

* SPECIFICATIONS

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**All data supplied herein is theoretical and no responsibility is implied by
Resistaloy Inc. as to actual field results which may vary.*

Analysis of Stainless Steel

DATA ON POPULAR STAINLESS GRADES

Type	C Max.	Mn Max.	Cr	Ni	Other Elements	Applications
304	.08	2.00	18.00/20.00	8.00/12.00	—	Aircraft, dairy, food, paper, petrochemical & textile industries.
304L	.03	2.00	18.00/20.00	8.00/12.00	—	Low carbon for fabrication by welding which cannot be subsequently annealed.
309	.20	2.00	22.00/24.00	12.00/15.00	—	Heat-resistant furnace parts, heater tubes, pyrometer tubes, retorts, heat exchangers exhaust stacks, oil burner parts.
309S	.08	2.00	22.00/24.00	12.00/15.00	—	Heat-resistant furnace parts, heater tubes, pyrometer tubes, retorts, heat exchangers exhaust stacks, oil burner parts. Lower Carbon for welding fabrication of parts.
310	.25	2.00	24.00/26.00	19.00/22.00	—	Chemical and petroleum industries, heat exchangers and furnace parts.
310S	.08	2.00	24.00/26.00	19.00/22.00	—	Chemical and Petroleum industries, heat exchangers and furnace parts. Lower Carbon for welding fabrication of parts.
316	.08	2.00	16.00/18.00	10.00/14.00	Mo 2.00/3.00	Chemical, food, paper, pharmaceutical industries & sea water atmosphere exposure. Better corrosion resistance & creep strength than Types 304 & 304L.
316L	.03	2.00	16.00/18.00	10.00/14.00	Mo 2.00/3.00	Lower carbon than Type 316 for fabrication by welding which cannot be subsequently annealed.
317	.08	2.00	18.00/20.00	11.00/15.00	Mo 3.00/4.00	Better corrosion resistance & creep strength than Types 316 & 316L.
317L	.030	2.00	18.00/20.00	11.00/15.00	Mo 3.00/4.00	Lower carbon than Type 317 for fabrication by welding which cannot be subsequently annealed.
321	.08	2.00	17.00/19.00	9.00/12.00	Ti 5 x C Min.	Aircraft exhaust manifolds, heater tubing sheaths & heat exchangers. Ti. stabilized for intermittent exposure at 800/1600°F. or subsequent welding.
347	.08	2.00	17.00/19.00	9.00/13.00	Columbium-Tantalum 10 x C Min.	Aircraft and chemical industries. Cb-Ta stabilized for intermittent exposure at 800/1600°F. or subsequent welding.
348	.08	2.00	17.00/19.00	9.00/13.00	Columbium-Tantalum 10 x C Min. Tantalum .10 Max.	Aircraft and missile industries. Cb stabilized for intermittent exposure at 800/1600°F. or subsequent welding.
409	.08	1.00	10.50/11.75	.50	Ti 5 x Carbon or .75 Max.	Moderate oxidation and corrosion resistance. Mufflers, exhaust parts, heater and combustion chamber parts.

P .045% max.

S .030% max. except Type 409—.045%

Si 1.00 max. except 310, 310S—1.50% max.

Analysis of Stainless Steel (cont'd)

DATA ON POPULAR STAINLESS GRADES

A.S.T.M. Number	Explanation
A-213	Covers twenty eight grades of minimum wall thickness seamless alloy (chrome-moly) and stainless boiler and superheater tubes. Includes grade T-22 and Type 304 among others and covers a size range 1/8 to 5 inch O.D and 0.015 to 0.500 in minimum wall thickness. (including most 300 Series S S and other grades)
A-249	Covers twenty one grades of nominal wall thickness welded austenitic stainless steel tubing for use in boilers, superheaters, heat exchangers and condensers. (including most of the 300 series grades)
A-268	Covers ten grades of nominal wall thickness stainless steel tubing (welded or seamless) for general corrosion-resisting and high temperature service. (including Types 405, 410, 430, 443, 446 and 369)
A-269	Covers thirteen grades of nominal wall thickness stainless steel tubing for general corrosion resisting and low or high temperature service. Can be made welded or seamless. (including most of the 300 series stainless steel grades)
A-270	Covers T-304 stainless steel minimum wall thickness sanitary tubing for use in the dairy and food industry. Maximum size supplied is 4" O.D. with I.D. only polished or O.D. & I.D. polished.
A-271	Covers six grades of seamless stainless steel tubing in sizes 2" to 9" O.D. and over .220" minimum wall thickness for use in refineries. Grades T-304, T-321, T-347 and the H grades of each)
A-312	Covers twenty one grades of seamless and welded schedule thickness austenitic stainless steel pipe intended for high temperature and general corrosive service. (including most 300 series stainless steel grades.)

AS WELDED refers to Welded Stainless Steel Pipe with no anneal or pickle performed after welding. Commonly referred to as non-specification or paper mill grade for use in general applications where optimum specifications or quality is not required.

A.S.T.M. Number	Explanation
A-358	Covers thirteen grades electric fusion filler metal added welded controlled thickness stainless steel pipe for use in corrosive or high temperature service or both. Any size may be ordered although commercial practice usually limits size range to not less than 8 inch nominal diameter (8.625 O.D). Most grades of 300 series stainless steel are included. Five classes are included and should be determined at the time the initial inquiry is taken as: Class 1 —Double welded, radiographed Class 2 —No radiograph Class 3 —Single welded, radiographed Class 4 —Double welded (inside only no filler metal added) radiographed Class 5 —Double welded spot radiographed
A-376	Covers twelve grades of seamless stainless steel pipe intended for high temperature central station service. (including most 300 series stainless steel grades)
A-409	Covers eight grades of welded large outside (14 to 30) diameter light walled (sch. 5S & 10S) stainless steel pipe for corrosive or high temperature service. (including most 300 series stainless steel grades)
A-450	Covers general requirements (tolerances, tests, weights, marking, and inspection) applicable to standard ASTM tubing specifications as specified therein.
A-530	Covers general requirements (tolerances, tests, weights, marking and inspection) applicable to standard ASTM pipe specification as specified therein.
A-554	Covers nineteen grades of stainless steel tubing for mechanical applications where appearance or corrosion resistance is needed in sizes from 1/2" to 16" in square, rounds or rectangles from .020" gauge & up. (including all 300 series and 429, 430 & 430Ti.)
A-688	Covers 5 grades of minimum and average wall thickness welded feedwater heater tubing both straight lengths and U-bent. (Grades are 304, 304L, 316, 316L and TP XM-29.)

Analysis of Stainless Steel (cont'd)

DATA ON POPULAR STAINLESS GRADES

T303		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.15 max.	Tensile psi (min.) 85,000	• Very superior machining and non-seizing characteristics • Non-Magnetic in annealed condition	• Automatic screw machines • Bolts, Bushings, Nuts • Shafts
Manganese	2.00 max.	Yield psi (min.) 35,000		
Phosphorus	.20 max.	Brinell (max.) Hardness 262		
Sulphur	.15 max.			
Silicon	1.00 max.	(BARS ANNEALED)		
Chromium	17.00-19.00			
Nickel	8.00-10.00			
Molybdenum	.60 max.			
T304		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.08 max.	Tensile psi (min.) 75,000	• Easy fabrication and cleaning with good corrosion resistance • High tensile strength • Bright, smooth appearance • Optimum strength-to-weight ratio	• Kitchen equipment • Chemical processing equipment • Brewing and distilling • Power plant systems • Pressure vessels • Synthetic fuel facilities
Manganese	2.00 max.	Yield psi (min.) 30,000		
Phosphorus	.045 max.	Brinell (max.) Hardness 202		
Sulphur	.030			
Silicon	1.00 max.			
Chromium	18.00-20.00			
Nickel	8.00-10.50			
T304L		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.03 max.	Tensile psi (min.) 70,000	• High corrosion resistance • Easy fabrication and cleaning • Lower carbon content restricting carbide precipitation during welding • Resists intergranular corrosion	• Fertilizer towers • Tank fabrication • Field welding of all types
Manganese	2.00 max.	Yield psi (min.) 25,000		
Phosphorus	.045 max.	Brinell (max.) Hardness 183		
Sulphur	.030 max.			
Silicon	1.00 max.			
Chromium	18.00-20.00			
Nickel	8.00-12.00			
T309S		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.08 max.	Tensile psi (min.) 75,000	• High heat resistant qualities • Corrosion oxidation resistance • Easy to weld • Ductile	• Heating and chemical • Furnace parts • Pump parts • Oven linings • Tube supports
Manganese	2.00 max.	Yield psi (min.) 30,000		
Phosphorus	.045 max.	Brinell (max.) Hardness 217		
Sulphur	.030 max.			
Silicon	1.00 max.			
Chromium	22.00-24.56			
Nickel	12.00-15.00			

Analysis of Stainless Steel (cont'd)

DATA ON POPULAR STAINLESS GRADES

T310S		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.08 max.	Tensile psi (min.) 75,000	• Oxidation resistant	• Heating and chemical equipment
Manganese	2.00 max.	Yield psi (min.) 30,000	• High heat resistant qualities	• Furnace parts
Phosphorus	.045 max.	Brinell (max.) Hardness 217	• Corrosion resistant	• Engine rings
Sulphur	.030 max.		• Ductile	
Silicon	1.50 max.			
Chromium	24.00–26.00			
Nickel	19.00–22.00			
T316		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.08 max.	Tensile psi (min.) 75,000	• Superior corrosion resistance	• Fertilizer equipment
Manganese	2.00 max.	Yield psi (min.) 30,000	• Heat resistant with superior creep strength at elevated temperatures	• Pulp and paper processing equipment
Phosphorus	.045 max.	Brinell (max.) Hardness 217	• Good pitting resistance	• Smoke stacks
Sulphur	.030 max.			• Chemical storage tanks
Silicon	1.00 max.			• Marine chemical environments
Chromium	16.00–18.00			• Corn products equipment
Nickel	10.00–14.00			• Phosphate industry parts
Molybdenum	2.00–3.00			• Textile finishing equipment
T316L		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.030 max.	Tensile psi (min.) 70,000	• Superior resistance to intergranular corrosion following welding or stress relieving	• Food processing equipment
Manganese	2.00 max.	Yield psi (min.) 25,000	• Deep drawing ability	• Field yielding of all types
Phosphorus	.045 max.	Brinell (max.) Hardness 217	• Good creep strength	• Tanks, piping and valves
Sulphur	.030 max.			
Silicon	1.00 max.			
Chromium	16.00–18.00			
Nickel	10.00–14.00			
Molybdenum	2.00–3.00			
T317L		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.030 max.	Tensile psi (min.) 75,000	• Excellent corrosion resistance	• Inks and dyeing equipment
Manganese	2.00 max.	Yield psi (min.) 30,000	• Minimizes metallic contamination	• Storage tanks for corrosive materials
Phosphorus	.045 max.	Brinell (max.) Hardness 217	• High creep and tensile strengths	• Pulp and paper processing
Sulphur	.030 max.		• High stress-to-rupture strength	• Scrubbers
Silicon	1.00 max.			
Chromium	18.00–20.00			
Nickel	11.00–15.00			
Molybdenum	3.00–4.00			

Analysis of Stainless Steel (cont'd)

DATA ON POPULAR STAINLESS GRADES

T321		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.08 max.	Tensile psi (min.) 75,000	• High immunity to high temperatures	• For welding of parts that cannot be subsequently annealed
Manganese	2.00 max.	Yield psi (min.) 30,000	• High strength	• Aircraft engine parts
Phosphorus	.045 max.	Brinell (max.) Hardness 217	• Excellent corrosion resistance	• Pressure vessels
Sulphur	.030 max.		• Stabilized by titanium	• Stack liners
Silicon	1.00 max.			
Chromium	17.00–19.00			
Nickel	9.00–12.00			
Titanium	5XC min.			
T347		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.08 max.	Tensile psi (min.) 75,000	• High temperature immunity	• Aircraft engines
Manganese	2.00 max.	Yield psi (min.) 30,000	• High strength	• Pressure vessels
Phosphorus	.045 max.	Brinell (max.) Hardness 202	• Excellent corrosion resistance and welding properties	• Annealing box covers
Sulphur	.030 max.		• Stabilized by Columbium and Tantalum	• Organic chemical tanks
Silicon	1.00 max.			
Chromium	17.00–19.00			
Nickel	9.00–13.00			
Columbium + Tantalum	10XC min.			
T409		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.08 max.	Tensile psi (min.) 55,000	• Superior mechanical and corrosion resistant properties	• Auto exhaust systems
Manganese	1.00 max.	Yield psi (min.) 30,000	• Oxidation resistant	• Transformer and capacitor cases
Phosphorus	.045 max.	Brinell (max.) Hardness 150		• Catalytic converters
Sulphur	.045 max.			• Farm equipment
Silicon	1.00 max.			• Fins for heater tubes
Chromium	10.50–11.75			
Nickel	.50			
Titanium	6XC min.			
T410		Nominal Properties	Benefits	Applications
Chemical		Mechanical		
Carbon	.15 max.	Tensile psi (min.) 65,000	• Corrosion and heat resistant with high impact strength	• Hand tools
Manganese	1.00 max.	Yield psi (min.) 30,000	• Good scaling resistance	• Coal processing equipment
Phosphorus	.040 max.	Brinell (max.) Hardness 217	• Good mechanical properties	• Cutlery
Sulphur	.030 max.		• Easily welded	• Fastening
Silicon	1.00 max.			• Bolts, nuts, screw
Chromium	11.50–13.50			• Valve parts
Nickel	.75			• Furnace parts and burners operating below 1200°

Stainless Pipe Specifications

ASTM No.	A-312	A-358	A-409	A-778
Normal Size Range	1/8" and larger	8" and larger	14" through 30"	3" through 48"
Weld-Bead Finish	May or may not be full finish	Bead may be removed Maximum 1/8" bead crown	Bead may be removed Maximum 1/16" bead crown No valley or groove	Bead may be removed Maximum 1/16" on either surface
Welding Process	Seamless or automatic welding No filler metal No X-ray required	Double welded Class 1, 2 & 5 Singed welded Class 3 & 4 Filler metal required all passes except root pass Class 4 100% X-ray to ASME UW-51 for Class 1, 3 & 4 No X-ray required Class 2 Spot X-ray to ASME UW-52 for Class 5	Manual or automatic Filler metal allowed No X-ray required	Manual or automatic welding Straight or spiral sear Filler metal allowed
Heat Treating	Annealed minimum 1900° F. and rapidly cooled	Annealed minimum 1900° F. and rapidly cooled unless marked "HT-____", "HT-O", or "HT-SO"	Annealed minimum 1900° F. and rapidly cooled unless marked "HT-____", "HT-O", or "HT-SO"	Not required
Cleaning	Pickled and Passivated	Pickled and Passivated	Pickled and Passivated	Pickled and Passivated
Hydrostatic Test	Required	Required unless waived and marked "N-H"	Required	Not required
Lengths	1/8" through 8" - 15' to 24' 10" and up - not specified Specific lengths Tol. -+ 1/4" - 0" Butt welds not allowed unless otherwise agreed upon	As agreed Butt welds allowed	22" and smaller - 9' to 12' Above 22" - minimum 5' Butt welds allowed	10' lengths and over Butt welds allowed
Variations in Outside Diameter & Ovality	See A-530	Outside diameter $\pm$ - 0.5% of nominal wraparound Ovality maximum 1% difference between major/minor outside diameter	Less than .188" wall $\pm$ 0.20% of specified outside diameter .188" wall and larger, $\pm$ 0.40% of specified outside diameter Ovality major/minor outside diameter maximum 1.5% difference between major/minor outside diameter	See A-530
Wall Thickness Variations	Maximum 12.5% under nominal	Maximum 0.01" under nominal	Maximum 0.018" under nominal	Maximum 12.5% under/over nominal
Alignment	Maximum 1/8" in 10 feet	Maximum 1/8" in 10 feet	Maximum 3/16" in 10 feet	Maximum 1/4" in 10 feet
End Preparation	Plain ends	Plain ends	Plain ends	Plain ends

Stainless Steel Pipe Sizes

THEORETICAL INTERNAL BURSTING PRESSURES*

Nominal I.P.S. (in.)	Nominal O.D. (in.)	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S	
		Wall (in.)	Pressure (psi)	Wall (in.)	Pressure (psi)	Wall (in.)	Pressure (psi)	Wall (in.)	Pressure (psi)
1/8	.405			.049	18150	.068	25175	.095	35175
1/4	.540			.065	18050	.088	24450	.119	33050
3/8	.675			.065	14450	.091	20225	.126	28000
1/2	.840	.065	11600	.083	14825	.109	19475	.147	26250
3/4	1.050	.065	9275	.083	11850	.113	16150	.154	22000
1	1.315	.065	7425	.109	12450	.133	15175	.179	20425
1 1/4	1.660	.065	5875	.109	9850	.140	12650	.191	17250
1 1/2	1.900	.065	5125	.109	8600	.145	11450	.200	15800
2	2.375	.065	4100	.109	6875	.154	9750	.218	13775
2 1/2	2.875	.083	4325	.120	6250	.203	10600	.276	14400
3	3.500	.083	3550	.120	5150	.216	9250		
3 1/2	4.000	.083	3100	.120	4500	.226	8475		
4	4.500	.083	2750	.120	4000	.237	7900		
5	5.563	.109	2950	.134	3625	.258	6950		
6	6.625	.109	2475	.134	3050	.280	6350		
8	8.625	.109	1900	.148	2575	.322	5600		
10	10.750	.134	1875	.165	2300	.365	5100		
12	12.750	.156	1825	.180	2125	.375	4400		
14	14.000	.156	1675	.188	2025				
16	16.000	.165	1550	.188	1775				
18	18.000	.165	1375	.188	1575				
20	20.000	.188	1400	.218	1625				
24	24.000	.218	1375	.250	1550				
30	30.000	.250	1250	.312	1550				

* Bursting pressure calculated using Barlow's formula: $P = \frac{2ST}{D}$

S = 75,000 psi fiber stress. T = nom. wall. D = nom. O.D.

Stainless Steel Pipe Sizes

A.S.A. PIPE SCHEDULES DIMENSIONS & WEIGHTS IN POUNDS PER FOOT

Pipe Size	Outside Diameter (Inches)	5S	5	10S	10	20	30	40S & Standard	40	60	80S & Extra Heavy	80	100	120	140	160	Double Extra Heavy
1/8	.405		.035 .1383	.049 .1863	.049 .1863			.068 .2447	.068 .2447		.095 .3145	.095 .3145					
1/4	.540		.049 .2570	.065 .3297	.065 .3297			.088 .4248	.088 .4248		.119 .5351	.119 .5351					
3/8	.675		.049 .3276	.065 .4235	.065 .4235			.091 .5676	.091 .5676		.126 .7388	.126 .7388					
1/2	.840	.065 .5383	.065 .5383	.083 .6710	.083 .6710			.109 .8510	.109 .8510		.147 1.088	.147 1.088				.187 1.304	.294 1.714
3/4	1.050	.065 .6383	.065 .6383	.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 1.274	.065 1.274	.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 5.022	.218 5.022				.343 7.444	.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				.437 14.32	.600 18.58
3-1/2	4.000	.083 3.472	.083 3.472	.120 4.973	.120 4.973			.226 9.109	.226 1.109		.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 10.79	.237 10.79	.281 12.66	.337 14.98	.337 14.98		.437 19.01		.531 22.51	.674 27.54
4-1/2	5.000							.247 12.53			.355 17.61						.710 32.53
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 9.290	.134 9.290			.280 18.97	.280 18.97		.432 28.57	.432 28.57		.562 36.39		.718 45.30	.864 53.16
7	7.625							.301 23.57			.500 38.05						.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	.593 50.87	.718 60.93	.812 67.76	.906 74.69	.875 72.42
9	9.625							.342 33.90			.500 48.72						
10	10.750	.134 15.19	.134 15.19	.165 18.70	.165 18.70	.250 28.04	.307 34.24	.365 28.55	.365 40.48	.500 54.74	.500 54.74	.593 64.33	.718 76.93	.843 89.20	1.000 104.1	1.125 115.7	
11	11.750							.375 45.55			.500 60.07						
12	12.750	.156 21.07	.165 22.18	.180 24.20	.180 24.20	.250 33.38	.330 43.77	.375 49.56	.406 53.53	.562 73.16	.500 65.42	.687 88.51	.843 107.2	1.000 125.5	1.125 139.7	1.312 160.3	
14	14.000	.156 23.07		.188 27.73	.250 36.71	.312 45.68	.375 54.57	.375 54.57	.437 63.67	.593 84.91	.500 72.09	.750 106.1	.937 130.7	1.093 150.7	1.250 170.2	1.406 189.1	
16	16.000	.165 27.90		.188 31.75	.250 42.05	.312 52.36	.375 62.58	.375 62.58	.500 82.77	.656 107.5	.500 82.77	.843 136.5	1.031 164.8	1.218 192.3	1.437 223.5	1.593 145.1	
18	18.000	.165 31.43		.188 35.76	.250 47.39	.312 59.03	.437 82.06	.375 70.59	.562 104.8	.750 138.2	.500 93.45	.937 170.8	1.156 208.0	1.375 244.1	1.562 274.2	1.781 308.5	
20	20.000	.188 39.78		.218 46.05	.250 52.73	.375 78.60	.500 104.1	.375 78.60	.593 122.9	.812 166.4	.500 104.1	1.031 208.9	1.280 256.1	1.500 296.4	1.750 341.1	1.968 379.0	
24	24.000	.218 55.37		.250 63.41	.250 63.41	.375 94.62	.562 140.8	.375 94.62	.687 171.2	.968 238.1	.500 125.5	1.218 296.4	1.531 367.4	1.182 429.4	2.062 483.1	2.343 541.9	

Sanitary Welded Tube Specifications

We inventory a large quantity of welded and seamless stainless tubing to meet your immediate needs. Readily available in 20 foot lengths from 1/4" OD to 6" OD, are types 304L and 316L - produced to ASTM specifications A249, A269 or A270. Other diameters, specifications and lengths available on special order. Large orders of tubing are packaged in tri-wall corrugated cartons equipped with wooden ends.

POLISH ID/OD Sanitary Finish

Polished to 180 grit OD and ID meeting or exceeding 3A standards. After polishing, special attention is given to cleanliness by washing and packaging in individual sealed plastic sleeves.

Other Finishes

Tubing also available in ID or OD polish only or provided unpolished (bright annealed).

Special Pharmaceutical & Electronic Finishes

ID polish to 15 RA or 20 RA, followed by electropolishing is available on special orders.

STAINLESS STEEL TUBING SPECIFICATIONS

Size (Tube OD)	Gauge	Wall	lbs/ft
1/2"	18	.049	.2365
3/4"	18	.049	.3670
1"	18	.049	.4980
1"	16	.065	.6490
1 1/2"	16	.065	.9962
2"	16	.065	1.3430
2 1/2"	16	.065	1.6900
3"	16	.065	2.0370
4"	14	.083	3.4720
6"	12	.109	6.923
8"	12	.109	9.300

Engineering Data

*LOSS OF HEAD IN FEET DUE TO FRICTION IN 100 FT. OF OD

SANITARY TUBING

.S.	Lbs.	Lbs.						
CPM	Min.	Hr.	1	1 1/2	2	2 1/2	3	4
5	42	2520	1.93	.27				
10	83	4980	10.26	1.08				
15	125	7500	16.05	2.23				
20	167	10020	28.29	3.81				
25	208	12480	43.70	5.02				
30	250	15000	63.25	8.26				
35	292	17520	85.10	11.61				
40	333	19980		14.99	.20			
45	374	22440		18.74	1.76	.75		
50	416	24960			5.61	1.86	.80	
75	624	37440			12.23	4.14	1.70	
100	831	49860			21.75	7.36	3.01	
.80								
125	1038	62280			34.27	11.24	4.57	
1.21								
150	1245	74700			48.76	16.10	6.55	
1.72								
75	1425	85500			21.75	8.55	2.28	
200	1659	99540			28.68	11.59	2.90	

*Established on products with viscosity and density similar to water or milk.

Sanitary Tube Volume Per Foot

Tube Size	U.S. Gallon	Imp. Gallons	Cu. In.
1	.033	.0275	7.67
1 1/2	.080	.067	18.52
2	.143	.119	32.95
2 1/2	.229	.191	52.94
3	.336	.280	77.63
4	.611	.500	141.16

*90° Elbow Friction Equivalent

1"	ELL = 6 Ft.	Straight Pipe
1 1/2"	ELL = 8 Ft.	" "
2"	ELL = 8 Ft.	" "
2 1/2"	ELL = 11 Ft.	" "
3"	ELL = 15 Ft.	" "
4"	ELL = 15 Ft.	" "

Recommended Tube Size Low Viscosity Products

0 - 4250 Lbs. per Hour	1"
4250 - 14500	1 1/2"
14500 - 33400	2"
33400 - 51900	2 1/2"
51900 - 82500	3"
Greater than 82500	4"

NOTE:

For Higher Viscosity Products Increase Tube Size. Our Engineering Department's Facilities are at your Service.

Stainless Steel Tube Sizes

THEORETICAL INTERNAL BURSTING PRESSURES

Theoretical Bursting Pressure, in pounds for welded stainless tubes. Based on Barlow's Formula: $P = \frac{2ST}{D}$

P = Bursting pressure in psi. D = Outside diameter of tube in inches. S = Fiber stress of 75,000 psi ultimate for bursting pressure. T = Wall thickness.

The mill pressures used when hydrotesting are usually based on fiber stress of 20,000 psi (26.7% of burst pressures listed below) unless specifications require other pressures.

Specifications and code rulings assign maximum stresses in use which are dependent on factors such as inspection requirements, temperatures encountered, service life expected and alloy.

WALL THICKNESS – INCHES & B.W.G.

O.D. Inches	.020 25	.022 24	.025 23	.028 22	.032 21	.035 20	.042 19	.049 18	.058 17	.065 16	.072 15	.083 14	.095 13	.109 12	.120 11	.134 10	.148 9	.165 8
1/8	24,000	26,400	30,000	33,600	38,400	42,000	50,400	58,800										
1/4	12,000	13,200	15,000	16,800	19,200	21,000	25,200	29,400	34,800	39,000								
3/8	8,000	8,800	10,000	11,200	12,800	14,000	16,800	19,600	23,200	26,000								
1/2	6,000	6,600	7,500	8,400	9,600	10,500	12,600	14,700	17,400	19,500	21,600	24,900	28,500					
5/8	4,800	5,300	6,000	6,725	7,675	8,400	10,075	11,750	13,925	15,600	17,275	19,925	22,800					
3/4	4,000	4,400	5,000	5,600	6,400	7,000	8,400	9,800	11,600	13,000	14,400	16,600	19,000	21,800				
7/8	3,425	3,750	4,300	4,800	5,475	6,000	7,200	8,400	9,950	11,150	12,350	14,225	16,275	18,675				
1	3,000	3,300	3,750	4,200	4,800	5,250	6,300	7,350	8,700	9,750	10,800	12,450	14,250	16,350	18,000	20,100	22,200	
1 1/8			3,325	3,750	4,275	4,650	5,600	6,550	7,750	8,650	9,600	11,050	12,650	14,550	16,000	17,875	19,725	
1 1/4			3,000	3,350	3,850	4,200	5,050	5,875	6,950	7,800	8,650	9,950	11,400	13,075	14,400	16,075	17,750	
1 1/2			2,725	3,050	3,500	3,825	4,575	5,350	6,325	7,100	7,850	9,050	10,350	11,900	13,100	14,625	16,150	
1 3/4			2,500	2,800	3,200	3,500	4,200	4,900	5,800	6,500	7,200	8,300	9,500	10,900	12,000	13,400	14,800	
2			2,300	2,575	2,950	3,225	3,875	4,525	5,350	6,000	6,650	7,650	8,775	10,050	11,075	12,375	13,650	
2 1/8			2,150	2,400	2,750	3,000	3,600	4,200	4,975	5,575	6,175	7,125	8,150	9,350	10,275	11,475	12,675	
2 1/4						2,800	3,350	3,925	4,650	5,200	5,750	6,650	7,600	8,725	9,600	10,725	11,850	
2 1/2						2,625	3,150	3,675	4,350	4,875	5,400	6,225	7,125	8,175	9,000	10,050	11,100	
2 3/4						2,475	2,975	3,450	4,100	4,600	5,075	5,850	6,700	7,700	8,475	9,450	10,450	
3						2,800	3,275	3,875	4,350	4,800	5,550	6,350	7,275	8,000	8,975	9,875		
3 1/8						2,650	3,100	3,675	4,100	4,550	5,250	6,000	6,900	7,575	8,475	9,350	10,425	
3 1/4						2,525	2,950	3,475	3,900	4,325	4,975	5,700	6,550	7,200	8,050	8,875	9,900	
3 1/2						2,400	2,800	3,325	3,725	4,125	4,750	5,425	6,225	6,850	7,650	8,450	9,425	
3 3/4						2,675	3,150	3,550	3,925	4,525	5,175	5,950	6,550	7,300	8,075	9,000		
4						2,550	3,025	3,400	3,750	4,325	4,950	5,675	6,250	7,000	7,725	8,600		
4 1/8						2,450	2,900	3,250	3,600	4,150	4,750	5,450	6,000	6,700	7,400	8,250		
4 1/4						2,350	2,775	3,125	3,450	3,975	4,550	5,225	5,550	6,425	7,100	7,925		
4 1/2						2,250	2,675	3,000	3,325	3,825	4,375	5,025	5,525	6,175	6,825	7,600		
4 3/4						2,175	2,575	2,875	3,200	3,675	4,225	4,850	5,325	5,950	6,575	7,325		
5						2,100	2,475	2,775	3,075	3,550	4,075	4,675	5,150	5,750	6,350	7,075		
5 1/8						2,025	2,400	2,675	2,975	3,425	3,925	4,500	4,950	5,550	6,100	6,825		
5 1/4	1,950	2,325	2,600	2,875	3,325	3,800	4,350	4,800	5,350	5,900	6,600	7,200	8,125	8,800				
5 1/2	1,900	2,250	2,500	2,775	3,200	3,675	4,200	4,650	5,175	5,725	6,375	6,975	7,850	8,500				
6	1,825	2,175	2,425	2,700	3,100	4,075	4,090	4,500	5,025	5,550	6,175	6,750	7,600	8,250				
6 1/4	1,725	2,050	2,300	2,550	2,925	3,350	3,850	4,225	4,725	5,225	5,825	6,350	7,150	7,750				
6 1/2	1,625	1,925	2,150	2,400	2,750	3,150	3,625	4,000	4,450	4,925	5,500	6,000	6,750	7,325	7,925			
6 3/4	1,550	1,825	2,050	2,275	2,625	3,000	3,450	3,775	4,225	4,675	5,200	5,675	6,400	6,950	7,500			
7	1,475	1,750	1,950	2,150	2,500	2,850	3,275	3,600	4,025	4,450	4,950	5,400	6,100	6,600	7,150			
8	1,400	1,650	1,850	2,050	2,375	2,700	3,100	3,425	3,825	4,225	4,700	5,150	5,800	6,275	6,800			
9	1,325	1,575	1,775	1,950	2,250	2,600	2,975	3,375	3,650	4,025	4,500	4,900	5,550	6,000	6,500	7,050		
10	1,275	1,500	1,700	1,875	2,150	2,475	2,850	3,125	3,500	3,850	4,300	4,700	5,300	5,725	6,200	6,750		
12	1,220	1,450	1,625	1,800	2,075	2,375	2,750	3,000	3,350	3,700	4,125	4,500	5,075	5,500	5,950	6,475	7,100	
14	925	1,100	1,225	1,350	1,550	1,775	2,050	2,250	2,525	2,775	3,100	3,375	3,800	4,125	4,475	4,850	5,325	5,625
16	750	875	975	1,075	1,250	1,425	1,625	1,800	2,000	2,225	2,475	2,700	3,050	3,300	3,575	3,875	4,250	4,500
18	625	725	825	900	1,050	1,200	1,375	1,500	1,675	1,850	2,075	2,250	2,550	2,750	2,975	3,250	3,550	3,750
20	525	625	700	775	900	1,025	1,175	1,300	1,450	1,600	1,775	1,925	2,175	2,350	2,550	2,775	3,050	3,225
22	450	550	600	675	775	900	1,025	1,125	1,250	1,400	1,550	1,700	1,900	2,050	2,225	2,425	2,675	2,825
24	400	475	550	600	700	800	900	1,000	1,125	1,250	1,375	1,500	1,700	1,850	1,975	2,150	2,350	2,500
26	375	450	500	550	625	725	825	900	1,000	1,100	1,250	1,350	1,525	1,650	1,775	1,950	2,125	2,250
28	300	375	400	450	525	600	675	750	850	925	1,025	1,125	1,250	1,375	1,475	1,625	1,775	1,875
30	250	300	325	350	425	475	550	600	675	750	825	900	1,025	1,100	1,200	1,300	1,425	1,500



Stainless Steel Tubing

THEORETICAL WEIGHTS*

WALL THICKNESS		OUTSIDE DIAMETER IN INCHES AND POUNDS PER FOOT											
Fraction or B.W.G.	Decimal	1/8 .125	3/16 .187	1/4 .250	5/16 .313	3/8 .375	7/16 .438	1/2 .500	9/16 .563	5/8 .625	11/16 .688	3/4 .750	13/16 .813
31	.010	.0124	.0192	.0258	.0327	.0394	.0461	.0528	.0597	.0663	.0731	.0797	.0866
30	.012	.0146	.0228	.0308	.0390	.0469	.0551	.0631	.0713	.0793	.0874	.0955	.1037
29	.013	.0157	.0245	.0332	.0421	.0508	.0596	.0682	.0771	.0858	.0946	.1033	.1121
28	.014	.0167	.0262	.0356	.0451	.0545	.0640	.0734	.0829	.0923	.1017	.1110	.1206
27 or 1/4	.016	.0188	.0297	.0404	.0513	.0619	.0728	.0835	.0944	.1051	.1159	.1266	.1375
26	.018	.0208	.0330	.0450	.0572	.0692	.0815	.0936	.1058	.1178	.1300	.1420	.1542
25	.020	.0226	.0362	.0496	.0632	.0765	.0901	.1035	.1171	.1304	.1440	.1574	.1710
24	.022	.0244	.0394	.0541	.0690	.0837	.0986	.1133	.1283	.1430	.1580	.1727	.1877
23	.025	.0269	.0439	.0607	.0776	.0944	.1113	.1280	.1450	.1617	.1787	.1954	.2124
22	.028	.0293	.0482	.0670	.0860	.1048	.1238	.1424	.1615	.1802	.1993	.2179	.2369
21	.032	.0321	.0538	.0752	.0969	.1183	.1401	.1614	.1832	.2046	.2263	.2477	.2694
20	.035	.0339	.0577	.0812	.1049	.1283	.1520	.1754	.1993	.2226	.2464	.2698	.2936
19	.042			.0942	.1227	.1508	.1793	.2073	.2359	.2640	.2925	.3206	.3491
18	.049			.1062	.1395	.1722	.2055	.2382	.2715	.3043	.3376	.3703	.4036
17	.058			.1200	.1595	.1983	.2376	.2764	.3158	.3545	.3939	.4328	.4721
16	.063			.1270	.1698	.2119	.2547	.2968	.3396	.3817	.4245	.4666	.5094
16	.065			.1296	.1738	.2172	.2605	.3049	.3490	.3925	.4366	.4800	.5242
15	.072							.3322	.3812	.4292	.4782	.5263	.5752
14	.083							.3731	.4295	.4851	.5414	.5969	.6532
13	.095									.5428	.6074	.6709	.7354
12 or 3/4	.109											.7533	.8273
11	.120												
10	.125												
10	.134												
9	.141												
9	.148												
8	.156												
8	.165												
7	.180												
6 or 1 1/4	.203												
5	.220												
4	.238												
1/4	.250												
3	.259												
1/2	.281												
2	.284												
1	.300												
5/16	.313												

*The weights on these and the following pages were calculated according to the formula:

$$W = 10.78 (D-t) \times t$$

where

W = the weight in pounds, of one foot of tubing

D = the outside diameter of the tube in inches, and

t = the wall thickness in inches

This formula involves the density of tubing material. The formula, and therefore, the values given in these tables apply to types 302, 304, 305, 308, 309, 310, 316, 317, and 321. For other materials, multiply the figure in the tables by the following factors:

Types 347 and 348.....	1.014
Type 409.....	.972
Hastelloy B.....	1.168
Hastelloy C.....	1.129
Incoloy 800.....	1.014
Incoloy 825.....	1.028
Monel 400.....	1.115
Titanium.....	0.570
Low Carbon Steel.....	0.993

Stainless Steel Tubing

THEORETICAL WEIGHTS (continued)

WALL THICKNESS		OUTSIDE DIAMETER IN INCHES AND POUNDS PER FOOT											
Fraction or B.W.G.	Decimal	1 3/4 1.750	1 7/8 1.875	2 2.000	2 1/8 2.125	2 1/4 2.250	2 3/8 2.375	2 1/2 2.500	2 5/8 2.625	2 3/4 2.750	2 7/8 2.875	3 3.000	3 1/8 3.125
31	.010												
30	.012												
29	.013												
28	.014												
27 or 1/4	.016	.2991	.3206	.3422									
26	.018	.3361	.3603	.3846									
25	.020	.3730	.3999	.4269	.4538	.4808	.5077	.5347	.5616	.5886	.6155	.6425	.6694
24	.022	.4098	.4395	.4692	.4987	.5284	.5580	.5877	.6173	.6470	.6766	.7063	.7359
23	.025	.4650	.4987	.5323	.5660	.5996	.6333	.6670	.7007	.7344	.7681	.8018	.8355
22	.028	.5198	.5575	.5953	.6330	.6708	.7085	.7462	.7839	.8216	.8593	.8971	.9348
21	.032	.5927	.6359	.6790	.7221	.7652	.8083	.8515	.8945	.9376	.9807	1.024	1.067
20	.035	.6472	.6943	.7415	.7886	.8359	.8830	.9301	.9773	1.025	1.072	1.118	1.166
19	.042	.7734	.8300	.8866	.9433	.9998	1.056	1.113	1.170	1.226	1.283	1.340	1.396
18	.049	.8986	.9647	1.031	1.096	1.163	1.228	1.295	1.361	1.426	1.493	1.559	1.625
17	.058	1.058	1.137	1.214	1.292	1.371	1.449	1.527	1.605	1.684	1.761	1.839	1.918
1 1/4	.063	1.146	1.230	1.315	1.400	1.486	1.571	1.655	1.740	1.825	1.910	1.995	2.079
16	.065	1.181	1.269	1.356	1.443	1.531	1.619	1.706	1.794	1.882	1.969	2.056	2.144
15	.072	1.302	1.399	1.497	1.594	1.691	1.788	1.885	1.982	2.078	2.175	2.273	2.370
14	.083	1.485	1.604	1.715	1.827	1.939	2.051	2.163	2.274	2.386	2.498	2.610	2.723
13	.095	1.695	1.823	1.951	2.079	2.207	2.335	2.463	2.591	2.719	2.848	2.975	3.103
12 or 3/4	.109	1.928	2.075	2.222	2.369	2.516	2.663	2.809	2.957	3.103	3.250	3.397	3.544
11	.120	2.109	2.270	2.432	2.594	2.756	2.917	3.079	3.240	3.403	3.564	3.726	3.887
1 1/2	.125	2.190	2.358	2.527	2.695	2.864	3.032	3.201	3.370	3.537	3.706	3.874	4.043
10	.134	2.335	2.516	2.695	2.876	3.057	3.237	3.418	3.599	3.779	3.960	4.141	4.321
3/4	.141	2.446	2.636	2.825	3.016	3.206	3.395	3.583	3.780	3.970	4.150	4.350	
9	.148			2.955	3.155	3.354	3.553	3.753	3.952	4.152	4.351	4.551	4.751
5/2	.156						3.732	3.942	4.152	4.362	4.572	4.783	4.994
8	.165						3.931	4.153	4.376	4.598	4.820		5.265
7	.180												
6 or 1 3/4	.203												
5	.220												
4	.238												
1/4	.250												
3	.259												
1/2	.281												
2	.284												
1	.300												
5/16	.313												

RESISTALLOY STAINLESS STEEL TUBING THEORETICAL WEIGHTS PER FOOT

Stainless Steel Tubing

THEORETICAL WEIGHTS (continued)

WALL THICKNESS		OUTSIDE DIAMETER IN INCHES AND POUNDS PER FOOT											
Fraction or B.W.G.	Decimal	3/4 3.250	33/8 3.375	3 1/2 3.500	35/8 3.625	3 3/4 3.750	37/8 3.875	4 4.000	4 1/8 4.125	4 1/4 4.250	4 3/8 4.375	4 1/2 4.500	4 5/8 4.625
31	.010												
30	.012												
29	.013												
28	.014												
27 or 1/4	.016												
26	.018												
25	.020	.6964	.7233	.7503	.7772	.8042	.8311	.8581					
24	.022	.7656	.7952	.8248	.8545	.8841	.9138	.9434					
23	.025	.8691	.9028	.9365	.9702	1.004	1.038	1.071					
22	.028	.9725	1.010	1.048	1.086	1.123	1.161	1.199	1.237	1.274	1.312	1.350	1.388
21	.032	1.110	1.153	1.196	1.239	1.283	1.326	1.369	1.412	1.455	1.498	1.541	1.584
20	.035	1.213	1.260	1.307	1.355	1.402	1.449	1.496	1.543	1.591	1.637	1.685	1.732
19	.042	1.453	1.509	1.566	1.622	1.679	1.735	1.792	1.848	1.906	1.961	2.019	2.075
18	.049	1.691	1.757	1.823	1.889	1.955	2.021	2.088	2.153	2.219	2.285	2.351	2.418
17	.058	1.996	2.074	2.152	2.231	2.309	2.386	2.465	2.543	2.622	2.699	2.778	2.856
16	.063	2.164	2.249	2.335	2.420	2.504	2.589	2.674	2.759	2.844	2.928	3.013	3.098
16	.065	2.232	2.320	2.408	2.494	2.582	2.670	2.758	2.845	2.932	3.020	3.108	3.196
15	.072	2.467	2.564	2.661	2.758	2.855	2.952	3.049	3.147	3.243	3.340	3.437	3.534
14	.083	2.834	2.946	3.058	3.170	3.282	3.393	3.505	3.617	3.729	3.841	3.952	4.064
13	.095	3.231	3.360	3.488	3.616	3.743	3.871	4.000	4.128	4.256	4.383	4.511	4.640
12 or 3/4	.109	3.692	3.838	3.985	4.132	4.279	4.426	4.573	4.719	4.867	5.013	5.160	5.307
11	.120	4.049	4.212	4.373	4.535	4.696	4.858	5.020	5.182	5.343	5.505	5.666	5.829
10	.125	4.212	4.380	4.549	4.717	4.885	5.053	5.222	5.391	5.559	5.728	5.896	6.065
10	.134	4.501	4.682	4.863	5.043	5.224	5.405	5.585	5.766	5.946	6.127	6.307	6.488
9	.141												
9	.148	4.949	5.149	5.341	5.548	5.747	5.947	6.147	6.346	6.545	6.744	6.944	7.144
8	.156	5.204	5.414	5.624	5.835	6.045	6.255	6.465	6.676	6.886	7.096	7.306	7.517
8	.165	5.488	5.711	5.933	6.155	6.377	6.600	6.822	7.044	7.267	7.489	7.711	7.934
7	.180												
6 or 1 1/4	.203												
5	.220												
4	.238												
1/4	.250												
3	.259												
3/2	.281												
2	.284												
1	.300												
5/8	.313												

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Stainless Steel Tubing

THEORETICAL WEIGHTS (continued)

WALL THICKNESS		OUTSIDE DIAMETER IN INCHES AND POUNDS PER FOOT											
Fraction or B.W.G.	Decimal	4 3/4 4.750	4 7/8 4.875	5 5.000	5 1/8 5.125	5 1/4 5.250	5 3/8 5.375	5 1/2 5.500	5 5/8 5.625	5 3/4 5.750	5 7/8 5.875	6 6.000	6 1/8 6.125
31	.010												
30	.012												
29	.013												
28	.014												
27 or 1/4	.016												
26	.018												
25	.020												
24	.022												
23	.025												
22	.028	1.425	1.463	1.501									
21	.032	1.628	1.671	1.714									
20	.035	1.779	1.826	1.874	1.921	1.967	2.015	2.062	2.109	2.156	2.203	2.251	
19	.042	2.132	2.188	2.245	2.302	2.358	2.415	2.471	2.528	2.584	2.641	2.698	
18	.049	2.483	2.550	2.616	2.681	2.748	2.813	2.879	2.945	3.011	3.077	3.143	
17	.058	2.934	3.012	3.090	3.169	3.246	3.325	3.403	3.481	3.559	3.637	3.715	
1 1/8	.063	3.184	3.269	3.353	3.438	3.523	3.608	3.693	3.777	3.862	3.948	4.033	4.118
16	.065	3.283	3.371	3.458	3.546	3.633	3.721	3.809	3.897	3.984	4.071	4.159	4.247
15	.072	3.631	3.728	3.825	3.923	4.020	4.117	4.214	4.310	4.407	4.504	4.601	4.699
14	.083	4.176	4.288	4.400	4.511	4.623	4.735	4.848	4.960	5.071	5.183	5.295	5.407
13	.095	4.768	4.896	5.024	5.151	5.280	5.408	5.536	5.664	5.792	5.920	6.048	6.176
12 or 3/4	.109	5.454	5.601	5.748	5.894	6.042	6.188	6.336	6.482	6.629	6.776	6.923	7.069
11	.120	5.990	6.152	6.313	6.475	6.637	6.799	6.960	7.122	7.283	7.446	7.607	7.769
1 1/8	.125	6.233	6.401	6.570	6.738	6.907	7.075	7.244	7.413	7.580	7.749	7.917	8.086
10	.134	6.669	6.849	7.030	7.211	7.391	7.571	7.752	7.933	8.113	8.294	8.475	8.655
9 1/4	.141												
9	.148	7.343	7.543	7.742	7.942	8.141	8.340	8.540	8.739	8.939	9.138	9.338	9.537
5 1/2	.156	7.727	7.937	8.147	8.358	8.568	8.778	8.987	9.197	9.407	9.618	9.828	10.04
8	.165	8.157	8.379	8.601	8.824	9.046	9.268	9.489	9.712	9.934	10.16	10.38	10.60
7	.180							10.32	10.57	10.81	11.05	11.29	11.54
6 or 1 3/4	.203							11.59	11.87	12.14	12.41	12.69	12.96
5	.220							12.52	12.82	13.11	13.41	13.71	14.00
4	.238							13.50	13.82	14.14	14.46	14.78	15.10
1/4	.250												
3	.259												
3/32	.281												
2	.284												
1	.300												
1/8	.313												

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26.000 or 26.125 or 26.250 or 26.375 or 26.500 or 26.625 or 26.750 or 26.875 or 27.000 or 27.125 or 27.250 or 27.375 or 27.500 or 27.625 or 27.750 or 27.875 or 28.000 or 28.125 or 28.250 or 28.375 or 28.500 or 28.625 or 28.750 or 28.875 or 29.000 or 29.125 or 29.250 or 29.375 or 29.500 or 29.625 or 29.750 or 29.875 or 30.000 or 30.125 or 30.250 or 30.375 or 30.500 or 30.625 or 30.750 or 30.875 or 31.000 or 31.125 or 31.250 or 31.375 or 31.500 or 31.625 or 31.750 or 31.875 or 32.000 or 32.125 or 32.250 or 32.375 or 32.500 or 32.625 or 32.750 or 32.875 or 33.000 or 33.125 or 33.250 or 33.375 or 33.500 or 33.625 or 33.750 or 33.875 or 34.000 or 34.125 or 34.250 or 34.375 or 34.500 or 34.625 or 34.750 or 34.875 or 35.000 or 35.125 or 35.250 or 35.375 or 35.500 or 35.625 or 35.750 or 35.875 or 36.000 or 36.125 or 36.250 or 36.375 or 36.500 or 36.625 or 36.750 or 36.875 or 37.000 or 37.125 or 37.250 or 37.375 or 37.500 or 37.625 or 37.750 or 37.875 or 38.000 or 38.125 or 38.250 or 38.375 or 38.500 or 38.625 or 38.750 or 38.875 or 39.000 or 39.125 or 39.250 or 39.375 or 39.500 or 39.625 or 39.750 or 39.875 or 40.000 or 40.125 or 40.250 or 40.375 or 40.500 or 40.625 or 40.750 or 40.875 or 41.000 or 41.125 or 41.250 or 41.375 or 41.500 or 41.625 or 41.750 or 41.875 or 42.000 or 42.125 or 42.250 or 42.375 or 42.500 or 42.625 or 42.750 or 42.875 or 43.000 or 43.125 or 43.250 or 43.375 or 43.500 or 43.625 or 43.750 or 43.875 or 44.000 or 44.125 or 44.250 or 44.375 or 44.500 or 44.625 or 44.750 or 44.875 or 45.000 or 45.125 or 45.250 or 45.375 or 45.500 or 45.625 or 45.750 or 45.875 or 46.000 or 46.125 or 46.250 or 46.375 or 46.500 or 46.625 or 46.750 or 46.875 or 47.000 or 47.125 or 47.250 or 47.375 or 47.500 or 47.625 or 47.750 or 47.875 or 48.000 or 48.125 or 48.250 or 48.375 or 48.500 or 48.625 or 48.750 or 48.875 or 49.000 or 49.125 or 49.250 or 49.375 or 49.500 or 49.625 or 49.750 or 49.875 or 50.000 or 50.125 or 50.250 or 50.375 or 50.500 or 50.625 or 50.750 or 50.875 or 51.000 or 51.125 or 51.250 or 51.375 or 51.500 or 51.625 or 51.750 or 51.875 or 52.000 or 52.125 or 52.250 or 52.375 or 52.500 or 52.625 or 52.750 or 52.875 or 53.000 or 53.125 or 53.250 or 53.375 or 53.500 or 53.625 or 53.750 or 53.875 or 54.000 or 54.125 or 54.250 or 54.375 or 54.500 or 54.625 or 54.750 or 54.875 or 55.000 or 55.125 or 55.250 or 55.375 or 55.500 or 55.625 or 55.750 or 55.875 or 56.000 or 56.125 or 56.250 or 56.375 or 56.500 or 56.625 or 56.750 or 56.875 or 57.000 or 57.125 or 57.250 or 57.375 or 57.500 or 57.625 or 57.750 or 57.875 or 58.000 or 58.125 or 58.250 or 58.375 or 58.500 or 58.625 or 58.750 or 58.875 or 59.000 or 59.125 or 59.250 or 59.375 or 59.500 or 59.625 or 59.750 or 59.875 or 60.000 or 60.125 or 60.250 or 60.375 or 60.500 or 60.625 or 60.750 or 60.875 or 61.000 or 61.125 or 61.250 or 61.375 or 61.500 or 61.625 or 61.750 or 61.875 or 62.000 or 62.125 or 62.250 or 62.375 or 62.500 or 62.625 or 62.750 or 62.875 or 63.000 or 63.125 or 63.250 or 63.375 or 63.500 or 63.625 or 63.750 or 63.875 or 64.000 or 64.125 or 64.250 or 64.375 or 64.500 or 64.625 or 64.750 or 64.875 or 65.000 or 65.125 or 65.250 or 65.375 or 65.500 or 65.625 or 65.750 or 65.875 or 66.000 or 66.125 or 66.250 or 66.375 or 66.500 or 66.625 or 66.750 or 66.875 or 67.000 or 67.125 or 67.250 or 67.375 or 67.500 or 67.625 or 67.750 or 67.875 or 68.000 or 68.125 or 68.250 or 68.375 or 68.500 or 68.625 or 68.750 or 68.875 or 69.000 or 69.125 or 69.250 or 69.375 or 69.500 or 69.625 or 69.750 or 69.875 or 70.000 or 70.125 or 70.250 or 70.375 or 70.500 or 70.625 or 70.750 or 70.875 or 71.000 or 71.125 or 71.250 or 71.375 or 71.500 or 71.625 or 71.750 or 71.875 or 72.000 or 72.125 or 72.250 or 72.375 or 72.500 or 72.625 or 72.750 or 72.875 or 73.000 or 73.125 or 73.250 or 73.375 or 73.500 or 73.625 or 73.750 or 73.875 or 74.000 or 74.125 or 74.250 or 74.375 or 74.500 or 74.625 or 74.750 or 74.875 or 75.000 or 75.125 or 75.250 or 75.375 or 75.500 or 75.625 or 75.750 or 75.875 or 76.000 or 76.125 or 76.250 or 76.375 or 76.500 or 76.625 or 76.750 or 76.875 or 77.000 or 77.125 or 77.250 or 77.375 or 77.500 or 77.625 or 77.750 or 77.875 or 78.000 or 78.125 or 78.250 or 78.375 or 78.500 or 78.625 or 78.750 or 78.875 or 79.000 or 79.125 or 79.250 or 79.375 or 79.500 or 79.625 or 79.750 or 79.875 or 80.000 or 80.125 or 80.250 or 80.375 or 80.500 or 80.625 or 80.750 or 80.875 or 81.000 or 81.125 or 81.250 or 81.375 or 81.500 or 81.625 or 81.750 or 81.875 or 82.000 or 82.125 or 82.250 or 82.375 or 82.500 or 82.625 or 82.750 or 82.875 or 83.000 or 83.125 or 83.250 or 83.375 or 83.500 or 83.625 or 83.750 or 83.875 or 84.000 or 84.125 or 84.250 or 84.375 or 84.500 or 84.625 or 84.750 or 84.875 or 85.000 or 85.125 or 85.250 or 85.375 or 85.500 or 85.625 or 85.750 or 85.875 or 86.000 or 86.125 or 86.250 or 86.375 or 86.500 or 86.625 or 86.750 or 86.875 or 87.000 or 87.125 or 87.250 or 87.375 or 87.500 or 87.625 or 87.750 or 87.875 or 88.000 or 88.125 or 88.250 or 88.375 or 88.500 or 88.625 or 88.750 or 88.875 or 89.000 or 89.125 or 89.250 or 89.375 or 89.500 or 89.625 or 89.750 or 89.875 or 90.000 or 90.125 or 90.250 or 90.375 or 90.500 or 90.625 or 90.750 or 90.875 or 91.000 or 91.125 or 91.250 or 91.375 or 91.500 or 91.625 or 91.750 or 91.875 or 92.000 or 92.125 or 92.250 or 92.375 or 92.500 or 92.625 or 92.750 or 92.875 or 93.000 or 93.125 or 93.250 or 93.375 or 93.500 or 93.625 or 93.750 or 93.875 or 94.000 or 94.125 or 94.250 or 94.375 or 94.500 or 94.625 or 94.750 or 94.875 or 95.000 or 95.125 or 95.250 or 95.375 or 95.500 or 95.625 or 95.750 or 95.875 or 96.000 or 96.125 or 96.250 or 96.375 or 96.500 or 96.625 or 96.750 or 96.875 or 97.000 or 97.125 or 97.250 or 97.375 or 97.500 or 97.625 or 97.750 or 97.875 or 98.000 or 98.125 or 98.250 or 98.375 or 98.500 or 98.625 or 98.750 or 98.875 or 99.000 or 99.125 or 99.250 or 99.375 or 99.500 or 99.625 or 99.750 or 99.875 or 100.000 or 100.125 or 100.250 or 100.375 or 100.500 or 100.625 or 100.750 or 100.875 or 101.000 or 101.125 or 101.250 or 101.375 or 101.500 or 101.625 or 101.750 or 101.875 or 102.000 or 102.125 or 102.250 or 102.375 or 102.500 or 102.625 or 102.750 or 102.875 or 103.000 or 103.125 or 103.250 or 103.375 or 103.500 or 103.625 or 103.750 or 103.875 or 104.000 or 104.125 or 104.250 or 104.375 or 104.500 or 104.625 or 104.750 or 104.875 or 105.000 or 105.125 or 105.250 or 105.375 or 105.500 or 105.625 or 105.750 or 105.875 or 106.000 or 106.125 or 106.250 or 106.375 or 106.500 or 106.625 or 106.750 or 106.875 or 107.000 or 107.125 or 107.250 or 107.375 or 107.500 or 107.625 or 107.750 or 107.875 or 108.000 or 108.125 or 108.250 or 108.375 or 108.500 or 108.625 or 108.750 or 108.875 or 109.000 or 109.125 or 109.250 or 109.375 or 109.500 or 109.625 or 109.750 or 109.875 or 110.000 or 110.125 or 110.250 or 110.375 or 110.500 or 110.625 or 110.750 or 110.875 or 111.000 or 111.125 or 111.250 or 111.375 or 111.500 or 111.625 or 111.750 or 111.875 or 112.000 or 112.125 or 112.250 or 112.375 or 112.500 or 112.625 or 112.750 or 112.875 or 113.000 or 113.125 or 113.250 or 113.375 or 113.500 or 113.625 or 113.750 or 113.875 or 114.000 or 114.125 or 114.250 or 114.375 or 114.500 or 114.625 or 114.750 or 114.875 or 115.000 or 115.125 or 115.250 or 115.375 or 115.500 or 115.625 or 115.750 or 115.875 or 116.000 or 116.125 or 116.250 or 116.375 or 116.500 or 116.625 or 116.750 or 116.875 or 117.000 or 117.125 or 117.250 or 117.375 or 117.500 or 117.625 or 117.750 or 117.875 or 118.000 or 118.125 or 118.250 or 118.375 or 118.500 or 118.625 or 118.750 or 118.875 or 119.000 or 119.125 or 119.250 or 119.375 or 119.500 or 119.625 or 119.750 or 119.875 or 120.000 or 120.125 or 120.250 or 120.375 or 120.500 or 120.625 or 120.750 or 120.875 or 121.000 or 121.125 or 121.250 or 121.375 or 121.500 or 121.625 or 121.750 or 121.875 or 122.000 or 122.125 or 122.250 or 122.375 or 122.5

