

Designed by :
Thomas Smeets ©
Quality Assurance Manager

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FLANGES

PIPES

FITTINGS

ENGINEERING PRODUCTION

PRO ALLOY bv

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Ansi Pipe Schedules and Weights in Kg/Mtr.

Figures below = weight in kg/mtr.

Nominal Pipe	O.D. m m	Sched. 5S	Sched. 10.S	Sched. 10Full	Sched. 20	Sched. 30	Sched. Std	Sched. 40Full	Sched. 60	Sched. XS	Sched. 80Full	Sched. 100	Sched. 120	Sched. 140	Sched. 160	Sched. XXS
1/8"	10.30	-	1.24	-	-	-	1.73	1.73	-	2.41	2.41	-	-	-	-	-
			0.28				0.36	0.36		0.46	0.46					
1/4"	13.72	-	1.65	-	-	-	2.24	2.24	-	3.02	3.02	-	-	-	-	-
			0.49				0.63	0.63		0.80	0.80					
3/8"	17.14	-	1.65	-	-	-	2.31	2.31	-	3.20	3.20	-	-	-	-	-
			0.63				0.85	0.85		1.10	1.10					
1/2"	21.34	1.65	2.11	-	-	-	2.77	2.77	-	3.73	3.73	-	-	-	4.78	7.47
		0.80	1.00				1.27	1.27		1.62	1.62				1.94	2.55
3/4"	26.67	1.65	2.11	-	-	-	2.87	2.87	-	3.91	3.91	-	-	-	5.56	7.82
		1.03	1.28				1.68	1.68		2.19	2.19				2.90	3.63
1"	33.40	1.65	2.77	-	-	-	3.38	3.38	-	4.55	4.55	-	-	-	6.35	9.09
		1.29	2.08				2.50	2.50		3.23	3.23				4.18	5.45
1.1/4"	42.16	1.65	2.77	-	-	-	3.56	3.56	-	4.85	4.85	-	-	-	6.35	9.70
		1.65	2.69				3.38	3.38		4.46	4.46				5.58	7.76
1.1/2"	48.26	1.65	2.77	-	-	-	3.68	3.68	-	5.08	5.08	-	-	-	7.14	10.16
		1.90	3.12				4.05	4.05		5.41	5.41				7.22	9.55
2"	60.32	1.65	2.77	-	-	-	3.91	3.91	-	5.54	5.54	-	-	-	8.74	11.07
		2.38	3.94				5.44	5.44		7.49	7.49				11.08	13.45
2.1/2"	73.02	2.11	3.05	-	-	-	5.16	5.16	-	7.01	7.01	-	-	-	9.52	14.02
		3.70	5.26				8.68	8.68		11.42	11.42				14.88	20.41
3"	88.90	2.11	3.05	-	-	-	5.49	5.49	-	7.62	7.62	-	-	-	11.13	15.24
		4.50	6.45				11.29	11.29		15.27	15.27				20.98	27.67
3.1/2"	101.60	2.11	3.05	-	-	-	5.74	5.74	-	8.08	8.08	-	-	-	-	-
		5.20	7.40				13.57	13.57		18.63	18.63				-	-
4"	114.30	2.11	3.05	-	-	-	6.02	6.02	-	8.56	8.56	-	11.13	-	13.49	17.12
		5.81	8.34				16.07	16.07		22.31	22.31		28.25		33.48	41.02
5"	141.03	2.77	3.40	-	-	-	6.55	6.55	-	9.52	9.52	-	12.70	-	15.88	19.05
		9.45	11.56				21.78	21.78		30.95	30.95		40.24		49.11	57.42
6"	168.30	2.77	3.40	-	-	-	7.11	7.11	-	10.97	10.97	-	14.27	-	18.26	21.95
		11.31	13.82				28.26	28.26		42.56	42.56		54.20		67.22	79.18
8"	219.10	2.77	3.76	-	6.35	7.04	8.18	8.18	10.31	12.70	12.70	15.09	18.26	20.62	23.01	22.22
		14.78	19.94		33.03	36.72	42.53	42.53	52.88	64.63	64.63	75.80	90.32	101.04	111.32	107.87
10"	273.00	3.40	4.19	-	6.35	7.80	9.27	9.27	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40
		22.62	27.83		41.70	51.00	60.29	60.29	81.46	81.46	95.95	114.59	132.74	154.94	172.14	154.94
12"	323.85	3.96	4.57	-	6.35	8.38	9.52	10.31	14.27	12.70	17.47	21.44	25.40	28.58	33.34	25.40
		33.00	36.00		49.81	65.07	73.82	79.67	108.97	97.36	131.70	159.52	186.77	206.96	238.11	186.77
14"	355.60	3.96	4.78	6.35	7.92	9.52	9.52	11.13	15.09	12.70	19.05	23.82	27.79	31.75	35.71	-
		34.23	41.18	54.63	67.95	81.28	81.28	94.31	126.49	107.28	157.94	194.82	224.42	253.14	281.38	-
16"	406.40	4.19	4.78	6.35	7.92	9.52	9.52	12.70	16.64	12.70	21.44	26.19	30.96	36.52	40.49	-
		41.60	47.33	62.58	77.88	93.21	93.21	123.18	159.98	123.18	203.16	245.32	286.44	332.62	364.85	-
18"	457.20	4.19	4.78	6.35	7.92	11.13	9.52	14.27	19.05	12.70	23.82	29.36	34.92	39.69	45.24	-
		46.83	53.18	70.53	87.81	122.12	105.14	155.90	205.62	139.07	254.19	309.44	363.19	408.01	459.18	-
20"	508.00	4.78	5.54	6.35	9.52	12.70	9.52	15.09	20.62	12.70	26.19	32.54	38.10	44.45	50.01	-
		59.22	68.50	78.47	117.07	154.97	117.07	183.12	247.79	154.97	310.90	381.04	440.93	587.54	564.14	-
22"	558.80	-	-	6.35	9.52	12.70	9.52	-	22.22	12.70	28.60	34.92	41.28	47.62	53.98	-
				86.94	129.01	171.01	129.01		294.06	171.01	373.58	451.14	526.70	600.27	671.58	-
24"	609.60	5.54	6.35	6.35	9.52	14.27	9.52	17.48	24.61	12.70	30.96	38.89	46.02	52.30	59.54	-
		82.60	94.37	94.37	140.94	209.54	140.94	254.74	354.64	186.75	441.10	546.92	639.18	718.94	806.61	-
26"	660.40	-	-	7.92	12.70	-	9.52	-	-	12.70	-	-	-	-	-	-
				127.58	202.65		152.87			202.65						
28"	711.20	-	-	7.92	12.70	15.88	9.52	-	-	12.70	-	-	-	-	-	-
				137.50	218.51	271.90	164.63			218.51						
30"	762.00	-	-	7.92	12.70	15.88	9.52	-	-	12.70	-	-	-	-	-	-
				147.33	234.44	291.81	176.73			234.44						
32"	812.80	-	-	7.92	12.70	15.88	9.52	17.48	-	12.70	-	-	-	-	-	-
				156.58	250.33	311.67	188.66	352.28		250.33						
34"	863.60	-	-	7.92	12.70	15.88	9.52	17.48	-	12.70	-	-	-	-	-	-
				166.82	266.35	331.54	200.59	363.91		266.35						
36"	914.40	-	-	7.92	12.70	15.88	9.52	19.05	-	12.70	-	-	-	-	-	-
				177.12	282.12	351.41	212.52	420.17		282.12						



PRO Alloy bv

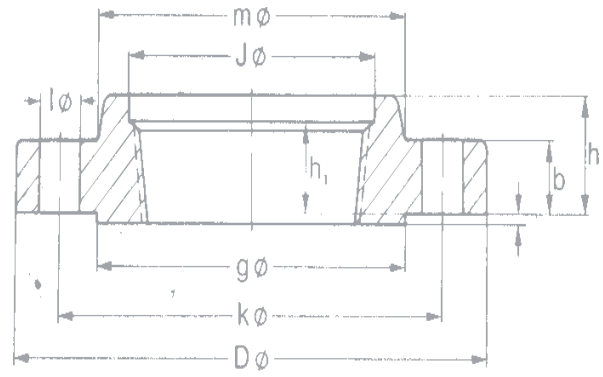
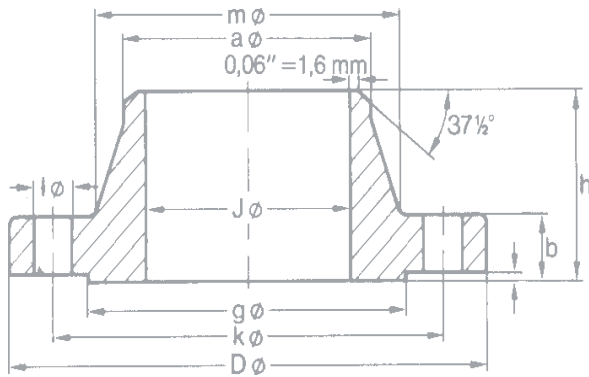
Wire Gauges.



Gauge No.	B.W.G.		L.S.W.G.		B.G.		U.S.G.	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm
3/0	0.425	10.795	0.372	9.449	0.500	12.700	0.375	9.525
2/0	0.380	9.652	0.348	8.839	0.445	11.300	0.344	8.731
0	0.340	8.636	0.324	8.230	0.396	10.060	0.313	7.938
1	0.300	7.620	0.300	7.620	0.353	8.956	0.281	7.144
2	0.284	7.214	0.276	7.010	0.315	8.001	0.266	6.747
3	0.259	6.579	0.252	6.401	0.280	7.112	0.250	6.350
4	0.238	6.045	0.232	5.893	0.250	6.350	0.234	5.953
5	0.220	5.588	0.212	5.385	0.223	5.664	0.219	5.556
6	0.203	5.156	0.192	4.877	0.198	5.029	0.203	5.159
7	0.180	4.572	0.176	4.470	0.176	4.470	0.188	4.763
8	0.165	4.191	0.160	4.064	0.157	3.988	0.172	4.366
9	0.148	3.759	0.144	3.658	0.140	3.556	0.156	3.969
10	0.134	3.404	0.128	3.251	0.125	3.175	0.141	3.572
11	0.120	3.048	0.116	2.946	0.111	2.827	0.125	3.175
12	0.109	2.769	0.104	2.642	0.099	2.517	0.109	2.778
13	0.095	2.413	0.092	2.337	0.088	2.240	0.094	2.381
14	0.083	2.108	0.080	2.032	0.079	1.994	0.078	1.984
15	0.072	1.829	0.072	1.829	0.070	1.775	0.070	1.786
16	0.065	1.651	0.064	1.626	0.063	1.588	0.063	1.583
17	0.058	1.473	0.056	1.422	0.056	1.412	0.056	1.429
18	0.049	1.245	0.048	1.219	0.500	1.257	0.050	1.270
19	0.042	1.067	0.040	1.016	0.044	1.118	0.044	1.111
20	0.035	0.889	0.036	0.914	0.039	0.996	0.038	0.953
21	0.032	0.813	0.032	0.813	0.035	0.887	0.034	0.873
22	0.028	0.711	0.028	0.711	0.031	0.795	0.031	0.794
23	0.025	0.635	0.024	0.610	0.028	0.706	0.028	0.714
24	0.022	0.559	0.022	0.559	0.025	0.630	0.025	0.635
25	0.020	0.508	0.020	0.508	0.022	0.559	0.022	0.556
26	0.018	0.457	0.0180	0.457				
27	0.016	0.406	0.0164	0.417				
28	0.014	0.356	0.0148	0.376				
29	0.013	0.330	0.0136	0.345				
30	0.012	0.305	0.0124	0.315				
31	0.010	0.254	0.0116	0.295				
32	0.009	0.229	0.0108	0.274				
33	0.008	0.203	0.100	0.254				
34	0.007	0.178	0.0092	0.234				
35	0.005	0.127	0.0084	0.213				

Notes: B.W.G. Birmingham (or Stubs Iron) Wire Gauge.
 L.S.W.G. British Empire Standard Wire Gauge or Legal Standard Wire Gauge.
 B.G. British Standard " B.G. " Gauge.
 U.S.G. United States Standard Gauge.

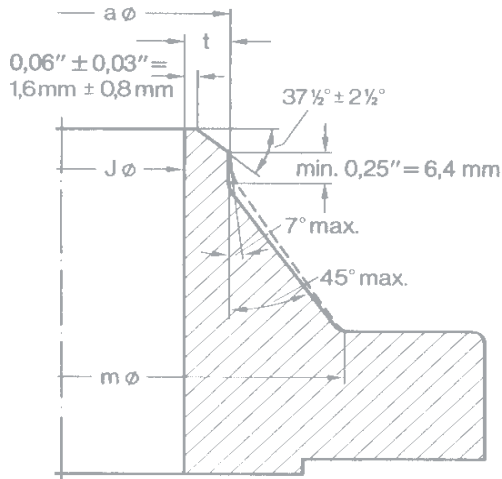
Dimensional Tolerances according to ASME / ANSI B 16.5



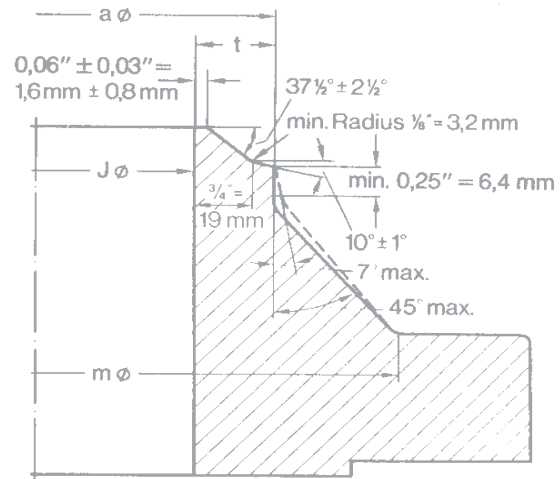
Independent of the tolerances of the measures "j" and "a",
Wall thickness shall not be less than 87.5 % of nominal wall thickness.

Welding Neck Flanges			lap Joint, Slip-on, Threaded and Blind Flanges		
Area	Dimension	Tolerance mm	Area	Dimension	Tolerance mm
D Outside Dia	5" and smaller 6" and larger	+2.0 / -1.0mm +4.0 / - 1.0mm	D Outside Dia	5" and smaller 6" and larger	+2.0 / -1.0mm +4.0 / - 1.0mm
J Inside Dia	10" and smaller 12" up to 18" 20" and larger	+/- 1.0mm +/- 1.0mm +3.0 / -1.5mm	J Inside Dia	10" and smaller 12" up to 18" 20" and larger	+/- 1.0mm +/- 1.0mm +3.0 / -1.5mm
g Dia of Contact Face	(1.6) 2.0 mm facings (6.4) 7.0 mm facings Tongue and Groove Male and Female	+/- 1.0mm +/- 0.5mm +/- 0.5mm +/- 0.5mm	g Dia of Contact Face	(1.6) 2.0 mm facings (6.4) 7.0 mm facings Tongue and Groove Male and Female	+/- 1.0mm +/- 0.5mm +/- 0.5mm +/- 0.5mm
a Dia of Hub at Bevel	87.5% of wall thickness	+/- 12.5%	j Dia of counterbore Threaded Flanges	10" and smaller 12" and larger	+1.0 / - 0.0mm +1.5 / - 0.0mm
m Dia of Hub at Base	When Hub is 24" and less When Hub is over 24"	+/- 1.5mm +/- 3.0mm	j Dia of counterbore S.W.	all sizes	+/- 0.25mm
l Drilling and Facing	Bolt Circle Dia k Center to center bolt holes Max. eccentricity between bolt circle Dia k and machined facing Dia g sizes 2.1/2" and smaller sizes 3"and larger	+/- 1.5mm +/- 0.8mm +/- 0.8mm +/- 0.8mm +/- 1.5mm	m Dia of Hub	When Hub is 24" and less When Hub is over 24"	+/- 1.5mm +/- 3.0mm
			l Drilling and Facing	Bolt Circle Dia k Center to center bolt holes Max. eccentricity between bolt circle Dia k and machined facing Dia g sizes 2.1/2" and smaller sizes 3"and larger	+/- 1.5mm +/- 0.8mm +/- 0.8mm +/- 0.8mm +/- 1.5mm
h Overall Length through Hub	4"and smaller 5"up to 10" 12"and larger	+/- 1.5mm +1.5 / -3.0mm +3.0 / -5.0mm	h Overall Length of Hub	4"and smaller 5"up to 10" 12"and larger	+/-1.5mm +1.5 / -3.0mm +3.0 / -5.0mm
b Thickness	18"and smaller 20"and larger	+3.0 / -0mm +5.0 / -0mm	b Thickness	18"and smaller 20"and larger	+3.0 / -0mm +5.0 / -0mm

Welding Ends ASME / ANSI B 16.25



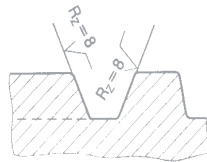
Bevel for Wall Thickness $T = 4.9\text{mm}$ to 22.4mm



Bevel for Wall Thickness $T = \text{greater than } 22.4\text{mm}$

A = Outside dia of the pipe, J = Inside dia of the pipe and T = Wall thickness.

Face Finish

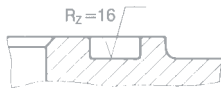


R_z in μm

Facings are made by mechanical turning.

Ring Joint Facings

$R_z = 8$ (R_z in μm)

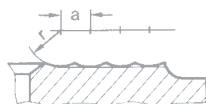


R_z in μm

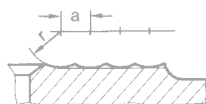
Tongue / Groove

Small Male / Female Facings

$R_z = 16$ (R_z in μm)



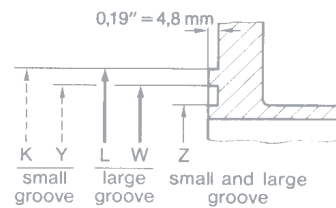
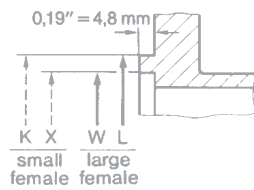
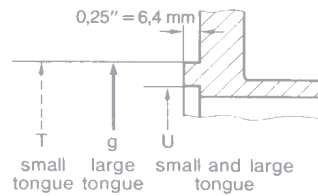
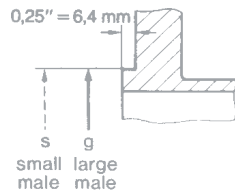
Stock Finish
Large Male / Female Facings
19 - 22 Grooves / Cm



Smooth Finish
22 - 28 Grooves / Cm

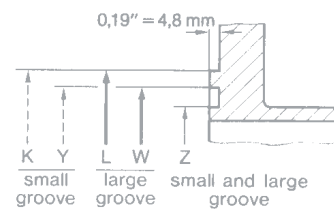
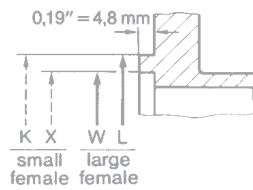
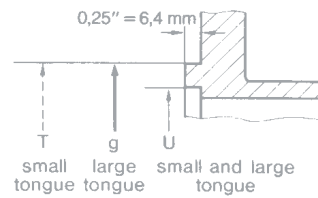
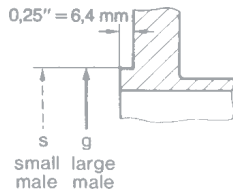


Large and Small Male / Female Facings Large and Small Tongue / Groove Facings



Nominal Pipe Size	mm	Outside Diameter			Inside Diameter of Large and Small Tongue U	Outside Diameter			Inside Diameter of Large and Small Groove Z	Diam. of Race Face Small Female & Groove K	Diam. of Race Face Large Female & Groove L	Nominal Pipe Size
		Large Male Large Tongue G	Small Male S	Small Tongue T		Large Female and Large Groove W	Small Female X	Small Groove Y				
1/2"	mm	35.1	18.3	35.1	25.4	36.6	19.8	36.6	23.9	44.5	46.0	1/2"
3/4"	mm	42.9	23.9	42.9	33.3	44.5	25.4	44.5	31.8	52.3	53.8	3/4"
1"	mm	50.8	30.2	47.8	38.1	52.3	31.8	49.3	36.6	57.2	62.0	1"
1.1/4"	mm	63.5	38.1	57.2	47.8	65.0	39.6	58.7	46.0	66.5	74.7	1.1/4"
1.1/2"	mm	73.2	44.5	63.5	53.8	74.7	46.0	65.0	52.3	73.2	84.1	1.1/2"
2"	mm	91.9	57.2	82.6	73.2	93.7	58.7	84.1	71.4	91.9	103.1	2"
2.1/2"	mm	104.6	68.3	95.3	85.9	106.4	69.9	96.8	84.1	104.6	115.8	2.1/2"
3"	mm	127.0	84.1	117.3	108.0	128.5	85.9	119.1	106.4	127.0	138.2	3"
3.1/2"	mm	139.7	96.8	130.0	120.7	141.2	98.6	131.8	119.1	139.7	150.9	3.1/2"
4"	mm	157.2	109.5	144.5	131.8	158.8	111.3	146.1	130.0	157.2	168.1	4"

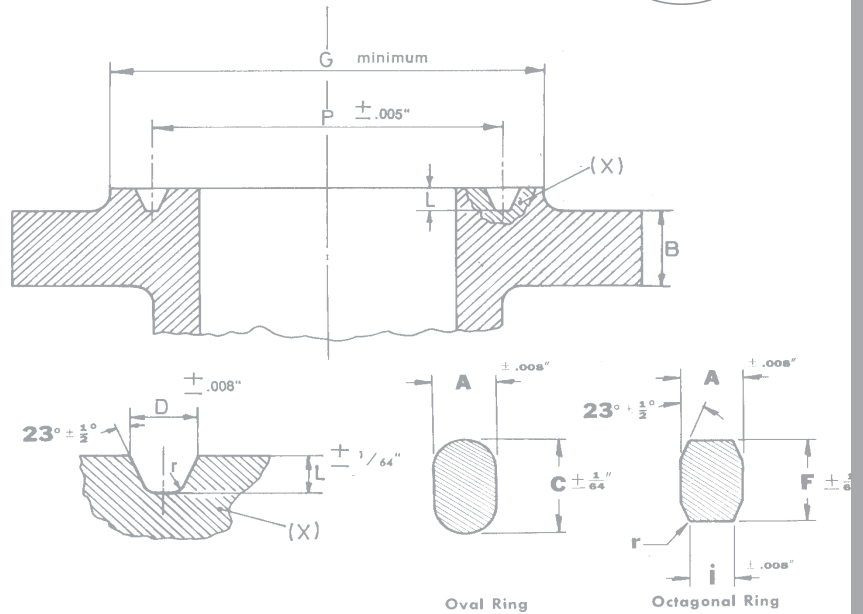
Large and Small Male / Female Facings Large and Small Tongue / Groove Facings



Nominal Pipe Size	mm	Outside Diameter			Inside Diameter of Large and Small Tongue U	Outside Diameter			Inside Diameter of Large and Small Groove Z	Diam. of Race Face Small Female & Groove K	Diam. of Race Face Large Female & Groove L	Nominal Pipe Size
		Large Male Large Tongue G	Small Male S	Small Tongue T		Large Female and Large Groove W	Small Female X	Small Groove Y				
5"	mm	185.7	136.7	173.0	160.3	187.5	138.2	174.8	158.8	185.7	196.9	5"
6"	mm	215.9	162.1	203.2	190.5	217.4	163.6	204.7	189.0	215.9	227.1	6"
8"	mm	269.7	212.9	254.0	238.3	271.5	214.4	255.5	236.5	269.7	280.9	8"
10"	mm	323.9	266.7	304.8	285.8	325.4	268.3	306.3	284.2	323.9	335.0	10"
12"	mm	381.0	317.5	362.0	342.9	382.5	319.0	363.5	341.4	381.0	392.2	12"
14"	mm	412.8	349.3	393.7	374.7	414.3	350.8	395.2	373.1	412.8	423.9	14"
16"	mm	469.9	400.1	447.5	425.5	471.4	401.6	449.3	423.9	469.9	481.1	16"
18"	mm	533.4	450.9	511.0	489.0	534.9	452.4	512.8	487.4	533.4	544.6	18"
20"	mm	584.2	501.7	558.8	533.4	585.7	503.2	560.3	531.9	584.2	595.4	20"
24"	mm	692.2	603.3	666.8	641.4	693.7	604.8	668.3	639.8	692.2	703.3	24"

150 Lbs

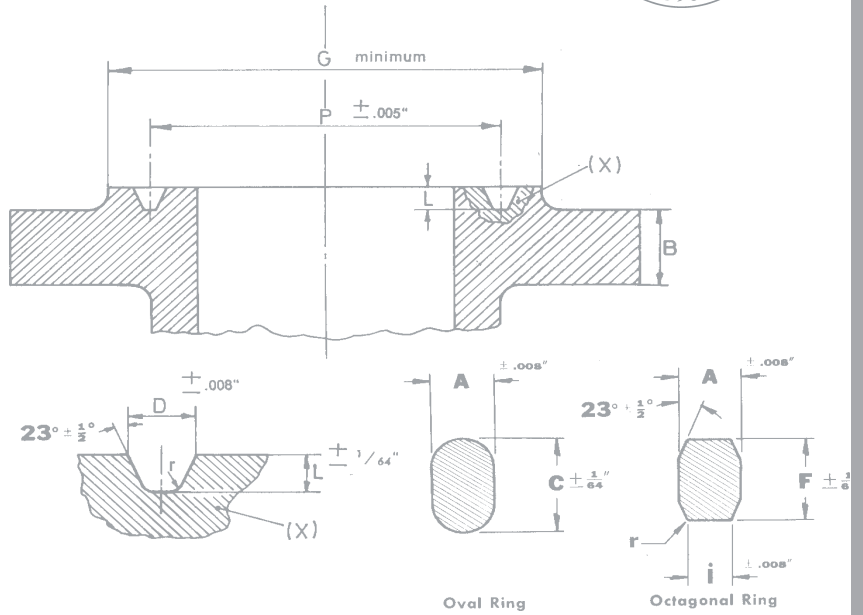
Ring Joint Dimensions ANSI B 16.5



Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
1"	mm	63.5	47.6	6.35	0.8	8.7	7.9	14.3	12.7	5.2	15
1.1/4"	mm	73.2	57.2	6.35	0.8	8.7	7.9	14.3	12.7	5.2	17
1.1/2"	mm	82.5	65.1	6.35	0.8	8.7	7.9	14.3	12.7	5.2	19
2"	mm	101.6	82.6	6.35	0.8	8.7	7.9	14.3	12.7	5.2	22
2.1/2"	mm	120.7	101.6	6.35	0.8	8.7	7.9	14.3	12.7	5.2	25
3"	mm	133.4	114.3	6.35	0.8	8.7	7.9	14.3	12.7	5.2	29
3.1/2"	mm	153.9	131.8	6.35	0.8	8.7	7.9	14.3	12.7	5.2	33
4"	mm	171.5	149.2	6.35	0.8	8.7	7.9	14.3	12.7	5.2	36
5"	mm	193.5	171.5	6.35	0.8	8.7	7.9	14.3	12.7	5.2	40

150 Lbs

Ring Joint Dimensions ANSI B 16.5

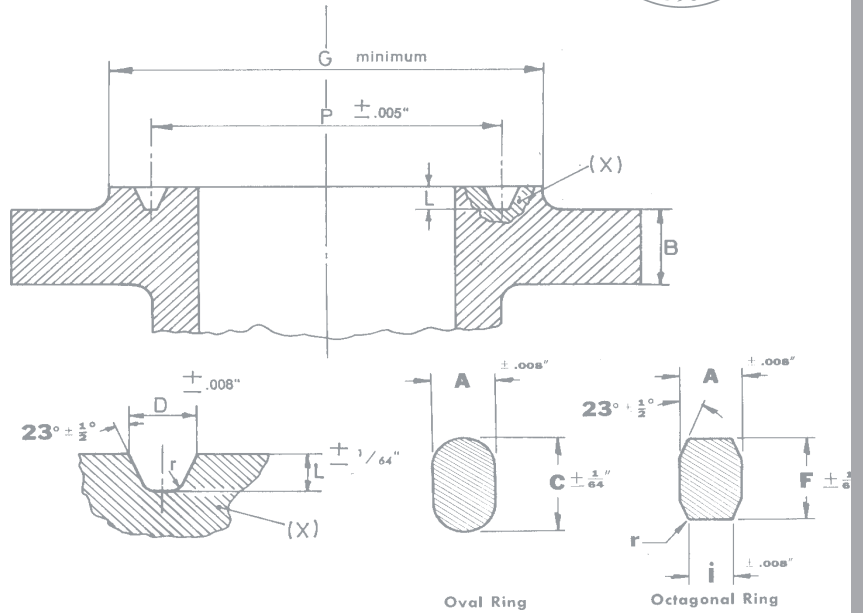


Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
6"	mm	218.9	193.7	6.35	0.8	8.7	7.9	14.3	12.7	5.2	43
8"	mm	273.1	247.7	6.35	0.8	8.7	7.9	14.3	12.7	5.2	48
10"	mm	330.2	304.8	6.35	0.8	8.7	7.9	14.3	12.7	5.2	52
12"	mm	406.4	381.0	6.35	0.8	8.7	7.9	14.3	12.7	5.2	56
14"	mm	425.5	396.9	6.35	0.8	8.7	7.9	14.3	12.7	5.2	59
16"	mm	482.6	454.0	6.35	0.8	8.7	7.9	14.3	12.7	5.2	64
18"	mm	546.1	517.5	6.35	0.8	8.7	7.9	14.3	12.7	5.2	68
20"	mm	596.9	558.8	6.35	0.8	8.7	7.9	14.3	12.7	5.2	72
24"	mm	711.2	673.1	6.35	0.8	8.7	7.9	14.3	12.7	5.2	76

300 - 600 Lbs

Ring Joint Dimensions

ANSI B 16.5

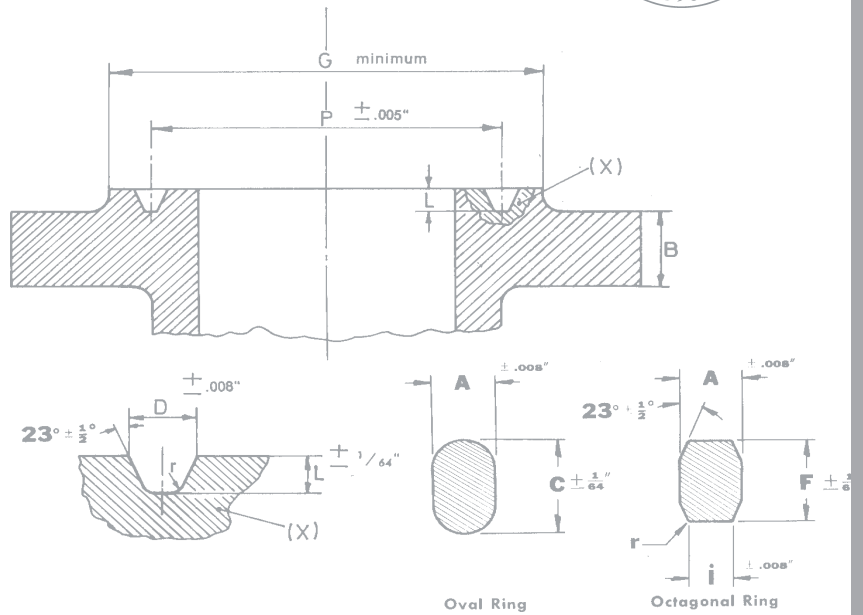


Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
1/2"	mm	50.8	34.1	5.60	0.8	7.1	6.35	11.1	9.53	4.3	11
3/4"	mm	63.5	42.9	6.35	0.8	8.7	7.9	14.3	12.7	5.2	13
1"	mm	69.9	50.8	6.35	0.8	8.7	7.9	14.3	12.7	5.2	16
1.1/4"	mm	79.2	60.3	6.35	0.8	8.7	7.9	14.3	12.7	5.2	18
1.1/2"	mm	90.4	68.3	6.35	0.8	8.7	7.9	14.3	12.7	5.2	20
2"	mm	108.0	82.6	7.9	0.8	11.9	11.1	17.5	15.88	7.7	23
2.1/2"	mm	127.0	101.6	7.9	0.8	11.9	11.1	17.5	15.88	7.7	26
3"	mm	146.1	123.8	7.9	0.8	11.9	11.1	17.5	15.88	7.7	31
3.1/2"	mm	158.8	131.8	7.9	0.8	11.9	11.1	17.5	15.88	7.7	34
4"	mm	174.8	149.2	7.9	0.8	11.9	11.1	17.5	15.88	7.7	37

300 - 600 Lbs

Ring Joint Dimensions

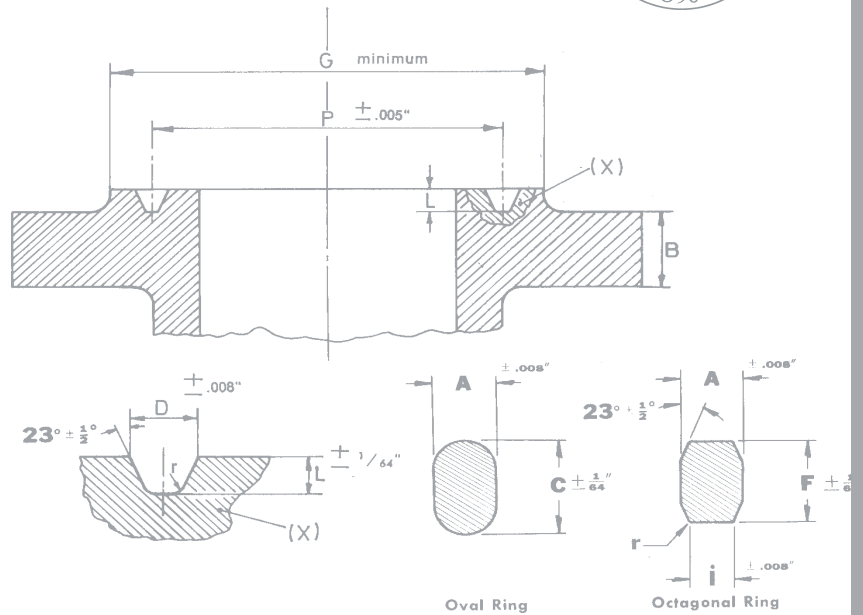
ANSI B 16.5



Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
5"	mm	209.5	181.0	7.9	0.8	11.9	11.1	17.5	15.88	7.7	41
6"	mm	241.3	211.1	7.9	0.8	11.9	11.1	17.5	15.88	7.7	45
8"	mm	301.8	269.9	7.9	0.8	11.9	11.1	17.5	15.88	7.7	49
10"	mm	355.6	323.9	7.9	0.8	11.9	11.1	17.5	15.88	7.7	53
12"	mm	412.8	381.0	7.9	0.8	11.9	11.1	17.5	15.88	7.7	57
14"	mm	457.5	419.1	7.9	0.8	11.9	11.1	17.5	15.88	7.7	61
16"	mm	508.0	469.9	7.9	0.8	11.9	11.1	17.5	15.88	7.7	65
18"	mm	574.5	533.4	7.9	0.8	11.9	11.1	17.5	15.88	7.7	69
20"	mm	635.0	584.2	9.5	1.6	13.5	12.7	19.0	17.46	8.7	73
24"	mm	749.3	692.2	11.1	1.6	16.7	15.9	22.2	20.64	10.5	77

900 Lbs

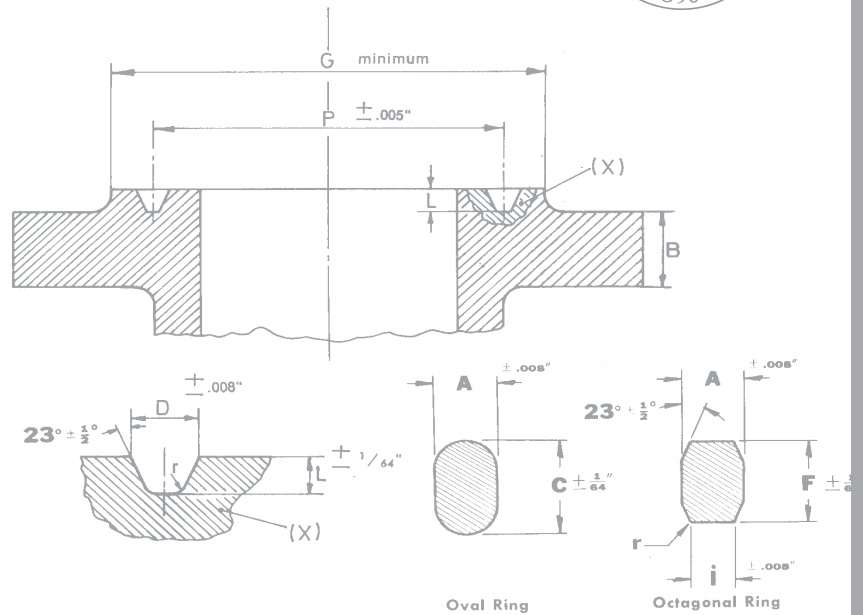
Ring Joint Dimensions ANSI B 16.5



Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
1/2"	mm	60.5	39.7	6.35	0.8	8.7	7.9	14.3	12.7	5.2	12
3/4"	mm	66.5	44.5	6.35	0.8	8.7	7.9	14.3	12.7	5.2	14
1"	mm	69.9	50.8	6.35	0.8	8.7	7.9	14.3	12.7	5.2	16
1.1/4"	mm	79.2	60.3	6.35	0.8	8.7	7.9	14.3	12.7	5.2	18
1.1/2"	mm	90.4	68.3	6.35	0.8	8.7	7.9	14.3	12.7	5.2	20
2"	mm	124.0	95.3	7.9	0.8	11.9	11.1	17.5	15.88	7.7	24
2.1/2"	mm	136.7	108.0	7.9	0.8	11.9	11.1	17.5	15.88	7.7	27
3"	mm	155.4	123.8	7.9	0.8	11.9	11.1	17.5	15.88	7.7	31
4"	mm	180.8	149.2	7.9	0.8	11.9	11.1	17.5	15.88	7.7	37
5"	mm	215.9	181.0	7.9	0.8	11.9	11.1	17.5	15.88	7.7	41

900 Lbs

Ring Joint Dimensions ANSI B 16.5

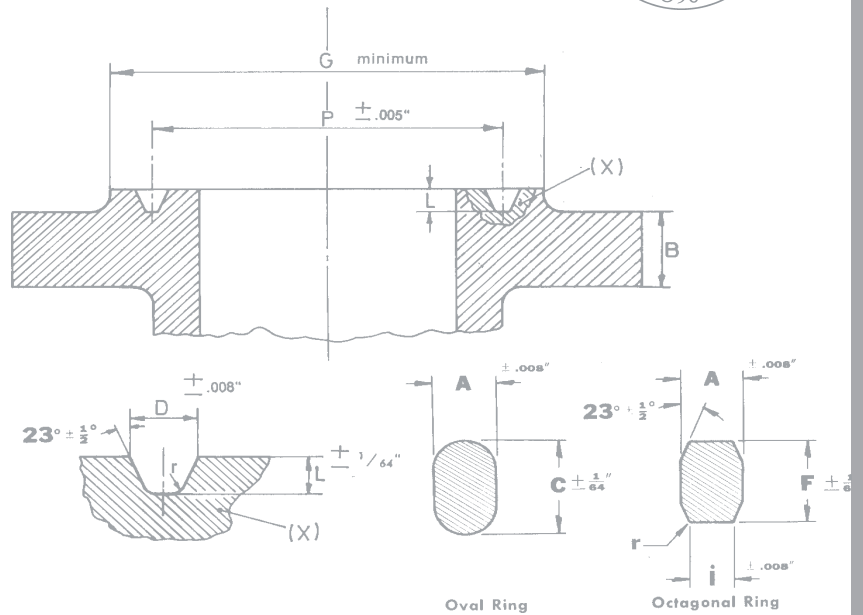


Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
6"	mm	241.3	211.1	7.9	0.8	11.9	11.1	17.5	15.88	7.7	45
8"	mm	307.8	269.9	7.9	0.8	11.9	11.1	17.5	15.88	7.7	49
10"	mm	362.0	323.9	7.9	0.8	11.9	11.1	17.5	15.88	7.7	53
12"	mm	419.1	381.0	7.9	0.8	11.9	11.1	17.5	15.88	7.7	57
14"	mm	466.9	419.1	11.1	1.5	16.7	15.9	22.2	20.64	10.5	62
16"	mm	523.9	469.9	11.1	1.5	16.7	15.9	22.2	20.64	10.5	66
18"	mm	593.9	533.4	12.7	1.5	19.8	19.0	25.4	23.8	12.3	70
20"	mm	647.7	584.2	12.7	1.5	19.8	19.0	25.4	23.8	12.3	74
24"	mm	771.7	692.2	15.9	2.3	27.0	25.4	33.3	31.75	17.3	78

1500 Lbs

Ring Joint Dimensions

ANSI B 16.5

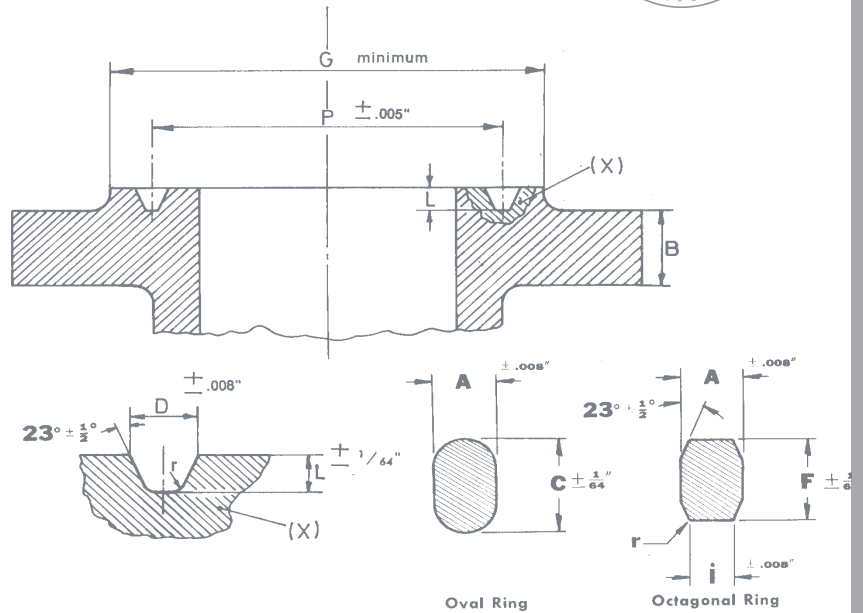


Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
1/2"	mm	60.5	39.7	6.35	0.8	8.7	7.9	14.3	12.7	5.2	12
3/4"	mm	66.5	44.5	6.35	0.8	8.7	7.9	14.3	12.7	5.2	14
1"	mm	71.4	50.8	6.35	0.8	8.7	7.9	14.3	12.7	5.2	16
1.1/4"	mm	81.0	60.3	6.35	0.8	8.7	7.9	14.3	12.7	5.2	18
1.1/2"	mm	91.9	68.3	6.35	0.8	8.7	7.9	14.3	12.7	5.2	20
2"	mm	124.0	95.3	7.9	0.8	11.9	11.1	17.5	15.88	7.7	24
2.1/2"	mm	136.7	108.0	7.9	0.8	11.9	11.1	17.5	15.88	7.7	27
3"	mm	168.1	136.5	7.9	0.8	11.9	11.1	17.5	15.88	7.7	35
4"	mm	193.5	161.9	7.9	0.8	11.9	11.1	17.5	15.88	7.7	39
5"	mm	228.6	193.7	7.9	0.8	11.9	11.1	17.5	15.88	7.7	44

1500 Lbs

Ring Joint Dimensions

ANSI B 16.5

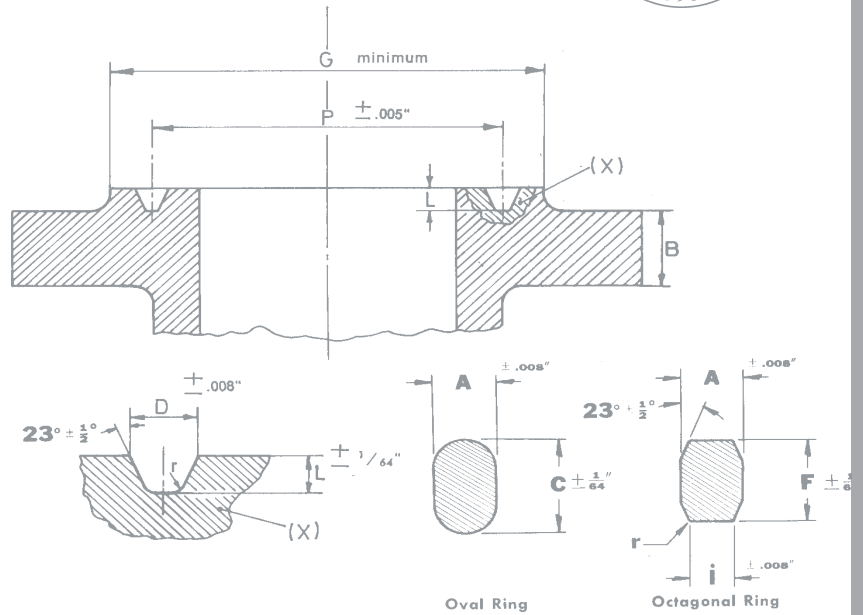


Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
6"	mm	247.7	211.1	9.5	1.6	13.5	12.7	19.0	17.46	8.7	46
8"	mm	317.5	269.9	11.1	1.6	16.7	15.9	22.2	20.64	10.5	50
10"	mm	371.3	323.9	11.1	1.6	16.7	15.9	22.2	20.64	10.5	54
12"	mm	438.2	381.0	14.3	1.6	23.0	22.2	28.6	26.99	14.8	58
14"	mm	489.0	419.1	15.9	2.4	27.0	25.4	33.3	31.75	17.3	63
16"	mm	546.1	469.9	17.5	2.4	30.2	28.6	36.5	34.92	19.8	67
18"	mm	612.6	533.4	17.5	2.4	30.2	28.6	36.5	34.92	19.8	71
20"	mm	673.1	584.2	17.5	2.4	33.3	31.7	39.7	38.10	22.3	75
24"	mm	793.8	692.2	20.6	2.4	36.5	34.9	44.4	41.27	24.8	79

2500 Lbs

Ring Joint Dimensions

ANSI B 16.5

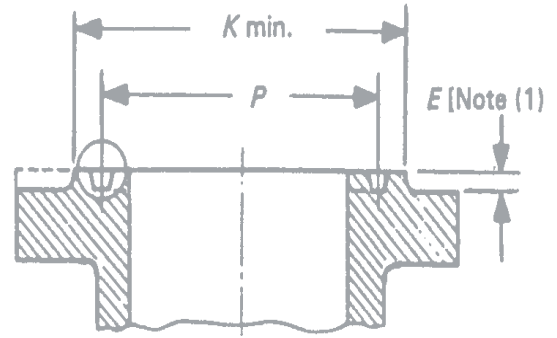
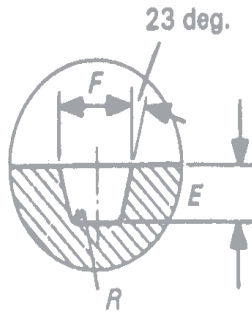


Nominal Pipe Size	Sizes in mm	Raised Face Ring Joint G	Pitch Diameter Groove P	Depth of Groove L	Radius at Bottom r	Width of Groove D	Width of Ring A	Height Oval Ring C	Height Octagonal Ring F	Width of Flat I	Ring Number R
1/2"	mm	65.0	42.9	6.35	0.8	8.7	7.9	14.3	12.7	5.2	13
3/4"	mm	73.2	50.8	6.35	0.8	8.7	7.9	14.3	12.7	5.2	16
1"	mm	82.6	60.3	6.35	0.8	8.7	7.9	14.3	12.7	5.2	18
1.1/4"	mm	101.6	72.2	7.9	0.8	11.9	11.1	17.5	15.88	7.7	21
1.1/2"	mm	114.3	82.6	7.9	0.8	11.9	11.1	17.5	15.88	7.7	23
2"	mm	133.4	101.6	7.9	0.8	11.9	11.1	17.5	15.88	7.7	26
2.1/2"	mm	149.4	111.1	9.5	1.6	13.5	12.7	19.0	17.46	8.7	28
3"	mm	168.1	127.0	9.5	1.6	13.5	12.7	19.0	17.46	8.7	32
4"	mm	203.2	157.2	11.1	1.6	16.7	15.9	22.2	20.64	10.5	38
5"	mm	241.3	190.5	12.7	1.6	19.8	19.0	25.4	23.81	12.3	42
6"	mm	279.4	228.6	12.7	1.6	19.8	19.0	25.4	23.81	12.3	47
8"	mm	339.9	279.4	14.3	1.6	23.0	22.2	28.6	26.99	14.8	51
10"	mm	425.5	342.9	17.5	2.4	30.2	28.6	36.5	34.92	19.8	55
12"	mm	495.3	406.4	17.5	2.4	33.3	31.7	39.7	38.10	22.3	60

300 - 400 - 600 - 900 Lbs

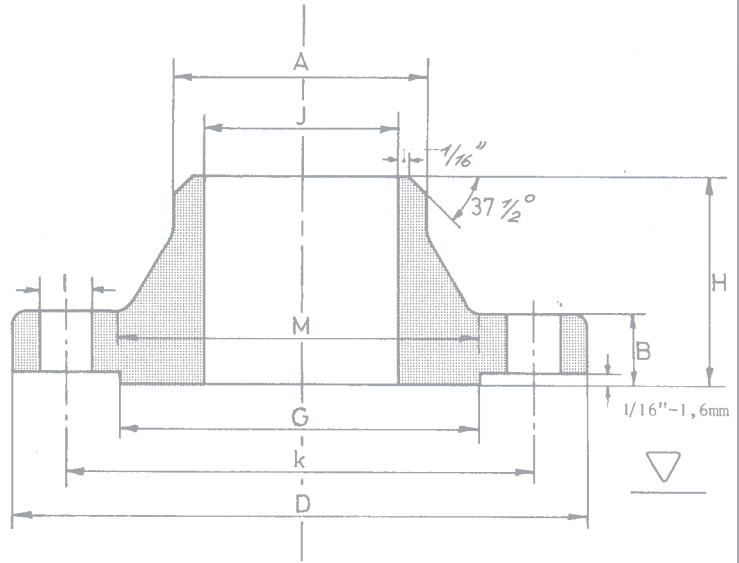
Ring Joint Dimensions ANSI B 16.47

Tolerances
 E (depth) + 0.4 / -0
 F (width) +/- 0.2
 P (pitch dia) +/- 0.1
 R (radius at bottom) max.
 23 deg. (angle) +/- 0.5 deg.



