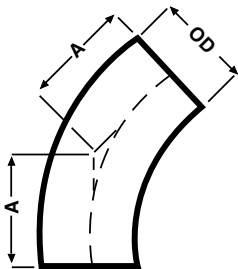
Size Tube OD	A	B	C	R	Nom. Wall
1/2	1.500	1.000	0.500	0.750	0.065
3/4	2.250	1.500	0.750	1.125	0.065
1	3.000	2.000	1.000	1.500	0.065
1 1/4	3.750	2.500	1.250	1.875	0.065
1 1/2	4.500	3.000	1.500	2.250	0.065
2	6.000	4.000	2.000	3.000	0.065
2 1/2	7.500	5.000	2.500	3.750	0.065
3	9.000	6.000	3.000	4.500	0.065
4	12.000	8.000	4.000	6.000	0.083
6	18.000	12.000	6.000	9.000	0.109

V2WK - 45° ELBOW LESS TANGENTS



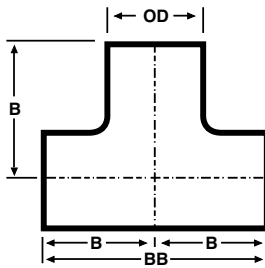
Size Tube OD	A	Nom. Wall
1/2	0.312	0.065
3/4	0.468	0.065
1	0.625	0.065
1 1/4	0.781	0.065
1 1/2	0.937	0.065
2	1.250	0.065
2 1/2	1.562	0.065
3	1.875	0.065
4	2.500	0.083
6	3.750	0.109
8	5.000	0.109

V2KS - 45° ELBOW WITH TANGENTS



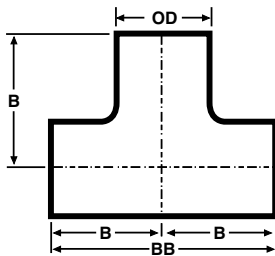
Size Tube OD	A	Nom. Wall
1	1.187	0.065
1 1/2	1.625	0.065
2	2.312	0.065
2 1/2	3.000	0.065
3	3.687	0.065
4	4.812	0.083

V7W - LONG TEE



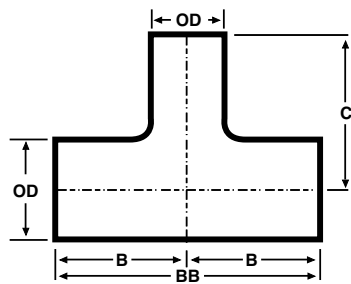
Size Tube OD	B	BB	Nom. Wall
1/2	CONTACT US FOR DIMENSIONS		
3/4			
1	1.875	3.750	0.065
1 1/2	2.250	4.500	0.065
1 1/4	2.250	4.500	0.065
2	3.000	6.000	0.065
2 1/2	3.000	6.000	0.065
3	3.250	6.500	0.065
4	3.875	7.750	0.083
6	5.625	11.250	0.109
8	7.000	14.000	0.109

V7WWW - SHORT TEE



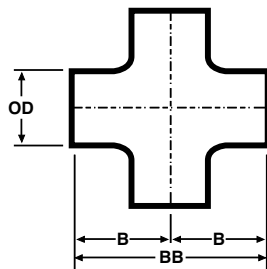
Size Tube OD	B	BB	Nom. Wall
1	1.125	2.250	0.065
1 1/2	1.656	3.312	0.065
2	2.062	4.125	0.065
2 1/2	2.343	4.687	0.065
3	2.593	5.187	0.065
4	3.625	7.250	0.083