Stainless Steel Bars

WEIGHT IN POUNDS PER FOOT

Size in Inches	Round	Square	Octa-gon	Hexa-gon	Size in Inches	Round	Square	Octa-gon	Hexa-gon	Size in Inches	Round	Square	Octa-gon
1/16	.010	.013	.011	.012	1 1/4	4.172	5.313	4.407	4.601	4 3/4	60.25	76.71	63.62
5/64	.017	.022	.018	.019	1 5/16	4.600	5.857	4.858	5.072	4 13/16	61.85	78.75	65.32
3/32	.023	.029	.024	.025	1 3/8	5.049	6.428	5.332	5.567	4 7/8	63.46	80.80	67.02
7/64	.031	.039	.033	.034	1 7/16	5.518	7.026	5.827	6.085	4 15/16	65.10	82.89	68.75
1/8	.042	.053	.044	.046	1 1/2	6.008	7.650	6.345	6.625	5	66.76	85.00	70.50
9/64	.053	.067	.056	.058	1 9/16	6.519	8.301	6.885	7.189	5 1/16	68.44	87.14	72.27
5/32	.065	.083	.069	.072	1 5/8	7.051	8.978	7.446	7.775	5 1/8	70.14	89.30	74.07
11/64	.079	.100	.083	.087	1 11/16	7.604	9.682	8.030	8.385	5 3/16	71.86	91.50	75.89
3/16	.094	.120	.099	.104	1 3/4	8.178	10.41	8.634	9.018	5 1/4	73.60	93.71	77.72
13/64	.110	.140	.116	.121	1 13/16	8.773	11.17	9.265	9.673	5 5/16	75.36	95.96	79.59
7/32	.128	.163	.135	.141	1 7/8	9.388	11.95	9.911	10.35	5 3/8	77.15	98.23	81.47
15/64	.147	.187	.155	.162	1 15/16	10.02	12.76	10.58	11.05	5 7/16	78.95	100.5	83.38
1/4	.167	.213	.176	.184	2	10.68	13.60	11.28	11.78	5 1/2	80.78	102.9	85.30
17/64	.188	.240	.199	.207	2 1/16	11.36	14.46	11.99	12.53	5 9/16	82.62	105.2	87.25
9/32	.211	.269	.223	.233	2 1/8	12.06	15.35	12.73	13.30	5 5/8	84.49	107.6	89.23
19/64	.235	.300	.248	.259	2 3/16	12.78	16.27	13.49	14.09	5 11/16	86.38	110.0	91.22
5/16	.261	.332	.275	.288	2 1/4	13.52	17.21	14.27	14.91	5 3/4	88.29	112.4	93.23
21/64	.288	.365	.304	.318	2 5/16	14.28	18.18	15.08	15.75	5 13/16	90.22	114.9	95.27
11/32	.316	.402	.334	.348	2 3/8	15.06	19.18	15.91	16.61	5 7/8	92.17	117.7	97.33
33/64	.345	.439	.364	.381	2 7/16	15.87	20.20	16.75	17.49	5 15/16	94.14	119.9	99.41
3/8	.376	.478	.397	.414	2 1/2	16.69	21.25	17.62	18.40	6	96.13	122.4	101.5
25/64	.408	.519	.431	.450	2 9/16	17.53	22.33	18.52	19.34	6 1/16	98.15	125.0	103.6
13/32	.441	.561	.466	.486	2 5/8	18.40	23.43	19.43	20.29	6 1/8	100.2	127.6	105.8
27/64	.475	.605	.502	.524	2 11/16	19.20	24.56	20.37	21.27	6 3/16	102.2	130.2	108.0
7/16	.511	.651	.540	.564	2 3/4	20.19	25.71	21.33	22.27	6 1/4	104.3	132.8	110.2
29/64	.548	.698	.579	.604	2 13/16	21.12	26.90	22.31	23.29	6 5/16	106.4	135.5	112.4
15/32	.587	.747	.620	.647	2 7/8	22.07	28.10	23.31	24.34	6 3/8	108.5	138.2	114.6
31/64	.627	.798	.662	.692	2 15/16	23.04	29.34	24.33	25.41	6 7/16	110.7	140.9	116.9
1/2	.668	.850	.705	.736	3	24.03	30.60	25.38	26.50	6 1/2	112.8	143.7	119.1
33/64	.710	.904	.750	.783	3 1/16	25.05	31.89	26.45	27.62	6 9/16	115.0	146.4	121.4
17/32	.754	.960	.796	.831	3 1/8	26.08	33.20	27.54	28.76	6 5/8	117.2	149.2	123.8
35/64	.799	1.017	.844	.881	3 3/16	27.13	34.55	28.65	29.92	6 11/16	119.4	152.1	126.1
9/16	.845	1.076	.892	.932	3 1/4	28.21	35.91	29.79	....	6 3/4	121.7	154.9	128.5
37/64	.893	1.136	.943	.985	3 5/16	29.30	37.21	30.94	....	6 13/16	123.9	157.8	130.9
19/32	.941	1.199	.994	1.038	3 3/8	30.42	38.73	32.12	....	6 7/8	126.2	160.7	133.3
39/64	.992	1.263	1.048	1.094	3 7/16	31.55	40.18	33.32	....	6 15/16	128.5	163.6	135.7
5/8	1.043	1.328	1.102	1.150	3 1/2	32.71	41.65	34.54	....	7	130.9	166.6	138.2
41/64	1.096	1.395	1.157	1.209	3 9/16	33.90	43.15	35.79	....	7 1/16	133.2	169.6	140.7
21/32	1.150	1.464	1.214	1.268	3 5/8	35.09	44.68	37.07	....	7 1/8	135.6	172.6	143.2
43/64	1.205	1.535	1.272	1.329	3 11/16	36.31	46.23	38.34	....	7 3/16	138.0	175.6	145.7
11/16	1.262	1.607	1.333	1.392	3 3/4	37.55	47.81	39.65	....	7 1/4	140.4	178.7	148.2
45/64	1.320	1.681	1.394	1.456	3 13/16	38.81	49.42	40.99	....	7 5/16	142.8	181.8	150.8
23/32	1.380	1.756	1.487	1.521	3 7/8	40.10	51.05	42.34	....	7 3/8	145.2	184.9	153.4
47/64	1.440	1.834	1.521	1.588	3 15/16	41.40	52.71	43.72	....	7 7/16	147.7	188.1	156.0
3/4	1.502	1.913	1.586	1.656	4	42.73	54.40	45.12	....	7 1/2	150.2	191.3	158.6
25/32	1.630	2.075	1.721	1.797	4 1/16	44.07	56.11	46.54	....	7 5/8	155.3	197.7	164.0
13/16	1.763	2.245	1.862	1.944	4 1/8	45.44	57.85	47.98	....	7 3/4	160.4	204.2	169.4
27/32	1.901	2.421	2.008	2.096	4 3/16	46.83	59.62	49.45	....	7 7/8	165.6	210.9	174.9
7/8	2.045	2.603	2.159	2.254	4 1/4	48.23	61.41	50.93	....	8	170.9	217.6	180.5
29/32	2.193	2.792	2.316	2.418	4 5/16	49.66	63.23	52.44	....	8 1/4	181.8	230.9	192.0
15/16	2.347	2.988	2.479	2.588	4 3/8	51.11	65.08	53.98	....	8 1/2	192.9	245.7	203.8
31/32	2.506	3.191	2.646	2.763	4 7/16	52.58	66.95	55.53	....	8 3/4	204.4	259.6	215.8
1	2.670	3.400	2.820	2.945	4 1/2	54.08	68.85	57.10	....	9	216.3	275.4	228.4
1 1/16	3.015	3.838	3.183	3.324	4 9/16	55.59	70.78	58.70	....	10	227.0	340.0	282.0
1 1/8	3.380	4.303	3.569	3.727	4 5/8	57.12	72.73	60.32	....	11	323.1	411.4	341.2
1 3/16	3.766	4.795	3.977	4.152	4 11/16	58.68	74.71	61.96	....	12	384.4	489.6	406.1

ALSO AVAILABLE IN HIGH NICKEL ALLOYS & ALUMINIUM.

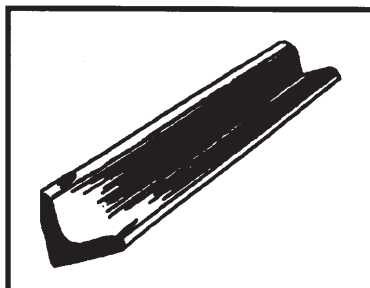
Stainless Steel Flat Bars

WEIGHT IN POUNDS PER FOOT

	WIDTH																					
	Inches	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	
THICKNESS	1/16	.053	.066	.080	.093	.106	.120	.133	.146	.159	.173	.186	.199	.213	.239	.266	.292	.319	.345	.372	.398	
	3/32	.080	.100	.120	.140	.159	.179	.199	.219	.239	.259	.279	.299	.319	.359	.398	.438	.478	.518	.558	.598	
	1/8	.106	.133	.159	.186	.213	.239	.266	.292	.319	.345	.372	.398	.425	.478	.531	.584	.638	.691	.744	.797	
	5/32	.133	.166	.199	.232	.266	.299	.332	.365	.398	.432	.465	.498	.531	.598	.664	.731	.797	.863	.930	.996	
	3/16	.159	.199	.239	.279	.319	.359	.398	.438	.478	.518	.558	.598	.638	.717	.797	.877	.956	1.04	1.12	1.20	
THICKNESS	1/4	.213	.266	.319	.372	.425	.478	.531	.584	.638	.691	.744	.797	.850	.956	1.06	1.17	1.28	1.38	1.49	1.59	
	5/16	.266	.332	.398	.465	.531	.598	.664	.731	.797	.863	.930	.996	1.06	1.20	1.33	1.46	1.59	1.73	1.86	1.99	
	3/8	.319	.398	.478	.558	.638	.717	.797	.877	.956	1.04	1.12	1.20	1.28	1.43	1.59	1.75	1.91	2.07	2.23	2.39	
	7/16	.372	.465	.558	.651	.744	.837	.930	1.02	1.12	1.21	1.30	1.40	1.49	1.67	1.86	2.05	2.31	2.42	2.60	2.79	
	1/2	.425	.531	.638	.744	.850	.956	1.06	1.17	1.28	1.38	1.49	1.59	1.70	1.91	2.13	2.34	2.55	2.76	2.98	3.19	
THICKNESS	9/16	.478	.598	.717	.837	.956	1.08	1.20	1.32	1.43	1.55	1.63	1.79	1.91	2.15	2.39	2.63	2.87	3.11	3.35	3.59	
	5/8	.531	.664	.797	.930	1.06	1.20	1.33	1.46	1.59	1.73	1.86	1.99	2.13	2.39	2.66	2.92	3.19	3.45	3.72	3.98	
	11/16	.584	.731	.877	1.02	1.17	1.32	1.46	1.61	1.75	1.90	2.05	2.19	2.34	2.63	2.92	3.21	3.51	3.80	4.09	4.38	
	3/4	.638	.797	.956	1.12	1.28	1.43	1.59	1.75	1.91	2.07	2.23	2.39	2.55	2.87	3.19	3.51	3.83	4.14	4.46	4.78	
	13/16	.691	.863	1.04	1.21	1.38	1.55	1.73	1.90	2.07	2.25	2.42	2.59	2.76	3.11	3.45	3.80	4.14	4.49	4.83	5.18	
THICKNESS	7/8	.744	.930	1.12	1.30	1.49	1.67	1.86	2.05	2.23	2.42	2.60	2.79	2.98	3.35	3.72	4.09	4.46	4.83	5.21	5.58	
	15/16	.797	.996	1.20	1.40	1.59	1.79	1.99	2.19	2.39	2.59	2.79	2.99	3.19	3.59	3.98	4.38	4.78	5.18	5.58	5.98	
	1	.850	1.06	1.28	1.49	1.70	1.91	2.13	2.34	2.55	2.76	2.98	3.19	3.40	3.83	4.25	4.68	5.10	5.53	5.95	6.38	
	1 1/8	.956	1.20	1.43	1.67	1.91	2.15	2.39	2.63	2.87	3.11	3.35	3.59	3.83	4.30	4.78	5.26	5.74	6.22	6.69	7.17	
	1 1/4	1.06	1.33	1.59	1.86	2.13	2.39	2.66	2.92	3.19	3.45	3.72	3.98	4.25	4.78	5.31	5.84	6.38	6.91	7.44	7.97	
THICKNESS	1 3/8	1.17	1.46	1.75	2.05	2.34	2.63	2.92	3.21	3.51	3.80	4.09	4.38	4.68	5.26	5.84	6.43	7.01	7.60	8.18	8.77	
	1 1/2	1.28	1.59	1.91	2.23	2.55	2.87	3.19	3.51	3.83	4.14	4.46	4.78	5.10	5.74	6.38	7.01	7.65	8.29	8.93	9.56	
	1 5/8	1.38	1.73	2.07	2.42	2.76	3.11	3.45	3.80	4.14	4.49	4.83	5.18	5.53	6.22	6.91	7.60	8.29	8.98	9.67	10.36	
	1 3/4	1.49	1.86	2.23	2.60	2.98	3.35	3.72	4.09	4.46	4.83	5.21	5.58	5.95	6.69	7.44	8.18	8.93	9.67	10.41	11.16	
	1 7/8	1.59	1.99	2.39	2.79	3.19	3.59	3.98	4.38	4.78	5.18	5.58	5.98	6.38	7.17	7.97	8.77	9.56	10.36	11.16	11.95	
THICKNESS	2	1.70	2.13	2.55	2.98	3.40	3.83	4.25	4.68	5.10	5.53	5.95	6.38	6.80	7.65	8.50	9.35	10.20	11.05	11.90	12.75	
	2 1/4	1.91	2.39	2.87	3.35	3.83	4.30	4.78	5.26	5.74	6.21	6.69	7.17	7.65	8.61	9.56	10.52	11.48	12.43	13.39	14.34	
	2 1/2	2.13	2.66	3.19	3.72	4.25	4.78	5.31	5.84	6.38	6.91	7.44	7.97	8.50	9.56	10.63	11.69	12.75	13.81	14.88	15.94	
	2 3/4	2.34	2.92	3.51	4.09	4.68	5.26	5.84	6.43	7.01	7.60	8.18	8.77	9.35	10.52	11.69	12.86	14.03	15.19	16.36	17.53	
	3	2.55	3.19	3.83	4.46	5.10	5.74	6.38	7.01	7.65	8.29	8.93	9.56	10.20	11.58	12.75	14.03	15.30	16.58	17.85	19.13	
	WIDTH																					
	Inches	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	5 1/4	5 1/2	5 3/4	6	8	10	12	
THICKNESS	1/16	.425	.478	.531	.584	.638	.691	.744	.797	.850	.903	.956	1.01	1.06	1.12	1.17	1.22	1.28	1.70	2.13	2.55	
	3/32	.638	.717	.797	.877	.956	1.04	1.12	1.20	1.28	1.36	1.43	1.51	1.59	1.67	1.75	1.83	1.91	2.55	3.19	3.83	
	1/8	.850	.956	1.06	1.17	1.28	1.38	1.49	1.59	1.70	1.81	1.91	2.02	2.13	2.23	2.34	2.44	2.55	3.40	4.25	5.10	
	5/32	1.06	1.20	1.33	1.46	1.59	1.73	1.86	1.99	2.13	2.26	2.39	2.52	2.66	2.79	2.92	3.05	3.19	4.25	5.31	6.38	
	3/16	1.28	1.43	1.59	1.75	1.91	2.07	2.23	2.39	2.55	2.71	2.87	3.03	3.19	3.35	3.51	3.67	3.83	5.10	6.38	7.65	
THICKNESS	1/4	1.70	1.91	2.13	2.34	2.55	2.76	2.98	3.19	3.40	3.61	3.83	4.04	4.25	4.46	4.68	4.89	5.10	6.80	8.50	10.20	
	5/16	2.13	2.39	2.66	2.92	3.19	3.45	3.72	3.98	4.25	4.52	4.78	5.05	5.31	5.58	5.84	6.11	6.38	8.50	10.63	12.75	
	3/8	2.55	2.87	3.19	3.51	3.83	4.14	4.46	4.78	5.10	5.42	5.74	6.06	6.38	6.69	7.01	7.33	7.65	10.20	12.75	15.30	
	7/16	2.98	3.35	3.72	4.09	4.46	4.83	5.21	5.58	5.95	6.32	6.69	7.07	7.44	7.81	8.18	8.55	8.93	11.90	14.88	17.85	
	1/2	3.40	3.83	4.25	4.68	5.10	5.53	5.95	6.38	6.80	7.23	7.65	8.08	8.50	8.93	9.35	9.78	10.20	13.60	17.00	20.40	
THICKNESS	9/16	3.83	4.30	4.78	5.26	5.74	6.22	6.69	7.17	7.65	8.13	8.61	9.08	9.56	10.04	10.52	11.00	11.48	15.30	19.13	22.95	
	5/8	4.25	4.78	5.31	5.84	6.38	6.91	7.44	7.97	8.50	9.03	9.56	10.09	10.63	11.16	11.69	12.22	12.75	17.00	21.25	25.50	
	11/16	4.68	5.26	5.84	6.43	7.01	7.60	8.18	8.77	9.35	9.93	10.52	11.10	11.69	12.27	12.86	13.44	14.03	18.70	23.38	28.05	
	3/4	5.10	5.74	6.38	7.01	7.65	8.29	8.93	9.56	10.20	10.84	11.48	12.11	12.75	13.39	14.03	14.66	15.30	20.40	25.50	30.60	
	13/16	5.53	6.22	6.91	7.60	8.29	8.98	9.67	10.36	11.05	11.74	12.43	13.12	13.81	14.50	15.19	15.88	16.58	22.10	27.63	33.15	
THICKNESS	7/8	5.95	6.69	7.44	8.18	8.93	9.67	10.41	11.16	11.90	12.64	13.39	14.13	14.88	15.62	16.36	17.11	17.85	23.80	29.75	35.70	
	15/16	6.38	7.17	7.97	8.77	9.56	10.36	11.16	11.95	12.75	13.55	14.34	15.14	15.94	16.73	17.53	18.33	19.13	25.50	31.88	38.25	
	1	6.80	7.65	8.50	9.35	10.20	11.05	11.90	12.75	13.60	14.45	15.30	16.15	17.00	17.85	18.70	19.55	20.40	27.20	34.00	40.80	
	1 1/8	7.65	8.61	9.56	10.52	11.48	12.43	13.39	14.34	15.30	16.26	17.21	18.17	19.13	20.08	21.04	21.99	22.95	30.60	38.25	45.90	
	1 1/4	8.50	9.56	10.63	11.69	12.75	13.81	14.88	15.94	17.00	18.06	19.13	20.19	21.25	22.31	23.38	24.44	25.50	34.00	42.50	51.00	
THICKNESS	1 3/8	9.35	10.52	11.69	12.86	14.03	15.19	16.36	17.53	18.70	19.87	21.04	22.21	23.38	24.54	25.71	26.88	28.05	37.40	46.75	56.10	
	1 1/2	10.20	11.48	12.75	14.03	15.30	16.58	17.85	19.13	20.40	21.68	22.95	24.23	25.50	26.78	28.05	29.33	30.60	40.80	51.00	61.20	
	1 5/8	11.05	12.43	13.81	15.19	16.58	17.96	19.34	20.72	22.10	23.48	24.86	26.24	27.63	29.01	30.39	31.77	33.15	44.20	55.25	66.30	
	1 3/4	11.90	13.39	14.88	16.36	17.85	19.34	20.83	22.31	23.80	25.29	26.78	28.26	29.75	31.24	32.73	34.21	35.70	47.40	59.50	71.40	
	1 7/8	12.75	14.34	1																		

Stainless Steel Angles

HOT ROLLED, ANNEALED AND PICKLED
12 TO 20 FOOT RANDOM LENGTHS



SPECIFICATION ASTM A-276

MILL TEST CERTIFICATES AVAILABLE

Size		Weight		T304	T316	T316L
(inches)	(mm)	(lbs/ft)	(kgs/m)			
1 x 1 x 1/8	25.40 x 25.40 x 3.175	.8500	1.266	*	*	
1 1/4 x 1 1/4 x 1/8	31.75 x 31.75 x 3.175	1.030	1.532	*	*	
1 1/2 x 1 1/2 x 1/8	38.10 x 38.10 x 3.175	1.300	1.936	*	*	
1 1/4 x 1 1/4 x 3/16	31.75 x 31.75 x 4.763	1.490	2.218		*	
1 1/2 x 1 1/2 x 3/16	38.10 x 38.10 x 4.763	1.890	2.812	*	*	
1 x 2 x 3/16	50.80 x 50.80 x 4.763	2.560	3.806	*	*	*
1 1/2 x 1 1/2 x 1/4	38.10 x 38.10 x 6.350	2.500	3.707	*	*	
2 x 2 x 1/4	50.80 x 50.80 x 6.350	3.350	4.987	*	*	*
2 1/2 x 2 1/2 x 1/4	63.50 x 63.50 x 6.350	4.300	6.398	*	*	
3 x 3 x 1/4	76.20 x 76.20 x 6.350	5.050	7.513	*	*	
2 1/2 x 2 1/2 x 3/8	63.50 x 63.50 x 9.525	6.080	9.055		*	
3 x 3 x 3/8	76.20 x 76.20 x 9.525	7.344	10.925	*	*	

*Standard Production Sizes
Larger sizes now available

Stainless Steel Bars

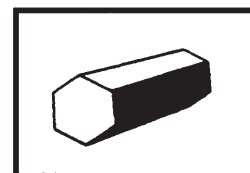
HOT ROLLED, ANNEALED AND PICKLED
12 FOOT RANDOM LENGTHS

SPECIFICATION ASTM A-276

MILL TEST CERTIFICATES AVAILABLE

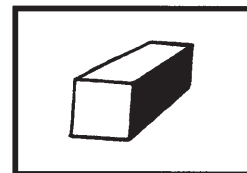
HEXAGON

Size		Weight		T316
(inches)	(mm)	(lbs/ft)	(kgs/m)	
3/8	9.525	.420	.627	*
7/16	11.11	.572	.853	*
1/2	12.70	.747	1.112	*
9/16	14.29	.946	1.408	*
5/8	15.88	1.170	1.742	*
11/16	17.46	1.312	1.952	*
3/4	19.05	1.680	2.500	*
7/8	22.23	2.280	3.379	*
1	25.40	2.980	4.429	*
1 1/16	26.99	3.324	4.954	*
1 1/8	28.58	3.790	5.643	*
1 1/4	31.75	4.760	7.087	*
1 5/16	33.34	5.072	7.546	*
1 3/8	34.93	5.650	8.399	*
1 1/2	38.10	6.720	10.006	*
1 3/4	34.45	9.160	13.615	*
2	50.80	11.960	17.782	*
2 1/4	57.15	14.910	22.178	*
2 1/2	63.50	18.680	27.788	*



SQUARES

Size		Weight		T316
(inches)	(mm)	(lbs/ft)	(kgs/m)	
1/8	3.175	.053	.079	*
3/16	4.763	.120	.177	*
1/4	6.350	.214	.318	*
3/8	9.525	.481	.715	*
1/2	12.70	.863	1.283	*
5/8	15.88	1.350	2.008	*
3/4	19.05	1.940	2.887	*
1	25.40	3.450	5.118	*
1 1/4	31.75	5.390	8.038	*
1 1/2	38.10	7.760	11.549	*
1 3/4	44.45	9.110	13.550	*
2	50.80	13.800	20.538	*



*Standard Production Sizes

Stainless Steel Sheet

APPROXIMATE WEIGHTS

Sheet Size	8 GA .1719" 7.01 lb.	9 GA .1563" 6.37 lb.	10 GA .1406" 5.72 lb.	11 GA .1250" 5.10 lb.	12 GA .1094" 4.46 lb.	13 GA .0938" 3.83 lb.	14 GA .0781" 3.18 lb.	15 GA .0703" 2.87 lb.	16 GA .0625" 2.55 lb.	17 GA .0563" 2.29 lb.	18 GA .0500" 2.03 lb.
30 x 96	140.2	127.4	114.4	102.0	89.2	76.6	63.6	57.4	51.0	45.8	40.6
30 x 120	175.2	159.2	143.0	127.5	111.5	95.7	79.5	71.7	63.8	57.2	50.8
30 x 144	210.3	191.1	171.6	153.0	133.8	114.9	95.4	86.1	76.5	68.7	60.9
36 x 96	168.2	152.8	137.3	122.4	107.0	91.9	76.3	68.8	61.2	54.9	48.7
36 x 120	210.3	191.1	171.6	153.0	133.8	114.9	95.4	86.1	76.5	68.7	60.9
36 x 144	252.3	229.3	205.9	183.6	160.6	137.8	114.5	103.3	91.8	82.4	73.1
42 x 96	196.2	178.3	160.2	142.8	124.9	107.2	89.0	80.3	71.4	64.1	56.8
42 x 120	245.3	222.9	200.2	178.5	156.1	134.0	111.3	100.4	89.3	80.1	71.1
42 x 144	294.4	267.5	240.2	214.2	187.3	160.8	133.6	120.5	107.1	96.1	85.3
48 x 96	224.3	203.8	183.0	163.2	142.7	122.5	101.8	91.8	81.6	73.2	65.0
48 x 120	280.4	254.8	228.8	204.0	178.4	153.2	127.2	114.8	102.0	91.6	81.2
48 x 144	336.4	305.7	274.6	244.8	214.1	183.8	152.6	137.7	122.4	109.9	97.4
60 x 96	280.4	254.8	228.8	204.0	178.4	153.2	127.2	114.8	102.0	91.6	81.2
60 x 120	350.5	318.5	286.0	255.0	223.0	191.5	159.0	143.5	127.5	114.5	101.5
60 x 144	420.6	382.2	343.2	306.0	267.6	229.8	190.8	172.2	153.0	137.4	121.8
72 x 96	336.4	305.7	274.5	244.8	214.0	183.8	152.6	137.7	122.4	109.9	97.4
72 x 120	420.6	382.2	343.2	306.0	267.6	229.8	190.8	172.2	153.0	137.4	121.8
72 x 144	504.7	458.6	411.8	367.2	321.1	275.7	228.9	206.6	183.6	164.8	146.1

Sheet Size	19 GA .0438" 1.78 lb.	20 GA .0375" 1.52 lb.	21 GA .0344" 1.40 lb.	22 GA .0313" 1.27 lb.	23 GA .0281" 1.15 lb.	24 GA .0250" 1.02 lb.	25 GA .0219" .89 lb.	26 GA .0188" .76 lb.	28 GA .0156" .63 lb.	30 GA .0125" .51 lb.
30 x 96	35.6	30.4	28.0	25.4	23.0	20.4	17.8	15.2	12.6	10.2
30 x 120	44.5	38.0	35.0	31.8	28.7	25.5	22.2	19.0	15.7	12.7
30 x 144	53.4	45.6	42.0	38.1	34.5	30.6	26.7	22.8	18.9	15.3
36 x 96	42.7	36.5	33.6	30.5	27.6	24.5	21.3	18.2	15.1	12.2
36 x 120	53.4	45.6	42.0	38.1	34.5	30.6	26.7	22.8	18.9	15.3
36 x 144	64.0	54.7	50.4	45.7	41.4	36.7	32.0	27.4	22.6	18.3
42 x 96	49.8	42.6	39.2	35.6	32.2	28.6	24.9	21.3	17.6	14.2
42 x 120	62.3	53.2	49.0	44.5	40.2	35.7	31.1	26.6	22.0	17.8
42 x 144	74.7	63.8	58.8	53.3	48.3	42.8	37.3	31.9	26.4	21.4
48 x 96	56.9	48.6	44.8	40.6	36.8	32.6	28.4	24.3	20.1	16.3
48 x 120	71.2	60.8	56.0	50.8	46.0	40.8	35.6	30.4	25.2	20.4
48 x 144	85.4	73.0	67.2	61.0	55.2	49.0	42.7	36.5	30.2	24.4
60 x 96	71.2	60.8	56.0	50.8	46.0	40.8	35.6	30.4	25.2	20.4
60 x 120	89.0	76.0	70.0	63.5	57.5	51.0	44.5	38.0	31.5	25.5
60 x 144	106.8	91.2	84.0	76.2	69.0	61.2	53.4	45.6	37.8	30.6

ALSO AVAILABLE IN HIGH NICKEL ALLOYS.

Stainless Steel Plate

DIMENSIONAL AND WEIGHTS DATA

Decimal Thickness Inches	Fraction of an Inch	Weight (Pounds per Square Foot)	mm	kgs/m2	Decimal Thickness Inches	Fraction of an Inch	Weight (Pounds per Square Foot)	mm	kgs/m2
.1875	3/16	8.579	4.76	41.9	.8125	13/16	34.627	20.64	169.1
.203125	13/64	9.294	5.16	45.4	.84375	27/32	35.959	21.43	175.6
.21875	7/32	10.009	5.56	48.8	.875	7/8	37.291	22.23	182.0
.234375	15/64	10.724	5.95	52.3	.90625	29/32	38.623	23.02	188.6
.2500	1/4	11.162	6.35	54.6	.9375	15/16	39.992	23.81	195.3
.265625	17/64	11.684	6.75	57.0	.96875	31/32	41.325	24.61	201.8
.28125	9/32	12.371	7.14	60.4	1.000	1	42.665	25.40	208.2
.3125	5/16	13.746	7.94	67.2	1.0625	1 1/16	45.324	26.99	221.4
.34375	11/32	15.121	8.73	73.9	1.1250	1 1/8	47.990	28.58	234.2
.375	3/8	16.496	9.53	80.5	1.1875	1 3/16	50.565	30.16	247.0
.40625	13/32	17.601	10.32	86.0	1.2500	1 1/4	53.226	31.75	259.7
.4375	7/16	18.955	11.11	92.6	1.3125	1 5/16	55.887	33.34	272.9
.46875	15/32	20.309	11.91	99.2	1.3750	1 3/8	58.549	34.93	285.9
.5000	1/2	21.663	12.70	105.7	1.4375	1 7/16	61.210	36.51	298.9
.53125	17/32	22.806	13.49	111.4	1.5000	1 1/2	63.871	38.10	311.7
.5625	9/16	24.148	14.29	117.9	1.5625	1 9/16	66.532	39.69	324.9
.59375	19/32	25.490	15.08	124.5	1.6250	1 5/8	69.194	41.28	337.9
.625	5/8	26.831	15.88	130.9	1.6875	1 11/16	71.855	42.86	350.9
.65625	21/32	28.173	16.67	137.6	1.7500	1 3/4	74.516	44.45	363.9
.6875	11/16	29.446	17.46	143.8	1.8125	1 13/16	77.177	46.04	376.9
.71875	23/32	30.785	18.26	150.4	1.8750	1 7/8	79.838	47.63	389.9
.75	3/4	32.123	19.05	156.8	1.9375	1 15/16	82.500	49.21	402.9
.78125	25/32	33.462	19.84	163.4	2.0000	2	85.161	50.80	415.6

ALSO AVAILABLE IN HIGH NICKEL ALLOYS & ALUMINIUM.

A.S.T.M. Product Cross Index

Metal	Type	Pipe	Tubing	Welding Fittings ¹	Flanges	Welding Rod
Stainless Austenitic Steel	Type 304 18 Cr-8 Ni	A312-TP304 A358-304 A376-TP304	A213-TP304 A249-TP304 A269-TP304 A271-TP304	A403-WP304	A182-F304	A298-E308-15
		312-TP304H 376-TP304H	A213-TP304H A249-TP304H A271-TP304H	A403-WP304H	A182-F304H	A298-E308-15
		A312-TP304L	A213-TP304L A249-TP304L A269-TP304L	A403-WP304L	A182-F304L	A298-E308ELC-15
	Type 309 25 Cr-12 Ni	A312-TP309 A358-309	A249-TP309	A403-WP309	A314-309	A298-E309-15
	Type 310 25 Cr-20 Ni	A312-TP310 A358-310	A213-TP310 A249-TP310	A403-WP310	A182-F310	A298-E310-15
	Type 316 16 Cr-13 Ni with 2½ Mo	A312-TP316 A358-316 A376-TP316	A213-TP316 A249-TP316 A269-TP316	A403-WP316	A182-F316	A298-E316-15
		A312-TP316H A376-TP316H	A213-TP316H A249-TP316H	A403-WP316H	A182-F316H	A298-E316-15
		A312-TP316L	A213-TP316L A249-TP316L A269-TP316L	A403-WP316L	A182-F316L	A298-E316ELC-15
	Type 317 16 Cr-13 Ni with 3½ Mo	A312-TP317	A249-TP317 A269-TP317	A403-WP317	A314-317	A298-E317-15
	Type 321 18 Cr-8 Ni with Ti	A312-TP321 A358-321 A376-TP321	A213-TP321 A249-TP321 A269-TP321 A271-TP321	A403-WP321	A182-F321	A298-E347-15
		A312-TP321H A376-TP321H	A213-TP321H A249-TP321H A271-TP321H	A403-WP321H	A182-F321H	A298-E347-15
	Type 347 18 Cr-8 Ni with Ta-Cb	A312-TP347 A358-347 A376-TP347	A213-TP347 A249-TP347 A269-TP347 A271-TP347	A403-WP347	A182-F347	A298-E347-15
		A312-TP347H A376-TP347H	A213-TP347H A249-TP347H A271-TP347H	A403-WP347H	A182-F347H	A298-E347-15
	Type 348 18 Cr-8 Ni with Cb	A312-TP348 A358-348 A376-TP348	A213-TP348 A249-TP348 A269-TP348 A271-TP348	A403-WP348	A182-F348	A298-E347-15
		A312-TP348H	A213-TP348H A249-TP348H A271-TP348H	A403-WP348H	A182-F348H	A298-E347-15
Nickel and Nickel Base Alloys	Nickel-200	B161	B161	B366-WPN	(2)	 B304-56T Bare Welding Wire B295-54T Covered Welding Electrodes 
	Nickel-201 (low carbon)	B161	B161	B366-WPNL	(2)	
	Monel-400	B165	B165	B366-WPNC	(2)	
	Ni-Cu	B167	B167	B366-WPNCI	(2)	
	Inconel-600	(2)	(2)	B366-WPHB	(2)	
	Alloy B-(Hastelloy)	(2)	(2)	B366-WPHC	(2)	
	Ni-Mo	(2)	(2)			
Titanium	Alloy C-(Hastelloy)					
	Ni-Mo-Cr					
	99.3% Ti	B337-1	B338-1	B363-WPT1	(2)	B382-61T
	99.2% Ti	B337-2	B338-2	B363-WPT2		B382-61T
	99.0% Ti	B337-3	B338-3	B363-WPT3		B382-61T
	98.0% Ti	B337-4	B338-4			

1. When fittings are of welded construction, the fitting manufacturer shall supplement the grade symbol marking with the letter "W".

2. No ASTM specification has been written. However, materials having chemical and physical properties comparable to the other materials listed may be used.

Corrosion Resistance Data

The following table lists commonly-known corrosive media and tabulates the theoretical corrosion resistance of Stainless Steels 20Cb-3, 304, 304L, 309, 310, 316, 316L, 321, 347, and 348; Nickel 200, Monel 400, Inconel 600, Incoloy Alloy 825, Hastelloy Alloy B and C under various temperature conditions. The symbols A, B, C, D, and E represent approximate corrosion ranges as defined in the accompanying table.

See footnotes for circumstances applicable under certain conditions.

This data, which has been reviewed and brought up to the date of publication of this bulletin by the producers of alloys used in Stainless Welding Fittings, is intended for general guidance only. Selection of a particular alloy for specific corro-

sion service should be based on actual tests and technical advice which is available from the basic metal producers.

SYMBOL				
A	B	C	D	E
DEFINITION				
Fully Resistant ▼ Less than .00035 inches penetration per month	Satisfactorily Resistant ▼ .00035 to .0035 inches penetration per month	Fairly Resistant ▼ .0035 to .010 inches penetration per month	Slightly Resistant ▼ .010 to .035 inches penetration per month	Not Resistant ▼ Over .035 inches penetration per month

Substance and its Condition	Temp. °F	304 304L 347 348	316 316L 309 (1) 310 (1)	321	20Cb-3	Nickel 200	Monel 400	Inconel 600	Incoloy Alloy 825 (2)	Hastelloy Alloy B	Hastelloy Alloy C
A. S. T. M.		A-312	A-312	A-312	...	B-161	B-165	B-167	...	B-338-61T	B-334
A											
Acetic Acid											
5% and 10%	70	A	A	A	A	A	A	A	..	A	A
20%	70	A	A	A	A	A	A	A	..	A	A
50%	70	A	A	A	A	B	A	A	..	A	A
50%	Boiling	C	B	B	A	B	A	B	..	A	A
80%	70	A	A	A	A	B	A	A	..	A	A
80%	Boiling	D	B	C	B	B	A	B	..	A	A
100%	70	A	A	A	A	A	A	A	..	A	A
100%	Boiling	C	B	D	B	C	B	B	..	A	A
Acetic Anhydride	70	A	A	A	A	A	A	A	..	A	A
.....	Boiling	A	A	B	B	A	A	A	..	A	A
Acetic Vapors											
30%	Hot	C	B	C	B	..	..	..	..	..	..
100%	Hot	E	C	E	B	C	B	B	..	..	A
Acetone	70	A	A	A	A	A	A	A	..	A	A
.....	Boiling	A	A	A	A	A	A	A	..	A	A
Alcohol											
Ethyl 100%	70	A	A	A	A	A	A	A	A	..	..
.....	Boiling	A	A	..	A	A	A	A	..	A	A
Methyl	70	A	A	..	A	A	A	A	A	A	A
.....	150	†C	B	..	A	A	A	A	..	..	..
Alum. (Chrome 5%)	70	A	A	..	..	C	C	A	..	..	..
Aluminum Acetate											
Saturated		A	A	A	..	..	..	..	..	..	..
Aluminum Chloride	70	D	C	D	†A	B	B	C	..	A	..
Aluminum Chloride, Cold 100%	85	..	..	..	..	C	E	E	†E	A	..
Aluminum Fluoride	70	D	C	D	..	A	A	B	..	..	..
Aluminum Hydroxide											
Saturated		A	A	A	..	A	A	A	..	..	..
Aluminum	Molten	E	E	E	..	E	E	E	E	..	..
Aluminum Potassium Sulphate											
2% (alum.)	70	A	A	..	A	A	A	A	..	..	..
10%	70	A	A	A	A	A	A	A	..	..	B
10%	Boiling	B	A	B	A	B	A	B	..	..	..
Saturated	Boiling	C	B	C	B	C	B	B	..	..	..
Aluminum Sulfate											
10%	70	A	A	†B	A	A	A	A	..	..	A
10%	Boiling	B	A	B	A	B	A	B	..	..	B
Saturated	70	A	A	†B	A	A	A	A	..	..	..
Saturated	Boiling	B	A	C	B	B	A	B	..	..	..
Ammonia											
All Concentrations	70	A	A	A	A	A	A	A	..	B	B
Gas	Hot	D	..	..	..	A	A	A	A	..	..

.. No data available.

(1) Corrosion resistance data on Stainless Steels 309 and 310 is not currently available in published form. Suppliers of these alloys report that corrosion data shown for type 316 is approximately representative of types 309 and 310.

(2) Formerly known as Ni-o-nel 825. Corrosion resistance data on Incoloy 800 is not currently available from supplier in published form. Contact Huntington Alloys Division, International Nickel Company on specific media.

†Pitting may sometimes occur under certain conditions, such as at the air line or when allowed to dry or when solutions are stagnant.

*May attack when sulphuric acid is present.

‡May attack when hydrochloric acid is present.

‡Alkaline solutions.

**Applies to low carbon nickel.

Hastelloy is a registered trademark of Union Carbide Corporation. 20Cb-3 is a registered trademark of the Carpenter Steel Co. Inconel, Incoloy and Monel are registered trademarks of the International Nickel Co.

Corrosion Resistance Data (cont'd)

Substance and its Condition	Temp. °F	304 304L 347 348	316 316L 309 (1) 310 (1)	321	20Cb-3	Nickel 200	Monel 400	Inconel 600	Incoloy Alloy 825 (2)	Hastelloy Alloy B	Hastelloy Alloy C
A. S. T. M.		A-312	A-312	A-312	...	B-161	B-165	B-167	...	B-338-61T	B-334
Ammonia Liquor	70	A	A	A	..	C	C	A	..	..	..
Boiling	Boiling	A	A	A	..	C	C	A	..	..	..
Ammonium											
0-95%	85	..	..	..	..	E	E	A	A	..	..
100%	600	..	..	..	..	A	A	A	A	..	..
Ammonium Bicarbonate	70	A	A	A	..	A	A	A	..	..	..
Hot	Hot	A	A	A	..	A	A	A	..	..	..
0-100%	212	..	..	A	..	E	E	E	C	..	..
Ammonium Carbonate											
1 and 5%	70	A	A	A	A	A	A	A	..	..	..
Ammonium Chloride											
1% Solution	70	A	A	..	†A	A	A	A	..	..	..
10%	Boiling	†A	†A	†B	†B	A	A	B	..	A	A
28%	Boiling	†B	†A	†B	†B	A	A	B	..	A	A
50%	Boiling	†B	†A	†C	†B	A	A	B	..	A	A
Ammonium Nitrate											
0-100% Agitated or Aerated	70	A	A	..	A	C	C	A	..	..	..
Saturated	Boiling	A	A	A	A	E	E	B	B	..	..
Ammonium Oxalate											
5%	70	A	A	A	..	A	A	A	..	..	..
Ammonium Persulphate											
5%	70	A	A	A	..	E	E	A	..	..	..
Ammonium Phosphate											
5%	70	A	A	..	A	A	A	A	A	..	A
212	212	..	..	..	..	C	C	C	C	..	..
Ammonium Sulphate											
1% and 5% Agitated	70	A	A	..	B	A	A	A	A	..	B
1% and 5% Aerated	70	A	A	..	B	A	A	A	..	..	B
10%	Boiling	†B	†A	†B	B	B	B	B	..	..	B
Saturated	Boiling	†B	†A	..	..	B	B	B	..	..	..
Ammonium Sulphite											
Cold	Cold	A	A	A	..	C	B	B	..	..	..
Boiling	Boiling	A	A	B	..	E	C	C	..	..	..
Aniline											
3%	70	A	A	A	A	A	A	A	..	..	B
Conc. Crude	70	A	A	A	A	A	A	A	..	..	B
100%	85	..	..	..	..	C	C	C	C	..	B
Aniline Hypochloride	70	E	D	E	..	B	B	C	..	..	..
Antimony Trichloride	70	E	D	E	..	A	A	A	..	..	..
B											
Barium Carbonate	70	A	A	A	A	A	A	A	..	B	B
Barium Chloride											
5%	70	A	A	†B	A	A	A	A	..	B	B
0-40%	212	..	..	..	A	C	C	C	C	B	B
Saturated	70	A	B	†B	..	A	A	A	..	A	A
Aqueous Solution	Hot	†B	†A	..	..	A	A	B	..	..	..
Barium Nitrate											
Aqueous Solution	Hot	A	A	A	A	C	C	B	..	B	B
Barium Sulphate											
Barytes-BlancFixe	70	A	A	A	A	A	A	A	..	..	..
Benzene	70	A	A	A	A	A	A	A	..	B	B
0-75%	212	..	..	..	A	A	A	A	A	..	..
100%	212	..	..	..	A	A	A	A	A	B	B
Benzoic Acid	70	A	A	A	A	A	A	A	A	..	..
Benzol	Hot	A	A	A	..	A	A	A	A	B	A
Boracic Acid											
5%	Hot or Cold	A	A	A	A	A	A	A	A	A	A
0-20% (Air Free)	212	..	..	..	A	C	C	C	A	A	A
Borax—5%	Hot	A	A	A	..	A	A	A	..	..	..
Bromide—Dry	70	..	..	..	A	A	A	A	..	..	..
Bromine Water	70	E	D	..	E	D	D	D	..	..	..
Butyric Acid											
5%	70	A	A	A	B	A	A	A	..	..	..
5%	150	A	A	A	B	A	A	A	..	..	..
Aqueous Solution—Sp. gr. 0.964	Boiling	A	A	..	..	..	..	A	..	..	..

.. No data available.

(1) Corrosion resistance data on Stainless Steels 309 and 310 is not currently available in published form. Suppliers of these alloys report that corrosion data shown for type 316 is approximately representative of types 309 and 310.

(2) Formerly known as Ni-o-nel 825. Corrosion resistance data on Incoloy 800 is not currently available from supplier in published form. Contact Huntington Alloys Division, International Nickel Company on specific media.

†Pitting may sometimes occur under certain conditions, such as at the air line or when allowed to dry or when solutions are stagnant.

*May attack when sulphuric acid is present.

§May attack when hydrochloric acid is present.

‡Alkaline solutions.

**Applies to low carbon nickel.

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Corrosion Resistance Data (cont'd)

Substance and its Condition	Temp. °F	304 304L 347 348	316 316L 309 (1) 310 (1)	321	20Cb-3	Nickel 200	Monel 400	Inconel 600	Incoloy Alloy 825 (2)	Hastelloy Alloy B	Hastelloy Alloy C
A. S. T. M.		A-312	A-312	A-312	...	B-161	B-165	B-167	...	B-338-61T	B-334
C											
Calcium Carbonate	70	A	A	A	B	A	A	A	..	..	..
Calcium Chlorate											
Dilute Solution	70	A	A	A	B	A	A	A	..	..	..
Dilute Solution	Hot	A	A	A	B	A	A	B	..	..	..
Calcium Chloride											
Dilute Solution	70	±B	†A	**B	A	A	A	A	..	..	..
Conc. Solution	70	±B	†A	**B	B	A	A	A	..	..	..
Calcium Hydroxide											
10%	Boiling	A	A	A	B	A	A	A	..	B	A
20%	Boiling	A	A	A	..	A	A	A	..	B	A
50%	Boiling	A	A	A	..	A	A	A	..	B	A
Calcium Hypochlorite											
2%	70	†B	†A	D	B	C	C	B	..	..	..
Calcium Sulphate											
Saturated	70	A	A	A	B	A	A	A	..	B	B
Carbolic Acid											
C.P.	Boiling	A	A	A	..	A	A	A	..	..	..
Crude	Boiling	A	A	A	B	A	A	A	..	..	..
C.P.	70	A	A	A	..	A	A	A	..	..	..
Carbon Bisulphide	70	A	A	A	B	..	..	..	..	..	..
.....	100	..	..	..	B	A	B	A	..	..	..
Carbon Monoxide Gas	1400	A	A	..	A	..	..	..	..	A	A
.....	1600	A	A	A	A	..	..	..	..	..	..
Carbon Tetrachloride											
Pure (Dry)	70	A	A	A	A	A	A	A	..	A	A
Aqueous—5-10%	70	†C	†A	*C	A	A	A	A	..	A	A
Dry	Boiling	A	..	A	B	..	..	..	..	..	..
Chloroacetic Acid	70	D	C	D	..	A	A	A	..	..	..
Chlorobenzol Conc.-Pure	70	A	A	A	..	A	A	A	..	..	..
Chlorine (Dry) 100%	Limit	..	..	..	..	..	..	..	..	..	A
Gas—Dry	70	A	A	A	A	C	C	C	..	..	A
Gas—Moist	70	D	C	E	A	C	C	C	..	..	A
Gas	212	E	D	E	A	A	A	A	..	..	A
Chloroform	70	A	A	A	B	A	A	A	..	B	B
.....	212	..	..	..	A	A	A	A	C	B	B
Dry	70	A	..	..	A	..	..	..	..	B	B
Chromic Acid											
5%	70	A	A	..	B	A	A	A	..	..	B
10% C.P.	Boiling	C	B	..	E	C	B	C	..	..	B
10% C.P. (Free of SO ₂)	70	B	..	A	E	..	..	..	..	..	B
50% Com. (Cont. SO ₂)	Boiling	†D	C	E	E	..	..	..	..	..	B
50% C.P. (Free of SO ₂)	70	A	..	C	E	..	..	..	..	..	B
.....	Boiling	C	..	..	E	..	..	..	..	..	..
Chromium Plating Bath	70	A	A	..	..	C	C	A	..	..	A
Citric Acid											
Air free 0-60%	212	..	..	..	A	C	C	C	A	A	A
5% Still	70	A	A	..	A	A	A	A	..	A	A
.....	150	A	A	..	A	A	A	A	..	A	A
15%	70	A	A	..	A	A	A	A	..	A	A
.....	Boiling	B	A	..	A	A	A	A	..	A	A
Concentrated	Boiling	C	B	..	A	B	A	B	..	A	A
50%	70	A	..	A	..	..	..	..	..	A	A
.....	Boiling	D	..	..	A	..	..	..	..	A	A
Copper Acetate											
Saturated Sol.	70	A	A	A	..	C	C	A	..	..	..
Copper Carbonate											
Sat. Sol. in 50% NH ₄ OH		A	A	A	..	C	C	A	..	..	..
Copper Chloride											
1% Agitated	70	†B	†A	..	..	B	B	A	..	..	..
1% Aerated	70	†B	†A	..	..	B	B	A	..	..	..
10%	Boiling	E	..	E	..	..	..	..	..	..	..
5% Agitated	70	†B	†A	..	..	C	C	C	..	..	..
5% Aerated	70	†E	†D	..	..	D	D	C	..	..	..
Copper Cyanide											
Saturated Sol.	Boiling	A	A	A	B	B	B	B	..	B	A
Copper Nitrate											
1% and 5%	70	A	A	A	A	C	C	A	..	..	B

..No data available.

