



the finest **STEEL** has to go

through the **HOTTEST FIRE**



PSL PIPE & FITTINGS CO.

AN ISO 9001:2008 CERTIFIED CO.





Pipes & Tubes

Stainless Steel : ASTM A312 TP 304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/ 347/ 904L etc.
Carbon Steel : ASTM A53 GR. B/ A106 GR. B/ API 5L GRADE B/ API 5L GR.X42/46/52/56/60/65/70/
Low Temperature, Carbon Steel: A333 Gr.3/ Gr.6 etc.
Alloy Steel : ASTM A335 GR. P1/ P5/ P9/ P11/ P22/ P91 etc.
Nickel Alloys : Monel, Nickel, Inconel, Hastalloy, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel,
Duplex & Super Duplex Steel : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20
Non Ferrous Metal : Copper, Brass, Bronze, Zinc, Lead etc.
Types : Round, Square, Rectangular.
Size : Upto 24" NB. (Seamless & Welded)
Wall Thickness : Sch. 5S to Sch. XXS



Sheets, Plates & Coil

Stainless Steel Coils, Sheets & Plates as per ASTM A 240 Gr. TP 304, 304L, 304LN, 309, 309S, 309H, 310S, 310H, 316, 316L, 316H, 316LN, 316TI, 317, 317L, 321, 321H, 347, 347H, 348, 348H, 409, 410, 420, 430 etc.
Alloy Steel Plates as per ASTM A 387 Gr. 2, 5, 9, 11, 12 & 22 in class 1 & 2, ASTM A 204, Gr. A & B, DIN 17175 Gr. 15Mo3 & 16Mo3 with IBR Test Certificate.
Carbon Steel / Boiler Quality Plates as per IS 2062 Gr. A, B & C, IS 2002 Gr. 1& 2, ASTM A516 Gr. 60 & 70 ASTM A515 Gr. 70.
High Nickel Alloy : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Brass, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.
Duplex & Super Duplex Steel : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20
Types : Sheet, Plates, Strips, etc.



Butt-weld Fittings

Stainless Steel : ASTM A403 WP 304/ 304L/ 304H/316/ 316L/ 317/ 317L/ 321/ 310/ 347/904L etc.
Carbon Steel : ASTM A234 WPB/A420 WPL3/A420 WPL6/ MSS-SP-75 WPHY 42/46/52 / 56/60/65/70
Alloy Steel : ASTM A234 WP1/ WP5/ WP9/ WP11/ WP22/WP91 etc.
Duplex & Super Duplex Steel : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20
Others : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.
Types : Elbow, Tee, Reducer, Return Bends, Stub-Ends, Cap, Collar, Cross, Insert etc.
Size : 1/4" NB TO 32" NB. (Seamless & Welded)
Wall Thickness : Sch. 5S To Sch. XXS.



Forged Socket-weld & Screwed Fittings

Stainless Steel : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/ 347/ 904L etc.
Carbon Steel : ASTM A105 / A694 F42/46/ 52/56/ 60/ 65/70 / A350 LF3/ A350 LF2.
Alloy Steel : ASTM A182 F1/ F5/ F9/ F11/ F22/ F91 etc.
Others : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.
Types : Elbow, Tee, Union, Cross, Coupling, Cap, Bushing, Plug, Swage Nipple, Welding Boss, Hexagon Nipple, Barrel Nipple, Welding Nipple, Parallel Nipple, Street Elbow, Hexagon Nut, Hose Nipple, Bend, Adapter, Insert, Weldolet, Elbowlet, Sockolet, Thredolet, Nipolet, Letrolet, etc.
Size : 1/4" NB TO 4" NB. (Socket-weld & Threaded)
Class : 3000#, 6000#, 9000#.



Flanges

Stainless Steel : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/ 310/ 347/ 904L etc.
Carbon Steel : ASTM A105/ A694F42/46/52/56/60/65/70/A350 LF3/A350 LF2, etc.
Alloy Steel : ASTM A182 F1/ F5/ F9/ F11/ F22/ F91 etc.
Duplex & Super Duplex Steel : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20
Others: Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.
Types : Weldneck, Slipon, Blind, Socket Weld, Lap Joint, Spectacles, Ring Joint, Oriface, Long Weldneck, Deck Flange, RTJ, Flange
Size : 1/2" NB TO 24" NB.
Class : 150#, 300#, 400#, 600#, 900#, 1500# & 2500#.



Ferrule Fittings

Stainless Steel : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/ 347/ 904L etc.
Carbon Steel : ASTM A105 / A694 F42/46/ 52/56/ 60/ 65/70 / A350 LF3/ A350 LF2.
Alloy Steel : ASTM A182 F1/ F5/ F9/ F11/ F22/ F91 etc.
Duplex & Super Duplex Steel : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20
Other : Stainless Steel, Nickel Alloys, Carbon Steel, Alloy Steel, Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bimuth, Aluminium, High Speed Steel, Zinc, Lead, Etc.
Types : Nipples, Adaptors, Crosses, Union Ball Joints, Reducing Bushing, Reducers, Pipe Caps, Couplings, Pipe Plug, Hollow Hex Plug, Elbow, Reducing Union, 90 Deg. Union Elbow, Reducing 90 Deg. Union Elbow Etc. Extender Leg 90 Deg. Union Elbow, 45 Deg. Union Elbow, Union Tee, Female Connector, Male Connector, Manifold Tee, Locator Union, Extended Run Leg Union Tee, Reducing Tee, Tribow, ATW Weld Ring, Tube Socket weld To Pipe Butt Weld, Tube Butt Weld To Tube Socket Weld, Port Connector, Etc.



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COMPANY PROFILE



PSL PIPE & FITTINGS CO. is one of the fast growing & emerging enterprise in the Stainless steel industry.

PSL PIPE & FITTINGS CO. is a well established name in the stainless steel industry. In such short span of existence we have made our mark in importing, exporting & supplying all kinds of Stainless steel, Alloy steel, Carbon steel, Pipes, Sheets, Rods & Pipe Fittings to various core industries like Power, Petrochemicals, Agrochemicals, Offshore, Defence, Paper & Pulp industries, Sugar, Textiles etc.

We stock and deal in products that are widely used, generally accepted and in which we have the in depth knowledge. This helps us to work as a team with our customer's material management department to seek and source the right product every time.

As a matter of business practice we maintain a through professional and co-ordial relationship with all the producers and sourcing partners operating worldwide. We work as a team in understanding the need of our customers keeping each others business interest intact so that the right product is sourced, manufactured and supplied at the right time at the right price.





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S.S / C.S / A.S PIPES AND TUBES SCHEDULE DIMENSIONS, WALL THICKNESS, WT. / MTR. (KG)

Nominal Pipe Size	ANSI B 36.10										ANSI B 36.19										
	Schedule 10	Schedule 20	Schedule 30	Schedule STD	Schedule 40	Schedule 60	Schedule XS	Schedule 80	Schedule 100	Schedule 120	Schedule 140	Schedule 160	Schedule XXS	Schedule 5S	Schedule 10S	Schedule 40S	Schedule 80S				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
1/4"				2.24	0.63		3.02	0.80							1.65	0.50	2.24	0.64	3.02	0.81	
3/8"			2.31	0.84		3.20	1.10	3.20							1.65	0.64	2.31	0.86	3.20	1.12	
1/2"			2.77	1.27	1.27	3.73	1.62	3.73			4.78	1.95	7.47	2.55	2.11	1.02	2.77	1.29	3.73	1.65	
3/4"			2.87	1.69	1.69	3.91	2.20	3.91			5.56	2.90	7.82	3.64	2.11	1.30	2.87	1.71	3.91	2.23	
1"			3.38	2.50	2.50	4.55	3.24	4.55			6.35	4.24	9.09	5.45	2.77	2.13	3.38	2.54	4.55	3.29	
1 1/4"			3.56	3.39	3.39	4.85	4.47	4.85			6.35	5.61	9.70	7.77	2.77	2.73	3.56	3.44	4.85	4.53	
1 1/2"			3.68	4.05	4.05	5.08	5.41	5.08			7.14	7.25	10.15	9.56	2.77	3.16	3.68	4.11	5.08	5.49	
2"			3.91	5.44	5.44	5.54	7.48	5.54			8.74	11.11	11.07	13.44	2.77	3.99	3.91	5.52	5.54	7.60	
2 1/2"			5.16	8.63	8.63	7.01	11.41	7.01			9.53	14.92	14.02	20.39	2.11	3.75	3.05	5.16	8.77	11.59	
3"			5.49	11.29	11.29	7.62	15.27	7.62			11.13	21.35	15.24	27.68	2.11	4.59	3.05	6.56	5.49	11.47	
3 1/2"			5.74	13.57	13.57	8.08	18.63	8.08							2.11	5.26	3.05	7.53	5.74	13.78	
4"			6.02	16.07	16.07	8.56	22.32	8.56			11.13	28.32	17.12	41.03	2.11	5.93	3.05	8.50	6.02	16.32	
5"			6.55	21.77	21.77	9.53	30.97	9.53			12.70	40.28	19.05	57.43	2.77	9.61	3.40	11.74	6.55	22.10	
6"			7.11	28.26	28.26	10.97	42.56	10.97			14.27	54.20	21.95	79.22	2.77	11.48	3.40	14.04	7.11	28.70	
8"			8.18	42.55	42.55	13.08	53.08	13.08			20.62	100.90	23.01	111.20	2.77	14.9	3.80	20.12	8.18	43.20	
10"			9.27	60.31	60.31	12.70	81.55	12.70			20.62	155.10	28.58	172.30	3.40	22.95	4.19	28.20	9.27	61.22	
12"			9.53	73.88	73.88	14.27	108.90	14.27			28.58	208.10	33.32	238.70	3.96	31.71	4.57	36.53	9.53	74.94	
14"			9.53	81.33	81.33	15.09	126.70	15.09			31.75	253.50	35.71	281.70	3.96	34.87	4.78	41.99	9.53	82.50	
16"			9.53	93.27	93.27	16.66	160.10	16.66			36.53	333.10	40.49	365.30	4.19	42.20	4.78	48.07	9.53	94.61	
18"			9.53	105.10	105.10	19.05	205.70	19.05			39.67	408.20	45.24	459.30	4.19	47.53	4.78	54.15	9.53	106.83	
20"			9.53	117.10	117.10	20.62	247.80	20.62			44.45	508.10	50.50	564.80	4.78	60.23	5.54	69.70	9.53	118.95	
22"			9.53	129.10	129.10	22.23	294.20	22.23			47.63	600.60	53.90	672.20	4.78	66.31	5.54	76.75	9.53	131.07	
24"			9.53	141.10	141.10	24.61	355.20	24.61			52.37	720.10	59.54	808.20	5.54	83.80	6.35	95.92	9.53	143.20	
26"			9.53	152.80	152.80	27.07	420.40	27.07													205.85
28"			9.53	164.80	164.80	28.26	490.40	28.26													222.06
30"			9.53	176.80	176.80	30.97	560.40	30.97							6.35	120.15	7.92	149.55	9.53	179.56	
32"			9.53	188.80	188.80	34.90	640.40	34.90													238.28
34"			9.53	200.30	200.30	38.90	720.40	38.90													254.50
36"			9.53	212.50	212.50	42.40	800.40	42.40													270.72
			9.53	224.70	224.70	46.40	880.40	46.40													286.62

Formulae
 Weight of Steel Pipes & Tubes
 $OD(mm) \cdot W.T.(mm) \cdot X \cdot 0.02466 = \text{kg per meter}$
 Feet = meter $\cdot 3.281$
 ALL DIMENSIONS ARE IN KILOGRAMS & METERS



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STAINLESS STEEL SEAMLESS & WELDED PIPES CHEMICAL & PHYSICAL PROPERTIES