## V7WR - REDUCING TEE



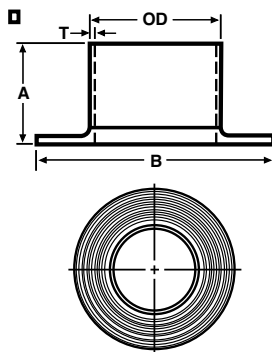
Size Tube OD	BB	C	B	Nom. Wall
3/4 x 1/2	CONTACT US			0.065
1 x 1/2				0.065
1 x 3/4				0.065
1 1/2 x 1/2				0.065
1 1/2 x 3/4				0.065
1 1/2 x 1	4.500	2.125	2.250	0.065
1 1/2 x 1 1/4	4.500	2.250	2.250	0.065
2 x 1	6.000	2.375	3.000	0.065
2 x 1 1/4	6.000	2.500	3.000	0.065
2 x 1 1/2	6.000	2.500	3.000	0.065
2 1/2 x 1 1/2	6.000	3.250	3.000	0.065
2 1/2 x 2	6.000	3.250	3.000	0.065
3 x 1 1/2	6.500	3.000	3.250	0.065
3 x 2	6.500	3.500	3.250	0.065
3 x 2 1/2	6.500	3.250	3.250	0.065
4 x 2	7.750	4.000	3.875	0.083
4 x 2 1/2	7.750	3.750	3.875	0.083
4 x 3	7.750	3.750	3.875	0.083
6 x 2	11.250	5.625	5.625	0.109
6 x 3	11.250	5.625	5.625	0.109
6 x 4	11.250	5.625	5.625	0.109

## V9W - CROSS



Size Tube OD	B	BB	Nom. Wall
1/2	CONTACT US		0.065
3/4			0.065
1	1.875	3.750	0.065
1 1/2	2.250	4.500	0.065
1 1/4	2.250	4.500	0.065
2	3.000	6.000	0.065
2 1/2	3.000	6.000	0.065
3	3.250	6.500	0.065
4	3.875	7.750	0.083
6	5.625	11.250	0.109

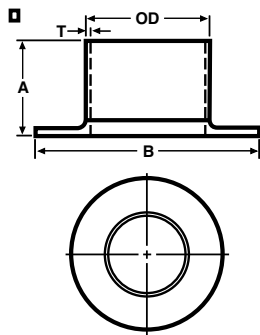
## V14WA - TYPE A STUB END WITH GROOVES



Size Tube OD	A	B	Nom. Wall ( T )
1/2	1.375	1.625	0.065
3/4	1.375	1.687	0.065
1	1.625	2.000	0.065
1 1/4	1.375	2.500	0.065
1 1/2	1.750	2.875	0.065
2	1.500	3.625	0.065
2 1/2	2.000	4.125	0.065
3	2.250	5.000	0.065
4	2.625	6.187	0.083
6	3.000	8.500	0.109

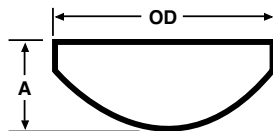


**F14WA - TYPE B STUB END LESS GROOVES**



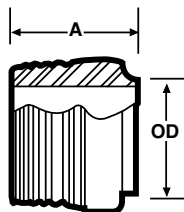
Size Tube OD	A	B	Nom. Wall ( T )
1/2	1.375	1.625	0.065
3/4	1.375	1.687	0.065
1	1.625	2.000	0.065
1 1/4	1.625	2.500	0.065
1 1/2	1.750	2.875	0.065
2	1.500	3.625	0.065
2 1/2	2.000	4.125	0.065
3	2.250	5.000	0.065
4	2.625	6.187	0.083
6	3.000	8.500	0.109

**V16W - WELD CAP**



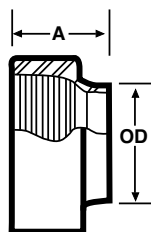
Size Tube OD	A	Nom. Wall
1/2	0.250	0.065
3/4	0.312	0.065
1	0.375	0.065
1 1/4	0.500	0.065
1 1/2	0.562	0.065
2	0.750	0.065
2 1/2	1.000	0.065
3	1.250	0.065
4	1.500	0.083
6	2.625	0.109
8	2.750	0.109

**19WB - MALE NPT X WELD ADAPTER**



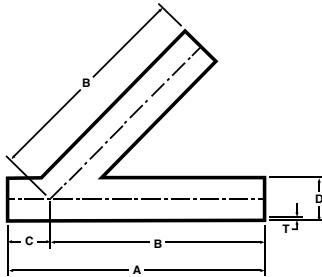
Size Tube OD	A	Nom. Wall
1/2	1.625	0.065
3/4	1.625	0.065
1	1.750	0.065
1 1/4	1.750	0.065
1 1/2	1.750	0.065
2	1.812	0.065
2 1/2	2.312	0.065
3	2.500	0.065
4	2.562	0.083
6	4.000	0.109