(1) Corrosion resistance data on Stainless Steels 309 and 310 is not currently available in published form. Suppliers of these alloys report that corrosion data shown for type 316 is approximately representative of types 309 and 310.

(2) Formerly known as Ni-80-20. Corrosion resistance data on Incoloy 800 is not currently available from supplier in published form. Contact Huntington Alloys Division, International Nickel Company on specific media.

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‡Alkaline solutions.

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Corrosion Resistance Data (cont'd)

Substance and its Condition	Temp. °F	304 304L 347 348	316 316L 309 (1) 310 (1)	321	20Cb-3	Nickel 200	Monel 400	Inconel 600	Incoloy Alloy 825 (2)	Hastelloy Alloy B	Hastelloy Alloy C
A. S. T. M.		A-312	A-312	A-312	...	B-161	B-165	B-167	...	B-338-61T	B-334
90% Aqueous	Hot	A	A	..	B	E	E	C	..	..	..
Copper Sulphate (Blue Vitrol) Saturated	212	A	A	A	A	..	..	..	..	..	A
Copper Sulphate 5%	70	A	A	..	A	B	B	A	..	..	..
0-30%	212	..	..	..	A	E	E	E	A	..	A
Saturated Sol.	Boiling	A	A	..	B	C	C	C	..	..	A
Creosote (Coal Tar)	Hot	A	A	A	..	A	A	A	..	..	..
Oil	Hot	A	A	A	..	A	A	A	..	..	..
Cyanogen Gas	70	A	A	A	..	A	A	A	..	..	..
D											
Dinitrochlorobenzol Melted and Solidified	70	A	A	A	..	..	..	..	..	..	..
E											
Ether—100%	70	A	A	A	..	A	A	A	..	..	..
Ethyl Chloride	70	A	A	..	..	A	A	A	..	..	..
Ethylene Chloride	85	A	A	A	..	A	A	A	..	..	..
F											
Ferric Chloride 1% Solution, Still	70	S+B	†A	†C	†E	B	C	C	..	..	A
5% Solution, Still	Boiling	S+D	†D	D	..	E	E	E	..	..	A
5% Agitated	70	S+C	†B	C	..	D	D	D	..	..	A
5% Aerated	70	S+C	†C	..	E	D	D	C	..	..	A
Ferric Hydroxide (Hydrated Iron Oxide)	70	A	A	A	..	A	A	A	..	..	..
Ferric Nitrate 1% and 5%	70	A	A	A	A	D	D	A	..	..	A
Ferric Sulphate 1% and 5%	70	†A	A	..	A	C	C	A	..	..	A
10%	70	†A	..	..	A	..	..	..	..	..	..
0-30%	Boiling	A	..	..	A	..	..	..	..	..	..
Ferrous Sulphate Dilute Sol.	85	..	..	..	..	E	C	E	A	..	A
Fluorine	70	A	A	†B	B	A	A	A	..	B	B
Formic Acid 5% Still	70	E	E	E	..	A	A	A	..	B	B
Air-free—100%	150	B	A	B	A	A	A	A	..	A	A
Fuel Oil	212	..	..	..	B	C	C	C	C	A	A
Containing H ₂ SO ₄	Hot	A	A	A	..	B	B	A	..	..	..
G											
Gallic Acid 5% Solution	70	A	A	..	B	A	A	A	..	B	B
5% Solution	150	A	A	..	B	A	A	A	..	B	B
100%	85	..	..	..	B	C	C	C	C	B	B
Saturated	212	A	..	A	B	..	..	..	..	B	B
Glue Acid Free	Hot	A	..	A	..	..	..	..	..	..	..
Acid Sol.	85	†B	A	..	..	A	A	A	A	..	..
Glycerine	70-85	A	A	A	A	A	A	A	A	..	..
H											
Hydrochloric Acid 1:85	70	E	E	C	B	B	B	C	..	C	A
Boiling	Boiling	E	..	E	E	..	..	..	..	B	D
Hydrocyanic Acid	70	A	A	A	..	A	A	A	C	..	..
Vapors	70	D	..	..	..	..	..	..	..	..	..
212	212	D	..	..	..	..	..	..	..	..	..

.. No data available.

(1) Corrosion resistance data on Stainless Steels 309 and 310 is not currently available in published form. Suppliers of these alloys report that corrosion data shown for type 316 is approximately representative of types 309 and 310.

(2) Formerly known as Ni-80-20. Corrosion resistance data on Incoloy 800 is not currently available from supplier in published form. Contact Huntington Alloys Division, International Nickel Company on specific media.

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Corrosion Resistance Data (cont'd)

Substance and its Condition	Temp. °F	304 304L 347 348	316 316L 309 (1) 310 (1)	321	20Cb-3	Nickel 200	Monel 400	Inconel 600	Incoloy Alloy 825 (2)	Hastelloy B	Hastelloy Alloy C
A. S. T. M.		A-312	A-312	A-312	...	B-161	B-165	B-167	...	B-338-61T	B-334
Hydrogen Peroxide	70	*A	A	A	A	A	A	A	..	..	..
Acid Free	Boiling	*B	A	A	B	..	..	..	..	..	..
Hydrogen Sulfide	85	..	..	..	A	C	C	C	A	A	A
Dry		A	A	A	B	E	A	A	A	..	..
Wet		*B	*A	A	B	A	A	A	..	..	..
Hydrosulphite Soda (Hypo)		A	†A	†A	..	A	A	A	..	..	..
I											
Iodine		E	D	D	B	D	D	D	C	..	B
Iodoform		A	A	A	..	..	..	..	..	..	..
L											
Lactic Acid	70	A	A	A	B	A	A	A	..	B	B
5%	150	B	A	B	B	A	A	A	..	B	B
5%	Boiling	D	B	D	..	C	C	B	..	B	B
10%	150	C	B	C	B	C	B	B	..	B	B
10%											
Lead	Molten	B	B	C	..	D	D	B	..	..	..
Linseed Oil	70-85	A	A	A	..	A	A	A	..	..	..
M											
Magnesium Chloride	70	†A	A	†B	A	A	A	A	A	A	A
1% and 5%, Still	Hot	†C	†B	†C	A	A	A	A	..	A	A
Magnesium Sulphate	Hot or Cold	A	A	†B	A	A	A	A	..	A	A
0-60%	212	..	..	..	A	C	C	C	A	..	..
Malic Acid	Hot or Cold	B	A	B	B	A	A	A	..	..	..
Mayonnaise	70	†A	A	†A	..	B	B	A	..	..	..
Mercuric Chloride											
All Solutions		†E	†D	E	..	D	D	D	E	..	..
Mercury		A	A	A	..	A	A	A	..	..	..
Methanol (Methyl Alcohol)	70	A	A	A	..	A	A	A	A	..	..
Methyl Chloride 100%	85	..	..	A	A	C	C	C	A	..	..
Mixed Acids											
45% HNO ₃	Cold	A	A	..	..	D	D	A	A	..	..
50% H ₂ SO ₄ + 50%											
HNO ₃	140	A	B	A	..	..	..	..	..	..	..
..	200	B	..	B	..	..	..	..	..	..	..
..	250	C	..	C	..	..	..	..	..	..	..
75% H ₂ SO ₄ + 25%											
HNO ₃	140	A	B	A	..	..	..	..	A	..	..
..	200	B	..	B	..	..	..	..	..	..	..
..	315	D	..	D	..	..	..	..	..	..	..
70% H ₂ SO ₄ + 10% HNO ₃											
+ 20% Water	140	A	..	A	..	..	..	..	A	..	..
..	200	B	..	B	..	..	..	..	..	..	..
..	335	E	..	E	..	..	..	..	..	..	..
30% H ₂ SO ₄ + 75%											
HNO ₃ + 65% Water	140	A	B	A	..	..	..	..	A	..	..
..	200	A	..	A	..	..	..	..	..	..	..
..	230	B	..	B	..	..	..	..	..	..	..
15% H ₂ SO ₄ + 5%											
HNO ₃ + 80% Water	140	A	B	A	..	..	..	..	..	..	..
..	200	A	..	A	..	..	..	..	..	..	..
..	220	A	..	A	..	..	..	..	..	..	..
Mixtures of Acids and Salts											
Fuming Nitric Acid											
(Sp.gr. 1.52) + 10%											
Potassium Nitrate	Boiling	B	..	B	..	..	..	..	..	..	..
Fuming Nitric Acid											
(Sp.gr. 1.52) + 10%											
Alum. Nitrate	Boiling	B	..	..	..	..	..	..	..	..	..
10% Sulphuric Acid +											
10% Copper Sulphate	Boiling	A	..	A	..	..	..	..	..	..	..
10% Sulphuric Acid +											
10% Ferrous Sulphate	Boiling	B	..	..	..	..	..	..	..	..	..
Molasses		A	A	A	..	A	A	A	..	..	..
Muriatic Acid	70	E	E	..	..	B	B	C	..	..	..
Mustard	70	†A	†A	†A	..	A	B	B	..	..	..

..No data available.

(1) Corrosion resistance data on Stainless Steels 309 and 310 is not currently available in published form. Suppliers of these alloys report that corrosion data shown for type 316 is approximately representative of types 309 and 310.

(2) Formerly known as Ni-o-nel 825. Corrosion resistance data on Incoloy 800 is not currently available from supplier in published form. Contact Huntington Alloys Division, International Nickel Company on specific media.

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Corrosion Resistance Data (cont'd)

Substance and its Condition	Temp. °F	304 304L 347 348	316 316L 309 (1) 310 (1)	321	20Cb-3	Nickel 200	Monel 400	Inconel 600	Incoloy Alloy 825 (2)	Hastelloy Alloy B	Hastelloy Alloy C
A. S. T. M.		A-312	A-312	A-312	...	B-161	B-165	B-167	...	B-338-61T	B-334
N											
Nickel Chloride Sol.	70	†A	†A	..	..	B	B	B	B	A	A
Nickel Sulfate	Hot or Cold	A	A	..	B	A	A	A	A	..	..
Nitre Cake	Fused	B	A	B	..	..	..	..	..	..	..
Nitric Acid											
5% Sol.	70	A	A	A	A	E	E	B	A	E	A
20% Sol.	70	A	A	..	A	E	E	A	A	E	A
50% Sol.	70	A	A	A	A	E	E	A	A	E	A
65% Sol.	Boiling	A	A	A	B	E	E	C	A	E	A
Conc.	Boiling	B	B	..	B	E	E	D	C	E	A
Conc.	70	A	A	A	E	E	E	A	A	E	A
Conc.	Boiling	D	D	B	C	E	E	D	..	..	..
Nitrous Acid—5% Sol.	70	A	A	..	B	D	D	A	..	B	B
O											
Oils, Crude											
Asphalt Base	Cold or Hot	*A	*A	†A	..	A	A	A	A	..	..
Oils, Essential	85	..	..	..	..	A	A	A	A	..	..
Oils, Veg. Mineral	70-85	A	A	A	..	A	A	A	A	..	..
Oleic Acid	70-85	†A	A	..	B	A	A	A	C	..	..
Oxalic Acid											
5%	70	A	A	..	B	A	A	A	..	B	B
10%	70	A	A	..	B	A	A	A	..	B	B
10%	Boiling	D	C	D	B	B	A	B	..	B	B
25%	Boiling	B	..	D	B	..	..	..	..	B	B
50%	Boiling	D	B	D	B	..	..	..	..	B	B
Air-free	85	..	..	..	..	E	C	C	C	..	..
P											
Paraffin	Hot or Cold	A	A	A	..	A	A	A	..	..	..
Petroleum Ether		A	A	A	..	A	A	A	..	..	..
Phenol		A	A	..	B	A	A	A	A	..	..
Phosphoric Acid											
1%	70	SA	SA	A	A	A	A	A	A	A	A
5%	Boiling	A	..	B	..	..	..	..	A	A	A
10%, Still	70	C	A	..	B	A	A	A	A	..	..
10% Agitated	70	C	B	..	..	B	B	B	A	..	..
10% Aerated	70	C	B	..	A	C	C	B	A	..	..
10%	Boiling	D	..	D	..	..	..	..	A	A	A
45%	Boiling	D	..	D	..	..	..	..	A	A	A
80%	140	C	..	C	..	..	..	..	A	A	A
80%	230	E	..	E	..	..	..	..	B	A	C
Picric Acid	70	A	A	A	B	..	..	..	..	..	B
Potassium Bichromate											
0-20%	212	..	..	A	..	C	C	C	C	..	..
0-20%	70	A	A	..	..	C	C	C	..	..	..
Potassium Bromide	70	†B	†A	†B	B	A	A	A	..	B	B
0-30% Air-Free	212	..	..	..	B	C	C	C	C	..	..
Potassium Carbonate	212	..	..	..	..	C	C	C	C	B	B
1%	70	A	A	..	B	A	A	A	..	B	B
1%	Hot	A	A	A	B	A	A	A	..	B	B
Potassium Chlorate		A	A	A	B	A	A	A	C	..	..
Potassium Chloride											
1% and 5%	70	†A	†A	†A	†A	A	A	A	†A	..	..
1% and 5%	Boiling	A	A	†A	†A	A	A	A	..	..	..
Potassium Ferricyanide											
5%	70	A	A	A	B	..	..	..	..	B	B
25%	70	A	..	..	B	..	..	..	..	B	B
Potassium Ferrocyanide 5%	70	A	A	..	B	..	..	..	..	B	B
Potassium Hydroxide											
5%	70	A	A	..	B	A	A	A	A	B	..
27%	Boiling	A	A	A	B	A	A	A	..	B	..
50%	Boiling	B	A	B	B	A	A	A	..	B	..
Melting	675	E	..	E	..	..	..	..	..	..	..
Potassium Nitrate											
Air-free	212	..	..	..	..	C	C	C	C	..	B

.. No data available.

(1) Corrosion resistance data on Stainless Steels 309 and 310 is not currently available in published form. Suppliers of these alloys report that corrosion data shown for type 316 is approximately representative of types 309 and 310.

(2) Formerly known as Ni-o-nel 825. Corrosion resistance data on Incoloy 800 is not currently available from supplier in published form. Contact Huntington Alloys Division, International Nickel Company on specific media.

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Corrosion Resistance Data (cont'd)

Substance and its Condition	Temp. °F	304 304L 347 348	316 316L 309 (1) 310 (1)	321	20Cb-3	Nickel 200	Monel 400	Inconel 600	Incoloy Alloy 825 (2)	Hastelloy Alloy B	Hastelloy Alloy C
A. S. T. M.		A-312	A-312	A-312	...	B-161	B-165	B-167	...	B-338-61T	B-334
1% and 5%	70	A	A	..	B	A	A	A	..	..	B
1% and 5%	Hot	A	A	..	B	A	A	A	..	..	B
Potassium Nitrate (salt peter) 50%	70	A	..	A	B	..	..	..	..	..	B
.....	Boiling	A	..	A	B	..	..	..	..	..	B
Potassium Oxalate		A	A	A	B	A	A	A	..	..	..
Potassium Permanganate 5%	70	A	A	A	B	A	A	A	..	..	B
Potassium Sulphate 1% and 5%	70	A	A	B	B	A	A	A	..	D	B
.....	Hot	A	A	..	B	A	A	A	..	B	B
10%	85	..	..	..	B	C	C	C	C	B	C
Potassium Sulphide (saft)		A	A	A	..	A	A	A	..	..	..
Q											
Quinine Bisulphate—Dry		B	A	B	..	A	A	A	..	..	..
Quinine Sulphate—Dry		A	A	A	..	A	A	A	..	..	..
R											
Resin 100%	Molten	A	A	A	B	A	A	A	..	..	..
S											
Sea Water		†A	†A	†B	A	A	A	A	..	..	A
.....	212	..	..	..	..	A	A	A	A	..	A
Sewage		†A	†A	†A	..	..	A	A	..	..	A
Silver Bromide		†B	†A	†C	..	..	..	..	..	..	..
Silver Chloride		E	E	..	..	..	..	..	..	..	..
Silver Nitrate—0-100%	Boiling	A	A	A	B	A	E	E	..	..	..
Soap	70	A	A	A	..	A	A	A	A	..	..
Sodium Acetate	85	..	..	..	B	C	C	C	A	B	B
Moist		†A	A	†A	..	A	A	A	..	..	..
Sodium Bicarbonate	70	A	A	A	..	A	A	A	..	..	B
5% Still	150	A	A	..	A	A	A	A	..	..	..
Sodium Carbonate 5%	70	A	A	A	A	A	A	A	..	B	B
5%	150	A	A	..	A	A	A	A	..	B	B
5%	Boiling	A	..	..	A	..	..	..	..	B	B
30%	85	..	..	..	..	C	C	C	C	B	..
50%	Boiling	A	..	A	..	..	..	..	..	B	..
Sodium Chloride 5%, Still	70	†A	A	..	B	A	A	A	..	A	A
.....	150	†A	A	..	B	A	A	A	..	A	A
20%, Aerated	70	†A	A	..	..	A	A	A	..	A	B
Saturated	70	†A	A	†A	..	A	A	A	..	..	..
.....	Boiling	†B	A	†B	..	A	A	A	..	..	..
Sodium Fluoride 5% Sol.		†B	†A	†B	..	A	A	A	..	..	..
Sodium Hydroxide	70	A	A	..	..	A	A	A	..	..	..
20%	230	A	..	A	B	A	..	A	..	A	A
34%	212	A	..	A	B	A	..	A	..	..	..
Melting	610	B	..	B	..	B	..	C	..	..	..
Sodium Hypochlorite—5% Still		†B	A	†C	..	C	C	C	..	..	..
Sodium Hyposulphite	70	*A	A	†A	..	A	A	A	..	..	..
0-50%	212	..	..	..	..	A	A	A	A	..	..
50-75%	212	..	..	..	..	A	A	A	C	..	..
75-100%	800	..	..	..	..	A	..	A	..	..	..
Sodium Nitrate	Fused	C	B	..	..	A	B	A	..	..	..
0-50%	212	..	..	..	A	C	C	A	A	..	..
Sodium Sulphate 5%, Still, All	70	A	A	B	A	A	A	A	..	B	B
0-30%	212	..	..	..	B	C	C	C	C	B	B
Sodium Sulphide Saturated		†B	A	†A	B	A	A	A	..	..	A
Sodium Sulphite 5%	70	A	A	..	A	A	A	A	..	..	B
10%	150	A	A	..	A	A	A	A	..	..	B

.. No data available.

(1) Corrosion resistance data on Stainless Steels 309 and 310 is not currently available in published form. Suppliers of these alloys report that corrosion data shown for type 316 is approximately representative of types 309 and 310.

(2) Formerly known as Ni-80-20. Corrosion resistance data on Incoloy 800 is not currently available from supplier in published form. Contact Huntington Alloys Division, International Nickel Company on specific media.

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**Applies to low carbon nickel.

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20Cb-3 is a registered trademark of the Carpenter Steel Co.
Inconel, Incoloy and Monel are registered trademarks of the International Nickel Co.

Corrosion Resistance Data (cont'd)

Substance and its Condition	Temp. °F	304 304L 347 348	316 316L 309 (1) 310 (1)	321	20Cb-3	Nickel 200	Monel 400	Inconel 600	Incoloy Alloy 825 (2)	Hastelloy Alloy B	Hastelloy Alloy C
A. S. T. M.		A-312	A-312	A-312	...	B-161	B-165	B-167	...	B-338-61T	B-334
Stannic Chloride											
Sol.	70	D	C	D	..	A	B	B	..	..	..
Sp. gr. 1.21	Boiling	E	E	E	..	B	B	C	..	..	..
Stannous Chloride											
Saturated	85	C	A	C	..	A	B	B	..	B	..
Dry—100%		..	..	..	..	E	E	E	..	..	..
Stearic Acid											
.....		A	A	A	B	A	A	A	A	A	A
Sulphate Black Liquor											
Green Liquor		..	..	..	B	..	..	A	A	A	A
Sulphur											
.....	265	A	..	..	..	..	..	..	..	..	..
Boiling	830	E	..	..	A	..	..	..	..	..	..
Air Free	400	..	..	..	..	C	C	A	A	..	..
Sulphur Chloride											
.....		E	D	..	B	A	A	A	..	..	..
Sulphur Dioxide, Dry											
.....	Limit	..	..	..	B	..	..	..	..	..	B
Sulphur Dioxide Gas											
Moist	70	B	A	B	..	D	C	C	..	..	A
Dry	575	A	A	A	..	..	..	..	..	..	A
Sulphur—Dry											
.....	Molten	A	A	..	A	A	A	A	..	..	A
Wet		†B	†A	..	A	B	B	A	..	..	A
Sulphuric Acid											
5%	70	C	B	B	A	A	A	A	A	A	A
.....	Boiling	C	C	C	B	B	B	C	A	A	B
10%	70	E	B	E	A	A	A	B	A	A	B
.....	Boiling	E	D	E	B	B	B	C	B	A	B
50%	70	E	C	E	A	A	A	B	B	A	B
.....	Boiling	E	D	E	A	A	A	B	B	A	B
Conc.	70	A	A	A	C	A	E	B	E	E	D
.....	Boiling	A	D	E	..	..	..	..	A	A	..
.....	300	E	E	E	E	E	E	E	E	E	..
Fuming	70	C	B	..	..	C	B	B	A	E	A
Sulphurous Acid											
Saturated	70	C	B	..	B	E	E	E	..	..	B
60 psi	250	C	B	..	..	E	E	E	..	..	B
70/125 psi	310	C	B	E	..	E	E	E	..	..	B
150 psi	375	C	B	E	..	E	E	E	..	..	B
T											
Tannic Acid											
10%	85	A	A	A	B	C	C	C	C	B	B
.....	Boiling	A	..	A	B	..	C	C	C	B	B
0-100%	212	..	..	..	B	..	..	..	C	..	..
50%	Boiling	A	..	A	B	..	..	..	..	..	..
Tartaric Acid, Air-free											
.....	70	A	A	A	B	A	A	A	..	..	..
.....	150	B	A	A	B	A	A	A	..	..	..
0-50%	212	..	..	B	B	C	C	C	A	B	B
Tin											
.....	Molten	C	C	E	..	E	E	E	E	..	..
Trichloroacetic Acid											
.....	70	E	E	E	..	B	C	B	E	..	..
V											
Varnish											
.....	85	A	A	A	..	A	A	A	A	..	..
.....	Hot	A	A	..	..	A	A	A	..	..	..
Vinegar—Still, Agitated or Aerated											
.....	70-85	A	A	A	..	A	A	A	A	..	..
Z											
Zinc											
.....	Molten	E	E	E	..	E	E	E	..	..	..
Zinc Chloride											
5% Still	70	†A	†A	..	A	A	A	A	..	B	..
.....	Boiling	†B	†B	..	B	B	B	B	..	B	..
Zinc Chloride Sol.											
Sp. gr. 2.05	100	†A	..	†C	..	..	..	..	..	..	..
.....	Boiling	†A	..	D	..	..	..	..	..	..	..
1.09	Hot	A	..	A	..	..	..	..	..	..	..
Zinc Nitrate Sol.											
.....	Hot	A	..	A	..	..	..	..	..	..	..
Zinc Sulphate											
5%	70	A	A	..	A	A	A	A	A	B	B
Saturated	70	A	A	B	..	A	A	A	A	..	..
25%	Boiling	A	A	B	B	A	A	A	A	B	B

.. No data available.

(1) Corrosion resistance data on Stainless Steels 309 and 310 is not currently available in published form. Suppliers of these alloys report that corrosion data shown for type 316 is approximately representative of types 309 and 310.

(2) Formerly known as Ni-80-20. Corrosion resistance data on Incoloy 800 is not currently available from supplier in published form. Contact Huntington Alloys Division, International Nickel Company on specific media.

†Pitting may sometimes occur under certain conditions, such as at the air line or when allowed to dry or when solutions are stagnant.

*May attack when sulphuric acid is present.

‡May attack when hydrochloric acid is present.

§Alkaline solutions.

**Applies to low carbon nickel.

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INDUSTRIAL FITTINGS

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Dimensional Data**

I-13 to I-16

**Stainless Butt-Weld Fittings
Dimensional Data**

I-17 to I-25

Other Stainless Products

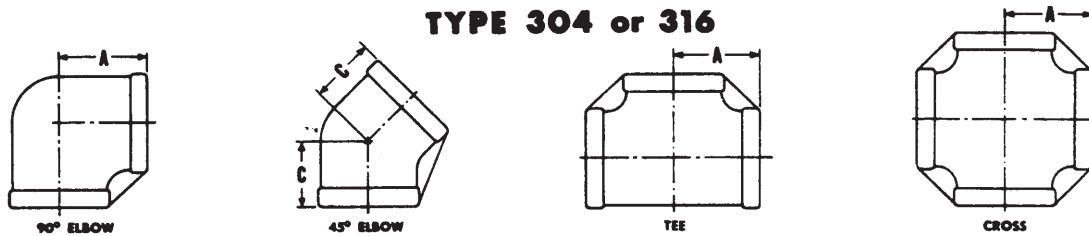
NOTE: MOST ITEMS SHOWN ARE AVAILABLE IN
HIGH NICKEL ALLOYS & ALUMINIUM

**All data supplied herein is theoretical and no responsibility is implied by
Resistaloy Inc. as to actual field results which may vary.*

Stainless Steel Screwed Fittings

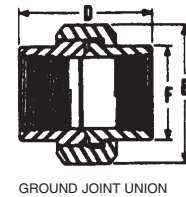
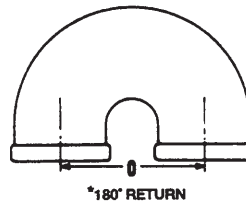
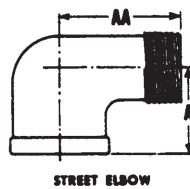
DIMENSIONAL DATA 150 POUND WORKING PRESSURE

TYPE 304 or 316



NOMINAL PIPE SIZE	90° ELBOW	45° ELBOW	TEE	CROSS
	A	C	A	A
1/8	3/4	3/8	3/4	3/4
1/4	13/16	11/16	13/16	13/16
3/8	15/16	3/4	15/16	15/16
1/2	1 1/8	1 1/16	1 1/8	1 1/8
3/4	1 5/16	1 1/16	1 5/16	1 5/16
1	1 1/2	1 1/8	1 1/2	1 1/2
1 1/4	1 3/4	1 5/16	1 3/4	1 3/4
1 1/2	1 15/16	1 7/16	1 15/16	1 15/16
2	2 1/4	1 11/16	2 1/4	2 1/4
2 1/2	2 11/16	1 15/16	2 11/16	2 11/16
3	3 1/16	2 3/16	3 1/16	3 1/16
4	3 13/16	2 5/8	3 13/16	3 13/16

AVAILABLE FROM STOCK IN ALL POPULAR SIZES



NOMINAL PIPE SIZE	STREET ELBOW		180° RETURN	UNION		
	A	AA	O	D	E	F
1/8	3/4	1	...	1 7/16	1 3/16	5/8
1/4	13/16	1 3/16	...	1 21/32	1 7/16	13/16
3/8	15/16	1 7/16	...	1 13/16	1 9/16	1
1/2	1 1/8	1 5/8	1 1/2	1 15/16	1 13/16	1 3/16
3/4	1 5/16	1 7/8	2	1 15/16	2	1 3/8
1	1 1/2	2 1/8	2 1/2	2 1/4	2 13/32	1 5/8
1 1/4	1 3/4	2 7/16	3	2 3/8	2 3/4	2
1 1/2	1 15/16	2 11/16	3 1/2	2 5/8	3	2 1/4
2	2 1/4	3 1/4	4	3	3 11/16	2 3/4
2 1/2	2 11/16	3 7/8	4 1/2	3 1/2	4 7/16	3 1/4
3	3 1/16	4 1/2	5	4 1/8	5 1/4	3 15/16
4	3 13/16	5 11/16	6	4 7/16	6 5/8	5 3/16

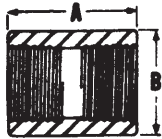
*Special Order Only

NOTE: 150 LBS STAINLESS ALSO AVAILABLE IN SOCKET WELD.

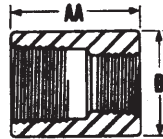
Stainless Steel Screwed Fittings (cont'd)

DIMENSIONAL DATA 150 POUND WORKING PRESSURE

TYPES 304 or 316



COUPLING



REDUCING COUPLING



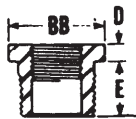
HALF COUPLING



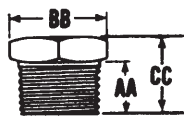
CAP

NOMINAL PIPE SIZE	COUPLING		REDUCING COUPLING		HALF COUPLING		CAP	
	A	B	AA	B	AAA	B	D	B
1/8	31/32	5/8	...	5/8	13/32	5/8	5/8	5/8
1/4	1 1/16	3/4	1	3/4	7/16	3/4	25/32	3/4
3/8	1 5/32	7/8	1 1/8	7/8	1/2	7/8	27/32	7/8
1/2	1 11/32	1 1/16	1 3/8	1 1/16	5/8	1 1/16	1 1/32	1 1/16
3/4	1 33/64	1 5/16	1 9/16	1 5/16	11/16	1 5/16	1 3/32	1 5/16
1	1 43/64	1 9/16	1 3/4	1 9/16	3/4	1 9/16	1 5/16	1 9/16
1 1/4	1 15/16	2 1/16	2 1/16	2 1/16	7/8	2 1/16	1 19/32	2 1/8
1 1/2	2 5/32	2 11/32	2 5/16	2 11/32	1	2 11/32	1 25/32	2 1/2
2	2 17/32	2 7/8	2 13/16	2 7/8	1 3/16	2 7/8	1 13/16	3
2 1/2	2 7/8	3 7/16	3 1/4	3 7/16	1 3/8	3 7/16	2 3/32	3 1/2
3	3 3/16	4 1/8	3 11/16	4 1/8	1 17/32	4 1/8	2 3/8	4 1/4
4	3 11/16	5 3/16	4 3/8	5 3/16	1 25/32	5 3/16	2 5/8	5 1/4

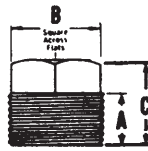
AVAILABLE FROM STOCK IN ALL POPULAR SIZES



HEX. HEAD BUSHING



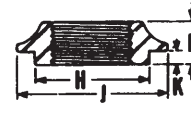
HEX. HEAD PLUG



SQUARE HEAD PLUG



*LOCK NUT



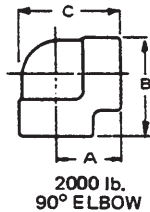
*WELDING SPUD

NOMINAL PIPE SIZE	HEX. HEAD BUSHING			HEX. HEAD PLUG			SQUARE HEAD PLUG			LOCK NUT		WELDING SPUD			
	BB	D	E	BB	CC	AA	B	C	A	F	G	H	J	K	L
1/8	...	...	...	7/16	9/16	7/16				3/16	11/16	27/32	1 3/8	3/32	15/32
1/4	9/16	1/8	1/2	9/16	5/8	1/2				1/4	7/8	31/32	1 1/2	1/8	1/2
3/8	11/16	3/16	9/16	11/16	3/4	9/16				9/32	1	31/32	1 5/8	1/8	1/2
1/2	7/8	3/16	11/16	7/8	7/8	11/16				5/16	1 3/16	1 5/32	1 3/4	5/32	19/32
3/4	1 1/16	1/4	3/4	1 1/16	1	3/4				11/32	1 7/16	1 11/32	2	5/32	21/32
1	1 3/8	1/4	7/8	1 3/8	1 1/8	7/8				3/8	1 3/4	1 23/32	2 1/4	3/16	25/32
1 1/4	1 3/4	3/8	15/16				15/16	1 3/8	13/16	7/16	2 1/8	1 15/16	2 11/16	3/16	3/4
1 1/2	2	3/8	1				1 1/8	1 1/2	7/8	15/32	2 3/8	2 5/16	3 1/32	3/16	3/4
2	2 1/2	7/16	1 1/4				1 5/16	1 5/8	15/16	17/32	2 7/8	2 11/16	3 1/2	3/16	13/16
2 1/2	3	1/2	1 3/8				1 1/2	2 1/8	1 1/8	19/32	3 1/2	3 3/16	4 1/16	3/16	1
3	3 7/8	1/2	1 3/8				1 11/16	1 15/16	1 1/8	11/16	4 9/32	3 11/16	4 5/8	3/16	1
4	5	5/8	1 1/2				2 1/4*	2 11/16	1 1/4	13/16	5 3/8	4 3/4	5 13/16	3/16	1 1/8

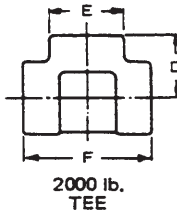
*Special Order Only

Stainless Steel Screwed Fittings (cont'd)

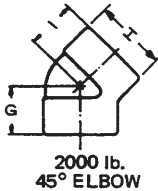
DIMENSIONAL DATA 2000, 3000, 6000 p.s.i.* WORKING PRESSURE



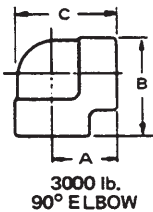
	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
A	.620	.620	.780	.900	1.035	1.200	1.420	1.670	1.990
B	.900	.900	1.085	1.330	1.570	1.860	2.200	2.485	3.000
C	1.242	1.242	1.560	1.800	2.070	2.400	2.840	3.340	3.980
Wt. Per Each	3 oz.	3 oz.	5 oz.	9 oz.	13 oz.	20 oz.	30 oz.	43 oz.	63 oz.



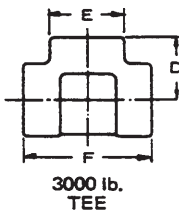
D	.670	.670	.790	.920	1.050	1.220	1.450	1.630	1.950
E	.875	.875	1.040	1.330	1.585	1.870	2.280	2.490	3.070
F	1.740	1.740	2.095	2.325	2.655	3.080	3.550	4.080	4.800
Wt. Per Each	4 oz.	4 oz.	7 oz.	10 oz.	15 oz.	25 oz.	40 oz.	55 oz.	88 oz.



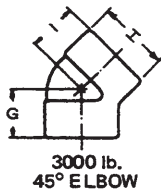
G	1.585	1.585	1.800	1.125	2.385	2.775	3.465	3.475	4.665
H	.885	.885	1.010	1.310	1.525	1.810	2.270	2.460	3.040
I	.091	.091	1.000	1.085	1.125	1.330	1.600	1.700	2.250
Wt. Per Each	3 oz.	3 oz.	4 oz.	7 oz.	9 oz.	14 oz.	28 oz.	29 oz.	55 oz.



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.



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.



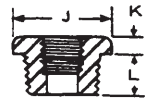
G	.970	.970	1.200	1.420	1.450	1.575	1.950	2.375	2.532
H	1.050	1.050	1.315	1.505	1.890	2.285	2.505	3.020	3.312
I	1.860	1.860	2.130	2.620	2.835	3.190	3.680	4.395	4.764
Wt. Per Each	5 oz.	5 oz.	8 oz.	13 oz.	22 oz.	35 oz.	26 oz.	65 oz.	68 oz.

*Dimensions Available Upon Request

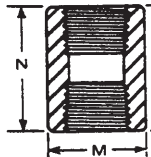
MANY TYPES AVAILABLE FROM STOCK IN BOTH TYPES 304L, 316L & ALUMINUM & HIGH NICKEL ALLOYS.

Stainless Steel Screwed Fittings (cont'd)

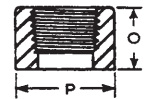
DIMENSIONAL DATA 2000, 3000, 6000 p.s.i.* WORKING PRESSURE



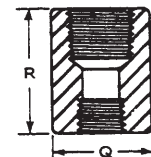
HEX. HEAD
BUSHING



3000 lb.
COUPLING



3000 lb.
HALF COUPLING



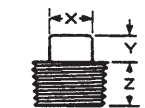
3000 lb.
REDUCING COUPLING



3000 lb.
CAP



3000 lb.
HEX. HEAD PLUG



3000 lb.
SQUARE HEAD PLUG

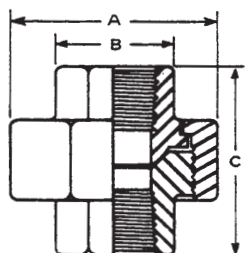
	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
J	—	.625	.687	.875	1.062	1.437	1.812	2.000	2.500
K	—	.125	.187	.187	.250	.250	.375	.375	.437
L	—	.500	.562	.562	.750	.812	.875	.937	1.000
Wt. Per Each	—	—	—	—	—	—	—	—	—
M	.750	.750	.875	1.125	1.375	1.750	2.250	2.500	3.000
N	1.250	1.375	1.500	1.875	2.000	2.375	2.625	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.
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.
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.
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.	2 oz.	4 oz.	5 oz.	8 oz.	16 oz.	26 oz.	50 oz.
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.
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.

*Dimensions Available Upon Request

MANY TYPES AVAILABLE FROM STOCK IN BOTH TYPES 304L, 316L & ALUMINUM & HIGH NICKEL ALLOYS.

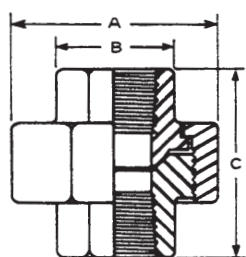
Stainless Steel Screwed Fittings (cont'd)

DIMENSIONAL DATA 2000, 3000, 6000 p.s.i.* WORKING PRESSURE



3000 lb.
SCREWED UNION

	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.

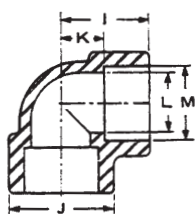


3000 lb.
SOCKET WELD
UNIONS

A	—								
B	—								
C	—								
Wt. Per Each	—	9 oz.	9 oz.	11 oz.	20 oz.	27 oz.	39 oz.	55 oz.	82 oz.

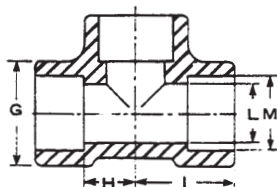
Note: Same Dimensions as Screwed

DIMENSIONS OF 3000 LB. SOCKET WELD STAINLESS FITTINGS



3000 lb.
SOCKET WELD
90° ELBOW

I	—	.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

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.

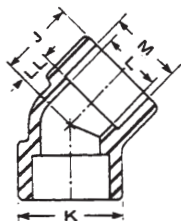
*Dimensions Available Upon Request

MANY TYPES AVAILABLE FROM STOCK IN BOTH TYPES 304L, 316L & ALUMINUM & HIGH NICKEL ALLOYS.

Stainless Steel Socket Weld Fittings

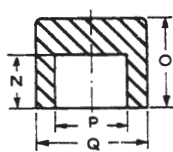
DIMENSIONAL DATA 2000, 3000, 6000 p.s.i.* WORKING PRESSURE

SOCKET WELD



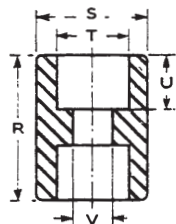
3000 lb.
SOCKET WELD
45° ELBOW

	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.



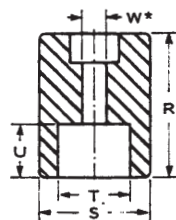
3000 lb.
SOCKET WELD
CAP

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.



3000 lb.
SOCKET WELD
COUPLING

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
REDUCING COUPLING

Note: Same Dimensions as Coupling

W*: The I.D. of Reducing Coupling is that same size to which the reduction is made.

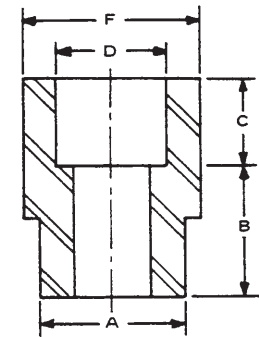
*Dimensions Available Upon Request

MANY TYPES AVAILABLE FROM STOCK IN BOTH TYPES 304L, 316L & ALUMINUM & HIGH NICKEL ALLOYS.

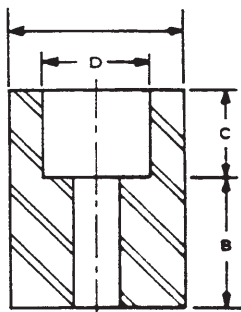
Stainless Steel Forged Socket Weld Fittings

DIMENSIONAL DATA
2000, 3000, 6000 p.s.i.* WORKING PRESSURE

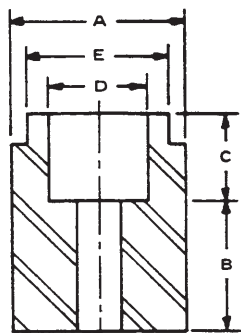
FORGED SOCKET WELD



AA REDUCING INSERT



BB REDUCING INSERT



CC REDUCING INSERT

	Size	Type	A	B	C	D	E	F
A	1/2 x 3/8	AA	.850	15/16	7/16	.690		1
	1/2 x 1/4	BB	.850	5/8	3/8	.555		
	1/2 x 1/8	CC	.850	5/8	3/8	.420	11/16	
C	3/4 x 1/2	AA	1.060	1	1/2	.855		1-1/4
	3/4 x 3/8	BB	1.060	9/16	7/16	.690		
	3/4 x 1/4	CC	1.060	5/8	3/8	.555	7/8	
F	3/4 x 1/8	CC	1.060	5/8	3/8	.420	7/8	
A	1 x 3/4	AA	1.325	15/16	9/16	1.065		1-1/2
	1 x 1/2	BB	1.325	13/16	1/2	.855		
	1 x 3/8	CC	1.325	7/8	7/16	.690	1	
C	1 x 1/4	CC	1.325	15/16	3/8	.555	1	
D	1-1/4 x 1	AA	1.670	1-1/16	5/8	1.330		1-3/4
	1-1/4 x 3/4	BB	1.670	13/16	9/16	1.065		
	1-1/4 x 1/2	CC	1.670	7/8	1/2	.855	1-1/4	
A	1-1/2 x 1-1/4	AA	1.910	1-3/16	11/16	1.675		2-1/8
	1-1/2 x 1	BB	1.910	13/16	5/8	1.330		
	1-1/2 x 3/4	CC	1.910	7/8	9/16	1.065	1-1/2	
D	1-1/2 x 1/2	CC	1.910	15/16	1/2	.855	1-1/4	
E	2 x 1-1/2	BB	2.400	13/16	3/4	1.915		
	2 x 1-1/4	CC	2.400	7/8	11/16	1.675	2-1/8	
	2 x 1	CC	3.400	15/16	5/8	1.330	1-3/4	
	2 x 3/4	CC	2.400	1	9/16	1.065	1-1/2	
	2 x 1/2	CC	2.400	1-1/16	1/2	.855	1-1/4	

NOTE: Dimensions for use with Schedule 40 & 80 Pipe

*Dimensions Available Upon Request

MANY TYPES AVAILABLE FROM STOCK IN BOTH TYPES 304L, 316L & ALUMINUM & HIGH NICKEL ALLOYS.

Stainless Steel Screwed Pipe Nipples

Schedule 40, 80, 160, XXH With various Ends
In Types 304L, 316L, Aluminum & High Nickel
Alloys all with quick delivery times.



Pipe Size	Close	Short	Standard Lengths
1/8"	3/4"	1 1/2"	Stocked in 1/2" increments up to 6" in length. Intermediate or longer sizes are available on request.
1/4"	7/8"	1 1/2"	
3/8"	1"	1 1/2"	
1/2"	1 1/4"	1 1/2"	
3/4"	1 3/8"	2"	
1"	1 1/2"	2"	
1 1/4"	1 3/4"	2 1/2"	
1 1/2"	1 3/4"	2 1/2"	
2"	2"	2 1/2"	
2 1/2"	2 1/2"	3"	
3"	2 5/8"	3"	
4"	2 3/4"	4"	

Stainless, Aluminum & Nickel Alloy Weldolets - Thredolets
- Sockolets as well as Specialty Items made to your drawings.



THREDOLETS



WELDOLETS

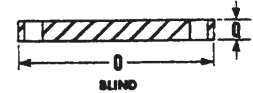
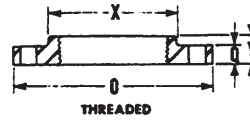
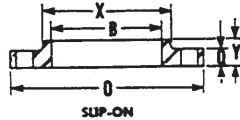
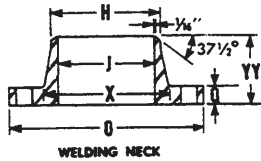


SOCKOLETS

Available in sizes 1/8" thru 12"
DIMENSIONAL DATA UPON REQUEST

Stainless Steel Flanges

M.S.S. 150 POUND WORKING PRESSURE



Nominal Pipe Size	COMMON DIMENSIONS					WELDING NECK			SLIP-ON THREADED	SLIP-ON
	O	Q	X	Number and Diameter of Bolt Holes	Bolt Circle	YY	H	J	Y	B
1/2	3 1/2	5/16	1 3/16	4 - 3/8	2 1/2	1 7/8	.84	.62	5/8	.88
3/4	3 3/4	11/32	1 1/2	4 - 1/2	2 3/4	2 1/16	1.05	.82	5/8	1.09
1	4 1/4	3/8	1 15/16	4 - 3/4	3 1/2	2 3/16	1.32	1.05	11/16	1.36
1 1/4	4 3/4	13/32	2 5/16	4 - 7/8	3 3/4	2 1/4	1.66	1.38	13/16	1.70
1 1/2	5	7/16	2 9/16	4 - 1	3 3/4	2 7/16	1.90	1.61	7/8	1.95
2	6	1/2	3 1/16	4 - 1 1/8	4 1/2	2 1/2	2.38	2.07	1	2.44
2 1/2	7	9/16	3 9/16	4 - 1 1/4	5 1/2	2 3/4	2.88	2.47	1 1/8	2.94
3	7 1/2	5/8	4 1/4	4 - 1 3/8	6	2 3/4	3.50	3.07	1 3/16	3.57
4	9	11/16	5 5/16	8 - 3/4	7 1/2	3	4.50	4.03	1 5/16	4.57
5	10	3/4	6 7/16	8 - 7/8	8 1/2	3 1/2	5.56	5.05	1 7/16	5.66
6	11	13/16	7 9/16	8 - 1	9 1/2	3 1/2	6.63	6.07	1 9/16	6.72
8	13 1/2	15/16	9 11/16	8 - 1 1/4	11 3/4	4	8.63	7.98	1 3/4	8.72
10	16	1	12	12-1	14 1/4	4	10.75	10.02	1 15/16	10.88
12	19	1 1/16	14 3/8	12-1	17	4 1/2	12.75	12.00	2 3/16	12.88

Drilling and O.D. match A.S.A. B16.5-150 lb. Steel Flange Standard, M.S.S. SP-42-150 lb. Corrosion Resistant Valve Standard and A.S.A. B16.1-125 lb. Cast Iron Flange Standard.

Special stainless steels and other corrosion resisting metal alloys available from our Canadian warehouse stocks or from nearby mill sources.

ALLOYS AVAILABLE

304 SS	347 SS
304L SS	403 SS
309 SS	405 SS
309S SS	410 SS
310 SS	420 SS
316 SS	430 SS
316L SS	440 SS
317 SS	446 SS
317L SS	600 SS
321 SS	Carpenter
330 SS	Hastelloy A B C
333 SS	Titanium
Monel	Nickel
	Inconel

This list of alloys is representative only. All these alloys are available. However, a full range of sizes is not necessarily available in each alloy. We welcome all inquiries for non-standard items.

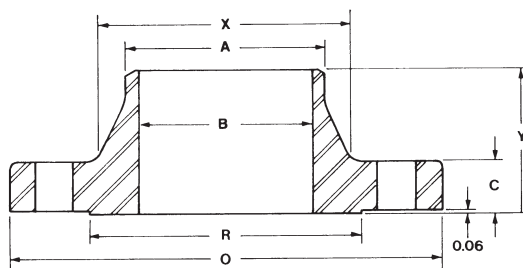
NOW AVAILABLE IN ALUMINUM CASTING GRADE 356-F

Stainless Steel Forged Flanges

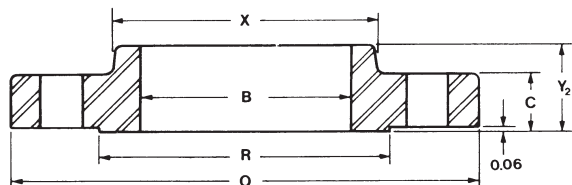
NOTE: Manufacturers Catalogs
on 1500 and 2500 pound A.S.A.
Flanges are available upon request.

ANSI B16.5/ASA

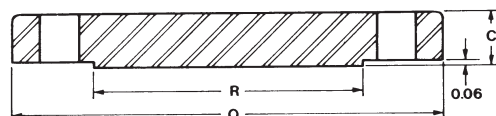
150 lbs



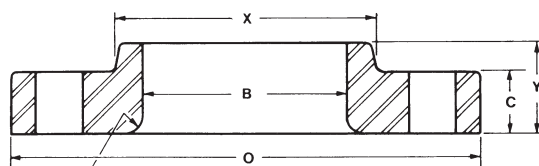
WELDING NECK



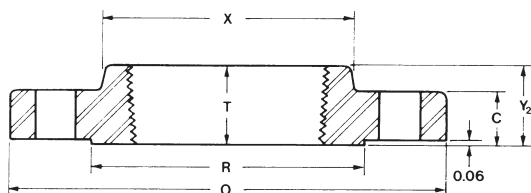
SLIP-ON



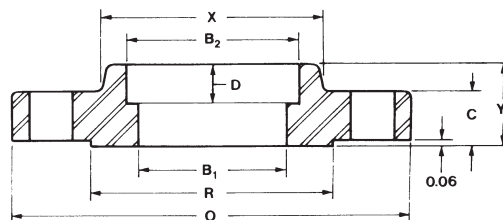
BLIND



LAP JOINT



THREADED



SOCKET WELD

150-LB.																		
Nom. Pipe Size	Out- side Diam.	Thkn. (min.)	O.D. of Raised Face	Hub Diam.	Length thru Hub			Bore			Depth of Socket	Approx. Weight (Lbs.)				Drilling		
					Wldg. Neck	Slip-on Thrd. Sock. W.	Lap Joint	Wldg. Neck	Slip-on Sock. W.	Lap Joint		Wldg. Neck	Slip-On Thrd. Sock. W.	Lap Joint	Blind	No. Holes	Diam. Holes	Bolt Circle Diam.
O	C	R	X	Y ₁	Y ₂	Y ₃	B ₁	B ₂	B ₃	D								
1/2	3 1/2	7/16	1 3/8	1 1/8	1 7/8	5/8	5/8	0.62	0.88	0.90	3/8	2	1	1	1	4	5/8	2 3/8
3/4	3 7/8	1/2	1 11/16	1 1/2	2 1/16	5/8	5/8	0.82	1.09	1.11	7/8	2	2	2	2	4	5/8	2 3/4
1	4 1/4	9/16	2	1 5/8	2 3/8	1 1/8	1 1/8	1.05	1.36	1.38	1 1/2	3	2	2	2	4	5/8	3 1/8
1 1/4	4 5/8	5/8	2 1/2	2 5/8	2 1/4	1 3/8	1 3/8	1.38	1.70	1.72	9/8	3	3	3	3	4	5/8	3 1/2
1 1/2	5	1 1/8	2 7/8	2 5/8	2 7/8	7/8	7/8	1.61	1.95	1.97	5/8	4	3	3	4	4	5/8	3 7/8
2	6	3/4	3 5/8	3 1/8	2 1/2	1	1	2.07	2.44	2.46	1 1/8	6	5	5	5	4	3/4	4 3/4
2 1/2	7	7/8	4 1/8	3 3/8	2 3/4	1 1/8	1 1/8	2.47	2.94	2.97	3/4	8	7	7	7	4	3/4	5 1/2
3	7 1/2	1 5/16	5	4 1/4	2 3/4	1 3/8	1 3/8	3.07	3.57	3.60	1 3/8	10	8	8	9	4	3/4	6
3 1/2	8 1/2	1 3/8	5 1/2	4 1 3/16	2 1 3/16	1 1/4	1 1/4	3.55	4.07	4.10	7/8	12	11	11	13	8	3/4	7
4	9	1 5/8	6 3/8	5 5/8	3	1 3/8	1 3/8	4.03	4.57	4.60	1 5/8	15	13	13	17	8	3/4	7 1/2
5	10	1 5/8	7 3/8	6 1/8	3 1/2	1 3/8	1 3/8	5.05	5.66	5.69	1 5/8	19	15	15	20	8	7/8	8 1/2
6	11	1	8 1/2	7 1/8	3 1/2	1 3/8	1 3/8	6.07	6.72	6.75	1 1/2	24	19	19	26	8	7/8	9 1/2
8	13 1/2	1 1/8	10 5/8	9 1 1/8	4	1 3/4	1 3/4	7.98	8.72	8.75	1 1/4	39	30	30	45	8	7/8	11 3/4
10	16	1 3/8	12 3/4	12	4	1 5/8	1 5/8	10.02	10.88	10.92	1 3/8	52	43	43	70	12	1	14 1/4
12	19	1 1/4	15	14 3/8	4 1/2	2 3/8	2 3/8	12.00	12.88	12.92	1 3/8	80	64	64	110	12	1	17
14	21	1 3/8	16 1/4	15 3/4	5	2 1/4	3 1/8	13.25	14.14	14.18	1 5/8	110	90	105	140	12	1 1/8	18 3/4
16	23 1/2	1 1/2	18 1/2	18	5	2 1/2	3 3/8	15.25	16.16	16.19	1 3/4	140	98	140	180	16	1 1/8	21 1/4
18	25	1 5/8	21	19 7/8	5 1/2	2 1 1/16	3 1 1/8	17.25	18.18	18.20	1 5/8	150	130	160	220	16	1 1/4	22 3/4
20	27 1/2	1 1 1/16	23	22	5 1 1/16	2 7/8	4 1/8	19.25	20.20	20.25	2 1/8	180	165	195	285	20	1 1/4	25
22	29 1/2	1 1 3/16	25 1/4	24 1/4	5 7/8	3 3/8	4 1/4	21.25	22.22	22.25	2 3/8	225	185	245	355	20	1 3/8	27 1/4
24	32	1 7/8	27 1/4	26 1/8	6	3 3/4	4 3/8	23.25	24.25	24.25	2 1/2	260	220	275	430	20	1 3/8	29 1/4

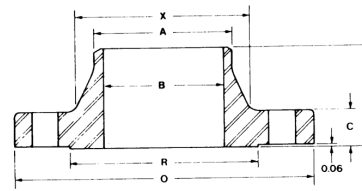
The 1/16" raised face is included in thickness C and length Y.