Chemical Composition										Tensile Test				
Grade	C	Si	Mn	P Max	S Max	Cr	Mo	Ni	Other Elements	Tensile Strength kg/mm ² min	Yield Point Strength kg/mm ² min	Elongation in 2 or 50mm min% Curved strip and Tubular Specimens		
												Longitudinal		Transverse
												t ≤ 5/16in	t ≥ 5/16in	t ≤ 5/16in
TP304	0.08 max	0.75 max	2.0 max	0.040	0.030	18.0-20.0		8.00-11.0	-	52.52	20.90	35	-	25
TP304H	0.04-0.10	0.75 max	2.0 max	0.040	0.030	18.0-20.0		8.00-11.0	-	52.52	20.90	35	-	25
TP304L	0.035 max	0.75 max	2.0 max	0.040	0.030	18.0-20.0		8.00-13.0	-	49.46	17.34	35	-	25
TP304N	0.08 max	0.75 max	2.0 max	0.040	0.030	18.0-20.0		8.00-11.0	N 0.10-0.16	56.10	24.61	35	-	25
TP304LN	0.035 max	0.75 max	2.0 max	0.040	0.030	18.0-20.0		8.00-11.0	N 0.10-0.16	52.52	20.90	35	-	25
TP309S	0.08 max	0.75 max	2.0 max	0.045	0.030	22.0-24.0	0.75 Max	12.0-15.0	-	52.52	20.90	35	-	25
TP310S	0.08 max	0.75 max	2.0 max	0.045	0.030	24.0-26.0	0.75 Max	19.0-22.0	-	52.52	20.90	35	-	25
TP316	0.08 max	0.75 max	2.0 max	0.040	0.030	16.0-18.0	2.00-3.00	11.0-14.0	-	52.52	20.90	35	-	25
TP316H	0.04-0.10	0.75 max	2.0 max	0.040	0.030	16.0-18.0	2.00-3.00	11.0-14.0	-	52.52	20.90	35	-	25
TP316L	0.035 max	0.75 max	2.0 max	0.040	0.030	16.0-18.0	2.00-3.00	10.0-15.0	-	49.46	17.34	35	-	25
TP316N	0.08 max	0.75 max	2.0 max	0.040	0.030	16.0-18.0	2.00-3.00	11.0-14.0	N 0.10-0.16	56.10	24.61	35	-	25
TP316LN	0.035 max	0.75 max	2.0 max	0.040	0.030	16.0-18.0	2.00-3.00	11.0-14.0	N 0.10-0.16	52.52	20.90	35	-	25
TP317	0.08 max	0.75 max	2.0 max	0.040	0.030	18.0-20.0	3.00-4.00	11.0-14.0	-	52.52	20.90	35	-	25
TP317L	0.035 max	0.75 max	2.0 max	0.040	0.030	18.0-20.0	3.00-4.00	11.0-15.0	-	52.52	20.90	35	-	25
TP321	0.08 max	0.75 max	2.0 max	0.040	0.030	17.0-20.0		9.0-13.0	Ti5xC%-0.70	52.52	20.90	35	-	25
TP321H	0.04-0.10	0.75 max	2.0 max	0.040	0.030	17.0-20.0		9.0-13.0	Ti4xC%-0.60	52.52	20.90	35	-	25
TP347	0.08 max	0.75 max	2.0 max	0.040	0.030	17.0-20.0		9.0-13.0	Nb+TA10xC%-1.00	52.52	20.90	35	-	25
TP347H	0.04-0.10	0.75 max	2.0 max	0.040	0.030	17.0-20.0		9.0-13.0	Nb+TA8xc%~1	52.52	20.90	35	-	25
TP348	0.08 max	0.75 max	2.0 max	0.040	0.030	17.0-20.0		9.0-13.0	Nb+TA10xc%~1	52.52	20.90	35	-	25
TP348H	0.04-0.10	0.75 max	2.0 max	0.040	0.030	17.0-20.0		9.0-13.0	Nb+TA8xc%~1	52.52	20.90	35	-	25
TPXM-10	0.08 max	1.00 max	8.00-10.00	0.040	0.030	19.0-21.50		5.50-7.50	NO.15-0.40	63.22	35.18	35	-	25
TPXM-11	0.04 max	1.00 max	8.00-10.00	0.040	0.030	19.0-21.50		5.50-7.50	NO.15-0.40	63.22	35.18	35	-	25
A240 TP304	0.08 max	0.75 max	2.0 max	0.045	0.030	18.0-20.0	-	8.00-10.50	NO.10 Max			Class 1 : Double welded pipes & full Radiography Class 2 : Double welded no Radiography Class 3 : Single welded full Radiography Class 4 : Single welded full Radiography rootpass without addition of filler metal Class 5: Double welded spot Radiography		
TP310S	0.08 max	0.75 max	2.0 max	0.045	0.030	24.0-26.0	-	19.0-22.0						
TP316	0.08 max	0.75 max	2.0 max	0.045	0.030	16.0-18.0	2.0-3.0	10.0-14.0	NO.10 Max					
TP316L	0.035 max	0.75 max	2.0 max	0.045	0.030	16.0-18.0	2.0-3.0	10.0-14.0	NO.10 Max					
TP317L	0.035 max	0.75 max	2.0 max	0.045	0.030	18.0-20.0	3.0-4.0	11.0-15.0	NO.10 Max					
TP321	0.08 max	0.75 max	2.0 max	0.045	0.030	17.0-19.0	-	9.0-12.0	NO.10 Max					
TP347	0.08 max	0.75 max	2.0 max	0.045	0.030	17.0-19.0	-	9.0-13.0	Cb+TA10xC/1.0					



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CARBON STEEL, ALLOY STEEL, LOW TEMP, PIPE AND TUBES SPECIFICATION

CHEMICAL ANALYSIS									MECHANICAL PROPERTIES			SPECIFIC REQUIREMENT
									TENSILE STRENGTH	YIELD STRENGTH	ELONGATION	
SPECIFICATION	WT	C%	Mn %	P % MAX	S% MAX	Si%	Cr%	Mo%	Mpa	Mpa	50mm MIN Longitudinal	
ASTM A 53/A	AW	0.25MAX	0.95MAX	0.050	0.060	-	-	-	331MIN	207MIN	36	Cr Mo Cu Ni Va 0.40 0.15 0.40 0.40 0.08 Five elements not to exceed 1%
ASTM A 53/B	AW	0.30MAX	1.20MAX	0.050	0.060	-	-	-	413MIN	240MIN	29.5	
ASTM A 106/A	AW	0.25MAX	0.27-0.93	0.025	0.025	0.10MIN	0.40MAX	0.15MAX	330MIN	205MIN	35/28	
ASTM A 106/B	AW	0.30MAX	0.29-1.06	0.025	0.025	0.10MIN	0.40MAX	0.15MAX	415 MIN	240MIN	30/22	
ASTM A 106/C	AW	0.35MAX	0.29-1.06	0.025	0.025	0.10MIN	0.40MAX	0.15MAX	485MIN	275MIN	30/22	
ASTM A 179	MW	0.06-018	0.27-0.63	0.048	0.048	-	-	-	325MIN	180MIN	35.0	Hardness 72 HRB Max
ASTM A 214	MW	0.18MAX	0.27-0.63	0.050	0.050	-	-	-	385MIN	180MIN	35.0	Hardness 72 HRB Max
ASTM A 192	MW	0.06-0.18	0.27-0.63	0.048	0.048	0.25MAX	-	-	325MIN	180MIN	35.0	Hardness 77 HRB Max
ASTM A 209/T1	MW	0.10-0.20	0.30-0.80	0.045	0.045	0.10-0.50	-	0.44-0.65	380MIN	205MIN	30/22	Hardness 80 HRB Max
ASTM A 209/T1a	MW	0.15-0.25	0.30-0.80	0.045	0.045	0.10-0.50	-	0.44-0.65	365MIN	195MIN	30/22	Hardness 81 HRB Max
ASTM A 209/T1B	MW	0.14MAX	0.30-0.80	0.045	0.045	0.10-0.50	-	0.44-0.65	415MIN	220MIN	30/22	Hardness 77 HRB Max
ASTM A 210/A-1	MW	0.27max	0.93max	0.048	0.058	0.10MIN	-	-	415MIN	255MIN	30/22	Hardness 79 HRB Max
ASTM A 210/C	MW	0.35MAX	0.29-1.06	0.048	0.058	0.10MIN	-	-	485MIN	275MIN	30/22	Hardness 89 HRB Max
ASTM A 213/T2	MW	0.10/0.20	0.30-0.61	0.045	0.045	0.10-0.30	0.50-0.81	0.44-0.65	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 213/T5	MW	0.15MAX	0.30-0.60	0.030	0.030	0.50MAX	4.00-6.00	0.44-0.65	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 213/T11	MW	0.15MAX	0.30-0.60	0.030	0.030	0.50-1.00	1.00-1.50	0.44-0.65	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 213/T12	MW	0.15MAX	0.30-0.61	0.045	0.045	0.50MAX	0.80-1.25	0.44-0.65	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 213/T22	MW	0.15MAX	0.30-0.60	0.030	0.030	0.50MAX	1.90-2.60	0.87-1.13	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 333/1	AW	0.30MAX	0.40-1.06	0.025	0.025	-	-	-	380MIN	205MIN	25/20	IMPACT AS -50F FOR 40X10J/18/14 -50F40X10J/18/14 90 HRB MAX
ASTM A 333/6	AW	0.30MAX	0.29-1.06	0.025	0.025	0.10MIN	-	-	415MIN	240MIN	30/22	
ASTM A 334/1	AW	0.30MAX	0.40-1.06	0.025	0.025	-	-	-	380MIN	205MIN	35/28	
ASTM A 334/6	MW	0.30MAX	0.29-1.06	0.025	0.025	0.10MIN	-	-	415MIN	240MIN	30/22	
ASTM A 335/P1	AW	0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	380MIN	205MIN	30/22	
ASTM A 335/P2	AW	0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.44-0.65	380MIN	205MIN	30/22	
ASTM A 335/P5	AW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	4.00-6.00	0.45-0.65	415MIN	205MIN	30/22	
ASTM A 335/P9	AW	0.15MAX	0.30-0.60	0.025	0.025	0.25-1.00	8.00-10.00	0.09-1.10	415MIN	172MIN	30/22	
ASTM A 335/P11	AW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65	415MIN	205MIN	30/22	
ASTM A 335/P12	AW	0.15MAX	0.30-0.61	0.025	0.025	0.50MAX	0.80-1.25	0.44-0.65	415MIN	205MIN	50/22	
ASTM A 335/P22	AW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415MIN	205MIN	30/22	
BS/3059/1/33		0.15Max	0.30-0.70	0.050	0.050	-	-	-	324-441	186MIN	25	
BS/3059/2/33		0.15MAX	0.40-0.70	0.050	0.050	0.10-0.35	-	-	324-441	186MIN	21	
BS/3059/2/45		0.12-0.18	0.90-1.20	0.035	0.035	0.10-0.35	-	-	441-560	245MIN	22	
BS/3059/2/620		0.10-0.15	0.40-0.70	0.040	0.040	0.10-0.35	0.70-1.10	0.45-0.65	441-618	235MIN	22	
DIN/17175/ST35.8		0.17MAX	0.40MIN	0.040	0.040	0.35MAX	-	-	340-441	235MIN	25	
DIN/17175/ST45.8		0.22MAX	0.45MIN	0.040	0.040	0.10-0.35	-	-	441-540	255 MIN	25	
DIN/17175/15MO3		0.12-0.20	0.50-0.80	0.040	0.040	0.10-0.35	-	0.25-0.35	441-540	284MIN	21	
DIN/17175/13CrMO44		0.10-0.18	0.40-0.70	0.040	0.040	0.10-0.35	0.70-1.60	0.40-0.50	441-570	294MIN	22	
DIN/17175/10CrM910		0.15MAX	0.40-0.60	0.040	0.040	0.15-0.50	2.0-2.5	0.9-1.10	441-570	294MIN	22	
ASTM A 199/T5	MW	0.50-0.15	0.30-0.60	0.030	0.030	0.50MAX	4.00-6.00	0.45-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 199/T11	MW	0.05-0.15	0.30-0.60	0.030	0.030	0.50-1.00	1.00-1.50	0.44-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 199/T22	MW	0.05-0.15	0.30-0.60	0.030	0.030	0.50MAX	1.90-2.60	0.87-1.13	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 199/T4	MW	0.15MAX	0.30-0.60	0.030	0.030	0.50-1.00	2.15-2.85	0.44-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 199/T7	MW	0.15MAX	0.30-0.60	0.030	0.030	0.50-1.00	6.00-8.00	0.45-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 200/T5	MW	0.15MAX	0.30-0.60	0.030	0.030	0.50-1.00	4.00-6.00	0.45-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 200/T11	MW	0.05-0.15	0.30-0.60	0.030	0.030	0.50-1.00	1.00-1.50	0.44-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 200/T22	MW	0.05-0.15	0.30-0.60	0.030	0.030	0.50MAX	1.90-2.60	0.87-1.13	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 200/T4	MW	0.05-0.15	0.30-0.60	0.030	0.030	0.50-1.00	2.15-2.85	0.44-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 200/T7	MW	0.15MAX	0.30-0.60	0.030	0.030	0.50-1.00	6.00-8.00	0.45-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX
ASTM A 199/T9	MW	0.15MAX	0.30-0.60	0.030	0.030	0.25-1.00	8.00-10.0	0.90-1.10	415MIN	170MIN	30/22	HARDNESS 89 HRB MAX



PSL PIPE & FITTINGS CO.