Nominal Pipe Size						RaceFace Ring Joint K	Pitch Diameter Groove P	Depth of Groove E	Radius at Bottom R	Width of Groove F	Ring Number R
300	400	600	900								
26"	26"	26"			809.8	749.3	12.7	1.5	19.8	93	
28"	28"	28"			860.6	800.1	12.7	1.5	19.8	94	
30"	30"	30"			917.4	857.3	12.7	1.5	19.8	95	
32"	32"	32"			984.3	914.4	14.3	1.5	23.0	96	
34"	34"	34"			1035.1	965.2	14.3	1.5	23.0	97	
36"	36"	36"			1092.2	1022.4	14.3	1.5	23.0	98	
				26"	831.9	749.3	17.5	2.3	30.2	100	
				28"	889.0	800.1	17.5	2.3	33.3	101	
				30"	946.2	857.3	17.5	2.3	33.3	102	
				32"	1003.3	914.4	17.5	2.3	33.3	103	
				34"	1066.8	965.2	20.6	2.3	36.5	104	
				36"	1124.0	1022.4	20.6	2.3	36.5	105	

150 Lbs
Welding Neck
1/2" - 24" ANSI B 16.5



* Diameter J to be specified.

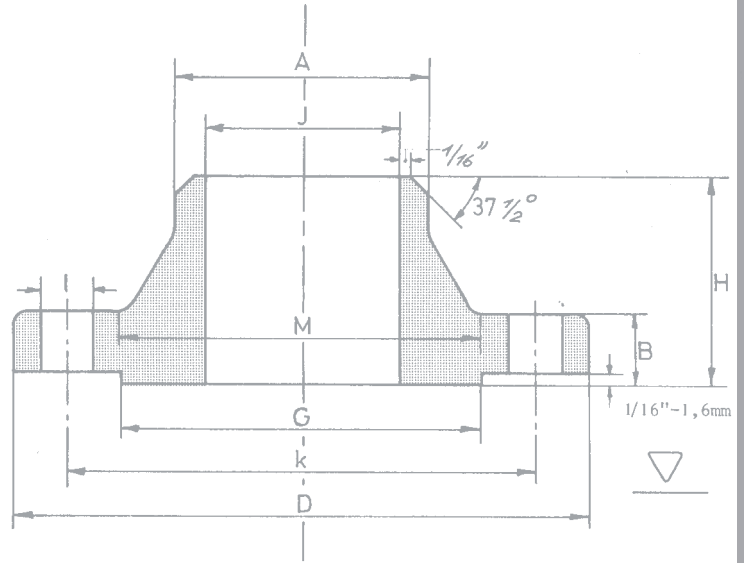
Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
1/2"	mm	90.0		11.2	47.8	21.3	30.2	35.1	4	15.7	60.5	0.5
3/4"	mm	100.0		12.7	52.3	26.7	38.1	42.9	4	15.7	69.9	0.7
1"	mm	110.0		14.3	55.6	33.5	49.3	50.8	4	15.7	79.2	1
1.1/4"	mm	115.0		15.9	57.2	42.2	58.7	63.5	4	15.7	88.9	1.4
1.1/2"	mm	125.0		17.5	62.0	48.3	65.0	73.2	4	15.7	98.6	1.8
2"	mm	150.0		19.1	63.5	60.5	77.7	91.9	4	19.1	120.7	2.6
2.1/2"	mm	180.0		22.3	69.9	73.2	90.4	104.6	4	19.1	139.7	4.2
3"	mm	190.0		23.9	69.9	88.9	108.0	127.0	4	19.1	152.4	5
3.1/2"	mm	215.0		23.9	71.4	101.6	122.2	139.7	8	19.1	177.8	6.1
4"	mm	230.0		23.9	76.2	114.3	134.9	157.2	8	19.1	190.5	7
5"	mm	255.0		23.9	88.9	141.2	163.6	185.7	8	22.4	215.9	8.6
6"	mm	280.0		25.4	88.9	168.4	192.0	215.9	8	22.4	241.3	10.6
8"	mm	345.0		28.6	101.6	219.2	246.1	269.7	8	22.4	298.5	17.6
10"	mm	405.0		30.2	101.6	273.1	304.8	323.8	12	25.4	362.0	24



150 Lbs

Welding Neck

1/2" - 24" ANSI B 16.5



* Diameter J to be specified.

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
12"	mm	485.0		31.8	114.3	323.9	365.3	381.0	12	25.4	431.8	37
14"	mm	535.0		35.0	127.0	355.6	400.1	412.8	12	28.4	476.3	49
16"	mm	595.0		36.6	127.0	406.4	457.2	469.9	16	28.4	539.8	61
18"	mm	635.0		39.7	139.7	457.2	505.0	533.4	16	31.8	577.9	68
20"	mm	700.0		42.9	144.5	508.0	558.8	584.2	20	31.8	635.0	85
24"	mm	815.0		47.8	152.4	609.6	663.4	692.2	20	35.1	749.3	115

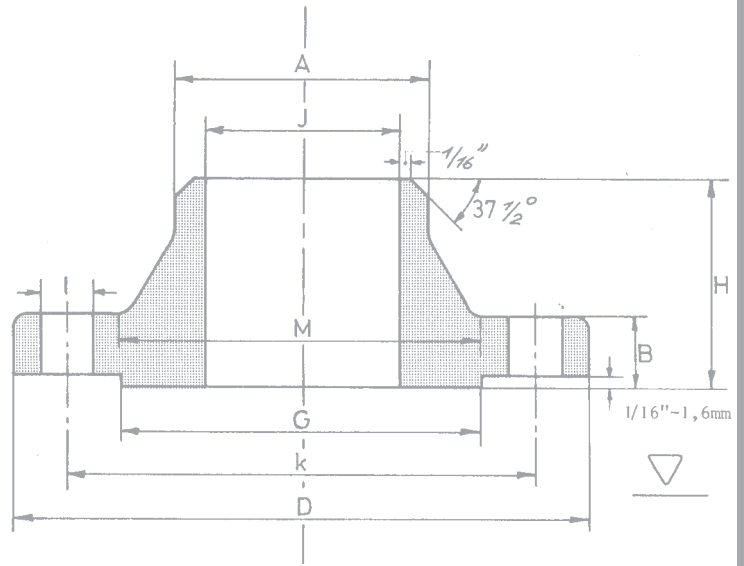
Pipes Flanges and Fittings

Technical Bulletin

300 Lbs

Welding Neck

1/2" - 24" ANSI B 16.5



* Diameter J to be specified.

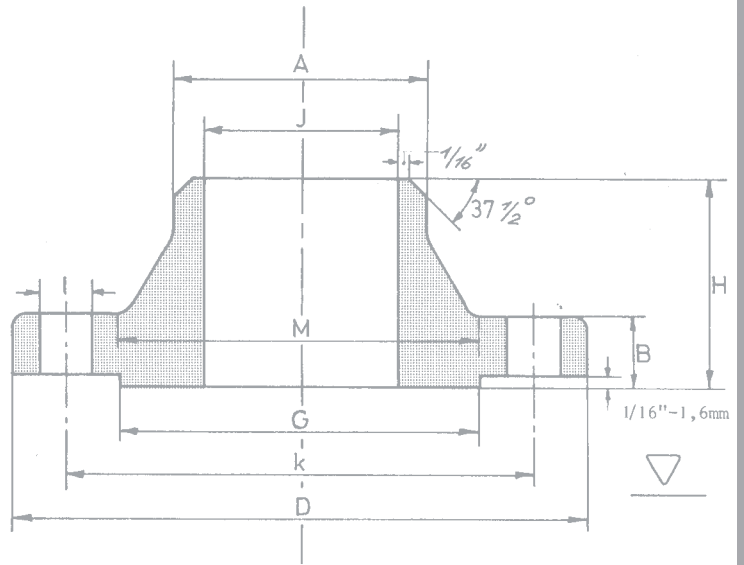
Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
1/2"	mm	95.0		14.3	52.3	21.3	38.1	35.0	4	15.7	66.5	0.8
3/4"	mm	115.0		15.9	57.1	26.7	47.7	42.9	4	19.0	82.5	1.3
1"	mm	125.0		17.5	62.0	33.5	53.8	50.8	4	19.0	88.9	1.6
1.1/4"	mm	135.0		19.1	65.0	42.2	63.5	63.5	4	19.0	98.5	2.1
1.1/2"	mm	155.0		20.7	68.3	48.3	69.8	73.1	4	22.3	114.3	3
2"	mm	165.0		22.3	69.8	60.4	84.0	91.9	8	19.0	127.0	3.4
2.1/2"	mm	190.0		25.4	76.2	73.1	100.0	104.6	8	22.3	149.3	5.2
3"	mm	210.0		28.6	79.2	88.9	117.3	127.0	8	22.3	168.1	7
3.1/2"	mm	230.0		30.2	81.0	101.6	133.3	139.7	8	22.3	184.1	8.7
4"	mm	255.0		31.8	85.8	114.3	146.0	157.2	8	22.3	200.1	11.2
5"	mm	280.0		35.0	98.5	141.2	177.8	185.6	8	22.3	234.9	16
6"	mm	320.0		36.6	98.5	168.4	206.2	215.9	12	22.3	269.7	20
8"	mm	380.0		41.3	111.2	219.2	260.3	269.7	12	25.4	330.2	30
10"	mm	445.0		47.7	117.3	273.0	320.5	323.8	16	28.6	387.3	43



300 Lbs

Welding Neck

1/2" - 24" ANSI B 16.5



* Diameter J to be specified.

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
12"	mm	520.0		50.8	130.0	323.8	374.6	381.0	16	31.7	450.8	62
14"	mm	585.0		54.0	142.7	355.6	425.4	412.7	20	31.7	514.3	86
16"	mm	650.0		57.2	146.0	406.4	482.6	469.9	20	35.0	571.5	106
18"	mm	710.0		60.4	158.7	457.2	533.4	533.4	24	35.0	628.6	131
20"	mm	775.0		63.5	162.0	508.0	587.2	584.2	24	35.0	685.8	158
24"	mm	915.0		69.9	168.1	609.6	701.5	692.1	24	41.1	812.8	230

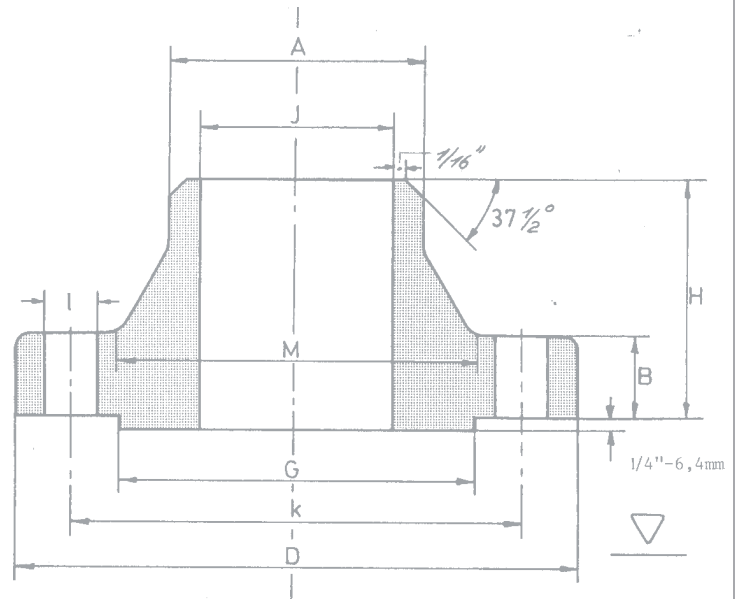
Technical Bulletin

Pipes Flanges and Fittings

600 Lbs

Welding Neck

1/2" - 24" ANSI B 16.5



* Diameter J to be specified.

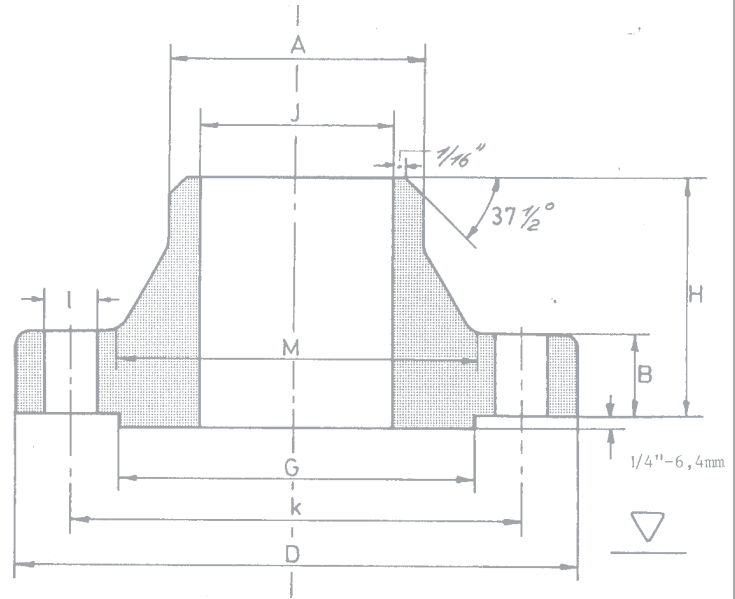
Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
1/2"	mm	95.0		14.3	52.3	21.3	38.1	34.9	4	15.7	66.5	0.9
3/4"	mm	115.0		15.9	57.2	26.7	47.8	42.9	4	19.1	82.6	1.5
1"	mm	125.0		17.5	62.0	33.5	53.8	50.8	4	19.1	88.9	1.8
1.1/4"	mm	135.0		20.7	66.5	42.2	63.5	63.5	4	19.1	98.6	2.5
1.1/2"	mm	155.0		22.3	69.9	48.3	69.9	73.0	4	22.4	114.3	3.5
2"	mm	165.0		25.4	73.2	60.5	84.1	92.1	8	19.1	127.0	4.4
2.1/2"	mm	190.0		28.6	79.2	73.2	100.1	104.8	8	22.4	149.4	6.4
3"	mm	210.0		31.8	82.6	88.9	117.3	127.0	8	22.4	168.1	8.6
3.1/2"	mm	230.0		35.0	85.9	101.6	133.4	139.7	8	25.4	184.2	11.7
4"	mm	275.0		38.1	101.6	114.3	152.4	157.2	8	25.4	215.9	18
5"	mm	330.0		44.5	114.3	141.2	189.0	185.7	8	28.4	266.7	30
6"	mm	355.0		47.7	117.3	168.4	222.3	215.9	12	28.4	292.1	35
8"	mm	420.0		55.6	133.4	219.2	273.1	269.9	12	31.8	349.3	54
10"	mm	510		63.5	152.4	273.1	342.9	323.8	16	35.1	431.8	87



600 Lbs

Welding Neck

1/2" - 24" ANSI B 16.5



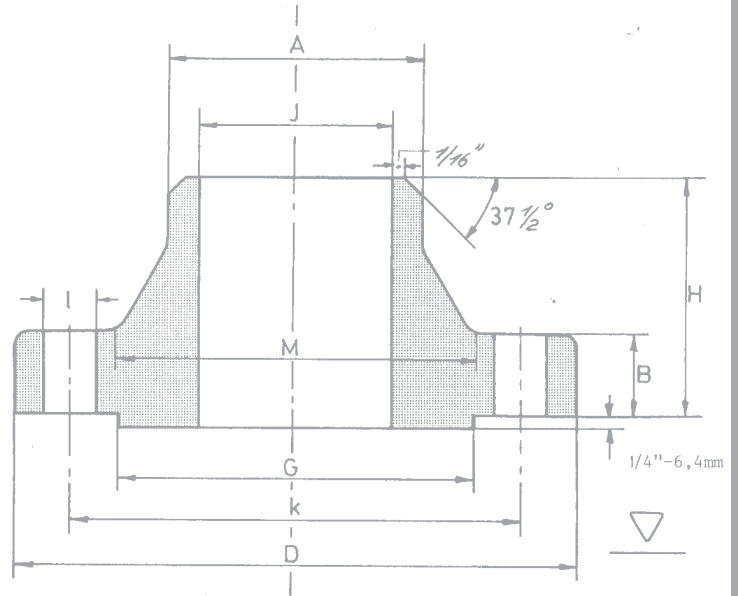
* Diameter J to be specified.

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
12"	mm	560.0		66.7	155.4	323.9	400.1	381.0	20	35.1	489.0	103
14"	mm	605.0		69.9	165.1	355.6	431.8	412.8	20	38.1	527.1	122
16"	mm	685.0		76.2	177.8	406.4	495.3	469.9	20	41.1	603.3	170
18"	mm	745.0		82.6	184.2	457.2	546.1	533.4	20	44.5	654.1	204
20"	mm	815.0		88.9	190.5	508.0	609.6	584.2	24	44.5	723.9	254
24"	mm	940.0		101.6	203.2	609.6	717.6	692.2	24	50.8	838.2	358

Technical Bulletin

Pipes Flanges and Fittings

900 Lbs
Welding Neck
ANSI B 16.5

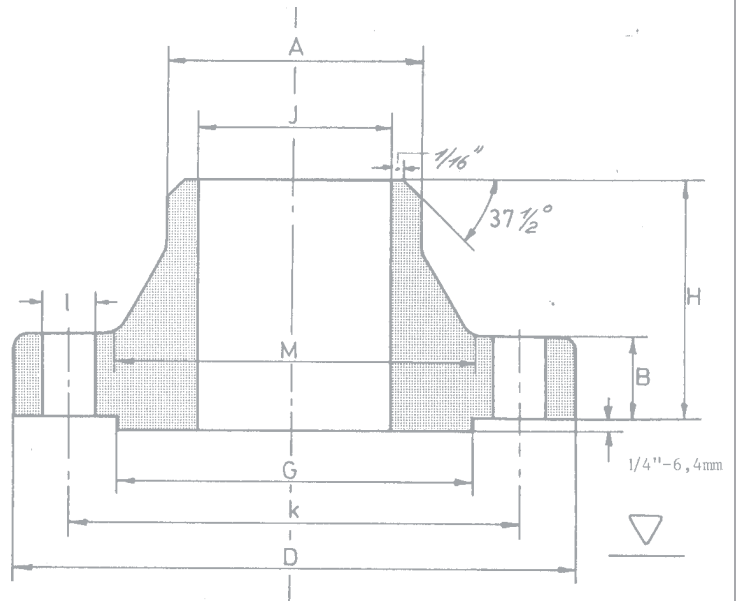


* Diameter J to be specified.

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
1/2"	mm	120.0		22.3	60.4	21.3	38.1	35.0	4	22.3	82.5	2.3
3/4"	mm	130.0		25.4	69.8	26.7	44.4	42.9	4	22.3	88.9	2.7
1"	mm	150.0		28.4	73.1	33.4	52.3	50.8	4	25.4	101.6	4.1
1.1/4"	mm	160.0		28.4	73.1	42.2	63.5	63.5	4	25.4	111.2	4.5
1.1/2"	mm	180.0		31.7	82.5	48.3	69.8	73.1	4	28.4	123.9	5.9
2"	mm	215.0		38.1	101.6	60.3	104.6	91.9	8	25.4	165.1	11.3
2.1/2"	mm	245.0		41.1	104.6	73.0	123.9	104.6	8	28.4	190.5	16.3
3"	mm	240.0		38.1	101.6	88.9	127.0	127.0	8	25.4	190.5	14
4"	mm	290.0		44.5	114.3	114.3	158.7	157.2	8	31.7	234.9	23
5"	mm	350.0		50.8	127.0	141.2	190.5	185.6	8	35.0	279.4	38
6"	mm	380.0		55.6	139.7	168.4	234.9	215.9	12	31.7	317.5	48
8"	mm	470.0		63.5	162.0	219.2	298.4	269.7	12	38.1	393.7	82
10"	mm	545.0		69.9	184.1	273.0	368.3	323.8	16	38.1	469.9	119
12"	mm	610.0		79.4	200.1	323.8	419.1	381.0	20	38.1	533.4	157



900 Lbs
Welding Neck
ANSI B 16.5

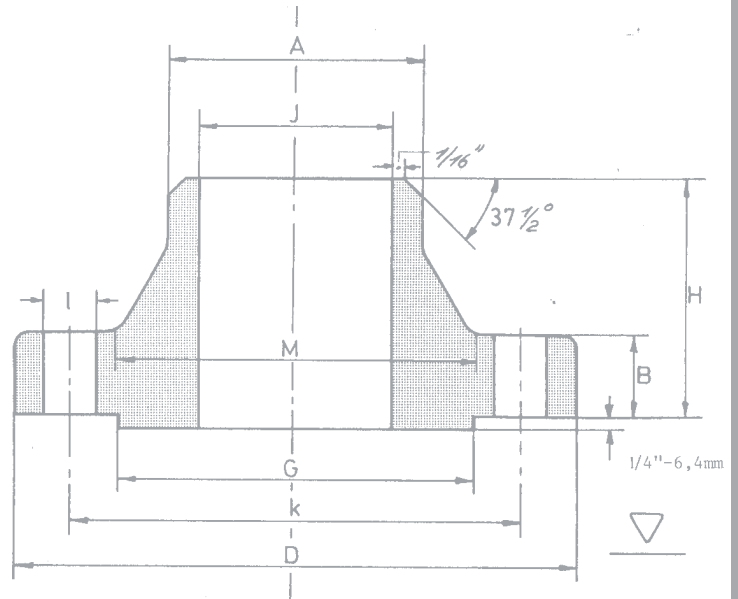


* Diameter J to be specified.

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
14"	mm	640.0		85.8	212.8	355.6	450.8	412.7	20	41.1	558.8	180
16"	mm	705.0		88.9	215.9	406.4	508.0	469.9	20	44.4	615.9	217
18"	mm	785.0		101.6	228.6	457.2	565.1	533.4	20	50.8	685.8	298
20"	mm	855.0		108.0	247.6	508.0	622.3	584.2	20	53.8	749.3	362
24"	mm	1040.0		139.7	292.1	609.6	749.3	692.1	20	66.5	901.7	665

1500 Lbs

Welding Neck
ANSI B 16.5



* Diameter J to be specified.

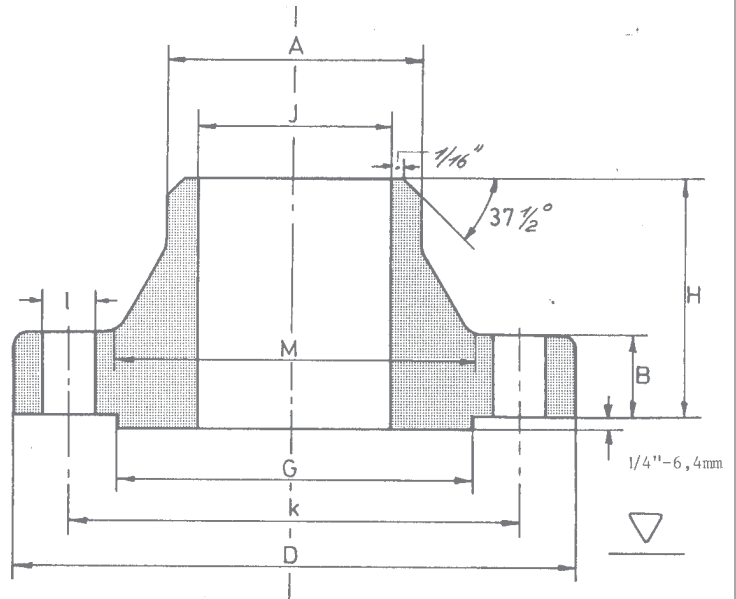
Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
1/2"	mm	120.0		22.3	60.4	21.3	38.1	35.0	4	22.3	82.5	2.3
3/4"	mm	130.0		25.4	69.8	26.7	44.4	42.9	4	22.3	88.9	2.7
1"	mm	150.0		28.6	73.1	33.4	52.3	50.8	4	25.4	101.6	4.1
1.1/4"	mm	160.0		28.6	73.1	42.2	63.5	63.5	4	25.4	111.2	4.5
1.1/2"	mm	180.0		31.8	82.5	48.3	69.8	73.1	4	28.4	123.9	5.9
2"	mm	215.0		38.1	101.6	60.3	104.6	91.9	8	25.4	165.1	11.3
2.1/2"	mm	245.0		41.3	104.6	73.0	123.9	104.6	8	28.4	190.5	16.3
3"	mm	265.0		47.7	117.3	88.9	133.3	127.0	8	31.7	203.2	21.8
4"	mm	310.0		54.0	123.9	114.3	162.0	157.2	8	35.0	241.3	33
5"	mm	375.0		73.1	155.4	141.2	196.8	185.6	8	41.1	292.1	59
6"	mm	395.0		82.6	171.4	168.4	228.6	215.9	12	38.1	317.5	75
8"	mm	485.0		92.1	212.8	219.2	292.1	269.7	12	44.4	393.7	125
10"	mm	585.0		108.0	254.0	273.0	368.3	323.8	12	50.8	482.6	206
12"	mm	675.0		123.9	282.4	323.8	450.8	381.0	16	53.8	571.5	313



1500 Lbs

Welding Neck

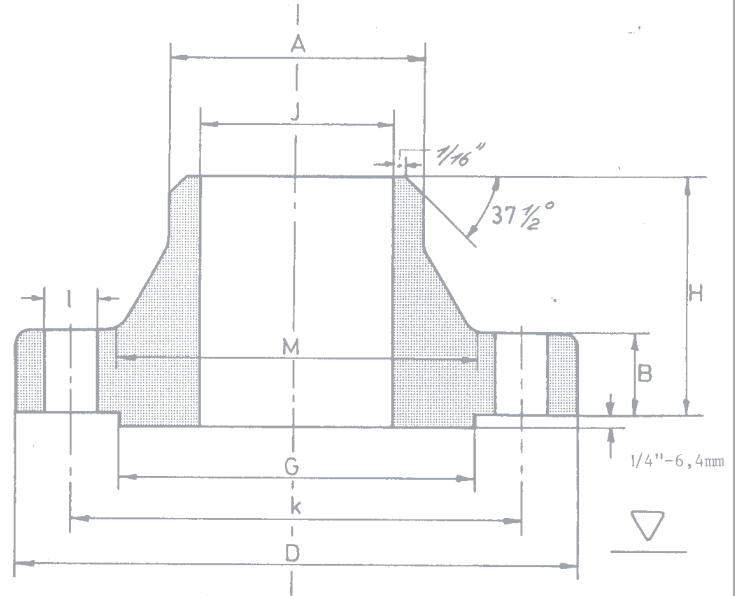
ANSI B 16.5



* Diameter J to be specified.

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
14"	mm	750.0		133.4	298.4	355.6	495.3	412.7	16	60.4	635.0	380
16"	mm	825.0		146.01	311.1	406.4	552.4	469.9	16	66.5	704.8	485
18"	mm	915.0		162.0	327.1	457.2	596.9	533.4	16	73.1	774.7	644
20"	mm	985.0		177.8	355.6	508.0	641.3	584.2	16	79.2	831.8	775
24"	mm	1170.0		203.2	406.4	609.6	762.0	692.1	16	91.9	990.6	1232

2500 Lbs
Welding Neck
ANSI B 16.5



* Diameter J to be specified.

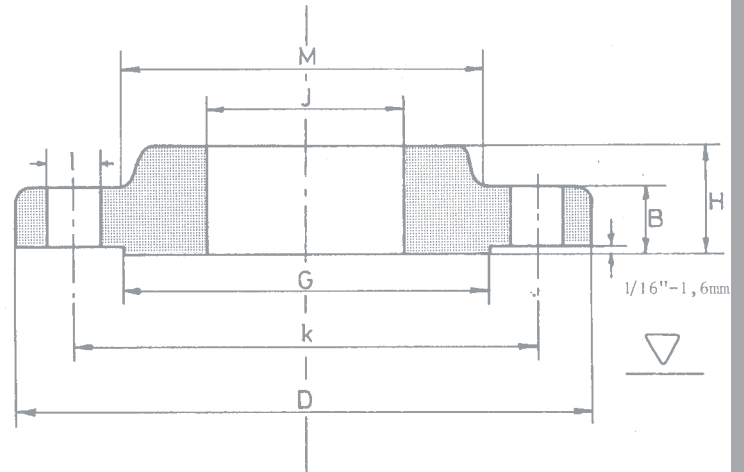
Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A	Diam. at Base of Hub M	O.D. Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K.	Approx Weight Kg
1/2"	mm	135.0		30.2	73.2	21.3	42.9	35.1	4	22.4	88.9	3.2
3/4"	mm	140.0		31.8	79.2	26.7	50.8	42.9	4	22.4	95.3	3.7
1"	mm	160.0		35.0	88.9	33.5	57.2	50.8	4	25.4	108.0	5.3
1.1/4"	mm	185.0		38.1	95.3	42.2	73.2	63.5	4	28.4	130.0	7.8
1.1/2"	mm	205.0		44.5	111.3	48.3	79.2	73.2	4	31.8	146.1	11
2"	mm	235.0		50.9	127.0	60.5	95.3	91.9	8	28.4	171.5	17
2.1/2"	mm	265.0		57.2	142.7	73.2	114.3	104.6	8	31.8	196.9	24
3"	mm	305.0		66.7	168.1	88.9	133.4	127.0	8	35.1	228.6	37
4"	mm	355.0		76.2	190.5	114.3	165.1	157.2	8	41.1	273.1	56
5"	mm	420.0		92.1	228.6	141.2	203.2	185.7	8	47.8	323.9	93
6"	mm	485.0		108.0	273.1	168.4	235.0	215.9	8	53.8	368.3	143
8"	mm	550.0		127.0	317.5	219.2	304.8	269.7	12	53.8	438.2	215
10"	mm	675.0		165.1	419.1	273.0	374.7	323.9	12	66.5	539.8	406
12"	mm	760.0		184.2	463.6	323.9	441.5	381.0	12	73.2	619.3	572



150 Lbs

Slip On Flanges

1/2" - 24" ANSI B 16.5

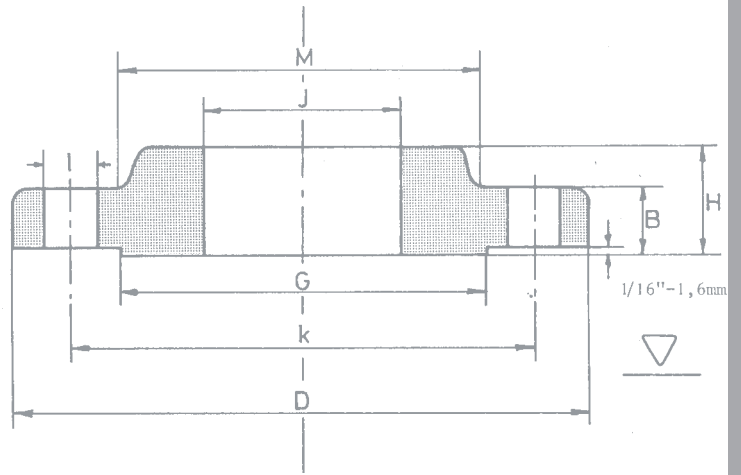


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H		Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	90.0	22.4	11.2	15.7		30.2	35.1	4	15.7	60.5	0.4
3/4"	mm	100.0	27.7	12.7	15.7		38.1	42.9	4	15.7	69.9	0.6
1"	mm	110.0	34.5	14.3	17.5		49.3	50.8	4	15.7	79.2	0.8
1.1/4"	mm	115.0	43.2	15.9	20.6		58.7	63.5	4	15.7	88.9	1
1.1/2"	mm	125.0	49.5	17.5	22.4		65.0	73.2	4	15.7	98.6	1.4
2"	mm	150.0	62.0	19.1	25.4		77.7	91.9	4	19.1	120.7	2.1
2.1/2"	mm	180.0	74.7	22.3	28.4		90.4	104.6	4	19.1	139.7	3.3
3"	mm	190.0	90.7	23.9	30.2		108.0	127.0	4	19.1	152.4	3.9
3.1/2"	mm	215.0	103.4	23.9	31.8		122.2	139.7	8	19.1	177.8	4.9
4"	mm	230.0	116.1	23.9	33.3		134.9	157.2	8	19.1	190.5	5.4
5"	mm	255.0	143.8	23.9	36.6		163.6	185.7	8	22.4	215.9	6.1
6"	mm	280.0	170.7	25.4	39.6		192.0	215.9	8	22.4	241.3	7.5
8"	mm	345.0	221.5	28.6	44.5		246.1	269.7	8	22.4	298.5	12.1
10"	mm	405.0	276.4	30.2	49.3		304.8	323.9	12	25.4	362.0	16.5

150 Lbs

Slip On Flanges

1/2" - 24" ANSI B 16.5

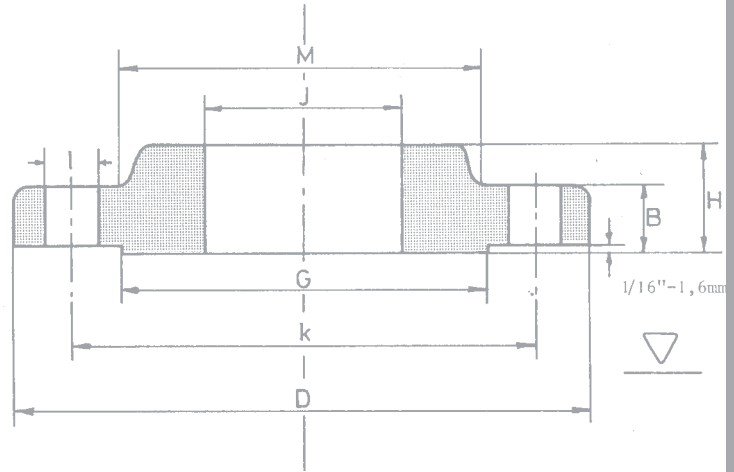


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	485.0	327.2	31.8	55.6	365.3	381.0	12	25.4	431.8	27
14"	mm	535.0	359.2	35.0	57.2	400.1	412.8	12	28.4	476.2	35
16"	mm	595.0	410.5	36.6	63.5	457.2	469.9	16	28.4	539.8	45
18"	mm	635.0	461.8	39.7	68.3	505.0	533.4	16	31.8	577.9	49
20"	mm	700.0	513.1	42.9	73.2	558.8	584.2	20	31.8	635.0	62
24"	mm	815.0	616.0	47.8	82.6	663.4	692.2	20	35.1	749.3	87

300 Lbs

Slip On Flanges

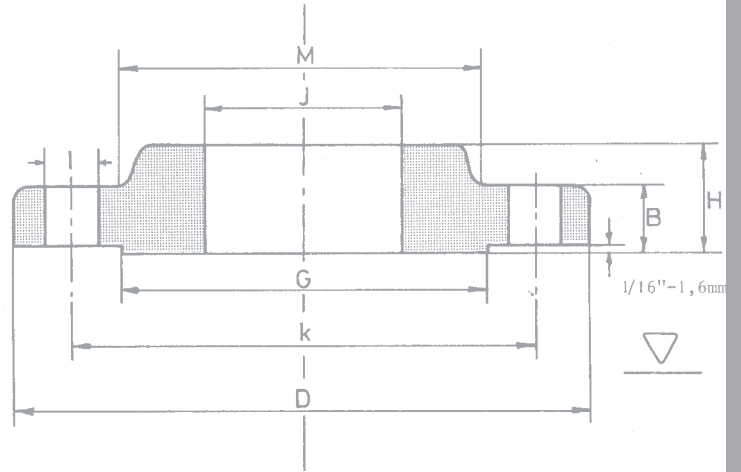
1/2" - 24" ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	95.0	22.3	14.3	22.3	38.1	35.0	4	15.7	66.5	0.7
3/4"	mm	115.0	27.7	15.9	25.4	47.7	42.9	4	19.0	82.5	1.2
1"	mm	125.0	34.5	17.5	26.9	53.8	50.8	4	19.0	88.9	1.4
1.1/4"	mm	135.0	43.2	19.1	26.9	63.5	63.5	4	19.0	98.5	1.7
1.1/2"	mm	155.0	49.5	20.7	30.2	69.8	73.1	4	22.3	114.3	2.5
2"	mm	165.0	62.0	22.3	33.2	84.0	91.9	8	19.0	127.0	2.9
2.1/2"	mm	190.0	74.7	25.4	38.1	100.0	104.6	8	22.3	149.3	4.4
3"	mm	210.0	90.7	28.6	42.9	117.3	127.0	8	22.3	168.1	5.6
3.1/2"	mm	230.0	103.4	30.2	44.4	133.3	139.7	8	22.3	184.1	7.4
4"	mm	255.0	116.1	31.8	47.7	146.0	157.2	8	22.3	200.1	10
5"	mm	280.0	143.8	35.0	50.8	177.8	185.6	8	22.3	234.9	12.3
6"	mm	320.0	170.7	36.6	52.3	206.2	215.9	12	22.3	269.7	15.6
8"	mm	380.0	221.5	41.3	61.9	260.3	269.7	12	25.4	330.2	24.2
10"	mm	445.0	276.3	47.7	66.5	320.5	323.8	16	28.4	387.3	34.1

300 Lbs

Slip On Flanges
1/2" - 24" ANSI B 16.5

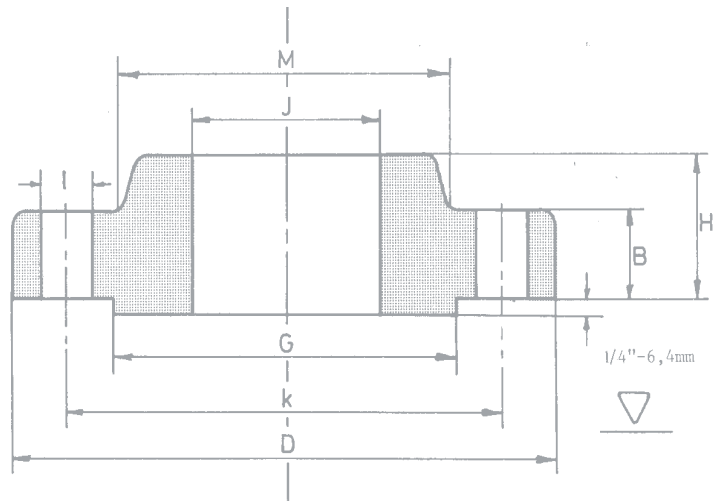


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H		Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	520.0	327.1	50.8	73.1		374.6	381.0	16	31.7	450.8	50
14"	mm	585.0	359.1	54.0	76.2		425.4	412.7	20	31.7	514.3	70
16"	mm	650.0	410.5	57.2	82.5		482.6	469.9	20	35.0	571.5	89
18"	mm	710.0	461.8	60.4	88.9		533.4	533.4	24	35.0	628.6	109
20"	mm	775.0	513.1	63.5	95.2		587.2	584.2	24	35.0	685.8	134
24"	mm	915.0	615.9	69.9	106.4		701.5	692.1	24	41.1	812.8	201