ANSI B16.5 only covers sizes through 24". For larger sizes refer to MSS - SP44, API 605, AWWA C207, Class 125, Class 175 p. 8-13.
Special designs can also be furnished.

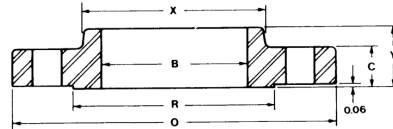
Stainless Steel Forged Flanges (cont'd)

ANSI B16.5/ASA

300 lbs & 400 lbs



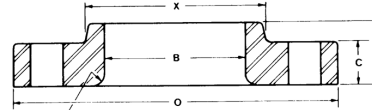
WELDING NECK



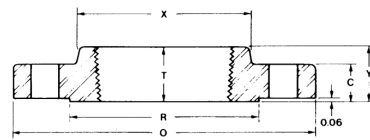
SLIP-ON



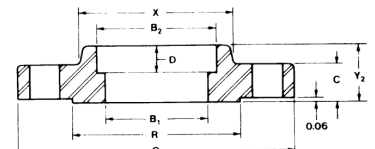
BLIND



LAP JOINT



THREADED



SOCKET WELD

300-lb.																		
Nom. Pipe Size	Out-side Diam.	Thkn. (min.)	O.D. of Raised Face	Hub Diam.	Length thru Hub			Bore □			Depth of Sock.	Approx. Weight (Lbs.)				Drilling		
					Wldg. Neck	Slip-on Thrd. Sock. W.	Lap Joint	Wldg. Neck ²	Slip-On Sock. W.	Lap Joint		Wldg. Neck	Slip-On Thrd. Sock. W.	Lap Joint	Blind	No. Holes	Diam. Holes	Bolt Circle Diam.
	O	C	R	X	Y ₁	Y ₂	Y ₃	B ₁	B ₂	B ₃	D							
½	3¾	⅝	1⅜	1½	2⅞	⅞	⅞	0.62	0.88	0.90	⅜	2	2	2	2	4	⅝	2⅝
¾	4⅝	⅞	1⅞	1⅞	2¼	1	1	0.82	1.09	1.11	⅞	3	3	3	3	4	¾	3¼
1	4⅞	1⅞	2	2⅞	2⅞	1⅞	1⅞	1.05	1.36	1.38	½	4	3	3	3	4	¾	3½
1¼	5¼	¾	2½	2½	2⅞	1⅞	1⅞	1.38	1.70	1.72	⅝	5	4	4	4	4	¾	3⅞
1½	6⅞	1⅞	2⅞	2¾	2⅞	1⅞	1⅞	1.61	1.95	1.97	⅝	7	6	6	6	4	⅞	4½
2	6½	⅞	3⅝	3⅞	2¾	1⅞	1⅞	2.07	2.44	2.46	⅞	9	7	7	8	8	¾	5
2½	7½	1	4⅞	3⅞	3	1½	1½	2.47	2.94	2.97	¾	12	10	10	12	8	⅞	5⅞
3	8¼	1⅞	5	4⅝	3⅞	1⅞	1⅞	3.07	3.57	3.60	⅞	15	13	13	16	8	⅞	6⅝
3½	9	1⅞	5½	5¼	3⅞	1¾	1¾	3.55	4.07	4.10	—	18	17	17	21	8	⅞	7¼
4	10	1¼	6⅞	5¾	3⅞	1⅞	1⅞	4.03	4.57	4.60	—	25	22	22	27	8	⅞	7⅞
5	11	1⅞	7⅞	7	3⅞	2	2	5.05	5.66	5.69	—	32	28	28	35	8	⅞	9¼
6	12½	1⅞	8½	8⅞	3⅞	2⅞	2⅞	6.07	6.72	6.75	—	42	39	39	50	12	⅞	10⅝
8	15	1⅞	10⅝	10¼	4⅞	2⅞	2⅞	7.98	8.72	8.75	—	67	58	58	81	12	1	13
10	17½	1⅞	12¾	12⅝	4⅞	2⅞	3¾	10.02	10.88	10.92	—	91	81	91	124	16	1⅞	15¼
12	20½	2	15	14¾	5⅞	2⅞	4	12.00	12.88	12.92	—	140	115	140	185	16	1¼	17¾
14	23	2⅞	16¼	16¾	5⅞	3	4⅞	13.25	14.14	14.18	—	180	165	190	250	20	1¼	20¼
16	25½	2¼	18½	19	5¾	3¼	4¾	15.25	16.16	16.19	—	250	190	250	295	20	1⅞	22½
18	28	2⅞	21	21	6¼	3½	5⅞	17.25	18.18	18.20	—	320	250	295	395	24	1⅞	24¾
20	30½	2½	23	23⅞	6⅞	3¾	5½	19.25	20.20	20.25	—	400	315	370	505	24	1⅞	27
22	33	2⅞	25¼	25¼	6½	4	5¾	21.25	22.22	22.25	—	465	370	435	640	24	1⅞	29¼
24	36	2¾	27¼	27⅞	6⅞	4⅞	6	23.25	24.25	24.25	—	580	475	550	790	24	1⅞	32
The ⅞" raised face is included in thickness C and length Y.																		
400-lb. (NOTE: Sizes ½" thru 3⅞" are identical with 600 lb. flanges (see next page).)																		
4	10	1⅞	6⅞	5¾	3½	2	2	To be specified	4.57	4.60		35	26	25	33	8	1	7⅞
5	11	1½	7⅞	7	4	2⅞	2⅞		5.66	5.69		43	31	29	44	8	1	9¼
6	12½	1⅞	8½	8⅞	4⅞	2¼	2¼		6.72	6.75		57	44	42	61	12	1	10⅝
8	15	1⅞	10⅝	10¼	4⅞	2⅞	2⅞	To be specified	8.72	8.75		89	67	64	100	12	1⅞	13
10	17½	2⅞	12¾	12⅝	4⅞	2⅞	4		10.88	10.92		125	91	110	155	16	1¼	15¼
12	20½	2¼	15	14¾	5⅞	3⅞	4¼		12.88	12.92		175	130	150	225	16	1⅞	17¾
14	23	2⅞	16¼	16¾	5⅞	3⅞	4⅞	To be specified	14.14	14.18		230	180	205	290	20	1⅞	20¼
16	25½	2½	18½	19	6	3⅞	5		16.16	16.19		295	235	260	370	20	1½	22½
18	28	2⅞	21	21	6½	3⅞	5⅞		18.18	18.20		350	285	315	455	24	1½	24¾
20	30½	2¾	23	23⅞	6⅞	4	5¾	To be specified	20.20	20.25		425	345	385	587	24	1⅞	27
22	33	2⅞	25¼	25¼	6¾	4¼	6		22.22	22.25		505	405	455	720	24	1¾	29¼
24	36	3	27¼	27⅞	6⅞	4½	6¼		24.25	24.25		620	510	570	890	24	1⅞	32
The ¼" raised face is not included in thickness C and length Y.																		

400-lb.

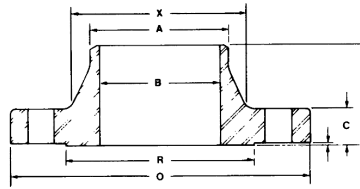
(NOTE: Sizes 1/2" thru 3 1/2" are identical with 600 lb. flanges (see next page).)

To be specified

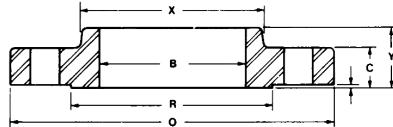
Stainless Steel Forged Flanges (cont'd)

ANSI B16.5/ASA

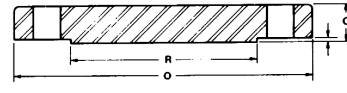
600 lbs & 900 lbs



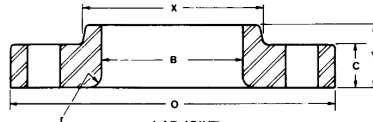
WELDING NECK



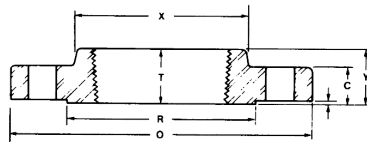
SLIP-ON



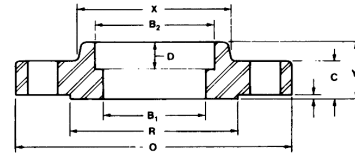
BLIND



LAP JOINT



THREADED



SOCKET WELD

600-lb.																		
Nom. Pipe Size	Out-side Diam.	Thkn. (min.)	O.D. of Raised Face	Hub Diam.	Length thru Hub			Bore [□]			Depth of Socket	Approx. Weight (Lbs.)				Drilling		
					Wldg. Neck	Slip-On Thrd. Sock. W.	Lap Joint	Wldg. Neck	Slip-On Socket W.	Lap Joint		Wldg. Neck	Slip-On Thrd. Sock. W.	Lap Joint	Blind	No. Holes	Diam. Holes	Bolt Circle Diam.
	O	C	R	X	Y ₁	Y ₂	Y ₃	B ₁	B ₂	B ₃	D							
1/2	3 3/4	3/16	1 3/8	1 1/2	2 1/16	7/8	7/8	To be specified	0.88	0.90	3/8	2	2	2	2	4	5/8	2 5/8
3/4	4 5/8	5/8	1 11/16	1 7/8	2 1/4	1	1		1.09	1.11	7/16	4	3	3	3	4	3/4	3 1/4
1	4 7/8	1 1/16	2	2 1/8	2 7/16	1 1/16	1 1/16		1.36	1.38	1/2	4	4	4	4	4	3/4	3 1/2
1 1/4	5 1/4	1 3/16	2 1/2	2 1/2	2 5/8	1 1/8	1 1/8		1.70	1.72	3/8	6	5	5	5	4	3/4	3 7/8
1 1/2	6 1/8	7/8	2 7/8	2 3/4	2 3/4	1 1/4	1 1/4		1.95	1.97	5/8	8	7	7	8	4	7/8	4 1/2
2	6 1/2	1	3 5/8	3 3/16	2 7/8	1 1/16	1 1/16		2.44	2.46	1 1/16	12	9	9	10	8	3/4	5
2 1/2	7 1/2	1 1/8	4 1/8	3 1 1/16	3 1/8	1 5/8	1 5/8		2.94	2.97	3/4	18	13	12	15	8	7/8	5 7/8
3	8 1/4	1 1/4	5	4 5/8	3 1/4	1 1 3/16	1 1 3/16		3.57	3.60	1 3/16	23	16	15	20	8	7/8	6 5/8
3 1/2	9	1 3/8	5 1/2	5 1/4	3 3/8	1 1 1/16	1 1 1/16		4.07	4.10	—	26	21	20	29	8	1	7 1/4
4	10 3/4	1 1/2	6 3/16	6	4	2 1/8	2 1/8		4.57	4.60	—	42	37	36	41	8	1	8 1/2
5	13	1 3/4	7 3/16	7 1/16	4 1/2	2 3/8	2 3/8		5.66	5.69	—	68	63	61	68	8	1 1/8	10 1/2
6	14	1 7/8	8 1/2	8 3/4	4 5/8	2 5/8	2 5/8		6.72	6.75	—	81	80	78	86	12	1 1/8	11 1/2
8	16 1/2	2 3/16	10 5/8	10 3/4	5 1/4	3	3		8.72	8.75	—	120	115	110	140	12	1 1/4	13 3/4
10	20	2 1/2	12 3/4	13 1/2	6	3 3/8	4 3/8		10.88	10.92	—	190	170	170	230	16	1 3/8	17
12	22	2 5/8	15	15 3/4	6 1/8	3 5/8	4 5/8		12.88	12.92	—	225	200	200	295	20	1 3/8	19 1/4
14	23 3/4	2 3/4	16 1/4	17	6 1/2	3 1 1/16	5		14.14	14.18	—	280	230	250	355	20	1 1/2	20 3/4
16	27	3	18 1/2	19 1/2	7	4 3/16	5 1/2		16.16	16.19	—	390	330	365	495	20	1 5/8	23 3/4
18	29 1/4	3 1/4	21	21 1/2	7 1/4	4 5/8	6		18.18	18.20	—	475	400	435	630	20	1 3/4	25 3/4
20	32	3 1/2	23	24	7 1/2	5	6 1/2		20.20	20.25	—	590	510	570	810	24	1 3/4	28 1/2
22	34 1/4	3 3/4	25 1/4	26 1/4	7 3/4	5 1/4	6 7/8		22.22	22.25	—	720	590	670	1000	24	1 7/8	30 5/8
24	37	4	27 1/4	28 1/4	8	5 1/2	7 1/4		24.25	24.25	—	830	730	810	1250	24	2	33
900-lb.																		
(NOTE: Sizes 1/2" thru 2 1/2" are identical with 1500 lb. flanges (see next page).)																		
3	9 1/2	1 1/2	5	5	4	2 1/8	2 1/8	To be specified	3.57	3.60	—	31	26	25	29	8	1	7 1/2
4	11 1/2	1 3/4	6 3/16	6 1/4	4 1/2	2 3/4	2 3/4		4.57	4.60	—	53	53	51	54	8	1 1/4	9 1/4
5	13 3/4	2	7 3/16	7 1/2	5	3 1/8	3 1/8		5.66	5.69	—	86	83	81	87	8	1 3/8	11
6	15	2 3/16	8 1/2	9 1/4	5 1/2	3 3/8	3 3/8		6.72	6.75	—	110	110	105	115	12	1 1/4	12 1/2
8	18 1/2	2 1/2	10 5/8	11 3/4	6 3/8	4	4 1/2		8.72	8.75	—	175	170	190	200	12	1 1/2	15 1/2
10	21 1/2	2 3/4	12 3/4	14 1/2	7 1/4	4 1/4	5		10.88	10.92	—	260	245	275	290	16	1 1/2	18 1/2
12	24	3 1/8	15	16 1/2	7 7/8	4 5/8	5 5/8		12.88	12.92	—	325	325	370	415	20	1 1/2	21
14	25 1/4	3 3/8	16 1/4	17 3/4	8 3/8	5 1/8	6 1/8		14.14	14.18	—	400	400	415	520	20	1 5/8	22
16	27 3/4	3 1/2	18 1/2	20	8 1/2	5 1/4	6 1/2		16.16	16.19	—	495	425	465	600	20	1 3/4	24 1/4
18	31	4	21	22 1/4	9	6	7 1/2		18.18	18.20	—	680	600	650	850	20	2	27
20	33 3/4	4 1/4	23	24 1/2	9 3/4	6 1/4	8 1/4		20.20	20.25	—	830	730	810	1075	20	2 1/8	29 1/2
22	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	—
24	41	5 1/2	27 1/4	29 1/2	11 1/2	8	10 1/2		24.25	24.25	—	1500	1400	1550	2025	20	2 5/8	35 1/2

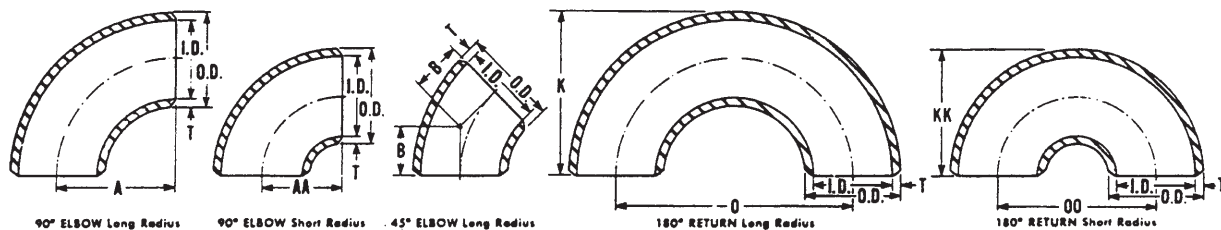
Stainless Steel I.P.S. Butt Welding Fittings

ALSO AVAILABLE IN ALUMINUM, & NICKEL ALLOYS

MSS SP-43 ASA B16.9**

Schedules 5S, 10S, 40S and 80S

(other thicknesses on request)



NOMINAL PIPE SIZE	OUTSIDE DIAMETER	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		90° ELBOW		45° ELBOW
		WALL THICKNESS	INSIDE DIAMETER	WALL THICKNESS	INSIDE DIAMETER	WALL THICKNESS	INSIDE DIAMETER	WALL THICKNESS	INSIDE DIAMETER	LONG RADIUS	SHORT RADIUS*	LONG RADIUS
	O.D.	T	I.D.	T	I.D.	T	I.D.	T	I.D.	A	AA	B
1/2	0.840	.065	.710	.083	.674	.109	.622	.147	.546	1 1/2	...	5/8
3/4	1.050	.065	.920	.083	.884	.113	.824	.154	.742	1 5/8	...	7/16
1	1.315	.065	1.185	.109	1.097	.133	1.049	.179	.957	1 1/2	1	3/8
1 1/4	1.660	.065	1.530	.109	1.442	.140	1.380	.191	1.278	1 7/8	1 1/4	1
1 1/2	1.900	.065	1.770	.109	1.682	.145	1.610	.200	1.500	2 1/4	1 1/2	1 1/8
2	2.375	.065	2.245	.109	2.157	.154	2.067	.218	1.939	3	2	1 3/8
2 1/2	2.875	.083	2.709	.120	2.635	.203	2.469	.276	2.323	3 3/4	2 1/2	1 3/4
3	3.500	.083	3.334	.120	3.260	.216	3.068	.300	2.900	4 1/2	3	2
3 1/2	4.000	.083	3.834	.120	3.760	.226	3.548	.318	3.364	5 1/4	3 1/2	2 1/4
4	4.500	.083	4.334	.120	4.260	.237	4.026	.337	3.826	6	4	2 1/2
5	5.563	.109	5.345	.134	5.295	.258	5.047	.375	4.813	7 1/2	5	3 1/8
6	6.625	.109	6.407	.134	6.357	.280	6.065	.432	5.761	9	6	3 3/4
8	8.625	.109	8.407	.148	8.329	.322	7.981	.500	7.625	12	8	5
10	10.750	.134	10.482	.165	10.420	.365	10.020	.500	9.750	15	10	6 1/4
12	12.750	.156	12.438	.180	12.390	.375	12.000	.500	11.750	18	12	7 1/2
14	14.000	.156	13.688	.188	13.624	.375+	13.250	.500+	13.000	21	14	8 3/4
16	16.000	.165	15.670	.188	15.624	.375+	15.250	.500+	15.000	24	16	10
18	18.000	.165	17.670	.188	17.624	.375+	17.250	.500+	17.000	27	18	11 1/4
20	20.000	.188	19.624	.218	19.564	.375+	19.250	.500+	19.000	30	20	12 1/2
24	24.000	.218	23.564	.250	23.500	.375+	23.250	.500+	23.000	36	24	15
30	30.000	.250	29.500	.312	29.376	.375+	29.250	.500+	29.000	45	30	18 1/2
36	36.000	TO BE SPECIFIED				.375+	35.250	.500+	35.000	54	36	22 1/4

**Dimensions are in accordance with MSS SP-43 and where applicable to A.S.A. B16.9. Short Radius Elbows are not included in either of these standards.

*Not available in Schedules 5S and 10S in sizes through 4".

Sizes 14" through 36" are not covered by A.S.A. B36.19-1957.

Wall thicknesses shown represent nominal or average wall dimensions as established in A.S.A. B36-19-1957. Wall thicknesses are

subject to a minus 12 1/2% mill tolerance. Wall thickness for Schedules 5S and 10S in sizes 12" through 30" are tentative and subject to change.

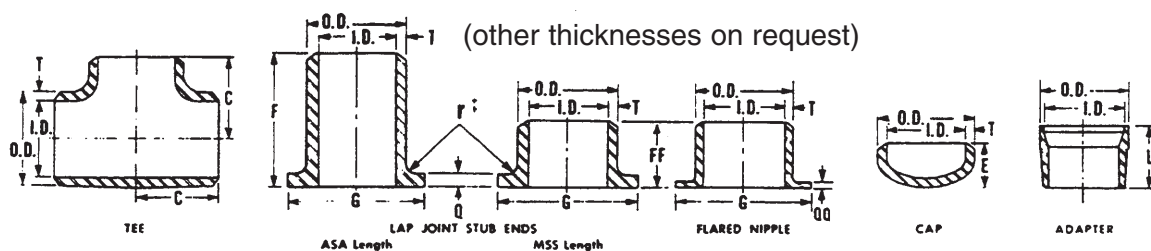
+ These wall thicknesses correspond respectively to Standard Weight and Extra Strong.

OTHER SCHEDULES AND WALL THICKNESSES ARE AVAILABLE.

Stainless Steel I.P.S. Butt Welding Fittings (cont'd)

ALSO AVAILABLE IN ALUMINUM, & NICKEL ALLOYS

MSS SP-43** ASA B16.9 Schedules 5S, 10S, 40S and 80S



NOMINAL PIPE SIZE	180° RETURN				TEE	LAP JOINT STUB ENDS ASA LENGTH AND MSS LENGTH							FLARED NIPPLE†	CAP	ADAPTER+
	LONG RADIUS		SHORT RADIUS*			Q*									
	K	O	KK	OO		C	F	FF	SCH. 5S	SCH. 10S	G	F‡				QQ	E	L
½	1 15⁄16	3	...	...	1	3	2	.084	.095	1 3⁄8	1⁄8	SLIGHTLY LESS THAN NOMINAL PIPE WALL THICKNESS	1	...	
¾	1 11⁄16	2 ¼	...	...	1 1⁄8	3	2	.086	.097	1 11⁄16	1⁄8		1	1 1⁄8	
1	2 3⁄16	3	1 5⁄8	2	1 ½	4	2	.093	.120	2	1⁄8		1 ½	1 ¾	
1 ¼	2 ¾	3 ¾	2 1⁄16	2 ½	1 7⁄8	4	2	.095	.124	2 ½	3⁄16		1 ½	1 ¾	
1 ½	3 ¼	4 ½	2 7⁄16	3	2 ¼	4	2	.097	.126	2 7⁄8	¼		1 ½	1 ¾	
2	4 3⁄16	6	3 3⁄16	4	2 ½	6	2 ½	.100	.130	3 5⁄8	5⁄16		1 ½	1 13⁄16	
2 ½	5 3⁄16	7 ½	3 15⁄16	5	3	6	2 ½	.130	.156	4 1⁄8	5⁄16		1 ½	2 5⁄16	
3	6 ¼	9	4 ¾	6	3 3⁄8	6	2 ½	.134	.161	5	3⁄8		2	2 ½	
3 ½	7 ¼	10 ½	5 ½	7	3 ¾	6	3	.137	.165	5 ½	3⁄8		2 ½	2 9⁄16	
4	8 ¼	12	6 ¼	8	4 1⁄8	6	3	.140	.169	6 3⁄16	7⁄16		2 ½	2 9⁄16	
5	10 5⁄16	15	7 ¾	10	4 7⁄8	8	3	.168	.186	7 5⁄16	7⁄16		3	...	
6	12 5⁄16	18	9 5⁄16	12	5 5⁄8	8	3 ½	.175	.194	8 1⁄2	½		3 ½	...	
8	16 5⁄16	24	12 5⁄16	16	7	8	4	.187	.218	10 5⁄8	½		4	...	
10	20 3⁄8	30	15 3⁄8	20	8 ½	10	5	.221	.245	12 ¾	½		5	...	
12	24 3⁄8	36	18 3⁄8	24	10	10	6	.249	.260	15	½		6	...	
14	28	42	21	28	11	12	7	.375	.375	16 ¼	½		6 ½	...	
16	32	48	24	32	12	12	8	.375	.375	18 ½	½		7	...	
18	36	54	27	36	13 ½	12	9	.375	.375	21	½		8	...	
20	40	60	30	40	15	12	10	.375	.375	23	½		9	...	
24	48	72	36	48	17	12	12	.375	.375	27 ¼	½		10 ½	...	
30	60	90	45	60	...	...	...	...	...	...	...	...	...	...	
36	72	108	54	72	...	...	...	...	...	...	...	...	...	...	

For O.D., I.D. and wall thickness T, see facing page.

**Dimensions are in accordance with MSS SP.43 and where applicable to A.S.A. B16.9.

*Not available in Schedules 5S and 10S in sizes through 4".

LAP JOINT STUB ENDS—MSS length available in Schedules 5S, 10S and 40S. A.S.A. length in Schedules 40S and 80S.

*Lap thickness Q for Schedule 40S and 80S in sizes through 12" is equal to wall thickness T. In sizes 14" and larger, the lap thickness for Schedules 40S and 80S is .375" and .500" respectively.

‡ Type B, Lap Joint Stub End (fillet radius "r" decreased to accommodate Slip-On Flange) available in Schedules 5S, 10S and 40S.

A.S.A. and MSS length Lap Joint Stub Ends are furnished with a

modified serrated face. Face of Flared Nipple is not serrated.

FLARED NIPPLES are available in Schedules 5S and 10S.

† Flared nipple has same FF and G dimensions as MSS length Lap Joint Stub End.

Caps have semi-ellipsoidal shape with minor axis at least one half of major axis.

+ WELDING ADAPTER (from Schedule 5S or 10S to NPT thread) available in Type 316 only. For Schedule 40S and 80S, use Standard Weight or Extra Strong Short Nipple threaded one end only.

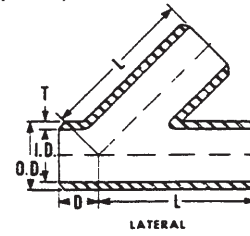
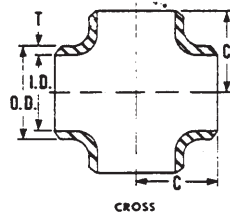
OTHER SCHEDULES AND WALL THICKNESSES ARE AVAILABLE.

Stainless Steel I.P.S. Butt Welding Fittings (cont'd)

ALSO AVAILABLE IN ALUMINUM, & NICKEL ALLOYS

Schedules 5S, 10S, 40S and 80S

(other thicknesses on request)



NOMINAL PIPE SIZE	OUTSIDE DIAMETER	SCHEDULE 5S		SCHEDULE 10S		SCHEDULE 40S		SCHEDULE 80S		CROSS C	Lateral			
		WALL THICKNESS	INSIDE DIAMETER	WALL THICKNESS	INSIDE DIAMETER	WALL THICKNESS	INSIDE DIAMETER	WALL THICKNESS	INSIDE DIAMETER		SCHEDULES 5S, 10S, 40S		SCHEDULE 80S	
		O.D.	T	I.D.	T	I.D.	T	I.D.	T		D	L	D	L
3/4	1.050	.065	.920	.083	.884	.113	.824	.154	.742	1 1/8	1	5	...	...
1	1.315	.065	1.185	.109	1.097	.133	1.049	.179	.957	1 1/2	1 3/4	5 3/4	2	6 1/2
1 1/4	1.660	.065	1.530	.109	1.442	.140	1.380	.191	1.278	1 7/8	1 3/4	6 1/4	2 1/4	7 1/4
1 1/2	1.900	.065	1.770	.109	1.682	.145	1.610	.200	1.500	2 1/4	2	7	2 1/2	8 1/2
2	2.375	.065	2.245	.109	2.157	.154	2.067	.218	1.939	2 1/2	2 1/2	8	2 1/2	9
2 1/2	2.875	.083	2.709	.120	2.635	.203	2.469	.276	2.323	3	2 1/2	9 1/2	2 1/2	10 1/2
3	3.500	.083	3.334	.120	3.260	.216	3.068	.300	2.900	3 3/8	3	10	3	11
3 1/2	4.000	.083	3.834	.120	3.760	.226	3.548	.318	3.364	3 3/4	3	11 1/2	3	12 1/2
4	4.500	.083	4.334	.120	4.260	.237	4.026	.337	3.826	4 1/8	3	12	3	13 1/2
5	5.563	.109	5.345	.134	5.295	.258	5.047	.375	4.813	4 7/8	3 1/2	13 1/2	3 1/2	15
6	6.625	.109	6.407	.134	6.357	.280	6.065	.432	5.761	5 5/8	3 1/2	14 1/2	4	17 1/2
8	8.625	.109	8.407	.148	8.329	.322	7.981	.500	7.625	7	4 1/2	17 1/2	5	20 1/2
10	10.750	.134	10.482	.165	10.420	.365	10.020	.500	9.750	8 1/2	5	20 1/2	5 1/2	24
12	12.750	.156	12.438	.180	12.390	.375	12.000	.500	11.750	10	5 1/2	24 1/2	6	27 1/2
14	14.000	.156	13.688	.188	13.624	.375†	13.250	.500†	13.000	11	6	27	6 1/2	31
16	16.000	.165	15.670	.188	15.624	.375†	15.250	.500†	15.000	12	6 1/2	30	7 1/2	34 1/2
18	18.000	.165	17.670	.188	17.624	.375†	17.250	.500†	17.000	13 1/2	7	32	8	37 1/2
20	20.000	.188	19.624	.218	19.564	.375†	19.250	.500†	19.000	15	8	35	8 1/2	40 1/2
24	24.000	.218	23.564	.250	23.500	.375†	23.250	.500†	23.000	17	9	40 1/2	10	47 1/2

Sizes 14" through 24" are not covered by A.S.A. B36.19-1957.

Wall thicknesses shown represent nominal or average wall dimensions as established in A.S.A. B36.19-1957. Wall thicknesses are subject to a minus 12 1/2% mill tolerance.

Wall thicknesses for Schedule 5S and 10S in sizes 12" are tentative and subject to change.

†These wall thickness correspond respectively to Standard Weight and Extra Strong.

Center to face dimensions of the Cross correspond to that of the Tee in A.S.A. B16.9.

Reducing Laterals are available with the same center to end dimensions as Straight Laterals of the same size run.

OTHER SCHEDULES AND WALL THICKNESSES ARE AVAILABLE.

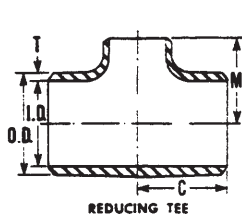
Stainless Steel I.P.S. Butt Welding Fittings (cont'd)

ALSO AVAILABLE IN ALUMINUM, & NICKEL ALLOYS

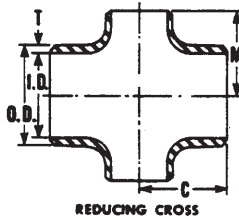
M.S.S. SP-43**

A.S.A. B16.9

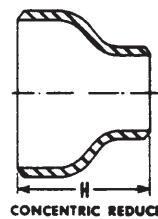
Schedules 5S, 10S, 40S and 80S
(other thicknesses on request)



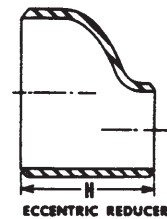
REDUCING TEE



REDUCING CROSS



CONCENTRIC REDUCER



EXCENTRIC REDUCER

NOMINAL PIPE SIZE	REDUCING TEE AND REDUCING CROSS		REDUCERS— CONCENTRIC ECCENTRIC
	C	M	
3/4 x 1/2	1 1/8	1 1/8	1 1/2
1 x 1/2	1 1/2	1 1/2	2
1 x 3/4	1 1/2	1 1/2	2
1 1/4 x 1/2	1 7/8	1 7/8	2
1 1/4 x 3/4	1 7/8	1 7/8	2
1 1/4 x 1	1 7/8	1 7/8	2
1 1/2 x 1/2	2 1/4	2 1/4	2 1/2
1 1/2 x 3/4	2 1/4	2 1/4	2 1/2
1 1/2 x 1	2 1/4	2 1/4	2 1/2
1 1/2 x 1 1/4	2 1/4	2 1/4	2 1/2
2 x 3/4	2 1/2	1 3/4	3
2 x 1	2 1/2	2	3
2 x 1 1/4	2 1/2	2 1/4	3
2 x 1 1/2	2 1/2	2 3/8	3
2 1/2 x 1	3	2 1/4	3 1/2
2 1/2 x 1 1/4	3	2 1/2	3 1/2
2 1/2 x 1 1/2	3	2 5/8	3 1/2
2 1/2 x 2	3	2 3/4	3 1/2
3 x 1 1/4	3 3/8	2 3/4	3 1/2
3 x 1 1/2	3 3/8	2 3/8	3 1/2
3 x 2	3 3/8	3	3 1/2
3 x 2 1/2	3 3/8	3 1/4	3 1/2
3 1/2 x 1 1/4	...	...	4
3 1/2 x 1 1/2	3 3/4	3 1/8	4
3 1/2 x 2	3 3/4	3 1/4	4
3 1/2 x 2 1/2	3 3/4	3 1/2	4
3 1/2 x 3	3 3/4	3 5/8	4
4 x 1 1/2	4 1/8	3 3/8	4
4 x 2	4 1/8	3 1/2	4
4 x 2 1/2	4 1/8	3 3/4	4
4 x 3	4 1/8	3 3/8	4
4 x 3 1/2	4 1/8	4	4
5 x 2	4 7/8	4 1/8	5
5 x 2 1/2	4 7/8	4 1/4	5
5 x 3	4 7/8	4 3/8	5
5 x 3 1/2	4 7/8	4 1/2	5
5 x 4	4 7/8	4 5/8	5

NOMINAL PIPE SIZE	REDUCING TEE AND REDUCING CROSS		REDUCERS— CONCENTRIC ECCENTRIC
	C	M	
6 x 2 1/2	5 5/8	4 3/4	5 1/2
6 x 3	5 5/8	4 7/8	5 1/2
6 x 3 1/2	5 5/8	5	5 1/2
6 x 4	5 5/8	5 1/8	5 1/2
6 x 5	5 5/8	5 3/8	5 1/2
8 x 3 1/2	7	6	6
8 x 4	7	6 1/8	6
8 x 5	7	6 3/8	6
8 x 6	7	6 5/8	6
10 x 4	8 1/2	7 1/4	7
10 x 5	8 1/2	7 1/2	7
10 x 6	8 1/2	7 3/8	7
10 x 8	8 1/2	8	7
12 x 5	10	8 1/2	8
12 x 6	10	8 3/8	8
12 x 8	10	9	8
12 x 10	10	9 1/2	8
14 x 8	11	9 3/4	13
14 x 10	11	10 1/8	13
14 x 12	11	10 5/8	13
16 x 8	12	10 3/4	14
16 x 10	12	11 1/8	14
16 x 12	12	11 5/8	14
16 x 14	12	12	14
18 x 10	13 1/2	12 1/8	15
18 x 12	13 1/2	12 5/8	15
18 x 14	13 1/2	13	15
18 x 16	13 1/2	13	15
20 x 10	15	13 1/8	20
20 x 12	15	13 3/8	20
20 x 14	15	14	20
20 x 16	15	14	20
20 x 18	15	14 1/2	20
24 x 12	17	15 5/8	20
24 x 14	17	16	20
24 x 16	17	16	20
24 x 18	17	16 1/2	20
24 x 20	17	17	20

** Dimensions are in accordance with MSS SP-43 and where applicable to ASA B16.9. Reducing Cross is not included in either of these standards.

O.D., I.D. and wall thickness for each end of a reducer correspond to dimensions for pipe of the same size, see facing page.

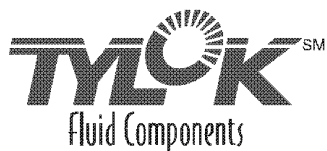
Sizes 14" through 24" are not covered by ASA B36.19-1957.

Reductions other than those listed are available on application.

Reducers 8" and larger will be furnished conical or contour design at option. In 12" and smaller sizes, Reducers with reductions beyond those shown are available in conical shapes with increased lengths.

OTHER SCHEDULES AND WALL THICKNESSES ARE AVAILABLE.

STAINLESS & ALLOY COMPRESSION TUBE FITTINGS WITH SINGLE OR DOUBLE FERRULES



CBC-LOK® Tube Fittings



Stainless Steel Flexible Hose

Available in all metals, all standard sizes. Also in any required length, with any standard or special fitting or flange attached.



COATED STAINLESS FLEXIBLE HOSES

**FLANGED SWIVEL &
FIX END ASSEMBLIES**

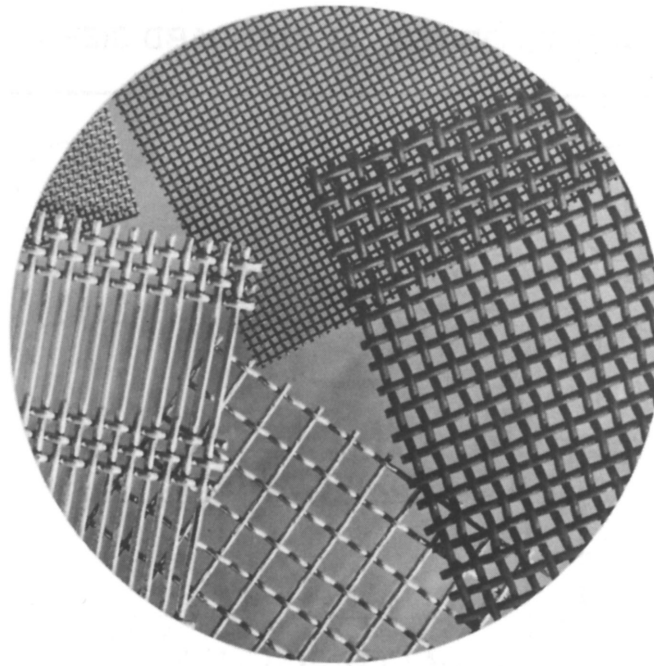
**QUICK DISCONNECT
FLEXIBLE STAINLESS
HOSE ASSEMBLIES**

**SANITARY STAINLESS
& TEFLON LINED HOSES**

**TEFLON LINED
FITTINGS & ADAPTERS**

**ALSO AVAILABLE IN TEFLON LINED-STAINLESS HOSE, OR WITH SANITARY CONNECTIONS.
THREADED END HOSES NOW AVAILABLE WITH U.L. APPROVAL.**

Corrosion Resisting Wire Cloth / Filter Cloth



Made of: Stainless Steel 304, 316, Monel. Other alloys and materials available.
 Meshes: SQUARE WEAVES; from coarse to very fine.
 Weaves: Plain, Twilled, and Dutch Weave (Corduroy and all grades of Filter Cloth).
 Widths: 36"—48"—and wider.
 Shipment: Large stock available for immediate shipment.
 Sample Swatches } : Promptly Furnished.

WIRE CLOTH
FABRICATION
made to order

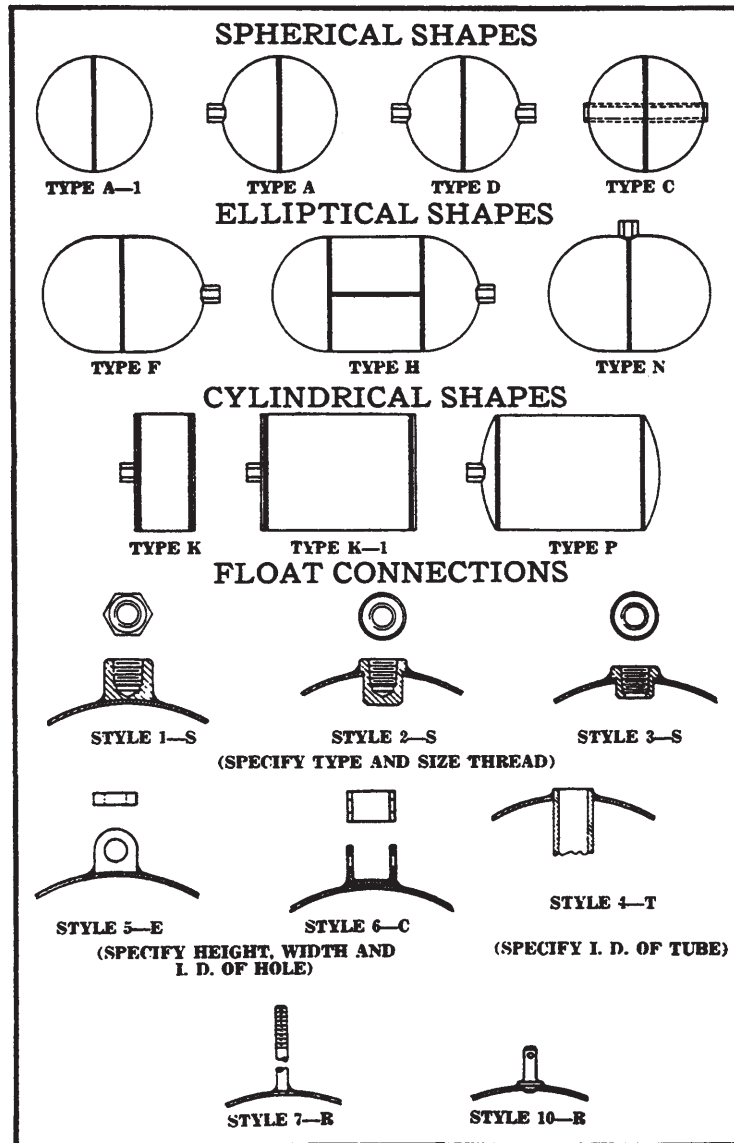
MARKET GRADE STAINLESS STEEL WIRE CLOTH

Mesh	W. & M. Gauge	Decimal Size of Wire Inches	Decimal Size of Opening Inches	Weight Per 100 Sq. Ft. in Lbs.	Open Area
2	16	.063	.437	51.2	76.4%
3	17	.054	.279	56.7	70.1%
4	18	.047	.203	57.6	65.9%
5	19	.041	.159	54.9	63.2%
6	20	.035	.132	48.1	62.7%
8	22	.028	.097	41.1	60.2%
10	23	.025	.075	41.2	56.3%
12	24	.023	.060	42.2	51.8%
14	25	.020	.051	37.2	51.0%
16	26	.018	.0445	34.5	50.7%
18	27	.017	.0386	34.8	48.3%
20	28	.016	.034	34.4	46.2%
24	30	.014	.0277	31.8	44.2%
30	31	.013	.0203	34.8	40.8%
40	34	.010	.015	27.6	36.0%
50	36	.009	.011	28.4	30.3%
60	39	.0075	.0092	23.7	30.5%
80	45	.0055	.007	16.9	29.6%
90	47	.005	.0061	15.8	31.4%
100	50	.0045	.0055	14.2	30.1%

SPECIAL SCREEN SHAPES AVAILABLE ON DEMAND.

Stainless Steel Floats

MADE TO ORDER, OR STANDARD SIZES



Dia. of Float	Std. Spud Pipe Tap	Approx. Buoyancy in Ounces when completely Submerged in Cold Water (60°F.)							
		U. S. STANDARD GAUGES							
		10	12	14	16	18	20	22	24
2"	1/8"							5	1.0
2 1/2"	1/8"						1.0	1.5	2.0
3"	1/8"					1.5	3.0	3.5	4.5
3 1/2"	1/8"				1.5	4	6	7.5	8.5
4"	1/8"			1	5	8	10	12	13
4 1/2"	1/8"			4	9	13	16	18	20
5"	1/4"			9	14	20	24	26	28
5 1/2"	1/4"			14	21	28	32	35	38
6"	1/4"			24	31	38	44	48	51
6 1/2"	1/4"		14	35	43	52	59	62	
7"	3/8"	2	24	48	58	68	76		
7 1/2"	3/8"	10	36	62	75	85	95		
8"	3/8"	25	54	83	96	108	119		
9"	3/8"	56	90	130	146	162			
10"	3/8"	100	141	190	210	230			
12"	1/2"	247	298	290	390	415			

Dia. of Float	SPHERICAL SHAPES MAXIMUM RECOMMENDED WORKING PRESSURE, PSI							
	U. S. STANDARD GAUGES							
	10	12	14	16	18	20	22	24
2"							900	775
2 1/2"						1000	800	650
3"					1400	875	700	575
3 1/2"				1600	1275	775	600	500
4"			1900	1450	1150	650	525	400
4 1/2"			1700	1325	1025	575	450	350
5"			1550	1200	900	500	375	300
5 1/2"			1375	1100	825	450	325	250
6"		1600	1250	1025	750	350	275	200
6 1/2"		1500	1125	925	650	325	225	
7"	1600	1400	1050	850	600	275		
7 1/2"	1550	1300	925	775	525	250		
8"	1500	1200	875	725	475	200		
9"	1400	1075	775	600	375			
10"	1325	925	650	525	300			
12"	1250	750	550	400				

Stainless Steel Chain, Springs & Accessories

WELDLESS CHAIN 18-8 Stainless Steel

	Name	Size of Wire or Metal	Links per Foot
	#3 Ball	3/32"	100
	#6 Ball	1/8"	75
	#10 Ball	3/16"	50
	#13 Ball	1/4"	25
	#3 Bow-tie	.080"	10 1/2
	#1 Bow-tie	.105"	8
	2/0 Bow-tie	.135"	6 1/2
	2/0 Safety	.018"	27
	1/0 Safety	.023"	25
	#1 Safety	.028"	20
	#8 Sash +	.035"	21
	#25 Sash	.042"	21
	#35 Sash *	.035"	22
	#40 Sash	.042"	22
	#50 Sash	.060"	18
	#65 Sash	.072"	14
	#18 Single Jack	.047"	29
	#16 Single Jack	.0625"	23
	#14 Single Jack	.080"	19
	#12 Single Jack	.105"	16
	#10 Single Jack	.135"	13

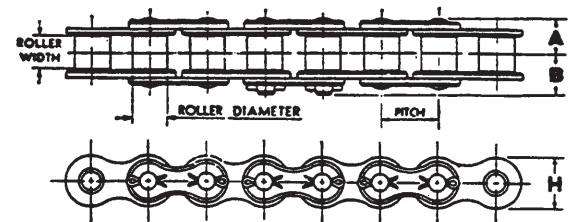
* Also stocked T-316
+ Also stocked Monel



STOCK LIST—WELDED LINK CHAIN

Wire Dia.	Alloy	Inside Link Dim.	Links per Foot
.105	T-304	1 1/4 x 7/32"	10 1/2
1/8	T-316	23/32 x 1/4"	16
5/16	T-316	1 x 3/8"	13
1/4	T-316	1 1/8 x 7/16"	12 1/2
5/16	T-316	1 3/16 x 9/16"	11
3/8	T-316	1 5/16 x 19/32"	9

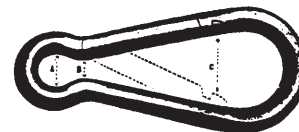
ROLLER CHAIN



STANDARD SERIES DIMENSIONS

Pitch	American Standard Number	Overall Dim.		Roller		Pin		Plate	
		Conn Link		Dia.	Width	Dia.	Height	Thick	
		A	B	D	E	G	H	T	
3/4	35	.228	.286	.200	3/8	.181	.434	.050	
1 1/2	41	.260	.333	.306	1/2	.141	.385	.050	
1 1/2	40	.314	.373	3/4	5/8	.156	.468	.060	
2	50	.392	.548	.400	3/4	.200	.571	.080	
2 1/2	60	.493	.567	1 1/2	1	.234	.679	.094	
3	80	.643	.762	3/4	1 1/2	.312	.908	.125	

SAFETY SPRING HOOKS, #2450-S



Molybdenum-bearing T-316 Stainless Steel

Spring-loaded, interlocking. Ideal for small boats, water skiing, mooring, motor safety line, trailer, winch rope, etc.

Size & Length	"A"	"B"	"C"
1/4" x 2 1/2"	5/16"	3/16"	5/16"
5/16" x 3 1/8"	7/16"	5/16"	3/8"
3/8" x 4"	9/16"	3/8"	1/2"
7/16" x 4 3/4"	1 1/16"	7/16"	1 1/16"

No. 7350-S QUICK LINKS T-316

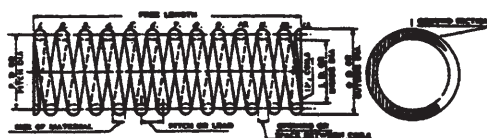
For quick connection of chain, cable and wire rope. No tools required. Easily tightened with fingers. Can be used over and over again. Has tensile of proof coil chain.



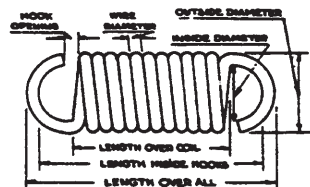
Trade Size	Overall Length	Jaw Opening	Wgt. Per 100	Average Tensile Lbs.
1/8"	1-3/8"	3/16"	2	550
3/16"	1-7/8"	1/4"	5	1,870
1/4"	2-1/4"	9/32"	9	2,760
5/16"	2-15/16"	3/8"	19	7,050
3/8"	3-1/8"	7/16"	25	7,950
1/2"	4-1/8"	19/32"	57	12,800

STAINLESS STEEL SPRINGS

COMPRESSION TYPE



EXTENSION TYPE



ALL SPRINGS MADE ON SPECIAL ORDER
PRICES ON APPLICATION

Stainless Steel Bolts, Fasteners & U-Bolts

stainless machine bolts & fasteners



American Standard hexagon head bolts with American Standard hexagon nuts are stocked for immediate shipment in sizes $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1 and $1\frac{1}{8}$ inch.

Lengths of bolts are measured from under head to extreme point.

ORDERING: Specify bolt size, name, length and alloy.

stainless hexagon nuts

American Standard hexagon nuts — sizes $\frac{1}{4}$ thru $1\frac{1}{2}$ inch.

American Standard heavy hexagon flat nuts — sizes $1\frac{3}{4}$ thru $3\frac{3}{4}$ inch.

ORDERING: Specify bolt size, name.

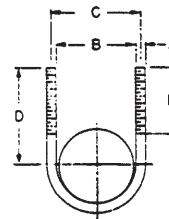
dimensions (inches)

bolt size	width	thickness
$\frac{1}{4}$	$\frac{7}{16}$	$\frac{15}{64}$
$\frac{3}{8}$	$\frac{9}{16}$	$\frac{11}{32}$
$\frac{1}{2}$	$\frac{3}{4}$	$\frac{29}{64}$
$\frac{5}{8}$	$\frac{15}{16}$	$\frac{9}{16}$
$\frac{3}{4}$	$1\frac{1}{8}$	$\frac{43}{64}$
$\frac{7}{8}$	$1\frac{5}{16}$	$\frac{25}{32}$
1	$1\frac{1}{2}$	$\frac{57}{64}$
$1\frac{1}{4}$	$1\frac{7}{8}$	$\frac{13}{32}$
$1\frac{3}{8}$	$2\frac{1}{16}$	$\frac{113}{64}$
$1\frac{1}{2}$	$2\frac{1}{4}$	$\frac{15}{16}$
$1\frac{3}{4}$	$2\frac{3}{4}$	$\frac{125}{32}$
2	$3\frac{3}{8}$	$\frac{21}{32}$
$2\frac{1}{4}$	$3\frac{1}{2}$	$\frac{219}{64}$
$2\frac{1}{2}$	$3\frac{7}{8}$	$\frac{235}{64}$
$2\frac{3}{4}$	$4\frac{1}{4}$	$\frac{213}{16}$
3	$4\frac{3}{4}$	$\frac{31}{16}$
$3\frac{1}{4}$	5	$\frac{35}{16}$
$3\frac{1}{2}$	$5\frac{3}{8}$	$\frac{39}{16}$
$3\frac{3}{4}$	$5\frac{3}{4}$	$\frac{313}{16}$

■ Furnished with 8 UN series threads.