AN ISO 9001:2008 CERTIFIED CO.

Chemical Composition & Mechanical Properties

Steel type	ASTM Grade	Chemical composition									Mechanical properties				
		C% max	Mn%	P% max	S% max	Si%	Cr%	Mo%	Ni%	Others	R.min. Tensile Strength MPa	S.min. Yield Strength MPa	A% min.(2" /4D) Elongation		Impact test KCV (2) J
													Long.	Transv.	
A234	WPB(1)	0.3	0.29-1.06	0.05	0.058	0.10 min	0.4	0.15	0.4	Cu=0.4 V=0.08 Cb=0.02	415-585	240	30	20	-
	WPC(1)	0.35	0.29-1.06	0.05	0.058	0.10 min	0.4	0.15	0.4	Cu=0.4 V=0.08 Cb=0.02	485-655	275	30	20	-
A420	WPL/6(1)	0.3	0.6-1.35	0.035	0.04	0.15-0.30	0.3	0.12	0.4	Cu=0.4 V=0.08 Cb=0.02	415-585	240	30	16,5	-45°C 17.6/13.6
	WPL3	0.2	0.31-0.64	0.05	0.05	0.13-0.37	-	-	3.2-3.8	-	450-620	240	30	20	-101°C 17.6/13.6
A234	WP1	0.28	0.30-0.9	0.045	0.045	0.10-0.50	-	0.44-0.65	-	-	380-550	205	30	20	-
	WP12CL1	0.05-0.2	0.3-0.8	0.045	0.045	0.6	0.8-1.25	0.44-0.65	-	-	415-585	220	30	20	-
	WP12CL2	-	-	-	-	-	-	-	-	-	485-655	275	30	20	-
	WP11CL1	-0.5-0.15	0.3-0.6	0.3	0.3	0.5-10	1.0-1.5	0.44-0.65	-	-	415-585	205	30	20	-
	WP11CL2	0.5-0.2	0.3-0.8	0.4	0.4	0.5-10	1.0-1.5	0.44-0.65	-	-	485-655	275	30	20	-
	WP11CL3	-	-	-	-	-	-	-	-	-	520-690	310	30	20	-
	WP22CL1	0.05-0.15	0.3-0.6	0.04	0.04	0.5	1.9-2.6	0.87-113	-	-	415-585	205	30	20	-
	WP22CL3	-	-	-	-	-	-	-	-	-	520-690	310	30	20	-
	WP5	0.15	0.3-0.6	0.04	0.03	0.5	4.0-6.0	0.44-0.65	-	-	415-585	205	30	20	-
	WP9	0.15	0.3-0.6	0.03	0.03	0.25-10	8.0-10.0	0.9-1.10	-	-	415-585	205	30	20	-
	WP91	0.08-0.12	0.3-0.6	0.02	0.01	0.2-0.5	8.0-9.5	0.85-1.05	0.4	V=0.18-0.25 Cb=0.06-0.10 N=0.03-0.07 Al=0.04	585-760	415	20	-	-
A403	WP304	0.08	2	0.045	0.03	1	18-20	-	8.0-11.0	-	515	205	28	20	-
	WP304L	0.035	2	0.045	0.03	1	18-20	-	8.0-13.0	-	485	170	28	20	-
	WP304H	0.04-0.10	2	0.045	0.03	1	18-20	-	8.0-11.0	-	515	205	28	20	-
	WP316	0.08	2	0.045	0.03	1	18-20	2.0-3.0	11.0-14.0	-	515	205	28	20	-
	WP316L	0.035	2	0.045	0.03	1	18-20	2.0-3.0	10.0-16.0	-	485	170	28	20	-
	WP321	0.08	2	0.045	0.03	1	17.0-20.0	-	9.0-13.0	Ti=5xC max 0.70%	515	205	28	20	-
	WP321H	0.04-0.10	2	0.045	0.03	1	17.0-20.0	-	9.0-13.0	Ti=4xC max 0.60%	515	205	28	20	-
	WP347	0.08	2	0.045	0.03	1	17.0-20.0	-	9.0-13.0	Cb+Ta=10x%C max 0.10%	515	205	28	20	-
	WP347H	0.04-0.10	2	0.045	0.03	1	17.0-20.0	-	9.0-13.0	Cb+Ta=8x%C max 0.10%	515	205	28	20	-
	WPS 31254	0.02	1	0.03	0.01	0.8	19.5-20.5	6.0-6.5	17.5-18.5	N=0.18-0.22 Cu=0.5-1.0	515	205	28	20	-
A815	S 31803	0.03	2	0.03	0.02	1	21.0-23.0	2.5-3.5	4.5-6.5	N=0.08-0.2	620	450	25	-	-
	WP410	0.15	1	0.04	0.03	1	11.5-13.5	-	0.5	-	485-655	205	20	-	-
B366	WPNIC10	0.06-0.10	1.5		0.015	1	19.0-23.0	-	30.0-35.0	Cu=0.75	450	170	30		
	WPNIC11	0.06-0.10	1.5		0.015	1	19.0-23.0	-	30.0-35.0	Al=0.15-0.80 Ti=0.15-0.60 Fe=39.5 min. Al+Ti=0.85-1.20	450	170	30		



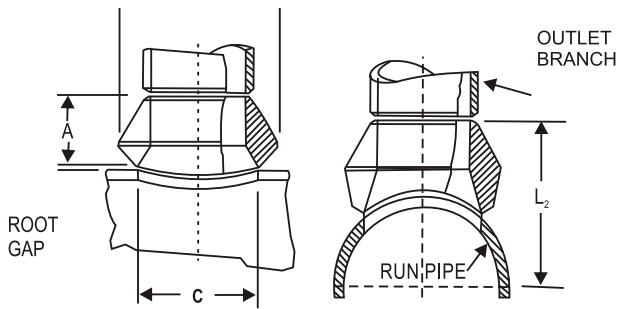
Titanium alloys, Nickel alloys, Inconel alloys, Coupro nickel & Aluminium alloys are also available upon request.
 For each reduction of 0.01% below the specified carbon max., an increase of 0.06% Mn above the specified max. will be permitted up to 1.35% max.
 2) Relative to 10x10 specimen.



PSL PIPE & FITTINGS CO.

AN ISO 9001:2008 CERTIFIED CO.

REDUCING & FLAT SIZE EXTRA STRONG, RUN AND BRANCH FORGED



Outlet Size Inches	Dimensions (Inches)		
	A	B	C
1/8	5/8	1	5/8
1/4	5/8	1	5/8
3/8	3/4	1-1/4	3/4
1/2	3/4	1-3/8	1-5/16
3/4	7/8	1-3/4	1-3/16
1	1-1/16	2-1/8	1-7/16
1-1/4	1-1/4	2-9/16	1-3/4
1-1/2	1-5/16	2-7/8	2
2	1-1/2	3-1/2	2-9/16
2-1/2	1-5/8	4-1/16	3
3	1-3/4	4-13/16	3-11/16
3-1/2	1-7/8	5-3/8	4
4	2	6	4-3/4
5	2-1/4	7-1/16	5-9/16
6	3-1/16	8-7/8	6-11/16
8	3-7/8	11-1/2	8-11/16
10	3-11/16	12-3/4	10-7/16
12	4-1/16	14-15/16	12-1/2
14	3-15/16	17	13-13/16
16	4-3/16	18-3/8	15-7/8
18	4-3/8	20-3/8	17-15/16
20	4-11/16	22-15/16	20-1/16
24	5-1/2	27-7/8	24-3/16
26	5-3/4	30-1/8	27-1/4

30, 36 and larger sizes available on application.

SIZE ON SIZE SCHEDULE 160 & DOUBLE EXTRA STRONG RUN AND BRANCH FORGED & OUTLET FITTINGS

Each Outlet size listed is available to fit any run curvature.

Larger Sizes Available on Application.

Design per MSS-SP-97. BW ends per B16.9 and B16.25

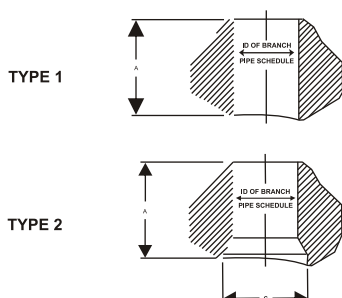
RUN PIPE SIZES

Outlet sizes 4" and less fit a number of run pipe sizes, and the fittings are marked accordingly.



Outlet Size (Inches)	Dimensions (Inches)		
	A	B	C
1/2	1-1/8	1-3/8	9/16
3/4	1-1/4	1-3/4	3/4
1	1-1/2	2	1
1-1/4	1-3/4	2-7/16	1-5/16
1-1/2	2	2-3/4	1-1/2
2	2-3/16	3-3/16	1-11/16
2-1/2	2-7/16	3-13/16	2-1/8
3	2-7/8	4-3/4	2-7/8
4	3-5/16	6	3-7/8
5	3-11/16	7-3/8	4-13/16
6	4-1/8	8-11/16	5-3/4
8-24	For dimensions see Heavy Wall Weldolet, page 53		

HEAVY WALL FORGED



The Heavy Wall Forged Weldolet[®] is an integrally reinforced branch connection.

It provides the economical and engineering answer to the problem of welding outlet fittings on high pressure, high temperature piping and pressure vessels.

Type 1 - Straight through bore design

Type 2 - Conventional tapered bore design



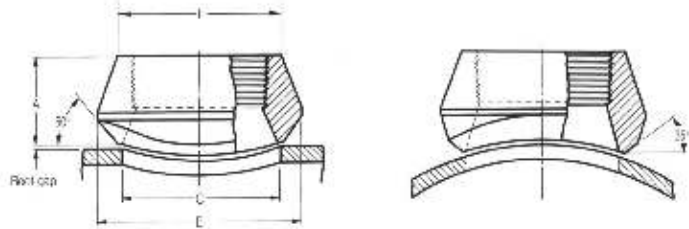


PSL PIPE & FITTINGS CO.