600 Lbs

Slip On Flanges

1/2" - 24" ANSI B 16.5

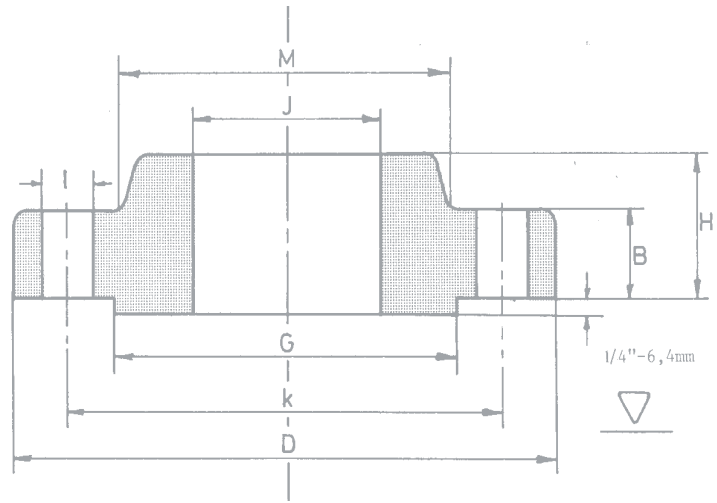


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H		Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	95.0	22.4	14.3	22.4		38.1	35.1	4	15.7	66.5	0.8
3/4"	mm	115.0	27.7	15.9	25.4		47.8	42.9	4	19.1	82.6	1.3
1"	mm	125.0	34.5	17.5	26.9		53.8	50.8	4	19.1	88.9	1.6
1.1/4"	mm	135.0	43.2	20.7	28.4		63.5	63.5	4	19.1	98.6	2.1
1.1/2"	mm	155.0	49.5	22.3	31.8		69.9	73.2	4	22.4	114.3	3
2"	mm	165.0	62.0	25.4	36.6		84.1	91.9	8	19.1	127.0	3.6
2.1/2"	mm	190.0	74.7	28.6	41.1		100.1	104.6	8	22.4	149.4	5.3
3"	mm	210.0	90.7	31.8	46.0		117.3	127.0	8	22.4	168.1	7
3.1/2"	mm	230.0	103.4	35.0	49.3		133.4	139.7	8	25.4	184.2	9
4"	mm	275.0	116.1	38.1	53.8		152.4	157.2	8	25.4	215.9	14.5
5"	mm	330.0	143.8	44.5	60.5		189.0	185.7	8	28.4	266.7	25
6"	mm	355.0	170.7	47.7	66.5		222.3	215.9	12	28.4	292.1	29
8"	mm	420.0	221.5	55.6	76.2		273.1	269.7	12	31.8	349.3	44
10"	mm	510	276.4	63.5	85.9		342.9	323.9	16	35.1	431.8	71

600 Lbs

Slip On Flanges

1/2" - 24" ANSI B 16.5

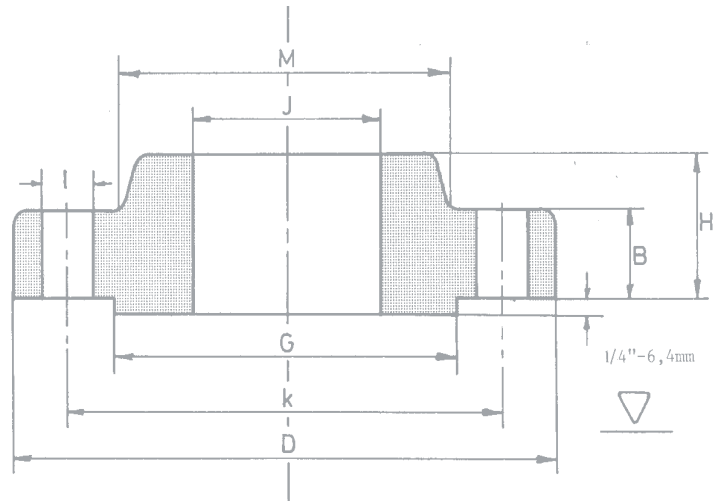


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H		Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	560.0	327.2	66.7	91.9		400.1	381.0	20	35.1	489.0	85
14"	mm	605.0	359.2	69.9	93.7		431.8	412.8	20	38.1	527.1	99
16"	mm	685.0	410.5	76.2	106.4		495.3	469.9	20	41.1	603.3	142
18"	mm	745.0	461.8	82.6	117.3		546.1	533.4	20	44.5	654.1	173
20"	mm	815.0	513.1	88.9	127.0		609.6	584.2	24	44.5	723.9	220
24"	mm	940.0	616.0	101.6	139.7		717.6	692.2	24	50.8	838.2	312



900 Lbs

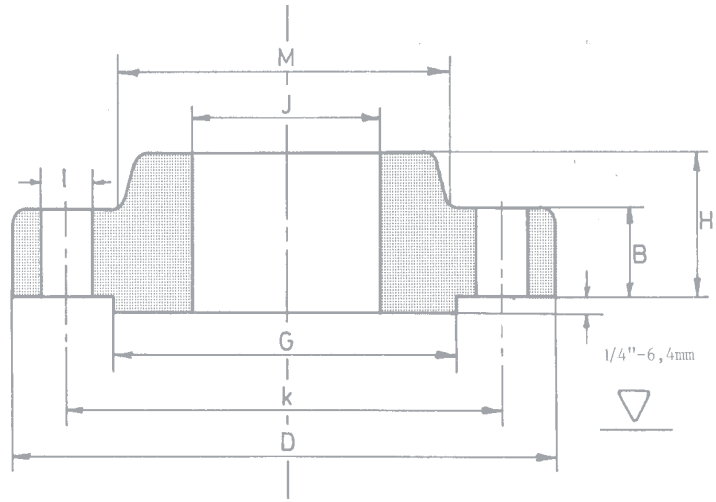
Slip On Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	22.3	22.3	31.7	38.1	35.0	4	22.3	82.5	1.8
3/4"	mm	130.0	27.7	25.4	35.0	44.4	42.9	4	22.3	88.9	2.4
1"	mm	150.0	34.5	28.4	41.1	52.3	50.8	4	25.4	101.6	3.5
1.1/4"	mm	160.0	43.2	28.4	41.1	63.5	63.5	4	25.4	111.2	4.0
1.1/2"	mm	180.0	49.5	31.7	44.5	69.8	73.1	4	28.4	123.9	5.4
2"	mm	215.0	62.0	38.1	57.1	104.6	91.9	8	25.4	165.1	10
2.1/2"	mm	245.0	74.7	41.1	63.5	123.9	104.6	8	28.4	190.5	14
3"	mm	240.0	90.7	38.1	53.8	127.0	127.0	8	25.4	190.5	12
4"	mm	290.0	116.1	44.5	69.8	158.7	157.2	8	31.7	234.9	20
5"	mm	350.0	143.8	50.8	79.2	190.5	185.6	8	35.0	279.4	32
6"	mm	380.0	170.7	55.6	85.8	234.9	215.9	12	31.7	317.5	42
8"	mm	470.0	221.5	63.5	101.6	298.4	269.7	12	38.1	393.7	71
10"	mm	545.0	276.3	69.9	107.9	368.3	323.8	16	38.1	469.9	101
12"	mm	610.0	327.1	79.4	117.3	419.1	381.0	20	38.1	533.4	133

900 Lbs

Slip On Flanges ANSI B 16.5

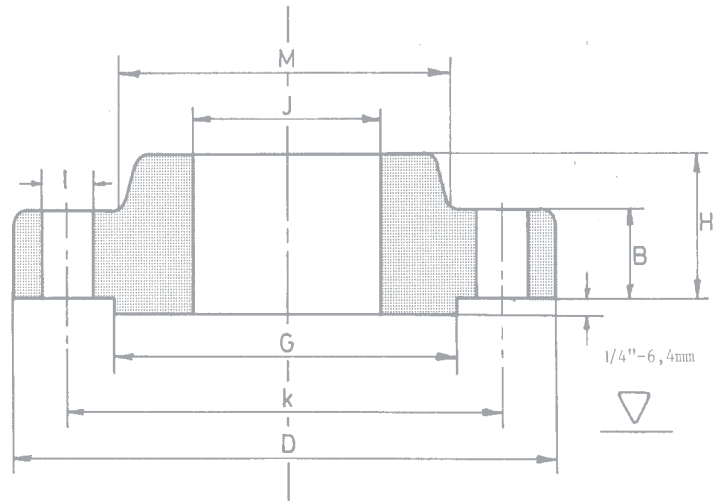


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
14"	mm	640.0	359.1	85.8	130.0	450.8	412.7	20	41.1	558.8	153
16"	mm	705.0	410.5	88.9	133.3	508.0	469.9	20	44.4	615.9	185
18"	mm	785.0	461.8	101.6	152.4	565.1	533.4	20	50.8	685.8	258
20"	mm	855.0	513.1	108.0	158.7	622.3	584.2	20	53.8	749.3	317
24"	mm	1040.0	615.9	139.7	203.2	749.3	692.1	20	66.5	901.7	606



1500 Lbs

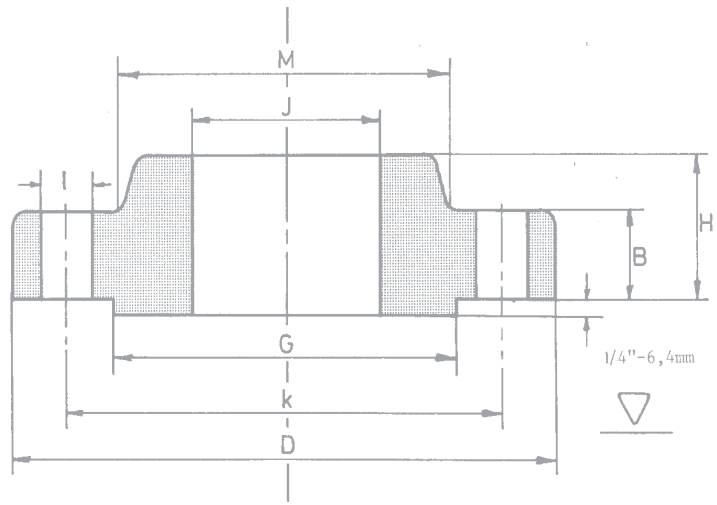
Slip On Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	22.3	22.3	31.7	38.1	35.0	4	22.3	82.5	1.8
3/4"	mm	130.0	27.7	25.4	35.0	44.4	42.9	4	22.3	88.9	2.4
1"	mm	150.0	34.5	28.6	41.1	52.3	50.8	4	25.4	101.6	3.5
1.1/4"	mm	160.0	43.2	28.6	41.1	63.5	63.5	4	25.4	111.2	4.0
1.1/2"	mm	180.0	49.5	31.8	44.5	69.8	73.1	4	28.4	123.9	5.4
2"	mm	215.0	62.0	38.1	57.1	104.6	91.9	8	25.4	165.1	10
2.1/2"	mm	245.0	74.7	41.3	63.5	123.9	104.6	8	28.4	190.5	14
3"	mm	265.0	90.7	47.7	73.1	133.3	127.0	8	31.7	203.2	21.5
4"	mm	310.0	116.1	54.0	90.5	162.0	157.2	8	35.0	241.3	33.2
5"	mm	375.0	143.8	73.1	104.8	196.8	185.6	8	41.1	292.1	60.8
6"	mm	395.0	170.7	82.6	119.1	228.6	215.9	12	38.1	317.5	74.8
8"	mm	485.0	221.5	92.1	142.9	292.1	269.7	12	44.4	393.7	118
10"	mm	585.0	276.3	108.0	158.7	368.3	323.8	12	50.8	482.6	197
12"	mm	675.0	327.1	123.9	181.0	450.8	381.0	16	53.8	571.5	264

1500 Lbs

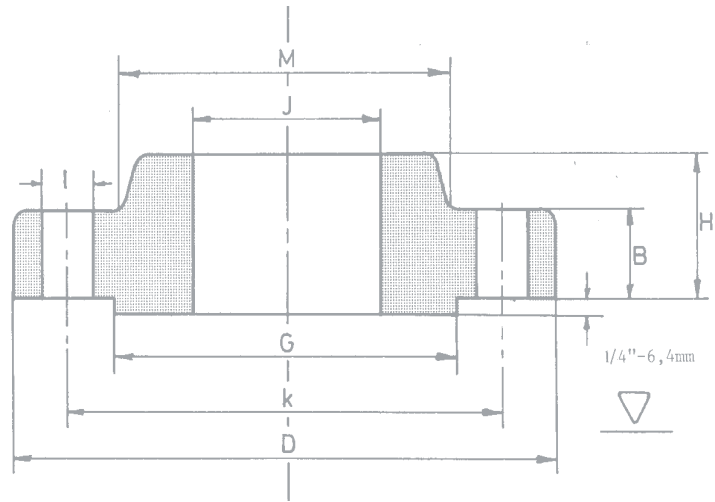
Slip On Flanges
ANSI B 16.5



* = not specified

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H		Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
14"	mm	750.0	359.1	133.4	241.3*		495.3	412.7	16	60.4	635.0	404*
16"	mm	825.0	410.5	146.01	260.3*		552.4	469.9	16	66.5	704.8	522*
18"	mm	915.0	461.8	162.0	276.2*		596.9	533.4	16	73.1	774.7	669*
20"	mm	985.0	513.1	177.8	292.1*		641.3	584.2	16	79.2	831.8	805*
24"	mm	1170.0	615.9	203.2	330.2*		762.0	692.1	16	91.9	990.6	1326*

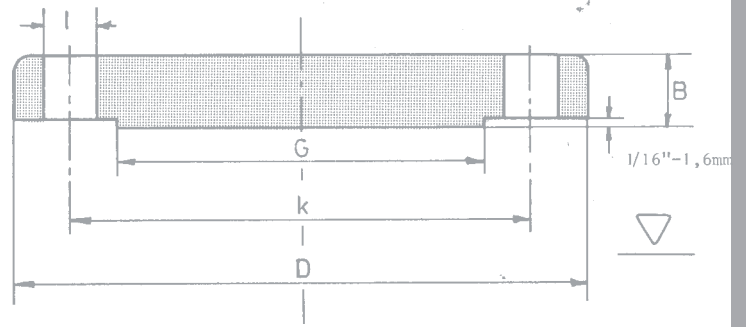
2500 Lbs
Slip On Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H		Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	135.0	22.3	30.2	39.7		42.9	35.1	4	22.4	88.9	3.0
3/4"	mm	140.0	27.7	31.8	42.9		50.8	42.9	4	22.4	95.3	3.6
1"	mm	160.0	34.5	35.0	47.6		57.2	50.8	4	25.4	108.0	5.0
1.1/4"	mm	185.0	43.2	38.1	52.4		73.2	63.5	4	28.4	130.0	7.2
1.1/2"	mm	205.0	49.5	44.5	60.3		79.2	73.2	4	31.8	146.1	10.0
2"	mm	235.0	62.0	50.9	69.8		95.3	91.9	8	28.4	171.5	17.0
2.1/2"	mm	265.0	74.7	57.2	79.4		114.3	104.6	8	31.8	196.9	25.0
3"	mm	305.0	90.7	66.7	92.1		133.4	127.0	8	35.1	228.6	38.0
4"	mm	355.0	116.1	76.2	107.9		165.1	157.2	8	41.1	273.1	56.0
5"	mm	420.0	143.8	92.1	130.2		203.2	185.7	8	47.8	323.9	95.0
6"	mm	485.0	170.7	108.0	152.4		235.0	215.9	8	53.8	368.3	147.0
8"	mm	550.0	221.5	127.0	177.8		304.8	269.7	12	53.8	438.2	220.0
10"	mm	675.0	276.3	165.1	228.6		374.4	323.9	12	66.5	539.8	410.0
12"	mm	760.0	327.1	184.2	254.0		441.5	381.0	12	73.2	619.3	500.0



150 Lbs
Blind Flanges
1/2" - 24" ANSI B 16.5



Technical Bulletin

Pipes Flanges and Fittings

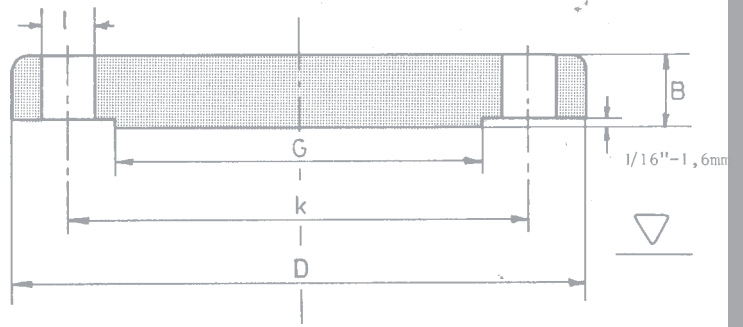
Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B				O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	90.0	11.2				35.1	4	15.7	60.5	0.5
3/4"	mm	100.0	12.7				42.9	4	15.7	69.9	0.7
1"	mm	110.0	14.3				50.8	4	15.7	79.2	0.9
1.1/4"	mm	115.0	15.9				63.5	4	15.7	88.9	1.2
1.1/2"	mm	125.0	17.5				73.2	4	15.7	98.6	1.6
2"	mm	150.0	19.1				91.9	4	19.1	120.7	2.5
2.1/2"	mm	180.0	22.3				104.6	4	19.1	139.7	4.0
3"	mm	190.0	23.9				127.0	4	19.1	152.4	4.9
3.1/2"	mm	215.0	23.9				139.7	8	19.1	177.8	6.2
4"	mm	230.0	23.9				157.2	8	19.1	190.5	7.0
5"	mm	255.0	23.9				185.7	8	22.4	215.9	8.7
6"	mm	280.0	25.4				215.9	8	22.4	241.3	11.3
8"	mm	345.0	28.6				269.7	8	22.4	298.5	20.0
10"	mm	405.0	30.2				323.9	12	25.4	362.0	29.0



150 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5

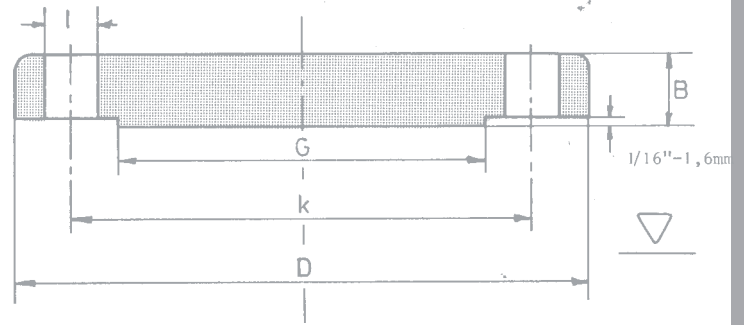


Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B					O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	485.0	31.8					381.0	12	25.4	431.8	44
14"	mm	535.0	35.0					412.8	12	28.4	476.2	59
16"	mm	595.0	36.6					469.9	16	28.4	539.7	76
18"	mm	635.0	39.7					533.4	16	31.8	577.8	94
20"	mm	700.0	42.9					584.2	20	31.8	635.0	122
24"	mm	815.0	47.8					692.2	20	35.1	749.3	185

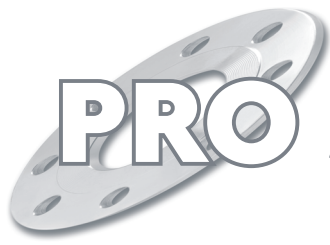
300 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B				O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	95.0	14.3				35.0	4	15.7	66.7	0.7
3/4"	mm	115.0	15.9				42.9	4	19.0	82.5	1.2
1"	mm	125.0	17.5				50.8	4	19.0	88.9	1.4
1.1/4"	mm	135.0	19.1				63.5	4	19.0	98.4	1.8
1.1/2"	mm	155.0	20.7				73.1	4	22.3	114.3	2.7
2"	mm	165.0	22.3				91.9	8	19.0	127.0	3.2
2.1/2"	mm	190.0	25.4				104.6	8	22.3	149.2	4.9
3"	mm	210.0	28.6				127.0	8	22.3	168.3	7
3.1/2"	mm	230.0	30.2				139.7	8	22.3	184.1	9
4"	mm	255.0	31.8				157.2	8	22.3	200.0	12
5"	mm	280.0	35.0				185.6	8	22.3	234.9	16
6"	mm	320.0	36.6				215.9	12	22.3	269.9	21
8"	mm	380.0	41.3				269.7	12	25.4	330.2	35
10"	mm	445.0	47.7				323.8	16	28.4	387.3	54



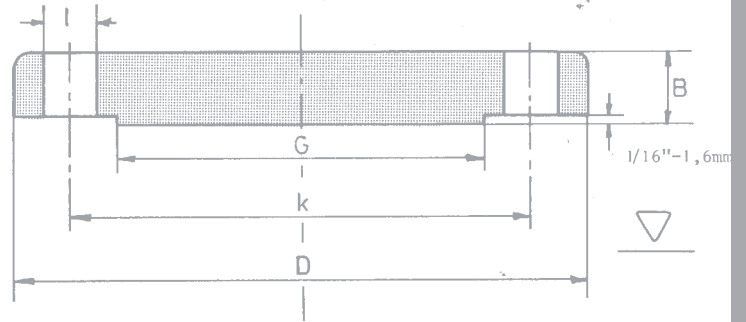
PRO Alloy bv



300 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5

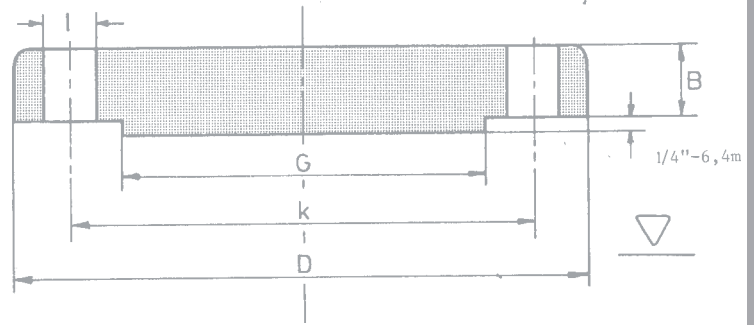


Nominal Pipe Size	mm	Outside Diam. D		Thick-ness Min. B				O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	520.0		50.8				381.0	16	31.7	450.8	87.9
14"	mm	585.0		54.0				412.7	20	31.7	514.3	105
16"	mm	650.0		57.2				469.9	20	35.0	571.5	137
18"	mm	710.0		60.4				533.4	24	35.0	628.6	175
20"	mm	775.0		63.5				584.2	24	35.0	685.8	221
24"	mm	915.0		69.9				692.1	24	41.1	812.8	340

600 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5

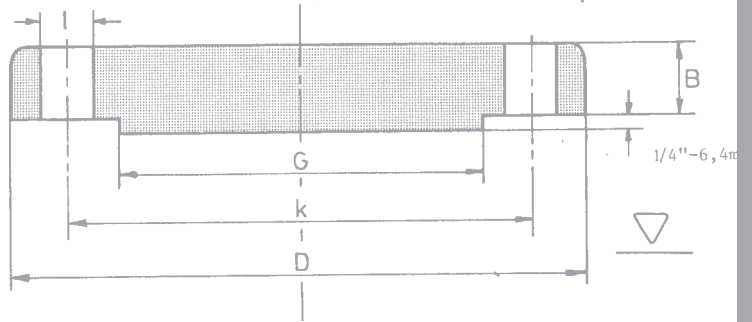


Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B				O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	95.0	14.3				35.1	4	15.7	66.5	0.8
3/4"	mm	115.0	15.9				42.9	4	19.1	82.6	1.3
1"	mm	125.0	17.5				50.8	4	19.1	88.9	1.6
1.1/4"	mm	135.0	20.7				63.5	4	19.1	98.6	2.3
1.1/2"	mm	155.0	22.3				73.2	4	22.4	114.3	3.3
2"	mm	165.0	25.4				91.9	8	19.1	127.0	4.2
2.1/2"	mm	190.0	28.6				104.6	8	22.4	149.4	6.2
3"	mm	210.0	31.8				127.0	8	22.4	168.1	8.5
3.1/2"	mm	230.0	35.0				139.7	8	25.4	184.2	11
4"	mm	275.0	38.1				157.2	8	25.4	215.9	18
5"	mm	330.0	44.5				185.7	8	28.4	266.7	30
6"	mm	355.0	47.7				215.9	12	28.4	292.1	36
8"	mm	420.0	55.6				269.7	12	31.8	349.3	65.9
10"	mm	510	63.5				323.9	16	35.1	431.8	98

600 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5

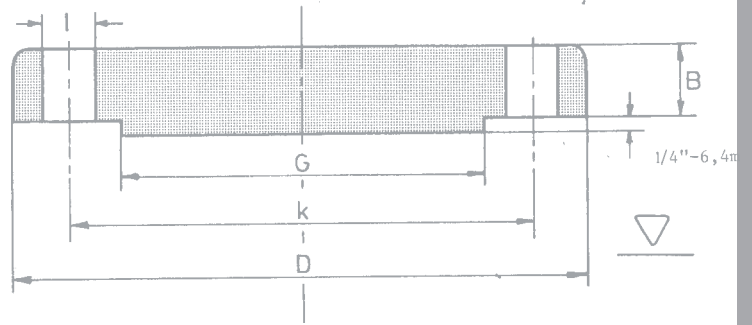


Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B					O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	560.0	66.7					381.0	20	35.1	489.0	124
14"	mm	605.0	69.9					412.8	20	38.1	527.1	151
16"	mm	685.0	76.2					469.9	20	41.1	603.3	214
18"	mm	745.0	82.6					533.4	20	44.5	654.1	272
20"	mm	815.0	88.9					584.2	24	44.5	723.9	349
24"	mm	940.0	101.6					692.2	24	50.8	838.2	533

900 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5



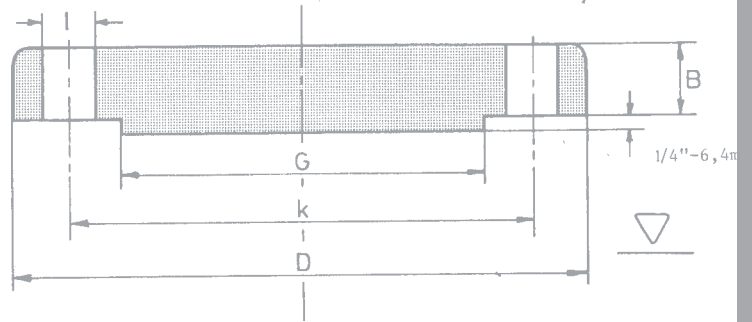
Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B				O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	22.3				35.0	4	22.3	82.5	1.8
3/4"	mm	130.0	25.4				42.9	4	22.3	88.9	2.5
1"	mm	150.0	28.4				50.8	4	25.4	101.6	3.6
1.1/4"	mm	160.0	28.4				63.5	4	25.4	111.2	4.2
1.1/2"	mm	180.0	31.7				73.1	4	28.4	123.9	5.8
2"	mm	215.0	38.1				91.9	8	25.4	165.1	11
2.1/2"	mm	245.0	41.1				104.6	8	28.4	190.5	14
3"	mm	240.0	38.1				127.0	8	25.4	190.5	13.1
4"	mm	290.0	44.5				157.2	8	31.7	234.9	27
5"	mm	350.0	50.8				185.6	8	35.0	279.4	36.5
6"	mm	380.0	55.6				215.9	12	31.7	317.5	48
8"	mm	470.0	63.5				269.7	12	38.1	393.7	83
10"	mm	545.0	69.9				323.8	16	38.1	469.9	122
12"	mm	610.0	79.4				381.0	20	38.1	533.4	173



900 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5



Technical Bulletin

Pipes Flanges and Fittings

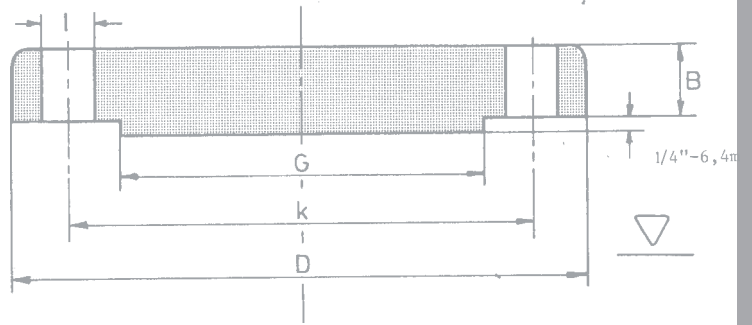
Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B					O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
14"	mm	640.0	85.8					412.7	20	41.1	558.8	206
16"	mm	705.0	88.9					469.9	20	44.4	615.9	259
18"	mm	785.0	101.6					533.4	20	50.8	685.8	367
20"	mm	855.0	108.0					584.2	20	53.8	749.3	463
24"	mm	1040.0	139.7					692.1	20	66.5	901.7	876



1500 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5



Technical Bulletin

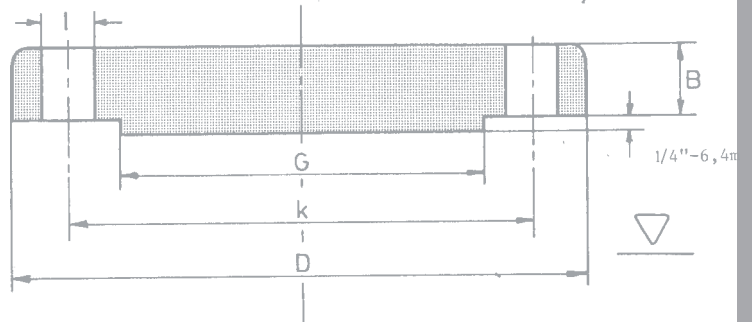
Pipes Flanges and Fittings

Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B				O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	22.3				35.0	4	22.3	82.5	1.8
3/4"	mm	130.0	25.4				42.9	4	22.3	88.9	2.5
1"	mm	150.0	28.6				50.8	4	25.4	101.6	3.6
1.1/4"	mm	160.0	28.6				63.5	4	25.4	111.1	4.2
1.1/2"	mm	180.0	31.8				73.1	4	28.4	123.8	5.8
2"	mm	215.0	38.1				91.9	8	25.4	165.1	11
2.1/2"	mm	245.0	41.3				104.6	8	28.4	190.5	14
3"	mm	265.0	47.7				127.0	8	31.7	203.2	20
4"	mm	310.0	54.0				157.2	8	35.0	241.3	30
5"	mm	375.0	73.1				185.6	8	41.1	292.1	59
6"	mm	395.0	82.6				215.9	12	38.1	317.5	72
8"	mm	485.0	92.1				269.7	12	44.4	393.7	122
10"	mm	585.0	108.0				323.8	12	50.8	482.6	210
12"	mm	675.0	123.9				381.0	16	53.8	571.5	316

1500 Lbs

Blind Flanges

1/2" - 24" ANSI B 16.5



Technical Bulletin

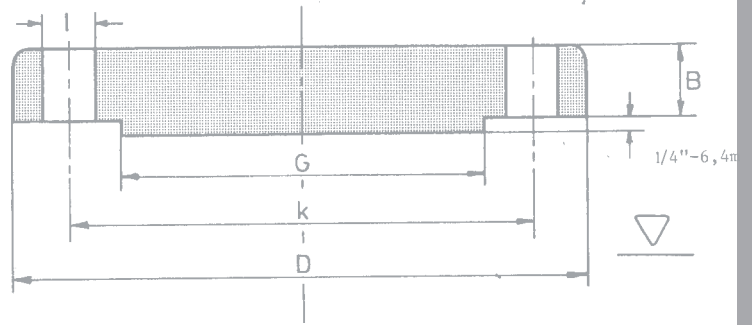
Pipes Flanges and Fittings

Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B				O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
14"	mm	750.0	133.4				412.7	16	60.4	635.0	420
16"	mm	825.0	146.01				469.9	16	66.5	704.8	560
18"	mm	915.0	162.0				533.4	16	73.1	774.7	760
20"	mm	985.0	177.8				584.2	16	79.2	831.8	965
24"	mm	1170.0	203.2				692.1	16	91.9	990.6	1558

2500 Lbs

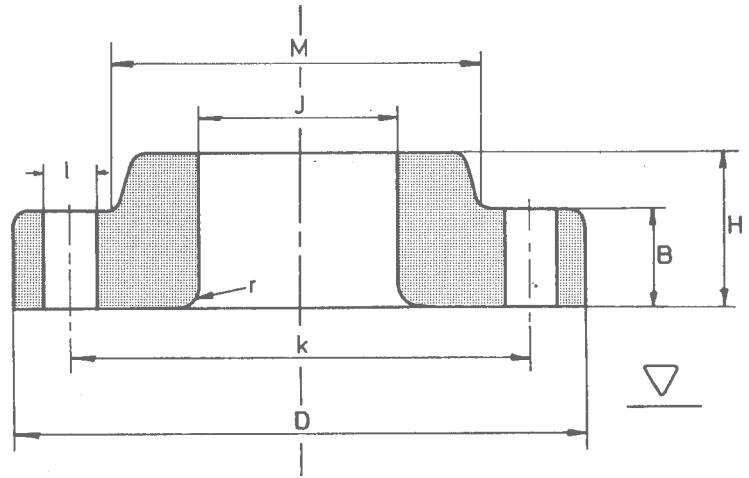
Blind Flanges

1/2" - 24" ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Thick-ness Min. B				O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	135.0	30.2				35.1	4	22.4	88.9	3
3/4"	mm	140.0	31.8				42.9	4	22.4	95.3	3.5
1"	mm	160.0	35.0				50.8	4	25.4	108.0	5
1.1/4"	mm	185.0	38.1				63.5	4	28.4	130.0	7.4
1.1/2"	mm	205.0	44.5				73.2	4	31.8	146.1	10.4
2"	mm	235.0	50.9				91.9	8	28.4	171.5	16
2.1/2"	mm	265.0	57.2				104.6	8	31.8	196.9	23
3"	mm	305.0	66.7				127.0	8	35.1	228.6	35
4"	mm	355.0	76.2				157.2	8	41.1	273.1	54
5"	mm	420.0	92.1				185.7	8	47.8	323.9	91
6"	mm	485.0	108.0				215.9	8	53.8	368.3	141
8"	mm	550.0	127.0				269.7	12	53.8	438.2	214
10"	mm	675.0	165.1				323.9	12	66.5	539.8	411
12"	mm	760.0	184.2				381.0	12	73.2	619.3	592

150 Lbs Lap Joint Flanges ANSI B 16.5

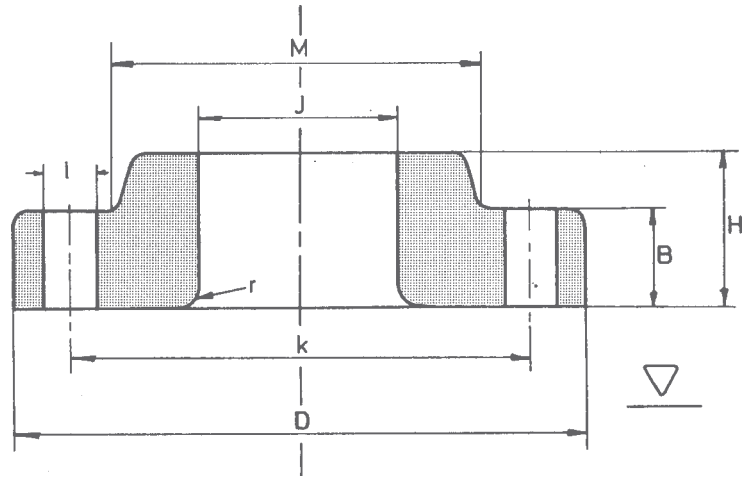


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	90.0	22.9	11.2	15.7	3.0	30.2		4	15.7	60.5	0.4
3/4"	mm	100.0	28.2	12.7	15.7	3.0	38.1		4	15.7	69.9	0.6
1"	mm	110.0	35.1	14.3	17.5	3.0	49.3		4	15.7	79.2	0.8
1.1/4"	mm	115.0	43.7	15.9	20.6	4.8	58.7		4	15.7	88.9	1.0
1.1/2"	mm	125.0	50.0	17.5	22.4	6.4	65.0		4	15.7	98.6	1.3
2"	mm	150.0	62.5	19.1	25.4	7.9	77.7		4	19.1	120.7	2.0
2.1/2"	mm	180.0	75.4	22.3	28.4	7.9	90.4		4	19.1	139.7	3.3
3"	mm	190.0	91.4	23.9	30.2	9.7	108.0		4	19.1	152.4	3.8
3.1/2"	mm	215.0	104.1	23.9	31.8	9.7	122.2		8	19.1	177.8	4.8
4"	mm	230.0	116.8	23.9	33.3	11.2	134.9		8	19.1	190.5	5.3
5"	mm	255.0	144.5	23.9	36.6	11.2	163.6		8	22.4	215.9	6.1
6"	mm	280.0	171.5	25.4	39.6	12.7	192.0		8	22.4	241.3	7.4
8"	mm	345.0	222.3	28.6	44.5	12.7	246.1		8	22.4	298.5	12.1
10"	mm	405.0	277.4	30.2	49.3	12.7	304.8		12	25.4	362.0	16.4



150 Lbs

Lap Joint Flanges
ANSI B 16.5



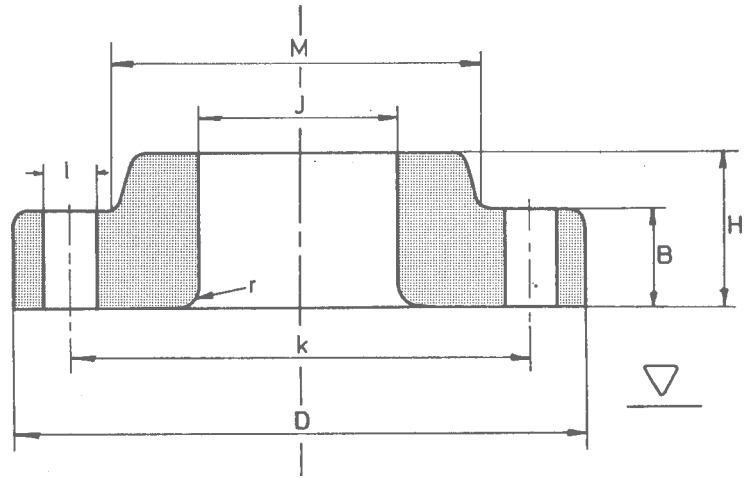
Technical Bulletin

Pipes Flanges and Fittings

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	485.0	328.2	31.8	55.6	12.7	365.3		12	25.4	431.8	27
14"	mm	535.0	360.2	35.0	79.2	12.7	400.1		12	28.4	476.3	35
16"	mm	595.0	411.2	36.6	87.4	12.7	457.2		16	28.4	539.8	45
18"	mm	635.0	462.3	39.7	96.8	12.7	505.0		16	31.8	577.9	49
20"	mm	700.0	514.4	42.9	103.1	12.7	558.8		20	31.8	635.0	62
24"	mm	815.0	616.0	47.8	111.3	12.7	663.4		20	35.1	749.3	87



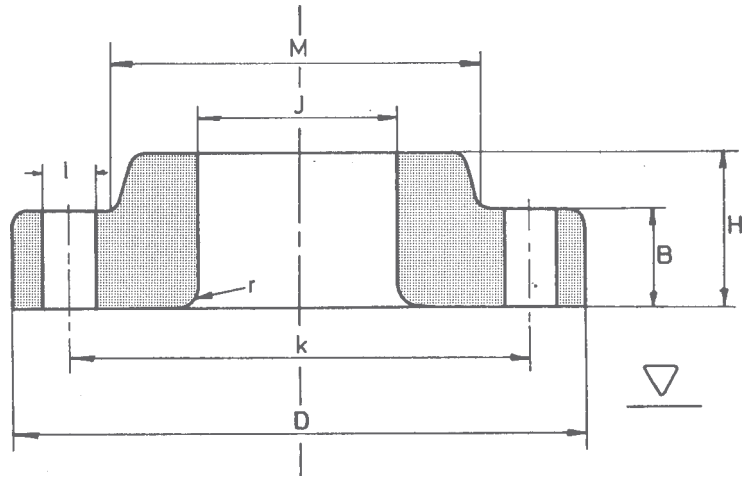
300 Lbs
Lap Joint Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	95.0	22.9	14.3	22.3	3.0	38.1		4	15.7	66.5	0.7
3/4"	mm	115.0	28.2	15.9	25.4	3.0	47.7		4	19.0	82.5	1.1
1"	mm	125.0	35.0	17.5	26.9	3.0	53.8		4	19.0	88.9	1.4
1.1/4"	mm	135.0	43.7	19.1	26.9	4.8	63.5		4	19.0	98.5	1.7
1.1/2"	mm	155.0	50.0	20.7	30.2	6.4	69.8		4	22.3	114.3	2.5
2"	mm	165.0	62.5	22.3	33.2	7.8	84.0		8	19.0	127.0	2.9
2.1/2"	mm	190.0	75.4	25.4	38.1	7.8	100.0		8	22.3	149.3	4.3
3"	mm	210.0	91.4	28.6	42.9	9.6	117.3		8	22.3	168.1	5.8
3.1/2"	mm	230.0	104.1	30.2	44.4	9.6	133.3		8	22.3	184.1	7.3
4"	mm	255.0	116.8	31.8	47.7	11.1	146.0		8	22.3	200.1	10
5"	mm	280.0	144.5	35.0	50.8	11.1	177.8		8	22.3	234.9	12.2
6"	mm	320.0	171.4	36.6	52.3	12.7	206.2		12	22.3	269.7	15.5
8"	mm	380.0	222.2	41.3	61.9	12.7	260.3		12	25.4	330.2	24.1
10"	mm	445.0	277.4	47.7	95.2	12.7	320.5		16	28.4	387.3	34.4



300 Lbs
Lap Joint Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	520.0	328.2	50.8	101.6	12.7	374.6		16	31.7	450.8	51
14"	mm	585.0	360.2	54.0	111.2	12.7	425.4		20	31.7	514.3	71
16"	mm	650.0	411.2	57.2	120.6	12.7	482.6		20	35.0	571.5	90
18"	mm	710.0	462.3	60.4	130.0	12.7	533.4		24	35.0	628.6	111
20"	mm	775.0	514.3	63.5	139.7	12.7	587.2		24	35.0	685.8	137
24"	mm	915.0	615.9	69.9	152.4	12.7	701.5		24	41.1	812.8	204