*Other Types Available Upon Request

standard weight U-bolt fig. 30



SIZE RANGE: $\frac{1}{2}$ to 10 inch pipe and conduit.

MATERIAL: Stainless steel 304L & 316L

SERVICE: Recommended for support, or guide of relatively light loads. Normally used with two hex nuts.

MAXIMUM TEMPERATURE: 650°F.

ORDERING: Specify rod size x pipe size, figure number, name. Hex nuts must be ordered separately.

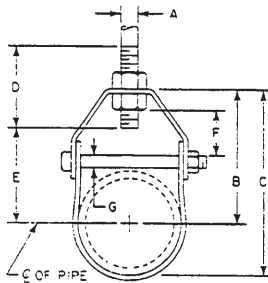
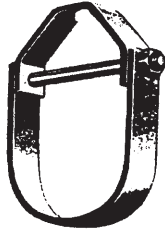
loads • weights • dimensions (inches)

pipe size	max recom load, lb	wgt app'x lbs each	rod size A	B	C	D	E
$\frac{1}{2}$	485	.06	$\frac{1}{4}$	$\frac{15}{16}$	$\frac{13}{16}$	$\frac{115}{16}$	$1\frac{3}{4}$
$\frac{3}{8}$	485	.07	$\frac{1}{4}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$\frac{21}{16}$	$1\frac{3}{4}$
1	485	.07	$\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{8}$	$\frac{23}{16}$	$1\frac{3}{4}$
$1\frac{1}{4}$	485	.08	$\frac{1}{4}$	$1\frac{11}{16}$	$\frac{115}{16}$	$\frac{23}{16}$	$1\frac{3}{4}$
$1\frac{1}{2}$	485	.09	$\frac{1}{4}$	2	$\frac{21}{16}$	$\frac{27}{16}$	$1\frac{3}{4}$
2	485	.10	$\frac{1}{4}$	$\frac{27}{16}$	$\frac{211}{16}$	$\frac{211}{16}$	$1\frac{3}{4}$
$2\frac{1}{2}$	1220	.28	$\frac{3}{8}$	$\frac{215}{16}$	$\frac{35}{16}$	$\frac{31}{16}$	2
3	1220	.31	$\frac{3}{8}$	$\frac{39}{16}$	$\frac{315}{16}$	$\frac{33}{16}$	2
$3\frac{1}{2}$	1220	.35	$\frac{3}{8}$	$\frac{41}{16}$	$\frac{47}{16}$	$\frac{35}{16}$	2
4	1220	.38	$\frac{3}{8}$	$\frac{49}{16}$	$\frac{415}{16}$	$\frac{37}{16}$	2
5	1220	.45	$\frac{3}{8}$	$\frac{53}{16}$	6	$\frac{49}{16}$	$2\frac{1}{4}$
6	2260	.95	$\frac{1}{2}$	$\frac{63}{16}$	$\frac{71}{16}$	$\frac{51}{16}$	$2\frac{1}{4}$
8	2260	1.2	$\frac{1}{2}$	$\frac{83}{16}$	$\frac{91}{16}$	$\frac{61}{16}$	$2\frac{1}{4}$
10	3620	2.3	$\frac{5}{8}$	$\frac{103}{16}$	$\frac{111}{16}$	$\frac{71}{16}$	$2\frac{1}{2}$

*Rod sizes may vary.

Stainless Steel Adjustable Clevis Hanger

adjustable clevis hanger*
fig. 25



NOTE: "Punched holes in bottom of clevis hangers are for rivoting insulation shields to clevis hanger."

SIZE RANGE: ½ through 30 inch.

clevis

MATERIAL: Stainless steel 304L & 316L.

SERVICE: Recommended for the suspension of stationary pipe lines.

MAXIMUM TEMPERATURE: 650°F.

APPROVALS: Underwriters' Laboratories listed and Factory Mutual approved for ¾ through 8 inch pipe. Complies with Federal Specification WW-H-171E (Type 1) and Manufacturers Standardization Society SP-69 (Type 1).

INSTALLATION: Hanger load nut *above* clevis must be tightened securely to assure proper hanger performance. When an oversized clevis is used, a nipple should be placed over the clevis bolt as a spacer to assure that the lower U-strap will not move in on the bolt.

ADJUSTMENT: Vertical adjustment without removing pipe may be made from 1½ to 5 inches, varying with the size of clevis. Tighten upper nut after adjustment.

FEATURES:

- Design has yoke on outside of lower U-strap so yoke cannot slide toward center of bolt, thus bending of bolt is minimized.
- Sizes 5-inch and up have rod and two nuts instead of bolt and nut; thread length on clevis rod is such that the thread locks the nuts in place, and threads are not in shear plane.
- The unique new tear drop shape design eases making hanger rod measurements and reduces assembly time by helping to maintain the hanger in its upright - final installed position. This feature is of particular benefit on the larger size clevis hangers.

ORDERING: Specify pipe size, figure number, name.

loads • weights • dimensions (inches)

pipe size	max. recom. load, lb	weight (approx) lbs each	size of steel		A	B	C	D	rod take out E	adjustment F	G
			upper	lower							
½	610	.25	½ x 1	½ x 1	¾	1 ¹⁵ / ₁₆	2 ³ / ₁₆	1½	1 ¹ / ₈	¾	¼
¾	610	.26	½ x 1	½ x 1	¾	1 ¹⁵ / ₁₆	2 ⁹ / ₁₆	1½	1 ¹ / ₈	½	¼
1	610	.29	½ x 1	½ x 1	¾	2 ¹ / ₈	2 ¹³ / ₁₆	1¾	1 ¹ / ₈	¾	¼
1¼	610	.33	½ x 1	½ x 1	¾	2 ⁵ / ₁₆	3 ³ / ₁₆	1¾	1½	¾	¼
1½	610	.36	½ x 1	½ x 1	¾	2 ¹¹ / ₁₆	3 ¹¹ / ₁₆	2	1 ⁷ / ₈	¾	¼
2	610	.42	½ x 1	½ x 1	¾	3 ³ / ₁₆	4 ⁷ / ₁₆	2¼	2 ³ / ₈	1 ¹ / ₈	¼
2½	1130	.72	½ x 1¼	½ x 1¼	½	3 ⁷ / ₈	5 ³ / ₈	2½	3	1 ⁵ / ₁₆	¾
3	1130	.84	½ x 1¼	½ x 1¼	½	4 ¹¹ / ₁₆	6½	3	3¾	1 ¹³ / ₁₆	¾
3½	1130	.98	½ x 1¼	½ x 1¼	½	4 ¹⁵ / ₁₆	7	3	4	1 ¹³ / ₁₆	¾
4	1430	1.18	¾ x 1¼	¾ x 1¼	¾	5 ³ / ₁₆	7 ⁹ / ₁₆	3¼	4 ¹ / ₈	1 ¹¹ / ₁₆	¾
5	1430	1.53	¾ x 1¼	¾ x 1¼	¾	6 ¹ / ₁₆	8 ¹⁵ / ₁₆	3½	4 ⁷ / ₈	1 ⁷ / ₈	½
6	1940	2.42	¾ x 1½	¾ x 1½	¾	6 ¹³ / ₁₆	10 ³ / ₁₆	3¾	5½	1 ⁷ / ₈	½
8	2000	3.48	¾ x 1¾	¾ x 1¾	¾	8 ¹ / ₈	12½	4	6 ⁷ / ₈	2 ¹ / ₁₆	¾
10	3600	8.8	¾ x 1¾	¾ x 1¾	¾	9½	15	4	8	1 ⁷ / ₈	¾
12	3800	11.4	¾ x 2	¾ x 2	¾	11 ¹ / ₈	17 ¹ / ₈	4½	9½	2 ¹ / ₁₆	¾
14	4200	14.8	¾ x 2	¾ x 2	1	12¾	19½	5¼	10 ³ / ₈	2 ¹¹ / ₁₆	¾
16	4600	21.0	¾ x 2½	¾ x 2½	1	13 ¹³ / ₁₆	21 ¹⁵ / ₁₆	5½	12	2¾	1
18	4800	24.4	¾ x 2½	¾ x 2½	1	15¾	24 ³ / ₈	6½	13 ³ / ₈	3 ³ / ₈	1
20	4800	42.6	¾ x 3	¾ x 3	1¼	17 ⁷ / ₈	27½	7	15¼	3 ⁷ / ₈	1¼
24	4800	48.4	¾ x 3	¾ x 3	1¼	19¾	31¾	7¼	17½	3 ⁷ / ₈	1¼
30	6000	69.5	¾ x 3	¾ x 3	1¼	24	39 ¹ / ₈	8¼	21¾	4 ⁷ / ₈	1 ¹ / ₈

*Other Hanger Types Available Upon Request

*Dimensions may vary with manufacturer

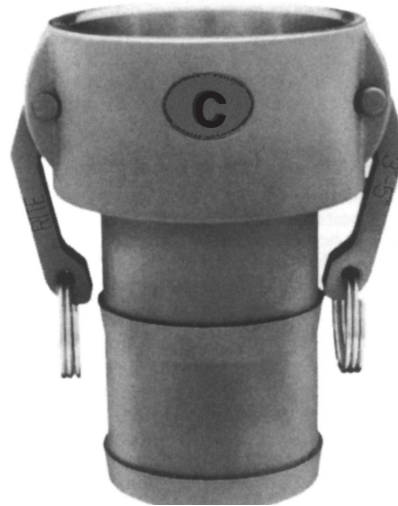
Stainless Steel Quick Couplings

SAVE LABOR, TIME AND MATERIAL



Part A Adaptor Female Thread

Size	½"	¾"	1"	1¼"	1½"	2"
Part No.	050A	075A	100A	125A	150A	200A
Size	2½"	3"	4"	5"	6"	8"
Part No.	250A	300A	400A	500A	600A	800A



Part C Hose Shank Coupler

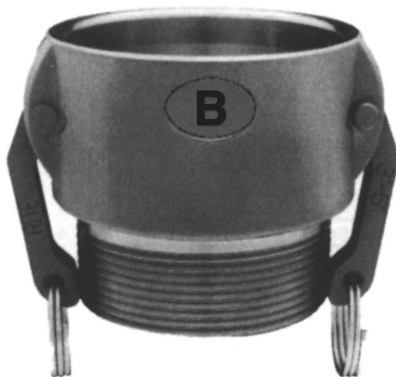
Size	½"	¾"	1"	1¼"	1½"	2"
Part No.	050C	075C	100C	125C	150C	200C
Size	2½"	3"	4"	5"	6"	8"
Part No.	250C	300C	400C	500C	600C	800C

Part B Coupler Male Thread

Size	½"	¾"	1"	1¼"	1½"	2"
Part No.	050B	075B	100B	125B	150B	200B
Size	2½"	3"	4"	5"	6"	
Part No.	250B	300B	400B	500B	600B	

Part F Adaptor Male Thread

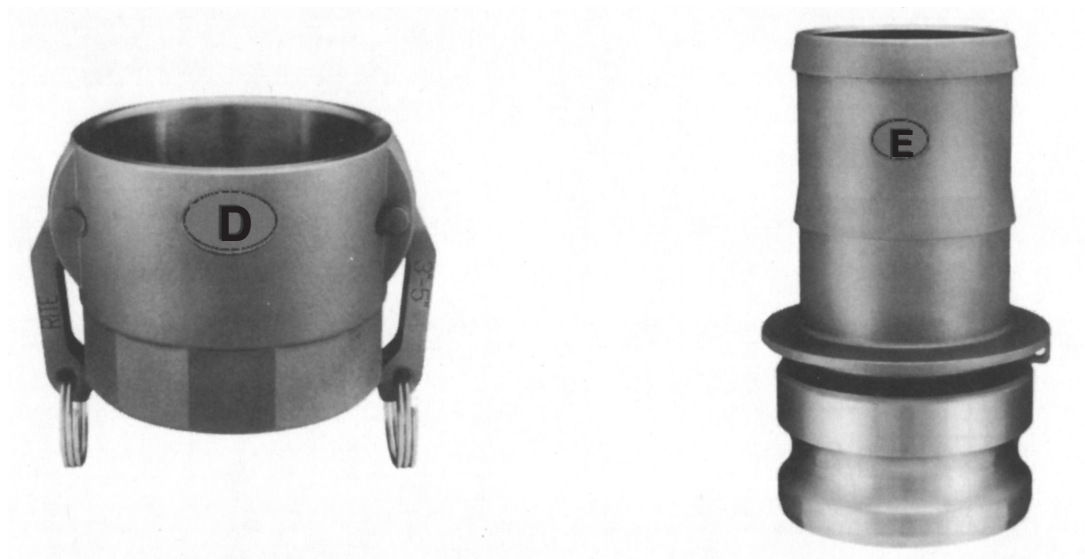
Size	½"	¾"	1"	1¼"	1½"	2"
Part No.	050F	075F	100F	125F	150F	200F
Size	2½"	3"	4"	5"	6"	
Part No.	250F	300F	400F	500F	600F	



AVAILABLE IN 316SS, ALUMINUM, BRASS IN ALL SIZES AND TYPES SHOWN

Stainless Steel Quick Couplings (cont'd)

SAVE LABOR, TIME AND MATERIAL



Part D Coupler Female Thread

Size	½"	¾"	1"	1¼"	1½"	2"
Part No.	050D	075D	100D	125D	150D	200D
Size	2½"	3"	4"	5"	6"	8"
Part No.	250D	300D	400D	500D	600D	800D

Part E Hose Shank Adaptor

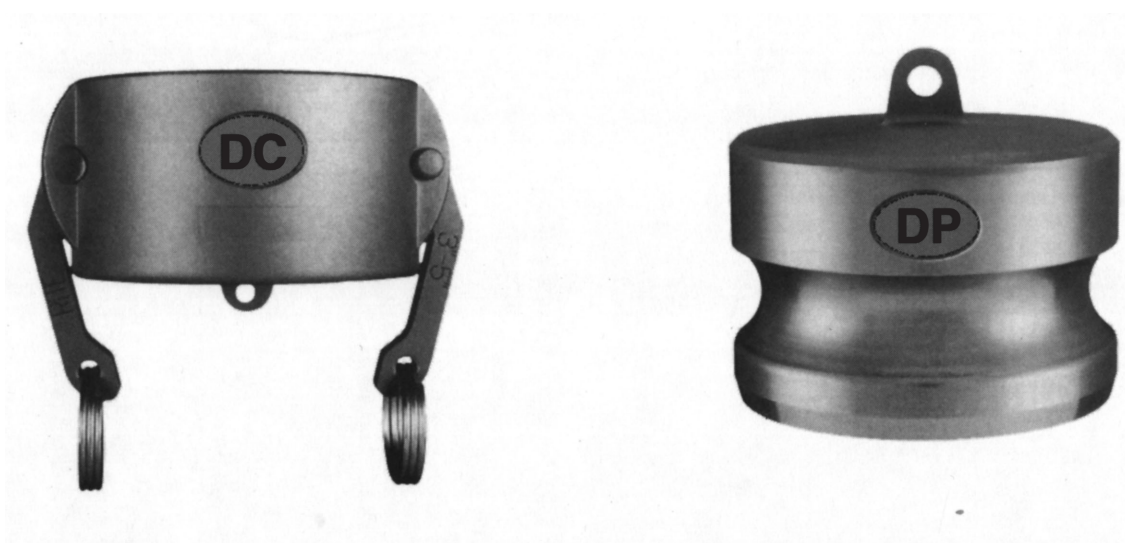
Size	½"	¾"	1"	1¼"	1½"	2"
Part No.	050E	075E	100E	125E	150E	200E
Size	2½"	3"	4"	5"	6"	8"
Part No.	250E	300E	400E	500E	600E	800E

Part DC Dust Cap For adaptors

Size	½"	¾"	1"	1¼"	1½"	2"
Part No.	050DC	075DC	100DC	125DC	150DC	200DC
Size	2½"	3"	4"	5"	6"	8"
Part No.	250DC	300DC	400DC	500DC	600DC	800DC

Part DP Dust Plug For Couplers

Size	½"	¾"	1"	1¼"	1½"	2"
Part No.	050DP	075DP	100DP	125DP	150DP	200DP
Size	2½"	3"	4"	5"	6"	8"
Part No.	250DP	300DP	400DP	500DP	600DP	800DP



AVAILABLE IN 316SS, ALUMINUM, BRASS IN ALL SIZES AND TYPES SHOWN

FOOD GRADE PIPING*

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**All dimensions shown herein are as per the factory data supplied to
Resistaloy Inc. and are subject to change without notice.*

Sanitary Stainless Bevel Seat Fittings



Resistaloy provides precision crafted Bevel Seat ACME Thread Union Fittings that provide fast, sanitary and secure connections. Polished fittings are manufactured to FDA and 3A regulatory standards. Special configurations are available on request.

Bevel Seat Specifications

Size Range: 1" OD through 4" OD

Materials: 304

316L

Other materials available upon request

Finish: No.7- ID and OD polished

No.5 - OD only polished

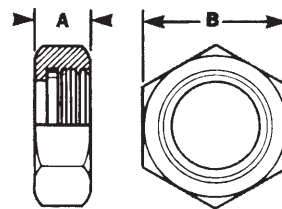
No.3-ID only polished

No.1 - unpolished ID and OD

Sanitary Stainless Bevel Seat Fittings (cont'd)

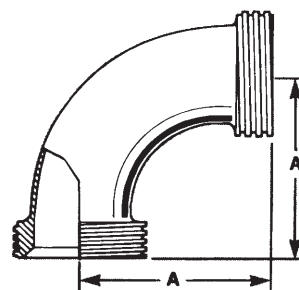
13H - HEX UNION NUT (3A)

SIZE (TUBE O.D.)	A	B
1	$\frac{29}{32}$	$1\frac{13}{16}$
1 $\frac{1}{2}$	$\frac{31}{32}$	$2\frac{13}{32}$
2	$1\frac{1}{16}$	3
2 $\frac{1}{2}$	$1\frac{3}{16}$	$3\frac{19}{32}$
3	$1\frac{9}{32}$	$4\frac{3}{16}$
4	$1\frac{1}{2}$	$5\frac{7}{16}$



2C-90 DEGREE SWEEP ELBOW (3A)

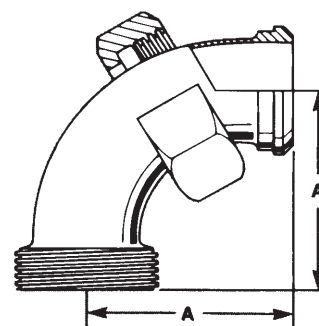
SIZE (TUBE O.D.)	A
1	$2\frac{3}{16}$
1 $\frac{1}{2}$	$2\frac{31}{32}$
2	$3\frac{23}{32}$
2 $\frac{1}{2}$	$4\frac{27}{32}$
3	$5\frac{29}{32}$
4	$8\frac{1}{16}$



2F-90 DEGREE SWEEP ELBOW (3A)

SIZE (TUBE O.D.)	A
1	$2\frac{3}{16}$
1 $\frac{1}{2}$	$2\frac{31}{32}$
2	$3\frac{23}{32}$
2 $\frac{1}{2}$	$4\frac{27}{32}$
3	$5\frac{29}{32}$
4	$8\frac{1}{16}$

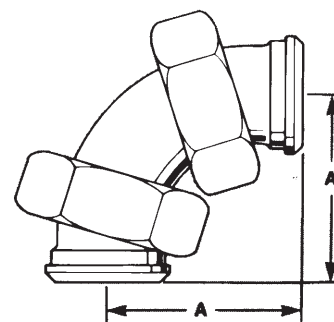
HEX NUT INCLUDED



2E-90 DEGREE SWEEP ELBOW (3A)

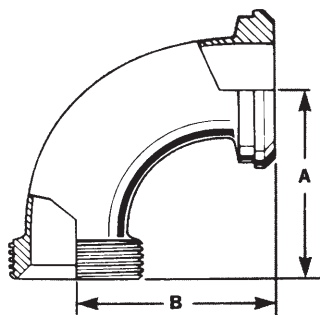
SIZE (TUBE O.D.)	A
1	$2\frac{3}{16}$
1 $\frac{1}{2}$	$2\frac{31}{32}$
2	$3\frac{23}{32}$
2 $\frac{1}{2}$	$4\frac{27}{32}$
3	$5\frac{29}{32}$
4	$8\frac{1}{16}$

HEX NUTS INCLUDED



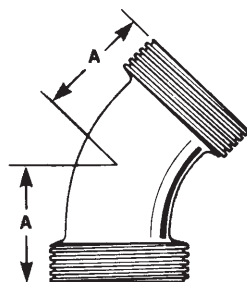
Sanitary Stainless Bevel Seat Fittings (cont'd)

2F-31 90 DEGREE CONCENTRIC REDUCING ELL (3A)



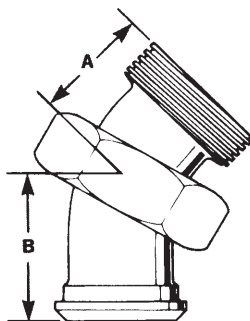
SIZE (TUBE O.D.)	A	B
1 $\frac{1}{2}$ X 1	2 $\frac{3}{16}$	1 $\frac{15}{16}$
2 X 1	2 $\frac{3}{16}$	2 $\frac{1}{16}$
2 X 1 $\frac{1}{2}$	2 $\frac{31}{32}$	2 $\frac{13}{16}$
2 $\frac{1}{2}$ X 1 $\frac{1}{2}$	2 $\frac{31}{32}$	2 $\frac{13}{16}$
2 $\frac{1}{2}$ X 2	3 $\frac{23}{32}$	3 $\frac{9}{16}$
3 X 1 $\frac{1}{2}$	2 $\frac{31}{32}$	2 $\frac{15}{16}$
3 X 2	3 $\frac{23}{32}$	3 $\frac{11}{16}$
3 X 2 $\frac{1}{2}$	4 $\frac{27}{32}$	4 $\frac{7}{16}$
4 X 2 $\frac{1}{2}$	4 $\frac{27}{32}$	4 $\frac{9}{16}$
4 X 3	5 $\frac{29}{32}$	5 $\frac{5}{16}$

2K-45 DEGREE SWEEP EL. (3A)



SIZE (TUBE O.D.)	A
1	1 $\frac{5}{16}$
1 $\frac{1}{2}$	1 $\frac{21}{32}$
2	2 $\frac{1}{8}$
2 $\frac{1}{2}$	2 $\frac{5}{8}$
3	3 $\frac{1}{8}$
4	4 $\frac{1}{4}$

2P-45 DEGREE - SWEEP ELL (3A)



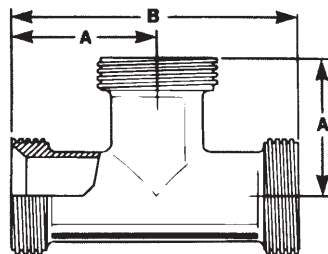
SIZE (TUBE O.D.)	A	B
1	1 $\frac{5}{16}$	2 $\frac{1}{8}$
1 $\frac{1}{2}$	1 $\frac{21}{32}$	2 $\frac{1}{8}$
2	2 $\frac{1}{8}$	2 $\frac{5}{16}$
2 $\frac{1}{2}$	2 $\frac{5}{8}$	2 $\frac{9}{16}$
3	3 $\frac{1}{8}$	2 $\frac{29}{32}$
4	4 $\frac{1}{4}$	3 $\frac{7}{8}$

HEX NUT INCLUDED

Sanitary Stainless Bevel Seat Fittings (cont'd)

7 TEE (3A)

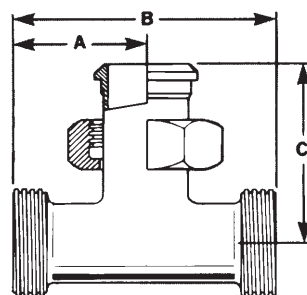
SIZE (TUBE O.D.)	A	B
1	1 ¹³ / ₁₆	3 ⁵ / ₈
1 ½	2 ³ / ₈	4 ³ / ₄
2	2 ²⁵ / ₃₂	5 ⁹ / ₁₆
2 ½	3 ³ / ₁₆	6 ³ / ₈
3	3 ½	7
4	4 ²¹ / ₃₂	9 ⁵ / ₁₆



7A TEE (3A)

SIZE (TUBE O.D.)	A	B	C
1	1 ¹³ / ₁₆	3 ⁵ / ₈	2 ¹¹ / ₁₆
1 ½	2 ³ / ₈	4 ³ / ₄	3 ¹³ / ₃₂
2	2 ²⁵ / ₃₂	5 ⁹ / ₁₆	3 ¹³ / ₁₆
2 ½	3 ³ / ₁₆	6 ³ / ₈	4 ¼
3	3 ½	7	4 ⁵ / ₈
4	4 ²¹ / ₃₂	9 ⁵ / ₁₆	6 ⅛

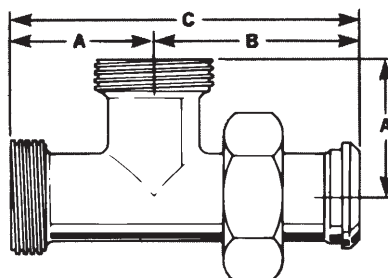
HEX NUT INCLUDED



7B TEE (3A)

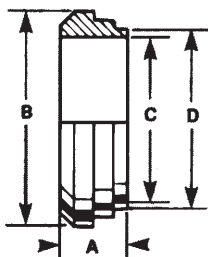
SIZE (TUBE O.D.)	A	B	C
1	1 ¹³ / ₁₆	2 ¹¹ / ₁₆	4 ½
1 ½	2 ³ / ₈	3 ¹³ / ₃₂	5 ²⁵ / ₃₂
2	2 ²⁵ / ₃₂	3 ¹³ / ₁₆	6 ¹⁹ / ₃₂
2 ½	3 ³ / ₁₆	4 ¼	7 ⁷ / ₁₆
3	3 ½	4 ⁵ / ₈	8 ⅛
4	4 ²¹ / ₃₂	6 ⅛	10 ²⁵ / ₃₂

HEX NUT INCLUDED



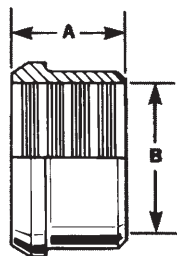
Sanitary Stainless Bevel Seat Fittings (cont'd)

14RW SHORT WELD FERRULE (3A)



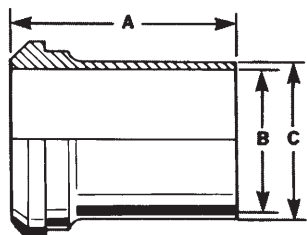
SIZE (TUBE O.D.)	A	B	C	D
1	$1\frac{1}{16}$	$1\frac{5}{16}$	$\frac{55}{64}$	1
1 ½	$\frac{23}{32}$	$1\frac{27}{32}$	$1\frac{23}{64}$	1 ½
2	$\frac{23}{32}$	$2\frac{3}{8}$	$1\frac{55}{64}$	2
2 ½	$\frac{27}{32}$	$2\frac{29}{32}$	$2\frac{23}{64}$	2 ½
3	$\frac{29}{32}$	$3\frac{7}{16}$	$2\frac{55}{64}$	3
4	$1\frac{7}{32}$	$4\frac{1}{2}$	$3\frac{13}{16}$	4

14R - PLAIN RECESSLESS FERRULE (3A) (For Expanding)



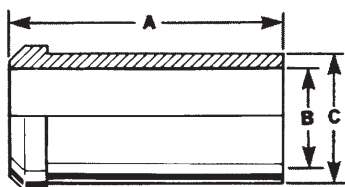
SIZE (TUBE O.D.)	A	B
1	$\frac{3}{4}$	1
1 ½	$1\frac{1}{8}$	1 ½
2	$1\frac{5}{16}$	2
2 ½	$1\frac{3}{8}$	2 ½
3	$1\frac{7}{16}$	3
4	$1\frac{1}{2}$	4

14A - PLAIN TUBE FERRULE (3A)



SIZE (TUBE O.D.)	A	B	C
1	$1\frac{3}{8}$	$\frac{29}{32}$	1
1 ½	$1\frac{1}{2}$	$1\frac{13}{32}$	1 ½
2	$1\frac{1}{2}$	$1\frac{7}{8}$	2
2 ½	$1\frac{3}{4}$	$2\frac{3}{8}$	2 ½
3	$1\frac{3}{4}$	$2\frac{7}{8}$	3
4	$1\frac{3}{4}$	$3\frac{27}{32}$	4

14W - PLAIN FERRULE, TANK SPUD (HEAVY) (3A)

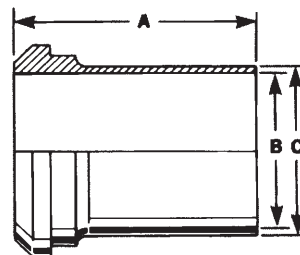


SIZE (TUBE O.D.)	A	B	C
1	2 3/8	.900	1 5/32
1 1/2	2 17/32	1.400	1 43/64
2	2 25/32	1.868	1 3/64
2 1/2	3 1/16	2.368	1 45/64
3	3 17/32	2.868	1 7/32
4	4 5/16	3.832	1 1/4

Sanitary Stainless Bevel Seat Fittings (cont'd)

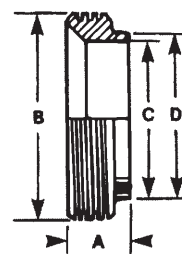
14WL - PLAIN FERRULE, TANK SPUD (LIGHT) (3A)

SIZE (TUBE O.D.)	A	B	C
1	2	$2\frac{9}{32}$	1
1 1/2	2 1/4	$1\frac{13}{32}$	1 1/2
2	2 1/2	$1\frac{7}{8}$	2
2 1/2	2 3/4	$2\frac{3}{8}$	2 1/2
3	3	$2\frac{7}{8}$	3
4	4	$3\frac{27}{32}$	4



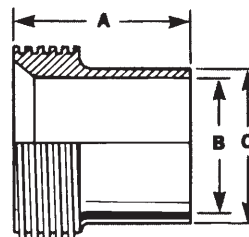
15RW SHORT WELD FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C	D
1	$1\frac{1}{16}$	$1\frac{29}{64}$	$\frac{55}{64}$	1
1 1/2	$\frac{23}{32}$	$1\frac{63}{64}$	$1\frac{23}{64}$	1 1/2
2	$\frac{23}{32}$	$2\frac{33}{64}$	$1\frac{55}{64}$	2
2 1/2	$\frac{27}{32}$	$3\frac{1}{32}$	$2\frac{23}{64}$	2 1/2
3	$\frac{29}{32}$	$3\frac{9}{16}$	$2\frac{55}{64}$	3
4	$1\frac{7}{32}$	$4\frac{43}{64}$	$3\frac{13}{16}$	4



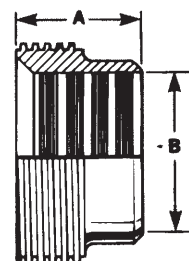
15A THREADED TUBE FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C
1	$1\frac{3}{8}$	$2\frac{9}{32}$	1
1 1/2	$1\frac{1}{2}$	$1\frac{13}{32}$	1 1/2
2	$1\frac{1}{2}$	$1\frac{7}{8}$	2
2 1/2	$1\frac{3}{4}$	$2\frac{3}{8}$	2 1/2
3	$1\frac{3}{4}$	$2\frac{7}{8}$	3
4	$1\frac{3}{4}$	$3\frac{27}{32}$	4



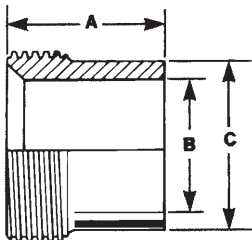
15R - THREADED RECESSLESS FERRULE (3A) (For Expanding)

SIZE (TUBE O.D.)	A	B
1	$\frac{13}{16}$	1
1 1/2	$1\frac{1}{8}$	1 1/2
2	$1\frac{3}{8}$	2
2 1/2	$1\frac{1}{2}$	2 1/2
3	$1\frac{5}{8}$	3
4	$1\frac{5}{8}$	4



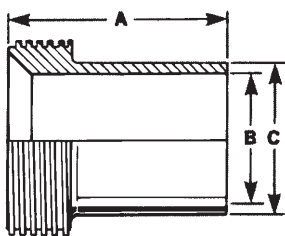
Sanitary Stainless Bevel Seat Fittings (cont'd)

15W - THREADED FERRULE, TANK SPUD (HEAVY) (3A)



SIZE (TUBE O.D.)	A	B	C
1	1 1/2	29/32	1 1/4
1 1/2	1 5/8	1 13/32	1 3/4
2	1 3/4	1 7/8	2 5/16
2 1/2	1 3/4	2 3/8	2 7/8
3	1 13/16	2 7/8	3 3/8
4	2 1/8	3 27/32	4 1/4

15WL - THREADED FERRULE, TANK SPUD (LIGHT) (3A)



SIZE (TUBE O.D.)	A	B	C
1	2	29/32	1
1 1/2	2 1/4	1 13/32	1 1/2
2	2 1/2	1 7/8	2
2 1/2	2 3/4	2 3/8	2 1/2
3	3	2 7/8	3
4	4	3 27/32	4

16A SOLID END CAP (3A)



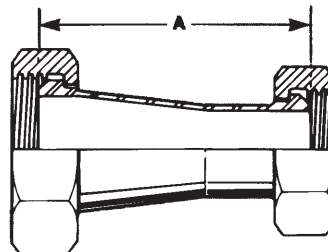
SIZE (TUBE O.D.)	A
1	1 15/16
1 1/2	1 27/32
2	2 3/8
2 1/2	2 29/32
3	3 7/16
4	4 1/2

Sanitary Stainless Bevel Seat Fittings (cont'd)

31-14F - CONVERTING TAPER REDUCER (3A)

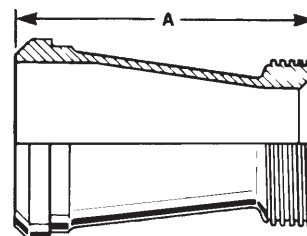
SIZE (TUBE O.D.)	A
1 1/2 x 1	4 11/32
2 x 1	6 11/32
2 x 1 1/2	4 7/16
2 1/2 x 1 1/2	6 9/16
2 1/2 x 2	4 3/4
3 x 2	6 13/16
3 x 2 1/2	5 1/16
4 x 2 1/2	9 3/8
4 x 3	7 17/32

HEX NUTS INCLUDED



31-15F - CONCENTRIC TAPER REDUCER (3A)

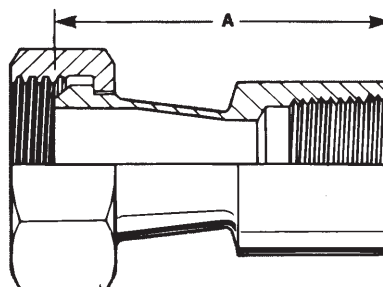
SIZE (TUBE O.D.)	A
1 1/2 x 1	3 13/32
2 x 1	5 13/32
2 x 1 1/2	3 7/16
2 1/2 x 1 1/2	5 9/16
2 1/2 x 2	3 9/16
3 x 2	5 5/8
3 x 2 1/2	3 3/4
4 x 2 1/2	8 1/16
4 x 3	6 1/8



31-18F - TAPER REDUCER-ADAPTER

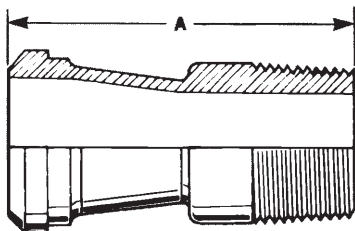
SIZE (TUBE O.D.)	A
1 1/2 x 1	4 1/16
2 x 1	6 1/16
2 x 1 1/2	4 11/32
2 1/2 x 1 1/2	6 15/32
2 1/2 x 2 *	4 3/8
3 x 2	6 7/16
3 x 2 1/2 *	4 27/32
4 x 2 1/2	9 5/32
4 x 3	7 13/32

*HEX NUT INCLUDED ON THESE SIZES ONLY



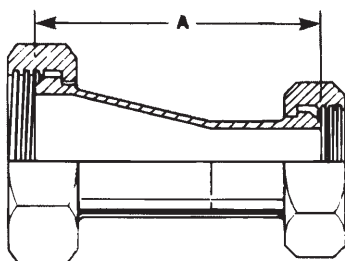
Sanitary Stainless Bevel Seat Fittings (cont'd)

31-19F - TAPER REDUCER-ADAPTER



SIZE (TUBE O.D.)	A
1 1/2 x 1	4 15/32
2 x 1	6 15/32
2 x 1 1/2	4 15/32
2 1/2 x 1 1/2	6 19/32
2 1/2 x 2	4 21/32
3 x 2	6 23/32
3 x 2 1/2	5 7/32
4 x 2 1/2	9 17/32
4 x 3	7 23/32

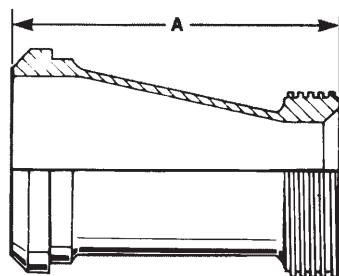
32-14F - ECCENTRIC TAPER REDUCER (3A)



SIZE (TUBE O.D.)	A
1 1/2 x 1	4 11/32
2 x 1	6 11/32
2 x 1 1/2	4 7/16
2 1/2 x 1 1/2	6 9/16
2 1/2 x 2	4 3/4
3 x 2	6 13/16
3 x 2 1/2	5 1/16
4 x 2 1/2	9 3/8
4 x 3	7 17/32

HEX NUTS INCLUDED

32-15F - ECCENTRIC TAPER REDUCER (3A)

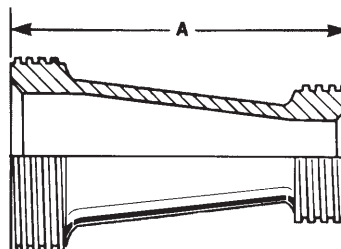


SIZE (TUBE O.D.)	A
1 1/2 x 1	3 13/32
2 x 1	5 13/32
2 x 1 1/2	3 7/16
2 1/2 x 1 1/2	5 9/16
2 1/2 x 2	3 9/16
3 x 2	5 5/8
3 x 2 1/2	3 3/4
4 x 2 1/2	8 1/16
4 x 3	6 1/8

Sanitary Stainless Bevel Seat Fittings (cont'd)

31TT - REDUCER (3A)

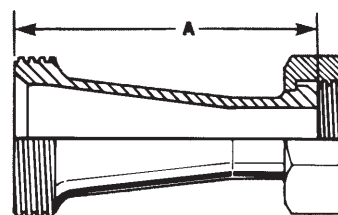
SIZE (TUBE O.D.)	A
1 1/2 x 1	3 13/32
2 x 1	3 25/32
2 x 1 1/2	3 7/16
2 1/2 x 1 1/2	3 29/32
2 1/2 x 2	3 9/16
3 x 2	5 5/8
3 x 2 1/2	5 13/32



31TP - TAPER REDUCER (3A)

SIZE (TUBE O.D.)	A
1 1/2 x 1	4 11/32
2 x 1	4 25/32
2 x 1 1/2	4 7/16
2 1/2 x 1 1/2	4 29/32
2 1/2 x 2	4 3/4
3 x 2	6 13/16
3 x 2 1/2	6 13/32

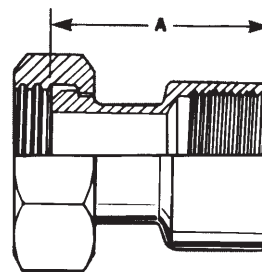
HEX NUT INCLUDED



14-18 ADAPTER (Acme Hex Nut to Female NPT)

SIZE (TUBE O.D.)	A OAL
1	3 1/8
1 1/2	3 1/4
2	3 5/16
2 1/2	4 1/16
3	4 1/4
4	4 5/16

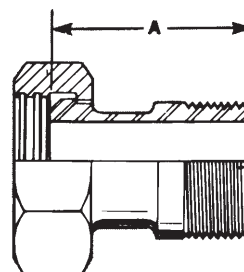
HEX NUT INCLUDED



14-19 ADAPTER (Acme Hex Nut to Male NPT)

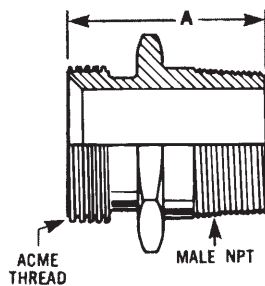
SIZE (TUBE O.D.)	A OAL
1	3 1/8
1 1/2	3 1/4
2	3 5/16
2 1/2	4 1/16
3	4 1/4
4	4 5/16

HEX NUT INCLUDED

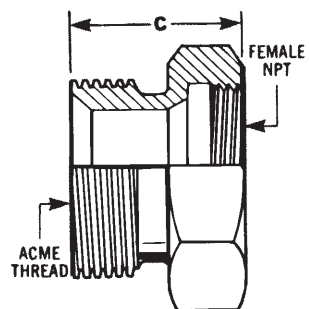


Sanitary Stainless Bevel Seat Fittings (cont'd)

N°21 ADAPTOR



N°22 ADAPTOR

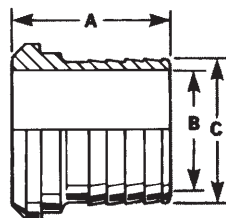


N°21 and N°22 - ADAPTERS

SIZE (TUBE O.D.)	NO. 21 A	NO. 22 C
1 x 3/4	2 3/16	1 5/8
1 x 1	2 1/4	2 1/16
1 x 1 1/2	2 3/8	2 1/2
1 x 2	2 5/8	2 1/2
1 1/2 x 3/4	2 3/16	1 5/8
1 1/2 x 1	2 5/16	1 5/8
1 1/2 x 1 1/4	2 7/16	2 1/2
1 1/2 x 1 1/2	2 7/16	2 1/4
1 1/2 x 2	2 5/8	2 1/2
2 x 1 1/4	2 15/32	1 21/32
2 x 1 1/2	2 15/32	1 21/32
2 x 2	2 21/32	2 11/32
2 x 2 1/2	3 1/8	1 27/32
2 1/2 x 1	2 21/32	1 27/32
2 1/2 x 1 1/2	2 25/32	1 27/32
2 1/2 x 2	2 25/32	1 27/32
2 1/2 x 2 1/2	3 9/32	2 3/32
3 x 3	3 1/2	2 3/16
4 x 4	3 13/16	2 5/8

NOTE: SANITARY SIZE SHOWN FIRST.

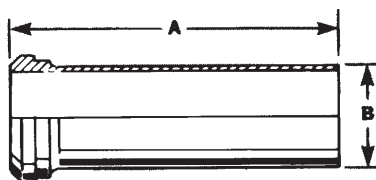
14AHR - RUBBER HOSE ADAPTER



SIZE (TUBE O.D.)	A	B	C
1	1 11/16	1 3/16	1
1 1/2	1 11/16	1 5/16	1 1/2
2	2 5/16	1 13/16	2
2 1/2	2 11/32	2 5/16	2 1/2
3	3 1/2	2 13/16	3
4	4	3 13/16	4

(LONGER LENGTHS AVAILABLE UPON REQUEST.)

14AHT - TYGON HOSE ADAPTER



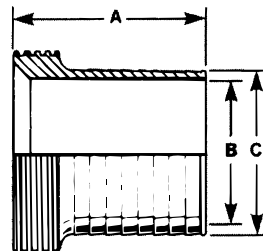
SIZE (TUBE O.D.)	A	B
1	4 11/16	1
1 1/2	4 23/32	1 1/2
2	4 23/32	2
2 1/2	4 27/32	2 1/2
3	4 29/32	3
4	5 7/32	4

Sanitary Stainless Bevel Seat Fittings (cont'd)

15AHR - RUBBER HOSE ADAPTER

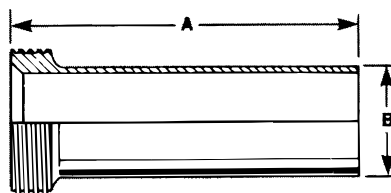
SIZE (TUBE O.D.)	A	B	C
1	1 ¹¹ / ₁₆	¹³ / ₁₆	1
1 ½	1 ¹¹ / ₁₆	1 ⁵ / ₁₆	1 ½
2	2 ⁵ / ₁₆	1 ¹³ / ₁₆	2
2 ½	3	2 ⁵ / ₁₆	2 ½
3	3 ½	2 ¹³ / ₁₆	3
4	4	3 ¹³ / ₁₆	4

(OTHER LENGTHS AVAILABLE UPON REQUEST.)



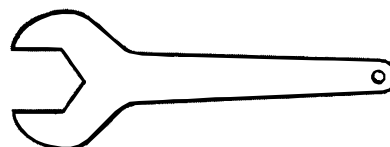
15AHT - TYGON HOSE ADAPTERS

SIZE (TUBE O.D.)	A	B
1	4 ¹¹ / ₁₆	1
1 ½	4 ²³ / ₃₂	1 ½
2	4 ²³ / ₃₂	2
2 ½	4 ²⁷ / ₃₂	2 ½
3	4 ²⁹ / ₃₂	3
4	5 ⁷ / ₃₂	4



25H ALUMINIUM HEX WRENCH - SINGLE END

SIZE
1
1 ½
2
2 ½
3
4

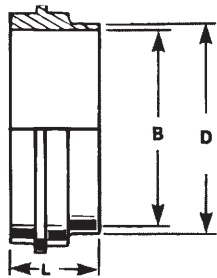


GASKETS FOR STANDARD BEVEL SEAT SANITARY FITTINGS

OEM	RESISTALLOY	MATERIAL
40BS-B	B40B	Buna
40BS-E	B40E	EPDM
40BS-BY	B40V	Viton
40BS-T	B40T	Teflon

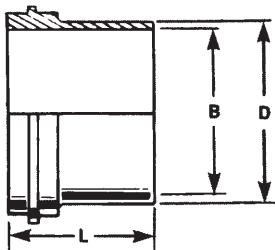


Sanitary Stainless John Perry Fittings



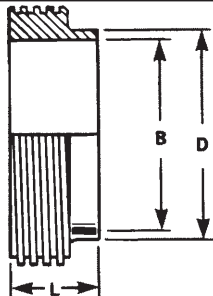
14RWJP SHORT WELD FERRULE - JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L
1	1	.870	$1\frac{1}{16}$
1.5	1.5	1.370	$\frac{23}{32}$
2.0	2.0	1.870	$\frac{23}{32}$
2.5	2.5	2.370	$\frac{27}{32}$
3.0	3.0	2.870	$\frac{29}{32}$
4.0	4.0	3.834	$1\frac{7}{32}$



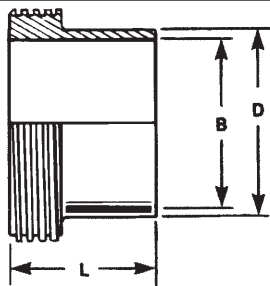
14AJP PLAIN TUBE FERRULE - JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L
1	1	.870	$1\frac{3}{8}$
1.5	1.5	1.370	$1\frac{1}{2}$
2.0	2.0	1.870	$1\frac{1}{2}$
2.5	2.5	2.370	$1\frac{3}{4}$
3.0	3.0	2.870	$1\frac{3}{4}$
4.0	4.0	3.834	$1\frac{3}{4}$



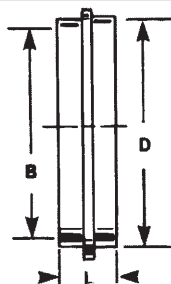
15RWP SHORT WELD FERRULE - JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L
1	1	.870	$1\frac{1}{16}$
1.5	1.5	1.370	$\frac{23}{32}$
2.0	2.0	1.870	$\frac{23}{32}$
2.5	2.5	2.370	$\frac{27}{32}$
3.0	3.0	2.870	$\frac{29}{32}$
4.0	4.0	3.834	$1\frac{7}{32}$



15AJP THREADED TUBE FERRULE - JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L
1	1	.870	$1\frac{3}{8}$
1.5	1.5	1.370	$1\frac{1}{2}$
2.0	2.0	1.870	$1\frac{1}{2}$
2.5	2.5	2.370	$1\frac{3}{4}$
3.0	3.0	2.870	$1\frac{3}{4}$
4.0	4.0	3.834	$1\frac{3}{4}$



16AJP END CAP - JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L
1	1	1.325	$\frac{15}{32}$
1.5	1.5	1.856	$\frac{31}{64}$
2.0	2.0	2.387	$\frac{17}{32}$
2.5	2.5	2.856	$\frac{35}{64}$
3.0	3.0	3.387	$\frac{39}{64}$
4.0	4.0	4.387	$1\frac{1}{16}$

Clamp Fittings



Resistaloy precision crafted Clamp Fittings that provide fast, sanitary and secure connections. Polished fittings are manufactured to FDA and 3A regulatory standards. Special configurations are available upon request.

Clamp Fittings Specifications

Size Range: 1" OD through 12" OD

Materials:

304

316L

Other materials available upon request

Finish:

No.7- ID and OD polished

No.5 - OD only polished

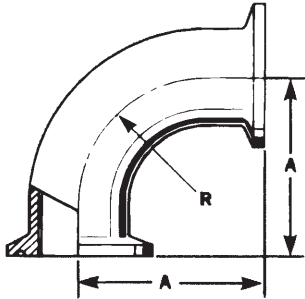
No.3 - ID only polished

No.1 - unpolished ID and OD

Clamp Fittings (cont'd)

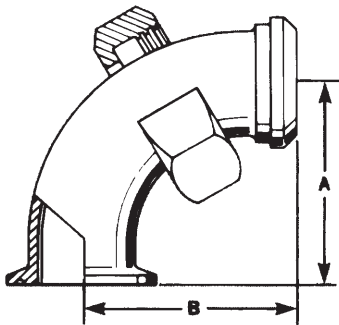
Most items shown on these pages are now available in sizes from 6" to 12".
Dimensions not shown are available upon request.

C2 - 90° ELL (3A)



SIZE (TUBE O.D.)	A	R
1	2	1 1/2
1 1/2	2 3/4	2 1/4
2	3 1/2	3
2 1/2	4 1/4	3 3/4
3	5	4 1/2
4	6 5/8	6

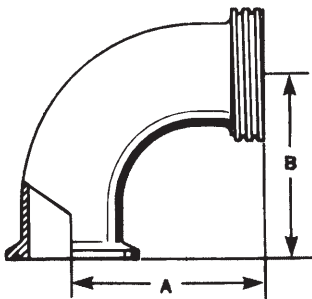
C2-14 - 90° SWEEP ELL (3A)



SIZE (TUBE O.D.)	A	B
1	2	2 3/16
1 1/2	2 3/4	2 31/32
2	3 1/2	3 23/32
2 1/2	4 1/4	4 19/32
3	5	5 13/32
4	6 5/8	7 7/32

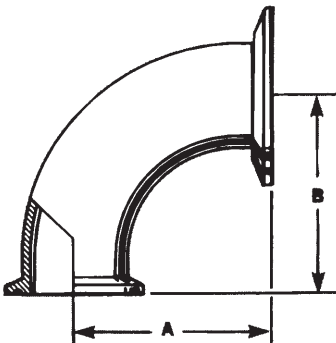
HEX NUT INCLUDED

C2-15 - 90° SWEEP ELL (3A)



SIZE (TUBE O.D.)	A	B
1	2	1 7/8
1 1/2	2 31/32	2 3/4
2	3 23/32	3 1/2
2 1/2	4 19/32	4 1/4
3	5 13/32	5
4	7 7/32	6 5/8

C2-31C - 90° CONCENTRIC REDUCING ELL



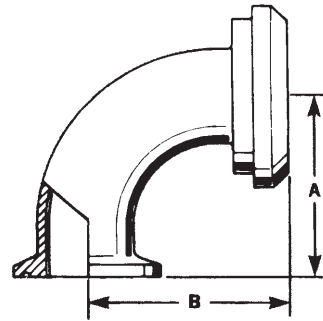
SIZE (TUBE O.D.)	A	B
2 x 1	1 9/16	2
2 x 1 1/2	2 5/16	2 3/4
2 1/2 x 1 1/2	2 5/16	2 3/4
2 1/2 x 2	3 1/16	3 1/2
3 x 1 1/2	2 5/16	2 3/4
3 x 2	3 1/16	3 1/2
3 x 2 1/2	3 13/16	4 1/4
4 x 2 1/2	3 13/16	4 1/4
4 x 3	4 9/16	5

NOTE: 1" CLAMP FITTINGS USE 11/2" CLAMPS.