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FORGED STEEL OUTLET FITTINGS THREDOLETS

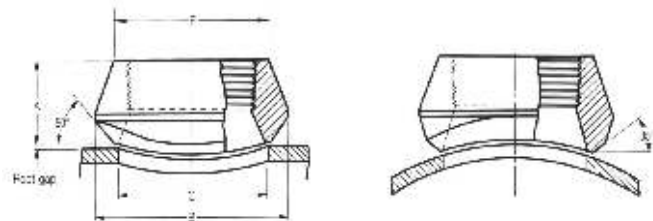
3000#, 6000#



Outlet Size	A		B		C	
	3000#	6000#	3000#	6000#	3000#	6000#
1/2	25.4	31.8	34.9	44.5	23.8	19.1
3/4	27.0	36.5	44.5	50.8	30.2	25.4
1	33.3	39.7	54.0	61.9	36.5	33.3
1 1/4	33.3	41.3	65.1	69.9	44.5	38.1
1 1/2	34.9	42.9	73.0	82.6	50.8	49.2
2	38.1	52.4	88.9	103.2	65.1	69.9
2 1/2	46.0	-	103.2	-	76.2	-
3	50.8	-	122.2	-	93.7	-
4	57.2	-	152.4	-	120.7	-

FORGED STEEL OUTLET FITTINGS SOCKOLETS

3000#, 6000#



Outlet Size	A		B		C	
	3000#	6000#	3000#	6000#	3000#	6000#
1/2	25.4	31.8	34.9	44.5	23.8	19.1
3/4	27.0	36.5	44.5	50.8	30.2	25.4
1	33.3	39.7	54.0	61.9	36.5	33.3
1 1/4	33.3	41.3	65.1	69.9	44.5	38.1
1 1/2	34.9	42.9	73.0	82.6	50.8	49.2
2	38.1	52.4	88.9	103.2	65.1	69.9
2 1/2	46.0	-	103.2	-	76.2	-
3	50.8	-	122.2	-	93.7	-
4	57.2	-	152.4	-	120.7	-

Applicable Run Pipe Sizes are From out-Let to 36"

For the 3000# and 6000# Sockolets and Thredolets, Inside Bore, Thread, Socket Bore and Socket depth Dimensions are According to ANSI B16.11

Pipe Schedule Numbers and Weight Designation are in Accordance With ANSI B36.10

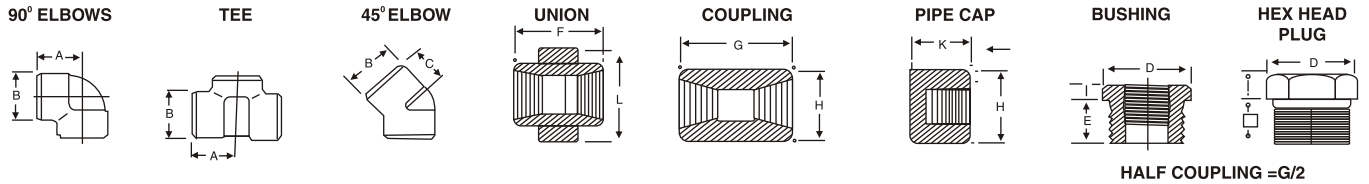
When Ordering Sockolets and Thredolets, Include The Quantity, Run and Out-Let Size, Item And Rating(or Schedule Number)and Material



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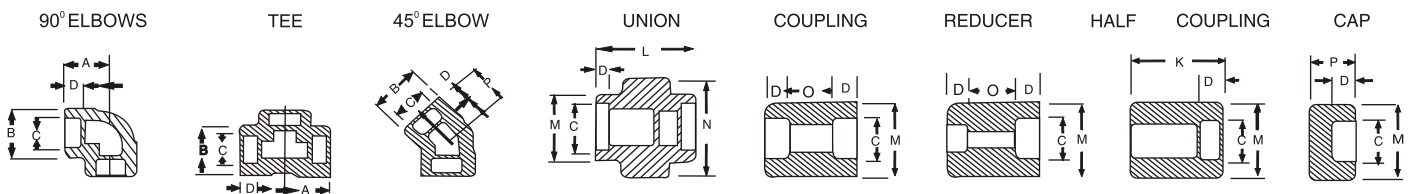
FORGED SCREWED & SOCKET WELD



HALF COUPLING = G/2

DIMENSION IN MM OF FORGED SCREWED FITTINGS TO ANSI B-16.11 THREADED TO ASA B 2.1

NOM BORE	PIPE O.D.	3000 L.B.S.						COMMON FACTORS						6000 L.B.S					
		A	B	C	G	H	K	D	E	F	I	J	L	A	B	C	G	H	K
1/8"	10.3	21	22	17	32	16	19	11	10	40	-	6	-	25	25	19	32	22	-
1/4"	13.7	25	25	19	35	19	25	16	11	43	3	6	32	29	33	22	35	25	27
3/8"	17.2	29	33	22	38	22	25	17.5	13	48	4	8	38	33	38	25	38	32	27
1/2"	21.3	33	38	25	48	29	32	22	15	51	5	8	46	38	46	29	48	38	33
3/4"	26.7	38	46	29	51	35	37	27	16	57	6	10	51	44	56	33	51	44	38
1"	33.4	44	56	33	60	44	41	35	19	64	6	10	60	51	62	35	60	57	43
1 1/4"	42.2	51	62	35	67	57	44	44.5	21	70	7	14	72	60	75	43	67	64	46
1 1/2"	48.3	60	75	43	79	64	44	51	21	79	8	16	80	64	84	44	79	76	48
2"	60.3	64	84	45	86	76	48	63.5	22	88	9	17	94	83	102	52	86	92	51
2 1/2"	73.02	83	102	52	92	92	60	76	27	118	10	21	122	95	121	64	92	108	64
3"	89.0	95	121	64	108	108	65	89	29	121	10	25	140	106	146	79	108	127	68
4"	114.5	114	152	79	121	140	68	117.5	32	150	13	25	180	114	152	79	121	159	75



SOCKET WELD FITTING TO ANSI B-16.11

NOM BORE	PIPE O.D.	3000 L.B.S.						COMMON FACTORS						6000 L.B.S					
		A	B	K	J	L	M	N	P	Q	C	D	O	O	A	B	M	K	N
1/8"	10.3	22	18.5	26	16	40	17.3	32	17.5	10	10.7	10	5	8	22	22	20	25	46
1/4"	13.7	22	22	26	18	43	21.2	32	17.5	10	14.1	10	5	8	27	25	24	25	51
3/8"	17.2	25	25	26	19	48	25.4	36	19	10	17.6	10	3	9	27	28	28	26	60
1/2"	21.3	27	32	30	21	51	31	43	22	10	21.7	10	6	13	31	34	34	31	72
3/4"	26.7	34	38	36	24	57	37	50	25	13	27	13	6	13	37	42	41	35	80
1"	33.4	37	46	40	25	64	45.2	60	27	13	33.8	13	9	17	42	50	50	40	94
1 1/4"	42.2	42	56	40	29	70	55	70	30	13	42.6	13	9	17	47	59	58	41	100
1 1/2"	48.3	47	62	40	30	79	61.4	78	32	13	48.7	13	9	17	53	67	66	43	122
2"	60.3	56	75	52	37	89	75	95	38	13	61.2	16	15	23	59	84	83	55	
2 1/2"	73.02	60	92	52	48	114	91.3	125	38	16	73.8	16	14	24		102		56	
3"	89.00	76	110	52	51	127	108.8	140	44	16	89.8	16	14	24		121		58	
4"	114.50	88	137	58		150	136.9		48	19	115.5	19	14	24		152		64	

DIMENSIONS AND OTHERS SPECIFICATIONS AS PER CUSTOMERS REQUIREMENTS ARE AVAILABLE ON REQUEST

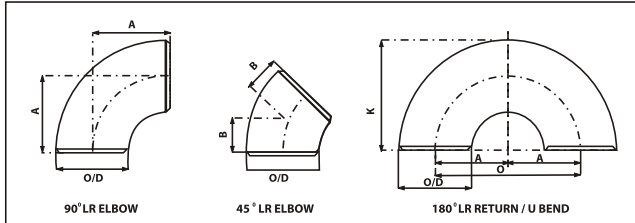


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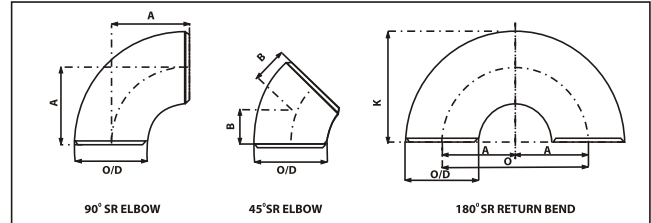
L R ELBOW & L R RETURN / U BEND BUTTWELD FITTING

B16.9



S R ELBOW & S R RETURN BEND BUTTWELD FITTING

B16.9 / B16.28



LR ELBOW & LR RETURN / U BEND

B16.9

Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)	Dimension A	Dimension B	Center to Center O	Back to Face K
1/2"	21.3	38	16	76	48
3/4"	26.7	38	19	76	51
1"	33.4	38	22	76	56
1.1/4"	42.2	48	25	95	70
1.1/2"	48.3	57	29	114	83
2"	60.3	76	35	152	106
2.1/2"	73.0	95	44	190	132
3"	88.9	114	51	229	159
3.1/2"	101.6	133	57	267	184
4"	114.3	152	64	305	210
5"	141.3	190	79	381	262
6"	168.3	229	95	457	313
8"	219.1	305	127	610	414
10"	273.0	381	159	762	518
12"	323.8	457	190	914	619
14"	355.6	533	222	1067	711
16"	406.4	610	254	1219	813
18"	457.0	686	286	1372	914
20"	508.0	762	318	1524	1016
22"	559.0	838	343	1676	1118
24"	610.0	914	381	1829	1219
26"	660.0	991	406	.....	.....
28"	711.0	1067	438	.....	.....
30"	762.0	1143	470	.....	.....
32"	813.0	1219	502	.....	.....
34"	864.0	1295	533	.....	.....
36"	914.0	1372	565	.....	.....

Note : All Dimensions are in millimeters (mm) Dimension for 38" and above on request.

SR ELBOW & SR RETURN BEND

B16.9 / B16.28

Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)	Dimension A	Dimension B	Center to Center O	Back to Face K
1/2"	21.3	.....	.....	.....	.....
3/4"	26.7	.....	.....	.....	.....
1"	33.4	25	.....	51	41
1.1/4"	42.2	32	.....	64	52
1.1/2"	48.3	38	.....	76	62
2"	60.3	51	.....	102	81
2.1/2"	73.0	64	.....	127	100
3"	88.9	76	31.6	152	121
3.1/2"	101.6	89	36.8	178	140
4"	114.3	102	42.1	203	159
5"	141.3	127	52.6	254	197
6"	168.3	152	63.4	305	237
8"	219.1	203	84.2	406	313
10"	273.0	254	105.2	508	391
12"	323.8	305	126.3	610	467
14"	355.6	356	147.3	711	533
16"	406.4	406	168.3	813	610
18"	457.0	457	189.4	914	686
20"	508.0	508	210.4	1016	762
22"	559.0	559	231.5	1118	838
24"	610.0	610	252.5	1219	914

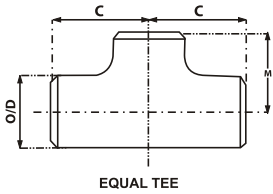
Note : All Dimensions are in millimeters (mm)



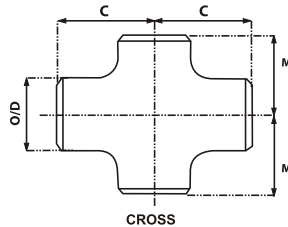
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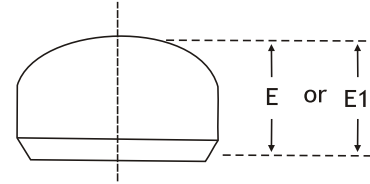
BUTTWELD FITTING - EQUAL TEE, CROSS & CAPS



EQUAL TEE



CROSS



EQUAL TEE, CROSS

B16.9

Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)	Run 'C'	Outlet 'M'
1/2"	21.3	25	25
3/4"	26.7	29	29
1"	33.4	38	38
1.1/4"	42.2	48	48
1.1/2"	48.3	57	57
2"	60.3	64	64
2.1/2"	73.0	76	76
3"	88.9	86	86
3.1/2"	101.6	95	95
4"	114.3	105	105
5"	141.3	124	124
6"	168.3	143	143
8"	219.1	178	178
10"	273.0	216	216
12"	323.8	254	254
14"	355.6	279	279
16"	406.4	305	305
18"	457.0	343	343
20"	508.0	381	381
22"	559.0	419	419
24"	610.0	432	432
26"	660.0	495	495
28"	711.0	521	521
30"	762.0	559	559
32"	813.0	597	597
34"	864.0	635	635
36"	914.0	673	673

Note : All Dimensions are in millimeters (mm)
Dimension for 38" and above on request.