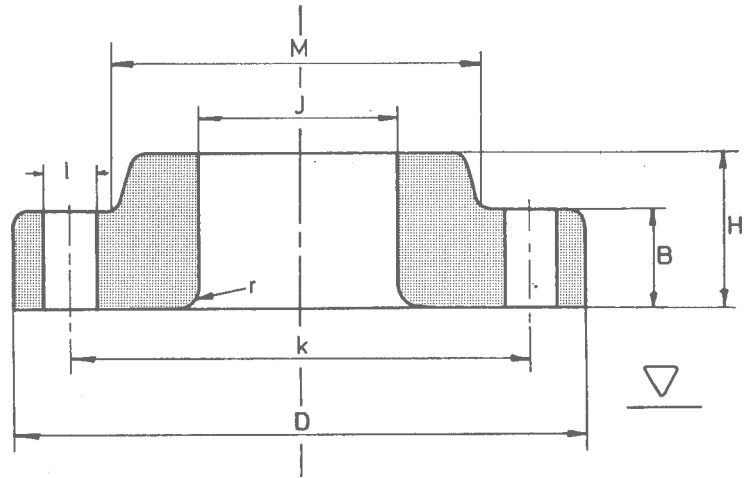
Technical Bulletin

Pipes Flanges and Fittings

600 Lbs

Lap Joint Flanges

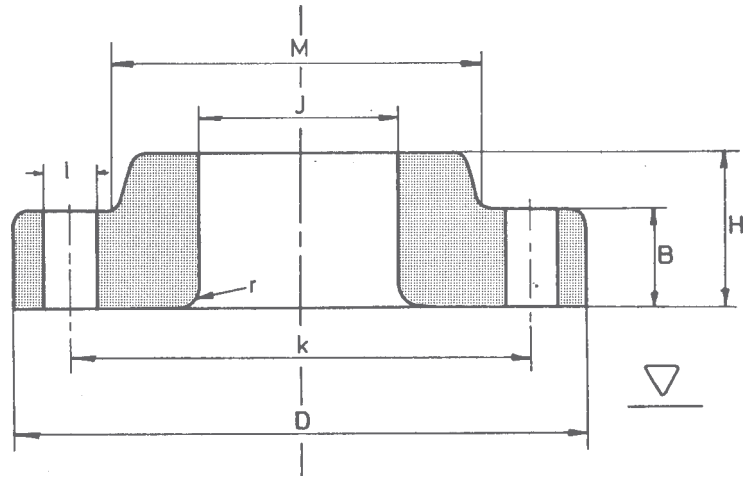
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Fillet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	95.0	22.9	14.3	22.4	3.0	38.1		4	15.7	66.5	0.8
3/4"	mm	115.0	28.2	15.9	25.4	3.0	47.8		4	19.1	82.6	1.3
1"	mm	125.0	35.1	17.5	26.9	3.0	53.8		4	19.1	88.9	1.5
1.1/4"	mm	135.0	43.7	20.7	28.4	4.8	63.5		4	19.1	98.6	2.0
1.1/2"	mm	155.0	50.0	22.3	31.8	6.4	69.9		4	22.4	114.3	2.9
2"	mm	165.0	62.5	25.4	36.6	7.9	84.1		8	19.1	127.0	3.6
2.1/2"	mm	190.0	75.4	28.6	41.1	7.9	100.1		8	22.4	149.4	5.3
3"	mm	210.0	91.4	31.8	46.0	9.7	117.3		8	22.4	168.1	7.0
3.1/2"	mm	230.0	104.1	35.0	49.3	9.7	133.4		8	25.4	184.2	9.0
4"	mm	275.0	116.8	38.1	53.8	11.2	152.4		8	25.4	215.9	14.4
5"	mm	330.0	144.5	44.5	60.5	11.2	189.0		8	28.6	266.7	24.3
6"	mm	355.0	171.5	47.7	66.5	12.7	222.3		12	28.6	292.1	28.5
8"	mm	420.0	222.3	55.6	76.2	12.7	273.1		12	31.8	349.3	43.1
10"	mm	510	277.4	63.5	111.3	12.7	342.9		16	35.1	431.8	70.5

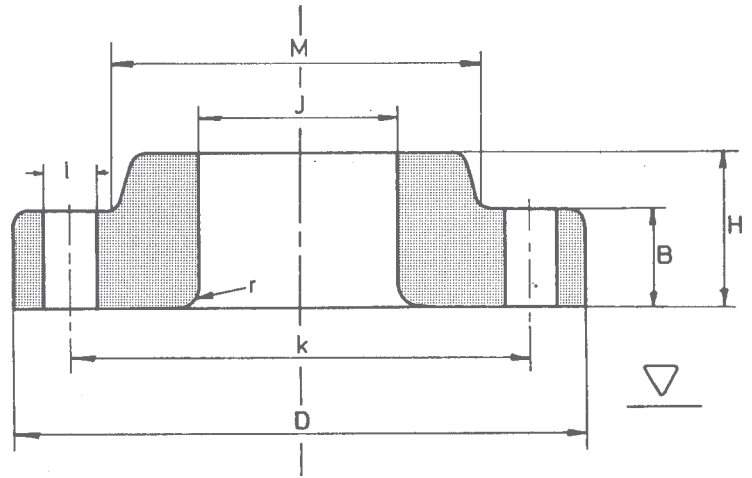


600 Lbs
Lap Joint Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	560.0	328.2	66.7	117.3	12.7	400.1		20	35.1	489.0	87
14"	mm	605.0	360.2	69.9	127.0	12.7	431.8		20	38.1	527.1	100
16"	mm	685.0	411.2	76.2	139.7	12.7	495.3		20	41.1	603.3	145
18"	mm	745.0	462.3	82.6	152.4	12.7	546.1		20	44.5	654.1	177
20"	mm	815.0	514.4	88.9	165.1	12.7	609.6		24	44.5	723.9	225
24"	mm	940.0	616.0	101.6	184.1	12.7	717.5		24	50.8	838.2	318

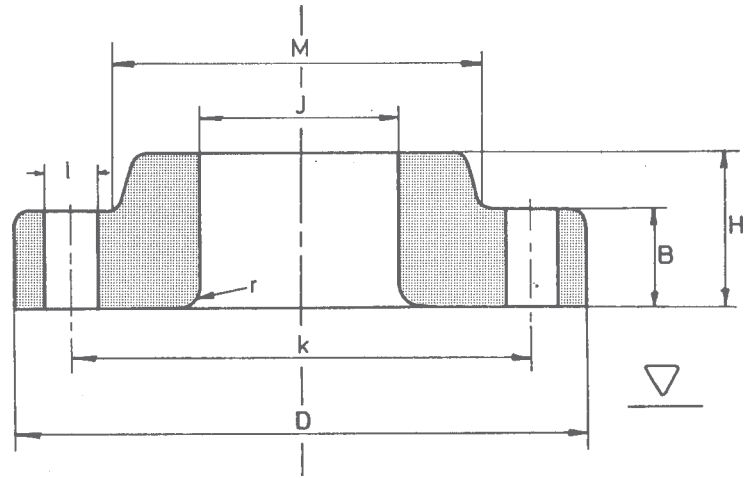
900 Lbs
Lap Joint Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	22.9	22.3	31.7	3.0	38.1		4	22.3	82.5	1.8
3/4"	mm	130.0	28.2	25.4	35.0	3.0	44.4		4	22.3	88.9	2.3
1"	mm	150.0	35.0	28.4	41.1	3.0	52.3		4	25.4	101.6	3.4
1.1/4"	mm	160.0	43.7	28.4	41.1	4.8	63.5		4	25.4	111.2	3.9
1.1/2"	mm	180.0	50.0	31.7	44.4	6.4	69.8		4	28.4	123.9	5.3
2"	mm	215.0	62.5	38.1	57.1	7.8	104.6		8	25.4	165.1	10
2.1/2"	mm	245.0	75.4	41.1	63.5	7.8	123.9		8	28.4	190.5	14
3"	mm	240.0	91.4	38.1	53.8	9.6	127.0		8	25.4	190.5	11.3
4"	mm	290.0	116.8	44.5	69.8	11.1	158.7		8	31.7	234.9	19.2
5"	mm	350.0	144.5	50.8	79.2	11.1	190.5		8	35.0	279.4	31.2
6"	mm	380.0	171.4	55.6	85.8	12.7	234.9		12	31.7	317.5	40.5
8"	mm	470.0	222.2	63.5	114.3	12.7	298.4		12	38.1	393.7	71.5
10"	mm	545.0	277.4	69.9	127.0	12.7	368.3		16	38.1	469.9	104
12"	mm	610.0	328.2	79.4	142.7	12.7	419.1		20	38.1	533.4	139

900 Lbs

Lap Joint Flanges
ANSI B 16.5

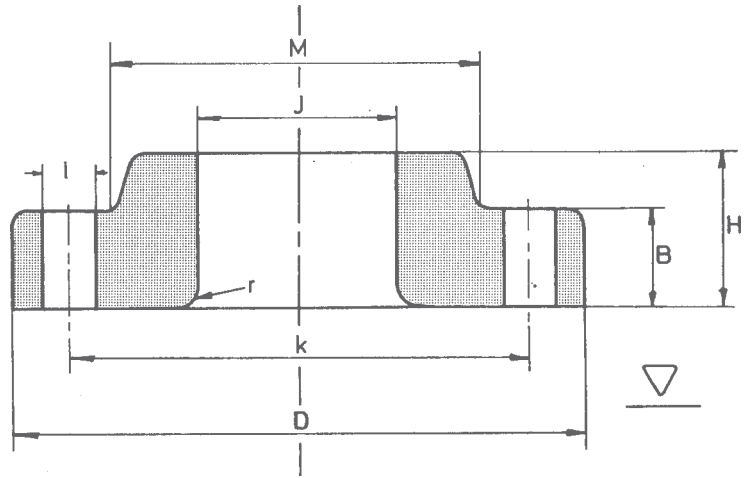


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
14"	mm	640.0	360.2	85.8	155.4	12.7	450.8		20	41.1	558.8	161
16"	mm	705.0	411.2	88.9	165.1	12.7	508.0		20	44.4	615.9	194
18"	mm	785.0	462.3	101.6	190.5	12.7	565.1		20	50.8	685.8	267
20"	mm	855.0	514.3	108.0	209.5	12.7	622.3		20	53.8	749.3	334
24"	mm	1040.0	615.9	139.7	266.7	12.7	749.3		20	66.5	901.7	618

1500 Lbs

Lap Joint Flanges

ANSI B 16.5

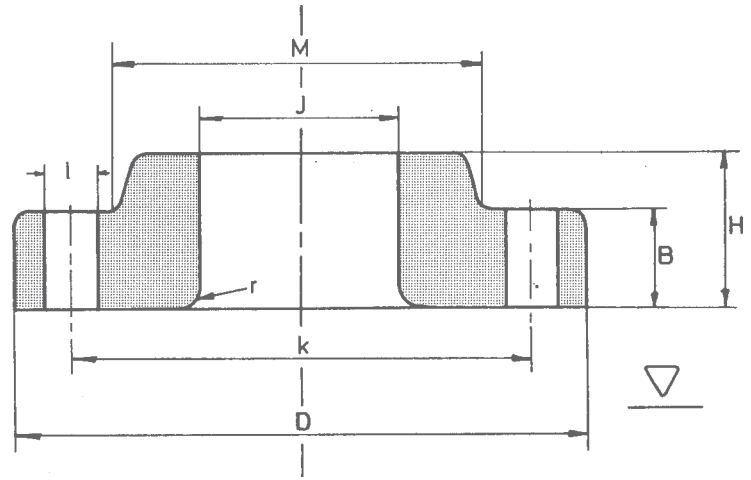


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	22.9	22.3	31.7	3.0	38.1		4	22.3	82.5	1.8
3/4"	mm	130.0	28.2	25.4	35.0	3.0	44.4		4	22.3	88.9	2.3
1"	mm	150.0	35.0	28.6	41.1	3.0	52.3		4	25.4	101.6	3.4
1.1/4"	mm	160.0	43.7	28.6	41.1	4.8	63.5		4	25.4	111.2	3.9
1.1/2"	mm	180.0	50.0	31.8	44.4	6.4	69.8		4	28.4	123.9	5.3
2"	mm	215.0	62.5	38.1	57.1	7.8	104.6		8	25.4	165.1	10
2.1/2"	mm	245.0	75.4	41.3	63.5	7.8	123.9		8	28.4	190.5	14
3"	mm	265.0	91.4	47.7	73.1	9.6	133.3		8	31.7	203.2	18
4"	mm	310.0	116.8	54.0	90.4	11.1	162.0		8	35.0	241.3	28
5"	mm	375.0	144.5	73.1	104.6	11.1	196.8		8	41.1	292.1	52
6"	mm	395.0	171.4	82.6	119.1	12.7	228.6		12	38.1	317.5	62
8"	mm	485.0	222.2	92.1	142.7	12.7	292.1		12	44.4	393.7	105
10"	mm	585.0	277.4	108.0	177.8	12.7	368.3		12	50.8	482.6	179
12"	mm	675.0	328.2	123.9	218.9	12.7	450.8		16	53.8	571.5	269



1500 Lbs

Lap Joint Flanges
ANSI B 16.5

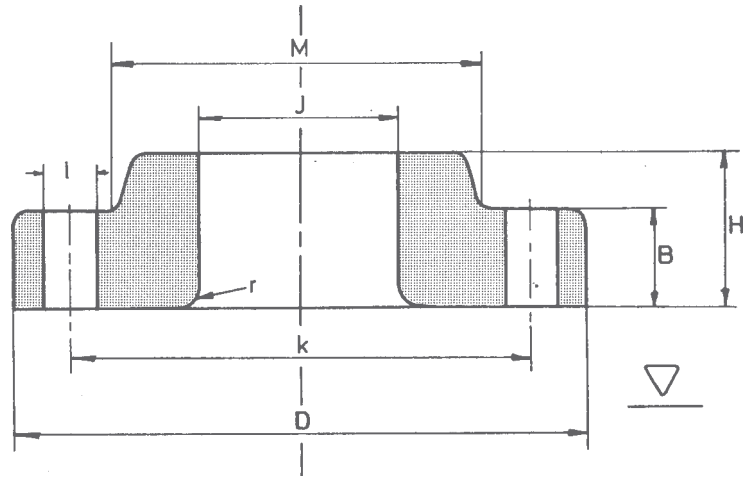


Technical Bulletin

Pipes Flanges and Fittings

Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Fillet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
14"	mm	750.0	360.2	133.4	241.3	12.7	495.3		16	60.4	635.0	365
16"	mm	825.0	411.2	146.01	260.3	12.7	552.4		16	66.5	704.8	459
18"	mm	915.0	462.3	162.0	276.2	12.7	596.9		16	73.1	774.7	598
20"	mm	985.0	514.3	177.8	292.1	12.7	641.3		16	79.2	831.8	712
24"	mm	1170.0	615.9	203.2	330.2	12.7	762.0		16	91.9	990.6	1090

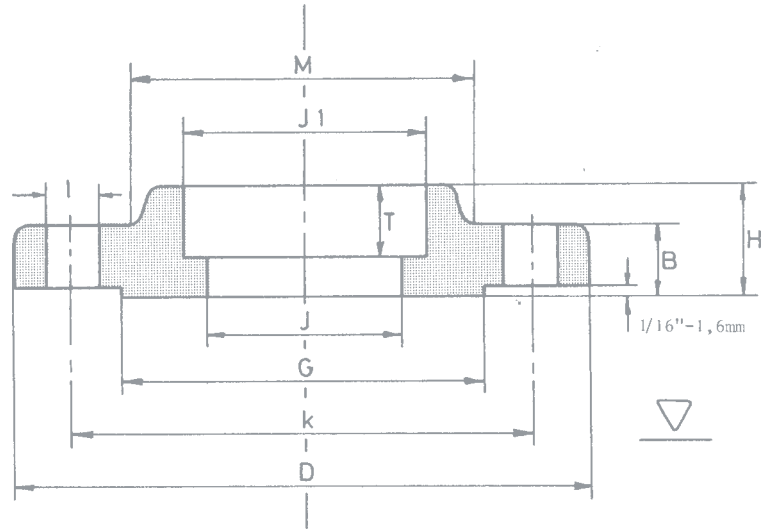
2500 Lbs
Lap Joint Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Radius of Filet R	Diam. at Base of Hub M		Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	135.0	22.9	30.2	39.6	3.0	42.9		4	22.4	88.9	3
3/4"	mm	140.0	28.2	31.8	42.9	3.0	50.8		4	22.4	95.3	3.5
1"	mm	160.0	35.1	35.0	47.8	3.0	57.2		4	25.4	108.0	4.8
1.1/4"	mm	185.0	43.7	38.1	52.3	4.8	73.2		4	28.4	130.0	7.1
1.1/2"	mm	205.0	50.0	44.5	60.5	6.4	79.2		4	31.8	146.1	10
2"	mm	235.0	62.5	50.9	69.9	7.9	95.3		8	28.4	171.5	14.7
2.1/2"	mm	265.0	75.4	57.2	79.2	7.9	114.3		8	31.8	196.9	22
3"	mm	305.0	91.4	66.7	91.9	9.7	133.4		8	35.1	228.6	33
4"	mm	355.0	116.8	76.2	107.9	11.2	165.1		8	41.1	273.1	53
5"	mm	420.0	144.5	92.1	130.2	11.2	203.2		8	47.8	323.9	83
6"	mm	485.0	171.5	108.0	152.4	12.7	235.0		8	53.8	368.3	127
8"	mm	550.0	222.3	127.0	177.8	12.7	304.8		12	53.8	438.2	186
10"	mm	675.0	277.4	165.1	228.6	12.7	374.7		12	66.5	539.8	352
12"	mm	760.0	328.2	184.2	254.0	12.7	441.5		12	73.2	619.3	501

150 Lbs

Socket Weld Flanges ANSI B 16.5



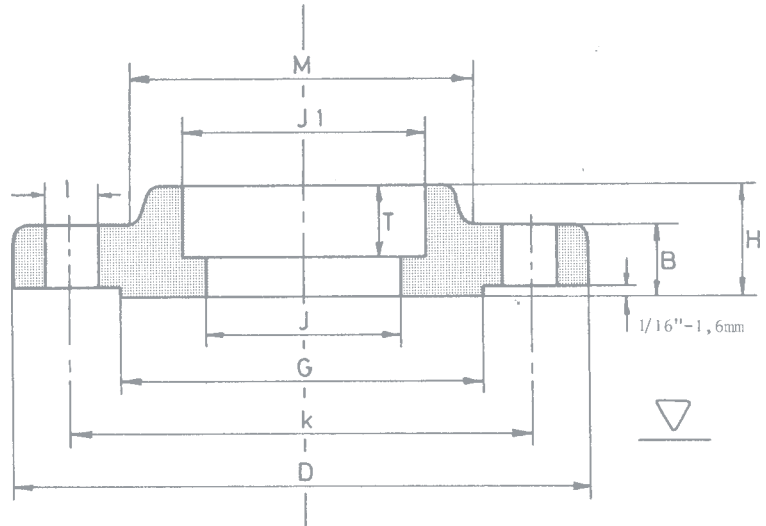
Diameter J to be specified

Nominal Pipe Size	mm	Outside Diam. D	Bore of Socket J1	Depth of Socket T	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/4"	mm	90.0	14.7	9.6	11.2	15.7	30.2	35.1	4	15.7	60.5	0.4
3/8"	mm	90.0	18.3	9.6	11.2	15.7	30.2	35.1	4	15.7	60.5	0.4
1/2"	mm	90.0	22.4	9.6	11.2	15.7	30.2	35.1	4	15.7	60.5	0.5
3/4"	mm	100.0	27.7	11.1	12.7	15.7	38.1	42.9	4	15.7	69.9	0.6
1"	mm	110.0	34.5	12.7	14.3	17.5	49.2	50.8	4	15.7	79.2	0.9
1.1/4"	mm	115.0	43.2	14.2	15.9	20.6	58.7	63.5	4	15.7	88.9	1.1
1.1/2"	mm	125.0	49.5	15.7	17.5	22.4	65.0	73.1	4	15.7	98.6	1.4
2"	mm	150.0	62.0	17.5	19.1	25.4	77.7	91.9	4	19.1	120.7	2.1
2.1/2"	mm	180.0	74.7	19.0	22.3	28.4	90.4	104.6	4	19.1	139.7	3.4
3"	mm	190.0	90.7	20.6	23.9	30.2	108.0	127.0	4	19.1	152.4	3.9
3.1/2"	mm	215.0	103.4	22.2	23.9	31.7	122.2	139.7	8	19.1	177.8	5.0
4"	mm	230.0	116.1	23.8	23.9	33.3	134.9	157.2	8	19.1	190.5	5.9
5"	mm	255.0	143.8	23.8	23.9	36.5	163.5	185.7	8	22.2	215.9	6.8
6"	mm	280.0	170.7	27.0	25.4	39.7	192.1	215.9	8	22.2	241.3	8.6

150 Lbs

Socket Weld Flanges

ANSI B 16.5

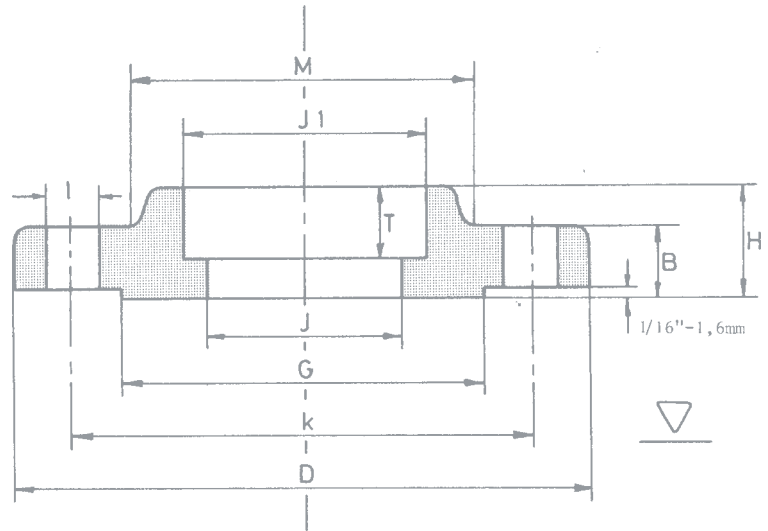


Diameter J to be specified

Nominal Pipe Size	mm	Outside Diam. D	Bore of Socket J I	Depth of Socket T	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
8"	mm	345.0	221.5	31.7	28.6	44.4	246.1	269.9	8	22.4	298.4	13.7
10"	mm	405.0	276.3	33.3	30.2	49.2	304.8	323.8	12	25.4	361.9	19.6
12"	mm	485.0	327.1	39.7	31.8	55.6	365.1	381.0	12	25.4	431.8	29
14"	mm	535.0	359.1	41.3	35.0	57.1	400.0	412.7	12	28.6	476.2	41
16"	mm	595.0	410.5	44.4	36.6	63.5	457.2	469.9	16	28.6	539.7	44.5
18"	mm	635.0	461.8	49.2	39.7	68.3	504.8	533.4	16	31.7	577.8	59
20"	mm	700.0	513.1	54.0	42.9	73.0	558.8	584.2	20	31.7	635.0	75
24"	mm	815.0	615.9	63.5	47.7	82.5	663.6	692.1	20	34.9	749.3	99

300 Lbs

Socket Weld Flanges ANSI B 16.5

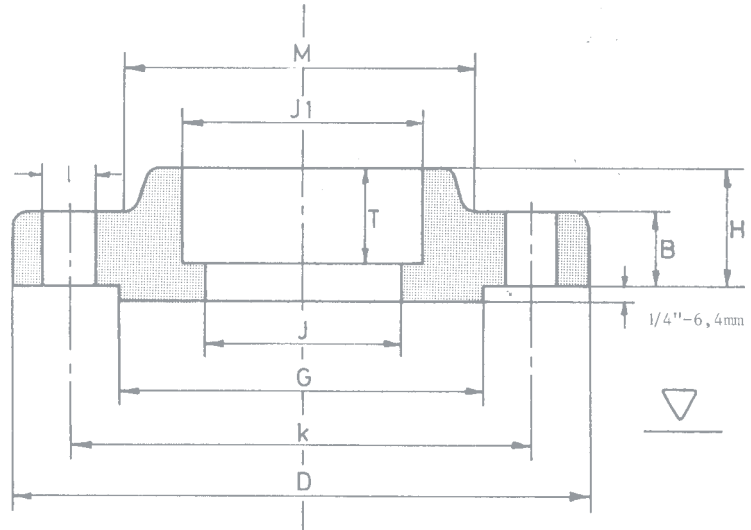


Diameter J to be specified

Nominal Pipe Size	mm	Outside Diam. D	Bore of Socket J1	Depth of Socket T	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/4"	mm	95.0	14.7	9.6	14.3	22.3	38.1	35.1	4	15.7	66.5	0.7
3/8"	mm	95.0	18.3	9.6	14.3	22.3	38.1	35.1	4	15.7	66.5	0.8
1/2"	mm	95.0	22.4	9.6	14.3	22.3	38.1	35.1	4	15.7	66.5	0.9
3/4"	mm	115.0	27.7	11.1	15.9	25.4	47.7	42.9	4	19.1	82.5	1.2
1"	mm	125.0	34.5	12.7	17.5	26.9	53.8	50.8	4	19.1	88.9	1.4
1.1/4"	mm	135.0	43.2	14.2	19.1	26.9	63.5	63.5	4	19.1	98.5	1.8
1.1/2"	mm	155.0	49.5	15.7	20.7	30.2	69.8	73.1	4	22.3	114.3	2.6
2"	mm	165.0	62.0	17.5	22.3	33.2	84.0	91.9	8	19.1	127.0	3.0
2.1/2"	mm	190.0	74.7	19.0	25.4	38.1	100.0	104.6	8	22.3	149.3	4.4
3"	mm	210.0	90.7	20.6	28.6	42.9	117.3	127.0	8	22.3	168.1	6.0
3.1/2"	mm	230.0	103.4	22.3	30.2	44.4	133.3	139.7	8	22.3	184.1	7.7
4"	mm	255.0	116.1	23.8	31.8	47.6	146.0	157.2	8	22.3	200.0	10

600 Lbs

Socket Weld Flanges ANSI B 16.5



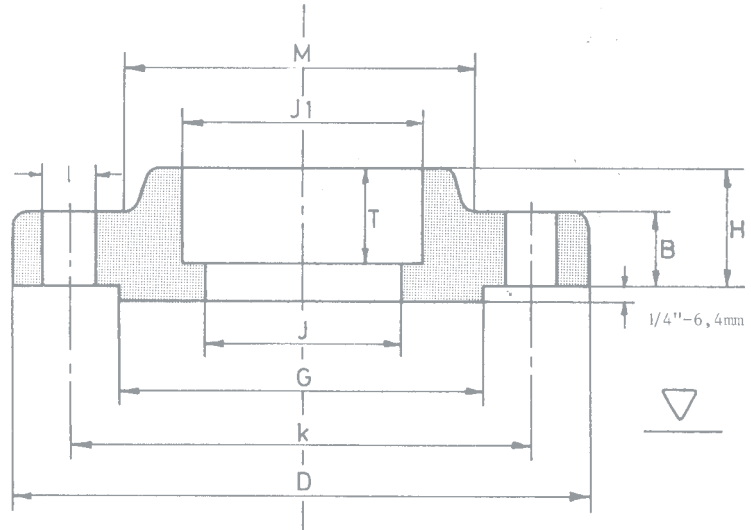
Diameter J to be specified

Nominal Pipe Size	mm	Outside Diam. D	Bore of Socket J1	Depth of Socket T	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/4"	mm	95.0	14.7	9.6	14.3	22.4	38.1	35.1	4	15.7	66.5	0.7
3/8"	mm	95.0	18.3	9.6	14.3	22.4	38.1	35.1	4	15.7	66.5	0.8
1/2"	mm	95.0	22.4	9.6	14.3	22.4	38.1	35.1	4	15.7	66.5	0.9
3/4"	mm	115.0	27.7	11.1	15.9	25.4	47.8	42.9	4	19.1	82.6	1.3
1"	mm	125.0	34.5	12.7	17.5	26.9	53.8	50.8	4	19.1	88.9	1.6
1.1/4"	mm	135.0	43.2	14.2	20.7	28.4	63.5	63.5	4	19.1	98.6	2.1
1.1/2"	mm	155.0	49.5	15.7	22.3	31.8	69.9	73.1	4	22.4	114.3	3.0
2"	mm	165.0	62.0	17.5	25.4	36.6	84.1	91.9	8	19.1	127.0	3.7
2.1/2"	mm	190.0	74.7	19.0	28.6	41.1	100.0	104.6	8	22.4	149.4	5.4
3"	mm	210.0	90.7	20.6	31.8	46.0	117.3	127.0	8	22.4	168.1	7.1
3.1/2"	mm	230.0	103.4	22.2	35.0	49.2	133.4	139.7	8	25.4	184.2	9.5

1500 Lbs

Socket Weld Flanges

ANSI B 16.5



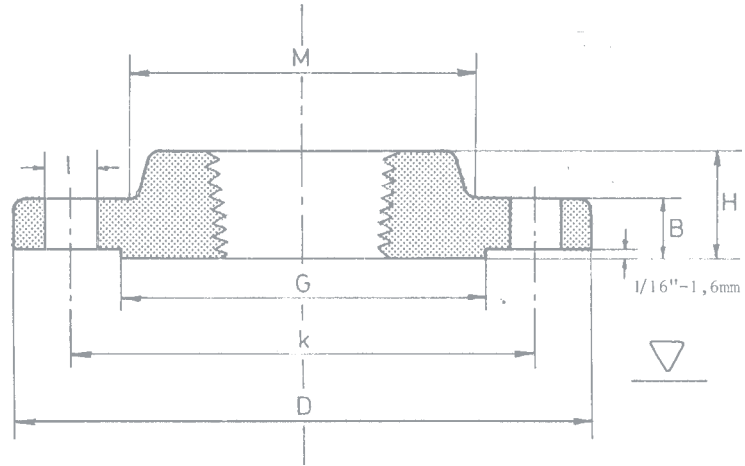
Diameter J to be specified

Nominal Pipe Size	mm	Outside Diam. D	Bore of Socket J1	Depth of Socket T	Thick-ness Min. B	Length thru Hub H	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	22.4	9.6	22.3	31.7	38.1	35.1	4	22.3	82.5	1.8
3/4"	mm	130.0	27.7	11.1	25.4	35.0	44.4	42.9	4	22.3	88.9	2.4
1"	mm	150.0	34.5	12.7	28.6	41.1	52.3	50.8	4	25.4	101.6	3.5
1.1/4"	mm	160.0	43.2	14.2	28.6	41.1	63.5	63.5	4	25.4	111.2	4.0
1.1/2"	mm	180.0	49.5	15.7	31.8	44.5	69.8	73.1	4	28.4	123.9	5.4
2"	mm	215.0	62.0	17.5	38.1	57.1	104.6	91.9	8	25.4	165.1	10.2
2.1/2"	mm	245.0	74.7	19.0	41.3	63.5	123.9	104.6	8	28.4	190.5	13.9

150 Lbs

Threaded Flanges

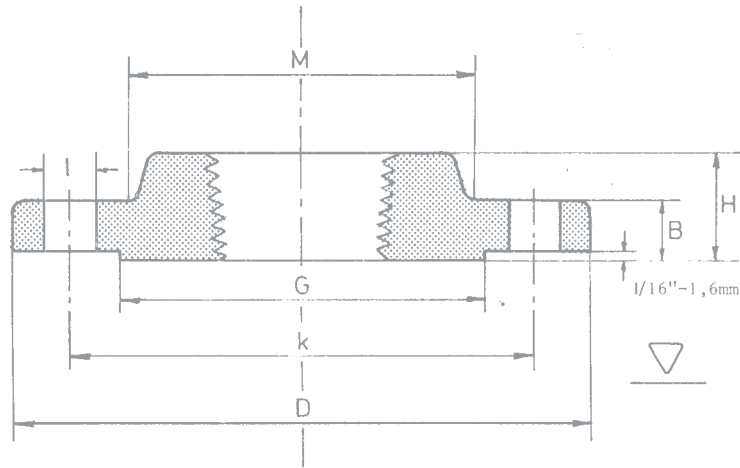
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	90.0		11.2	16	16	30.2	35.1	4	15.7	60.5	0.4
3/4"	mm	100.0		12.7	16	16	38.1	42.9	4	15.7	69.9	0.6
1"	mm	110.0		14.3	18	17	49.3	50.8	4	15.7	79.2	0.8
1.1/4"	mm	115.0		15.9	21	21	58.7	63.5	4	15.7	88.9	1.1
1.1/2"	mm	125.0		17.5	23	22	65.0	73.2	4	15.7	98.6	1.4
2"	mm	150.0		19.1	26	25	77.7	91.9	4	19.1	120.7	2.1
2.1/2"	mm	180.0		22.3	29	29	90.4	104.6	4	19.1	139.7	3.3
3"	mm	190.0		23.9	31	30	108.0	127.0	4	19.1	152.4	3.9
3.1/2"	mm	215.0		23.9	32	32	122.2	139.7	8	19.1	177.8	4.8
4"	mm	230.0		23.9	34	33	134.9	157.2	8	19.1	190.5	5.3
5"	mm	255.0		23.9	37	36	163.6	185.7	8	22.4	215.9	6.1
6"	mm	280.0		25.4	40	40	192.0	215.9	8	22.4	241.3	7.6
8"	mm	345.0		28.6	45	44	246.1	269.7	8	22.4	298.5	12.1
10"	mm	405.0		30.2	50	49	304.8	323.9	12	25.4	362.0	16.5

150 Lbs

Threaded Flanges ANSI B 16.5

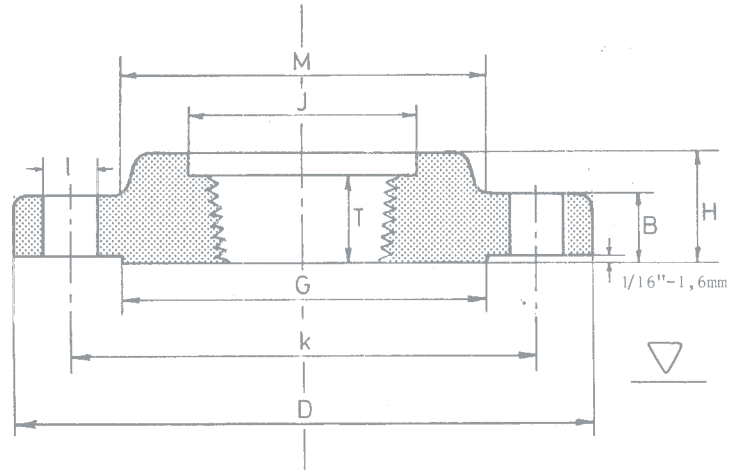


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	485.0		31.8	56	56	365.3	381.0	12	25.4	431.8	27
14"	mm	535.0		35.0	58	57	400.1	412.8	12	28.4	476.3	35
16"	mm	595.0		36.6	64	64	457.2	469.9	16	28.4	539.8	45
18"	mm	635.0		39.7	69	68	505.0	533.4	16	31.8	577.9	49
20"	mm	700.0		42.9	73	73	558.8	584.2	20	31.8	635.0	62
24"	mm	815.0		47.8	83	83	663.4	692.1	20	35.1	749.3	87

300 Lbs

Threaded Flanges

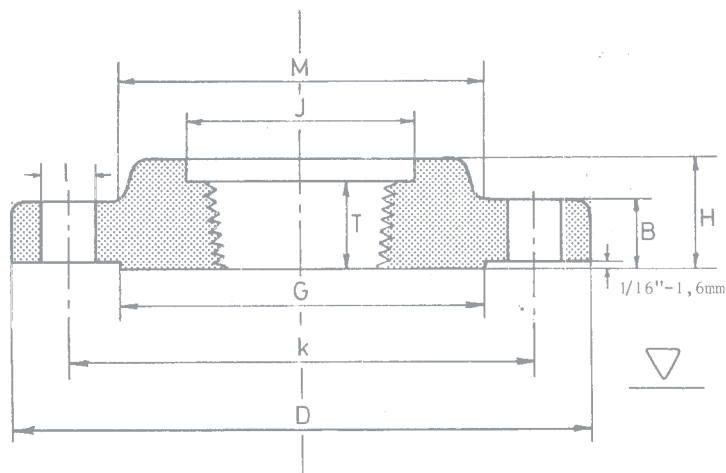
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	95.0	23.6	14.3	23	16.0	38.1	35.0	4	15.7	66.5	0.7
3/4"	mm	115.0	29.0	15.9	26	16.0	47.7	42.9	4	19.0	82.5	1.2
1"	mm	125.0	35.8	17.5	27	18.0	53.8	50.8	4	19.0	88.9	1.4
1.1/4"	mm	135.0	44.4	19.1	27	21.0	63.5	63.5	4	19.0	98.5	1.7
1.1/2"	mm	155.0	50.5	20.7	31	23.0	69.8	73.1	4	22.3	114.3	2.5
2"	mm	165.0	63.5	22.3	34	29.0	84.0	91.9	8	19.0	127.0	2.9
2.1/2"	mm	190.0	76.2	25.4	39	32.0	100.0	104.6	8	22.3	149.3	4.4
3"	mm	210.0	92.2	28.6	43	32.0	117.3	127.0	8	22.3	168.1	5.9
3.1/2"	mm	230.0	104.9	30.2	45	37.0	133.3	139.7	8	22.3	184.1	7.4
4"	mm	255.0	117.6	31.8	48	37.0	146.0	157.2	8	22.3	200.1	10
5"	mm	280.0	144.5	35.0	51	43.0	177.8	185.6	8	22.3	234.9	12.3
6"	mm	320.0	171.4	36.6	53	47.0	206.2	215.9	12	22.3	269.7	15.6
8"	mm	380.0	222.2	41.3	62	51.0	260.3	269.7	12	25.4	330.2	24.2
10"	mm	445.0	276.3	47.7	67	56.0	320.5	323.8	16	28.4	387.3	34.1

300 Lbs

Threaded Flanges
ANSI B 16.5

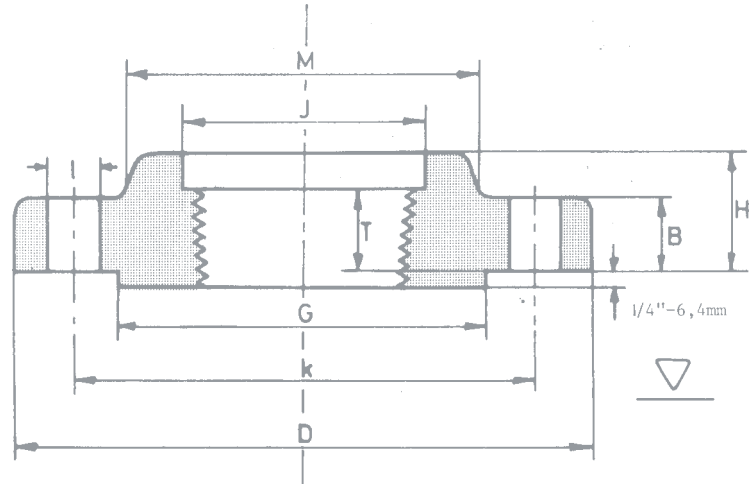


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	520.0	328.7	50.8	73	61.0	374.6	381.0	16	31.7	450.8	50
14"	mm	585.0	360.4	54.0	77	64.0	425.4	412.7	20	31.7	514.3	70
16"	mm	650.0	411.2	57.2	83	69.0	482.6	469.9	20	35.0	571.5	89
18"	mm	710.0	462.0	60.4	89	70.0	533.4	533.4	24	35.0	628.6	109
20"	mm	775.0	512.8	63.5	96	74.0	587.2	584.2	24	35.0	685.8	134
24"	mm	915.0	614.4	69.9	107	83.0	701.5	692.1	24	41.1	812.8	201

600 Lbs

Threaded Flanges

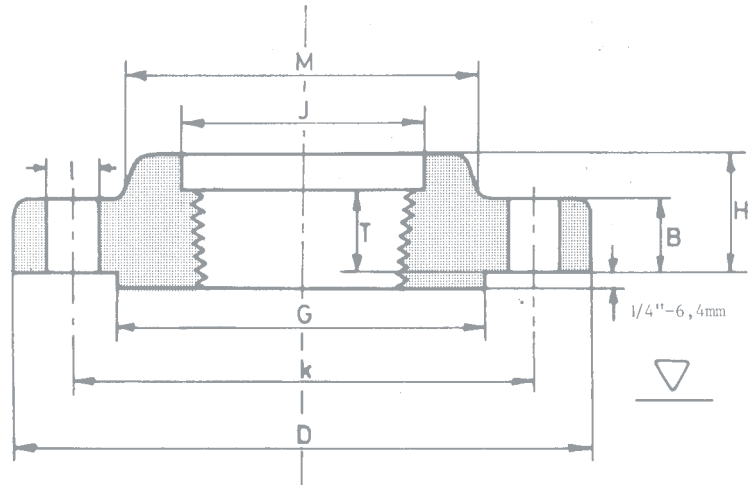
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	95.0	23.6	14.3	22	16.0	38.1	35.1	4	15.7	66.5	0.8
3/4"	mm	115.0	29.0	15.9	25	16.0	47.8	42.9	4	19.1	82.6	1.3
1"	mm	125.0	35.8	17.5	27	18.0	53.8	50.8	4	19.1	88.9	1.6
1.1/4"	mm	135.0	44.5	20.7	29	21.0	63.5	63.5	4	19.1	98.6	2.1
1.1/2"	mm	155.0	50.5	22.3	32	23.0	69.9	73.1	4	22.4	114.3	3.0
2"	mm	165.0	63.5	25.4	37	29.0	84.1	91.9	8	19.1	127.0	3.7
2.1/2"	mm	190.0	76.2	28.6	41	32.0	100.1	104.6	8	22.4	149.4	5.3
3"	mm	210.0	92.2	31.8	46	35.0	117.3	127.0	8	22.4	168.1	7.0
3.1/2"	mm	230.0	104.9	35.0	49	40.0	133.4	139.7	8	25.4	184.2	8.9
4"	mm	275.0	117.6	38.1	54	42.0	152.4	157.2	8	25.4	215.9	15
5"	mm	330.0	144.5	44.5	60	48.0	189.0	185.7	8	28.4	266.7	25
6"	mm	355.0	171.5	47.7	67	51.0	222.3	215.9	12	28.4	292.1	29
8"	mm	420.0	222.3	55.6	76	58.0	273.1	269.7	12	31.8	349.3	44
10"	mm	510	276.4	63.5	86	66.0	342.9	323.9	16	35.1	431.8	71



600 Lbs
Threaded Flanges
ANSI B 16.5



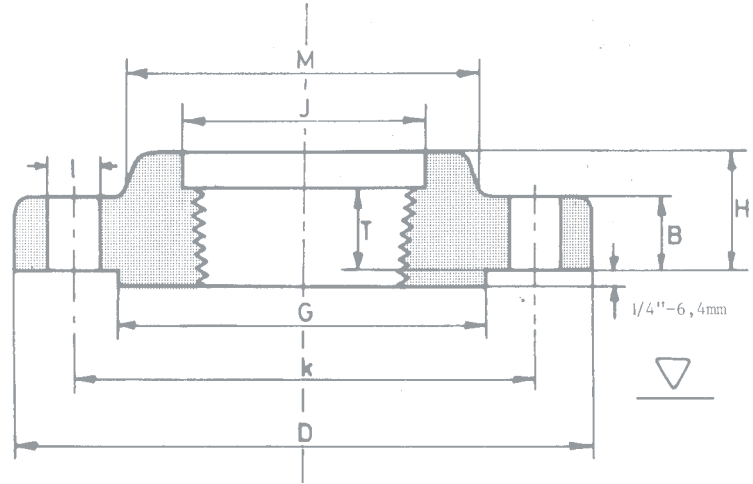
Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
12"	mm	560.0	328.7	66.7	91.9	70.0	400.1	381.0	20	35.1	489.0	85
14"	mm	605.0	360.4	69.9	93.7	74.0	431.8	412.8	20	38.1	527.1	99
16"	mm	685.0	411.2	76.2	106.4	78.0	495.3	469.9	20	41.1	603.3	142
18"	mm	745.0	462.0	82.6	117.3	80.0	546.1	533.4	20	44.5	654.1	173
20"	mm	815.0	512.8	88.9	127.0	73.0	609.6	584.2	24	44.5	723.9	220
24"	mm	940.0	614.4	101.6	139.7	93.0	717.6	692.1	24	50.8	838.2	312