**22WB - FEMALE NPT X WELD ADAPTER**



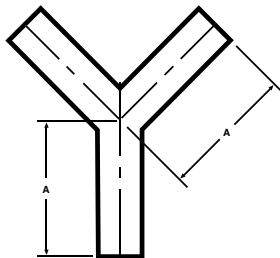
Size Tube OD	A	Nom. Wall
1/2	1.125	0.065
3/4	1.125	0.065
1	1.125	0.065
1 1/4	1.375	0.065
1 1/2	1.437	0.065
2	1.437	0.065
2 1/2	1.625	0.065
3	1.812	0.065
4	2.000	0.083

### V28WA - 45° LATERAL



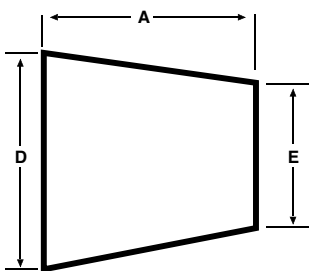
Size Tube OD	A	B	C	D	Nom. Wall (T)
1	6.000	5.000	1.000	1.000	0.065
1 1/2	7.375	6.187	1.187	1.500	0.065
2	8.625	7.125	1.500	2.000	0.065
2 1/2	10.125	8.500	1.625	2.500	0.065
3	10.750	8.875	1.875	3.000	0.065
4	12.812	10.750	2.062	4.000	0.083
6	18.000	14.500	3.500	6.000	0.109

### V28WB - TRUE Y



Size Tube OD	A
1	3.000
1 1/2	3.000
2	4.000
2 1/2	5.000
3	6.000
4	8.000
6	8.000

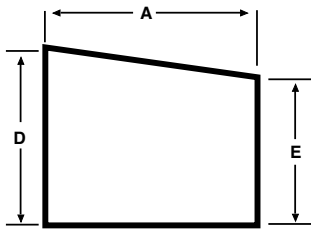
### V31W - CONCENTRIC REDUCER



Size Tube OD D x E	A	Nom. Wall
3/4 x 1/2	*	0.065
1 x 1/2	*	0.065
1 x 3/4	*	0.065
1 1/2 x 1/2	*	0.065
1 1/2 x 3/4	*	0.065
1 1/2 x 1	2.000	0.065
1 1/2 x 1 1/4	1.000	0.065
2 x 1	4.000	0.065
2 x 1 1/4	3.000	0.065
2 x 1 1/2	2.000	0.065
2 1/2 x 1 1/2	4.000	0.065
2 1/2 x 2	2.000	0.065
3 x 1 1/2	6.000	0.065
3 x 2	4.000	0.065
3 x 2 1/2	2.000	0.065
4 x 2	8.000	0.083 x 0.065
4 x 2 1/2	6.000	0.083 x 0.065
4 x 3	4.000	0.083 x 0.065
6 x 3	5.500	0.109 x 0.083
6 x 4	5.500	0.109 x 0.083

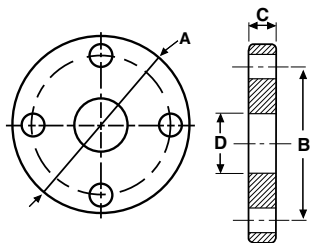
\* Contact Factory for Exact Dimensions.