CAPS

B16.9

Nominal Pipe Size (NPS)	Outside Diameter at Bevel D	Length (1) E	Limiting Wall Thickness for Length E	Length (2) E1
1/2	0.84	1.00	0.18	1.00
3/4	1.05	1.00	1.15	1.00
1	1.32	1.50	0.18	1.50
1 1/4	1.66	1.50	0.19	1.50
1 1/2	1.90	1.50	0.20	1.50
2	2.38	1.50	0.22	1.75
2 1/2	2.88	1.50	0.28	2.00
3	3.50	2.00	0.30	2.50
3 1/2	4.00	2.50	0.32	3.00
4	4.50	2.50	0.34	3.00
5	5.56	3.00	0.38	3.50
6	6.62	3.50	0.43	4.00
8	8.62	4.00	0.50	5.00
10	10.75	5.00	0.50	6.00
12	12.75	6.00	0.50	7.00
14	14.00	6.50	0.50	7.50
16	16.00	7.00	0.50	8.00
18	18.00	8.00	0.50	9.00
20	20.00	9.00	0.50	10.00
22	22.00	10.00	0.50	10.00
24	24.00	10.50	0.50	12.00
26	26.00	10.50	...	...
28	28.00	10.50	...	...
30	30.00	10.50	...	...
32	32.00	10.50	...	...
34	34.00	10.50	...	...
36	36.00	10.50	...	...
38	38.00	12.00	...	...
40	40.00	12.00	...	...
42	42.00	12.00	...	...
44	44.00	13.50	...	...
46	46.00	13.50	...	...
48	48.00	13.50	...	...

GENERAL NOTE :

- (a) Dimensions are in inches.
- (b) The shape of these caps shall be ellipsoidal and shall conform to the shape requirements as given in the ASME Boiler and Pressure Vessel Code

NOTES :

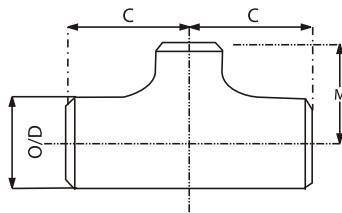
- (1) Length E applies for thickness not exceeding that given in column "Limiting Wall Thickness for Length E".
- (2) Length E1 applies for thickness greater than that given in column "Limiting Wall Thickness" for NPS 24 and smaller For NPS 26 and larger, length E1 shall be by agreement between manufacturer and purchaser.



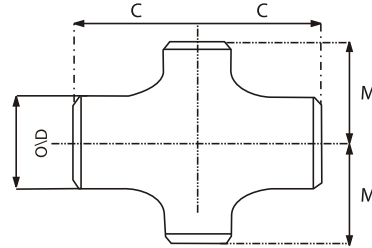
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BUTTWELD FITTING - UNEQUAL TEE & UNEQUAL CROSS



UNEQUAL TEE



CROSS UNEQUAL

B16.9

Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)		Center - to - Center		Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)		Center - to - Center	
	Run	Outlet	Run 'C'	Outlet 'M'		Run	Outlet	Run 'C'	Outlet 'M'
1/2" x 3/8"	21.3	17.3	25	25	10" x 8"	273.0	219.1	216	203
1/2" x 1/4"	21.3	13.7	25	25	10" x 6"	273.0	168.3	216	194
3/4" x 1/2"	26.7	21.3	29	29	10" x 5"	273.0	141.3	216	191
3/4" x 3/8"	26.7	17.3	29	29	10" x 4"	273.0	114.3	216	184
1" x 3/4"	33.4	26.7	38	38	12" x 10"	323.8	273.0	254	241
1" x 1/2"	33.4	21.3	38	38	12" x 8"	323.8	219.1	254	229
1.1/4" x 1"	42.2	33.4	48	48	12" x 6"	323.8	168.3	254	219
1.1/4" x 3/4"	42.2	26.7	48	48	12" x 5"	323.8	141.3	254	216
1.1/4" x 1/2"	42.2	21.3	48	48	14" x 12"	355.6	323.8	279	270
1.1/2" x 1.1/4"	48.3	42.2	57	57	14" x 10"	355.6	273.0	279	257
1.1/2" x 1"	48.3	33.4	57	57	14" x 8"	355.6	219.1	279	248
1.1/2" x 3/4"	48.3	26.7	57	57	14" x 6"	355.6	168.3	279	238
1.1/2" x 1/2"	48.3	21.3	57	57	16" x 14"	406.4	355.6	305	305
2" x 1.1/2"	60.3	48.3	64	60	16" x 12"	406.4	323.8	305	295
2" x 1.1/4"	60.3	42.2	64	57	16" x 10"	406.4	273.0	305	283
2" x 1"	60.3	33.4	64	51	16" x 8"	406.4	219.1	305	273
2" x 3/4"	60.3	26.7	64	44	16" x 6"	406.4	168.3	305	264
2.1/2" x 2"	73.0	60.3	76	70	18" x 16"	457.0	406.4	343	330
2.1/2" x 1.1/2"	73.0	48.3	76	67	18" x 14"	457.0	355.6	343	330
2.1/2" x 1.1/4"	73.0	42.2	76	64	18" x 12"	457.0	323.8	343	321
2.1/2" x 1"	73.0	33.4	76	57	18" x 10"	457.0	273.0	343	308
					18" x 8"	457.0	219.1	343	298
3" x 2.1/2"	88.9	73.0	86	83	20" x 18"	508.0	457.0	381	368
3" x 2"	88.9	60.3	86	76	20" x 16"	508.0	406.4	381	356
3" x 1.1/2"	88.9	48.3	86	73	20" x 14"	508.0	355.6	381	356
3" x 1.1/4"	88.9	42.2	86	70	20" x 12"	508.0	323.8	381	346
					20" x 10"	508.0	273.0	381	333
					20" x 8"	508.0	219.1	381	324
3.1/2" x 3"	101.6	88.9	95	92	22" x 20"	559.0	508.0	419	406
3.1/2" x 2.1/2"	101.6	73.0	95	89	22" x 18"	559.0	457.0	419	394
3.1/2" x 2"	101.6	60.3	95	83	22" x 16"	559.0	406.4	419	381
3.1/2" x 1.1/2"	101.6	48.3	95	79	22" x 14"	559.0	355.6	419	381
					22" x 12"	559.0	323.8	419	371
					22" x 10"	559.0	273.0	419	359
4" x 3.1/2"	114.3	101.6	105	102	24" x 22"	610.0	559.0	432	432
4" x 3"	114.3	88.9	105	98	24" x 20"	610.0	508.0	432	432
4" x 2.1/2"	114.3	73.0	105	95	24" x 18"	610.0	457.0	432	419
4" x 2"	114.3	60.3	105	89	24" x 16"	610.0	406.4	432	406
4" x 1.1/2"	114.3	48.3	105	86	24" x 14"	610.0	355.6	432	406
					24" x 12"	610.0	323.8	432	397
					24" x 10"	610.0	273.0	432	384
5" x 4"	141.3	114.3	124	117	26" x 24"	660.0	610.0	495	483
5" x 3.1/2"	141.3	101.6	124	114	26" x 22"	660.0	559.0	495	470
5" x 3"	141.3	88.9	124	111	26" x 20"	660.0	508.0	495	457
5" x 2.1/2"	141.3	73.0	124	108	26" x 18"	660.0	457.0	495	444
5" x 2"	141.3	60.3	124	105	26" x 16"	660.0	406.4	495	432
					26" x 14"	660.0	355.6	495	432
					26" x 12"	660.0	323.8	495	422
6" x 5"	168.3	141.3	143	137	28" x 26"	711.0	660.0	521	521
6" x 4"	168.3	114.3	143	130	28" x 24"	711.0	610.0	521	508
6" x 3.1/2"	168.3	101.6	143	127	28" x 22"	711.0	559.0	521	495
6" x 3"	168.3	88.9	143	124	28" x 20"	711.0	508.0	521	483
6" x 2.1/2"	168.3	73.0	143	121					
8" x 6"	219.1	168.3	178	168					
8" x 5"	219.1	141.3	178	162					
8" x 4"	219.1	114.3	178	156					
8" x 3.1/2"	219.1	101.6	178	152					

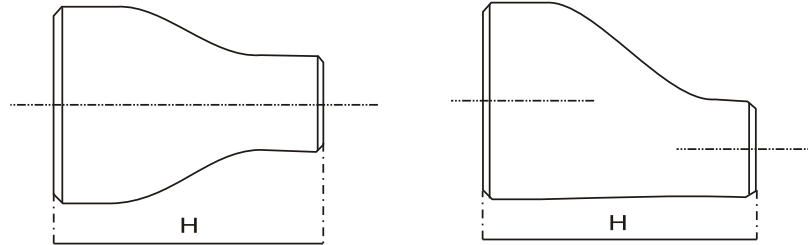
Note : All Dimensions are in millimeters (mm) Dimension for 30" and above on request.



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BUTTWELD FITTING : REDUCER : CONCENTRIC & ECCENTRIC



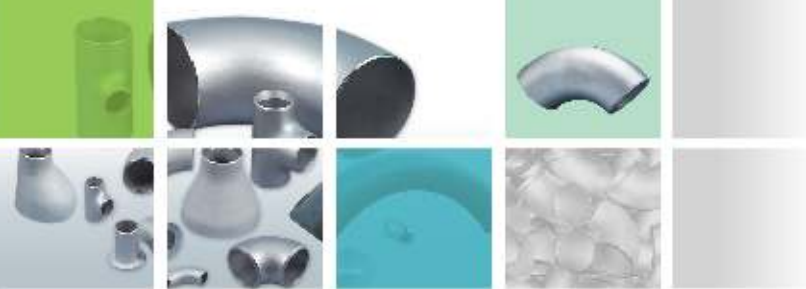
CONCENTRIC REDUCER

ECCENTRIC REDUCER

B16.9

Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)		End-to-End H	Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)		End-to-End H
	Run	Outlet			Run	Outlet	
3/4" x 1/2"	26.7	21.3	38	12" x 10"	323.8	273.0	203
3/4" x 3/8"	26.7	17.3	38	12" x 8"	323.8	219.1	203
1" x 3/4"	33.4	26.7	51	12" x 6"	323.8	168.3	203
1" x 1/2"	33.4	21.3	51	12" x 5"	323.8	141.3	203
1.1/4" x 1"	42.2	33.4	51	14" x 12"	355.6	323.8	330
1.1/4" x 3/4"	42.2	26.7	51	14" x 10"	355.6	273.0	330
1.1/4" x 1/2"	42.2	21.3	51	14" x 8"	355.6	219.1	330
1.1/2" x 1.1/4"	48.3	42.2	64	14" x 6"	355.6	168.3	330
1.1/2" x 1"	48.3	33.4	64	16" x 14"	406.4	355.6	356
1.1/2" x 3/4"	48.3	26.7	64	16" x 12"	406.4	323.8	356
1.1/2" x 1/2"	46.3	21.3	64	16" x 10"	406.4	273.0	356
2" x 1.1/2"	60.3	48.3	76	16" x 8"	406.4	219.1	356
2" x 1.1/4"	60.3	42.2	76	18" x 16"	457.0	406.4	381
2" x 1"	60.3	33.4	76	18" x 14"	457.0	356.6	381
2" x 3/4"	60.3	26.7	76	18" x 12"	457.0	323.8	381
2.1/2" x 2"	73.0	60.3	89	18" x 10"	457.0	273.0	381
2.1/2" x 1.1/2"	73.0	48.3	89	20" x 18"	508.0	457.0	508
2.1/2" x 1.1/4"	73.0	42.2	89	20" x 16"	508.0	406.4	508
2.1/2" x 1"	73.0	33.4	89	20" x 14"	508.0	355.6	508
3" x 2.1/2"	88.9	73.0	89	20" x 12"	508.0	323.8	508
3" x 2"	88.9	60.3	89	22" x 20"	559.0	508.0	508
3" x 1.1/2"	88.9	48.3	89	22" x 18"	559.0	457.0	508
3" x 1.1/4"	88.9	42.2	89	22" x 16"	559.0	406.4	508
3.1/2" x 3"	101.6	88.9	102	22" x 14"	559.0	355.6	508
3.1/2" x 2.1/2"	101.6	73.0	102	24" x 22"	610.0	559.0	508
3.1/2" x 2"	101.6	60.3	102	24" x 20"	610.0	508.0	508
3.1/2" x 1.1/2"	101.6	48.3	102	24" x 18"	610.0	457.0	508
4" x 3.1/2"	114.3	101.6	102	24" x 16"	610.0	406.4	508
4" x 3"	114.3	88.9	102	26" x 24"	660.0	610.0	610
4" x 2.1/2"	114.3	73.0	102	26" x 22"	660.0	559.0	610
4" x 2"	114.3	60.3	102	26" x 20"	660.0	508.0	610
4" x 1.1/2"	114.3	48.3	102	26" x 18"	660.0	457.0	610
5" x 4"	141.3	114.3	127	28" x 26"	711.0	660.0	610
5" x 3.1/2"	141.3	101.6	127	28" x 24"	711.0	610.0	610
5" x 3"	141.3	88.9	127	28" x 20"	711.0	508.0	610
5" x 2.1/2"	141.3	73.0	127	28" x 18"	711.0	457.0	610
5" x 2"	141.3	60.3	127	30" x 28"	762.0	711.0	610
6" x 5"	168.3	141.3	140	30" x 26"	762.0	660.0	610
6" x 4"	168.3	114.3	140	30" x 24"	762.0	610.0	610
6" x 3.1/2"	168.3	101.6	140	30" x 22"	762.0	610.0	610
6" x 3"	168.3	88.9	140	30" x 20"	762.0	508.0	610
6" x 2.1/2"	168.3	73.0	140	32" x 30"	813.0	762.0	610
8" x 6"	219.1	168.3	152	32" x 28"	813.0	711.0	610
8" x 5"	219.1	141.3	152	32" x 26"	813.0	660.0	610
8" x 4"	219.1	114.3	152	32" x 24"	813.0	610.0	610
8" x 3.1/2"	219.1	101.6	152	34" x 32"	864.0	813.0	610
10" x 8"	273.0	219.1	178	34" x 30"	864.0	762.0	610
10" x 6"	273.0	168.3	178	34" x 26"	864.0	660.0	610
10" x 5"	273.0	141.3	178	34" x 24"	864.0	610.0	610
10" x 4"	273.0	114.3	178				