Technical Bulletin

Pipes Flanges and Fittings

900 Lbs

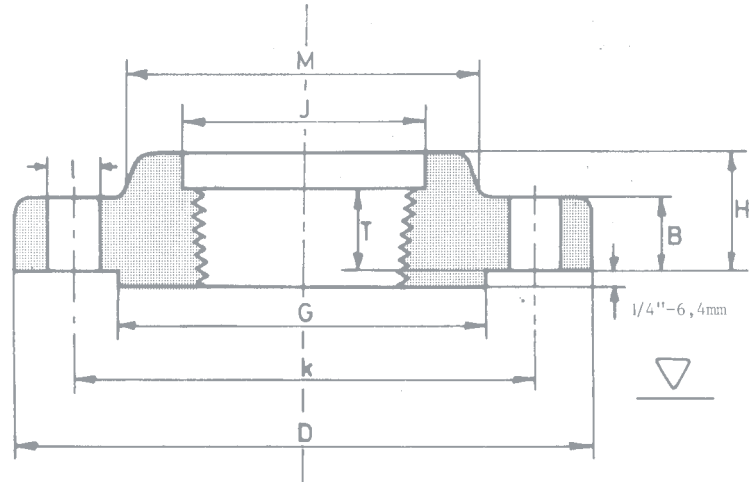
Threaded Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	23.6	22.3	32.0	23.0	38.1	34.9	4	22.3	82.5	1.8
3/4"	mm	130.0	29.0	25.4	35.0	26.0	44.4	42.9	4	22.3	88.9	2.3
1"	mm	150.0	35.8	28.4	41.0	29.0	52.3	50.8	4	25.4	101.6	3.6
1.1/4"	mm	160.0	44.4	28.4	41.0	31.0	63.5	63.5	4	25.4	111.2	4.1
1.1/2"	mm	180.0	50.5	31.7	44.0	32.0	69.8	73.1	4	28.4	123.9	5.4
2"	mm	215.0	63.5	38.1	57.0	39.0	104.6	91.9	8	25.4	165.1	10
2.1/2"	mm	245.0	76.2	41.1	64.0	48.0	123.9	104.6	8	28.4	190.5	14
3"	mm	240.0	92.2	38.1	54.0	42.0	127.0	127.0	8	25.4	190.5	12
4"	mm	290.0	117.6	44.5	70.0	48.0	158.7	157.2	8	31.7	234.9	20
5"	mm	350.0	144.5	50.8	79.0	54.0	190.5	185.6	8	35.0	279.4	32
6"	mm	380.0	171.4	55.6	86.0	58.0	234.9	215.9	12	31.7	317.5	42
8"	mm	470.0	222.2	63.5	102.0	64.0	298.4	269.7	12	38.1	393.7	71
10"	mm	545.0	276.3	69.9	108.0	72.0	368.3	323.8	16	38.1	469.9	101
12"	mm	610.0	328.7	79.4	117.0	77.0	419.1	381.0	20	38.1	533.4	133

900 Lbs

Threaded Flanges
ANSI B 16.5

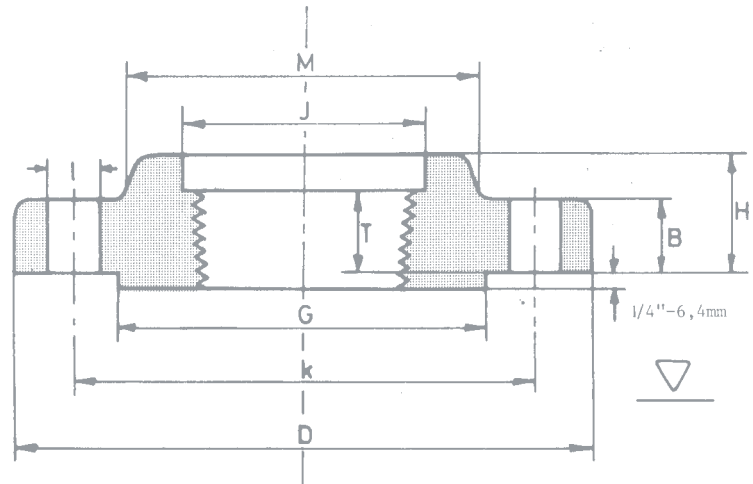


Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
14"	mm	640.0	360.4	85.8	130.0	83.0	450.8	412.7	20	41.3	558.8	153
16"	mm	705.0	411.2	88.9	133.0	86.0	508.0	469.9	20	44.4	618.9	185
18"	mm	785.0	462.0	101.6	152.0	89.0	565.1	533.4	20	50.8	685.8	258
20"	mm	855.0	512.8	108.0	159.0	93.0	622.3	584.2	20	54.0	749.3	317
24"	mm	1040.0	614.4	139.7	203.0	102.0	749.3	692.1	20	66.5	901.7	606

1500 Lbs

Threaded Flanges

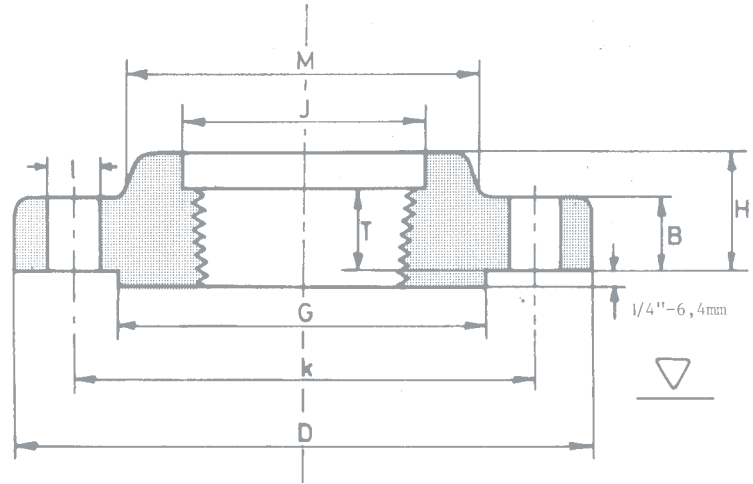
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	120.0	23.6	22.3	32.0	23.0	38.1	35.0	4	22.3	82.5	1.8
3/4"	mm	130.0	29.0	25.4	35.0	26.0	44.4	42.9	4	22.3	88.9	2.3
1"	mm	150.0	35.8	28.6	41.0	29.0	52.3	50.8	4	25.4	101.6	3.6
1.1/4"	mm	160.0	44.4	28.6	41.0	31.0	63.5	63.5	4	25.4	111.2	4
1.1/2"	mm	180.0	50.5	31.8	44.0	32.0	69.8	73.1	4	28.4	123.9	5.4
2"	mm	215.0	63.5	38.1	57.0	39.0	104.6	91.9	8	25.4	165.1	10
2.1/2"	mm	245.0	76.2	41.3	64.0	48.0	123.9	104.6	8	28.4	190.5	14

2500 Lbs

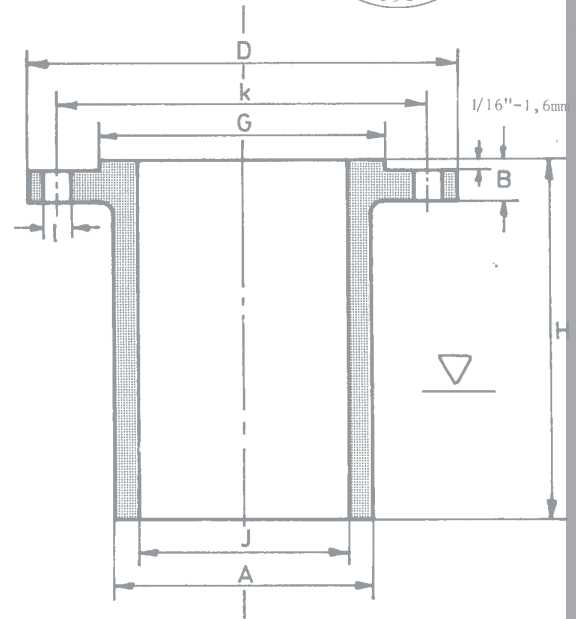
Threaded Flanges
ANSI B 16.5



Nominal Pipe Size	mm	Outside Diam. D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Thread Length T	Diam. at Base of Hub M	O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diam. K	Approx Weight Kg
1/2"	mm	135.0	23.6	30.2	40.0	29.0	42.9	35.1	4	22.4	88.9	3
3/4"	mm	140.0	29.0	31.8	43.0	32.0	50.8	42.9	4	22.4	95.3	3.5
1"	mm	160.0	35.8	35.0	48.0	35.0	57.2	50.8	4	25.4	108.0	4.9
1.1/4"	mm	185.0	44.5	38.1	52.0	39.0	73.2	63.5	4	28.4	130.0	7.2
1.1/2"	mm	205.0	50.5	44.5	60.0	45.0	79.2	73.2	4	31.8	146.1	10
2"	mm	235.0	63.5	50.9	70.0	51.0	95.3	91.9	8	28.4	171.5	15
2.1/2"	mm	265.0	76.2	57.2	79.0	58.0	114.3	104.6	8	31.8	196.9	22

150 Lbs

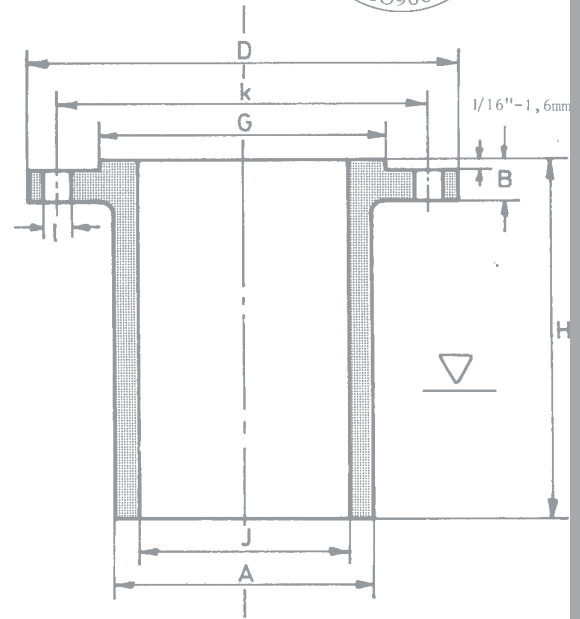
Long Welding Neck Flanges



Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
1"	mm	107.9	25.4	14.3	228.6	50.8		50.8	4	15.9	79.4	3.2
1.1/4"	mm	117.5	31.7	15.9	228.6	60.3		63.5	4	15.9	88.9	3.6
1.1/2"	mm	127.0	38.1	17.5	228.6	66.7		73.0	4	15.9	98.4	5.4
2"	mm	152.4	50.8	19.0	228.6	82.5		92.1	4	19.0	120.6	7.7
2.1/2"	mm	177.8	63.5	22.2	228.6	95.2		104.8	4	19.0	139.7	9.5
3"	mm	190.5	76.2	23.8	228.6	107.9		127.0	4	19.0	152.4	11.3
3.1/2"	mm	215.9	88.9	23.8	228.6	123.8		139.7	8	19.0	177.8	14
4"	mm	228.6	101.6	23.8	304.8	139.7		157.2	8	19.0	190.5	21.3
5"	mm	254.0	127.0	23.8	304.8	165.1		185.7	8	22.2	215.9	25.9
6"	mm	279.4	152.4	25.4	304.8	196.8		215.9	8	22.2	241.3	34.4
8"	mm	342.9	203.2	28.6	304.8	247.6		269.9	8	22.2	298.4	45.2
10"	mm	406.4	254.0	30.2	304.8	304.8		323.8	12	25.4	361.9	65.6
12"	mm	482.6	304.8	31.7	304.8	365.1		381.0	12	25.4	431.8	92.8
14"	mm	533.4	355.6	34.9	304.8	406.4		412.7	12	28.6	476.2	83.7

150 Lbs

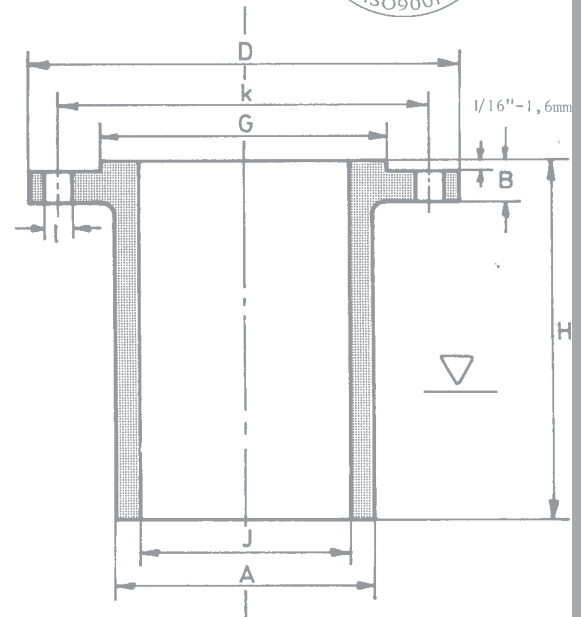
Long Welding Neck Flanges



Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
16"	mm	596.9	406.4	36.5	304.8	457.2		469.9	16	28.6	539.7	97
18"	mm	635.0	457.2	39.7	304.8	504.8		533.4	16	31.7	577.8	106
20"	mm	698.5	508.0	42.9	304.8	558.8		584.2	20	31.7	635.0	124
24"	mm	812.8	609.6	47.6	304.8	666.7		692.1	20	34.9	749.3	167

300 Lbs

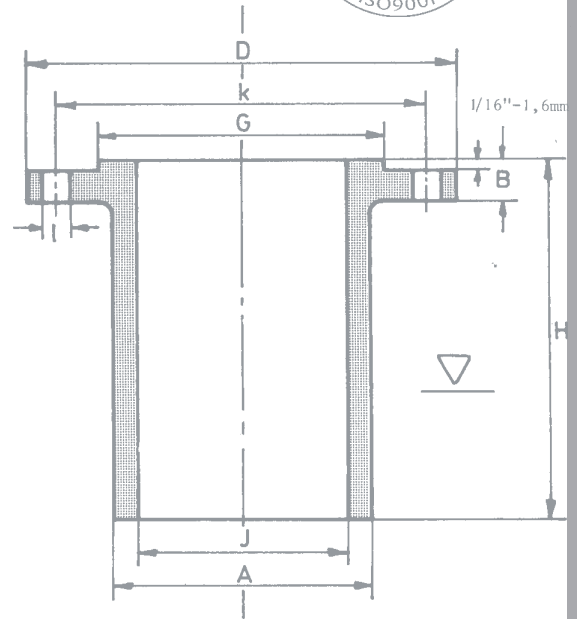
Long Welding Neck Flanges



Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
1"	mm	123.8	25.4	17.5	228.6	54.0		50.8	4	19.0	88.9	4.5
1.1/4"	mm	133.3	31.7	19.0	228.6	63.5		63.5	4	19.0	98.4	5.4
1.1/2"	mm	155.6	38.1	20.6	228.6	69.8		73.0	4	22.2	114.3	6.8
2"	mm	165.1	50.8	22.2	228.6	82.5		92.1	8	19.0	127.0	8.6
2.1/2"	mm	190.5	63.5	25.4	228.6	100.0		104.8	8	22.2	149.2	11.7
3"	mm	209.5	76.2	28.6	228.6	117.5		127.0	8	22.2	168.3	15.4
3.1/2"	mm	228.6	88.9	30.2	228.6	133.3		139.7	8	22.2	184.1	19.5
4"	mm	254.0	101.6	31.8	304.8	146.0		157.2	8	22.2	200.0	28
5"	mm	279.4	127.0	34.9	304.8	177.8		185.7	8	22.2	234.9	37.6
6"	mm	317.5	152.4	36.5	304.8	206.4		215.9	12	22.2	269.9	47.5
8"	mm	381.0	203.2	41.3	304.8	260.3		269.9	12	25.4	330.2	68
10"	mm	444.5	254.0	47.6	304.8	320.7		323.8	16	28.6	387.3	95
12"	mm	520.7	304.8	50.8	304.8	374.6		381.0	16	31.7	450.8	124
14"	mm	584.2	355.6	54.0	304.8	425.4		412.7	20	31.7	514.3	130

300 Lbs

Long Welding Neck Flanges



Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
16"	mm	647.7	406.4	57.1	304.8	482.6		469.9	20	34.9	571.5	160
18"	mm	711.2	457.2	60.3	304.8	533.4		533.4	24	34.9	628.6	185
20"	mm	774.7	508.0	63.5	304.8	587.4		584.2	24	34.9	685.8	210
24"	mm	914.4	609.6	69.8	304.8	701.7		692.1	24	41.3	812.8	316

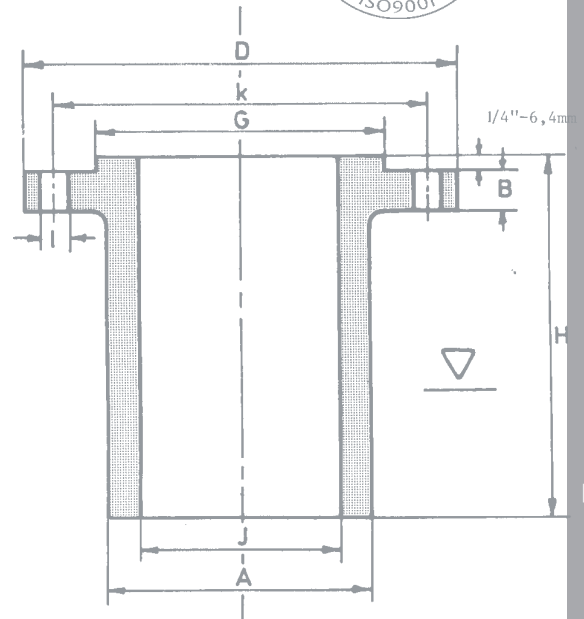
Pipes Flanges and Fittings

Technical Bulletin



600 Lbs

Long Welding Neck Flanges



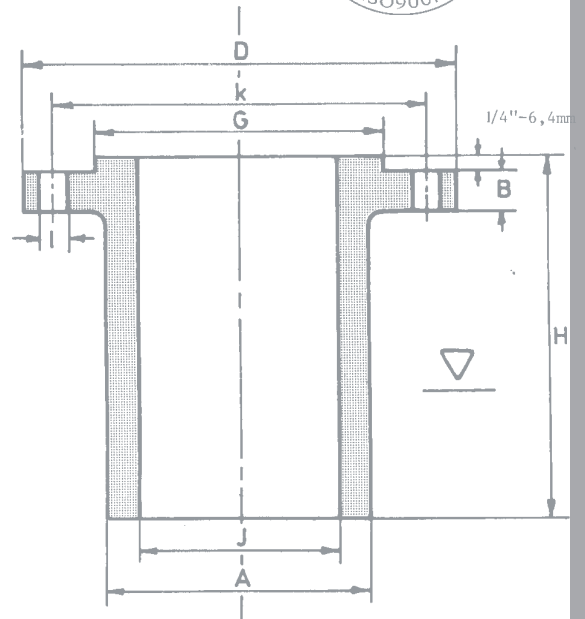
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Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
1"	mm	123.8	25.4	17.5	228.6	54.0		50.8	4	19.0	88.9	4.5
1.1/4"	mm	133.3	31.7	20.6	228.6	63.5		63.5	4	19.0	98.4	5.8
1.1/2"	mm	155.6	38.1	22.2	228.6	69.8		73.0	4	22.2	114.3	7.2
2"	mm	165.1	50.8	25.4	228.6	82.5		92.1	8	19.0	127.0	9
2.1/2"	mm	190.5	63.5	28.6	228.6	100.0		104.8	8	22.2	149.2	12.2
3"	mm	209.5	76.2	31.7	228.6	117.5		127.0	8	22.2	168.3	16.3
3.1/2"	mm	228.6	88.9	34.9	228.6	133.3		139.7	8	25.4	184.1	20.4
4"	mm	273.0	101.6	38.1	304.8	152.4		157.2	8	25.4	215.9	34.8
5"	mm	330.2	127.0	44.4	304.8	190.5		185.7	8	28.6	266.7	56.5
6"	mm	355.6	152.4	47.6	304.8	222.2		215.9	12	28.6	292.1	68
8"	mm	419.1	203.2	55.6	304.8	273.0		269.9	12	31.7	349.2	92.7
10"	mm	508.0	254.0	63.5	304.8	342.9		323.8	16	34.9	431.8	147
12"	mm	558.8	304.8	66.7	304.8	400.0		381.0	20	34.9	488.9	178
14"	mm	603.2	355.6	69.8	*	431.8		412.7	20	38.1	527.0	



600 Lbs

Long Welding Neck Flanges



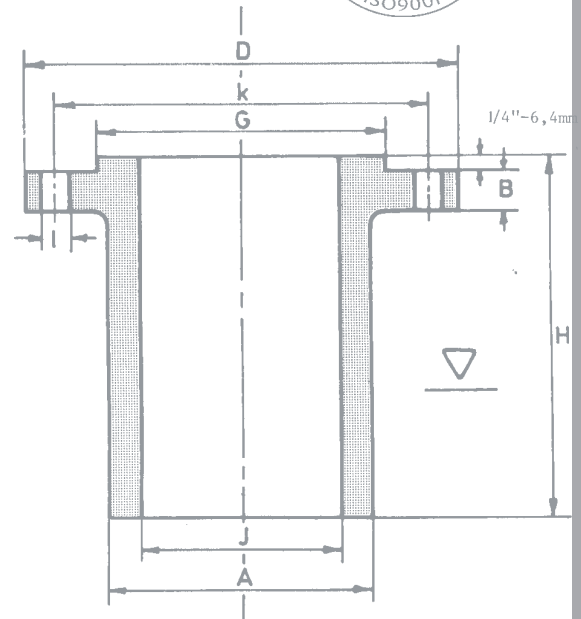
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Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
16"	mm	685.8	406.4	76.2	*	495.3		469.9	20	41.3	603.2	
18"	mm	742.9	457.2	82.5	*	546.1		533.4	20	44.4	654.0	
20"	mm	812.8	508.0	88.9	*	609.6		584.2	24	44.4	723.9	
24"	mm	939.8	609.6	101.6	*	717.5		692.1	24	50.8	838.2	



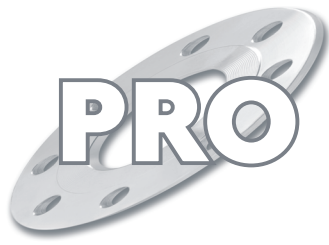
900 Lbs

Long Welding Neck Flanges



* = to be specified

Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
1"	mm	149.2	25.4	28.6	228.6	52.4		50.8	4	25.4	101.6	5.9
1.1/4"	mm	158.7	31.7	28.6	228.6	63.5		63.5	4	25.4	111.1	7.7
1.1/2"	mm	177.8	38.1	31.7	228.6	69.8		73.0	4	28.6	123.8	9.5
2"	mm	215.9	50.8	38.1	228.6	104.8		92.1	8	25.4	165.1	19
2.1/2"	mm	244.5	63.5	41.3	304.8	123.8		104.8	8	28.6	190.5	30.2
3"	mm	241.3	76.2	38.1	304.8	127.0		127.0	8	25.4	190.5	28
4"	mm	292.1	101.6	44.4	304.8	158.7		157.2	8	31.7	234.9	42
5"	mm	349.2	127.0	50.8	304.8	190.5		185.7	8	34.9	279.4	61
6"	mm	381.0	152.4	55.6	304.8	234.9		215.9	12	31.7	317.5	77
8"	mm	469.9	203.2	63.5	304.8	298.4		269.9	12	38.1	393.7	133
10"	mm	546.1	254.0	69.8	406.4	368.3		323.8	16	38.1	469.9	236
12"	mm	609.6	304.8	79.4	406.4	419.1		381.0	20	38.1	533.4	290
14"	mm	641.2	355.6	85.7	*	450.8		412.7	20	41.3	558.8	
16"	mm	704.8	406.4	88.9	*	508.0		469.9	20	44.4	615.9	

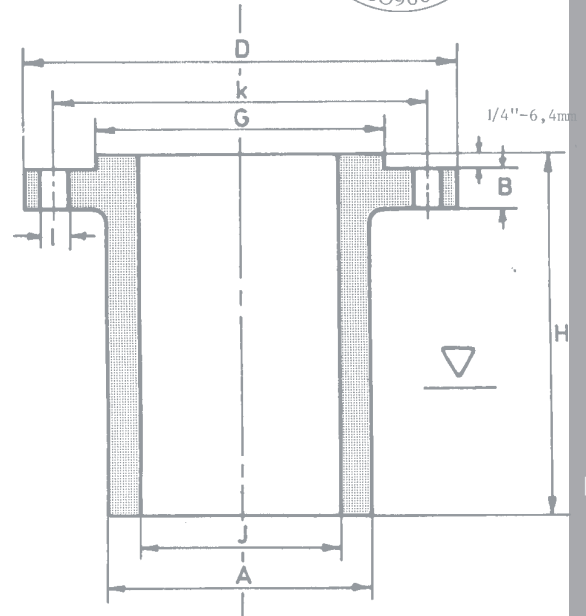


PRO Alloy bv



900 Lbs

Long Welding Neck Flanges



* = to be specified

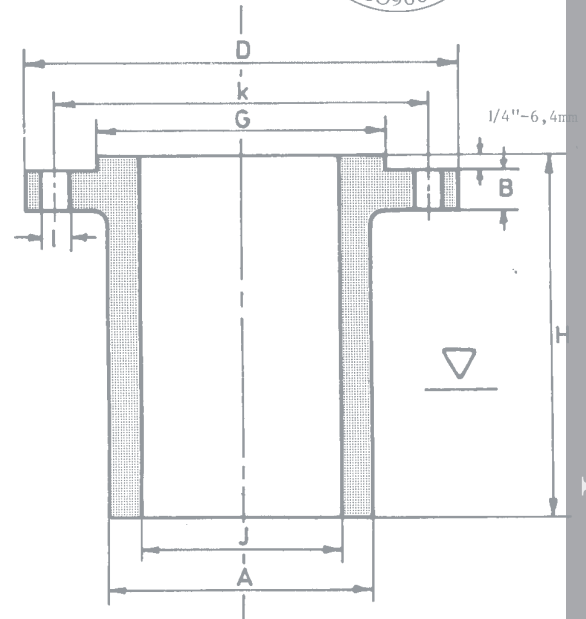
Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
18"	mm	787.4	457.2	101.6	*	565.1		533.4	20	50.8	685.8	
20"	mm	857.2	508.0	107.9	*	622.3		584.2	20	54.0	749.3	
24"	mm	1041.4	609.6	139.7	*	749.3		692.1	20	66.7	901.7	

Technical Bulletin

Pipes Flanges and Fittings

1500 Lbs

Long Welding Neck Flanges

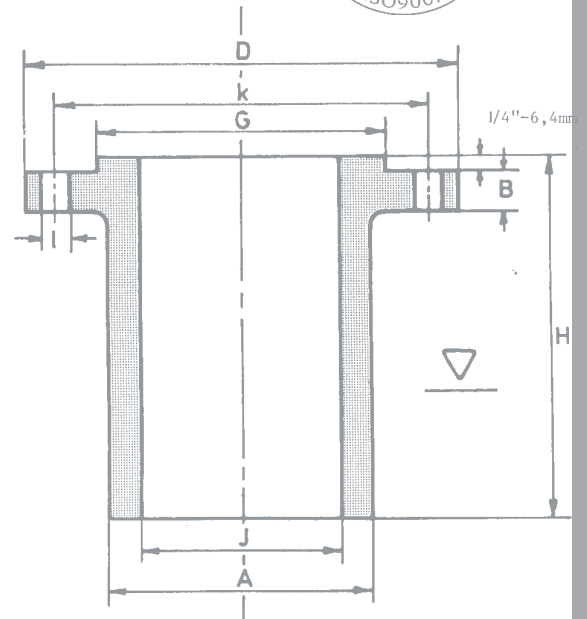


* = to be specified

Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
1"	mm	149.2	25.4	28.6	228.6	52.4		50.8	4	25.4	101.6	5.9
1.1/4"	mm	158.7	31.7	28.6	228.6	63.5		63.5	4	25.4	111.1	7.7
1.1/2"	mm	177.8	38.1	31.7	228.6	69.8		73.0	4	28.6	123.8	9.5
2"	mm	215.9	50.8	38.1	228.6	104.8		92.1	8	25.4	165.1	19
2.1/2"	mm	244.5	63.5	41.3	304.8	123.8		104.8	8	28.6	190.5	30.2
3"	mm	266.7	76.2	47.6	304.8	133.3		127.0	8	31.7	203.2	35.4
4"	mm	311.1	101.6	54.0	304.8	161.9		157.2	8	34.9	241.3	49.7
5"	mm	374.6	127.0	73.0	304.8	196.8		185.7	8	41.3	292.1	81.5
6"	mm	393.7	152.4	82.5	304.8	228.6		215.9	12	38.1	317.5	97
8"	mm	482.6	203.2	92.1	304.8	292.1		269.9	12	44.4	393.7	152
10"	mm	584.2	254.0	107.9	406.4	368.3		323.8	12	50.8	482.6	294
12"	mm	673.1	304.8	123.8	406.4	405.8		381.0	16	54.0	571.5	425
14"	mm	749.3	355.6	133.3	*	495.3		412.7	16	60.3	635.0	
16"	mm	825.5	406.4	146.0	*	552.4		469.9	16	66.7	704.8	

1500 Lbs

Long Welding Neck Flanges



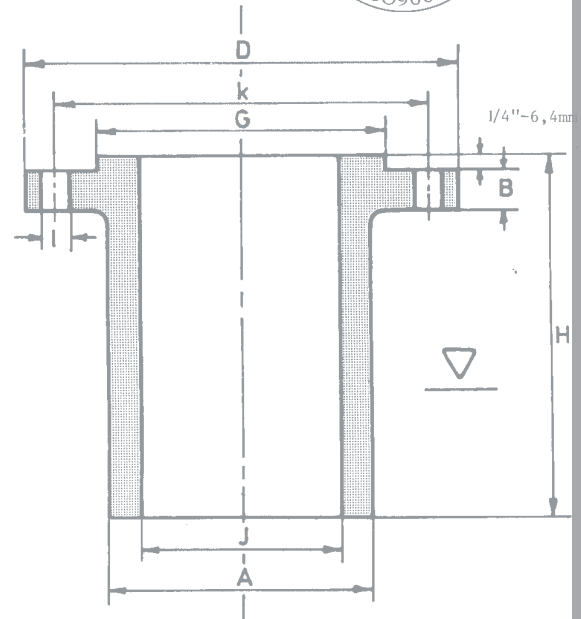
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Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
18"	mm	914.4	457.2	161.9	*	596.9		533.4	16	73.0	774.7	
20"	mm	984.2	508.0	177.8	*	641.2		584.2	16	79.4	831.8	
24"	mm	1168.4	609.6	203.2	*	762.0		692.1	16	92.1	990.6	



2500 Lbs

Long Welding Neck Flanges



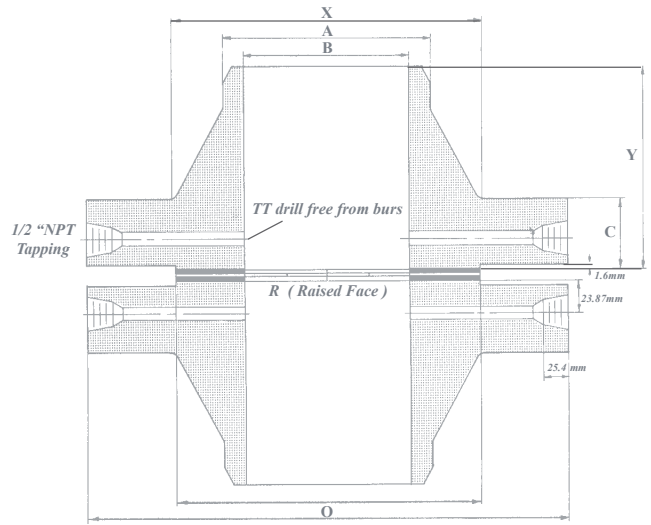
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Nominal Pipe Size	mm	Outside Diameter D	Diam. of Bore J	Thick-ness Min. B	Length thru Hub H	Diam. Hub at Bevel A		O.D. of Raised Face G	Number of Holes	Diam of Holes I	Bolt Circle Diameter K	Approx Weight Kg
1"	mm	158.7	25.4	34.9	228.6	57.1		50.8	4	25.4	107.9	8.1
1.1/4"	mm	184.1	31.7	38.1	228.6	73.0		63.5	4	28.6	130.2	11.8
1.1/2"	mm	203.2	38.1	44.4	228.6	79.4		73.0	4	31.7	146.0	15.4
2"	mm	234.9	50.8	50.8	228.6	95.2		92.1	8	28.6	171.4	21
2.1/2"	mm	266.7	63.5	57.1	304.8	114.3		104.8	8	31.7	196.8	34.4
3"	mm	304.8	76.2	66.7	304.8	133.3		127.0	8	34.9	228.6	49.8
4"	mm	355.6	101.6	76.2	304.8	165.1		157.2	8	41.3	273.0	72.5
5"	mm	419.1	127.0	92.1	304.8	203.2		185.7	8	47.6	323.8	113
6"	mm	482.6	152.4	107.9	304.8	234.9		215.9	8	54.0	368.3	163
8"	mm	552.4	203.2	127.0	304.8	304.8		269.9	12	54.0	438.1	236
10"	mm	673.1	254.0	165.1	406.4	374.6		323.8	12	66.7	539.7	452
12"	mm	762.0	304.8	184.1	406.4	441.3		381.0	12	73.0	619.1	610



300 Lbs

Orifice Welding Neck Flanges ASME B 16.36



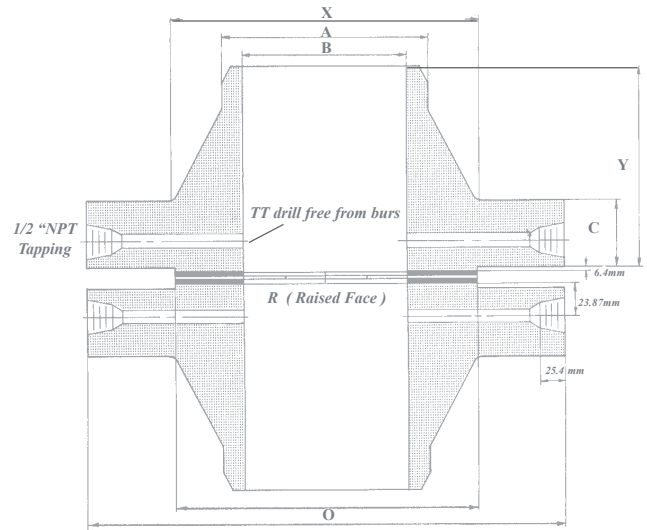
Diameter B to be specified

Nominal Pipe Size Inches	O.D. Raised Face R	Outside Diam. O	Thick-ness Min. C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	Diam. Connection TT	Bolt Circle Diam.	Number of Holes	Diam of Holes	Jack Screw sizes RF	Jack Screw Length	Jack Screw sizes RTJ	Jack Screw Length
1"	50.8	124.0	38.1	82.6	53.9	33.6	6.4	88.9	4	17.6	5/8	2.3/4	5/8	3.3/4
1.1/2"	73.2	155.5	38.1	85.9	69.9	48.3	6.4	114.3	4	20.6	5/8	2.3/4	5/8	3.3/4
2"	92.0	165.1	38.1	85.9	84.1	60.5	6.4	127.0	8	17.6	5/8	2.3/4	5/8	3.3/4
2.1/2"	104.7	190.5	38.1	88.9	100.1	73.2	6.4	149.3	8	20.6	5/8	2.3/4	3/4	3.3/4
3"	127.0	209.6	38.1	88.9	117.4	88.9	9.6	168.2	8	20.6	3/4	2.3/4	3/4	3.3/4
4"	157.2	254.0	38.1	92.0	146.1	114.3	12.7	200.2	8	20.6	3/4	2.3/4	3/4	3.3/4
6"	215.9	317.5	38.1	100.1	206.3	168.4	12.7	269.8	12	22.4	3/4	2.3/4	3/4	4
8"	269.8	381.0	41.2	111.3	260.4	219.2	12.7	330.2	12	25.4	3/4	3	3/4	4.1/4
10"	323.9	444.5	47.8	117.4	320.6	273.1	12.7	387.4	16	28.5	1	3.1/2	1	4.1/2
12"	381.0	520.7	50.8	130.1	374.7	323.9	12.7	450.9	16	31.8	1	3.1/2	1	4.1/2
14"	412.8	584.2	53.9	142.8	425.5	355.6	12.7	514.4	20	31.8	1	3.1/2	1	5
16"	469.9	647.7	57.2	146.1	482.6	406.4	12.7	571.5	20	35.1	1	3.1/2	1	5
18"	533.4	711.2	60.5	158.8	533.4	457.2	12.7	628.7	24	35.1	1	3.3/4	1	5
20"	584.2	774.7	63.5	162.1	587.3	508.0	12.7	685.8	24	35.1	1	3.3/4	1	5.1/2
24"	692.2	914.4	69.9	168.2	701.6	609.6	12.7	812.8	24	41.2	1	4	1	5.1/2



600 Lbs

Orifice Welding Neck Flanges ASME B 16.36



Diameter B to be specified

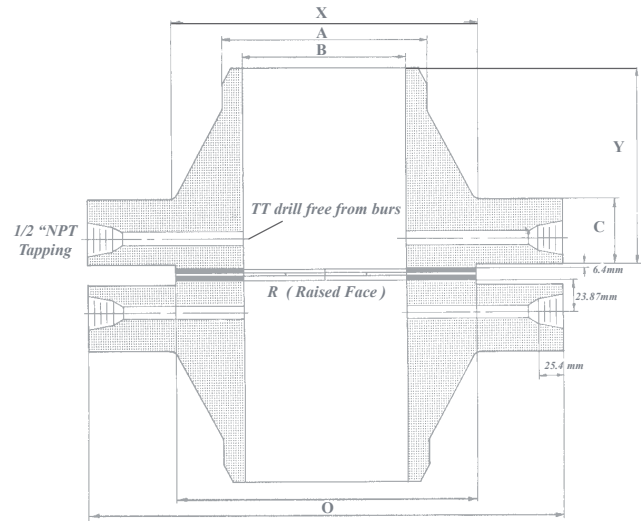
Nominal Pipe Size Inches	O.D. Raised Face R	Outside Diam. O	Thick-ness Min. C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	Diam. Connection TT	Bolt Circle Diam.	Number of Holes	Diam of Holes	Jack Screw sizes RF	Jack Screw Length	Jack Screw sizes RTJ	Jack Screw Length
1"	50.8	124.0	36.6	81.1	53.9	33.6	6.4	88.9	4	17.6	5/8	2.3/4	5/8	3.3/4
1.1/2"	73.2	155.5	36.6	84.4	69.9	48.3	6.4	114.3	4	20.6	5/8	2.3/4	5/8	3.3/4
2"	92.0	165.1	36.6	84.4	84.1	60.5	6.4	127.0	8	17.6	5/8	2.3/4	5/8	3.3/4
2.1/2"	104.7	190.5	36.6	87.4	100.1	73.2	6.4	149.3	8	20.6	3/4	2.3/4	3/4	3.3/4
3"	127.0	209.6	36.6	87.4	117.4	88.9	9.6	168.2	8	20.6	3/4	2.3/4	3/4	3.3/4
4"	157.2	273.1	38.1	101.6	152.4	114.3	12.7	215.9	8	25.4	3/4	3.1/4	3/4	4
6"	215.9	355.6	47.8	117.4	222.3	168.4	12.7	292.1	12	28.5	7/8	4	7/8	4.1/2
8"	269.8	419.1	55.7	133.4	273.1	219.2	12.7	349.3	12	31.8	7/8	4	7/8	5
10"	323.9	508.0	63.5	152.4	342.9	273.1	12.7	431.8	16	35.1	7/8	4.1/2	7/8	5
12"	381.0	558.8	66.6	155.5	400.1	323.9	12.7	489.0	20	35.1	7/8	4.1/2	7/8	5.1/2
14"	412.8	603.3	69.9	165.1	431.8	355.6	12.7	527.1	20	38.1				
16"	469.9	685.8	76.2	177.8	495.3	406.4	12.7	603.3	20	41.2				
18"	533.4	743.0	82.6	184.2	546.1	457.2	12.7	654.1	20	44.5				
20"	584.2	812.8	88.9	190.5	609.6	508.0	12.7	723.9	24	44.5				
24"	692.2	939.8	101.6	203.2	717.6	609.6	12.7	838.2	24	50.8				

Pipes Flanges and Fittings

Technical Bulletin

900 Lbs

Orifice Welding Neck Flanges ASME B 16.36



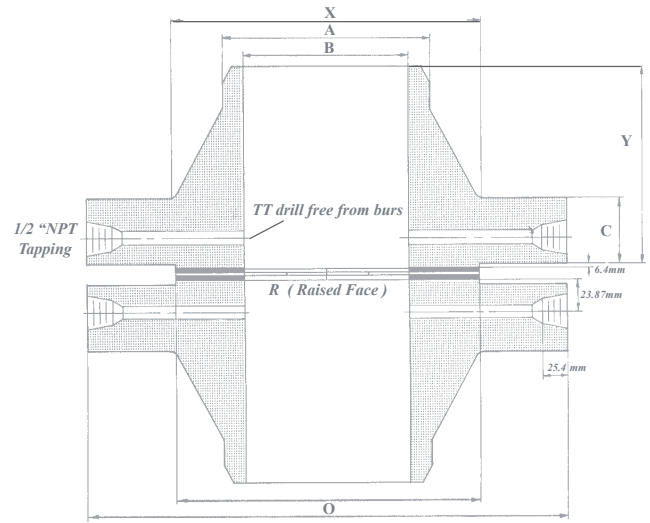
Diameter B to be specified

Nominal Pipe Size Inches	O.D. Raised Face R	Outside Diam. O	Thick-ness Min. C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	Diam. Connection TT	Bolt Circle Diam.	Number of Holes	Diam of Holes	Jack Screw sizes RF	Jack Screw Length	Jack Screw sizes RTJ	Jack Screw Length
1"	50.8	149.4	38.1	82.6	52.4	33.6	6.4	101.6	4	25.4	5/8	3.1/4	5/8	3.3/4
1.1/2"	73.2	177.8	38.1	88.9	69.9	48.3	6.4	124.0	4	28.5	5/8	3.1/4	5/8	3.3/4
2"	92.0	215.9	38.1	101.6	104.7	60.5	6.4	165.1	8	25.4	5/8	3.1/4	5/8	4
2.1/2"	104.7	244.4	41.2	104.7	124.0	73.2	6.4	190.5	8	28.5	5/8	3.1/2	5/8	4.1/4
3"	127.0	241.3	38.1	101.6	127.0	88.9	9.6	190.5	8	25.4	3/4	3.1/4	3/4	4
4"	157.2	292.1	44.5	114.3	158.8	114.3	12.7	235.0	8	31.8	3/4	3.1/2	3/4	4.1/4
6"	215.9	381.0	55.7	139.7	235.0	168.4	12.7	317.5	12	31.8	1	4	1	5
8"	269.8	469.9	63.5	162.1	298.5	219.2	12.7	393.7	12	38.1	1	4	1	5
10"	323.9	546.1	69.9	184.2	368.3	273.1	12.7	469.9	16	38.1	1	4.1/2	1	5.1/2
12"	381.0	609.6	79.3	200.2	419.1	323.9	12.7	533.4	20	38.1	1	4.1/2	1	6
14"	412.8	641.4	85.9	212.9	450.9	355.6	12.7	558.8	20	41.2				
16"	469.9	704.9	88.9	215.9	508.0	406.4	12.7	616.0	20	44.5				
18"	533.4	787.4	101.6	228.6	565.2	457.2	12.7	685.8	20	50.8				
20"	584.2	857.3	108.0	247.7	622.3	508.0	12.7	749.3	20	53.9				
24"	692.2	1041.4	139.7	292.1	749.3		12.7	901.7	20	66.6				