Clamp Fittings (cont'd)

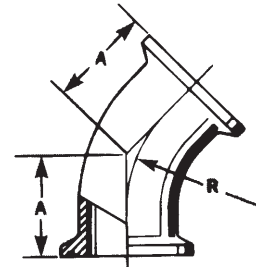
C2-31F - 90° CONCENTRIC REDUCING ELL-NON TAPERED

SIZE (TUBE O.D.)	A	B
2 x 1	2	1 ⁹ / ₁₆
2 x 1 1/2	2 ³ / ₄	2 ⁵ / ₁₆
2 1/2 x 1 1/2	2 ³ / ₄	2 ⁵ / ₁₆
2 1/2 x 2	3 1/2	3 ¹ / ₁₆
3 x 1 1/2	2 ³ / ₄	2 ⁵ / ₁₆
3 x 2	3 1/2	3 ¹ / ₁₆
3 x 2 1/2	4 1/4	3 ¹³ / ₁₆
4 x 2 1/2	4 1/4	3 ¹³ / ₁₆
4 x 3	5	4 ⁹ / ₁₆



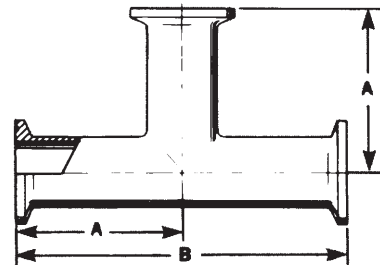
C2C - 45° ELL (3A)

SIZE (TUBE O.D.)	A	R
1	1 ¹ / ₈	1 1/2
1 1/2	1 ⁷ / ₁₆	2 ¹ / ₄
2	1 ³ / ₄	3
2 1/2	2 ¹ / ₁₆	3 ³ / ₄
3	2 ³ / ₈	4 1/2
4	3 ¹ / ₈	6



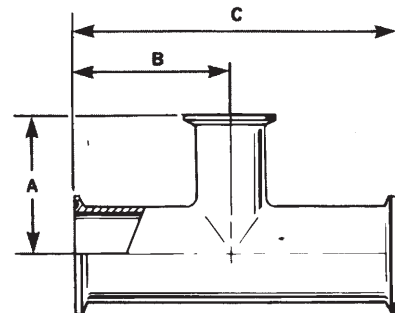
C7 - TEE (3A)

SIZE (TUBE O.D.)	A	B
1	2 ³ / ₈	4 ³ / ₄
1 1/2	2 ³ / ₄	5 1/2
2	3 1/2	7
2 1/2	3 1/2	7
3	3 ³ / ₄	7 1/2
4	4 1/2	9



C7R - REDUCING TEE (Reduced Size on Branch)

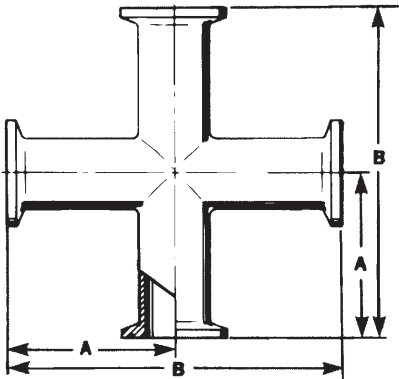
SIZE (TUBE O.D.)	A	B	C
2 x 1	2 ¹ / ₈	2 ⁹ / ₁₆	5 ¹ / ₈
2 x 1 1/2	2 ¹³ / ₃₂	2 ⁹ / ₁₆	5 ¹ / ₈
2 1/2 x 2	2 ¹³ / ₁₆	2 ²⁷ / ₃₂	5 ¹¹ / ₁₆
3 x 2	3 ¹ / ₁₆	3 ³ / ₃₂	6 ⁹ / ₁₆
3 x 2 1/2	3 ³ / ₃₂	3 ³ / ₃₂	6 ⁹ / ₁₆
4 x 2	4 ⁷ / ₈	4 ¹ / ₁₆	8 ¹ / ₈
4 x 2 1/2	4 ⁷ / ₈	4 ¹ / ₁₆	8 ¹ / ₈
4 x 3	4 ⁷ / ₈	4 ¹ / ₁₆	8 ¹ / ₈



NOTE: 1" CLAMP FITTINGS USE 1 1/2" CLAMPS.

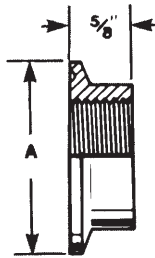
Clamp Fittings (cont'd)

C9 - CROSS (3A)



SIZE (TUBE O.D.)	A	B
1	2 ³ / ₈	4 ³ / ₄
1 1/2	2 ³ / ₄	5 1/2
2	3 1/2	7
2 1/2	3 1/2	7
3	3 ³ / ₄	7 1/2
4	4 1/2	9

C23B - THERMOMETER CAP



SIZE (TUBE O.D.)	A
1	1.984
1 1/2	1.984
2	2.516
2 1/2	3.047
3	3.579
4	4.682

NOTE: 1" TAPPED 1/2" NPT; ALL OTHERS 3/4" NPT

C14-31 - REDUCING FERRULE - CONCENTRIC (3A)



SIZE (TUBE O.D.)	OVERALL LENGTH
1 1/2 x 1	3/4
2 x 1	3/4
2 x 1 1/2	1 1/8
2 1/2 x 1	1 1/8
2 1/2 x 1 1/2	1 1/8
2 1/2 x 2	1 5/16
3 x 1	1 5/16
3 x 1 1/2	1 5/16

SIZE (TUBE O.D.)	OVERALL LENGTH
3 x 2	1 5/16
3 x 2 1/2	1 3/8
4 x 2 1/2	1 3/8
4 x 3	1 7/16

C14R-32 - REDUCING FERRULE - ECCENTRIC (3A)



SIZE (TUBE O.D.)	OVERALL LENGTH
1 1/2 x 1	3/4
2 x 1	3/4
2 x 1 1/2	1 1/8
2 1/2 x 1	1 1/8
2 1/2 x 1 1/2	1 1/8
2 1/2 x 2	1 5/16
3 x 1	1 5/16
3 x 1 1/2	1 5/16

SIZE (TUBE O.D.)	OVERALL LENGTH
3 x 2	1 5/16
3 x 2 1/2	1 3/8
4 x 2 1/2	1 3/8
4 x 3	1 7/16

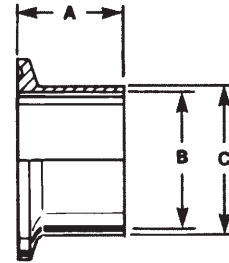
NOTE: 1" CLAMP FITTINGS USE 1 1/2" CLAMPS.

Clamp Fittings (cont'd)

C14A* - BUTT WELDING FERRULE (3A)

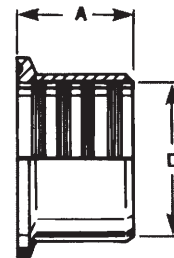
SIZE (TUBE O.D.)	A	B	C
1	1 1/8	.870	1.000
1 1/2	1 1/8	1.370	1.500
2	1 1/8	1.870	2.000
2 1/2	1 1/8	2.370	2.500
3	1 1/8	2.870	3.000
4	1 1/8	3.837	4.000

*ALSO AVAILABLE IN 6" through 12"



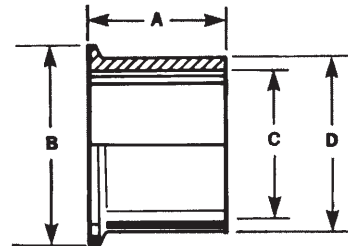
C14R - RECESSLESS FERRULE (3A)

SIZE (TUBE O.D.)	A	D
1	3/4	1
1 1/2	1 1/8	1 1/2
2	1 5/16	2
2 1/2	1 3/8	2 1/2
3	1 7/16	3
4	1 1/2	4



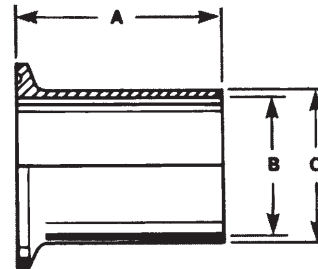
C14W - HEAVY TANK WELDING FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C	D
1	1 5/8	1.984	.900	1.160
1 1/2	1 5/8	1.984	1.400	1.676
2	1 3/4	2.516	1.868	2.192
2 1/2	1 3/4	3.047	2.368	2.708
3	1 13/16	3.579	2.868	3.224
4	2 1/8	4.682	3.832	4.256



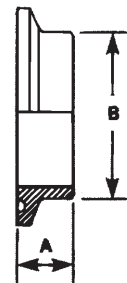
C14WL - TANK WELDING SPUD-LIGHT (3A)

SIZE (TUBE O.D.)	A	B	C
1	3	.900	1.000
1 1/2	3	1.400	1.500
2	3	1.868	2.000
2 1/2	3	2.368	2.500
3	4	2.868	3.000
4	4	3.832	4.000



C14RW - SHORT WELDING FERRULE (3A)

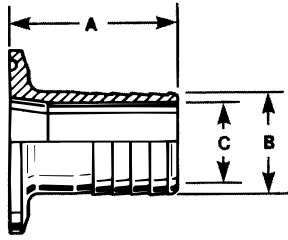
SIZE (TUBE O.D.)	A	B
1	1/2	1.000
1 1/2	1/2	1.500
2	1/2	2.000
2 1/2	1/2	2.500
3	1/2	3.000
4	5/8	4.000
6	3/4	6.000
8	7/8	8.000



NOTE: 1" CLAMP FITTINGS USE 1 1/2" CLAMPS.

Clamp Fittings (cont'd)

C14AHR - RUBBER HOSE ADAPTER

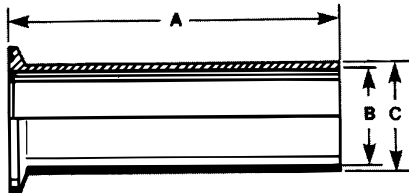


(OTHER LENGTHS AVAILABLE UPON REQUEST.)

SIZE (TUBE O.D.)	A	B	C
1	1 ¹¹ / ₁₆	1.000	.812
1 1/2	1 ¹¹ / ₁₆	1.500	1.312
2	2 ⁵ / ₁₆	2.000	1.810
2 1/2	2 ¹¹ / ₃₂	2.500	2.312
3	3 ³ / ₃₂	3.000	2.834
4	3 ¹³ / ₃₂	4.000	3.834

NOTE: WHEN ORDERING SPECIFY I.D. SIZE OF HOSE BEING USED.

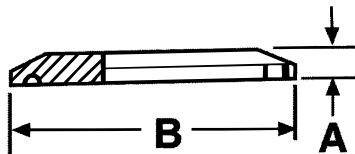
C14AHT - TYGON HOSE ADAPTER



SIZE (TUBE O.D.)	A	B	C
1	4 1/2	.856	1.000
1 1/2	4 1/2	1.356	1.500
2	4 1/2	1.856	2.000
2 1/2	4 1/2	2.356	2.500
3	4 1/2	2.856	3.000
4	4 5/8	3.810	4.000

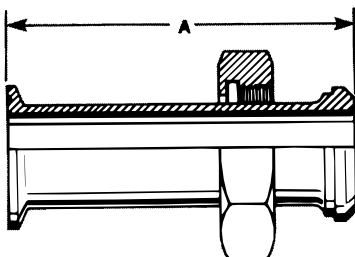
NOTE: WHEN ORDERING SPECIFY I.D. SIZE OF HOSE BEING USED.

C16 - SOLID END CAP (3A)



SIZE (TUBE O.D.)	A	B
1 & 1 1/2	.250	1.9843
2	.250	2.516
2 1/2	.250	3.047
3	.250	3.579
4	.312	4.682
6	.437	6.563
8	.437	8.571
10	.437	10.447
12	.437	12.156

C17-14 - ADAPTER (3A)



SIZE (TUBE O.D.)	A
1	3
1 1/2	3
2	3
2 1/2	3 1/2
3	3 3/4
4	4

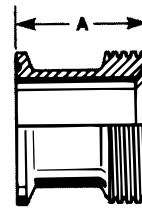
HEX NUT INCLUDED.

NOTE: 1" CLAMP FITTINGS USE 1 1/2" CLAMPS.

Clamp Fittings (cont'd)

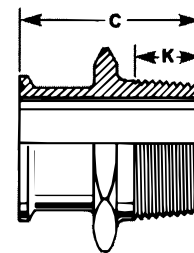
C17-15 - ADAPTER (3A)

SIZE (TUBE O.D.)	A
1	1 ¹¹ / ₁₆
1 ½	1 ²³ / ₃₂
2	1 ²³ / ₃₂
2 ½	1 ²⁷ / ₃₂
3	1 ²⁹ / ₃₂
4	2 ¹¹ / ₃₂

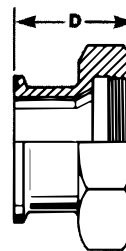


C21 and C22 - ADAPTERS (N.P.T. Pipe Threads)

SIZE (TUBE O.D.)	NO. C21		NO. C22
	C	K	D
1 x ¾	2 ³ / ₁₆	3 ⁵ / ₆₄	1 ⁵ / ₈
1 x 1	2 ¼	1 ¹ / ₁₆	1 ⁵ / ₈
1 x 1 ½	2 ⁷ / ₁₆	2 ³ / ₃₂	2 ¼
1 x 2	2 ⁵ / ₈	¾	2 ¼
1 ½ x ¾	2 ³ / ₁₆	3 ⁵ / ₆₄	1 ⁵ / ₈
1 ½ x 1	2 ⁵ / ₁₆	1 ¹ / ₁₆	1 ⁵ / ₈
1 ½ x 1 ¼	2 ⁷ / ₁₆	4 ⁵ / ₆₄	2 ¼
1 ½ x 1 ½	2 ⁷ / ₁₆	2 ³ / ₃₂	2 ¼
1 ½ x 2	2 ⁵ / ₈	¾	2 ¼
2 x 1 ¼	2 ¹⁵ / ₃₂	4 ⁵ / ₆₄	1 ¹¹ / ₁₆
2 x 1 ½	2 ¹⁵ / ₃₂	2 ³ / ₃₂	1 ¹¹ / ₁₆
2 x 2	2 ²¹ / ₃₂	¾	2 ¹¹ / ₃₂
2 x 2 ½	3 ⅛	1 ⁹ / ₆₄	2 ¹³ / ₃₂
2 ½ x 1	2 ²⁵ / ₃₂	5/8	1 ⁵ / ₁₆
2 ½ x 1 ½	2 ²⁵ / ₃₂	2 ³ / ₃₂	1 ²¹ / ₃₂
2 ½ x 2	2 ²⁵ / ₃₂	¾	1 ²³ / ₃₂
2 ½ x 2 ½	3 ⁹ / ₃₂	1 ⁹ / ₆₄	2 ³ / ₃₂
3 x 3	3 ½	1 ¹³ / ₆₄	2 ³ / ₁₆
4 x 4	3 ¹³ / ₁₆	1 ¹⁹ / ₆₄	2 ⁵ / ₈



C21
(CLAMP X MALE N.P.T.)

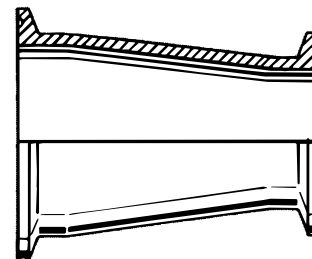


C22
(CLAMP X FEMALE N.P.T.)

C31C - CONCENTRIC REDUCER (3A)

SIZE (TUBE O.D.)	OVERALL LENGTH
1 ½ x 1	3
2 x 1	5
2 x 1 ½	3
2 ½ x 1	7
2 ½ x 1 ½	5
2 ½ x 2	3
3 x 1 ½	7

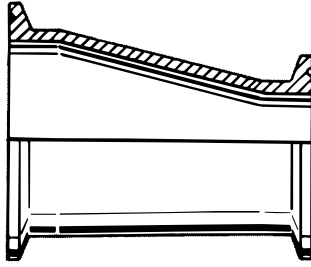
SIZE (TUBE O.D.)	OVERALL LENGTH
3 x 2	5
3 x 2 ½	3
4 x 2	9 ⅛
4 x 2 ½	7 ⅛
4 x 3	5 ⅛



NOTE: 1" CLAMP FITTINGS USE 11/2" CLAMPS.

Clamp Fittings (cont'd)

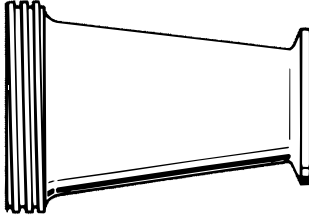
C32C - ECCENRIC REDUCER (3A)



SIZE (TUBE O.D.)	OVERALL LENGTH
1½ x 1	3
2 x 1	5
2 x 1½	3
2½ x 1½	5
2½ x 2	3
3 x 1½	7

SIZE (TUBE O.D.)	OVERALL LENGTH
3 x 2	5
3 x 2½	3
4 x 2	9⅛
4 x 2½	7⅞
4 x 3	5⅞

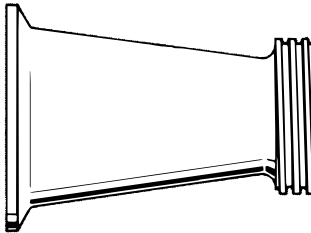
C31TC - ADAPTER-REDUCER-CONCENTRIC (3A)



SIZE (TUBE O.D.)	OVERALL LENGTH
1½ x 1	3⅞
2 x 1	5⅞
2 x 1½	3⅞
2½ x 1½	5⅞
2½ x 2	3⅞

SIZE (TUBE O.D.)	OVERALL LENGTH
3 x 2	5⅞
3 x 2½	3⅞
4 x 2½	7⅞
4 x 3	5⅞

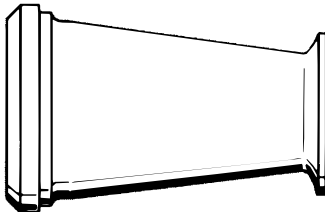
C31CT - ADAPTER-REDUCER-CONCENTRIC (3A)



SIZE (TUBE O.D.)	OVERALL LENGTH
1½ x 1	3⅞
2 x 1	5⅞
2 x 1½	3⅞
2½ x 1½	5⅞
2½ x 2	3⅞

SIZE (TUBE O.D.)	OVERALL LENGTH
3 x 2	5⅞
3 x 2½	3⅞
4 x 2½	7⅞
4 x 3	5⅞

C31PC - ADAPTER-REDUCER-CONCENTRIC (3A)

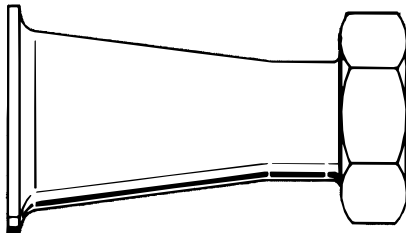


SIZE (TUBE O.D.)	OVERALL LENGTH
* 1½ x 1	3⅞
2 x 1	5⅞
2 x 1½	3⅞
2½ x 1½	5⅞
2½ x 2	3⅞

SIZE (TUBE O.D.)	OVERALL LENGTH
3 x 2	5⅞
3 x 2½	3⅞
4 x 2½	7⅞
4 x 3	5⅞

• HEX NUT INCLUDED IN 1½" x 1" ONLY

C31PC - ADAPTER-REDUCER-CONCENTRIC (3A)



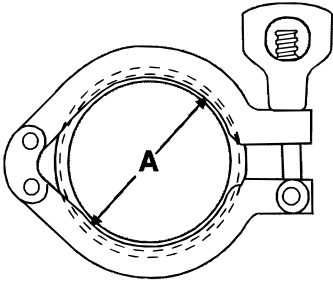
SIZE (TUBE O.D.)	OVERALL LENGTH
1½ x 1	4⅞
2 x 1	6⅞
2 x 1½	4⅞
2½ x 1½	6⅞
2½ x 2	4⅞

SIZE (TUBE O.D.)	OVERALL LENGTH
3 x 2	6⅞
3 x 2½	4⅞
4 x 2½	8⅞
4 x 3	6⅞

HEX NUT INCLUDED.

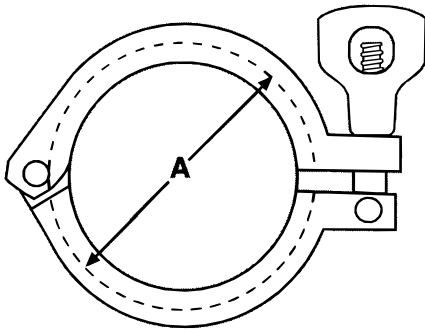
NOTE: 1" CLAMP FITTINGS USE 1½" CLAMPS.

Clamp Fittings (cont'd)



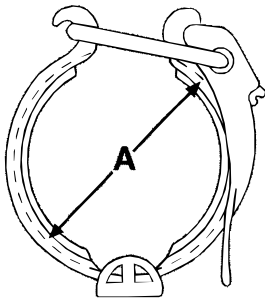
C13HHD - HEAVY DUTY CLAMP
Size Range: 1-11/2" to 10" Tube O.D.

SIZE (TUBE O.D.)	A
1-1 1/2	2.140
2	2.610
2 1/2	3.141
3	3.673
4	4.776
6	6.695
8	8.695
10	10.695



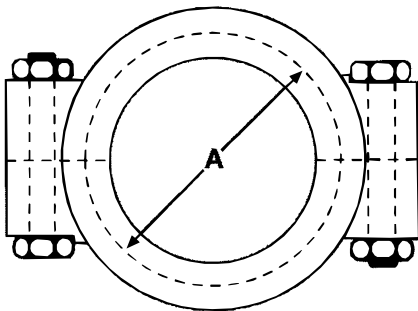
C13HH - HEAVY DUTY CLAMP (STANDARD)
Size Range: 1/2" to 8" Tube O.D.

SIZE (TUBE O.D.)	A
1-1 1/2	2.140
2	2.610
2 1/2	3.141
3	3.673
4	4.776
6	6.695
8	8.695



C13CH - ADJUSTABLE CLAMP
Size Range: 1-11/2" to 4" Tube O.D.

SIZE (TUBE O.D.)	A
1-1 1/2	2.140
2	2.610
2 1/2	3.141
3	3.673
4	4.776



C13MHP* - HIGH PRESSURE CLAMP
Size Range: 1 1/2" to 6" Tube O.D.

SIZE (TUBE O.D.)	A
1-1 1/2	2.046
2	2.578
2 1/2	3.110
3	3.640
4	4.744
6	6.632

*with Aluminium Bronze Nuts

Clamp Gaskets

CLAMP GASKETS (1" O.D. TO 8" O.D.) (3A)



O-RING

C40B	Buna N
C40BW	Buna White
C40S	Silicone
C40E	E.P.D.M.
C40V	SFY Viton
C40T	Teflon



FLANGED (TYPE 2)

C40BF	Buna N
C40SF	Silicone
C40EF	E.P.D.M.
C40VF	Viton

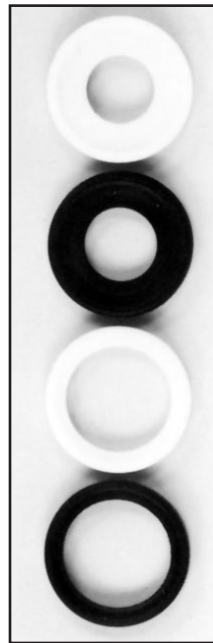
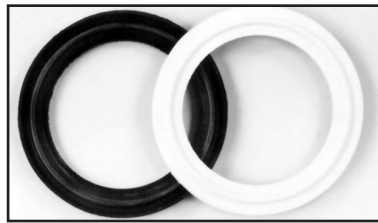


ENVELOPE (TYPE 3)

C40GR	Teflon
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ALSO AVAILABLE:

Bevel Seat, I-Clamp
John Perry and many others



FRACTIONAL SIZE GASKETS for CLAMP-TYPE FITTINGS

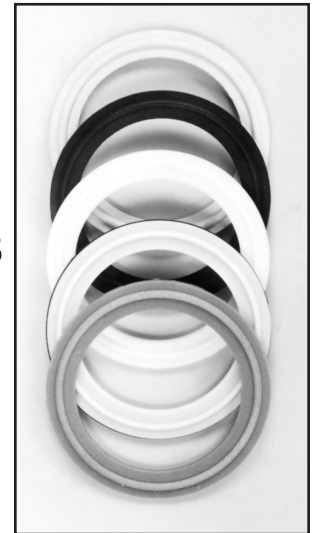
Our line of Clamp Gaskets also includes 1/2" and 3/4" fractional sizes.

OEM #	Material	Resistaloy
42MPUW	Buna-n (Black)	C40BW
42MPU	Buna-N (White)	C40B
42MPSFY	Viton	C40V
42MPE	EPDM	C40E
42MP-X	Silicone	C40S
42MP-G	Teflon	C40T

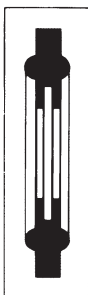
FLANGED GASKETS for CLAMP-TYPE FITTINGS

OEM #	Material
40MPF-U	Buna-N (Black)
40MPF-UW	Buna-N (White)
40MPF-X	Silicone
40MPF-E	EPDM
40MPF-SFY	Viton

Larger sizes are available.



SCREEN & ORIFICE GASKETS



OEM #	Material
40MPSU	Screen Type 316 Stainless Steel
40MPUP	Perforated Screen Type 316 Stainless Steel
40MPSG	Teflon Screen
A80MPU	Buna Orifice Plate Type 316 Stainless Steel
A80MPSFY	Viton Orifice Plate Type

*Other mesh sizes available, #14, #16, #20, #30, #40, #60, #100, #200

SCHEDULE 5 GASKETS



OEM #	Material
40MVU	Buna
40MVSFY	Viton
40MVG	Teflon
40MVGR	Teflon Envelope
40MVX	Silicone
40MVE	EPDM
40MVFU	Flanged Buna
40MVFX	Flanged Silicone
40MVFSFY	Flanged Viton
40MVFE	Flanged EPDM

Sanitary Butt-Weld Fittings



Resistaloy provides a complete range of smooth flow Sanitary Butt-Weld Fittings for all sanitary applications. Special configurations are available upon request.

Butt-Weld Specifications

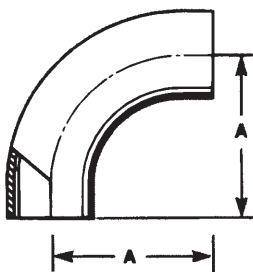
Size Range: 1" OD through 4" OD

Materials: 304
316L

Finish: No.7- ID and OD polished
No.5 - OD only polished
No.3 - ID only polished
No.1 - unpolished ID and OD

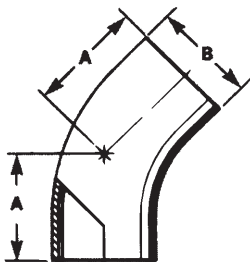
Sanitary Butt-Weld Fittings (cont'd)

S2S - 90° TUBE BEND (3A)



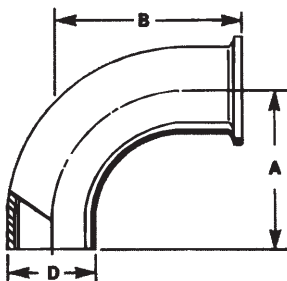
SIZE (TUBE O.D.)	A
1	2 ¹ / ₁₆
1 ½	2 ¹⁵ / ₁₆
2	4 ¹ / ₁₆
2 ½	5 ³ / ₁₆
3	6 ⁷ / ₁₆
4	8 ⁵ / ₁₆

S2CS - 45° TUBE BEND (3A)



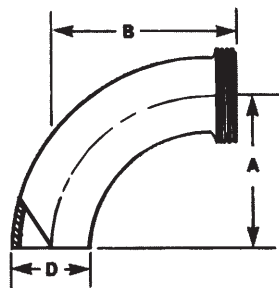
SIZE (TUBE O.D.)	A	B
1	1 ³ / ₁₆	1
1 ½	1 ⁵ / ₈	1 ½
2	2 ⁵ / ₁₆	2
2 ½	3	2 ½
3	3 ¹ / ₁₆	3
4	4 ³ / ₁₆	4

S2CK - 90° SWEEP ELL (3A)



SIZE (TUBE O.D.)	A	B	D
1 ½	2 ¹⁵ / ₁₆	3 ⁷ / ₁₆	1 ½
2	4 ¹ / ₁₆	4 ⁹ / ₁₆	2
2 ½	5 ³ / ₁₆	5 ¹ / ₁₆	2 ½
3	6 ⁷ / ₁₆	6 ¹³ / ₁₆	3
4	8 ⁵ / ₁₆	8 ¹⁵ / ₁₆	4

S2C - 90° ELL (3A)



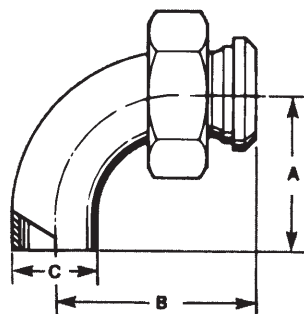
SIZE (TUBE O.D.)	A	B	D
1 ½	2 ¹⁵ / ₁₆	3 ²¹ / ₃₂	1 ½
2	4 ¹ / ₁₆	4 ²⁵ / ₃₂	2
2 ½	5 ³ / ₁₆	6 ¹ / ₃₂	2 ½
3	6 ⁷ / ₁₆	7 ⁷ / ₃₂	3
4	8 ⁵ / ₁₆	9 ¹⁷ / ₃₂	4

Sanitary Butt-Weld Fittings (cont'd)

S2F - 90° SWEEP ELL (3A)

SIZE (TUBE O.D.)	A	B	C
1 1/2	2 15/16	3 21/32	1 1/2
2	4 1/16	4 25/32	2
2 1/2	5 9/16	6 1/32	2 1/2
3	6 5/16	7 7/32	3
4	8 5/16	9 17/32	4

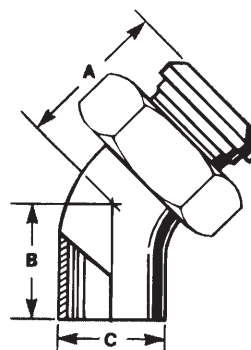
HEX NUT INCLUDED



S2P - 45° SWEEP ELL (3A)

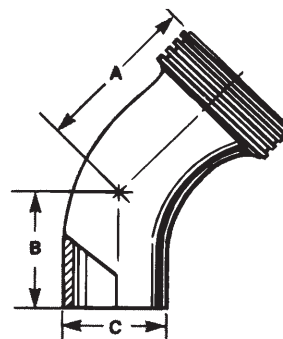
SIZE (TUBE O.D.)	A	B	C
1 1/2	2 11/32	1 5/8	1 1/2
2	3 1/32	2 5/16	2
2 1/2	3 27/32	3	2 1/2
3	4 19/32	3 11/16	3
4	6 1/32	4 13/16	4

HEX NUT INCLUDED



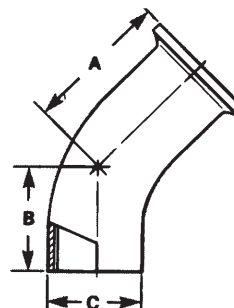
S2C - 45° SWEEP ELL (3A)

SIZE (TUBE O.D.)	A	B	C
1 1/2	2 11/32	1 5/8	1 1/2
2	3 1/32	2 5/16	2
2 1/2	3 27/32	3	2 1/2
3	4 19/32	3 11/16	3
4	6 1/32	4 13/16	4

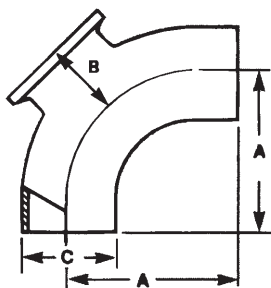


S2CC - 45° SWEEP ELL (3A)

SIZE (TUBE O.D.)	A	B	C
1 1/2	2 1/8	1 5/8	1 1/2
2	2 13/16	2 5/16	2
2 1/2	3 1/2	3	2 1/2
3	4 3/16	3 11/16	3
4	5 7/16	4 13/16	4

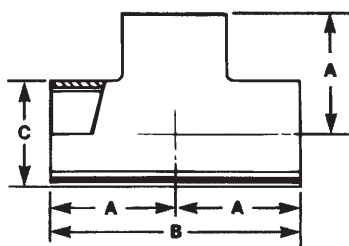


Sanitary Butt-Weld Fittings (cont'd)



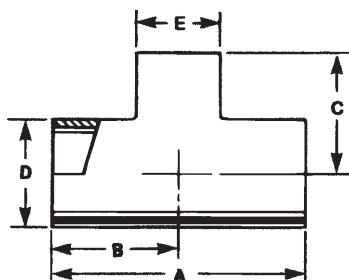
S2CP - 90° INSPECTION ELBOW

SIZE (TUBE O.D.)	A	B	C
1 ½	2 15/16	1 3/8	1 ½
2	4 1/16	1 5/8	2
2 ½	5 3/16	1 7/8	2 ½
3	6 3/16	2 1/8	3
4	8 3/16	2 3/4	4



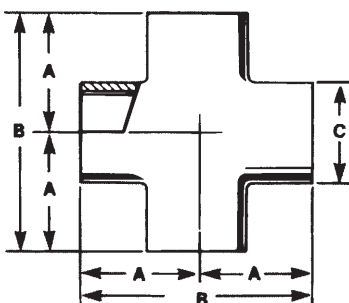
S7WWW - TEE (3A)

SIZE (TUBE O.D.)	A	B	C
1	1 1/8	2 1/4	1
1 ½	1 21/32	3 5/16	1 ½
2	2 1/16	4 1/8	2
2 ½	2 11/32	4 11/16	2 ½
3	2 19/32	5 3/16	3
4	3 7/16	6 7/8	4



S7RWWW - REDUCING TEE (3A)

SIZE (TUBE O.D.)	A	B	C	D	E
1 ½ x 1	3 5/16	1 21/32	1 3/8	1 ½	1
2 x 1 ½	4 1/8	2 1/16	1 29/32	2	1 ½
2 ½ x 2	4 11/16	2 11/32	2 5/16	2 ½	2
3 x 2	5 3/16	2 19/32	2 9/16	3	2
3 x 2 ½	5 3/16	2 19/32	2 19/32	3	2 ½
4 x 2	9 1/4	4 5/8	4 1/4	4	2
4 x 2 ½	9 1/4	4 5/8	4 1/4	4	2 ½
4 x 3	9 1/4	4 5/8	4 1/4	4	3



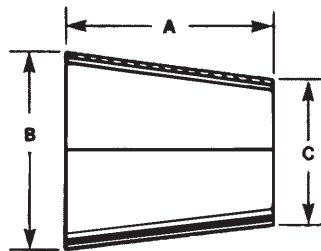
S9WWW - CROSS (3A)

SIZE (TUBE O.D.)	A	B	C
1 ½	1 21/32	3 5/16	1 ½
2	2 1/16	4 1/8	2
2 ½	2 11/32	4 11/16	2 ½
3	2 19/32	5 3/16	3
4	3 7/16	6 7/8	4

Sanitary Butt-Weld Fittings (cont'd)

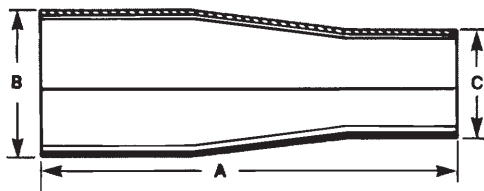
S31 - CONCENTRIC REDUCER (3A)

SIZE (TUBE O.D.)	A	B	C
1½ x 1	2	1½	1
2 x 1½	2	2	1½
2½ x 1½	4	2½	1½
2½ x 2	2	2½	2
3 x 1½	6	3	1½
3 x 2	4	3	2
3 x 2½	2	3	2½
4 x 1½	10	4	1½
4 x 2	8	4	2
4 x 2½	6	4	2½
4 x 3	4	4	3



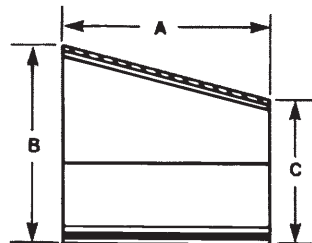
S31E - CONCENTRIC REDUCERS (3A)

SIZE (TUBE O.D.)	A	B	C
1½ x 1	3⅞	1½	1
2 x 1½	3⅞	2	1½
2½ x 1½	6	2½	1½
2½ x 2	4¼	2½	2
3 x 1½	8⅞	3	1½
3 x 2	6⅞	3	2
3 x 2½	4½	3	2½
4 x 1½	12¼	4	1½
4 x 2	10½	4	2
4 x 2½	8⅞	4	2½
4 x 3	6¾	4	3



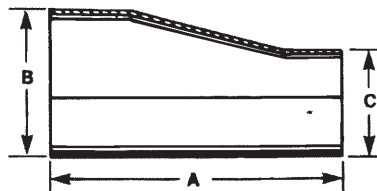
S32 - ECCENTRIC REDUCER (3A)

SIZE (TUBE O.D.)	A	B	C
1½ x 1	2	1½	1
2 x 1½	2	2	1½
2½ x 1½	4	2½	1½
2½ x 2	2	2½	2
3 x 1½	6	3	1½
3 x 2	4	3	2
3 x 2½	2	3	2½
4 x 1½	10	4	1½
4 x 2	8	4	2
4 x 2½	6	4	2½
4 x 3	4	4	3



S32E - ECCENTRIC REDUCER (3A)

SIZE (TUBE O.D.)	A	B	C
1½ x 1	3⅞	1½	1
2 x 1½	3⅞	2	1½
2½ x 1½	6	2½	1½
2½ x 2	4¼	2½	2
3 x 1½	8⅞	3	1½
3 x 2	6⅞	3	2
3 x 2½	4½	3	2½
4 x 1½	12¼	4	1½
4 x 2	10½	4	2
4 x 2½	8⅞	4	2½
4 x 3	6¾	4	3



Tube O.D. Butt-Weld Fittings

Resistaloy provides a complete range of non tangent OD Weld Fittings. Special configurations available upon request.

Tube O.D. Butt-Weld Specifications

Size Range: 1" OD through 12" OD

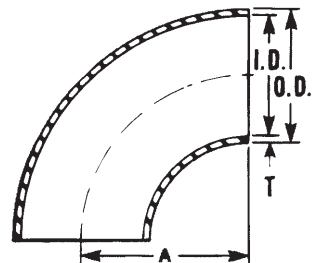
Materials: 304
316L

Finish: No.1 - unpolished
No.7 - polished I.D. and O.D.

Butt-Weld Fittings (cont'd)

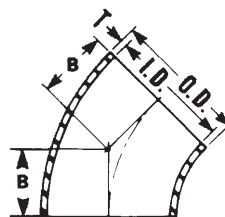
B2WC - L.R. 90° ELL

SIZE (TUBE O.D.)	O.D.	I.D.	T	A
1	1.000	.870	.065	1½
1½	1.500	1.370	.065	2¼
2	2.000	1.870	.065	3
2½	2.500	2.370	.065	3¾
3	3.000	2.870	.065	4½
4	4.000	3.834	.083	6
6	6.000	5.782	.109	9



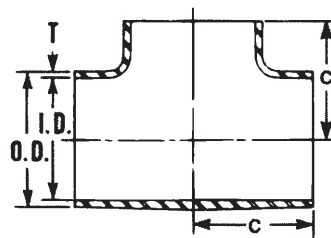
B2WK - L.R. 45° ELL

SIZE (TUBE O.D.)	O.D.	I.D.	T	B
1	1.000	.870	.065	5/8
1½	1.500	1.370	.065	15/16
2	2.000	1.870	.065	1¼
2½	2.500	2.370	.065	19/16
3	3.000	2.870	.065	17/8
4	4.000	3.834	.083	2½
6	6.000	5.782	.109	3¾



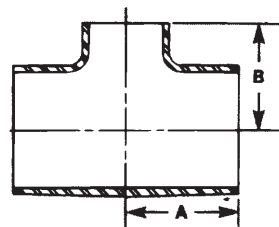
B7W - TEE

SIZE (TUBE O.D.)	O.D.	I.D.	T	C
1	1.000	.870	.065	17/8
1½	1.500	1.370	.065	2¼
2	2.000	1.870	.065	3
2½	2.500	2.370	.065	3
3	3.000	2.870	.065	3¼
4	4.000	3.834	.083	37/8
6	6.000	5.782	.109	5



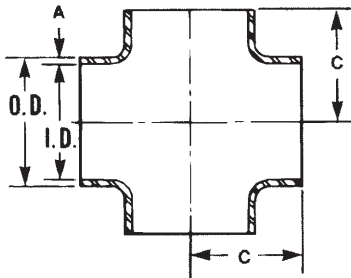
B7WR - REDUCING TEE

SIZE (TUBE O.D.)	A	B
1½ x 1	2¼	2⅝
2 x 1	3	2⅜
2 x 1½	3	2½
2½ x 1½	3	2¾
2½ x 2	3	3¼
3 x 1½	3¼	3
3 x 2	3¼	3½
3 x 2½	3¼	3¼
4 x 2	37/8	4
4 x 2½	37/8	3¾
4 x 3	37/8	3¾
6 x 3	5	4¾
6 x 4	5	47/8



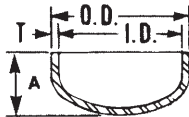
Butt-Weld Fittings (cont'd)

B9W - CROSS



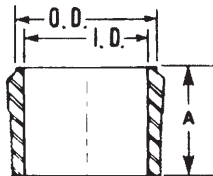
SIZE (TUBE O.D.)	O.D.	I.D.	A	C
1	1.000	.870	.065	1 ⁷ / ₈
1 ½	1.500	1.370	.065	2 ¹ / ₄
2	2.000	1.870	.065	3
2 ½	2.500	2.370	.065	3
3	3.000	2.870	.065	3 ¹ / ₄
4	4.000	3.834	.083	3 ⁷ / ₈
6	6.000	5.782	.109	5

B16W - CAP



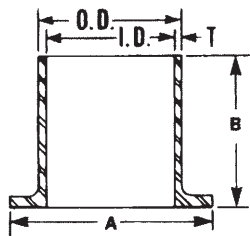
SIZE (TUBE O.D.)	O.D.	I.D.	T	A
1	1.000	.870	.065	³ / ₈
1 ½	1.500	1.370	.065	⁹ / ₁₆
2	2.000	1.870	.065	³ / ₄
2 ½	2.500	2.370	.065	1
3	3.000	2.870	.065	1 ¹ / ₄
4	4.000	3.834	.083	1 ¹ / ₂

B19W - ADAPTER



SIZE (TUBE O.D.)	O.D.	I.D.	A
1	1.000	.870	1 ³ / ₄
1 ½	1.500	1.370	1 ³ / ₄
2	2.000	1.870	1 ¹³ / ₁₆
2 ½	2.500	2.370	2 ⁵ / ₁₆
3	3.000	2.870	2 ¹ / ₂
4	4.000	3.834	2 ⁹ / ₁₆

B14WC - STUB END

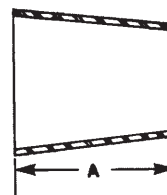


SIZE (TUBE O.D.)	O.D.	I.D.	T	A	B
1	1.000	.870	.065	2	1 ⁵ / ₈
1 ½	1.500	1.370	.065	2 ⁷ / ₈	1 ³ / ₄
2	2.000	1.870	.065	3 ⁵ / ₈	1 ¹ / ₂
2 ½	2.500	2.370	.065	4 ¹ / ₈	2
3	3.000	2.870	.065	5	2 ¹ / ₄
4	4.000	3.834	.083	6 ³ / ₁₆	2 ⁵ / ₈
6	6.000	5.782	.109	8 ¹ / ₂	3

Butt-Weld Fittings (cont'd)

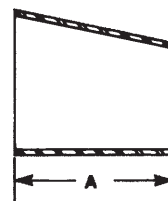
B31W - CONCENTRIC REDUCER

SIZE (TUBE O.D.)	A
1½ x 1	2
2 x 1	4
2 x 1½	2
2½ x 1½	4
2½ x 2	2
3 x 1½	6
3 x 2	4
3 x 2½	2
4 x 2	8
4 x 2½	6
4 x 3	4
6 x 3	6
6 x 4	4



B32W - ECCENTRIC REDUCER

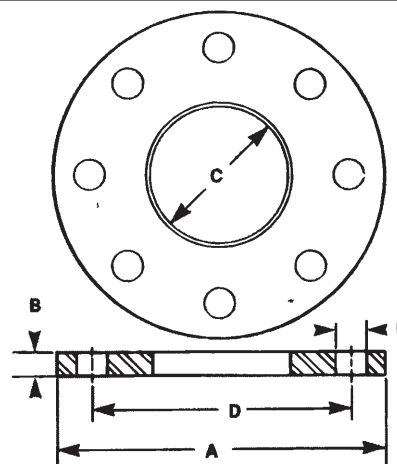
SIZE (TUBE O.D.)	A
1½ x 1	2
2 x 1	4
2 x 1½	2
2½ x 1½	4
2½ x 2	2
3 x 1½	6
3 x 2	4
3 x 2½	2
4 x 2	8
4 x 2½	6
4 x 3	4
6 x 3	6
6 x 4	4



B38BU - BACK-UP FLANGE (304 STAINLESS)

SIZE (TUBE O.D.)	OUTSIDE DIA. A	WALL THICKNESS B	INSIDE DIA. C	BOLT CIRCLE D	NO. & DIA. OF BOLT HOLES E
1	4¼	⅜	1.063	3⅛	4-⅝
1½	5	⅜	1.563	3⅞	4-⅝
2	6	⅞	2.063	4¾	4-¾
2½	7	⅞	2.563	5½	4-¾
3	7½	½	3.063	6	4-¾
4	9	½	4.063	7½	8-¾
6	11	⅞	6.063	9½	8-⅞

ALSO AVAILABLE: B38LWN - O.D. WELDING FLANGE



Long Tangent Fittings

Resistaloy provides long tangent precision crafted automatic weld fittings designed for high speed automatic welding equipment. Automatic weld fittings are available with sanitary finishes to meet pharmaceutical process specifications. Long tangent fittings are manufactured to dimensional specifications per ASTM A270.

Long Tangent Fittings Specifications

Size Range: 1/2" OD through 4" OD

Materials: 316L

Finish: No.3 - 20 RA Mechanical ID only

No.3 EP - 15 RA Mechanical and Electropolish ID only

No.7 - 20 RA Mechanical ID 150 Grit Mechanical OD

No.7 EP - 15 RA Mechanical and Electropolish ID 150 Grit

Mechanical OD

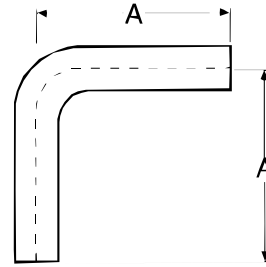
No.1 - unpolished

Special finishes available upon request.