Note : All Dimensions are in millimeters (mm) Dimension for 36" and above on request.



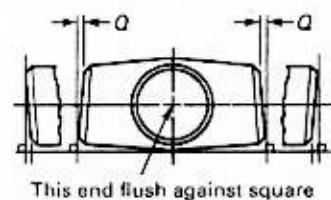
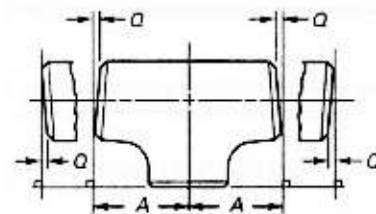
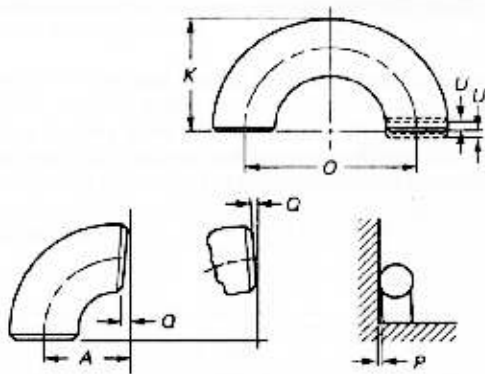
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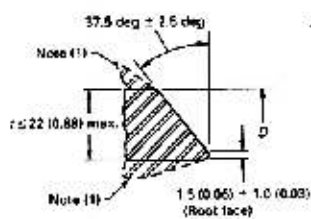
DIMENSIONAL TOLERANCE OF PIPE FITTING ANSI B16.9 / B16.28 / MSS SP - 43

ALL FITTINGS				90°/60°/45° 30° ELBOWS & TEES		REDUCERS & STUBEND		180° RETURNS				CAPS		ANGULARITY TOLERANCE		
Nominal Pipe size INCH/MM	Outside Diameter at Bevel	Inside Dia Meter	Wall Thickness at End	Center to End	Overall Length Dimension	Center to End	Back to Face Dimension	Alignment of End Dimensions	Overall Length	Nominal Pipe Size	Off Angel Inch/mm	Off Plane				
	D		T	A, B, C, M	H, F	O	K	U	E		Q	P				
	(1) B16.9 MSS SP 43	(2) B16.9	B16.9 MSS SP 43	B16.9 MSS SP 43	B16.9 MSS SP 43	B16.9 MSS SP 43	B16.9 MSS SP 43	B16.9 MSS SP 43	B16.9 MSS SP 43	B16.9 MSS SP 43	B16.9	B16.9				
1/2" - 2 1/2" 15 - 65	+1.6 -0.8		±0.8		FROM 1/2" TO 18 15 TO 600	FROM 3/4"	FROM 1/2" - 24" 15 - 600	FROM 1/2" - 8" 15 - 200			±3	±3.17	1/2" - 4" 15 - 100	±1	±2	
3" - 3 1/2" 80 - 90	±1.6	±0.80	±1.6	±2	±1.60	±2	±1.60	±6	±6.35	±6.0	±6.4	±1	±0.8	5" - 8" 125 - 200	±2	±4
4" 100														10" - 12" 250 - 300	±3	±5
5" - 6" 125 - 150	+2.4 -1.6	+1.60 -0.80	±3.2	Not Less Than 87.5% Nominal Thk	Not Less Than 87.5% Nominal Thk	±2.40	±2.38	±10	±10	±6.0	±6.4	±1	±0.8	14" - 16" 350 - 400	±3	±7
8" 200	18" - 24" 450 - 600	±4												±10		
10" - 18" 250 - 450	+4 -3.2	+2.38 -0.80												26" - 30" 650 - 750	±5	±10
20" - 24" 500 - 600	+6.4 -4.8	+3.17 -0.79	±4.8	±3	±5									32" - 42" 800 - 1050	±5	±13
26" - 30" 650 - 750	+6.4 -4.8	±4.8												44" - 48" 1100 - 1200	±5	±20
32" - 48" 800 - 1200	+6.4 -4.8													42" - 48" 1050 - 1200	±5	±20

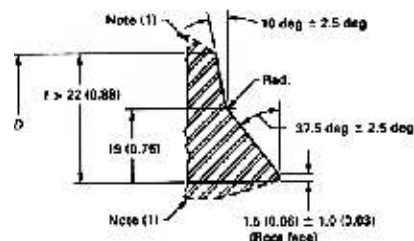
Tolerances



Welding Bevels and Root Face



(a) Plain Bevel

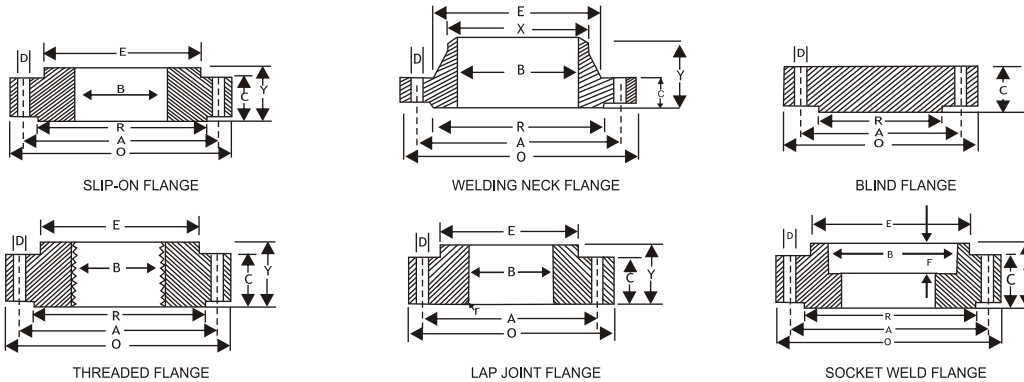


(b) Compound Bevel

Nominal Wall Thickness	End Preparation
Less than x (Note (2)) x to 22 (0.88), inclusive More than 22 (0.88)	Cut Square or Slightly Chamfer, at manufacturer's option (not illustrated) Plain as in illustration (a) above Compound bevel as in illustration (b) above



FLANGES CLASS 150 & 300



DIMENSIONS OF CLASS 150 FLANGES AS PER B16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. Of Bolt Holes D	No. Of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	88.9	60.3	15.9	4	11.1	30.2	15.9	47.6	15.9	22.3	22.9	34.9	9.5	21.33
20	98.4	69.8	15.9	4	12.7	38.1	15.9	52.4	15.9	27.7	28.2	42.9	11.1	26.67
25	107.9	79.4	15.9	4	14.3	49.2	17.5	55.6	17.5	34.5	35.0	50.8	12.7	33.40
32	117.5	88.9	15.9	4	15.9	58.7	20.6	57.1	20.6	43.2	43.7	63.5	14.3	42.16
40	127.0	98.4	15.9	4	17.5	65.1	22.2	61.9	22.2	49.5	50.0	73.0	15.9	48.26
50	152.4	120.6	19.0	4	19.0	77.8	25.4	63.5	25.4	62.0	62.5	92.1	17.5	60.31
65	177.8	139.7	19.0	4	22.2	90.5	28.6	69.8	28.6	74.7	75.4	104.8	19.0	73.02
80	190.5	152.4	19.0	4	23.8	107.9	30.2	69.8	30.2	90.7	91.4	127.0	20.6	88.90
100	228.6	190.5	19.0	8	23.8	134.9	33.3	76.2	33.3	116.1	116.8	157.2	23.8	114.30
125	254.0	215.9	22.2	8	23.8	163.5	36.5	88.9	36.5	143.8	144.5	185.7	23.8	141.30
150	279.4	241.3	22.2	8	25.4	192.1	39.7	88.9	39.7	170.7	171.4	215.9	27.0	168.27
200	342.9	298.4	22.2	8	28.6	246.1	44.4	101.6	44.4	221.5	222.2	269.9	31.7	219.07
250	406.4	361.9	25.4	12	30.2	304.8	49.2	101.6	49.2	276.3	277.4	323.8	33.3	273.05
300	482.6	431.8	25.4	12	31.8	365.1	55.6	114.3	55.6	327.1	328.2	381.0	39.7	323.85
350	533.4	476.2	28.6	12	34.9	400.0	57.1	127.0	79.4	359.1	360.2	412.7	41.3	355.60
400	596.9	539.7	28.6	16	36.5	457.2	63.5	127.0	87.3	410.5	411.2	469.9	44.4	406.40
450	635.0	577.8	31.7	16	39.7	504.8	68.3	139.7	96.8	461.8	462.3	533.4	49.2	457.20
500	698.5	635.0	31.7	20	42.9	558.8	73.0	144.5	103.2	513.1	514.3	584.2	54.0	508.00
600	812.8	749.3	34.9	20	47.6	663.6	82.5	152.4	111.1	615.9	615.9	692.1	63.5	609.60