1500 Lbs

Orifice Welding Neck Flanges ASME B 16.36



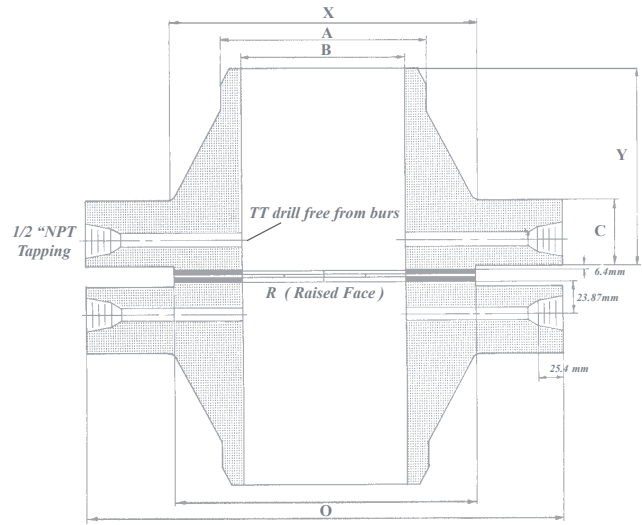
Diameter B to be specified

Nominal Pipe Size Inches	O.D. Raised Face R	Outside Diam. O	Thick-ness Min. C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	Diam. Connection TT	Bolt Circle Diam.	Number of Holes	Diam of Holes	Jack Screw sizes RF	Jack Screw Length	Jack Screw sizes RTJ	Jack Screw Length
1"	50.8	149.4	38.1	82.6	52.4	33.6	6.4	101.6	4	25.4	5/8	3.1/4	5/8	3.3/4
1.1/2"	73.2	177.8	38.1	88.9	69.9	48.3	6.4	124.0	4	28.5	5/8	3.1/4	5/8	3.3/4
2"	92.0	215.9	38.1	101.6	104.7	60.5	6.4	165.1	8	25.4	5/8	3.1/4	5/8	4
2.1/2"	104.7	244.4	41.2	104.7	124.0	73.2	6.4	190.5	8	28.5	5/8	3.1/2	5/8	4.1/4
3"	127.0	266.7	47.8	117.4	133.4	88.9	9.6	203.2	8	31.8	3/4	3.3/4	3/4	4.1/2
4"	157.2	311.2	53.9	124.0	162.1	114.3	12.7	241.3	8	35.1	3/4	4	3/4	5
6"	215.9	393.7	82.6	171.5	228.6	168.4	12.7	317.5	12	38.1	1	5	1	6
8"	269.8	482.6	92.0	212.9	292.1	219.2	12.7	393.7	12	44.5	1	5.1/2	1	7
10"	323.9	584.2	108.0	254.0	368.3	273.1	12.7	482.6	12	50.8	1	6	1	7
12"	381.0	673.1	124.0	282.5	450.9	323.9	12.7	571.5	16	53.9	1	7	1	8
14"	412.8	749.3	133.4	298.5	495.3	355.6	12.7	635.0	16	60.5				
16"	469.9	825.5	146.1	311.2	552.5	406.4	12.7	704.9	16	66.6				
18"	533.4	914.4	162.1	327.2	596.9	457.2	12.7	774.7	16	73.2				
20"	584.2	984.3	177.8	355.6	641.4	508.0	12.7	831.9	16	79.3				
24"	692.2	1168.4	203.2	406.4	762.0	609.6	12.7	990.6	16	92.0				



2500 Lbs

Orifice Welding Neck Flanges ASME B 16.36



Diameter B to be specified

Nominal Pipe Size Inches	O.D. Raised Face R	Outside Diam. O	Thick-ness Min. C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	Diam. Connection TT	Bolt Circle Diam.	Number of Holes	Diam of Holes	Jack Screw sizes RF	Jack Screw Length	Jack Screw sizes RTJ	Jack Screw Length
1"	50.8	158.8	38.1	92.0	57.2	33.6	6.4	108.0	4	25.4				
1.1/2"	73.2	203.2	44.5	111.3	79.3	48.3	6.4	146.1	4	31.8				
2"	92.0	235.0	50.8	127.0	95.3	60.5	6.4	171.5	8	28.5				
2.1/2"	104.7	266.7	57.2	142.8	114.3	73.2	6.4	196.9	8	31.8				
3"	127.0	304.8	66.6	168.2	133.4	88.9	9.6	228.6	8	35.1				
4"	157.2	355.6	76.2	190.5	165.1	114.3	12.7	273.1	8	41.2				
6"	215.9	482.6	108.0	273.1	235.0	168.4	12.7	368.3	8	53.9				
8"	269.8	552.5	127.0	317.5	304.8	219.2	12.7	438.2	12	53.9				
10"	323.9	673.1	165.1	419.1	374.7	273.1	12.7	539.8	12	66.6				
12"	381.0	762.0	184.2	463.6	441.5	323.9	12.7	619.3	12	73.2				

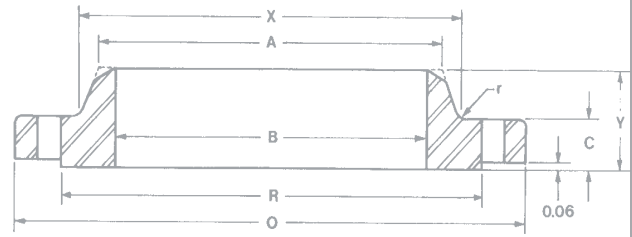
Technical Bulletin

Pipes Flanges and Fittings

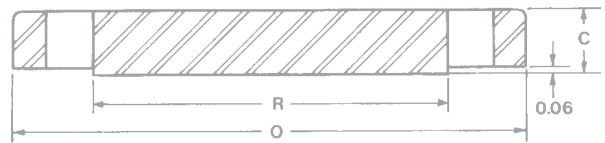


Industry Standard

CLASS 75



Welding Neck



Blind

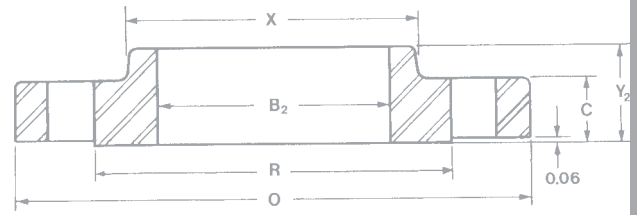
Diameter B to be specified

Nominal Pipe Size	mm	Outside Diam. O	Thickness C		O.D. Raised Face R	Hub Dia. X	Bore B	L Thru Hub Y	Hub Dia. at Bevel A	Drilling		
			Weld Neck	Blind						Bolt Circle	Dia of Holes	Nr. of Holes
26"	mm	800.1	29.2	31.8	727.2	689.1		76.2		752.6	25.4	32
28"	mm	850.9	31.8	31.8	778.0	739.9		76.2		803.4	25.4	36
30"	mm	901.7	31.8	35.1	828.8	790.7		76.2		854.2	25.4	36
32"	mm	971.6	31.8	38.1	889.0	847.9		82.6	To be established by design requirements	917.7	28.7	36
34"	mm	1022.4	31.8	38.1	939.8	898.7		82.6		968.5	28.7	40
36"	mm	1073.2	31.8	41.4	990.6	949.5		82.6		1019.3	28.7	40
42"	mm	1244.6	31.8	47.8	1155.7	1111.3		88.9		1187.5	31.8	48
48"	mm	1397.0	31.8	54.1	1308.1	1263.7		95.3		1339.9	31.8	52
54"	mm	1555.8	35.1	60.5	1466.9	1422.4		101.6		1498.6	31.8	64
60"	mm	1708.2	41.4	66.8	1619.3	1574.8		111.3		1651.0	31.8	72
66"	mm	1879.6	47.8	73.2	1781.3	1727.2		124.0		1816.1	35.1	72
72"	mm	2032.0	57.2	79.5	1933.7	1879.6		133.4		1968.5	35.1	80

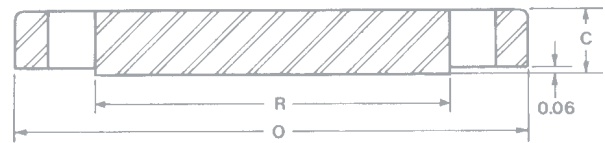


Industry Standard

CLASS 75



Slip On



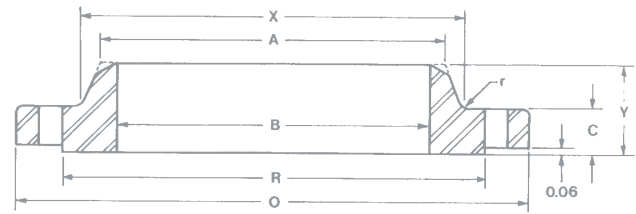
Blind

Diameter B to be specified

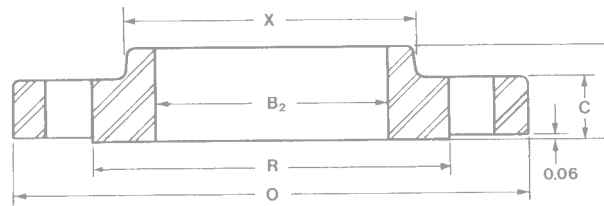
Nominal Pipe Size	mm	Outside Diam. O	Thickness C		O.D. Raised Face R	Hub Dia. X	Bore B	L Thru Hub Y	Hub Dia. at Bevel A	Drilling		
			Weld Neck	Blind						Bolt Circle	Dia of Holes	Nr. of Holes
26"	mm	838.2	31.8	31.8	762.0	723.9	666.8	57.2		787.4	25.4	32
28"	mm	889.0	31.8	35.1	812.8	774.7	717.6	57.2		838.2	25.4	36
30"	mm	939.8	31.8	35.1	863.6	825.5	768.4	57.2		889.0	25.4	36
32"	mm	1003.3	31.8	38.1	920.8	879.6	819.2	63.5	To be established by design requirements	949.5	28.7	40
34"	mm	1054.1	31.8	41.4	971.6	930.4	870.0	63.5		1000.3	28.7	40
36"	mm	1104.9	31.8	41.4	1022.4	981.2	920.8	63.5		1051.1	28.7	44
42"	mm	1270.0	31.8	47.8	1181.1	1136.7	1073.2	69.9		1212.9	31.8	48
48"	mm	1422.4	31.8	54.1	1333.5	1289.1	1225.6	73.2		1365.3	31.8	56
54"	mm	1587.5	35.1	60.5	1498.6	1454.2	1378.0	79.5		1530.4	31.8	68
60"	mm	1739.9	41.4	66.8	1651.0	1606.6	1530.4	92.2		1682.8	31.5	72
66"	mm	1917.7	44.5	73.2	1819.4	1765.3	1682.8	101.6		1854.2	35.1	72
72"	mm	2070.1	50.8	79.5	1971.8	1917.7	1835.2	114.3		2006.6	35.1	80

Industry Standard

CLASS 175



Welding Neck



Slip On

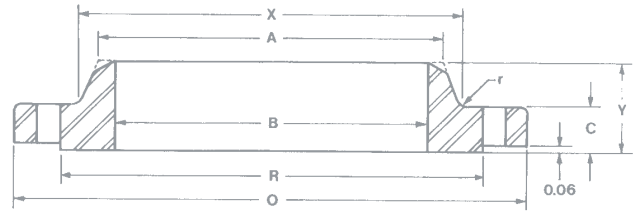
Diameter B to be specified

Nominal Pipe Size	Outside Diam. O	Thickness C			O.D. Raised Face R	Hub Dia. X	Bore B	Bore B 2	L Thru Hub Y		Hub at Bevel A	Drilling		
		Weld Neck	Slip on	Blind					Weld Neck	Slip on		Bolt Circle	Dia of Holes	Nr. of Holes
26"	800.1	35.1	35.1	45.3	736.6	701.8		666.8	85.9	69.9		759.0	22.4	28
28"	850.9	35.1	35.1	50.8	787.4	752.6		717.6	85.9	69.9		809.8	22.4	28
30"	908.1	35.1	35.1	54.1	844.6	809.8		768.4	92.2	69.9		866.9	22.4	36
32"	958.9	35.1	35.1	57.2	895.4	860.6		819.2	92.2	69.9	To be established by design requirements	917.7	22.4	36
34"	1022.4	38.1	44.5	60.5	949.5	911.4		870.0	95.3	85.9		974.9	25.4	36
36"	1073.2	38.1	44.5	63.5	1000.3	962.2		920.8	95.3	85.9		1025.7	25.4	36
38"	1124.0	44.5	50.8	66.8	1051.1	1013.0		971.6	104.9	95.3		1076.5	25.4	36
40"	1174.8	44.5	50.8	69.9	1101.9	1063.8		1022.4	104.9	101.6		1127.3	25.4	40
42"	1244.6	50.8	60.5	73.2	1162.1	1120.9		1073.2	114.3	111.3		1190.8	28.7	40
44"	1295.4	50.8	60.5	76.2	1212.9	1171.7		1124.0	114.3	111.3		1241.6	28.7	40
46"	1346.2	50.8	60.5	79.5	1263.7	1222.5		1174.8	114.3	117.6		1292.4	28.7	40
48"	1397.0	57.2	66.8	85.9	1314.5	1273.3		1225.6	124.0	124.0		1343.2	28.7	44
50"	1447.8	57.2	66.8	85.9	1365.3	1324.1		1276.4	124.0	124.0		1394.0	28.7	44
52"	1511.3	66.8	76.2	92.2	1422.4	1378.0		1327.2	136.7	136.7	1454.2	31.8	44	

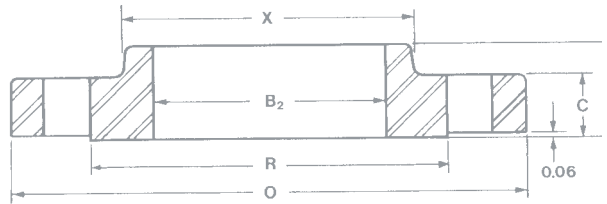


Industry Standard

CLASS 175



Welding Neck



Slip On

Diameter B to be specified

Nominal Pipe Size	Outside Diam. O	Thickness C			O.D. Raised Face R	Hub Dia. X	Bore B	Bore B 2	L Thru Hub Y		Hub at Bevel A	Drilling		
		Weld Neck	Slip on	Blind					Weld Neck	Slip on		Bolt Circle	Dia of Holes	Nr. of Holes
54"	1562.1	66.8	76.2	92.2	1473.2	1428.8		1378.0	136.7	136.7		1505.0	31.8	44
60"	1714.5	69.9	79.5	101.6	1625.6	1581.2		1530.4	146.1	149.4		1657.4	31.8	48
66"	1866.9	79.5	101.6	111.3	1778.0	1739.9		1682.8	155.7	174.8		1809.8	31.8	56
72"	2032.0	92.2	127.0	120.7	1943.1	1892.3		1835.2	168.4	203.2		1974.9	31.8	64
											To be established by design requirements			

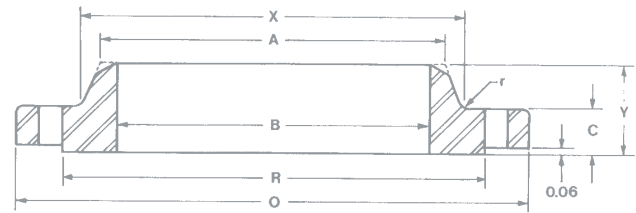
Technical Bulletin

Pipes Flanges and Fittings

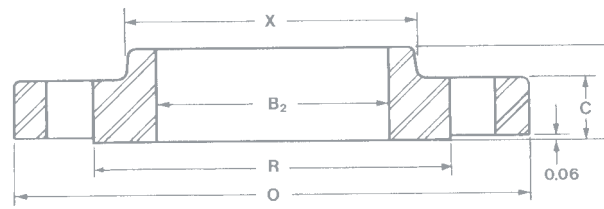


Industry Standard

CLASS 350



Welding Neck



Slip On

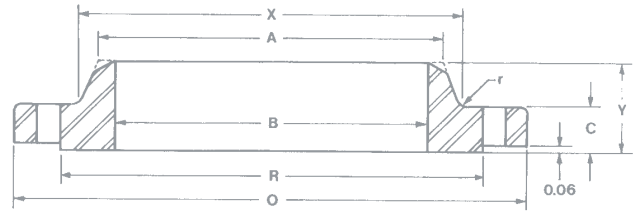
Diameter B to be specified

Nominal Pipe Size	Outside Diam. O	Thickness C			O.D. Raised Face R	Hub Dia. X	Bore B	Bore B 2	L Thru Hub Y		Hub at Bevel A	Drilling		
		Weld Neck	Slip on	Blind					Weld Neck	Slip on		Bolt Circle	Dia of Holes	Nr. of Holes
26"	831.9	63.5	63.5	69.9	749.3	708.2		666.8	127.0	114.3		778.0	28.7	28
28"	882.7	63.5	63.5	73.2	800.1	759.0		717.6	127.0	114.3		828.8	28.7	28
30"	939.8	66.8	66.8	76.2	857.3	816.1		768.4	133.4	120.7		886.0	28.7	32
32"	990.6	69.9	69.9	82.6	908.1	866.9		819.2	139.7	127.0	To be established by design requirements	936.8	28.7	36
34"	1041.4	73.2	73.2	85.9	958.9	917.7		870.0	146.1	130.3		987.6	28.7	40
36"	1111.3	79.5	79.5	92.2	1022.4	977.9		920.8	155.7	143.0		1054.1	31.8	40
38"	1162.1	79.5	79.5	95.3	1073.2	1028.7		971.6	155.7	143.0		1104.9	31.8	40
40"	1212.9	82.6	82.6	101.6	1124.0	1079.5		1022.4	158.8	149.4		1155.7	31.8	44
42"	1270.0	88.9	88.9	104.9	1181.1	1136.7		1073.2	165.1	155.7		1212.9	31.8	48
44"	1339.9	95.3	95.3	111.3	1241.6	1187.5		1124.0	171.5	171.5		1276.4	35.1	44
46"	1390.7	108.0	108.0	120.7	1292.4	1238.3		1174.8	184.2	184.2		1327.2	35.1	48
48"	1441.5	108.0	108.0	120.7	1343.2	1289.1		1225.6	184.2	184.2		1378.0	35.1	48
52"	1562.1	108.0	****	****	1454.2	1397.0		1276.4	190.5	****		1492.3	38.1	52
54"	1612.9	114.3	120.7	****	1505.0	1447.8		1327.2	196.9	209.6		1543.1	38.1	52

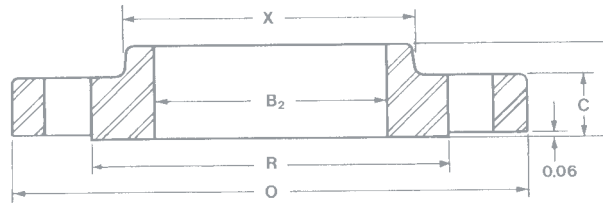


Industry Standard

CLASS 350



Welding Neck



Slip On

Diameter B to be specified

Nominal Pipe Size	Outside Diam. O	Thickness C			O.D. Raised Face R	Hub Dia. X	Bore B	Bore B 2	L Thru Hub Y		Hub at Bevel A	Drilling		
		Weld Neck	Slip on	Blind					Weld Neck	Slip on		Bolt Circle	Dia of Holes	Nr. of Holes
60"	1765.3	114.3	127.0	****	1657.4	1600.2		1378.0	203.2	215.9		1695.5	38.1	60
66"	1955.8	101.6	****	****	1838.5	1778.0		1530.4	215.9	****		1879.6	41.4	60
72"	2108.2	101.6	****	****	1990.9	1930.4		1682.8	228.6	****		2032.0	41.4	72
											To be established by design requirements			

Technical Bulletin

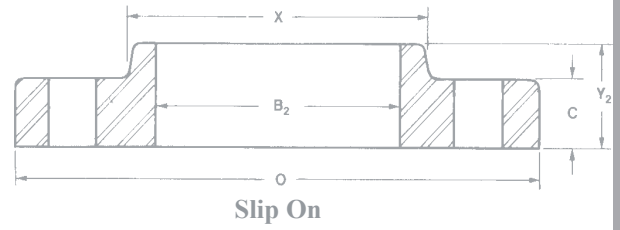
Pipes Flanges and Fittings



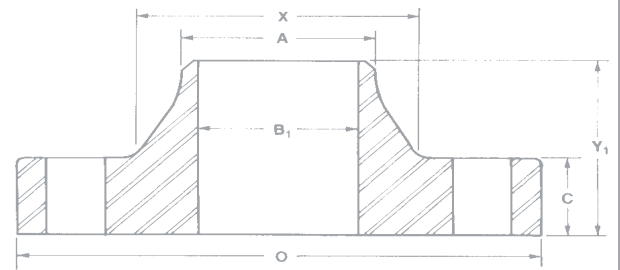
Class 125 LW

AWWA C207

CLASS E



Slip On



Welding Neck

Diameter B1 to be specified

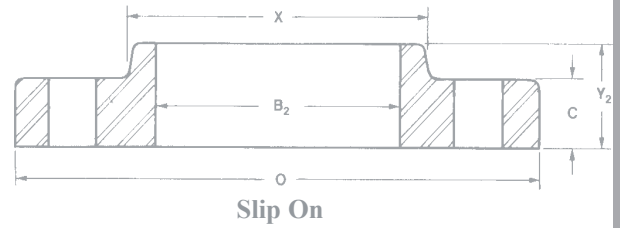
Nominal Pipe Size	mm	Outside Diam. O	Thickness C	Hub Dia. X	Bore		Length Thru Hub		Diam Hub at Bevel A	Drilling		
					W. N. B 1	Slip On B 2	Slip On Y 2	W. N. Y 1		Bolt Circle	Dia Holes	Nr. of Holes
6"	mm	279.4	25.4	192.1		170.7	39.7	88.9	168.4	241.3	22.4	8
8"	mm	342.9	28.7	245.9		221.5	44.5	101.6	219.2	298.5	22.4	8
10"	mm	406.4	30.3	304.8		276.4	49.3	101.6	273.1	362.0	25.4	12
12"	mm	482.6	31.8	365.3		327.2	55.7	114.3	323.9	431.8	25.4	12
14"	mm	533.4	35.1	400.1		359.2	57.2	127.0	355.6	476.3	28.7	12
16"	mm	596.9	36.6	457.2		410.5	63.5	127.0	406.4	539.8	28.7	16
18"	mm	635.0	39.7	505.0		461.8	68.1	139.7	457.2	577.9	31.8	16
20"	mm	698.5	42.7	558.8		513.1	73.2	144.6	508.0	635.0	31.8	20
22"	mm	749.3	46.0	616.0		564.4	79.5	149.4	558.8	692.2	35.1	20
24"	mm	812.8	47.8	663.7		616.0	82.6	152.4	609.6	749.3	35.1	20
26"	mm	870.0	50.8	723.9		666.8	85.9	127.0	660.4	806.5	35.1	24
28"	mm	927.1	52.4	781.1		717.6	87.4	128.6	711.2	863.6	35.1	28
30"	mm	984.3	54.1	831.9		768.4	88.9	130.3	762.0	914.4	35.1	28
32"	mm	1060.5	57.2	889.0		819.2	92.2	133.4	812.8	977.9	41.4	28



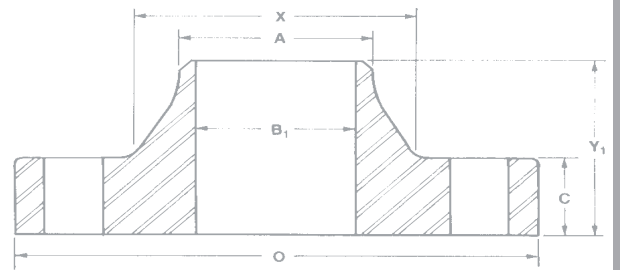
Class 125 LW

AWWA C207

CLASS E



Slip On



Welding Neck

Diameter B1 to be specified

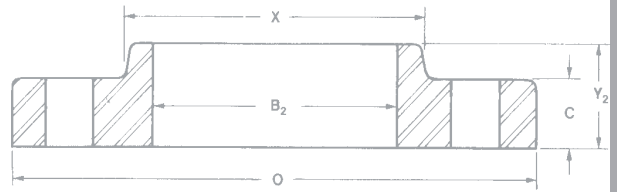
Nominal Pipe Size	mm	Outside Diam. O	Thickness C	Hub Dia. X	Bore		Length Thru Hub		Diam Hub at Bevel A	Drilling		
					W. N. B 1	Slip On B 2	Slip On Y 2	W. N. Y 1		Bolt Circle	Dia Holes	Nr. of Holes
34"	mm	1111.3	58.7	939.8		870.0	93.5	134.9	863.6	1028.7	41.4	32
36"	mm	1168.4	60.5	997.0		920.8	95.3	136.7	914.4	1085.9	41.4	32
38"	mm	1238.3	60.5	1060.5		971.6	95.3	136.7	965.2	1149.4	41.4	32
40"	mm	1289.1	63.5	1111.3		1022.4	98.6	139.7	1016.0	1200.2	41.4	36
42"	mm	1346.2	66.8	1168.4		1073.2	101.6	143.0	1066.8	1257.3	41.4	36
44"	mm	1403.4	66.8	1219.2		1124.0	101.6	143.0	1117.6	1314.5	41.4	40
46"	mm	1454.2	68.1	1270.0		1174.8	103.2	144.3	1168.4	1365.3	41.4	40
48"	mm	1511.3	69.9	1327.2		1225.6	104.9	146.1	1219.2	1422.4	41.4	44
50"	mm	1568.5	69.9	1378.0		1276.4	104.9	146.1	1270.0	1479.6	47.8	44
52"	mm	1625.6	73.2	1435.1		1327.2	108.0	149.4	1320.8	1536.7	47.8	44
54"	mm	1682.8	76.2	1492.3		1378.0	111.3	152.4	1371.6	1593.9	47.8	44
60"	mm	1854.2	79.5	1657.4		1530.4	114.3	155.7	1524.0	1759.0	47.8	52
66"	mm	2032.0	85.9	1816.1		1682.8	124.0	162.1	1676.4	1930.4	47.8	52
72"	mm	2197.1	88.9	1993.9		1835.2	127.0	165.1	1828.8	2095.5	47.8	60



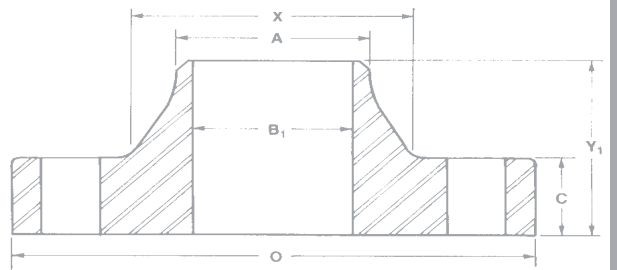
Class125 LW

AWWA C207

CLASS E



Slip On



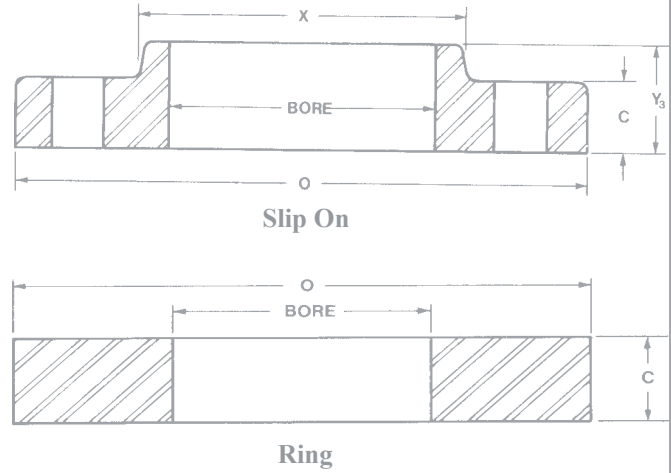
Welding Neck

Diameter B1 to be specified

Nominal Pipe Size	mm	Outside Diam. O	Thickness C	Hub Dia. X	Bore		Length Thru Hub		Diam Hub at Bevel A	Drilling		
					W. N. B1	Slip On B2	Slip On Y2	W. N. Y1		Bolt Circle	Dia Holes	Nr. of Holes
84"	mm	2533.7	98.6	2298.7		2140.0	136.7	174.8	2133.6	2425.7	54.1	64
96"	mm	2876.6	108.0	2609.9		2444.8	146.1	184.2	2438.4	2755.9	60.5	68

Class 125 LW

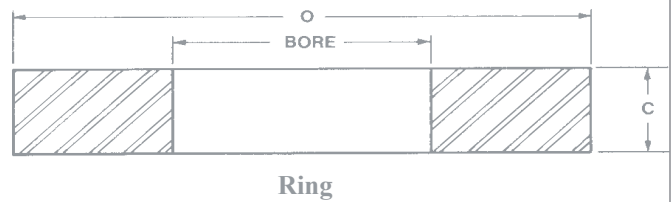
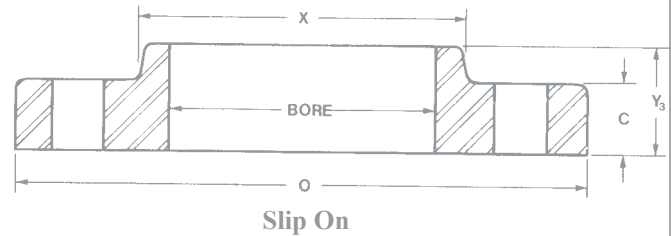
AWWA C207
CLASSES B,D



Nominal Pipe Size	mm	Outside Diam. O	Thickness C			Hub Dia. X	Bore	L Thru Hub Y 2	Drilling			
			Slip on B, D	Ring					Bolt Circle	Dia Hole B	Dia Hole D	Nr. of Holes
				B	D							
6"	mm	279.4	14.3	17.5	17.5	192.1	170.7	31.8	241.3	19.1	22.4	8
8"	mm	342.9	14.3	17.5	17.5	245.9	221.5	31.8	298.5	19.1	22.4	8
10"	mm	406.4	17.3	17.5	17.5	304.8	276.4	31.8	362.0	19.1	25.4	12
12"	mm	482.6	17.3	17.5	20.6	365.3	327.2	31.8	431.8	19.1	25.4	12
14"	mm	533.4	19.1	17.5	23.9	400.1	359.2	31.8	476.3	22.4	28.7	12
16"	mm	596.9	19.1	17.5	25.4	457.2	410.5	31.8	539.8	22.4	28.7	16
18"	mm	635.0	19.1	17.5	26.9	505.0	461.8	31.8	577.9	22.4	31.8	16
20"	mm	698.5	19.1	17.5	28.7	558.8	513.1	31.8	635.0	22.4	31.8	20
22"	mm	749.3	25.4	19.1	30.3	616.0	564.4	44.5	692.2	22.4	35.1	20
24"	mm	812.8	25.4	19.1	31.8	663.7	616.0	44.5	749.3	22.4	35.1	20
26"	mm	870.0	25.4	20.6	33.3	723.9	666.8	44.5	806.5	22.4	35.1	24
28"	mm	927.1	25.4	22.4	33.3	774.7	717.6	44.5	863.6	22.4	35.1	28
30"	mm	984.3	25.4	22.4	35.1	825.5	768.4	44.5	914.4	25.4	35.1	28
32"	mm	1060.5	28.7	23.9	38.1	882.7	819.2	44.5	977.9	25.4	41.4	28

Class 125 LW

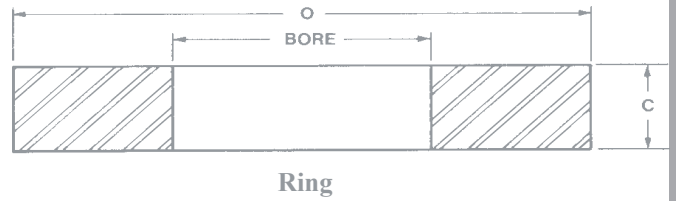
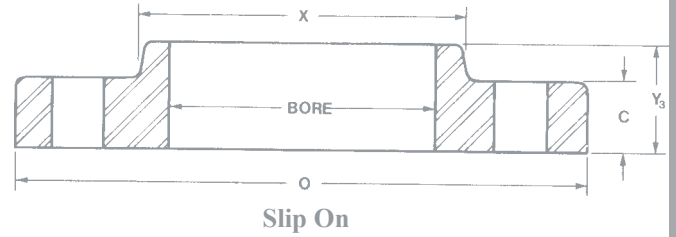
AWWA C207
CLASSES B,D



Nominal Pipe Size	mm	Outside Diam. O	Thickness C			Hub Dia. X	Bore	L Thru Hub Y 2	Drilling			
			Slip on B, D	Ring					Bolt Circle	Dia Hole B	Dia Hole D	Nr. of Holes
				B	D							
34"	mm	1111.3	28.7	23.9	38.1	933.5	870.0	44.5	1028.7	25.4	41.4	32
36"	mm	1168.4	28.7	25.4	41.4	984.3	920.8	44.5	1085.9	25.4	41.4	32
38"	mm	1238.3	28.7	25.4	41.4	1035.1	971.6	44.5	1149.4	25.4	41.4	32
40"	mm	1289.1	28.7	25.4	41.4	1092.2	1022.4	44.5	1200.2	25.4	41.4	36
42"	mm	1346.2	31.8	28.7	44.5	1143.0	1073.2	44.5	1257.3	28.7	41.4	36
44"	mm	1403.4	31.8	28.7	44.5	1193.8	1124.0	57.2	1314.5	28.7	41.4	40
46"	mm	1454.2	31.8	28.7	44.5	1244.6	1174.8	57.2	1365.3	28.7	41.4	40
48"	mm	1511.3	35.1	31.8	44.5	1295.4	1225.6	63.5	1422.4	28.7	41.4	44
50"	mm	1568.5	35.1	31.8	50.8	1346.2	1276.4	63.5	1479.6	31.8	47.8	44
52"	mm	1625.6	35.1	31.8	50.8	1397.0	1327.2	63.5	1536.7	31.8	47.8	44
54"	mm	1682.8	35.1	33.8	54.1	1447.8	1378.0	63.5	1593.9	35.1	47.8	44
60"	mm	1854.2	38.1	38.1	57.2	1600.2	1530.4	69.9	1759.0	35.1	47.8	52
66"	mm	2032.0	38.1	41.1	63.5	1752.6	1682.8	69.9	1930.4	35.1	47.8	52
72"	mm	2197.1	38.1	44.5	66.8	1905.0	1835.2	69.9	2095.5	35.1	47.8	60

Class 125 LW

AWWA C207
CLASSES B, D

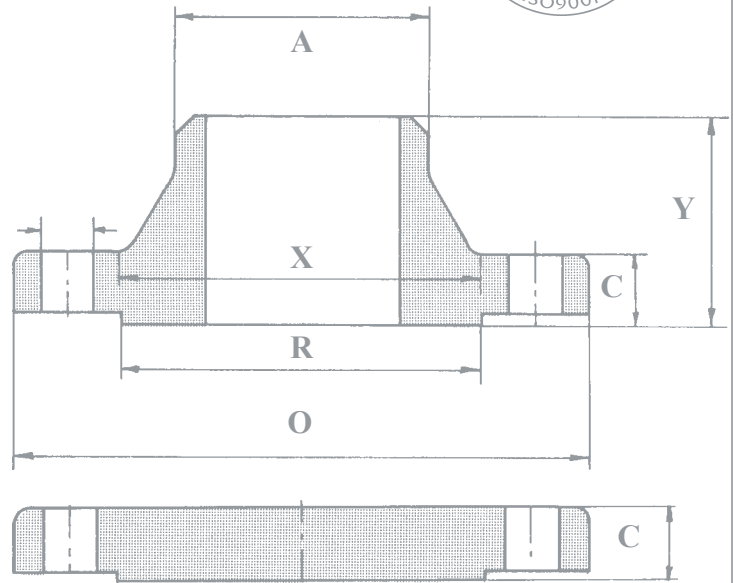


Nominal Pipe Size	mm	Outside Diam. O	Thickness C			Hub Dia. X	Bore	L Thru Hub Y 2	Drilling			
			Slip on B, D	Ring					Bolt Circle	Dia Hole B	Dia Hole D	Nr. of Holes
				B	D							
84"	mm	2533.7	44.5	50.8	69.9	2222.5	2140.0	76.2	2425.7	41.4	54.1	64
96"	mm	2876.6	50.8	57.2	76.2	2540.0	2444.8	82.6	2755.9	47.8	60.5	68



150 Lbs

Welding Neck Flanges
Asme B 16.47 Series A

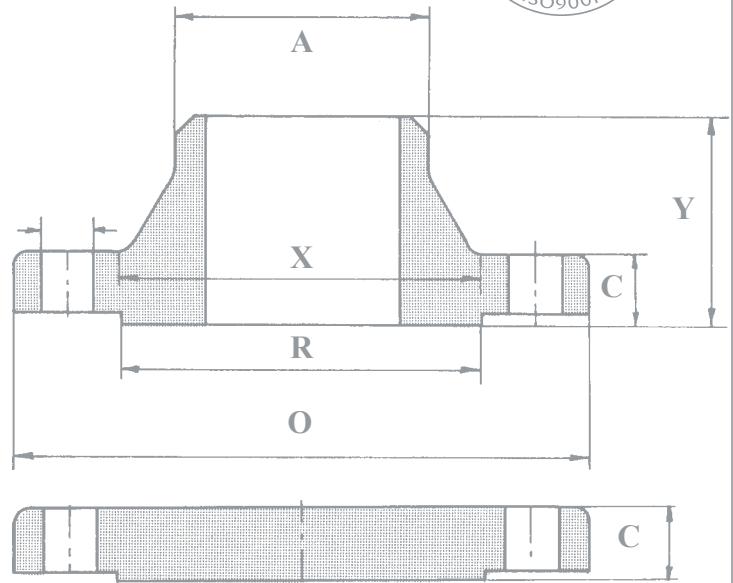


Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	870.0	68.3	68.3	120.7	676.1	660.4	749.3	806.5	24	35.1	1.1/4	9.7
28"	927.1	71.4	71.4	125.5	726.9	711.2	800.1	863.6	28	35.1	1.1/4	11.2
30"	984.3	74.7	74.7	136.7	781.1	762.0	857.3	914.4	28	35.1	1.1/4	11.2
32"	1060.5	81.0	81.0	144.5	831.9	812.8	914.4	977.9	28	41.1	1.1/2	11.2
34"	1111.3	82.6	82.6	149.4	882.7	863.6	965.2	1028.7	32	41.1	1.1/2	12.7
36"	1168.4	90.4	90.4	157.2	933.5	914.4	1022.4	1085.9	32	41.1	1.1/2	12.7
38"	1238.3	87.4	87.4	157.2	990.6	965.2	1073.2	1149.4	32	41.1	1.1/2	12.7
40"	1289.1	90.4	90.4	163.6	1041.4	1016.0	1124.0	1200.2	36	41.1	1.1/2	12.7
42"	1346.2	96.8	96.8	171.5	1092.2	1066.8	1193.8	1257.3	36	41.1	1.1/2	12.7
44"	1403.4	101.6	101.6	177.8	1143.0	1117.6	1244.6	1314.5	40	41.1	1.1/2	12.7
46"	1454.2	103.1	103.1	185.7	1196.8	1168.4	1295.4	1365.3	40	41.1	1.1/2	12.7
48"	1511.3	108.0	108.0	192.0	1247.6	1219.2	1358.9	1422.4	44	41.1	1.1/2	12.7
50"	1568.5	111.3	111.3	203.2	1301.8	1270.0	1409.7	1479.6	44	47.8	1.3/4	12.7
52"	1625.6	115.8	115.8	209.6	1352.6	1320.8	1460.5	1536.7	44	47.8	1.3/4	12.7



150 Lbs

Welding Neck Flanges
Asme B 16.47 Series A



Pipes Flanges and Fittings

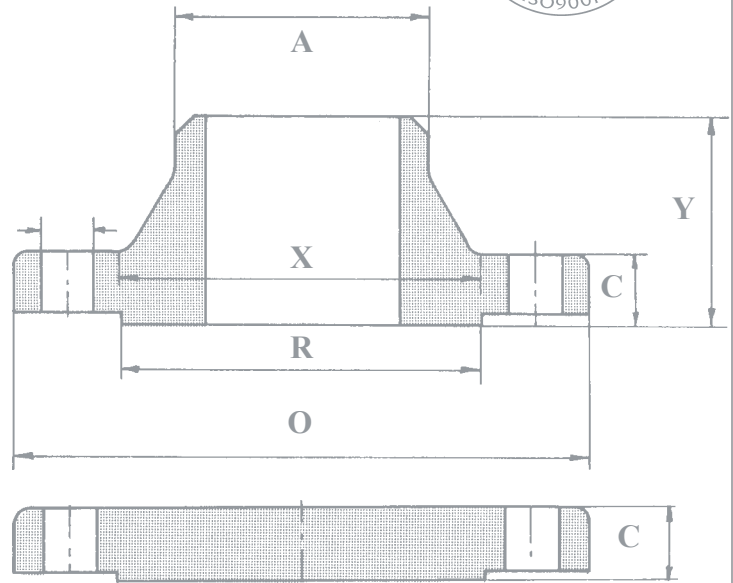
Technical Bulletin

Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
54"	1682.8	120.7	120.7	215.9	1403.4	1371.6	1511.3	1593.9	44	47.8	1.3/4	12.7
56"	1746.3	124.0	124.0	228.6	1457.5	1422.4	1574.8	1651.0	48	47.8	1.3/4	12.7
58"	1803.4	128.5	128.5	235.0	1508.3	1473.2	1625.6	1708.2	48	47.8	1.3/4	12.7
60"	1854.2	131.8	131.8	239.8	1559.1	1524.0	1676.4	1759.0	52	47.8	1.3/4	12.7



300 Lbs

Welding Neck Flanges
Asme B 16.47 Series A

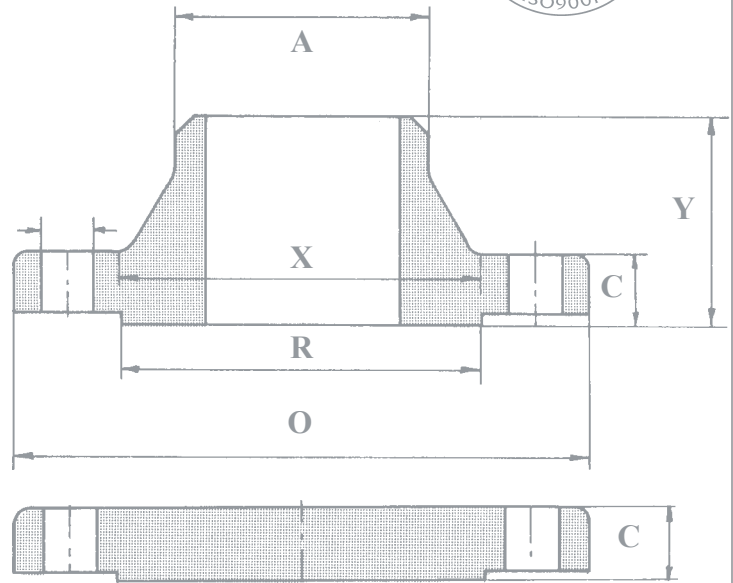


Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	971.6	79.2	82.6	184.2	720.9	660.4	749.3	876.3	28	44.5	1.5/8	9.7
28"	1035.1	85.9	88.9	196.9	774.7	711.2	800.1	939.8	28	44.5	1.5/8	11.2
30"	1092.2	91.9	93.7	209.6	827.0	762.0	857.3	997.0	28	47.8	1.3/4	11.2
32"	1149.4	98.6	98.6	222.3	881.1	812.8	914.4	1054.1	28	50.8	1.7/8	11.2
34"	1206.5	101.6	103.2	231.6	936.8	863.6	965.2	1104.9	28	50.8	1.7/8	12.7
36"	1270.0	104.6	109.6	241.3	990.6	914.4	1022.4	1168.4	32	53.8	2	12.7
38"	1168.4	108.0	108.0	180.8	993.6	965.2	1028.7	1092.2	32	41.1	1.1/2	12.7
40"	1238.3	114.3	114.3	193.5	1047.8	1016.0	1085.9	1155.7	32	44.5	1.5/8	12.7
42"	1289.1	119.1	119.1	200.2	1098.6	1066.8	1136.7	1206.5	32	44.5	1.5/8	12.7
44"	1352.6	124.0	124.0	206.2	1149.4	1117.6	1193.8	1263.7	32	47.8	1.3/4	12.7
46"	1416.1	128.5	128.5	215.9	1203.5	1168.4	1244.6	1320.8	28	50.8	1.7/8	12.7
48"	1466.9	133.4	133.4	223.8	1254.3	1219.2	1301.8	1371.6	32	50.8	1.7/8	12.7
50"	1530.4	139.7	139.7	231.6	1305.1	1270.0	1358.9	1428.8	32	53.8	2	12.7
52"	1581.2	144.5	144.5	238.3	1355.9	1320.8	1409.7	1479.6	32	53.8	2	12.7