Automatic Weld Fittings (cont'd)

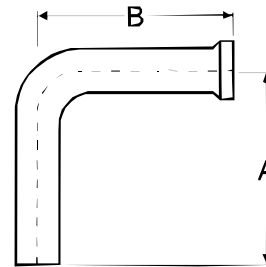
S2SAW - 90° ELL

SIZE (TUBE O.D.)	A
$\frac{1}{2}$	3
$\frac{3}{4}$	3
1	3
$1\frac{1}{2}$	$4\frac{1}{2}$
2	$5\frac{3}{4}$
$2\frac{1}{2}$	$5\frac{1}{2}$
3	$6\frac{1}{4}$
4	8



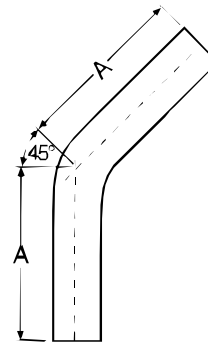
S2CKAW - 90° ELL

SIZE (TUBE O.D.)	A	B
$\frac{1}{2}$	3	$3\frac{1}{2}$
$\frac{3}{4}$	3	$3\frac{1}{2}$
1	3	$3\frac{1}{2}$
$1\frac{1}{2}$	$4\frac{1}{2}$	5
2	$5\frac{3}{4}$	$6\frac{1}{4}$
$2\frac{1}{2}$	$5\frac{1}{2}$	6
3	$6\frac{1}{4}$	$6\frac{3}{4}$
4	8	$8\frac{5}{8}$



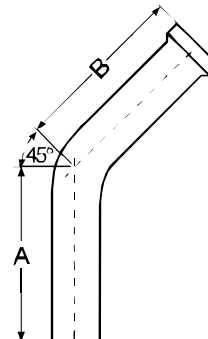
S2CSAW - 45° ELL

SIZE (TUBE O.D.)	A
$\frac{1}{2}$	$2\frac{1}{4}$
$\frac{3}{4}$	$2\frac{1}{4}$
1	$2\frac{1}{4}$
$1\frac{1}{2}$	3
2	$3\frac{1}{4}$
$2\frac{1}{2}$	$3\frac{3}{8}$
3	$3\frac{5}{8}$
4	$4\frac{1}{2}$



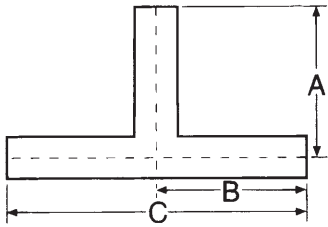
S2CCAW - 45° ELL

SIZE (TUBE O.D.)	A	B
$\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{3}{4}$
$\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$
1	$2\frac{1}{4}$	$2\frac{3}{4}$
$1\frac{1}{2}$	3	$3\frac{1}{2}$
2	$3\frac{1}{4}$	$3\frac{3}{4}$
$2\frac{1}{2}$	$3\frac{3}{8}$	$3\frac{7}{8}$
3	$3\frac{5}{8}$	$4\frac{1}{8}$
4	$4\frac{1}{2}$	$5\frac{1}{8}$



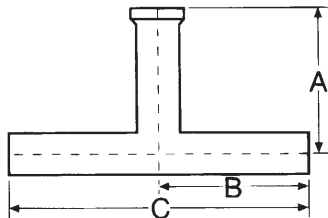
Automatic Weld Fittings (cont'd)

S7WWAW - TEE



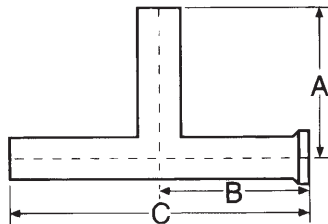
SIZE (TUBE O.D.)	A	B	C
$\frac{1}{2}$	$2\frac{1}{8}$	$2\frac{1}{8}$	$4\frac{1}{4}$
$\frac{3}{4}$	$2\frac{1}{8}$	$2\frac{1}{8}$	$4\frac{1}{4}$
1	$2\frac{1}{8}$	$2\frac{1}{8}$	$4\frac{1}{4}$
$1\frac{1}{2}$	$2\frac{3}{8}$	$2\frac{3}{8}$	$4\frac{3}{4}$
2	$3\frac{1}{8}$	$3\frac{1}{8}$	$6\frac{1}{4}$
$2\frac{1}{2}$	$3\frac{1}{8}$	$3\frac{1}{8}$	$6\frac{1}{4}$
3	$3\frac{3}{8}$	$3\frac{3}{8}$	$6\frac{3}{4}$
4	$4\frac{1}{8}$	$4\frac{1}{8}$	$8\frac{1}{4}$

S7WWKAW - TEE



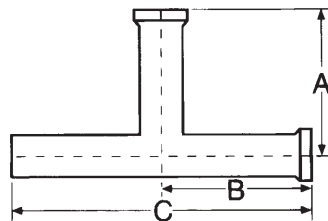
SIZE (TUBE O.D.)	A	B	C
$\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{1}{8}$	$4\frac{1}{4}$
$\frac{3}{4}$	$2\frac{5}{8}$	$2\frac{1}{8}$	$4\frac{1}{4}$
1	$2\frac{5}{8}$	$2\frac{1}{8}$	$4\frac{1}{4}$
$1\frac{1}{2}$	$2\frac{7}{8}$	$2\frac{3}{8}$	$4\frac{3}{4}$
2	$3\frac{5}{8}$	$3\frac{1}{8}$	$6\frac{1}{4}$
$2\frac{1}{2}$	$3\frac{5}{8}$	$3\frac{1}{8}$	$6\frac{1}{4}$
3	$3\frac{7}{8}$	$3\frac{3}{8}$	$6\frac{3}{4}$
4	$4\frac{3}{4}$	$4\frac{1}{8}$	$8\frac{1}{4}$

S7WKWA7 - TEE



SIZE (TUBE O.D.)	A	B	C
$\frac{1}{2}$	$2\frac{1}{8}$	$2\frac{5}{8}$	$4\frac{3}{4}$
$\frac{3}{4}$	$2\frac{1}{8}$	$2\frac{5}{8}$	$4\frac{3}{4}$
1	$2\frac{1}{8}$	$2\frac{5}{8}$	$4\frac{3}{4}$
$1\frac{1}{2}$	$2\frac{3}{8}$	$2\frac{7}{8}$	$5\frac{1}{4}$
2	$3\frac{1}{8}$	$3\frac{5}{8}$	$6\frac{3}{4}$
$2\frac{1}{2}$	$3\frac{1}{8}$	$3\frac{5}{8}$	$6\frac{3}{4}$
3	$3\frac{3}{8}$	$3\frac{7}{8}$	$7\frac{1}{4}$
4	$4\frac{1}{8}$	$4\frac{3}{4}$	$8\frac{7}{8}$

S7WKKAW - TEE

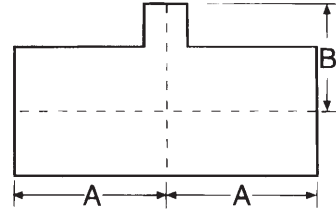


SIZE (TUBE O.D.)	A	B	C
$\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{5}{8}$	$4\frac{3}{4}$
$\frac{3}{4}$	$2\frac{5}{8}$	$2\frac{5}{8}$	$4\frac{3}{4}$
1	$2\frac{5}{8}$	$2\frac{5}{8}$	$4\frac{3}{4}$
$1\frac{1}{2}$	$2\frac{7}{8}$	$2\frac{7}{8}$	$5\frac{1}{4}$
2	$3\frac{5}{8}$	$3\frac{5}{8}$	$6\frac{3}{4}$
$2\frac{1}{2}$	$3\frac{5}{8}$	$3\frac{5}{8}$	$6\frac{3}{4}$
3	$3\frac{7}{8}$	$3\frac{7}{8}$	$7\frac{1}{4}$
4	$4\frac{3}{4}$	$4\frac{3}{4}$	$8\frac{7}{8}$

Automatic Weld Fittings (cont'd)

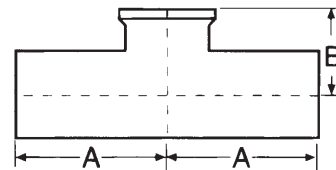
S7RWWAW - REDUCING TEE

SIZE	A	B
$\frac{3}{4} \times \frac{1}{2}$	$2\frac{1}{8}$	$2\frac{1}{8}$
$1 \times \frac{1}{2}$	$2\frac{1}{8}$	$2\frac{1}{8}$
$1 \times \frac{3}{4}$	$2\frac{1}{8}$	$2\frac{1}{8}$
$1\frac{1}{2} \times \frac{1}{2}$	$2\frac{3}{8}$	$2\frac{3}{8}$
$1\frac{1}{2} \times \frac{3}{4}$	$2\frac{3}{8}$	$2\frac{3}{8}$
$1\frac{1}{2} \times 1$	$2\frac{3}{8}$	$2\frac{1}{2}$
$2 \times \frac{1}{2}$	$3\frac{1}{8}$	$2\frac{3}{4}$
2×1	$3\frac{1}{8}$	$2\frac{3}{4}$
$2 \times 1\frac{1}{2}$	$3\frac{1}{8}$	$2\frac{3}{4}$
$2\frac{1}{2} \times 1\frac{1}{2}$	$3\frac{3}{8}$	3
$2\frac{1}{2} \times 2$	$3\frac{3}{8}$	$3\frac{1}{2}$
$3 \times \frac{1}{2}$	$3\frac{3}{8}$	$3\frac{1}{8}$
3×2	$3\frac{5}{8}$	$3\frac{3}{4}$
$3 \times 2\frac{1}{2}$	$3\frac{5}{8}$	$3\frac{3}{4}$
4×2	$4\frac{5}{8}$	$4\frac{1}{4}$
$4 \times 2\frac{1}{2}$	$4\frac{5}{8}$	$4\frac{1}{4}$
4×3	$4\frac{5}{8}$	$4\frac{1}{4}$



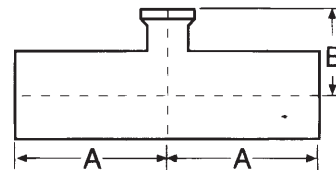
S7WWKSAW - SHORT OUTLET TEE

SIZE (TUBE O.D.)	A	B
$\frac{1}{2}$	$2\frac{1}{8}$	1
$\frac{3}{4}$	$2\frac{1}{8}$	$1\frac{1}{8}$
1	$2\frac{1}{8}$	$1\frac{1}{8}$
$1\frac{1}{2}$	$2\frac{3}{8}$	$1\frac{3}{8}$
2	$3\frac{1}{8}$	$1\frac{5}{8}$
$2\frac{1}{2}$	$3\frac{1}{8}$	$1\frac{7}{8}$
3	$3\frac{3}{8}$	$2\frac{1}{8}$
4	$4\frac{1}{8}$	$2\frac{3}{4}$



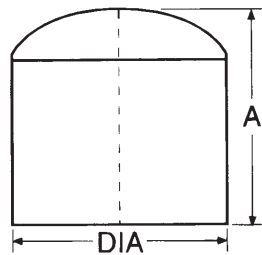
S7RWWKSAW - REDUCING SHORT OUTLET TEE

SIZE	A	B
$\frac{3}{4} \times \frac{1}{2}$	$2\frac{1}{8}$	1
$1 \times \frac{1}{2}$	$2\frac{1}{8}$	$1\frac{1}{8}$
$1 \times \frac{3}{4}$	$2\frac{1}{8}$	$1\frac{1}{8}$
$1\frac{1}{2} \times \frac{1}{2}$	$2\frac{3}{8}$	$1\frac{3}{8}$
$1\frac{1}{2} \times \frac{3}{4}$	$2\frac{3}{8}$	$1\frac{3}{8}$



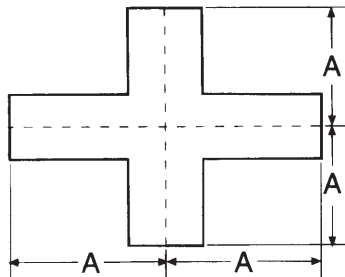
Automatic Weld Fittings (cont'd)

S16WAW - CAP



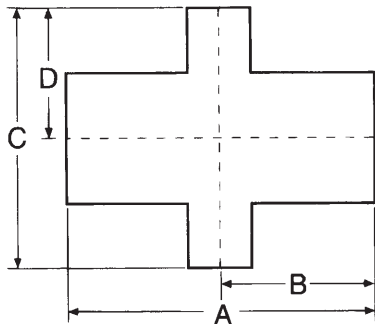
SIZE (TUBE O.D.)	A
$\frac{1}{2}$	$1\frac{1}{2}$
$\frac{3}{4}$	$1\frac{1}{2}$
1	$1\frac{1}{2}$
$1\frac{1}{2}$	$2\frac{1}{16}$
2	$2\frac{1}{4}$
$2\frac{1}{2}$	$2\frac{1}{2}$
3	$2\frac{3}{4}$
4	3

S9WWAW - CROSS



SIZE (TUBE O.D.)	A
$\frac{1}{2}$	$2\frac{1}{8}$
$\frac{3}{4}$	$2\frac{1}{8}$
1	$2\frac{1}{8}$
$1\frac{1}{2}$	$2\frac{3}{8}$
2	$3\frac{1}{8}$
$2\frac{1}{2}$	$3\frac{1}{8}$
3	$3\frac{3}{8}$
4	$4\frac{1}{8}$

S9RWWAW - REDUCING CROSS

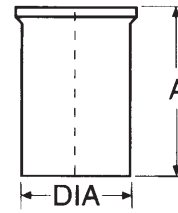


SIZE (TUBE O.D.)	A	B	C	D
$\frac{3}{4} \times \frac{1}{2}$	$4\frac{1}{4}$	$2\frac{1}{8}$	$4\frac{1}{4}$	$2\frac{1}{8}$
$1 \times \frac{1}{2}$	$4\frac{1}{4}$	$2\frac{1}{8}$	$4\frac{1}{4}$	$2\frac{1}{8}$
$1 \times \frac{3}{4}$	$4\frac{1}{4}$	$2\frac{1}{8}$	$4\frac{1}{4}$	$2\frac{1}{8}$
$1\frac{1}{2} \times \frac{1}{2}$	$4\frac{3}{4}$	$2\frac{3}{8}$	$4\frac{3}{4}$	$2\frac{3}{8}$
$1\frac{1}{2} \times \frac{3}{4}$	$4\frac{3}{4}$	$2\frac{3}{8}$	$4\frac{3}{4}$	$2\frac{3}{8}$
$1\frac{1}{2} \times 1$	$4\frac{3}{4}$	$2\frac{3}{8}$	5	$2\frac{1}{2}$
$2 \times \frac{1}{2}$	$6\frac{1}{4}$	$3\frac{1}{8}$	$5\frac{1}{2}$	$2\frac{3}{4}$
$2 \times \frac{3}{4}$	$6\frac{1}{4}$	$3\frac{1}{8}$	$5\frac{1}{2}$	$2\frac{3}{4}$
2×1	$6\frac{1}{4}$	$3\frac{1}{8}$	$5\frac{1}{2}$	$2\frac{3}{4}$
$2 \times 1\frac{1}{2}$	$6\frac{1}{4}$	$3\frac{1}{8}$	$5\frac{1}{2}$	$2\frac{3}{4}$
$2\frac{1}{2} \times 1$	$6\frac{1}{4}$	$3\frac{1}{8}$	$5\frac{3}{4}$	$2\frac{7}{8}$
$2\frac{1}{2} \times 1\frac{1}{2}$	$6\frac{1}{4}$	$3\frac{1}{8}$	$5\frac{3}{4}$	$2\frac{7}{8}$
$2\frac{1}{2} \times 2$	$6\frac{1}{4}$	$3\frac{1}{8}$	$6\frac{1}{4}$	$3\frac{1}{8}$
3×1	$6\frac{3}{4}$	$3\frac{3}{8}$	$6\frac{1}{4}$	$3\frac{1}{8}$
$3 \times 1\frac{1}{2}$	$6\frac{3}{4}$	$3\frac{3}{8}$	$6\frac{1}{4}$	$3\frac{1}{8}$
3×2	$6\frac{3}{4}$	$3\frac{3}{8}$	$6\frac{3}{4}$	$3\frac{3}{8}$
$3 \times 2\frac{1}{2}$	$6\frac{3}{4}$	$3\frac{3}{8}$	$6\frac{3}{4}$	$3\frac{3}{8}$
4×1	$8\frac{1}{4}$	$4\frac{1}{8}$	$7\frac{1}{4}$	$3\frac{5}{8}$
$4 \times 1\frac{1}{2}$	$8\frac{1}{4}$	$4\frac{1}{8}$	$7\frac{1}{4}$	$3\frac{5}{8}$
4×2	$8\frac{1}{4}$	$4\frac{1}{8}$	$7\frac{3}{4}$	$3\frac{7}{8}$
$4 \times 2\frac{1}{2}$	$8\frac{1}{4}$	$4\frac{1}{8}$	$7\frac{3}{4}$	$3\frac{7}{8}$
4×3	$8\frac{1}{4}$	$4\frac{1}{8}$	$7\frac{3}{4}$	$3\frac{7}{8}$

Automatic Weld Fittings (cont'd)

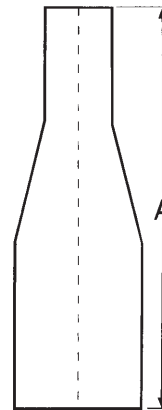
C14A7AW - FERRULE

SIZE (TUBE O.D.)	A
$\frac{1}{2}$	$1\frac{3}{4}$
$\frac{3}{4}$	$1\frac{3}{4}$
1	$1\frac{3}{4}$
$1\frac{1}{2}$	$1\frac{3}{4}$
2	$2\frac{1}{4}$
$2\frac{1}{2}$	$2\frac{1}{4}$
3	$2\frac{1}{4}$
4	$2\frac{1}{4}$



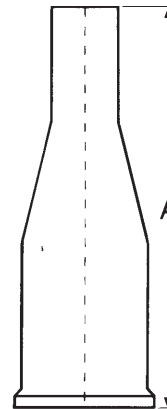
S31AW - CONCENTRIC REDUCER

SIZE	A
$\frac{3}{4} \times \frac{1}{2}$	4
$1 \times \frac{1}{2}$	$4\frac{1}{2}$
$1 \times \frac{3}{4}$	4
$1\frac{1}{2} \times \frac{1}{2}$	$5\frac{1}{2}$
$1\frac{1}{2} \times \frac{3}{4}$	5
$1\frac{1}{2} \times 1$	5
2×1	$7\frac{1}{4}$
$2 \times 1\frac{1}{2}$	$5\frac{1}{4}$
$2\frac{1}{2} \times 1\frac{1}{2}$	$7\frac{1}{4}$
$2\frac{1}{2} \times 2$	$5\frac{1}{2}$
3×2	$7\frac{1}{2}$
$3 \times 2\frac{1}{2}$	$5\frac{1}{2}$
4×2	$11\frac{3}{4}$
$4 \times 2\frac{1}{2}$	$9\frac{3}{4}$
4×3	$7\frac{3}{4}$



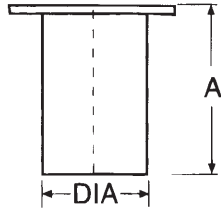
S31CAW - CONCENTRIC REDUCER

SIZE	A
$\frac{3}{4} \times \frac{1}{2}$	3
$1 \times \frac{1}{2}$	$3\frac{1}{2}$
$1 \times \frac{3}{4}$	3
$1\frac{1}{2} \times \frac{1}{2}$	$4\frac{1}{2}$
$1\frac{1}{2} \times \frac{3}{4}$	4
$1\frac{1}{2} \times 1$	4
$2 \times 1\frac{1}{2}$	$3\frac{5}{16}$
$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{5}{16}$
$2\frac{1}{2} \times 2$	$3\frac{9}{16}$
3×2	$5\frac{9}{16}$
$3 \times 2\frac{1}{2}$	$3\frac{11}{16}$
4×2	$9\frac{11}{16}$
$4 \times 2\frac{1}{2}$	$7\frac{13}{16}$
4×3	$5\frac{15}{16}$



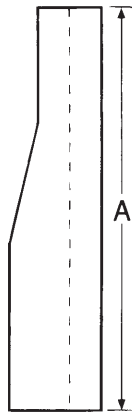
Automatic Weld Fittings (cont'd)

B14WCAW - STUB END



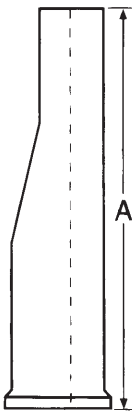
SIZE (TUBE O.D.)	A
$\frac{1}{2}$	2
$\frac{3}{4}$	2
1	$2\frac{3}{4}$
$1\frac{1}{2}$	$2\frac{3}{4}$
2	$2\frac{3}{4}$
$2\frac{1}{2}$	$2\frac{3}{4}$
3	$2\frac{3}{4}$
4	$2\frac{3}{4}$

S32AW - ECCENTRIC REDUCER



SIZE	A
$\frac{3}{4} \times \frac{1}{2}$	4
$1 \times \frac{1}{2}$	$4\frac{1}{2}$
$1 \times \frac{3}{4}$	4
$1\frac{1}{2} \times \frac{1}{2}$	$5\frac{1}{2}$
$1\frac{1}{2} \times \frac{3}{4}$	5
$1\frac{1}{2} \times 1$	5
$2 \times 1\frac{1}{2}$	$5\frac{1}{4}$
$2\frac{1}{2} \times 1\frac{1}{2}$	$7\frac{1}{4}$
$2\frac{1}{2} \times 2$	$5\frac{1}{2}$
3×2	$7\frac{1}{2}$
$3 \times 2\frac{1}{2}$	$5\frac{1}{2}$
4×2	$11\frac{3}{4}$
$4 \times 2\frac{1}{2}$	$9\frac{3}{4}$
4×3	$7\frac{3}{4}$

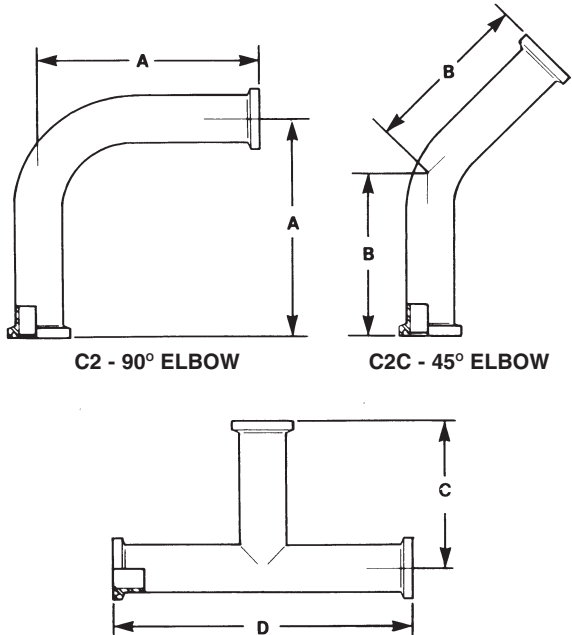
S32CAW - ECCENTRIC REDUCER



SIZE	A
$\frac{3}{4} \times \frac{1}{2}$	3
$1 \times \frac{1}{2}$	$3\frac{1}{2}$
$1 \times \frac{3}{4}$	3
$1\frac{1}{2} \times \frac{1}{2}$	$4\frac{1}{2}$
$1\frac{1}{2} \times \frac{3}{4}$	4
$1\frac{1}{2} \times 1$	4
$2 \times 1\frac{1}{2}$	$3\frac{5}{16}$
$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{5}{16}$
$2\frac{1}{2} \times 2$	$3\frac{9}{16}$
3×2	$5\frac{9}{16}$
$3 \times 2\frac{1}{2}$	$3\frac{11}{16}$
4×2	$9\frac{11}{16}$
$4 \times 2\frac{1}{2}$	$7\frac{13}{16}$
4×3	$5\frac{15}{16}$

Mini Clamp Type Fittings

Resistaloy provides mini clamp type fittings for the biotechnology, pharmaceutical, electronics and cosmetic industries. Produced of type 316L stainless steel, the units are available in several finishes, including electropolish.

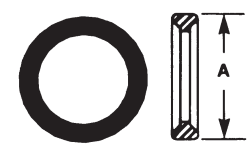


C2 - 90° ELBOW **C2C - 45° ELBOW**

C7 - TEE

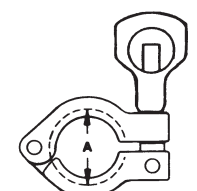
SIZE (TUBE O.D.)	C2	C2C	C7	
	A	B	C	D
1/2	3 1/2	2 3/4	2 5/8	5 1/4
3/4	3 1/2	2 3/4	2 5/8	5 1/4

C40 - GASKET



SIZE (TUBE O.D.)	A
1/2"	.859
3/4	.859

C13HH - HEAVY DUTY CLAMP

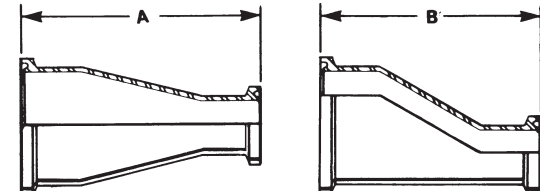


SIZE (TUBE O.D.)	A
1/2	1 1/8
3/4	1 1/8



C16 END CAP **C14RW & C14A WELD FERRULES**

OUTSIDE DIA. (TUBE O.D.)	C16 A	C14RW B	C14A B
1/2	.187	1/2	1 1/2
3/4	.187	1/2	1 1/2

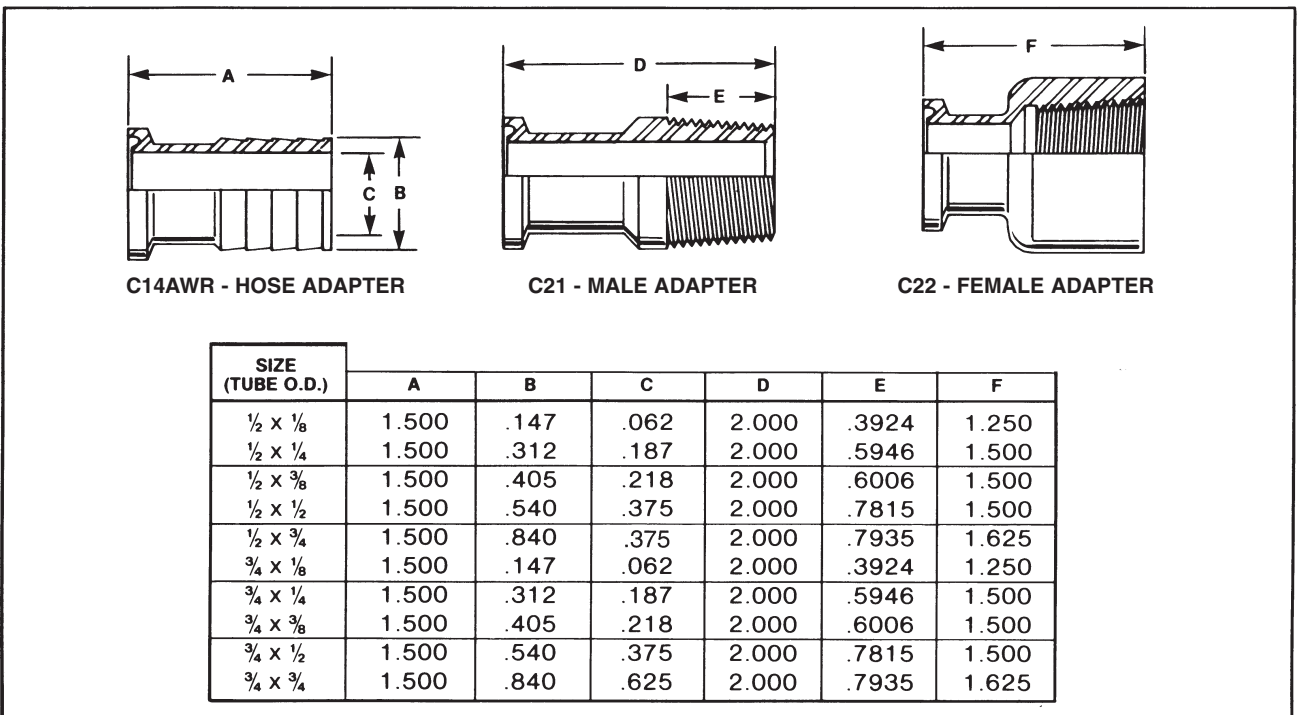
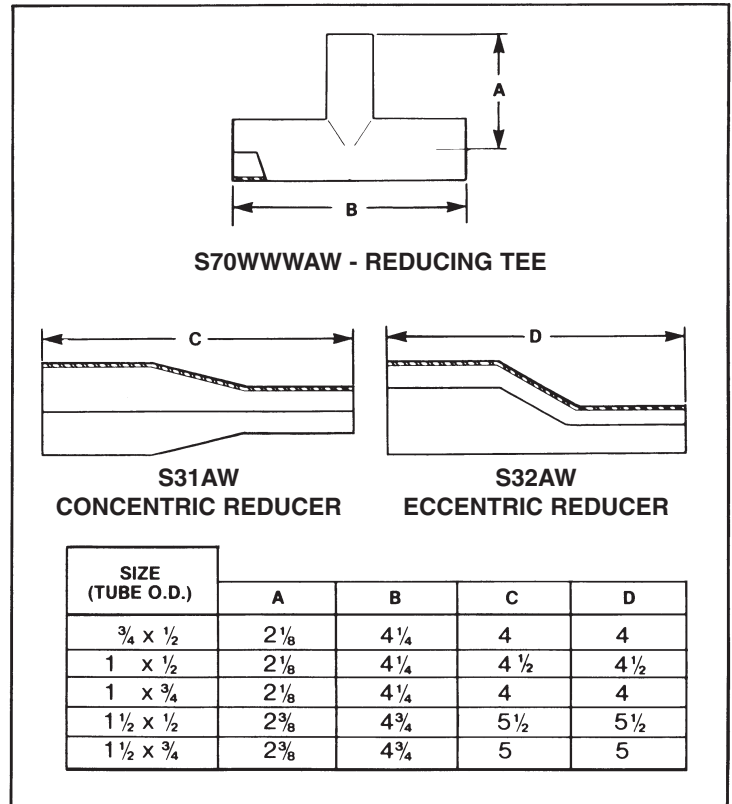
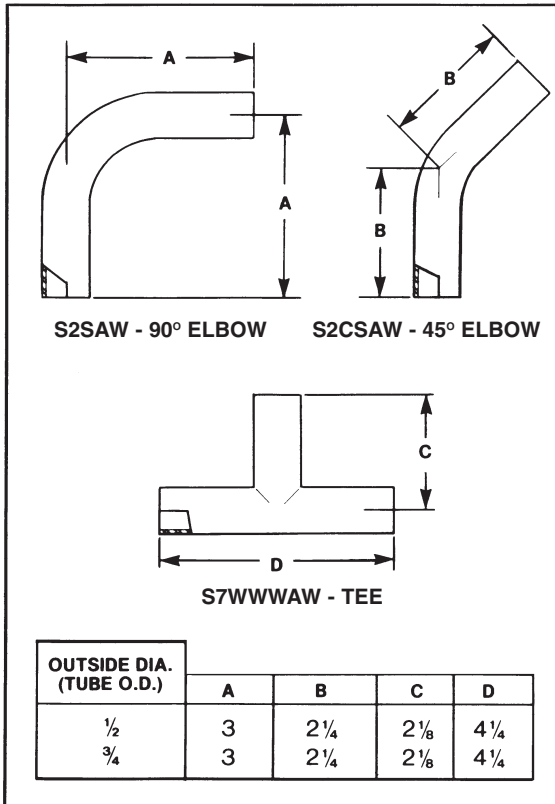


C31C CONCENTRIC REDUCER **C32C ECCENTRIC REDUCER**

SIZE (TUBE O.D.)	C31C	C32C
	A	B
3/4 x 1/2	2	2
1 x 1/2	2 1/2	2 1/2
1 x 3/4	2	2
1 1/2 x 1/2	3 1/2	3 1/2
1 1/2 x 3/4	3	3

Mini Automatic Weld Fittings

Resistaloy provides mini weld fittings for the latest fully automatic welding equipment. Available in many finishes. Special configurations upon request. Available in 316L Stainless.

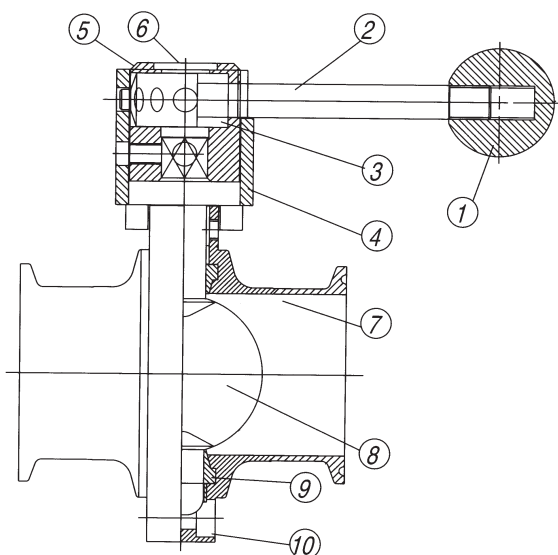


RAM-BALL C51CC Sanitary Butterfly Valves

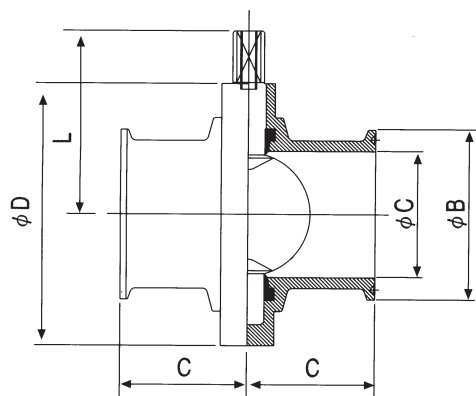


FEATURES:

4 POSITION PULL-LOCK HANDLE
180 DEGREE REVERSIBLE MOUNT
CLAMP CONNECTIONS STANDARD
OTHER CONNECTIONS ON REQUEST
AIR OR ELECTRIC OPERATORS AVAILABLE
ATTRACTIVE, FULLY MACHINED FINISH
TIGHT SHUTOFF TO 150 PSIG.



NO.	PART NO.
1	PLASTIC KNOB
2	ST 304
3	STAINLESS SPRING
4	ST 304 BONNET
5	ST 304 HOLDER
6	PLASTIC CAP
7	ST 304 OR 316 BODY
8	ST 304 OR 316 DISC
9	EPDM SEAT (STANDARD)
10	ST 304 SCREW



3A Clamp / Clamp Butterfly Valves

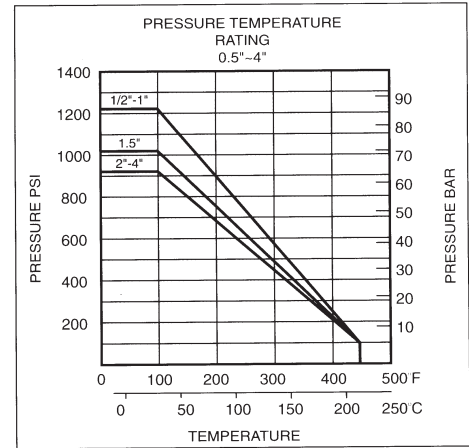
Size	A	B	C	D	L
1.0"	22.2	50.5	44.5	79	61
1.5"	34.9	50.5	44.5	85	64.3
2.0"	47.6	64.0	47.6	105	74.3
2.5"	60.3	77.5	48.4	112	77.6
3.0"	73.0	91.0	51.5	125	84.3
4.0"	97.6	119.0	51.5	157	101.6

NEW!

NOW STOCKED IN SIZES UP TO 6"

RAM-BALL 3006C Sanitary, Cavity Filled

3 PIECE BALL VALVES ISO MOUNTING PAD

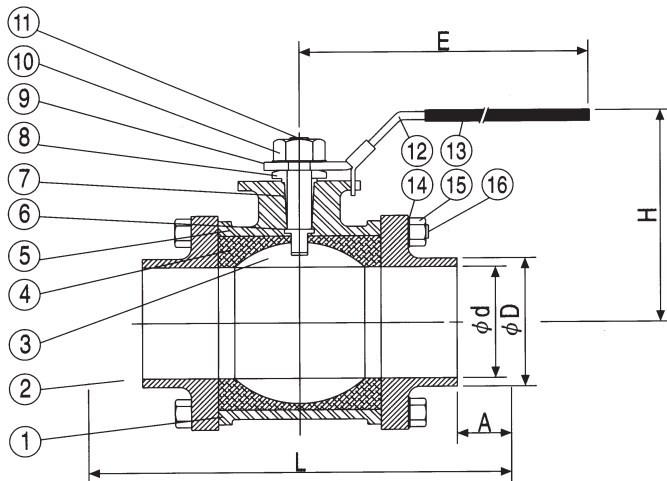


FEATURES:

LOCKING HANDLE STANDARD
STOCKED IN CLAMP ENDS
OTHER END CONNECTIONS AVAILABLE
1000 LBS W.O.G. WORKING PRESSURE
AIR OR ELECTRIC OPERATORS AVAILABLE

Size of Clamp & Weld End

Size	ϕD	ϕd	A	L	H	E
0.5"	12.7	9.5	20	89	52	100
3/4"	19.1	15.9	20	101	57	131
1"	25.4	22.2	20	114	60	131
1.5"	38.2	35.0	20	140	90	187
2"	50.8	47.6	20	156	102	187
2.5"	63.4	60.2	20	197	140	260
3"	76.2	73.0	20	229	155	260
4"	101.6	97.4	20	241	180	290



NO.	PARTS NAME	MATERIAL
1	Body	316
2	Cap	316
3	Ball	316
4	Seat	TEFLON
5	Body Seat	TEFLON
6	Thrust Washer	TEFLON
7	Stem Packing	TEFLON
8	Gland Nut	304
9	Stem	304
10	Stem Nut	304
11	Stem	304
12	Handle	304
13	Plastic Cover	Plastic
14	Bolt Washer	304
15	Nut	304
16	Bolt	304

ALSO AVAILABLE IN MULTI-PORT CONFIGURATIONS

NOTE: DIMENSIONS ARE SUBJECT TO CHANGE DEPENDING ON MANUFACTURER.

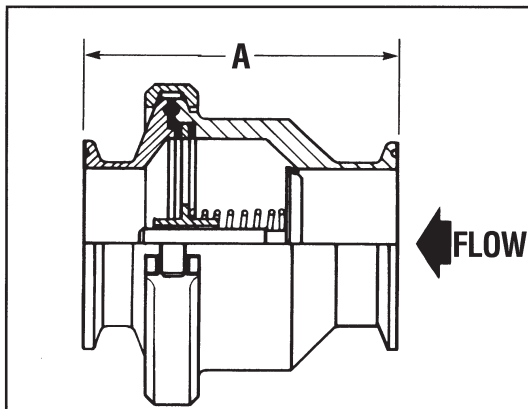
Concentric Check Valves



C45H - CHECK VALVE (3A) (DISC TYPE)

Concentric Check Valve Features

- Operating pressure to 150 psi
- Temperature to 225°F maximum
- Constructed with clamp type ends. Other ends available
- Available in 304 & 316
- Available with soft seat upon request



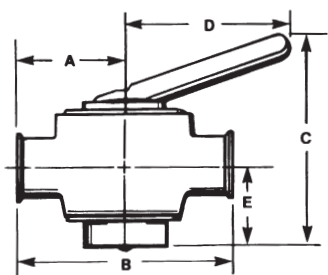
Note: Horizontal valve as shown. Remove spring to convert to vertical valve.

SIZE	A
1	4.00"
1 1/2	4.00"
2	4.00"
2 1/2	4.00"
3	4.00"
4	5.85"
6	8.00"

NOTE: DIMENSIONS ARE SUBJECT TO CHANGE DEPENDING ON MANUFACTURER.

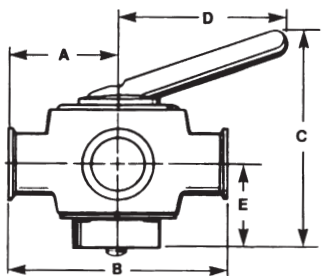
3A Plug Valves

C10C - 2-WAY PLUG VALVE CLAMP



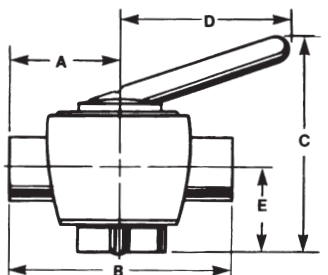
Size (Tube O.D.)	A	B	C	D	E
1	2 9/16	4 9/16	5 1/16	4 39/64	2 19/64
1 1/2	2 29/32	5 13/16	6 7/16	5 5/8	2 13/32
2	3 13/32	6 13/16	7 1/16	5 43/64	2 27/32
2 1/2	4 1/8	8 1/4	8 51/64	5 59/64	3 25/64
3	4 23/32	9 7/16	9 1/2	7 7/8	3 9/16

C11C - 3-WAY PLUG VALVE CLAMP



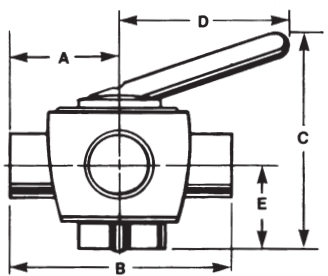
Size (Tube O.D.)	A	B	C	D	E
1	2 9/16	4 9/16	5 1/16	4 39/64	2 19/64
1 1/2	2 29/32	5 13/16	6 7/16	5 5/8	2 13/32
2	3 13/32	6 13/16	7 1/16	5 43/64	2 27/32
2 1/2	4 1/8	8 1/4	8 51/64	5 59/64	3 25/64
3	4 23/32	9 7/16	9 1/2	7 7/8	3 9/16

C10W - 2-WAY PLUG VALVE BUTT-WELD



Size (Tube O.D.)	A	B	C	D	E
1	3 5/8	7 1/4	5 1/16	4 39/64	2 19/64
1 1/2	2 29/32	7 13/16	6 7/16	5 5/8	2 13/32
2	4 13/32	8 13/16	7 1/64	5 43/64	2 27/32
2 1/2	5 1/8	10 1/4	8 51/64	5 59/64	3 25/64
3	5 23/32	11 7/16	9 1/2	7 1/8	3 9/16

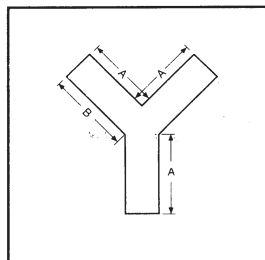
C11W - 3-WAY PLUG VALVE BUTT-WELD



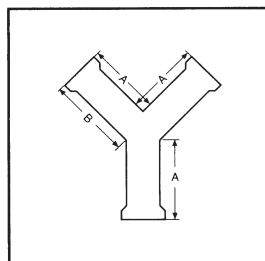
Size (Tube O.D.)	A	B	C	D	E
1	3 5/8	7 1/4	5 1/16	4 39/64	2 19/64
1 1/2	2 29/32	7 13/16	6 7/16	5 5/8	2 13/32
2	4 13/32	8 13/16	7 1/16	5 43/64	2 27/32
2 1/2	5 1/8	10 1/4	8 51/64	5 59/64	3 25/64
3	5 23/32	11 7/16	9 1/2	7 1/8	3 9/16

NOTE: ADD "R" FOR RUBBER PLUG.

Miscellaneous Fittings



B28Y TRUE "Y" 90° - WELD		
SIZE (TUBE O.D.)	A	B
1 1/2	2	2 7/16
2	2 5/8	3 1/4
2 1/2	3 3/8	4 1/8
3	4	4 7/8
4	5 3/8	6 9/16



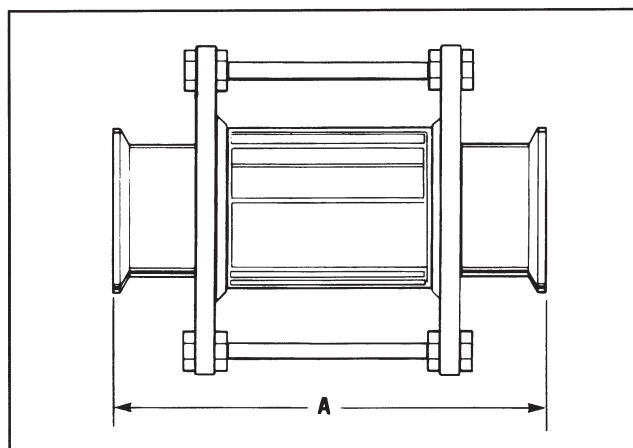
C28Y TRUE "Y" 90° - CLAMP		
SIZE (TUBE O.D.)	A	B
1 1/2	2 1/2	2 15/16
2	3 1/8	3 3/4
2 1/2	3 7/8	4 5/8
3	4 1/2	5 3/8
4	6	7 3/16

C50SG - IN-LINE SIGHT GLASSES

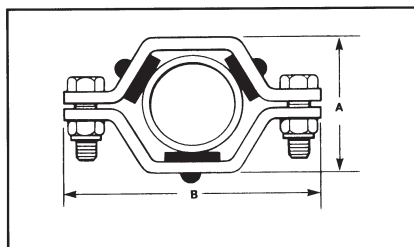
Fast, Continuous Inspection From All Angles

- Pyrex® Glass
- Available in types 304 and 316 S.S.
- Clamp Connections Standard - Also available with Bevel Seat and Weld configurations.
- Extra Safety Sight Glasses also available with clear acrylic protective shell.

SIZE (TUBE O.D.)	A
1	5 7/8
1 1/2	5 7/8
2	5 7/8
2 1/2	6 3/8
3	7 1/2
4	7 5/8

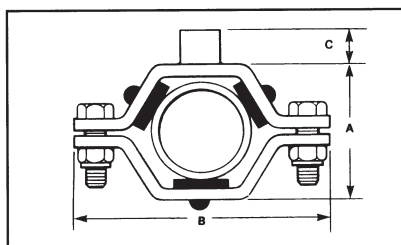


RESISTALLOY HANGERS ARE ALSO AVAILABLE WITH ONE-PIECE POLYPROPYLENE INSERTS.



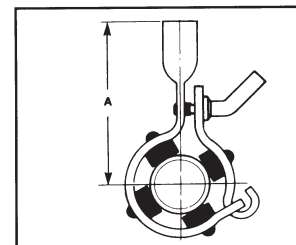
C24G Tubing Hanger

Size(Tube O.D.)	A	B
1/2	2 1/8	3 13/16
3/4	2 1/8	3 13/16
1	2 1/8	3 13/16
1 1/2	2 3/8	5
2	2 1/2	5
2 1/2	3 7/8	6 1/2
3	3 15/16	6 1/2
4	4 3/4	8 1/8
6	6 3/4	9



C24T Tubing Hanger (w/ 3/8" - 18NPT thread)

Size(Tube O.D.)	A	B	C
1/2	2 1/8	3 13/16	13/16
3/4	2 1/8	3 13/16	13/16
1	2 1/8	3 15/16	13/16
1 1/2	2 3/8	5	13/16
2	2 1/2	5	13/16
2 1/2	3 7/8	6 1/2	13/16
3	3 15/16	6 1/2	13/16
4	4 3/4	8 1/8	13/16
6	6 3/4	9	25/32

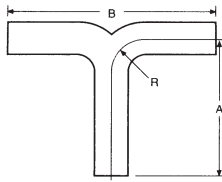


C24FCF Tubing Hanger

(w/ 3/8" - 18NPT thread)

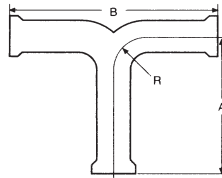
Size (Tube O.D.)	A
1	4 1/8
1 1/2	4 1/8
2	4 1/8
2 1/2	5
3	5
4	5 1/2

Miscellaneous Fittings (cont'd)



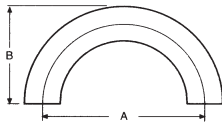
BSW LINE SPLITTER - WELD

SIZE (TUBE O.D.)	A	B	R
1 1/2	2 9/16	6 1/2	2 1/4
2	3 3/8	8	3
2 1/2	5 3/8	10 3/4	3 3/4
3	6	12	4 1/2
4	8	16	5 1/4



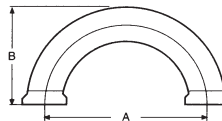
CSC LINE SPLITTER - CLAMP

SIZE (TUBE O.D.)	A	B	R
1 1/2	3 1/16	7 1/2	2 1/4
2	3 7/8	9	3
2 1/2	5 7/8	11 3/4	3 3/4
3	6 1/2	13	4 1/2
4	8 5/8	17 1/4	5 1/4



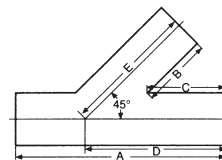
B2WU RETURN BENDS — 180° - WELD

SIZE (TUBE O.D.)	A	B
1	3	2
1 1/2	4 1/2	3 1/2
2	6	4
2 1/2	7 1/2	5
3	9	6
4	12	8



C2WUC RETURN BENDS — 180° - CLAMP

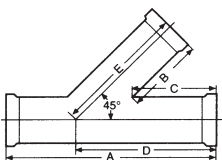
SIZE (TUBE O.D.)	A	B
1	3	2 1/2
1 1/2	4 1/2	4
2	6	4 1/2
2 1/2	7 1/2	5 1/2
3	9	6 1/2
4	12	8 5/8



B28W

LATERAL "Y" 45° - WELD

SIZE	A	B	C	D	E
1 1/2	4 1/2	2	1 1/4	3 1/16	3 13/16
2	5 5/8	2 5/8	1 7/8	4 5/16	5 1/16
2 1/2	6 7/8	3 3/8	2 3/8	5 3/8	6 3/8
3	8	4	2 13/16	6 13/32	7 19/32
4	10 3/8	5 3/8	3 13/16	8 11/16	10 3/16



C28C

LATERAL "Y" 45° - CLAMP

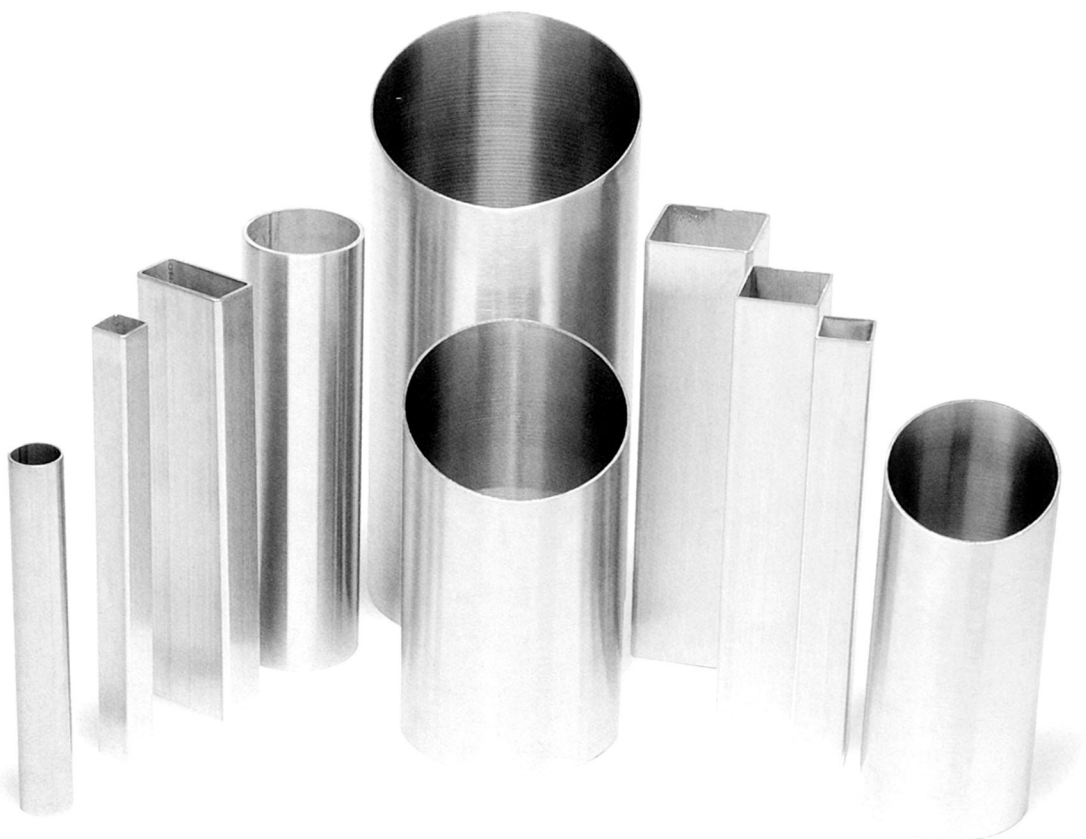
SIZE	A	B	C	D	E
1 1/2	5 1/2	2 1/2	1 3/4	3 9/16	4 5/16
2	6 5/8	3 1/8	2 3/8	4 13/16	5 9/16
2 1/2	7 7/8	3 7/8	2 7/8	5 7/8	6 7/8
3	9	4 1/2	3 7/16	6 29/32	8 3/32
4	11 5/8	6	4 7/16	9 5/16	10 13/16

ALSO AVAILABLE IN SIZES THROUGH 12" O.D.



RESISTALOY INC.

***STAINLESS PIPE, FITTINGS & VALVES.
TUYAU, RACCORDS, VALVES EN INOX.***



***Custom finishing and superior service
I.D. (inside diameter) and
O.D. (outside diameter) polishing
Electropolish Finishing
Hygienic Cleaning & Capping
Material provided or customer supplied***

INDUSTRIAL VALVES

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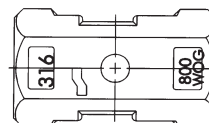
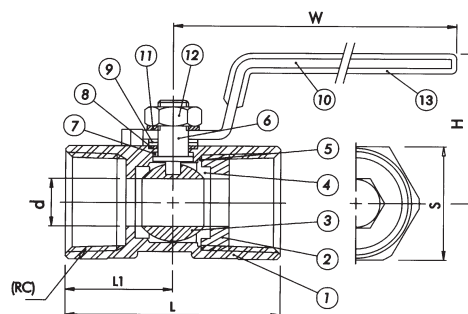
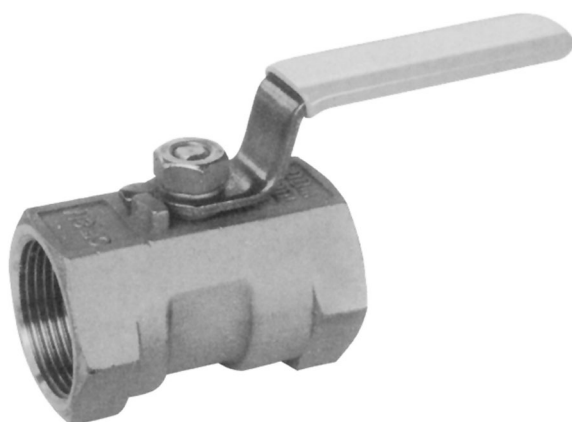
V-1 to V-5	Threaded Stainless Ball Valves
V-6	Threaded Shut-Off & Strainer
V-7	Threaded Piston & Swing Check
V-8	Threaded Gate & Globe Valves
V-9 to V-11	Flanged Full & Reduced Port Ball Valves
V-12 to V-13	Flanged Gate, Globe, Check & Strainer
V-14	Threaded Stainless Needle Valves
V-15	Wafer Style Butterfly Valves

**All dimensions shown herein are as per the factory data supplied to Resistaloy Inc. and are subject to change without notice.*

RAM-BALL #1006 1-Piece

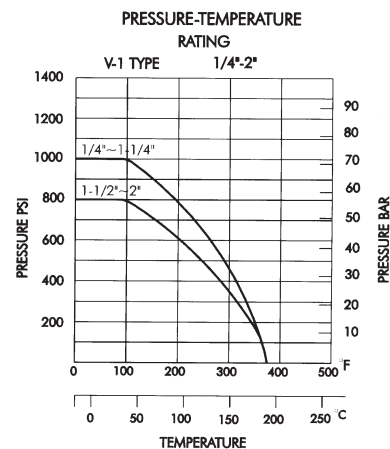
SIZE: 1/4" ~ 2" STAINLESS STEEL BALL VALVE SCREWED ENDS

FEATURES: * Pipe thread in accordance with ANSI B2.1, BS 21 1973, DIN 259/2999
 * Blow-out proof stem/Reduce bore
 * Investment casting body and inscrewed
 * 800 PSI (55 BAR) W.O.G./1000 PSI (69 BAR) W.O.G.
 * Material:ASTM-A351-CF8M, ASTM-A351-CF8



ITEM	NAME OF PARTS	QTY	MATERIALS	SPECIFICATION JIS SPEC.
1	BODY	1	STAINLESS STEEL	SUS316 OR SCS14A
2	INSERT	1	STAINLESS STEEL	SU5316 OR SCS14A
3	BALL	1	STAINLESS STEEL	SU5316
4	BALL SEAT	2	GIF+PTFE 15%	GIF+PTFE 15%
5	JOINT GASKET	1	PTFE	PTFE
6	STEM	1	STAINLESS STEEL	SU5316(1)
7	THRUST WASHER	1	PTFE	PTFE
8	STEM PACKING	1	PTFE	PTFE
9	STEM WASHER	2	STAINLESS STEEL	SU5304
10	HANDLE	1	STAINLESS STEEL	SU5304
11	SPRING WASHER	1	STAINLESS STEEL	SU5304
12	STEM NUT	1	STAINLESS STEEL	SU5304
13	PLASTIC COVER	1	PLASTIC	PLASTIC

NOMINAL SIZE (IPS)	d	L	L1	H	W	S	Cv FACTOR	TORQUE kgf-cm	kgs
1/4"	5	39	19	35	66	17	3.8	12	0.070
3/8"	7	44	21	36	74	21	4.0	12	0.102
1/2"	9.2	56.5	27.5	41	89	25	4.5	13	0.166
3/4"	12.5	59	30	44	89	32	9.0	20	0.247
1"	16	71	36	51	105	38	16.0	38	0.412
1-1/4"	20	78	39	56	105	48	24.0	50	0.672
1-1/2"	24.5	83	41.7	64	130	53	37.0	72	0.838
2"	32	100	50	71	130	65	68.0	90	1.384



RAM-BALL #2086 2-Piece

SIZE: 1/4" ~ 4" 1000 W.O.G. FULL PORT STAINLESS STEEL BALL VALVES AISI-316 (ASTM-A351-CF8M) IN STOCK AISI-304 (ASTM-A351-CF8) SPECIAL ORDER

FEATURES: * Pipe thread in accordance with ANSI B2.1, BS 21 1973, DIN 259/2999

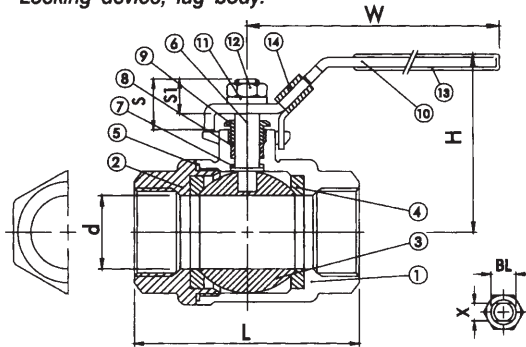
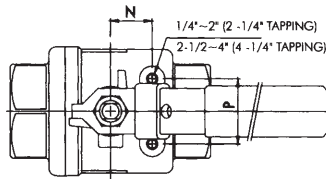
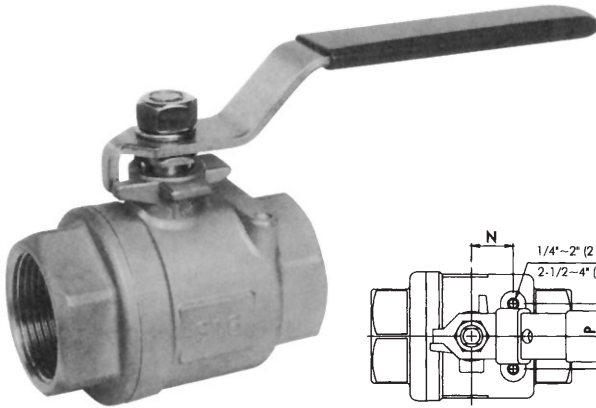
* With mounting pad

* Blow-out proof stem/Full port

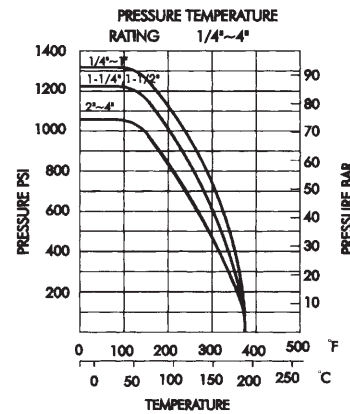
* Investment casting body and cap

* 1000 PSI (69 BAR) W.O.G.