V32W - ECCENTRIC REDUCER



Size Tube OD D x E	A	Nom. Wall
3/4 x 1/2	*	0.065
1 x 1/2	*	0.065
1 x 3/4	*	0.065
1 1/2 x 1/2	*	0.065
1 1/2 x 3/4	*	0.065
1 1/2 x 1	2.000	0.065
1 1/2 x 1 1/4	1.000	0.065
2 x 1	4.000	0.065
2 x 1 1/4	3.000	0.065
2 x 1 1/2	2.000	0.065
2 1/2 x 1 1/2	4.000	0.065
2 1/2 x 2	2.000	0.065
3 x 1 1/2	6.000	0.065
3 x 2	4.000	0.065
3 x 2 1/2	2.000	0.065
4 x 2	8.000	0.083 x 0.065
4 x 2 1/2	6.000	0.083 x 0.065
4 x 3	4.000	0.083 x 0.065
6 x 3	5.500	0.109 x 0.083
6 x 4	5.500	0.109 x 0.083

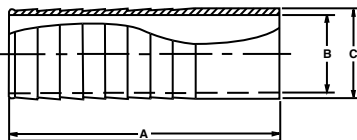
E38SL - SLIP ON FLANGE



Size Tube OD	A	B	C	D
1	4.250	3.125	0.375	1.010
1 1/2	5.000	3.875	0.437	1.510
2	6.000	4.750	0.500	2.010
2 1/2	7.000	5.500	0.562	2.510
3	7.500	6.000	0.625	3.010
3 1/2	8.500	7.000	0.625	3.510
4	9.000	7.500	0.689	4.010

150 PSI Rating

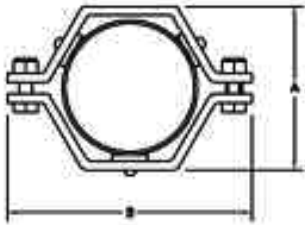
V14RH - 6L B/W Rubber Hose Barb Blank #1



Size Tube OD	A	B	C
1/4	1.500	0.120	0.250
5/16	1.500	0.182	0.312
3/8	1.500	0.250	0.375
1/2	1.500	0.375	0.500
5/8	1.500	0.495	0.625
3/4	1.500	0.620	0.750
1	3.000	0.870	1.000
1 1/4	3.000	1.120	1.250
1 1/2	3.000	1.370	1.500
2	3.000	1.870	2.000
2 1/2	3.000	2.370	2.500
3	3.000	2.870	3.000

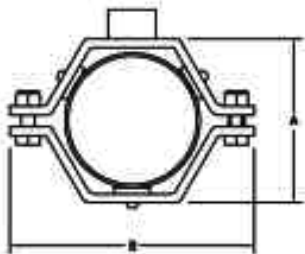
PIPE HANGERS

E24



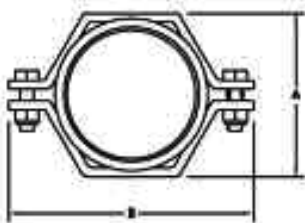
Size Tube OD	A	B
1/2	2 1/8	3 5/8
3/4	2 1/8	3 5/8
1	2 1/8	3 5/8
1 1/2	2 1/8	3 5/8
2	2 5/8	4 5/16
2 1/2	3 1/8	4 7/8
3	3 5/8	5 3/8
4	4 3/4	6 9/16
6	6 5/8	9

E24C



Size Tube OD	A	B
1/2	2 1/8	3 5/8
3/4	2 1/8	3 5/8
1	2 1/8	3 5/8
1 1/2	2 1/8	3 5/8
2	2 5/8	4 5/16
2 1/2	3 1/8	4 7/8
3	3 5/8	5 3/8
4	4 3/4	6 9/16
6	6 5/8	9

E24PVC



Size Tube OD	A	B
1/2	2	3 5/8
3/4	2 1/8	3 5/8
1	2 1/8	3 5/8
1 1/2	2 1/8	3 5/8
2	2 5/8	4 5/16
2 1/2	3 1/8	4 13/16
3	3 5/8	5 3/8
4	4 3/4	6 1/2
6	6 5/8	9

SANITARY TUBE				
OD (IN)		WALL (IN)	WEIGHT (LBS)	
1/2	X	.065	.302	
3/4	X	.065	.476	
1	X	.065	.649	
1 1/2	X	.065	.996	
2	X	.065	1.343	
2 1/2	X	.065	1.517	
3	X	.065	2.037	
4	X	.083	2.732	
6	X	.083	4.120	
6	X	.109	6.858	
8	X	.109	10.099	