DIMENSIONS OF CLASS 300 FLANGES AS PER B16.5

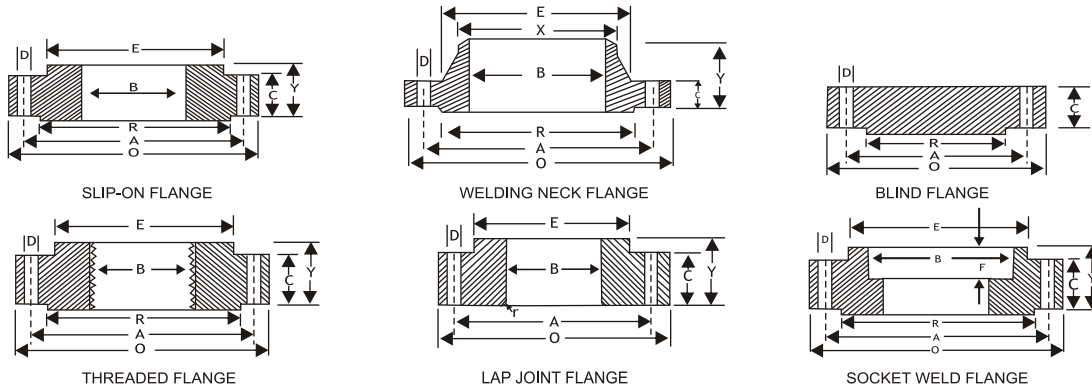
Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. Of Bolt Holes D	No. Of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S / O & S / W Y	W / N Y	L / J Y	S / O & S / W B	L / J B			
15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.2	22.3	22.9	34.9	9.5	21.33
20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.2	42.9	11.1	26.67
25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	27.0	34.5	35.0	50.8	12.7	33.40
32	133.3	98.4	19.0	4	19.0	63.5	27.0	65.1	27.0	43.2	43.7	63.5	14.3	42.16
40	155.6	114.3	22.2	4	20.6	69.8	30.2	68.3	30.2	49.5	50.0	73.0	15.9	48.26
50	165.1	127.0	19.0	8	22.2	84.1	33.3	69.8	33.3	62.0	62.5	92.1	17.5	60.31
65	190.5	149.2	22.2	8	25.4	100.0	38.1	76.2	38.1	74.7	75.4	104.8	19.0	73.02
80	209.5	168.3	22.2	8	28.6	117.5	42.9	79.4	42.9	90.7	91.4	127.0	20.6	88.90
100	254.0	200.0	22.2	8	31.8	146.0	47.6	85.7	47.6	116.1	116.8	157.2	23.8	114.30
125	279.4	234.9	22.2	8	34.9	177.8	50.8	98.4	50.8	143.8	144.5	185.7	-	141.30
150	317.5	269.9	22.2	12	36.5	206.4	52.4	98.4	52.4	170.7	171.4	215.9	-	168.27
200	381.0	330.2	25.4	12	41.3	260.3	61.9	111.1	61.9	221.5	222.2	269.9	-	219.07
250	444.5	387.3	28.6	16	47.6	320.7	66.7	117.5	95.2	276.3	277.4	323.8	-	273.05
300	520.7	450.8	31.7	16	50.8	374.6	73.0	130.2	101.6	327.1	328.2	381.0	-	323.85
350	584.2	514.3	31.7	20	54.0	425.4	76.2	142.9	111.1	359.1	360.2	412.7	-	355.60
400	647.7	571.5	34.9	20	57.2	482.6	82.5	146.0	120.6	410.5	411.2	469.9	-	406.40
450	711.2	628.5	34.9	24	60.3	533.4	88.9	158.7	130.2	461.8	462.3	533.4	-	457.20
500	774.7	685.8	34.9	24	63.5	587.4	95.2	161.9	139.7	513.1	514.3	584.2	-	508.00
600	914.4	812.8	41.3	24	69.8	701.7	106.4	168.3	152.4	615.9	615.9	692.1	-	609.60

Metric values are direct conversion from Inches table of B16.5

Flanges except Lap Joint will be furnished with (1.6 mm) raised face, Which is included in " Thickness " (C) and Length Through Hub (Y).



FLANGES CLASS 600 & 900



DIMENSIONS OF CLASS 600 FLANGES AS PER B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.3	22.3	22.8	34.9	9.5	21.33
20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.1	42.9	11.1	26.67
25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	26.9	34.5	35.0	50.8	12.7	33.40
32	133.3	98.4	19.0	4	20.6	63.5	28.6	66.7	28.4	43.2	43.6	63.5	14.2	42.16
40	155.6	114.3	22.2	4	22.2	69.8	31.7	69.8	31.7	49.5	50.0	73.0	15.8	48.26
50	165.1	127.0	19.0	8	25.4	84.1	36.5	73.0	36.5	62.0	62.4	92.1	17.4	60.31
65	190.5	149.2	22.2	8	28.6	100.0	41.3	79.4	41.1	74.7	75.4	104.8	19.0	73.02
80	209.5	168.3	22.2	8	31.8	117.5	46.0	82.5	45.9	90.7	91.4	127.0	-	88.90
100	273.0	215.9	25.4	8	38.1	152.4	54.0	101.6	53.8	116.1	116.8	157.2	-	114.30
125	330.2	266.7	28.6	8	44.4	188.9	60.3	114.3	60.4	143.8	141.5	185.7	-	141.30
150	355.6	292.1	28.6	12	47.6	222.2	66.7	117.5	66.5	170.7	171.4	215.9	-	168.27
200	419.1	349.2	31.7	12	55.6	273.0	76.2	133.3	76.2	221.5	222.2	269.9	-	219.07
250	508.0	431.8	34.9	16	63.5	342.9	85.7	152.4	111.2	276.3	277.3	323.8	-	273.05
300	558.8	488.9	34.9	20	66.7	400.0	92.1	155.6	117.3	327.1	328.1	381.0	-	323.85
350	603.2	527.0	38.1	20	69.9	431.8	93.7	165.1	127.0	359.1	360.1	412.7	-	355.60
400	685.8	603.2	41.3	20	76.2	495.3	106.4	177.8	139.7	410.5	411.2	469.9	-	406.40
450	742.9	654.0	44.4	20	82.6	546.1	117.5	184.1	152.4	461.8	462.2	533.4	-	457.20
500	812.8	723.9	44.4	24	88.9	609.6	127.0	190.5	165.1	513.1	514.3	584.2	-	508.00
600	939.8	838.2	50.8	24	101.6	717.5	139.7	203.2	184.1	615.9	615.9	692.1	-	609.60

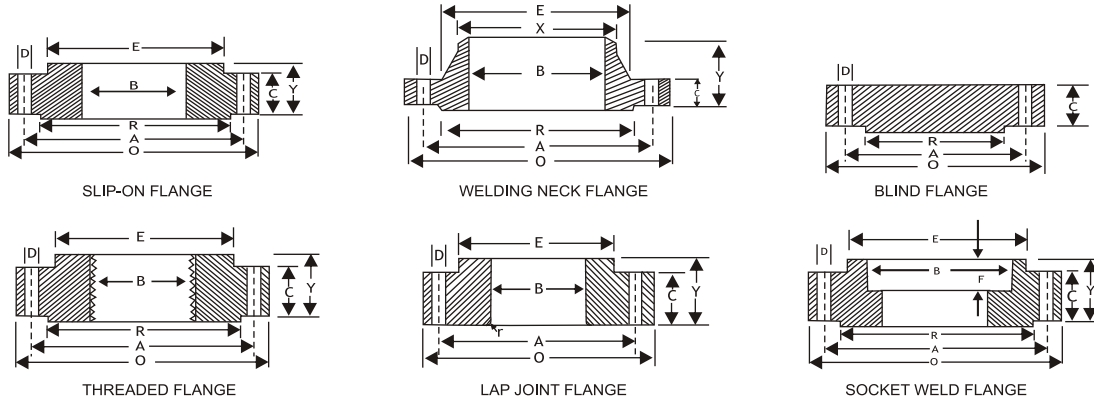
DIMENSIONS OF CLASS 900 FLANGES AS PER B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5	21.33
20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	35.0	27.7	28.1	42.9	11.1	26.67
25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.1	34.5	35.0	50.8	12.7	33.40
32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.1	43.2	43.6	63.5	14.2	42.16
40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8	48.26
50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.4	92.1	17.4	60.31
65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0	73.02
80	241.3	190.5	25.4	8	38.1	127.0	53.9	101.6	53.8	90.7	91.4	127.0	-	88.90
100	292.1	234.9	31.7	8	44.4	158.7	69.8	114.3	69.8	116.0	116.8	157.1	-	114.30
125	349.2	279.4	35.0	8	50.8	190.5	79.3	127.0	79.2	143.7	114.5	185.7	-	141.30
150	381.0	317.5	31.7	12	55.6	234.9	85.8	139.7	85.8	170.6	171.4	215.9	-	168.27
200	469.9	393.7	38.1	12	63.5	298.4	101.6	162.0	114.3	221.4	222.2	269.8	-	219.07
250	546.1	469.9	38.1	16	69.8	368.3	107.9	184.1	127.0	276.3	277.3	323.8	-	273.05
300	609.6	533.4	38.1	20	79.3	419.1	117.4	200.0	142.7	327.1	328.1	381.0	-	323.85

Metric values are direct conversion from Inches table of B16.5
 RF Thickness 6.3 mm Extra to be provided (Except Lap Joint Flange & FF Flanges).



FLANGES CLASS 1500 & 2500



DIMENSIONS OF CLASS 1500 FLANGES AS PER B16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. Of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5	21.33
20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	34.9	27.7	28.1	42.9	11.1	26.67
25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.3	34.5	35.0	50.8	12.7	33.40
32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.3	43.2	43.6	63.5	14.2	42.16
40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8	48.26
50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.0	92.1	17.4	60.31
65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0	73.02
80	266.7	203.2	31.7	8	47.6	133.3	73.0	117.5	73.0	90.7	91.4	127.0	-	88.90
100	311.1	241.3	34.9	8	54.0	161.9	90.5	123.0	90.4	116.1	116.8	157.2	-	114.30
125	374.6	292.1	41.3	8	73.0	196.8	104.8	155.6	104.8	143.8	144.5	185.7	-	141.30
150	393.7	317.5	38.1	12	82.6	228.6	119.1	171.4	119.1	170.7	171.4	215.9	-	168.27
200	482.6	393.7	44.4	12	92.1	292.1	142.9	212.7	142.8	221.5	222.2	269.9	-	219.07
250	584.2	482.6	50.8	12	107.9	368.3	158.7	254.0	177.8	276.3	277.3	323.8	-	273.05
300	673.1	571.5	54.0	16	123.8	450.8	181.0	285.5	218.9	327.1	328.1	381.0	-	323.85

DIMENSIONS OF CLASS 2500 FLANGES AS PER B16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. Of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	133.3	88.9	22.2	4	30.2	42.9	39.7	73.0	39.7	22.3	22.3	34.9	-	21.33
20	139.7	95.2	22.2	4	31.7	50.8	42.9	79.4	42.9	27.7	27.7	42.9	-	26.67
25	158.7	107.9	25.4	4	34.9	57.1	47.7	88.9	47.7	34.5	34.5	50.8	-	33.40
32	184.1	130.2	28.6	4	38.1	73.0	52.4	95.2	52.4	43.2	43.2	63.5	-	42.16
40	203.2	146.0	31.7	4	44.4	79.4	60.3	111.1	60.3	49.5	49.5	73.0	-	48.26
50	234.9	171.4	28.6	8	50.8	95.2	69.8	127.0	69.8	62.4	62.0	92.1	-	60.31
65	266.7	196.8	31.7	8	57.1	114.3	79.4	142.9	79.4	74.7	74.7	104.8	-	73.02
80	304.8	228.6	34.9	8	66.7	133.3	92.1	168.3	92.1	90.7	90.7	127.0	-	88.90
100	355.6	273.0	41.3	8	76.2	165.1	107.9	190.5	107.9	116.1	116.1	157.2	-	114.30
125	419.1	323.8	47.6	8	92.1	203.2	130.0	228.6	130.0	143.8	143.8	185.7	-	141.30
150	482.6	368.3	54.0	8	107.9	234.9	152.4	273.0	152.4	170.7	170.7	215.9	-	168.27
200	552.4	438.1	54.0	12	127.0	304.8	177.8	317.5	177.8	221.5	221.5	269.9	-	219.07
250	673.1	539.7	66.7	12	165.1	374.6	228.6	419.1	228.6	276.3	276.3	323.8	-	273.05
300	762.0	619.1	73.0	12	184.1	441.3	254.0	463.5	254.0	327.1	327.1	381.0	-	323.85