* Locking device, lug body.



ITEM	NAME OF PARTS	QTY	MATERIALS
1	BODY	1	ASTM-A351-CF8M
2	CAP	1	ASTM-A351-CF8M
3	BALL	1	ASTM-A351-CF8M
4	BALL SEAT	2	15% R-PTFE
5	JOINT GASKET	1	PTFE
6	STEM	1	AISI 316
7	THRUST WASHER	1	PTFE
8	STEM PACKING	2	PTFE
9	GLAND NUT	1	AISI 304
10	HANDLE	1	AISI 304
11	SPRING WASHER	1	AISI 304
12	STEM NUT	1	AISI 304
13	PLASTIC COVER	1	PLASTIC



NOMINAL SIZE (IPS)	d	L	H	W	S	S1	X	N	P	BL	Cv FACTOR	TORQUE kgf-cm	kgs
14	LOCK DEVICE	1			AISI 304								
1/4"	11.6	49	51	105	16.5	10.2	5	12.5	28.5	5/16"	6.6	40	0.27
3/8"	12.7	49	51	105	16.5	10.2	5	12.5	28.5	5/16"	7.9	40	0.27
1/2"	15	57	53	105	16.5	10.2	5	12.5	28.5	5/16"	11.2	54	0.32
3/4"	20	65	59	125	20	13.5	6.5	21	34.8	3/8"	21	74	0.50
1"	25	78	73	160	23.5	16	8	22.5	34.8	7/16"	35	104	0.82
1-1/4"	32	90.5	78	160	23.5	16	8	23.5	38.1	7/16"	57	135	1.25
1-1/2"	38	105	91	190	25.5	17	9	23.5	38.1	1/2"	80	180	1.93
2"	50	127	99	190	25.5	17	9	23.5	38.1	1/2"	148	250	3.10
2-1/2"	65	160	130	245	41	29.5	12	35	56	3/4"	265	480	6.47
3"	80	187	142	245	41	29.5	12	35	56	3/4"	415	750	10.75

RAM-BALL #2306 2-Piece

SIZE: 1/4" ~ 2"

3000 W.O.G. 316 SS

FULL PORT NPT BALL VALVES

STAINLESS STEEL AISI 316

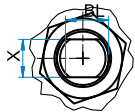


FEATURES:

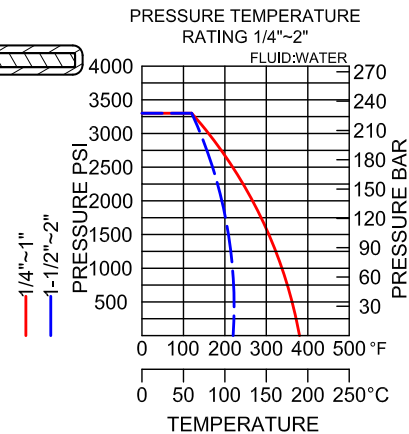
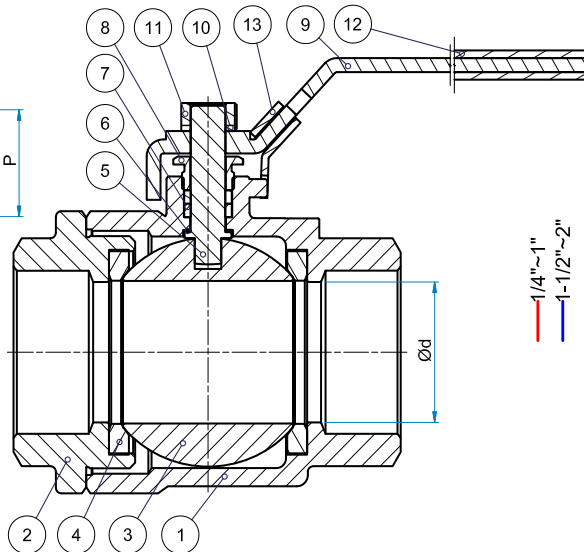
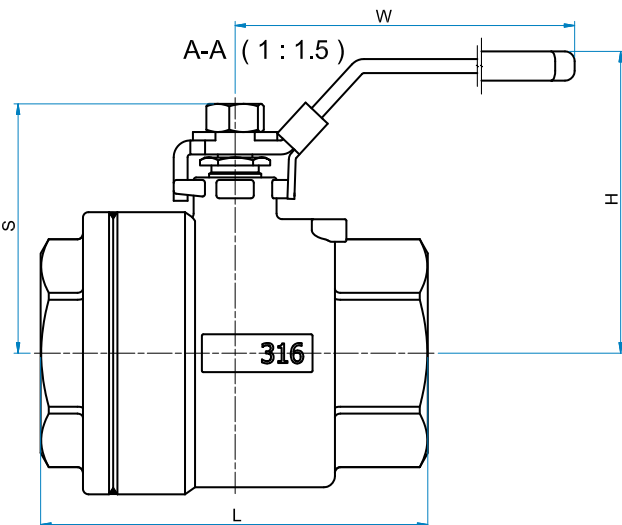
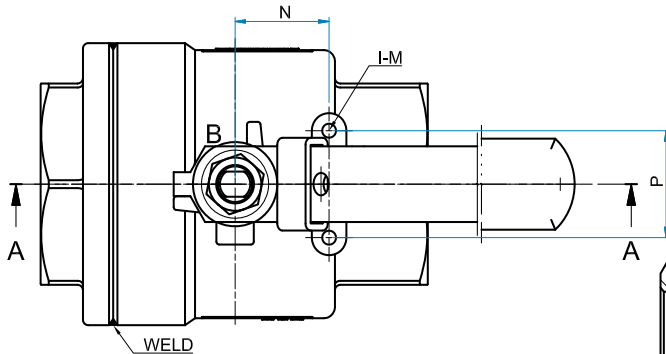
- Full port
- Welding between cap and body
- Pipe thread in accordance with ANSI B2.1, BS 21 1973
- Blow-out proof stem
- 3000 WOG(200 BAR)
- With mounting pad

OPTION:

- Locking device
- Drilled and tapped mounting pad



SIZE	Ød	L	H	W	N	S	P	I-M	X	BL	Cv FACTOR	TORQUE(Kgf-cm)
1/4"	11.6	60.5	58	95	12.5	42.4	28.5	2-1/4 20UNC	5	5/16"	6.6	46
3/8"	12.7	60.5	58	95	12.5	42.4	28.5	2-1/4 20UNC	5	5/16"	7.9	46
1/2"	15	62.5	58	95	12.5	42.5	28.5	2-1/4 20UNC	5	5/16"	11.2	54
3/4"	20	77	62.5	110	21	52.3	34.8	2-1/4 20UNC	6.5	3/8"	21	78
1"	25.4	90	77	135	22.5	63.1	34.8	2-1/4 20UNC	8	7/16"	35	106
1-1/4"	32	103	82	158	23.5	67.7	38.1	2-1/4 20UNC	8	7/16"	57	150
1-1/2"	38	120	98.5	253	23.5	78.9	38.1	2-1/4 20UNC	9	1/2"	80	200
2"	50.8	140	107.5	253	34	87.7	38.1	2-1/4 20UNC	9	1/2"	150	280

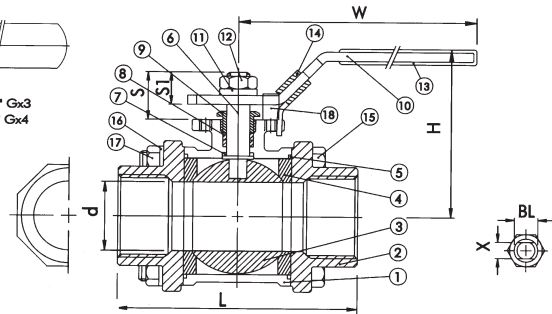
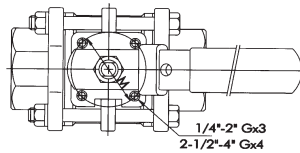
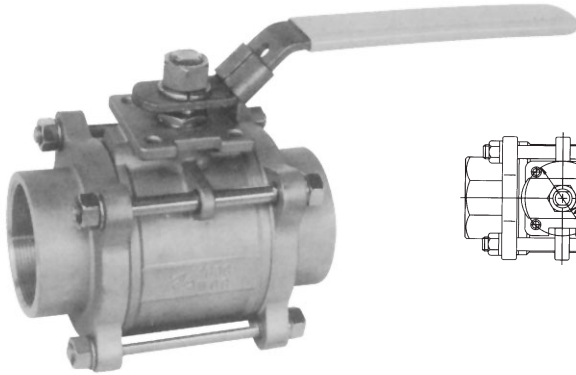


ITEM	PARTS	Q,TY	MATERIAL
1	BODY	1	ASTM-A351-CF8M
2	CAP	1	ASTM-A351-CF8M
3	BALL	1	ASTM-A351-CF8M
4	BALL SEAT	2	1/4"~1" R-PTFE 1-1/4"~2" PC-TFE
5	STEM	1	AISI 316
6	THRUST WASHER	1	R-PTFE
7	STEM PACKING	2	R-PTFE
8	GLAND NUT	1	AISI 304
9	HANDLE	1	AISI 430
10	STEM NUT	1	AISI 304
11	SPRING WASHER	1	AISI 304
12	PLASTIC COVER	1	PLASTIC
13	LOCK DEVICE	1	AISI 304

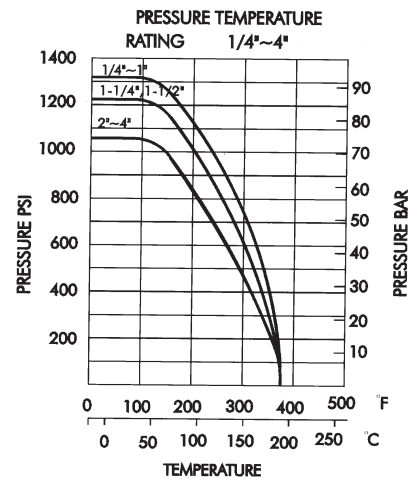
RAM-BALL #3006 3-Piece

SIZE: 1/4" ~ 4" 1000 W.O.G. 316 SS. FULL PORT NPT BALL VALVES STAINLESS STEEL AISI 316

- FEATURES:**
- * Pipe thread in accordance with ANSI B2.1, BS 21 1973, DIN 259/2999
 - * Locking device, Lug body.
 - * Blow-out proof stem/Full port
 - * Investment casting body and cap
 - * 1000 PSI (69 BAR) W.O.G
 - * Mounting Flanged for ISO Standard 5211
 - * Screwed end, butt weld end, socket weld end.
 - * Material: ASTM-A351-CF8M, ASTM-A351-CF8 & ASTM-A216-WCB



ITEM	NAME OF PARTS	QTY	MATERIALS
1	BODY	1	ASTM-A351-CF8M
2	CAP	2	ASTM-A351-CF8M
3	BALL	1	ASTM-A351-CF8M
4	BALL SEAT	2	15% R-PTFE
5	JOINT GASKET	2	15% R-PTFE
6	STEM	1	AISI 316
7	THRUST WASHER	1	PTFE
8	STEM PACKING	2	PTFE
9	GLAND NUT	1	AISI 304
10	HANDLE	1	AISI 304
11	STEM WASHER	1	AISI 304
12	STEM NUT	1	AISI 304
13	PLASTIC COVER	1	PLASTIC
14	LOCK DEVICE	1	AISI 304
15	BOLT	4(4"x6 SET)	AISI 304
16	SPRING WASHER	4(4"x6 SET)	AISI 304
17	HEX NUT	4(4"x6 SET)	AISI 304
18	STOP PIN	1	AISI 304

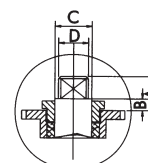
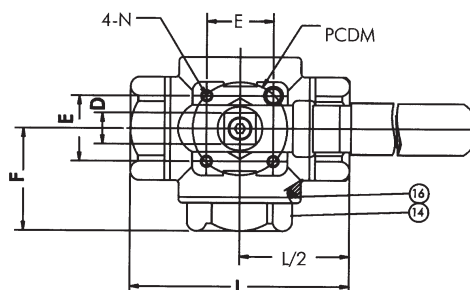


NOMINAL SIZE (IPS)	d	L	H	W	S	S1	X	BL	ISO M	5211 G	Cv FACTOR	TORQUE kgf-cm	kgs
1/4"	11.6	65	51	105	16.5	10.2	5	5/16"	36	M5	6.6	40	0.44
3/8"	12.7	65	51	105	16.5	10.2	5	5/16"	36	M5	7.9	40	0.43
1/2"	15	66	55	125	18.5	12.8	6.5	3/8"	36	M5	11.2	54	0.67
3/4"	20	81	60	125	20	13.5	6.5	3/8"	36	M5	21	78	0.88
1"	25	95	74	160	24	16	8	7/16"	42	M5	35	106	1.26
1-1/4"	32	109	80	160	24	16	8	7/16"	50	M6	57	150	2.04
1-1/2"	38	129	92	190	26	17	9	1/2"	50	M6	80	200	2.80
2"	50.8	150	101	190	26	17	9	1/2"	70	M8	150	280	4.29
2-1/2"	65	180	130	245	41	29.5	12	3/4"	70	M8	265	500	8.58
3"	80	206	142	245	41	29.5	12	3/4"	102	M10	415	770	14.15
4"	100	261	174	325	48	36.5	16	1"	102	M10	780	1100	25.18

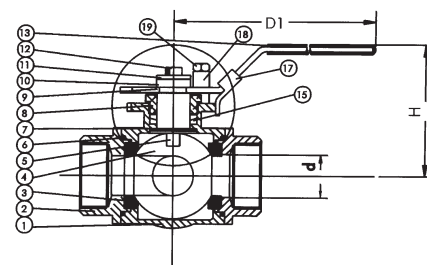
RAM-BALL 30T6 3-Way

SIZE: 1/4" ~ 2" 1000 W.O.G. 316 SS.
3-WAY, REDUCED PORT, NPT
STAINLESS STEEL BALL VALVES
WITH ISO MOUNTING PADS,
INVESTMENT CASTING

- FEATURES:**
- * Body & cap in ASTM A351-CF8M
 - * Trim in AISI 316
 - * Mounting pad for ISO 5211
 - * Anti-static device
 - * Blow-out proof stem, Lever operated.
 - * 1000 PSI (69 BAR) W.O.G.
 - * L port, T port

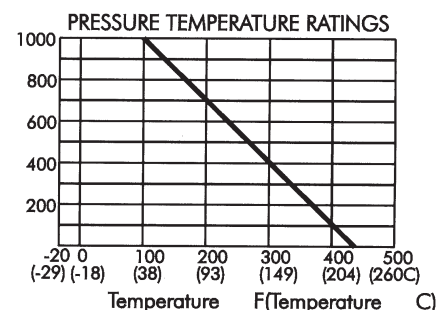


ITEM	PART	MATERIAL	QTY
1	BODY	ASTM A351 CF8M	1
2	END CAP	ASTM A351 CF8M	2
3	BALL SEAT	REINFORCED PTFE	4
4	BALL	ASTM A351 CF8M	1
5	STEM	AISI 316	1
6	END SEALS	REINFORCED PTFE	2
7	THRUST WASHER	REINFORCED PTFE	1
8	GLAND	AISI 304	1
9	HANDLE	AISI 304	1
10	HANDLE WASHER	AISI 304	1
11	WASHER	AISI 304	1
12	HANDLE NUT	AISI 304	1
13	HANDLE SLEEVE	PLASTIC	1
14	END CAP	ASTM A351 CF8M	1
15	STEM PACKING	REINFORCED PTFE	2
16	END SEALS	REINFORCED PTFE	1
17	LOCK	AISI 304	1
18	STOP RING	AISI 304	1
19	BOLT	AISI 304	1



PORT TYPE	1	2	3	4
L				
T				

NOMINAL SIZE	d	L	H	D1	A	B	C	D	E	F	M	N
1/4"	11.0	68	58	106	11	6	12	9	29.7	34	42	M5*0.8
3/8"	11.0	68	58	106	11	6	12	9	29.7	34	42	M5*0.8
1/2"	12.7	75	61	138	11	6	12	9	29.7	37.5	42	M5*0.8
3/4"	16.0	86	74	138	13	6	15	11	35.4	43	50	M6*1
1"	20.0	103	81	162	19	7.5	15	11	35.4	51.5	50	M6*1
1-1/4"	25.0	115	88	162	19	7.5	15	11	35.4	57.5	50	M6*1
1-1/2"	32.0	125	104	220	23.5	8.5	15	11	49.5	62.5	70	M8*1.25
2"	38.1	146	110	220	24.5	8.5	18.5	14	49.5	73	70	M8*1.25



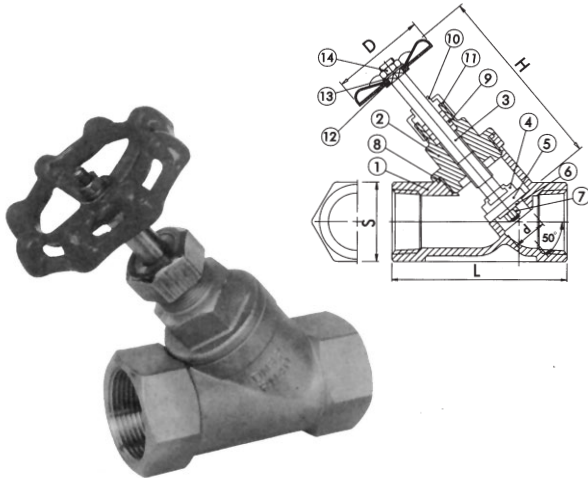
SHUT-OFF VALVE

SCREWED END

VT-S

TYPE SIZE: 1/4" ~ 2"

- FEATURES:**
- * Investment casting body.
 - * 300 PSI (20 BAR) W.O.G.
 - * Max. working temperature 230° C.
 - * The end-to-end length conforms to Din 3202 Part 4, M8 series. (PN40)
 - * Thread ends conform to ANSI B2.1, BS21, DIN 259/2999. standard.



ITEM	PARTS	MATERIAL
1	BODY	ASTM A351-CF8M
2	BONNET	ASTM A351-CF8M
3	STEM	AISI 316
4	DISC	AISI 316
5	SEAT	PTFE
6	WASHER	AISI 304
7	NUT	AISI 304
8	JOINT GASKET	PTFE
9	STEM PACKING	PTFE
10	GLAND	AISI 304
11	PACKING NUT	AISI 304
12	HANDWHEEL	MALLEABLE IRON
13	WASHER	AISI 304
14	NUT	AISI 304

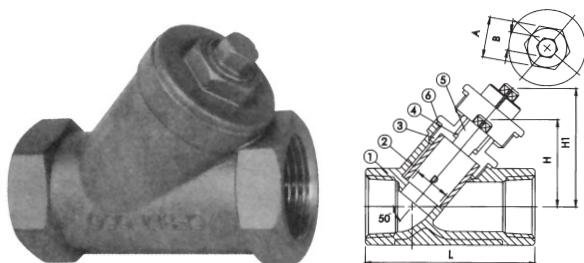
SIZE	d	L	S	H	D
1/4"	11.6	65.5	27	97	62
3/8"	12.5	65.5	27	97	62
1/2"	12.5	65.5	27	97	62
3/4"	18.0	75.5	32	110	62
1"	23.5	90.5	41	117	83
1-1/4"	31.4	111	50	138	83
1-1/2"	35.7	121	55.5	150	114
2"	45.5	151	70	168	114

Y-STRAINER

SCREWED END

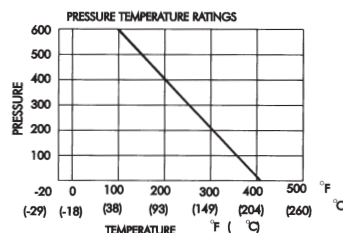
YS-600 TYPE SIZE: 1/4" ~ 2"

- FEATURES:**
- * Investment casting body,
 - * Max. Pressure 300PSI (20 BAR) W.O.G.
 - * Maximum working temperature 230° C.
 - * The end-to-end length conforms to Din 3202, Part 4, M8 series. (PN16, PN40)
 - * Thread ends conform to ANSI B2.1, BS21 DIN259/2999 standard



ITEM	PARTS	MATERIAL
1	BODY	ASTM-A351-CF8M
2	SCREEN	ASTM-A351 -CF8M
3	BONNET	ASTM-A351-CF8M
4	PACKING	PTFE
S	PLUG	AISI 316
6	JOINT GASKET	PTFE

SIZE	D	L	H	H1	A	B
1/4"	10.0	57	35	45	16	8
3/8"	10.0	57	35	45	16	8
1/2"	15.0	60	38	51	16	8
3/4"	20.0	69	42	55	16	8
1"	25.0	85	50	66	20.7	10
1-1/4"	32.0	99	55	73	25	12
1-1/2"	38.0	111	59	80	25	12
2"	51.0	137	73	100	32	12
2-1/2"	65.0	172	91	153	38	15
3"	80.0	205	110	173	38	15



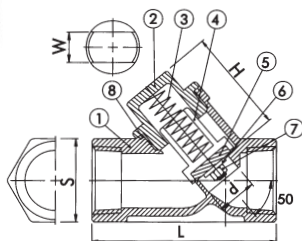
VARIOUS MESHES AVAILABLE.

PISTON CHECK VALVE

SCREWED END

PC-300 TYPE SIZE: 1/4" ~ 2"

- FEATURES:**
- * Investment casting body & cap.
 - * 300 PSI (20 BAR) W.O.G. rating.
 - * Maximum working temperature 230°C.
 - * The end-to-end length conforms to Din 3202. Part 4. M8 series. (PN40)
 - * Thread ends conform to ANSI B2.1, BS2.1, DIN 259/2999 STANDARD



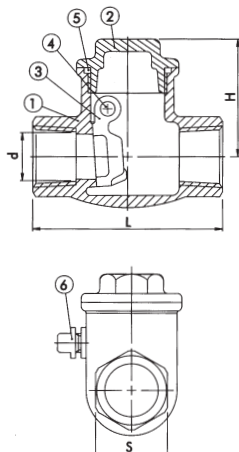
ITEM	PARTS	MATERIALS
1	BODY	ASTM-A351-CF8M
2	CAP	ASTM-A351-CF8M
3	SPRING	AISI 316
4	DISC	AISI 316
5	SEAT	PTFE
6	WASHER	AISI 304
7	NUT	AISI 304
8	JOINT GASKET	PTFE

SIZE	d	L	S	H	W
1/4"	11.6	65.5	27	38	24
3/8"	12.5	65.5	27	38	24
1/2"	12.5	65.5	27	36	24
3/4"	18	75.5	32	44	30
1"	23.5	90.5	41	57	35
1-1/4"	31.4	111	50	64	40
1-1/2"	35.7	121	55.5	76	45
2"	45.5	151	70	87	55

CLASS 200 SWING CHECK VALVE SCREWED END

SC-300 TYPE SIZE: 1/2" ~ 2"

Full port pressure temperature rating 200 PSI W.O.G.
350°F S.P. threaded ends conform to ANSI B 2.1, BS 21,
DIN 259/2999, Stainless steel class 200 screwed cap,
swing type disc, integral seat.



ITEM	PARTS	MATERIALS
1	BODY	ASTM-A351-CF8M
2	CAP	ASTM-A351-CF8M
3	DISC	AISI 316
4	HINGE PIN	AISI 316
5	PACKING	PTFE

SIZE	d	L	S	W
1/4"	10	65	27	45
3/8"	12	65	27	45
1/2"	15	65	27	45
3/4"	20	80	34	55
1"	25	90	40	58
1-1/4"	32	105	50	62
1-1/2"	40	120	57	75
2"	50	140	70	78

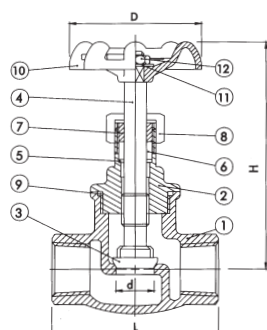
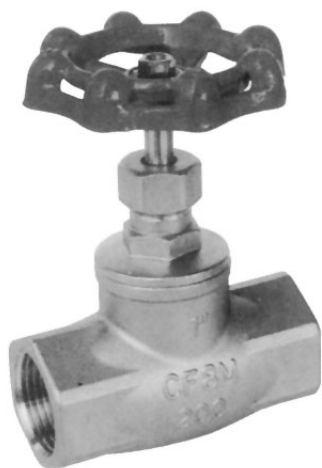
CLASS 200 GLOBE VALVE

SCREWED END

GB-100 TYPE SIZE: 1/2" ~ 2"

Full port pressure temperature rating 200 PSI W.O.G.
350°F S.P. threaded ends conform to ANSI B 2.1, BS 21,
DIN 259/2999

Stainless steel class 200 inside screw and screwed bonnet,
swivel disc integral seat, rising stem and handwheel.



ITEM	PARTS	MATERIALS
1	BODY	ASTM-A351-CF8M
2	BONNET	ASTM-A351-CF8M
3	DISC	AISI 316
4	STEM	AISI 316
5	RETAINER RING	AISI 316
6	PACKING	PTFE
7	GLAND	AISI 316
8	PACKING NUT	ASTM-A351-CF8M
9	PACKING	PTFE
10	HAND WHEEL	CAST IRON
11	PLATE	ALUMINUM
12	WHEEL NUT	AISI 316

SIZE	d	L	H OPEN	D
1/4"	10	52	102	60
3/8"	12	52	102	60
1/2"	15	52	102	60
3/4"	20	60	113	70
1"	25	72	123	70
1-1/4"	32	80	148	80
1-1/2"	40	90	160	90
2"	50	106	180	100

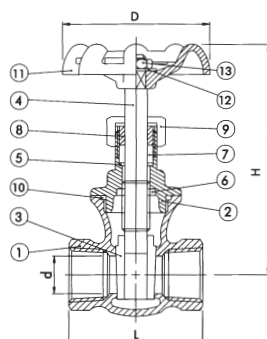
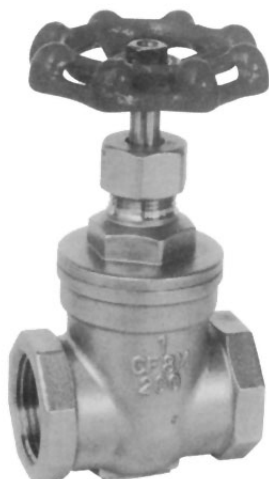
CLASS 200 GATE VALVE

SCREWED END

GT-200 TYPE SIZE: 1/2" ~ 2"

Full port pressure temperature rating 200 PSI W.O.G.
350°F S.P. threaded ends conform to ANSI B 2.1, BS 21,
DIN 259/2999

Stainless steel class 200 inside screw and screwed
bonnet, wedge disc integral seats, non-rising stem and
handwheel.



ITEM	PARTS	MATERIALS
1	BODY	ASTM-CF8M-A351
2	BONNET	ASTM-CF8M-A351
3	DISC	ASTM-CF8M-A351
4	STEM	AISI 316
5	STEM WASHER	AISI 316
6	SNAP WASHER	AISI 316
7	PACKING	PTFE
8	GLAND	AISI 316
9	PACKING NUT	ASTM-CF8M-A351
10	PACKING	PTFE
11	HAND WHEEL	CAST IRON
12	PLATE	
13	WHEEL NUT	AISI 316

SIZE	d	L	H OPEN	D
1/2"	15	54	93	60
3/4"	20	58	103	70
1"	25	65	112	70
1-1/4"	32	74	125	80
1-1/2"	40	78	145	90
2"	50	87	170	100

1-PIECE FLANGED END STANDARD PORT BALL VALVE

V-1F TYPE

SIZE: 1/2" ~ 6"

**1-PC STAINLESS STEEL
FLANGED BALL VALVES
WITH MOUNTING PAD ISO 5211
ANSI 150 LB**



STANDARD

DESIGN: BS 5351

FACE TO FACE: ANSI B16.10

FLANGE DIMENSIONS: ANSI B16.5

TESTING: API 598

APPLICATION

FOR GENERAL CHEMICAL AND INDUSTRIAL SERVICES

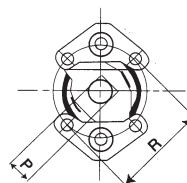
PRESSURE-TEMPERATURE RATING: ANSI B16.34

SPECIFICATION

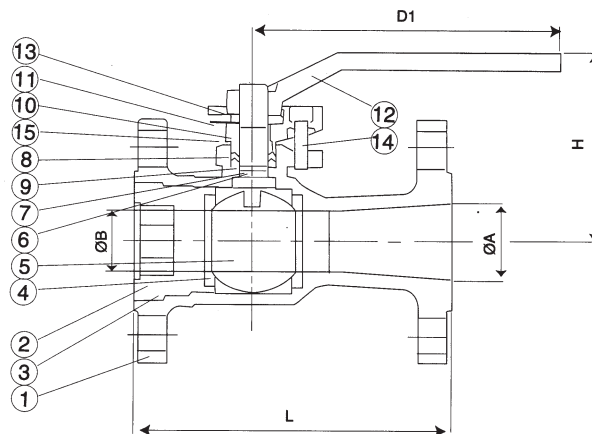
FIRE-SAFE DESIGN

BODY MATERIAL: CF8M, CF8, CF3M

ITEM	PART NAME	MATERIALS
1	BODY	ASTM A351 CF8M
2	INSERT	ASTM A351 CF8M
3	GASKET	PTFE
4	SEAT	PTFE
5	BALL	ASTM A351 CF8M
6	THRUST WASHER	PTFE
7	STEM	S.S. 316
8	PACKING	PTFE
9	WASHER	S.S. 304
10	GLAND	ASTM A351 CF8
11	STOPPER	S.S. 304
12	HANDLE	FCD45
13	SNAP RING	S.S. 304
14	GLAND BOLT	ASTM A193-B8
15	GLAND BUSH	PTFE



SIZE		A	B	L	D1	H	P	R
INCH	mm							
1/2"	15	15	12.7	108	125	70	10	42
3/4"	20	20	16	117	125	73	10	42
1"	25	25	20	127	125	76	10	42
1-1/2"	40	40	32	165	145	91	12	50
2"	50	50	40	178	230	119	17	70
2 1/2"	65	65	50	190	230	127	17	70
3"	80	80	65	203	400	157	22	102
4"	100	100	76	229	400	175	22	102
6"	150	150	125	268	460	243	27	125



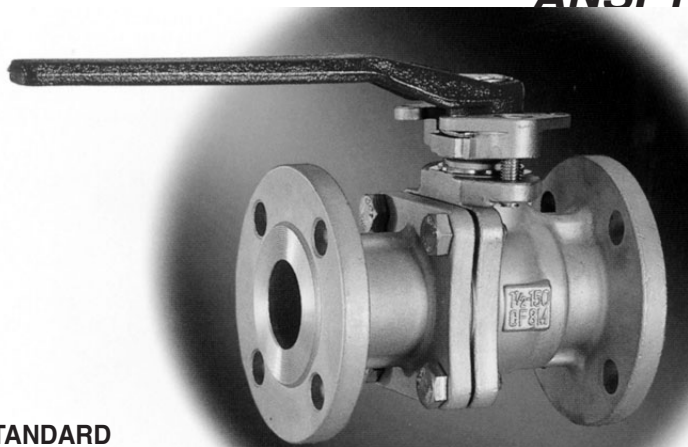
2-PIECE FLANGED END FULL PORT BALL VALVE

V-2F TYPE 2-PC STAINLESS STEEL FLANGED BALL VALVES

SIZE: 1/2" ~ 10"

WITH MOUNTING PAD ISO 5211

ANSI 150/300 LB / JIS 10K / DIN PN16



STANDARD

DESIGN: BS 5351

FACE TO FACE: ANSI B16.10/JIS B2002/DIN PN16 3202 F4/F5

FLANGE DIMENSIONS: ANSI B16.5/JIS B2210/DIN 2633 PN16

TESTING: API 598

APPLICATION

FOR GENERAL CHEMICAL AND INDUSTRIAL SERVICES

PRESSURE-TEMPERATURE RATING: ANSI B16.34/JIS B2201

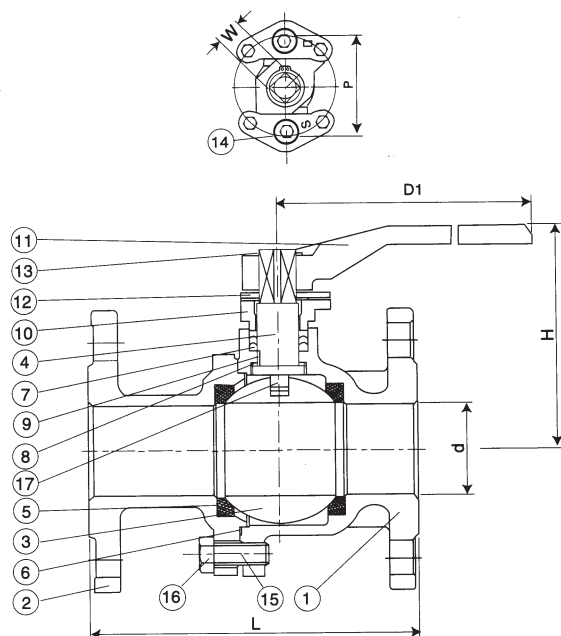
SPECIFICATION

FIRE-SAFE DESIGN

BODY MATERIAL: CF8M, CF8, CF3M

ITEM	PART NAME	MATERIALS	QTY
1	BODY	ASTM A351 CF8M	1
2	CAP	ASTM A351 CF8M	1
3	BALL	ASTM A351 CF8M	1
4	STEM	ASTM A276-316	1
5	SEATS	PTFE	2
6	GASKET	PTFE	1 SET
7	STEM PACKING	PTFE	1
8	THRUST WASHER	PTFE	1
9	BEARING	PTFE	1
10	GLAND FLANGE	ASTM A351 CF8	1
11	HANDLE	FCD45	1
12	STOP PLATE	S.S. 304	1
13	SNAP RING	S.S. 304	1
14	GLAND BOLT	ASTM A193-B8	2-4
15	BOLT	ASTM A193-B8	4-12
16	NUT	ASTM A194-8	4-12
17*	STATIC SPRING	S.S. 304	1-2

SIZE	mm	L			H	D1	P	W
		150 LB/JIS 10K	300 LB	PN 16				
1/2"	15	108	140	115	82	125	42	10
3/4"	20	117	152	120	85	125	42	10
1"	25	127	165	125	94	145	50	12
1 1/4"	32	140	178	130	100	145	50	12
1 1/2"	40	165	190	140	115	230	70	17
2"	50	178	216	150	120	230	70	17
2 1/2"	65	190	241	170	155	400	102	20
3"	80	203	282	180	165	400	102	20
4"	100	229	305	190	200	460	102	27
5"	125	356	-	325	220	460	102	27
6"	150	394	403	350	255	800	125	32
8"	200	457	502	400	300	1000	140	36
10"	250	533	-	450	360	1000	165	36



3-PIECE FLANGED END FULL PORT BALL VALVE

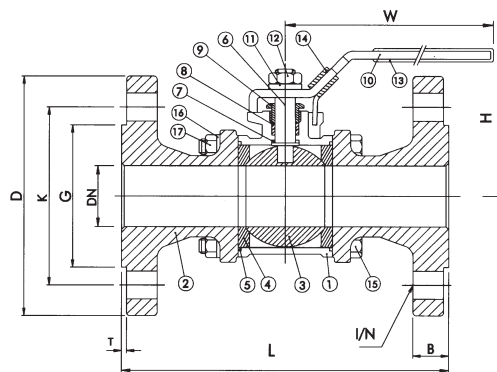
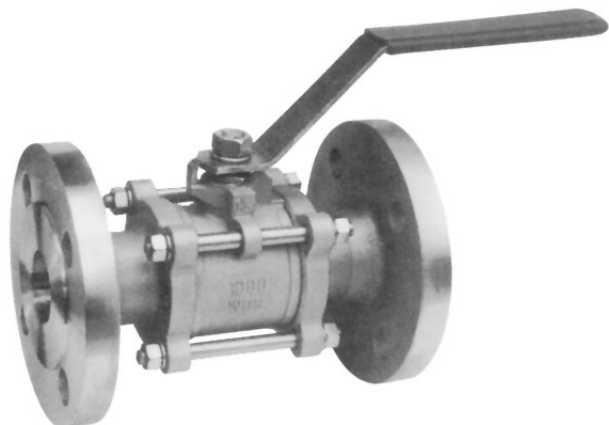
V-3F TYPE

3-PIECE FLANGED END BALL VALVE
ACC. TO ANSI-CLASS 150, DIN PN 16 / PN 40

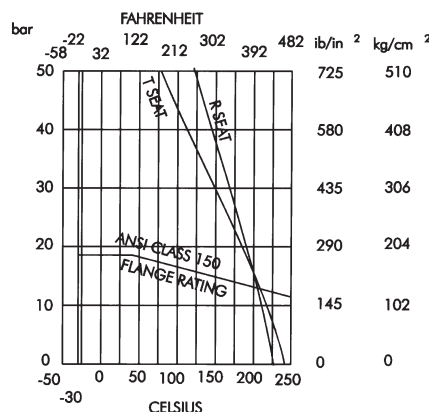
STAINLESS STEEL AISI 316

SIZE: 1/2" ~ 4"

- FEATURES:**
- * Face-to-face ANSI 16.1
 - * Locking device, lug body
 - * Blow-out proof system
 - * Investment casting body and cap
 - * Material: ASTM-A351-CF8M & ASTM-A351-CF8



ITEM	PARTS	QTY	MATERIALS
1	BODY	1	ASTM-A351-CF8M
2	FLANGED END CAP	2	ASTM-A351-CF8M
3	BALL	1	ASTM-A351-CF8M
4	BALL SEATS	2	15% R-PTFE
5	JOINT GASKET	2	15% R-PTFE
6	STEM	1	AISI 316
7	THRUST WASHER	1	PTFE
8	STEM PACKING	2	PTFE
9	GLAND NUT	1	AISI 304
10	HANDLE	1	AISI 304
11	STEM WASHER	1	AISI 304
12	STEM NUT	1	AISI 304
13	PLASTIC COVER	1	PLASTIC
14	LOCK DEVICE	1	AISI 304
15	BOLT	4	AISI 304
16	SPRING WASHER	4	AISI 304
17	HEX NUT	4	AISI 304



SIZE		L		ANSI-150					T	H	W	CV FAC- TOR	TORO UE kgf-cm	kgs
INCH	mm	F1	ANSI 150	D	K	G	B	I/N						
1/2	15	130	108	89	60.5	35	11.2	16/4	2	79	160	11.2	54	2.10
Cv	20	150	117	98	70	43	12.7	16/4	2	84	160	21	78	3.10
1	25	160	127	108	79.5	51	14.3	16/4	2	100	185	35	106	4.10
1 Zw	32	180	140	117	89	64	15.9	16/4	2	105	185	57	150	6.00
1 1/2	40	200	165	127	98.5	73	17.5	16/4	3	115	220	80	200	7.40
2	50	230	178	152	120.5	92	19.1	19/4	3	124	220	150	280	10.50
2 1/2	65	290	190	178	139.5	105	22.3	19/4	3	165	305	265	510	16.40
3	80	310	203	190	152.5	127	23.9	19/4	3	177	305	415	780	24.00
4	100	350	229	229	190.5	157	23.9	19/8	3	203	330	780	1130	33.00

GATE VALVE ANSI CLASS 150

V-GAF TYPE GATE VALVE FLANGED END, CLASS 150 LBS, STAINLESS

SIZE: 1/2" ~ 12"



APPLICABLE CLASS

150 STANDARDS:

Steel Valves, ANSI B16.34

Face to Face, ANSI B16.10

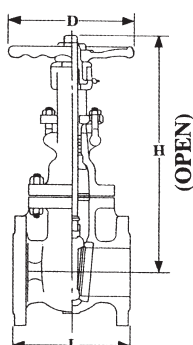
End Flanges, ANSI B16.5

TEST PRESSURE:

Shell (by Hydraulic), 450psig

Seat (by Hydraulic), 315psig

(by Pneumatic), 60-100psig



DESIGN DESCRIPTION:

Bolted Bonnet
Outside Screw and Yoke
Flexible Wedge, FOR 2 1/2"-12"

Rising Stem and
Non-Rising Handwheel
Flanged Ends

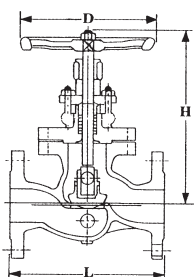
PARTS NAME	MATERIALS
BODY	ASTM-A351-CF8M
BONNET	ASTM-A351 -CF8M
STEM	AISI 316
DISC	ASTM-A351 -CF8M
SEAT RING	WELDED S.S.304
GLAND	A276-316
GLAND PACKING	PTFE (GRAFOIL)
GLAND FLANGE	ASTM-A351-CF8M
HANDWHEEL	DUCTILE IRON
GASKET	PTFE/ASBESTOS
BONNET BOLT/NUT	ASTM A194-B8
GLAND BOLT/NUT	ASTM A194-B8
BONNET BUSH	ASIS-410
YOKE SLEEVE	BRONZE

SIZE	IN	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"
	mm	15	20	25	40	50	65	80	100	125	150	200	250	300
L END TO END		108	117	127	165	178	190	203	229	254	267	292	330	356
H HEIGHT		185	210	220	270	320	380	445	523	606	710	920	1117	1324
D HANDLE		190	90	100	140	160	180	200	225	250	250	300	350	400

ACC. TO ANSI B16.10 FACE ANSI B 16.5 SPECIFICATION

GLOBE VALVE ANSI CLASS 150

SIZE: 1/2" ~ 12"



DESIGN DESCRIPTION:

Bolted Bonnet
Outside Screw and Yoke
Rising Stem and Handwheel
Yoke Integral with Bonnet
Renewable Seat Ring, Loose Disc
Flanged Ends

APPLICABLE CLASS 150

STANDARDS:

ANSI B16.34

Face to face, ANSI B16.10

End Flanges, ANSI B16.5

TEST PRESSURE:

Shell (By Hydraulic) 450psi

Seat (By Hydraulic) 315psi

(By Pneumatic) 60-100psi

PARTS NAME	MATERIALS
BODY	ASTM-A351-CF8M
BONNET	ASTM-A351-CF8M
STEM	AISI-316
DISC	ASTM-A351-CF8M
GLAND	ASTM-A351-CF8M
GLAND PACKING	PTFE/GRAFOIL
GLAND FLANGE	ASTM-A351-CF8M
HANDWHEEL	DUCTILE IRON
GASKET	PTFE/ASBESTOS
BONNET BOLT/NUT	ASTM A194-B8
GLAND BOLT/NUT	ASTM A194-B8
YOKE BUSH	BRONZE

SIZE	INCH	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"
	mm	15	20	25	40	50	65	80	100	125	150	200	250	300
L END TO END		108	117	127	165	203	216	241	292	356	406	495	622	698
H HEIGHT		185	195	205	240	250	270	290	350	410	520	570	670	736
D HANDLE		90	90	100	140	160	180	200	225	250	300	350	400	500

CHECK VALVE ANSI CLASS 150

V-WCF TYPE

SIZE: 1/2" ~ 12"

SWING CHECK VALVE, FLANGED END. 150 LBS STAINLESS STEEL AND

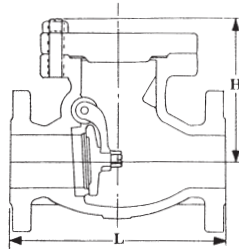


APPLICABLE CLASS 150 STANDARDS:

Steel Valves, ANSI B16.34
Face to Face, ANSI B16.10
End Flanges, ANSI B16.5

TEST PRESSURE:

Shell (by Water), 450psig
Seat (by Water), 315psig
(by Air), 60-100psig



DESIGN DESCRIPTION:

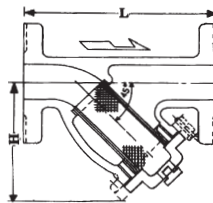
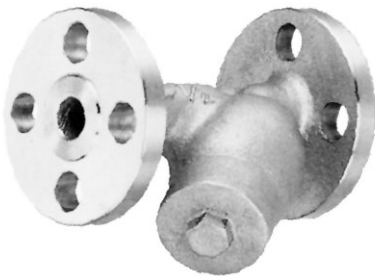
Bolted Bonnet
For Horizontal or Vertical Lines
Swing Type
Renewable Seat Ring
Flanged Ends

PARTS NUMBER	MATERIALS
BODY	ASTM-A351-CF8M
COVER	ASTM-A351-CF8M
DISC	ASTM-A351 -CF8M
DISC NUT	AISI 316
SEAT RING	
COVER BOLT/NUT	S.S.304
ARM	ASTM-A351-CF8M
GASKET	
PLUG	AISI 316

SIZE	INCH mm	1/2	Cv	1	1 1/2	2	2 1/2	3	4	5	6	8	10	12
		15	20	25	40	50	65	80	100	125	150	200	250	300
L END TO END		112	125	135	165	203	216	241	292	330	356	495	622	699
H HEIGHT		70	70	75	95	110	120	120	160	170	185	250	340	376

Y-TYPE STRAINER ANSI CLASS 150 STRAINER FULL PORT FLANGED END CAST STAINLESS STEEL

SIZE: 1/2" ~ 12"



ANSI B16.34

Face to Face, ANSI B16.10
End Flanges, ANSI B16.5
Various Meshes Available

Test Pressure

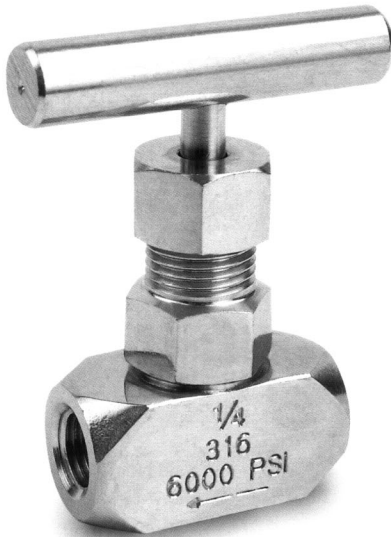
Shell (By Hydraulic) 450psi
Seat (By Hydraulic) 315 psi
Seat (By Hydraulic) 60-100 psi

NO	PARTS NAME	SUS 316	SUS 304
1	BODY	A351-CF8M	A351-CF8
2	COVER	A351-CF8M	A351-CF8
3	GASKET	ASBESTOS	ASBESTOS
4	SCREEN	AISI 316	AISI 304
5	BOLT & NUT	AISI 304	AISI 304
6	DRAIN PLUG	AISI 316	AISI 304

SIZE	INCH mm	1/2"	1/2"	1"	1 1/2"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"
		15	20	25	32	40	50	65	80	100	125	150	200	250	300
D		89	98	108	117	127	152	178	190	229	254	279	343	406	483
L		160	160	190	210	220	250	300	320	380	480	550	600	760	870
H		100	100	110	140	140	170	190	210	260	310	380	450	550	690

VT-ND NEEDLE VALVE S.S.316/6000 LBS

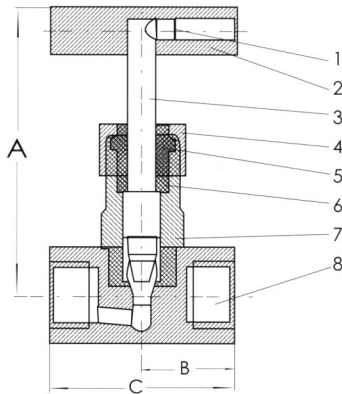
SIZE: 1/8"~1"



- ▲Investment Casting
- ▲Screwed-In Bonnet
- ▲Rising Stem
- ▲T Handle Operation
- ▲Conneting Threads:
ANSI B2.1
BS21
DIN
- ▲Working Pressure:6000psi

MATERIAL

NO	PARTS NAME	SPECIFCATION	Q,TY
1	SET SCREW	SS304	1
2	HANDLE	SS410	1
3	STEM	SS316	1
4	GLAND NUT	SS304	1
5	GLAND UNT	SS304	1
6	PACKING	TEFLON	1SET
7	BONNET	ASTM-A351-CF8M	1
8	BODY	ASTM-A351-CF8M	1



DIMENSIONS(mm)

SIZE	A	B	C
1/8"	75	29	58
1/4"	75	29	58
3/8"	75	29	58
1/2"	87	32.5	65
3/4"	90	35	70
1"	103	40	80

RAM-BALL BUTTERFLY VALVES

***NEW!* RESISTALOY NOW OFFERS A RANGE OF WAFER TYPE BUTTERFLY VALVES WITH 316 STAINLESS STEM & DISC AND WITH EPDM SEATS**

**THESE VALVES ARE AVAILABLE IN SIZES FROM 1.5"
TO 8" FROM STOCK AT GREAT PRICES!**



FEATURES:

WAFER AND LUG TYPE BODY.

CAST IRON BODY EXTENDED NECK.

CONFORMS TO MSS SP-67, SP25, AP1-609.

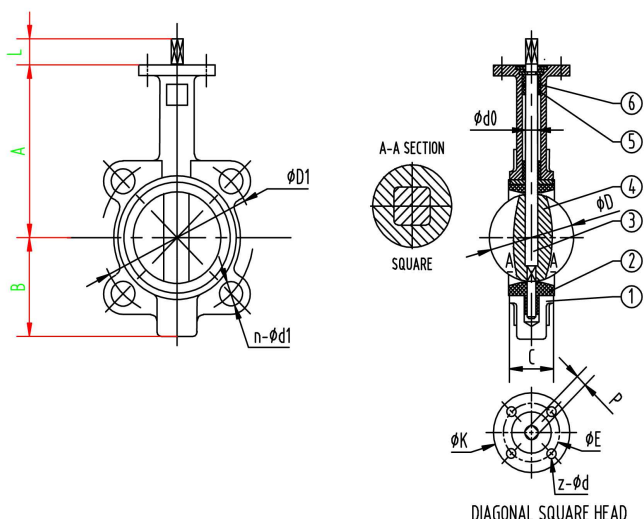
MAXIMUM PRESSURE 200 PSI.

2-DIRECTIONAL FLOW PATTERN.

EPDM SEATS STANDARD.

Concentric Butterfly Valve

WAFER TYPE



STANDARD MATERIALS OF MAIN PARTS

ITEM	PART NAME	MATERIAL
1	Body	Cast Iron, Ductile Iron, Stainless Steel
2	Seat	EPDM,NBR,Viton
3	Shaft	Stainless Steel 416,304,316
4	Disc	DI-NI,CF8,CF8M
5	Bushing	PTFE
6	O Ring	NBR

DIMENSIONS

SIZE		A	B	C	D	L	d0	P	UPPER FLANGE			ANSI 150		DIN PN10	
in	DN								K	E	z-d	D1	n-d1	D1	n-d1
2	50	161	80	42	52.6	32	14.3	11	90	70	4-9	120.5	4-19	125	4-18
2-1/2	65	175	89	44.7	64.5	32	14.3	11	90	70	4-9	139.5	4-19	145	4-18
3	80	181	95	45.2	78.8	32	14.3	11	90	70	4-9	152.5	4-19	160	4-18
4	100	200	114	52.1	104	32	15.77	11	90	70	4-9	190.5	8-19	180	8-18
5	125	213	127	54.4	123.3	32	18.92	14	90	70	4-9	216	8-22	210	8-18
6	150	226	139	55.8	155.6	32	18.92	14	90	70	4-9	241.5	8-22	240	8-23
8	200	260	175	60.6	202.5	45	22.1	17	125	102	4-12	298.5	8-22	295	8-23
10	250	292	203	65.6	250.5	45	28.45	22	125	102	4-12	362	12-25	350	12-23
12	300	337	242	76.9	301.6	45	31.6	22	140	102	4-12	432	12-25	400	12-23
14	350	368	267	76.5	333.3	45	31.6	22	140	102	4-12	476	12-29	460	16-23
16	400	400	309	86.5	389.6	51.2	38	24	197	140	4-18	540	16-29	515	16-27
18	450	422	328	105.6	440.5	51.2	42.86	27	197	140	4-18	578	16-32	565	20-27
20	500	480	361	131.8	491.6	64.2	45.72	36	197	140	4-18	635	20-32	620	20-27
24	600	562	459	152	592.5	70.2	53.98	36	276	165	4-23	749.5	20-35	725	20-30