300 Lbs

Welding Neck Flanges
Asme B 16.47 Series A



Technical Bulletin

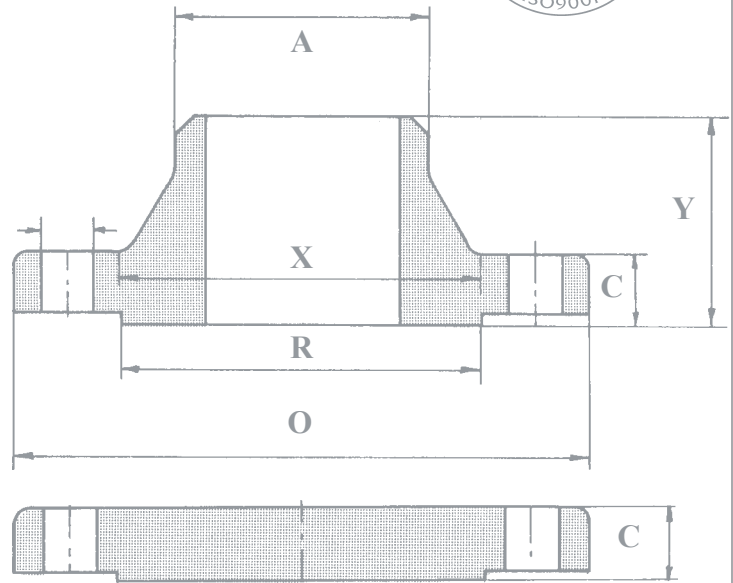
Pipes Flanges and Fittings

Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
54"	1657.4	152.4	152.4	252.5	1409.7	1371.6	1466.9	1549.4	28	60.5	2.1/4	12.7
56"	1708.2	153.9	153.9	260.4	1463.5	1422.4	1517.7	1600.2	28	60.5	2.1/4	12.7
58"	1759.0	158.8	158.8	266.7	1514.3	1473.2	1574.8	1651.0	32	60.5	2.1/4	12.7
60"	1809.8	163.6	163.6	273.1	1565.1	1524.0	1625.6	1701.8	32	60.5	2.1/4	12.7



400 Lbs

Welding Neck Flanges
Asme B 16.47 Series A

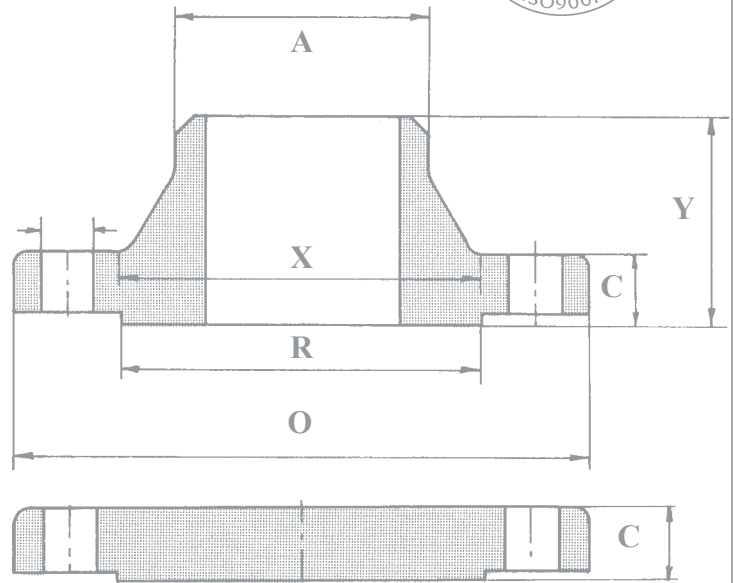


Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	971.6	88.9	98.6	193.5	726.9	660.4	749.3	876.3	28	47.8	1.3/4	11.2
28"	1035.1	95.3	104.6	206.2	782.6	711.2	800.1	939.8	28	50.8	1.7/8	12.7
30"	1092.2	101.6	111.3	218.9	836.7	762.0	857.3	997.0	28	53.8	2	12.7
32"	1149.4	108.0	115.8	231.6	889.0	812.8	914.4	1054.1	28	53.8	2	12.7
34"	1206.5	111.3	122.2	241.3	944.6	863.6	965.2	1104.9	28	53.8	2	14.3
36"	1270.0	114.3	128.5	251.0	1000.3	914.4	1022.4	1168.4	32	53.8	2	14.3
38"	1206.5	124.0	124.0	206.2	1003.3	965.2	1035.1	1117.6	32	47.8	1.3/4	14.3
40"	1270.0	130.0	130.0	215.9	1054.1	1016.0	1092.2	1174.8	32	50.8	1.7/8	14.3
42"	1320.8	133.4	133.4	223.8	1107.9	1066.8	1143.0	1225.6	32	50.8	1.7/8	14.3
44"	1384.3	139.7	139.7	233.2	1158.7	1117.6	1200.2	1282.7	32	53.8	2	14.3
46"	1441.5	146.1	146.1	244.3	1212.9	1168.4	1257.3	1339.9	36	53.8	2	14.3
48"	1511.3	152.4	152.4	257.0	1267.0	1219.2	1308.1	1403.4	28	60.5	2.1/4	14.3
50"	1568.5	157.2	158.8	268.2	1320.8	1270.0	1361.9	1460.5	32	60.5	2.1/4	14.3
52"	1619.3	162.1	163.6	276.4	1371.6	1320.8	1412.7	1511.3	32	60.5	2.1/4	14.3



400 Lbs

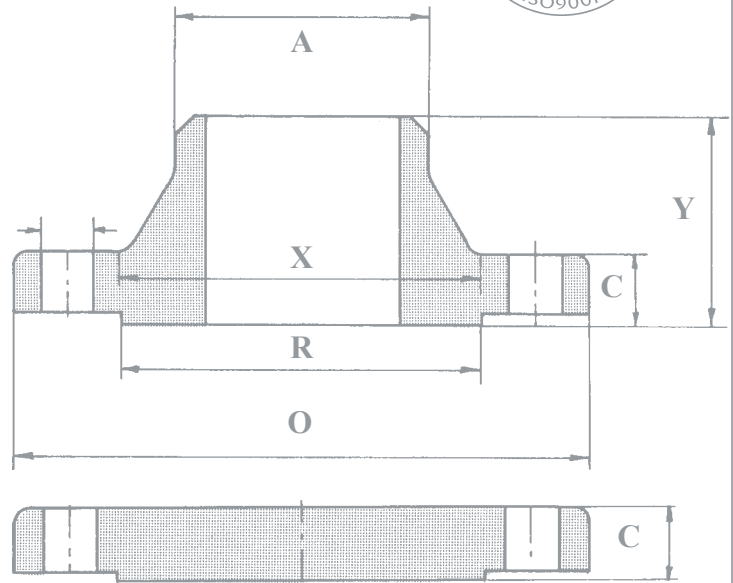
Welding Neck Flanges
Asme B 16.47 Series A



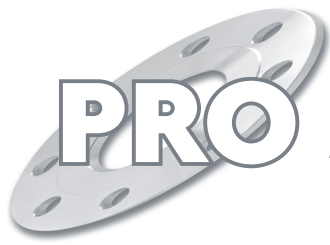
Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
54"	1701.8	169.9	171.5	289.1	1425.4	1371.6	1470.2	1581.2	28	66.5	2.1/2	14.3
56"	1752.6	174.8	176.3	298.5	1479.6	1422.4	1527.0	1632.0	32	66.5	2.1/2	14.3
58"	1803.4	177.8	180.8	306.3	1530.4	1473.2	1577.8	1682.8	32	66.5	2.1/2	14.3
60"	1886.0	185.7	189.0	319.0	1584.5	1524.0	1635.3	1752.6	32	73.2	2.1/2	14.3

600 Lbs

Welding Neck Flanges
Asme B 16.47 Series A



Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	1016.0	108.0	125.5	222.3	747.8	660.4	749.3	914.4	28	50.8	1.7/8	12.7
28"	1073.2	111.3	131.8	235.0	803.1	711.2	800.1	965.2	28	53.8	2	12.7
30"	1130.3	114.3	139.7	247.7	862.1	762.0	857.3	1022.4	28	53.8	2	12.7
32"	1193.8	117.3	147.6	260.4	917.4	812.8	914.4	1079.5	28	60.5	2.1/4	12.7
34"	1244.6	120.7	153.9	269.7	973.1	863.6	965.2	1130.3	28	60.5	2.1/4	14.3
36"	1314.5	124.0	162.1	282.4	1031.7	914.4	1022.4	1193.8	28	66.5	2.1/2	14.3
38"	1270.0	152.4	155.4	254.0	1022.4	965.2	1054.1	1162.1	28	60.5	2.1/4	14.3
40"	1320.8	158.8	162.1	263.7	1073.2	1016.0	1111.3	1212.9	32	60.5	2.1/4	14.3
42"	1403.4	168.1	171.5	279.4	1127.3	1066.8	1168.4	1282.7	28	66.5	2.1/2	14.3
44"	1454.2	173.0	177.8	289.1	1181.1	1117.6	1225.6	1333.5	32	66.5	2.1/2	14.3
46"	1511.3	179.3	185.7	300.0	1234.9	1168.4	1276.4	1390.7	32	66.5	2.1/2	14.3
48"	1593.9	189.0	195.3	316.0	1289.1	1219.2	1333.5	1460.5	32	73.2	2.3/4	14.3
50"	1670.1	196.9	203.2	328.7	1343.2	1270.0	1384.3	1524.0	28	79.2	3	14.3
52"	1720.9	203.2	209.6	336.6	1394.0	1320.8	1435.1	1574.8	32	79.2	3	14.3

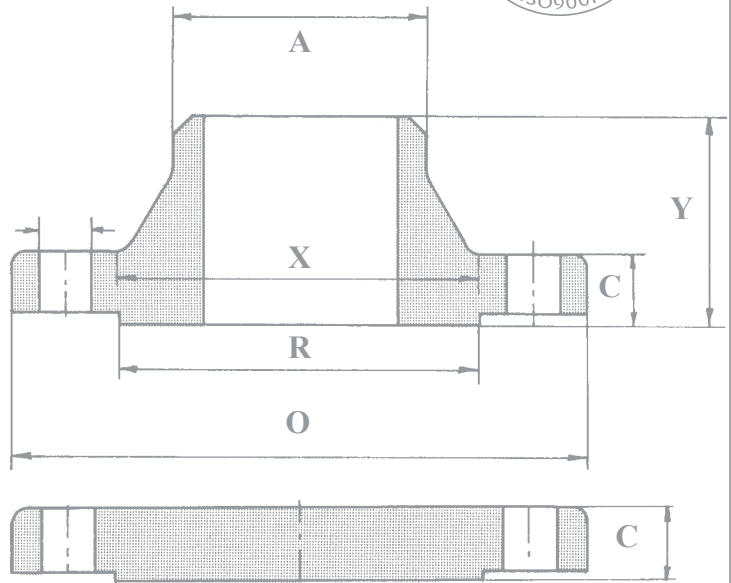


PRO Alloy bv



600 Lbs

Welding Neck Flanges
Asme B 16.47 Series A



Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
54"	1778.0	209.6	217.4	349.3	1447.8	1371.6	1492.3	1632.0	32	79.2	3	14.3
56"	1854.2	217.4	225.6	362.0	1501.6	1422.4	1543.1	1695.5	32	85.9	3.1/4	15.7
58"	1905.0	222.3	231.6	369.8	1552.4	1473.2	1600.2	1746.3	32	85.9	3.1/4	15.7
60"	1993.9	233.4	242.8	388.9	1609.9	1524.0	1657.4	1822.5	28	91.9	3.1/2	17.5

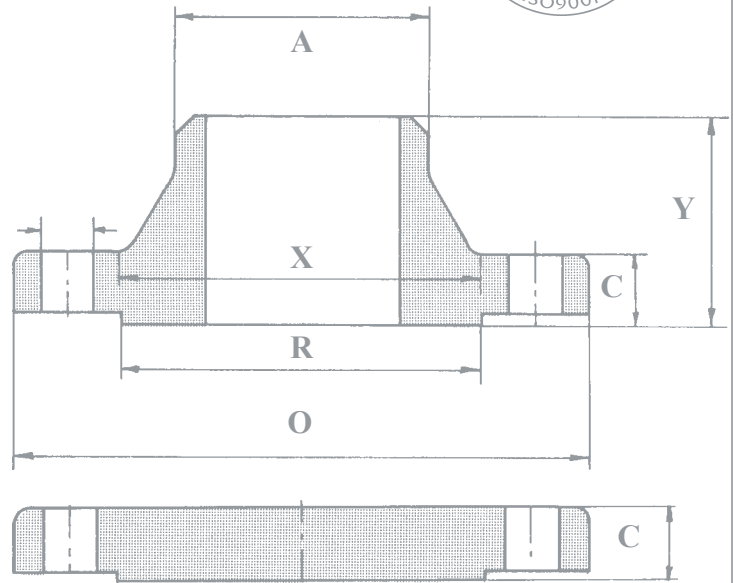
Technical Bulletin

Pipes Flanges and Fittings



900 Lbs

Welding Neck Flanges
Asme B 16.47 Series A



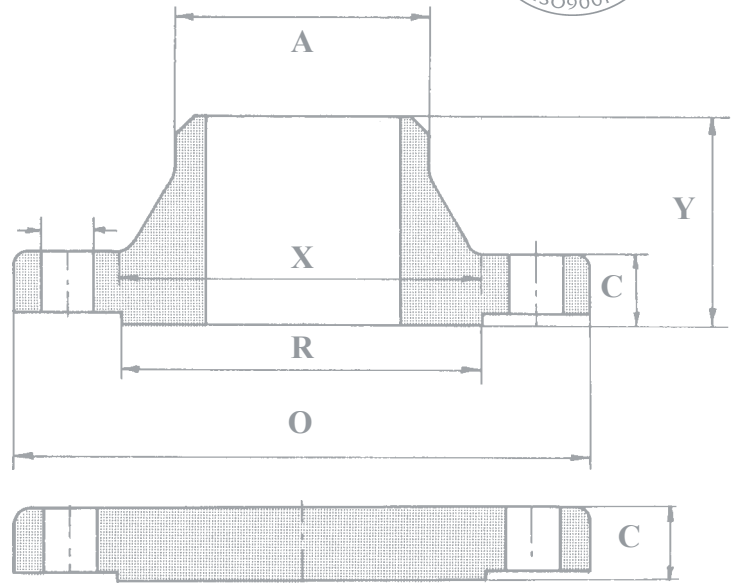
Technical Bulletin

Pipes Flanges and Fittings

Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	1085.9	139.7	160.3	285.8	774.7	660.4	749.3	952.5	20	73.2	2.3/4	11.2
28"	1168.4	142.7	171.5	298.5	831.9	711.2	800.1	1022.4	20	79.2	3	12.7
30"	1231.9	149.4	182.4	311.2	889.0	762.0	857.3	1085.9	20	49.2	3	12.7
32"	1314.5	158.8	193.5	330.2	946.2	812.8	914.4	1155.7	20	85.9	3.1/4	12.7
34"	1397.0	165.1	204.7	349.3	1006.3	863.6	965.2	1225.6	20	91.9	3.1/2	14.2
36"	1460.5	171.5	214.4	362.0	1063.8	914.4	1022.4	1289.1	20	91.9	3.1/2	14.2
38"	1460.5	190.5	215.9	352.6	1073.2	965.2	1098.6	1289.1	20	91.9	3.1/2	19.1
40"	1511.3	196.9	223.8	363.5	1127.3	1016.0	1162.1	1339.9	24	91.9	3.1/2	20.6
42"	1562.1	206.2	231.6	371.3	1176.3	1066.8	1212.9	1390.7	24	91.9	3.1/2	20.6
44"	1648.0	214.4	242.8	390.7	1234.9	1117.6	1270.0	1463.5	24	98.6	3.3/4	22.4
46"	1733.6	225.6	255.5	411.0	1292.4	1168.4	1333.5	1536.7	24	104.6	4	22.4
48"	1784.4	233.4	263.7	419.1	1343.2	1219.2	1384.3	1587.5	24	104.6	4	23.9

75 Lbs

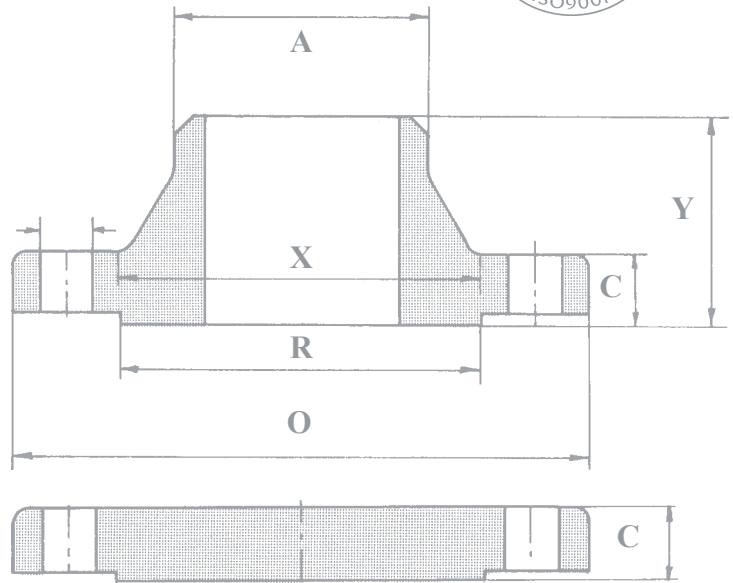
Welding Neck Flanges
Asme B 16.47 Series B



Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	762.0	33.3	33.3	58.7	676.2	662.0	704.9	723.9	36	19.1	5/8	7.9
28"	812.8	33.3	33.3	62.0	727.0	712.8	755.7	774.7	40	19.1	5/8	7.9
30"	863.6	33.3	33.3	65.0	777.8	763.6	806.5	825.5	44	19.1	5/8	7.9
32"	914.4	35.1	36.6	69.9	828.6	814.3	857.3	876.3	48	19.1	5/8	7.9
34"	965.2	35.1	38.1	73.2	879.4	865.2	908.1	927.1	52	19.1	5/8	7.9
36"	1033.6	36.6	42.4	85.9	935.0	916.0	965.2	992.1	40	22.4	3/4	9.7
38"	1084.4	38.1	44.5	88.9	985.8	966.7	1016.0	1042.9	40	22.4	3/4	9.7
40"	1135.2	38.1	44.5	92.0	1036.6	1017.5	1066.8	1093.7	44	22.4	3/4	9.7
42"	1185.9	39.6	47.8	95.3	1087.4	1068.3	1117.6	1144.5	48	22.4	3/4	9.7
44"	1251.0	42.9	49.3	104.7	1140.0	1119.1	1174.8	1203.5	36	25.4	7/8	9.7
46"	1301.8	44.5	50.8	108.0	1190.8	1169.9	1225.6	1254.3	40	25.4	7/8	9.7
48"	1352.6	46.0	53.9	111.3	1241.6	1220.7	1276.4	1305.0	44	25.4	7/8	9.7
50"	1403.4	47.8	55.4	115.8	1293.9	1271.5	1327.2	1355.9	44	25.4	7/8	9.7
52"	1457.5	47.8	57.2	120.7	1344.7	1322.3	1378.0	1409.7	48	25.4	7/8	9.7

75 Lbs

Welding Neck Flanges
Asme B 16.47 Series B

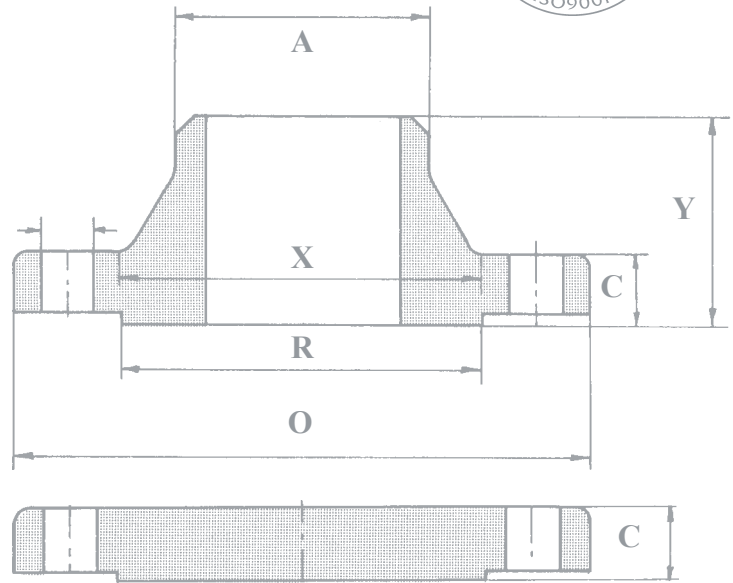


Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
54"	1508.3	49.3	60.5	125.5	1397.0	1373.1	1428.8	1460.5	48	25.4	7/8	9.7
56"	1574.8	50.8	62.0	134.9	1450.9	1423.9	1479.6	1521.0	40	28.5	1	11.2
58"	1625.6	52.3	63.5	138.2	1501.7	1474.7	1536.7	1571.8	44	28.5	1	11.2
60"	1676.4	55.6	66.6	144.5	1552.5	1525.5	1587.5	1622.6	44	28.5	1	11.2



150 Lbs

Welding Neck Flanges
Asme B 16.47 Series B

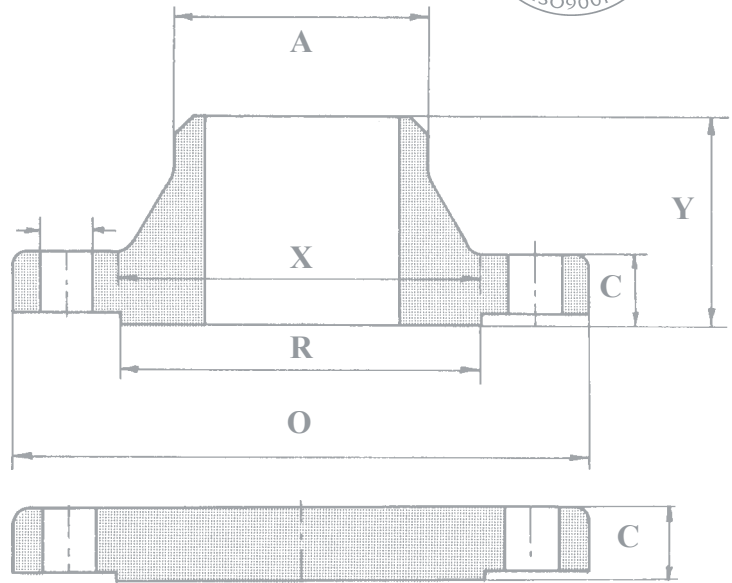


Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	785.9	41.1	44.5	88.9	684.3	661.9	711.2	744.5	36	22.4	3/4	9.7
28"	836.7	44.5	47.8	95.3	735.1	712.7	762.0	795.3	40	22.4	3/4	9.7
30"	887.5	44.5	50.8	100.1	787.4	763.5	812.8	846.1	44	22.4	3/4	9.7
32"	941.3	46.0	53.8	108.0	839.7	814.3	863.6	900.2	48	22.4	3/4	9.7
34"	1004.8	49.3	57.2	110.2	892.0	865.1	920.7	957.3	40	25.4	7/8	9.7
36"	1057.1	52.3	58.7	117.3	944.6	915.9	971.5	1009.6	44	25.4	7/8	9.7
38"	1124.0	53.8	63.5	124.0	997.0	968.3	1022.4	1069.8	40	28.4	1	9.7
40"	1174.8	55.6	66.5	128.5	1049.3	1019.0	1079.5	1120.6	44	28.4	1	9.7
42"	1225.6	58.7	68.3	133.4	1101.9	1069.8	1130.3	1171.4	48	28.4	1	11.2
44"	1276.4	60.5	71.4	136.7	1152.7	1120.6	1181.1	1222.2	52	28.4	1	11.2
46"	1341.4	62.0	74.7	144.5	1205.0	1171.4	1234.9	1284.2	40	31.8	1.1/8	11.2
48"	1392.2	65.0	77.7	149.4	1257.3	1222.2	1289.1	1335.0	44	31.8	1.1/8	11.2
50"	1443.0	68.3	80.8	153.9	1308.1	1273.0	1339.9	1385.8	48	31.8	1.1/8	11.2
52"	1494.0	69.9	84.1	157.3	1360.4	1323.8	1390.7	1436.6	52	31.8	1.1/8	11.2



150 Lbs

Welding Neck Flanges
Asme B 16.47 Series B



Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
54"	1549.4	71.4	87.4	162.1	1412.7	1374.6	1441.5	1492.3	56	31.8	1.1/8	11.2
56"	1600.20	73.2	90.4	166.6	1465.3	1425.4	1492.3	1543.1	60	31.8	1.1/8	14.3
58"	1674.9	74.7	93.5	174.8	1516.1	1476.2	1543.1	1611.4	48	35.1	1.1/4	14.3
60"	1725.7	76.2	96.8	179.3	1570.0	1527.0	1600.2	1662.2	52	35.1	1.1/4	14.3

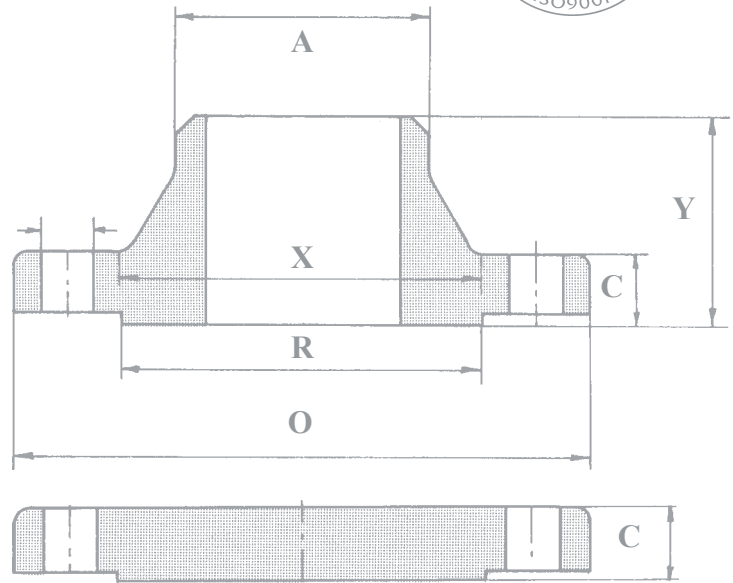
Technical Bulletin

Pipes Flanges and Fittings



300 Lbs

Welding Neck Flanges
Asme B 16.47 Series B

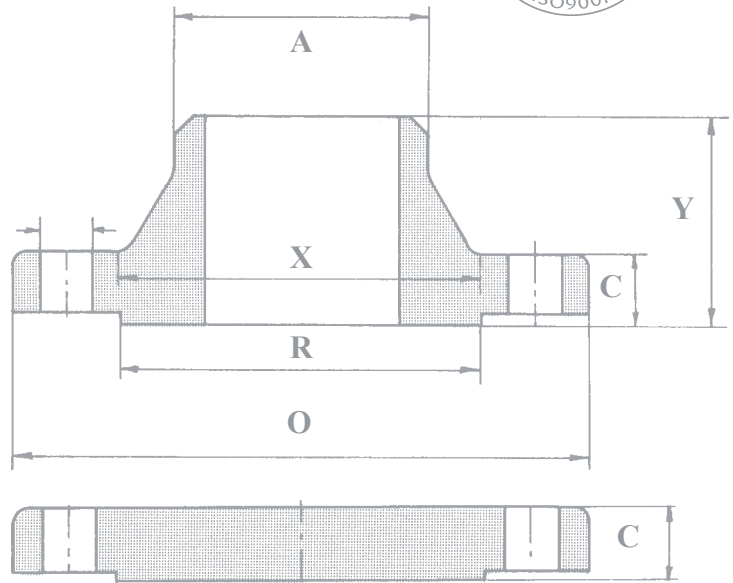


Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	866.6	88.9	88.9	144.5	701.5	665.2	736.6	803.1	32	35.1	1.1/4	14.2
28"	920.8	88.9	88.9	149.4	755.7	716.0	787.4	857.3	36	35.1	1.1/4	14.2
30"	990.6	93.7	93.7	158.0	812.8	768.4	844.6	920.8	36	38.1	1.3/8	14.2
32"	1054.1	103.1	103.1	168.1	863.6	819.2	901.7	977.9	32	41.1	1.1/2	15.7
34"	1107.9	103.1	103.1	173.0	917.4	870.0	952.5	1031.7	36	41.1	1.1/2	15.7
36"	1171.4	103.1	103.1	180.8	965.2	920.8	1009.7	1089.2	32	44.5	1.5/8	15.7
38"	1222.2	111.3	111.3	192.0	1016.0	971.6	1060.5	1140.0	36	44.5	1.5/8	15.7
40"	1273.0	115.8	115.8	198.4	1066.8	1022.4	1114.6	1190.8	40	44.5	1.5/8	15.7
42"	1333.5	119.1	119.1	204.7	1117.6	1074.7	1168.4	1244.6	36	47.8	1.3/4	15.7
44"	1384.3	127.0	127.0	214.4	1173.2	1125.5	1219.2	1295.4	40	47.8	1.3/4	15.7
46"	1460.5	128.5	130.0	222.3	1228.9	1176.3	1270.0	1365.3	36	50.8	1.7/8	15.7
48"	1511.3	128.5	134.9	223.8	1277.9	1227.1	1327.2	1416.1	40	50.8	1.7/8	15.7
50"	1562.1	138.2	139.7	235.0	1330.5	1277.9	1378.0	1466.9	44	50.8	1.7/8	15.7
52"	1612.9	142.7	144.3	242.8	1382.8	1328.7	1428.8	1517.7	48	50.8	1.7/8	15.7



400 Lbs

Welding Neck Flanges
Asme B 16.47 Series B



Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	850.9	88.9	88.9	149.4	688.8	660.4	711.2	781.1	28	38.1	1.3/8	11.2
28"	914.4	95.3	95.3	158.8	739.6	711.2	762.0	838.2	24	41.1	1.1/2	12.7
30"	971.6	101.6	101.6	169.9	793.8	762.0	819.2	895.4	28	41.1	1.1/2	12.7
32"	1035.1	108.0	108.0	179.3	844.6	812.8	873.3	952.5	28	44.5	1.5/8	12.7
34"	1085.9	111.3	111.3	187.5	898.7	863.6	927.1	1003.3	32	44.5	1.5/8	14.2
36"	1155.7	119.1	119.1	200.2	952.5	914.4	980.9	1066.8	28	47.8	1.3/4	14.2

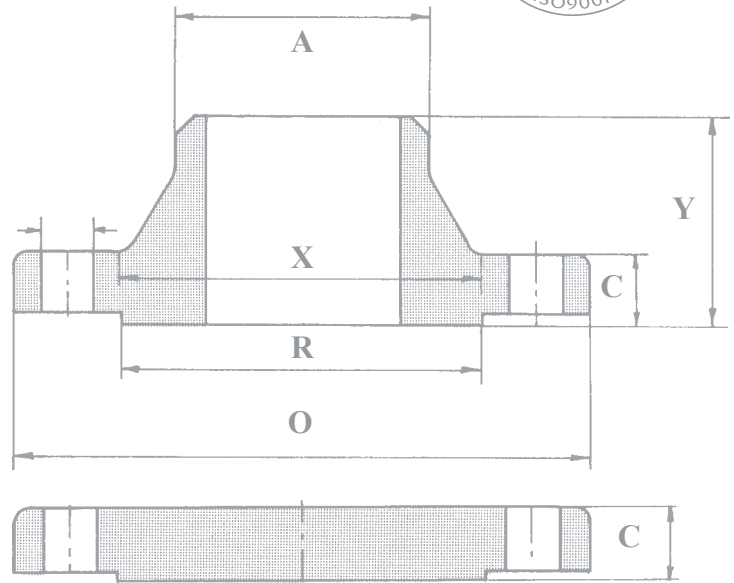
Technical Bulletin

Pipes Flanges and Fittings



600 Lbs

Welding Neck Flanges
Asme B 16.47 Series B



Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	889.0	111.3	111.3	180.8	698.5	660.4	726.9	806.5	28	44.5	1.5/8	12.7
28"	952.5	115.8	115.8	190.5	752.3	711.2	784.4	863.6	28	47.8	1.3/4	12.7
30"	1022.4	125.5	127.0	204.7	806.5	762.0	841.2	927.1	28	50.8	1.7/8	12.7
32"	1085.9	130.0	134.9	215.9	860.6	812.8	895.4	984.3	28	53.8	2	12.7
34"	1162.1	141.2	144.3	233.4	914.4	863.6	952.5	1054.1	24	60.5	2.1/4	14.2
36"	1212.9	146.1	150.9	242.8	968.2	914.4	1009.7	1104.9	28	60.5	2.1/4	14.2

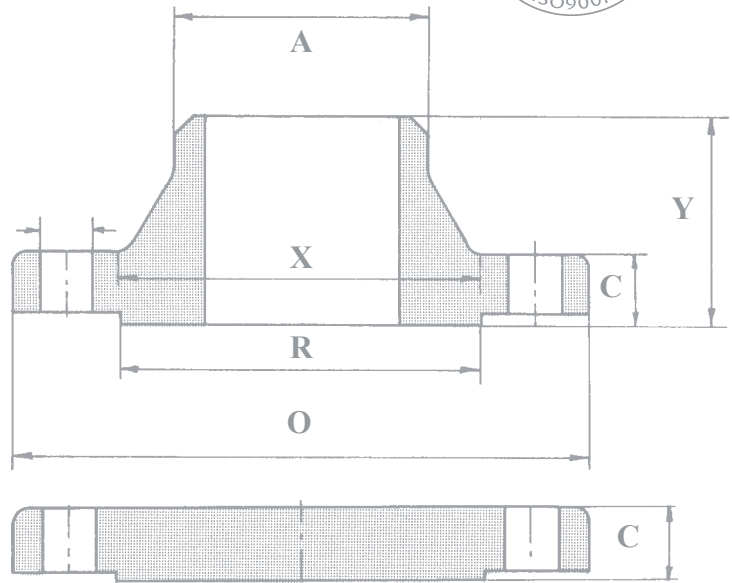
Technical Bulletin

Pipes Flanges and Fittings



900 Lbs

Welding Neck Flanges
Asme B 16.47 Serie B



Technical Bulletin

Pipes Flanges and Fittings

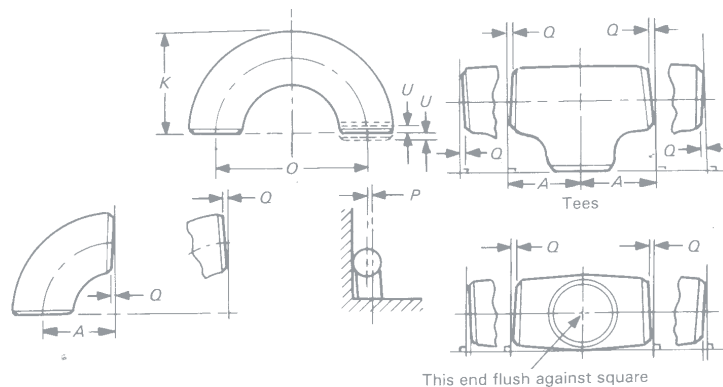
Nominal Pipe Size	Outside Diam. O	Thick-ness WNF C	Thick-ness Blind C	Length thru Hub Y	Diam. at Base of Hub X	Diam. Hub at Bevel A	O.D. of Race Face R	Bolt Circle Diameter	Number of Holes	Diam of Holes	Diam. of Bolt in inch	Radius at base of Hub
26"	1022.4	134.9	153.9	258.8	743.0	660.4	762.0	901.7	20	66.5	2.1/2	11.2
28"	1104.9	147.6	166.6	276.4	797.1	711.2	819.2	971.6	20	73.2	2.3/4	12.7
30"	1181.1	155.4	176.0	289.1	850.9	762.0	876.3	1035.1	20	79.2	3	12.7
32"	1238.3	160.3	185.7	303.3	908.1	812.8	927.1	1092.2	20	79.2	3	12.7
34"	1314.5	171.5	195.1	319.0	962.2	863.6	990.6	1155.7	20	85.9	3.1/4	14.2
36"	1346.2	173.0	201.7	325.4	1016.0	914.4	1028.7	1200.2	24	79.2	3	14.2

ASME B 16.9

Dimensional Tolerances

All Fittings				90 deg. and 45 deg. Elbows and Tees	3D Radius Elbows	Reducers and Lap Joint Stub Ends	Caps	180 deg. Returns			Lap Joint Stub Ends		
Nominal Pipe Size (NPS)	Outside Diameter at Bevel + Tol. (3-4) D	Outside Diameter at Bevel - Tol. (3-4) D	Inside Diameter at End (3 -5)	Center to End A,B,C,M	Center to End A,B	Overall Length F,H	Overall Length E	Center to-Center Dimen. O	Back to Face K	Alignment of Ends U	Outside Diameter of Lap G	Fillet Radius of Lap R	Thick-ness of Lap
½" - 2.½"	+ 1.6	- 0.8	0.8	2	3	2	3	6	6	1	+0 / -1	+0 / -1	+1.6 / -0
3" - 3.½"	+ 1.6	- 1.6	1.6	2	3	2	3	6	6	1	+0 / -1	+0 / -1	+1.6 / -0
4"	+ 1.6	- 1.6	1.6	2	3	2	3	6	6	1	+0 / -1	+0 / -2	+1.6 / -0
5" - 8"	+ 2.4	- 1.6	1.6	2	3	2	6	6	6	1	+0 / -1	+0 / -2	+1.6 / -0
10" - 18"	+ 4.0	- 3.2	3.2	2	3	2	6	10	6	2	+0 / -2	+0 / -2	+3.2 / -0
20" - 24"	+ 6.4	- 4.8	4.8	2	3	2	6	10	6	2	+0 / -2	+0 / -2	+3.2 / -0
26" - 30"	+ 6.4	- 4.8	4.8	3	6	5	10	...	...	...	...	...	...
32" - 48"	+ 6.4	- 4.8	4.8	5	6	5	10	...	...	...	...	...	...

Nominal Pipe Size (NPS)	Angularity Tol.	
	Off Angle Q	Off Plane P
½" to 4"	1	2
5" to 8"	2	4
10" to 12"	3	5
14" to 16"	3	6
18" to 24"	4	10
26" to 30"	5	10
32" to 42"	5	13
44" to 48"	5	19



This end flush against square

General Note : Dimensions are in millimeters (except NPS). Tolerances are equal plus and minus except as noted.

Notes:

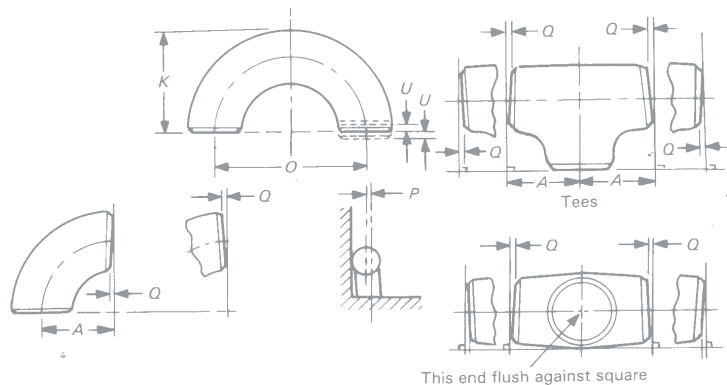
- (1) The inside diameter at the ends and the nominal wall thickness are to be specified by the purchaser.
- (2) A minimum wall thickness of 87.5% applies unless the purchaser specifies a different wall thickness tolerance.
- (3) Out-of-round is the sum of absolute values of plus and minus tolerance.
- (4) This tolerance may not apply in localized areas of formed fittings where increased wall thickness is required to meet design requirements.
- (5) Unless otherwise specified by the purchaser, these tolerances apply to the nominal inside diameter, which equals the difference between the nominal outside diameter and twice the nominal wall thickness.

MSS SP43

Dimensional Tolerances

All Fittings				90 deg. and 45 deg. Elbows and Tees	Reducers and Lap Joint Stub Ends	Caps	180 deg. Returns			Lap Joint Stub Ends		
Nominal Pipe Size (NPS)	Outside Diameter at Bevel (1) D + Tol.	Outside Diameter at Bevel (1) D - Tol.	Wall Thickness T	Center to End A,B,C,M	Overall Length F,H	Overall Length E	Center to-Center Dimen. O	Back to Face K	Alignment of Ends U	Fillet Radius of Lap A	Outside Diameter of Lap G	Thickness of Lap T
½" - 1½"	0.8mm	0.8mm	Not less than 87.5% of nominal thickness.	1.6mm	1.6mm	3.2mm	6.4mm	6.4mm	0.8mm	+0 / -0.8mm	+0 / -0.8mm	+1.6 / -0
2" - 3½"	0.8mm	0.8mm		1.6mm	1.6mm	3.2mm	6.4mm	6.4mm	0.8mm	+0 / -0.8mm	+0 / -0.8mm	+1.6 / -0
4"	0.8mm	0.8mm		1.6mm	1.6mm	3.2mm	6.4mm	6.4mm	0.8mm	+0 / -1.6mm	+0 / -0.8mm	+1.6 / -0
5" - 8"	+1.6mm	0.8mm		1.6mm	1.6mm	6.4mm	6.4mm	6.4mm	0.8mm	+0 / -1.6mm	+0 / -0.8mm	+1.6 / -0
10" - 18"	+2.4mm	0.8mm		2.4mm	2.4mm	6.4mm	9.7mm	6.4mm	1.6mm	+0 / -1.6mm	+0 / -1.6mm	+1.6 / -0
20" - 24"	+3.2mm	0.8mm		2.4mm	2.4mm	6.4mm	9.7mm	6.4mm	1.6mm	+0 / -1.6mm	+0 / -1.6mm	+1.6 / -0

Nominal Pipe Size (NPS)	Angularity Tol.	
	Off Angle Q	Off Plane P
½" - 4"	1	2
5" - 8"	2	4
10" - 18"	3	5
20 - 24"	4	10



General Note : Dimensions are in millimeters (except NPS). Tolerances are equal plus and minus except as noted.

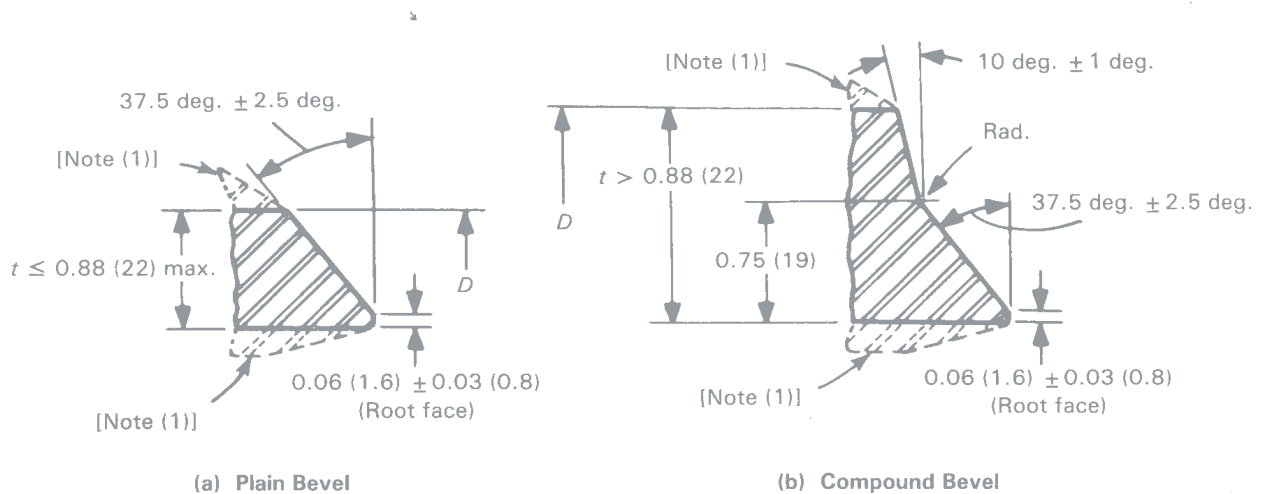
Notes:

- (1) The inside diameter at the ends and the nominal wall thickness are to be specified by the purchaser.
- (2) A minimum wall thickness of 87.5% applies unless the purchaser specifies a different wall thickness tolerance.
- (3) Out-of-round is the sum of absolute values of plus and minus tolerance.
- (4) This tolerance may not apply in localized areas of formed fittings where increased wall thickness is required to meet design requirements.
- (5) Unless otherwise specified by the purchaser, these tolerances apply to the nominal inside diameter, which equals the difference between the nominal outside diameter and twice the nominal wall thickness.