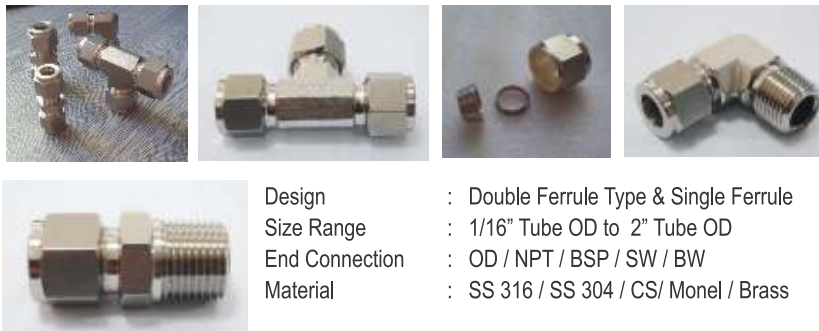
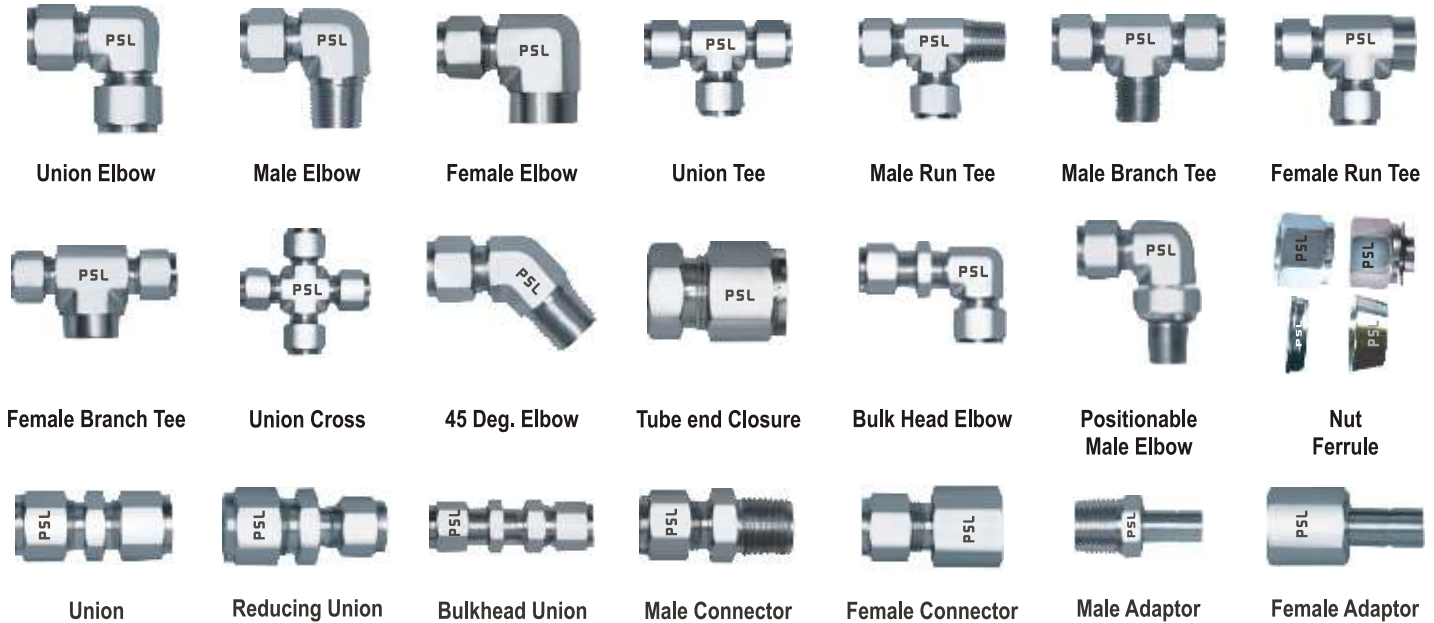
Metric values are direct conversion from Inches table of B16.5 : RF Thickness 6.3 mm Extra to be provided (Except Lap Joint Flange & FF Flanges).



PSL PIPE & FITTINGS CO.

AN ISO 9001:2008 CERTIFIED CO.

S. S. INSTRUMENTAL FERRULE FITTINGS



S. S. Tee / Elbow Ferrule Fittings

- S.S. Union Tee
- S.S. Male Branch Tee
- S.S. Female Branch Tee
- S.S. Male Elbow
- S.S. Cross
- S.S. Valve Body
- S.S. Union
- S.S. Union Tee
- S.S. Male Branch Tee
- S.S. Female Branch Tee
- S.S. Male Elbow
- S.S. Cross
- S.S. Valve Body
- S.S. Union

Manifold Valves

Design : Two Way, Three Way, Five Way, Manifold Straight & 'T' Type & 'H' Type
 End Connection : NPT / BSP / Flange (1/8" to 1")
 Material : SS316 / SS304 / CS / Brass / Monel
 Pressure Rating : 10,000 psig



WE ALSO SUPPLY YOU FORGED BODY MANIFOLD VALVES

Needle Valves

Needle valves are available in size, range of 1/8" to 1" with Double Ferrules Tube connection and NPT, BSP, BSPT, thread male/female connections with maximum working pressure 10,000 psi. Valves are available in Stainless Steel of all grades, Monel, Brass, C.S. etc.



Syphon Tubes

Type : Stainless Steel 304 & 316 Gr. in U type, Trumpet Type (Pigtail & Coil Type)
 Application : Connected between the pressure gauge & process in applications where high temperature above 65 Deg C for e.g., steam. These Syphon Tubes acts as a cooling coil and protects the gauge from high temperature vapors





PSL PIPE & FITTINGS CO.

AN ISO 9001:2008 CERTIFIED CO.

DAIRY EQUIPMENTS



slight glass



cross clamp end



3 way ball valve



butter fly valve

SMS , IDF, DIN UNIONS Etc.,

Size: 1/2" OD to 4" OD
Thickness :10 Swg to 22 Swg

The company offers comprehensive range of superior quality Dairy Fittings in which finest materials are used. We have carved out a niche for ourself as < Dairy Steel > providers at reasonable prices.

This line consists of Tri-Clover parts with either Tri-Weld ends suitable for use with orbital welding equipment or self-aligning Tri-clamp end connections.

Material of Construction: 304, 304L, 316, 316L etc.,

Finish : Mechanical Polish as well as Electropolish finishes.

Types: Seamless & Welded

Items: Threaded Bevel Seat 90° Elbow 90° Reducing Elbow, Non Tapered 90° Elbow, Plain Bevel Seat 90° Elbow Short Outlet Tee 45° Elbow • Equal Tee • Reducing Tee • Instrument Tee • Short Outlet Reducing Tee Equal Cross • Long Weld Ferrule • Short Weld Ferrule • Ferrule for Expanding (Recessless)



DAIRY BUTTWELD FITTINGS



IDF UNION



WYE LOOP



CONICAL STRAINER



PIPE HOLDER



BUTTER FLY VALVE



IDF UNION



NON-RETURN VALVE



DIAPHRAGM VALVE



T C CLAMP



HOSE FERRULE



PSL PIPE & FITTINGS CO.

AN ISO 9001:2008 CERTIFIED CO.

Cupro Nickel Fittings

PSL Pipe & Fittings Co. maintains a broad inventory of Copper Nickel C70600 (90/10) and C71500 (70/30) fittings. These copper nickel alloys prove to have very good resistance to seawater, brine water, organic compounds, neutral and alkaline salts, diluted non-oxidizing acids, and more. The copper nickel alloys are most commonly used in seawater environments because of the anti-fouling. Copper nickel creates a thin tenacious protective film formation, which eliminates any marine life to adhere to the pipe walls. Observations in velocity tests over a number of years indicates that the surface profile of copper nickel tended to become smoother rather than rougher at velocities where metal loss reached measurable amounts.

Typical Applications

- Condensers
- Seawater piping
- Power plants
- Exchanger shells



Please contact one of our experts today to find out how we can help meet your copper nickel needs

List of standard sizes for C70600

Class 200, SCH 40, SCH 80, Butt-weld Fittings
Threaded and Socket-weld Fittings, 3000#/6000#
C96200 400# Socket-weld Fittings

C70600

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Excellent
Coated Metal Arc Welding	Good
Spot Weld	Good
Seam Weld	Good
Butt Weld	Excellent
Capacity for Being Cold Worked	Good
Capacity for Being Hot Formed	Good
Machinability Rating	20

Chemical Composition (% max, unless shown as range or min.)

	Cu(1)	Fe	Pb	Mn	Ni(2)	Zn
Min. / Max.	Rem.	1.0 - 1.8	.05	1.0	9.0 - 11.0	1.0
Nominal	88.6	1.4	-	-	10.0	-

List of standard sizes for C71500

SCH 80 Butt-weld Fittings
Threaded and Socket-weld Fittings, 3000#/6000#
C96400 400# Socket-weld Fittings

C71500

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shielded Arc Welding	Excellent
Coated Metal Arc Welding	Excellent
Spot Weld	Excellent
Seam Weld	Excellent
Butt Weld	Excellent
Capacity for Being Cold Worked	Good
Capacity for Being Hot Formed	Good
Machinability Rating	20

Chemical Composition (% max, unless shown as range or min.)

	Cu(1)	Fe	Pb	Mn	Ni(2)	Zn
Min. / Max.	Rem.	0.40 - 1.0	.05	1.0	29.0-33.0	1.0
Nominal	69.5	0.50	-	-	30.0	-



PSL PIPE & FITTINGS CO.

AN ISO 9001:2008 CERTIFIED CO.

FORMULA OF CALCULATING WEIGHT

Formula of Calculating Weight

- 1) **Weight of S.S. Pipe**
O.D. (mm) - W. Thick (mm) x W. Thick (mm) x 0.0248 = Wt. Per Mtr.
O.D. (mm) - W. Thick (mm) x W. Thick (mm) x 0.00756 = Wt. Per Feet.
- 2) **Weight of S.S. Round Bar**
DIA (mm) x DIA (mm) x 0.00623 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x 0.0019 = Wt. Per Feet.
- 3) **Weight of S.S. Square Bar**
DIA (mm) x DIA (mm) x 0.00788 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x 0.0024 = Wt. Per Feet.
- 4) **Weight of S.S. Hexagonal Bar**
A/F (mm) x A/F (mm) x 0.00680 = Wt. Per Mtr.
A/F (mm) x A/F (mm) x 0.002072 = Wt. Per Feet.
- 5) **Weight of S.S. Flat Bar**
Width (mm) x Thick (mm) x 0.00798 = Wt. Per Mtr.
Width (mm) x Thick (mm) x 0.00243 = Wt. Per Feet.
- 6) **Weight of S.S. Sheets & Plates**
Length (Mtrs) x Width (Mtrs) X Thick (mm) x 8 = Kg. Per Sheet
Length (Ft) x Width (Ft) x Thick (mm) x 3/4 = Kg. Per Sheet
- 7) **Weight of S. S. Circle**
Dia (mm) x Dia (mm) x Thick (mm) ÷ 160 = Gms. Per PC
Dia (mm) x Dia (mm) x Thick (mm) x 0.0000063 = Kg. Per PC
- 8) **Weight of Brass Pipe / Copper Pipe**
O.D. (mm) - Thick (mm) x Thick (mm) x 0.0260 = Wt. Per Mtr.
- 9) **Weight of Lead Pipe**
O.D. (mm) - Wt. (mm) x Wt. (mm) x 0.0345 = Wt. Per. Mtr.
- 10) **Weight of Aluminium Pipe**
O.D. (mm) - Thick (mm) x Thick (mm) x 0.0083 = Wt. Per Mtr.
- 11) **Weight of Aluminium Sheet**
Length (Mtr.) x Width (Mtr.) x Thick (mm) x 2.69 = Wt. Per PC
- 12) **Weight for Conversion of Mtr. To Feet**
Weight of 1 Mtr. ÷ 3.2808 = Feet
- 13) **Formula for Calculating Width of Sheet for making Pipe**
Outer DIA - Wall Thickness X 22/7 Width of Sheet
- 14) **Formula For Healthy Business**
Honesty + Quality of Goods + Quick Service
+ Reasonable rate = **Good Health of Business**



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APPLICATION



Engineering

Ship Building

Petro-Chemical

Paper & Pulp Industries

Sugar Industry

Food Industries

Nuclear Power

Chemical & Pharmaceutical

Oil & Gas Industries



PSL PIPE & FITTINGS CO.

AN ISO 9001:2008 CERTIFIED CO.

Manufacturers : Stainless Steel, Carbon Steel, Alloy Steel, Cupro-Nickel, High Pressure Material & All Types of Exotic Metals

Specialized in : Pipe Fittings, High Pressure Fittings, and Flanges etc.

Stock Availability : Sheets, Plates, Coils, Pipes, Tubes, Rods, & Structure Steels etc.

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