Welding Ends

ASME B 16.9 and MSS-SP43

Welding end and Root Face to ASME / ANSI B 16.9 and ASME / ANSI B 28 are in accordance to ASME / ANSI B 16.25

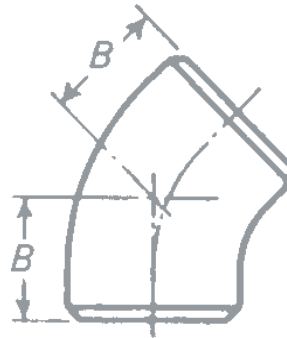


Nominal Pipe Wall Thickness (t)	End of Preparation
Less than x*	Cut square or slightly chamfer, at manufacturer's option.
x* to 22 mm incl.	Plain bevel as in sketch above.(A)
More than 22 mm.	Compound bevel as in sketch above. (B)

x* : 4 mm for AUSTENITIC ALLOY STEEL.
Taper Boring: max slope 1 : 3

ASME B 16.9

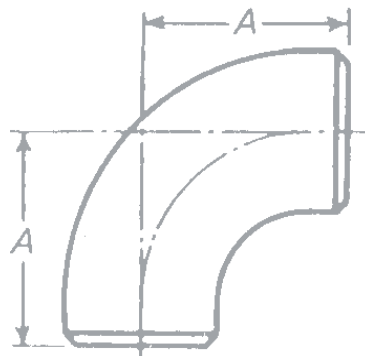
Elbows L.R.45 degrees



Nominal Pipe Size (NPS)	Outside Diameter Pipe	Wall thickness of Pipe Schedule / mm				B	Theoretical Weights kg / piece					
		Inch	mm	5 S	10 S		40 S	80 S	mm	5 S	10 S	40 S	80 S
1/2"	21.3			1.65	2.11	2.77	3.73	16	0.02	0.03	0.04	0.05
3/4"	26.7			1.65	2.11	2.87	3.91	19	0.02	0.03	0.04	0.05
1"	33.4			1.65	2.77	3.38	4.55	22	0.04	0.06	0.08	0.10
1.1/4"	42.2			1.65	2.77	3.56	4.85	25	0.06	0.10	0.13	0.17
1.1/2"	48.3			1.65	2.77	3.68	5.08	29	0.09	0.14	0.18	0.25
2"	60.3			1.65	2.77	3.91	5.54	35	0.14	0.24	0.33	0.45
2.1/2"	73.0			2.11	3.05	5.16	7.01	44	0.28	0.40	0.65	0.86
3"	88.9			2.11	3.05	5.49	7.62	51	0.41	0.59	1.03	1.39
3.1/2"	101.6			2.11	3.05	5.74	8.08	57	0.55	0.79	1.44	1.98
4"	114.3			2.11	3.05	6.02	8.56	64	0.71	1.01	1.95	2.70
5"	141.3			2.77	3.40	6.55	9.53	79	1.43	1.75	3.30	4.96
6"	168.3			2.77	3.40	7.11	10.97	95	2.06	2.52	5.16	7.77
8"	219.1			2.77	3.76	8.18	12.70	127	3.59	4.85	10.34	15.72
10"	273.0			3.40	4.19	9.27	12.70	159	6.87	8.44	18.32	24.77
12"	323.9			3.96	4.57	9.53	12.70	190	11.38	13.11		
14"	355.6			3.96	4.78			222	14.59	17.57		
16"	406.4			4.19	4.78			254	20.21	23.02		
18"	457.0			4.19	4.78			286	25.59	29.15		
20"	508.0			4.78	5.54			318	36.03	41.70		
22"	559.0			4.78	5.54			343	43.64	50.51		
24"	610.0			5.54	6.35			381	60.17	68.87		

ASME B 16.9

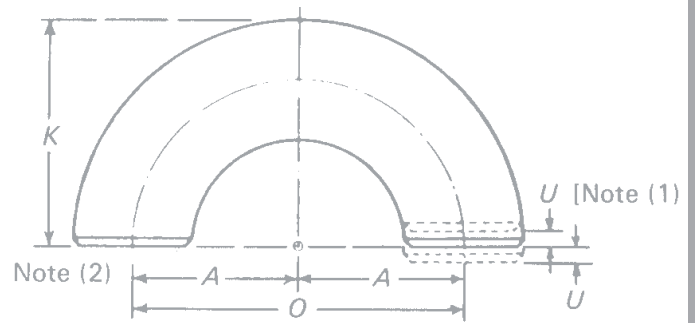
Elbows L.R.90 degrees



Nominal Pipe Size (NPS)	Outside Diameter Pipe	Wall thickness of Pipe Schedule / mm				A	Theoretical Weights kg / piece					
		inch	mm	5 S	10 S		40 S	80 S	mm	5 S	10 S	40 S	80 S
1/2"	21.3			1.65	2.11	2.77	3.73	38	0.05	0.06	0.08	0.10
3/4"	26.7			1.65	2.11	2.87	3.91	38	0.05	0.06	0.08	0.10
1"	33.4			1.65	2.77	3.38	4.55	38	0.08	0.13	0.15	0.20
1.1/4"	42.2			1.65	2.77	3.56	4.85	48	0.13	0.21	0.26	0.34
1.1/2"	48.3			1.65	2.77	3.68	5.08	57	0.17	0.28	0.37	0.49
2"	60.3			1.65	2.77	3.91	5.54	76	0.29	0.48	0.66	0.91
2.1/2"	73.0			2.11	3.05	5.16	7.01	95	0.56	0.80	1.31	1.73
3"	88.9			2.11	3.05	5.49	7.62	114	0.82	1.17	2.05	2.78
3.1/2"	101.6			2.11	3.05	5.74	8.08	133	1.10	1.57	2.88	3.95
4"	114.3			2.11	3.05	6.02	8.56	152	1.41	2.03	3.90	5.41
5"	141.3			2.77	3.40	6.55	9.53	190	2.87	3.50	6.59	9.38
6"	168.3			2.77	3.40	7.11	10.97	229	4.13	5.05	10.32	15.54
8"	219.1			2.77	3.76	8.18	12.70	305	7.19	9.71	20.69	31.43
10"	273.0			3.40	4.19	9.27	12.70	381	13.74	16.88	36.64	49.54
12"	323.9			3.96	4.57	9.53	12.70	457	22.76	26.22	53.83	71.01
14"	355.6			3.96	4.78			533	29.18	35.14		
16"	406.4			4.19	4.78			610	40.42	46.04		
18"	457.0			4.19	4.78			686	51.17	58.30		
20"	508.0			4.78	5.54			762	72.06	83.40		
22"	559.0			4.78	5.54			838	87.28	101.02		
24"	610.0			5.54	6.35			914	120.34	137.75		

ASME B 16.9

Elbows L.R.180 degrees

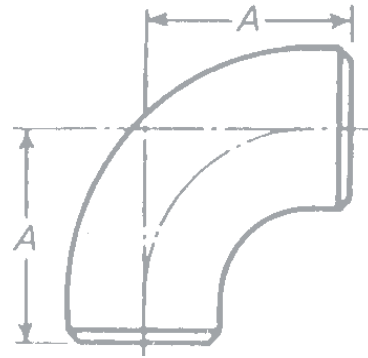


Note (1) = See table of tolerances for alignment of ends U.

Nominal Pipe Size (NPS)	Outside Dia. Pipe	Wall thickness of Pipe Schedule / mm				O	K	Theoretical Weights kg / piece			
		5 S	10 S	40 S	80 S			5 S	10 S	40 S	80 S
Inch	mm					mm	mm				
1/2"	21.3	1.65	2.11	2.77	3.73	76	48	0.10	0.12	0.15	0.20
3/4"	26.7	1.65	2.11	2.87	3.91	76	51	0.09	0.12	0.16	0.20
1"	33.4	1.65	2.77	3.38	4.55	76	56	0.16	0.25	0.30	0.39
1.1/4"	42.2	1.65	2.77	3.56	4.85	95	70	0.25	0.41	0.52	0.68
1.1/2"	48.3	1.65	2.77	3.68	5.08	114	83	0.35	0.57	0.74	0.98
2"	60.3	1.65	2.77	3.91	5.54	152	106	0.58	0.95	1.32	1.81
2.1/2"	73.0	2.11	3.05	5.16	7.01	191	132	1.12	1.59	2.61	3.46
3"	88.9	2.11	3.05	5.49	7.62	229	159	1.64	2.35	4.10	5.55
3.1/2"	101.6	2.11	3.05	5.74	8.08	267	184	2.20	3.14	5.75	7.90
4"	114.3	2.11	3.05	6.02	8.56	305	210	2.83	4.06	7.79	10.82
5"	141.3	2.77	3.40	6.55	9.53	381	262	5.73	7.00	13.19	18.76
6"	168.3	2.77	3.40	7.11	10.97	457	313	8.26	10.10	20.64	31.08
8"	219.1	2.77	3.76	8.18	12.70	610	414	14.37	19.42	41.38	62.87
10"	273.0	3.40	4.19	9.27	12.70	762	518	27.47	33.76	73.27	99.08
12"	323.9	3.96	4.57	9.53	12.70	914	619	45.53	52.44		
14"	355.6	3.96	4.78			1067	711	58.36	70.28		
16"	406.4	4.19	4.78			1219	813	80.84	92.08		
18"	457.0	4.19	4.78			1372	914	102.34	116.60		
20"	508.0	4.78	5.54			1514	1016	144.13	166.79		
22"	559.0	4.78	5.54			1676	1118	174.57	202.05		
24"	610.0	5.54	6.35			1676	1219	240.68	275.50		

ASME B 16.9

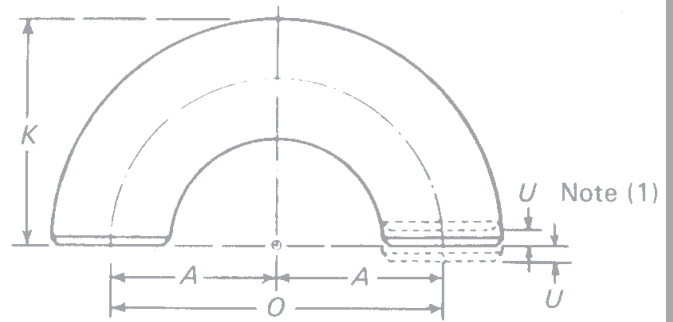
Elbows S.R. 90 degrees



Nominal Pipe Size (NPS)	Outside Diameter Pipe	Wall thickness of Pipe Schedule / mm				A	Theoretical Weights kg / piece					
		inch	mm	5 S	10 S		40 S	80 S	mm	5 S	10 S	40 S
1"	33.4			1.65	2.77	3.38	4.55	25	0.05	0.08	0.10	0.13
1.1/4"	42.2			1.65	2.77	3.56	4.85	32	0.08	0.14	0.17	0.23
1.1/2"	48.3			1.65	2.77	3.68	5.08	38	0.12	0.19	0.25	0.33
2"	60.3			1.65	2.77	3.91	5.54	51	0.19	0.32	0.44	0.61
2.1/2"	73.0			2.11	3.05	5.16	7.01	64	0.38	0.54	0.88	1.16
3"	88.9			2.11	3.05	5.49	7.62	76	0.55	0.78	1.37	1.85
3.1/2"	101.6			2.11	3.05	5.74	8.08	89	0.73	1.05	1.93	2.64
4"	114.3			2.11	3.05	6.02	8.56	102	0.95	1.36	2.61	3.63
5"	141.3			2.77	3.40	6.55	9.53	127	1.92	2.34	4.41	6.27
6"	168.3			2.77	3.40	7.11	10.97	152	2.74	3.35	6.85	10.31
8"	219.1			2.77	3.76	8.18	12.70	203	4.78	6.46	13.77	20.92
10"	273.0			3.40	4.19	9.27	12.70	254	9.16	11.25	24.42	33.03
12"	323.9			3.96	4.57	9.53	12.70	305	15.19	17.50	35.93	47.39
14"	355.6			3.96	4.78			356	19.49	23.47		
16"	406.4			4.19	4.78			406	26.90	30.64		
18"	457.0			4.19	4.78			457	34.09	38.84		
20"	508.0			4.78	5.54			508	48.04	55.60		
22"	559.0			4.78	5.54			559	58.22	67.39		
24"	610.0			5.54	6.35			610	80.31	91.93		

ASME B 16.9

Elbows S.R.180 degrees

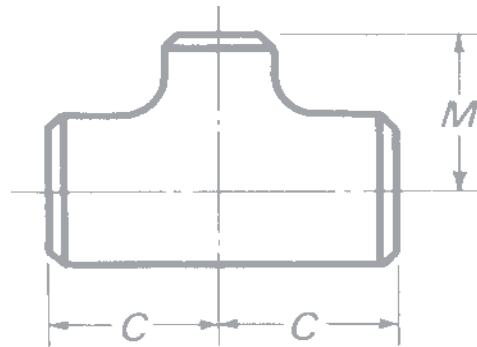


Note 1 = See table of tolerances for ASME B 16.9

Nominal Pipe Size (NPS)	Outside Dia. Pipe	Wall thickness of Pipe Schedule / mm				O	K	Theoretical Weights kg / piece			
		5 S	10 S	40 S	80 S			5 S	10 S	40 S	80 S
Inch	mm					mm	mm				
1"	33.4	1.65	2.77	3.38	4.55	51	41	0.10	0.17	0.20	0.26
1.1/4"	42.2	1.65	2.77	3.56	4.85	64	52	0.17	0.27	0.35	0.46
1.1/2"	48.3	1.65	2.77	3.68	5.08	76	62	0.23	0.38	0.49	0.66
2"	60.3	1.65	2.77	3.91	5.54	102	81	0.39	0.64	0.88	1.22
2.1/2"	73.0	2.11	3.05	5.16	7.01	127	100	0.75	1.07	1.76	2.33
3"	88.9	2.11	3.05	5.49	7.62	152	121	1.09	1.56	2.74	3.70
3.1/2"	101.6	2.11	3.05	5.74	8.08	178	140	1.47	2.10	3.85	5.29
4"	114.3	2.11	3.05	6.02	8.56	203	159	1.90	2.72	5.23	7.26
5"	141.3	2.77	3.40	6.55	9.53	254	197	3.83	4.68	8.81	12.54
6"	168.3	2.77	3.40	7.11	10.97	305	237	5.48	6.70	13.70	20.63
8"	219.1	2.77	3.76	8.18	12.70	406	313	9.57	12.92	27.54	41.84
10"	273.0	3.40	4.19	9.27	12.70	508	391	18.31	22.50	48.85	66.05
12"	323.9	3.96	4.57	9.53	12.70	610	467	30.39	35.00	71.85	94.79
14"	355.6	3.96	4.78			711	533	38.98	46.94		
16"	406.4	4.19	4.78			813	610	53.80	61.29		
18"	457.0	4.19	4.78			914	686	68.18	77.68		
20"	508.0	4.78	5.54			1016	762	96.09	111.20		
22"	559.0	4.78	5.54			1118	838	116.45	134.78		
24"	610.0	5.54	6.35			1219	914	160.63	183.87		

ASME B 16.9

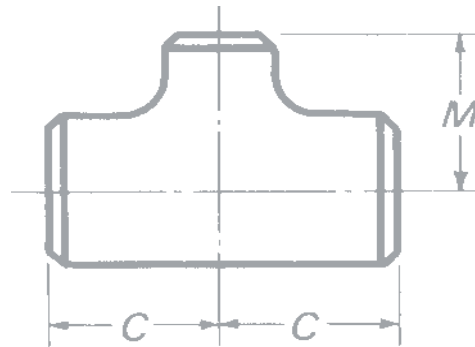
Straight Tees



Nominal Pipe Size (NPS)	Outside Diameter Pipe	Wall thickness of Pipe Schedule / mm				C = M	Theoretical Weights kg / piece			
		5 S	10 S	40 S	80 S		5 S	10 S	40 S	80 S
Inch	mm					mm				
1/2"	21.3	1.65	2.11	2.77	3.73	25	0.05	0.07	0.08	0.11
3/4"	26.7	1.65	2.11	2.87	3.91	29	0.08	0.10	0.13	0.16
1"	33.4	1.65	2.77	3.38	4.55	38	0.13	0.21	0.25	0.32
1.1/4"	42.2	1.65	2.77	3.56	4.85	48	0.21	0.34	0.42	0.56
1.1/2"	48.3	1.65	2.77	3.68	5.08	57	0.28	0.46	0.60	0.81
2"	60.3	1.65	2.77	3.91	5.54	64	0.39	0.65	0.89	1.23
2.1/2"	73.0	2.11	3.05	5.16	7.01	76	0.72	1.02	1.68	2.22
3"	88.9	2.11	3.05	5.49	7.62	86	0.98	1.40	2.45	3.31
3.1/2"	101.6	2.11	3.05	5.74	8.08	95	1.23	1.76	3.23	4.43
4"	114.3	2.11	3.05	6.02	8.56	105	1.53	2.19	4.21	5.84
5"	141.3	2.77	3.40	6.55	9.53	124	2.89	3.54	6.66	9.47
6"	168.3	2.77	3.40	7.11	10.97	143	3.96	4.84	9.89	14.90
8"	219.1	2.77	3.76	8.18	12.70	178	6.37	8.60	18.33	27.85
10"	273.0	3.40	4.19	9.27	12.70	216	11.74	14.42	31.31	42.34
12"	323.9	3.96	4.57	9.53	12.70	254	19.03	21.92	45.00	59.36
14"	355.6	3.96	4.78			279	22.98	27.67		
16"	406.4	4.19	4.78			305	30.03	34.20		
18"	457.0	4.19	4.78			343	38.01	43.31		
20"	508.0	4.78	5.54			381	53.52	61.94		
22"	559.0	4.78	5.54			419	64.82	91.60		
24"	610.0	5.54	6.35			432	83.06	995.08		

ASME B 16.9

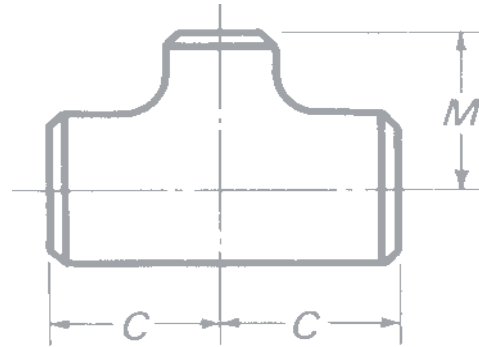
Reducing Tees



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness of pipe Schedule / mm.								Length in mm C	Length in mm M
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End		
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S			
1/2 x 1/2 x 3/8	21.3	17.1			2.11	1.65	2.77	2.31	3.73	3.20	25	25
1/2 x 1/2 x 1/4	21.3	13.7			2.11	1.65	2.77	2.24	3.73	3.02	25	25
3/4 x 3/4 x 1/2	26.7	21.3	1.65	1.65	2.11	2.11	2.87	2.77	3.91	3.73	29	29
3/4 x 3/4 x 3/8	26.7	17.1			2.11	1.65	2.87	2.31	3.91	3.20	29	29
1 x 1 x 3/4	33.4	26.7	1.65	1.65	2.77	2.11	3.38	2.87	4.55	3.91	38	38
1 x 1 x 1/2	33.4	21.3	1.65	1.65	2.77	2.11	3.38	2.77	4.55	3.73	38	38
1.1/4x1.1/4x 1	42.2	33.4	1.65	1.65	2.77	2.77	3.56	3.38	4.85	4.55	48	48
1.1/4x1.1/4x3/4	42.2	26.7	1.65	1.65	2.77	2.11	3.56	2.87	4.85	3.91	48	48
1.1/4x1.1/4x1/2	42.2	21.3	1.65	1.65	2.77	2.11	3.56	2.77	4.85	3.73	48	48
1.1/2x1.1/2x1.1/4	48.3	42.2	1.65	1.65	2.77	2.77	3.68	3.56	5.08	4.85	57	57
1.1/2x1.1/2x1	48.3	33.4	1.65	1.65	2.77	2.77	3.68	3.38	5.08	4.55	57	57
1.1/2x1.1/2x3/4	48.3	26.7	1.65	1.65	2.77	2.11	3.68	2.87	5.08	3.91	57	57
1.1/2x1.1/2x1/2	48.3	21.3	1.65	1.65	2.77	2.11	3.68	2.77	5.08	3.73	57	57
2 x 2 x 1.1/2	60.3	48.3	1.65	1.65	2.77	2.77	3.91	3.68	5.54	5.08	64	60
2 x 2 x 1.1/4	60.3	42.2	1.65	1.65	2.77	2.77	3.91	3.56	5.54	4.85	64	57
2 x 2 x 1	60.3	33.4	1.65	1.65	2.77	2.77	3.91	3.38	5.54	4.55	64	51
2 x 2 x 3/4	60.3	26.7	1.65	1.65	2.77	2.11	3.91	2.87	5.54	3.91	64	44
2.1/2x2.1/2x2	73.0	60.3	2.11	1.65	3.05	2.77	5.16	3.91	7.01	5.54	76	70
2.1/2x2.1/2x1.1/2	73.0	48.3	2.11	1.65	3.05	2.77	5.16	3.68	7.01	5.08	76	67
2.1/2x2.1/2x1.1/4	73.0	42.2	2.11	1.65	3.05	2.77	5.16	3.56	7.01	4.85	76	64
2.1/2x2.1/2x1	73.0	33.4	2.11	1.65	3.05	2.77	5.16	3.38	7.01	4.55	76	57

ASME B 16.9

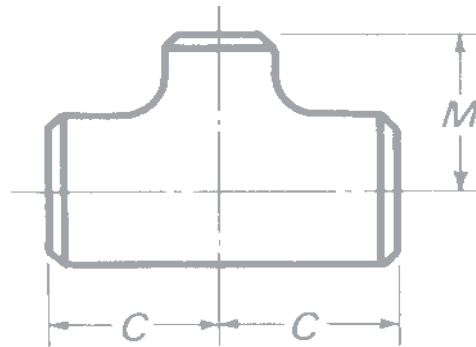
Reducing Tees



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness of pipe Schedule / mm.								Length in mm C	Length in mm M
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End		
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S			
3 x3 x2 1/2	88.9	73.0	2.11	2.11	3.05	3.05	5.49	5.16	7.62	7.01	86	83
3 x3 x2	88.9	60.3	2.11	1.65	3.05	2.77	5.49	3.91	7.62	5.54	86	76
3 x3 x1 1/2	88.9	48.3	2.11	1.65	3.05	2.77	5.49	3.68	7.62	5.08	86	73
3 x3 x1 1/4	88.9	42.2	2.11	1.65	3.05	2.77	5.49	3.56	7.62	4.85	86	70
3 1/2 x 3 1/2 x 3	101.6	88.9	2.11	2.11	3.05	3.05	5.74	5.49	8.08	7.62	95	92
3 1/2 x 3 1/2 x 2 1/2	101.6	73.0	2.11	2.11	3.05	3.05	5.74	5.16	8.08	7.01	95	89
3 1/2 x 3 1/2 x 2	101.6	60.3	2.11	1.65	3.05	2.77	5.74	3.91	8.08	5.54	95	83
3 1/2 x 3 1/2 x 1 1/2	101.6	48.3	2.11	1.65	3.05	2.77	5.74	3.68	8.08	5.08	95	79
4 x4 x3 1/2	114.3	101.6	2.11	2.11	3.05	3.05	6.02	5.74	8.56	8.08	105	102
4 x4 x3	114.3	88.9	2.11	2.11	3.05	3.05	6.02	5.49	8.56	7.62	105	98
4 x4 x2 1/2	114.3	73.0	2.11	2.11	3.05	3.05	6.02	5.16	8.56	7.01	105	95
4 x4 x2	114.3	60.3	2.11	1.65	3.05	2.77	6.02	3.91	8.56	5.54	105	89
4 x4 x1 1/2	114.3	48.3	2.11	1.65	3.05	2.77	6.02	3.68	8.56	5.08	105	86
5 x5 x4	141.3	114.3	2.77	2.11	3.40	3.05	6.55	6.02	9.53	8.56	124	117
5 x5 x3 1/2	141.3	101.6	2.77	2.11	3.40	3.05	6.55	5.74	9.53	8.08	124	114
5 x5 x3	141.3	88.9	2.77	2.11	3.40	3.05	6.55	5.49	9.53	7.62	124	111
5 x5 x2 1/2	141.3	73.0	2.77	2.11	3.40	3.05	6.55	5.16	9.53	7.01	124	108
5 x5 x2	141.3	60.3	2.77	1.65	3.40	2.77	6.55	3.91	9.53	5.54	124	105
6 x6 x5	168.3	141.3	2.77	2.77	3.40	3.40	7.11	6.55	10.97	9.53	143	137
6 x6 x4	168.3	114.3	2.77	2.11	3.40	3.05	7.11	6.02	10.97	8.56	143	130
6 x6 x3 1/2	168.3	101.6	2.77	2.11	3.40	3.05	7.11	5.74	10.97	8.08	143	127
6 x6 x3	168.3	88.9	2.77	2.11	3.40	3.05	7.11	5.49	10.97	7.62	143	124
6 x6 x2 1/2	168.3	73.0	2.77	2.11	3.40	3.05	7.11	5.16	10.97	7.01	143	121

ASME B 16.9

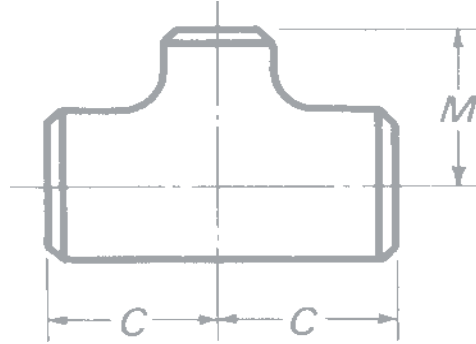
Reducing Tees



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness of pipe Schedule / mm.								Length in mm C	Length in mm M
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End		
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S			
8 x8 x6	219.1	168.3	2.77	2.77	3.76	3.40	8.18	7.11	12.70	10.97	178	168
8 x8 x5	219.1	141.3	2.77	2.77	3.76	3.40	8.18	6.55	12.70	9.53	178	162
8 x8 x4	219.1	114.3	2.77	2.11	3.76	3.05	8.18	6.02	12.70	8.56	178	156
8 x8 x31.2	219.1	101.6	2.77	2.11	3.76	3.05	8.18	5.74	12.70	8.08	178	152
10 x10 x8	273.1	219.1	3.40	2.77	4.19	3.76	9.27	8.18	12.70	12.70	216	203
10 x10 x6	273.1	168.3	3.40	2.77	4.19	3.40	9.27	7.11	12.70	10.97	216	194
10 x10 x5	273.1	141.3	3.40	2.77	4.19	3.40	9.27	6.55	12.70	9.53	216	191
10 x10 x4	273.1	114.3	3.40	2.11	4.19	3.05	9.27	6.02	12.70	8.56	216	184
12 x12 x10	323.9	273.1	3.96	3.40	4.57	4.19	9.53	9.27	12.70	12.70	254	241
12 x12 x8	323.9	219.1	3.96	2.77	4.57	3.76	9.53	8.28	12.70	12.70	254	229
12 x12 x6	323.9	168.3	3.96	2.77	4.57	3.40	9.53	7.11	12.70	10.97	254	219
12 x12 x5	323.9	141.3	3.96	2.77	4.57	3.40	9.53	6.55	12.70	9.53	254	216
14 x14 x12	355.6	323.9	3.96	3.96	4.78	4.57					279	270
14 x14 x10	355.6	273.1	3.96	3.40	4.78	4.19					279	257
14 x14 x8	355.6	219.1	3.96	2.77	4.78	3.76					279	248
14 x14 x6	355.6	168.3	3.96	2.77	4.78	3.40					279	238
16 x16 x14	406.4	355.6	4.19	3.96	4.78	4.78					305	305
16 x16 x12	406.4	323.9	4.19	3.96	4.78	4.57					305	295
16 x16 x10	406.4	273.1	4.19	3.40	4.78	4.19					305	283
16 x16 x8	406.4	219.1	4.19	2.77	4.78	3.76					305	273
16 x16 x6	406.4	168.3	4.19	2.77	4.78	3.40					305	264

ASME B 16.9

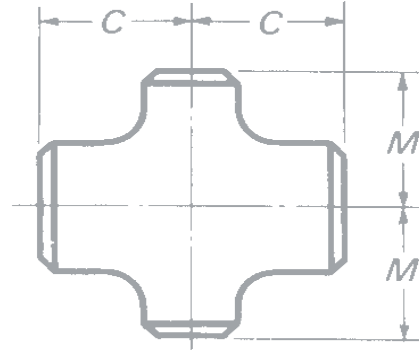
Reducing Tees



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness of pipe Schedule / mm.								Length in mm C	Length in mm M
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End		
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S			
18 x18 x16	457.0	406.4	4.19	4.19	4.78	4.78					343	330
18 x18 x14	457.0	355.6	4.19	3.96	4.78	4.78					343	330
18 x18 x12	457.0	323.9	4.19	3.96	4.78	4.57					343	321
18 x18 x10	457.0	273.1	4.19	3.40	4.78	4.19					343	308
18 x18 x8	457.0	219.1	4.19	2.77	4.78	3.76					343	298
20 x20 x18	508.0	457.0	4.78	4.19	5.54	4.78					381	368
20 x20 x16	508.0	406.4	4.78	4.19	5.54	4.78					381	356
20 x20 x14	508.0	355.6	4.78	3.96	5.54	4.78					381	356
20 x20 x12	508.0	323.9	4.78	3.96	5.54	4.57					381	346
20 x20 x10	508.0	273.1	4.78	3.40	5.54	4.19					381	333
20 x20 x8	508.0	219.1	4.78	2.77	5.54	3.76					381	324
22 x22 x20	559.0	508.0	4.78	4.78	5.54	5.54					419	406
22 x22 x18	559.0	457.0	4.78	4.19	5.54	4.78					419	394
22 x22 x16	559.0	406.4	4.78	4.19	5.54	4.78					419	381
22 x22 x14	559.0	355.6	4.78	3.96	5.54	4.78					419	381
22 x22 x12	559.0	323.9	4.78	3.96	5.54	4.57					419	371
22 x22 x10	559.0	273.1	4.78	3.40	5.54	4.19					419	359
24 x24 x22	610.0	559.0	5.54	4.78	6.35	5.54					423	432
24 x24 x20	610.0	508.0	5.54	4.78	6.35	5.54					432	432
24 x24 x18	610.0	457.0	5.54	4.19	6.35	4.78					432	419
24 x24 x16	610.0	406.4	5.54	4.19	6.35	4.78					432	406
24 x24 x14	610.0	355.6	5.54	3.96	6.35	4.78					432	406
24 x24 x12	610.0	323.9	5.54	3.96	6.35	4.57					432	397
24 x24 x10	610.0	273.1	5.54	3.40	6.35	4.19					432	384

ASME B 16.9

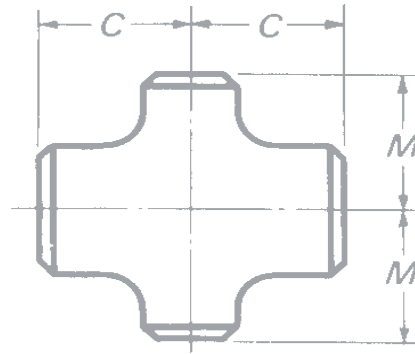
Straight Crosses



Nominal Pipe Size (NPS)	Outside Diameter Pipe	Wall thickness of Pipe Schedule / mm				C = M	Theoretical Weights kg / piece					
		Inch	mm	5 S	10 S		40 S	80 S	mm	5 S	10 S	40 S	80 S
1/2"	21.3			1.65	2.11	2.77	3.73	25	0.05	0.07	0.08	0.11
3/4"	26.7			1.65	2.11	2.87	3.91	29	0.08	0.10	0.13	0.16
1"	33.4			1.65	2.77	3.38	4.55	38	0.13	0.21	0.25	0.32
1.1/4"	42.2			1.65	2.77	3.56	4.85	48	0.21	0.34	0.42	0.56
1.1/2"	48.3			1.65	2.77	3.68	5.08	57	0.28	0.46	0.60	0.81
2"	60.3			1.65	2.77	3.91	5.54	64	0.39	0.65	0.89	1.23
2.1/2"	73.0			2.11	3.05	5.16	7.01	76	0.72	1.02	1.68	2.22
3"	88.9			2.11	3.05	5.49	7.62	86	0.98	1.40	2.45	3.31
3.1/2"	101.6			2.11	3.05	5.74	8.08	95	1.23	1.76	3.23	4.43
4"	114.3			2.11	3.05	6.02	8.56	105	1.53	2.19	4.21	5.84
5"	141.3			2.77	3.40	6.55	9.53	124	2.89	3.54	6.66	9.47
6"	168.3			2.77	3.40	7.11	10.97	143	3.96	4.84	9.89	14.90
8"	219.1			2.77	3.76	8.18	12.70	178	6.37	8.60	18.33	27.85
10"	273.0			3.40	4.19	9.27	12.70	216	11.74	14.42	31.31	42.34
12"	323.9			3.96	4.57	9.53	12.70	254	19.03	21.92	45.00	59.36
14"	355.6			3.96	4.78			279	22.98	27.67		
16"	406.4			4.19	4.78			305	30.03	34.20		
18"	457.0			4.19	4.78			343	38.01	43.31		
20"	508.0			4.78	5.54			381	53.52	61.94		
22"	559.0			4.78	5.54			419	64.82	91.60		
24"	610.0			5.54	6.35			432	83.06	995.08		

ASME B 16.9

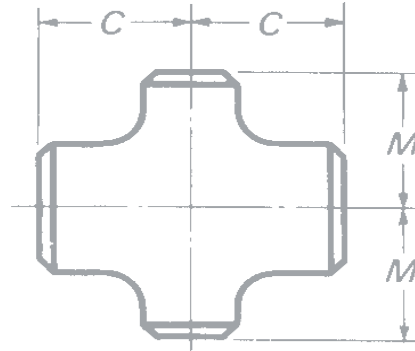
Reducing Crosses



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness of pipe Schedule / mm.								Length in mm C	Length in mm M
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End		
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S			
1/2 x 1/2 x 3/8	21.3	17.1			2.11	1.65	2.77	2.31	3.73	3.20	25	25
1/2 x 1/2 x 1/4	21.3	13.7			2.11	1.65	2.77	2.24	3.73	3.02	25	25
3/4 x 3/4 x 1/2	26.7	21.3	1.65	1.65	2.11	2.11	2.87	2.77	3.91	3.73	29	29
3/4 x 3/4 x 3/8	26.7	17.1			2.11	1.65	2.87	2.31	3.91	3.20	29	29
1 x 1 x 3/4	33.4	26.7	1.65	1.65	2.77	2.11	3.38	2.87	4.55	3.91	38	38
1 x 1 x 1/2	33.4	21.3	1.65	1.65	2.77	2.11	3.38	2.77	4.55	3.73	38	38
1.1/4x1.1/4x 1	42.2	33.4	1.65	1.65	2.77	2.77	3.56	3.38	4.85	4.55	48	48
1.1/4x1.1/4x3/4	42.2	26.7	1.65	1.65	2.77	2.11	3.56	2.87	4.85	3.91	48	48
1.1/4x1.1/4x1/2	42.2	21.3	1.65	1.65	2.77	2.11	3.56	2.77	4.85	3.73	48	48
1.1/2x1.1/2x1.1/4	48.3	42.2	1.65	1.65	2.77	2.77	3.68	3.56	5.08	4.85	57	57
1.1/2x1.1/2x1	48.3	33.4	1.65	1.65	2.77	2.77	3.68	3.38	5.08	4.55	57	57
1.1/2x1.1/2x3/4	48.3	26.7	1.65	1.65	2.77	2.11	3.68	2.87	5.08	3.91	57	57
1.1/2x1.1/2x1/2	48.3	21.3	1.65	1.65	2.77	2.11	3.68	2.77	5.08	3.73	57	57
2 x 2 x 1.1/2	60.3	48.3	1.65	1.65	2.77	2.77	3.91	3.68	5.54	5.08	64	60
2 x 2 x 1.1/4	60.3	42.2	1.65	1.65	2.77	2.77	3.91	3.56	5.54	4.85	64	57
2 x 2 x 1	60.3	33.4	1.65	1.65	2.77	2.77	3.91	3.38	5.54	4.55	64	51
2 x 2 x 3/4	60.3	26.7	1.65	1.65	2.77	2.11	3.91	2.87	5.54	3.91	64	44
2.1/2x2.1/2x2	73.0	60.3	2.11	1.65	3.05	2.77	5.16	3.91	7.01	5.54	76	70
2.1/2x2.1/2x1.1/2	73.0	48.3	2.11	1.65	3.05	2.77	5.16	3.68	7.01	5.08	76	67
2.1/2x2.1/2x1.1/4	73.0	42.2	2.11	1.65	3.05	2.77	5.16	3.56	7.01	4.85	76	64
2.1/2x2.1/2x1	73.0	33.4	2.11	1.65	3.05	2.77	5.16	3.38	7.01	4.55	76	57

ASME B 16.9

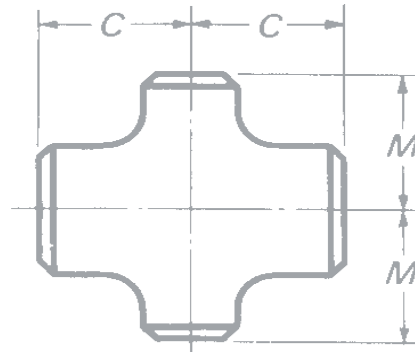
Reducing Crosses



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness of pipe Schedule / mm.								Length in mm C	Length in mm M
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End		
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S			
3 x3 x21/2	88.9	73.0	2.11	2.11	3.05	3.05	5.49	5.16	7.62	7.01	86	83
3 x3 x2	88.9	60.3	2.11	1.65	3.05	2.77	5.49	3.91	7.62	5.54	86	76
3 x3 x11/2	88.9	48.3	2.11	1.65	3.05	2.77	5.49	3.68	7.62	5.08	86	73
3 x3 x11/4	88.9	42.2	2.11	1.65	3.05	2.77	5.49	3.56	7.62	4.85	86	70
31/2x31/2x3	101.6	88.9	2.11	2.11	3.05	3.05	5.74	5.49	8.08	7.62	95	92
31/2x31/2x21/2	101.6	73.0	2.11	2.11	3.05	3.05	5.74	5.16	8.08	7.01	95	89
31/2x31/2x2	101.6	60.3	2.11	1.65	3.05	2.77	5.74	3.91	8.08	5.54	95	83
31/2x31/2x11/2	101.6	48.3	2.11	1.65	3.05	2.77	5.74	3.68	8.08	5.08	95	79
4 x4 x31/2	114.3	101.6	2.11	2.11	3.05	3.05	6.02	5.74	8.56	8.08	105	102
4 x4 x3	114.3	88.9	2.11	2.11	3.05	3.05	6.02	5.49	8.56	7.62	105	98
4 x4 x21/2	114.3	73.0	2.11	2.11	3.05	3.05	6.02	5.16	8.56	7.01	105	95
4 x4 x2	114.3	60.3	2.11	1.65	3.05	2.77	6.02	3.91	8.56	5.54	105	89
4 x4 x11/2	114.3	48.3	2.11	1.65	3.05	2.77	6.02	3.68	8.56	5.08	105	86
5 x5 x4	141.3	114.3	2.77	2.11	3.40	3.05	6.55	6.02	9.53	8.56	124	117
5 x5 x31/2	141.3	101.6	2.77	2.11	3.40	3.05	6.55	5.74	9.53	8.08	124	114
5 x5 x3	141.3	88.9	2.77	2.11	3.40	3.05	6.55	5.49	9.53	7.62	124	111
5 x5 x21/2	141.3	73.0	2.77	2.11	3.40	3.05	6.55	5.16	9.53	7.01	124	108
5 x5 x2	141.3	60.3	2.77	1.65	3.40	2.77	6.55	3.91	9.53	5.54	124	105
6 x6 x5	168.3	141.3	2.77	2.77	3.40	3.40	7.11	6.55	10.97	9.53	143	137
6 x6 x4	168.3	114.3	2.77	2.11	3.40	3.05	7.11	6.02	10.97	8.56	143	130
6 x6 x31/2	168.3	101.6	2.77	2.11	3.40	3.05	7.11	5.74	10.97	8.08	143	127
6 x6 x3	168.3	88.9	2.77	2.11	3.40	3.05	7.11	5.49	10.97	7.62	143	124
6 x6 x21/2	168.3	73.0	2.77	2.11	3.40	3.05	7.11	5.16	10.97	7.01	143	121

ASME B 16.9

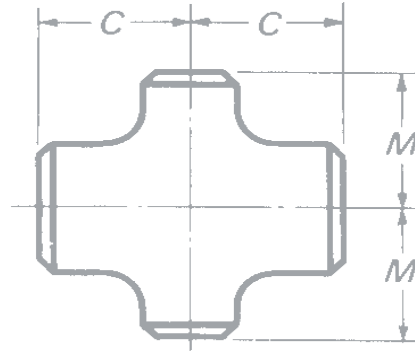
Reducing Crosses



Nominal Pipe Size (NPS)	Outside Diameter of pipe		Wall Thickness of pipe Schedule / mm.								Length in mm C	Length in mm M
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End		
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S			
8 x8 x6	219.1	168.3	2.77	2.77	3.76	3.40	8.18	7.11	12.70	10.97	178	168
8 x8 x5	219.1	141.3	2.77	2.77	3.76	3.40	8.18	6.55	12.70	9.53	178	162
8 x8 x4	219.1	114.3	2.77	2.11	3.76	3.05	8.18	6.02	12.70	8.56	178	156
8 x8 x31.2	219.1	101.6	2.77	2.11	3.76	3.05	8.18	5.74	12.70	8.08	178	152
10 x10 x8	273.1	219.1	3.40	2.77	4.19	3.76	9.27	8.18	12.70	12.70	216	203
10 x10 x6	273.1	168.3	3.40	2.77	4.19	3.40	9.27	7.11	12.70	10.97	216	194
10 x10 x5	273.1	141.3	3.40	2.77	4.19	3.40	9.27	6.55	12.70	9.53	216	191
10 x10 x4	273.1	114.3	3.40	2.11	4.19	3.05	9.27	6.02	12.70	8.56	216	184
12 x12 x10	323.9	273.1	3.96	3.40	4.57	4.19	9.53	9.27	12.70	12.70	254	241
12 x12 x8	323.9	219.1	3.96	2.77	4.57	3.76	9.53	8.28	12.70	12.70	254	229
12 x12 x6	323.9	168.3	3.96	2.77	4.57	3.40	9.53	7.11	12.70	10.97	254	219
12 x12 x5	323.9	141.3	3.96	2.77	4.57	3.40	9.53	6.55	12.70	9.53	254	216
14 x14 x12	355.6	323.9	3.96	3.96	4.78	4.57					279	270
14 x14 x10	355.6	273.1	3.96	3.40	4.78	4.19					279	257
14 x14 x8	355.6	219.1	3.96	2.77	4.78	3.76					279	248
14 x14 x6	355.6	168.3	3.96	2.77	4.78	3.40					279	238
16 x16 x14	406.4	355.6	4.19	3.96	4.78	4.78					305	305
16 x16 x12	406.4	323.9	4.19	3.96	4.78	4.57					305	295
16 x16 x10	406.4	273.1	4.19	3.40	4.78	4.19					305	283
16 x16 x8	406.4	219.1	4.19	2.77	4.78	3.76					305	273
16 x16 x6	406.4	168.3	4.19	2.77	4.78	3.40					305	264

ASME B 16.9

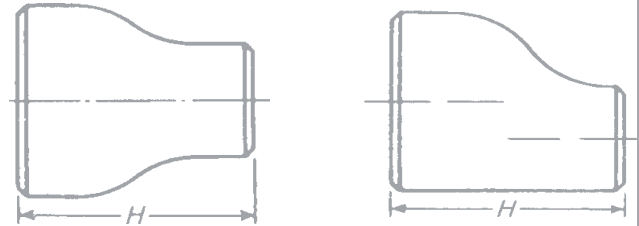
Reducing Crosses



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness of pipe Schedule / mm.								Length in mm C	Length in mm M
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End		
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S			
18 x18 x16	457.0	406.4	4.19	4.19	4.78	4.78					343	330
18 x18 x14	457.0	355.6	4.19	3.96	4.78	4.78					343	330
18 x18 x12	457.0	323.9	4.19	3.96	4.78	4.57					343	321
18 x18 x10	457.0	273.1	4.19	3.40	4.78	4.19					343	308
18 x18 x8	457.0	219.1	4.19	2.77	4.78	3.76					343	298
20 x20 x18	508.0	457.0	4.78	4.19	5.54	4.78					381	368
20 x20 x16	508.0	406.4	4.78	4.19	5.54	4.78					381	356
20 x20 x14	508.0	355.6	4.78	3.96	5.54	4.78					381	356
20 x20 x12	508.0	323.9	4.78	3.96	5.54	4.57					381	346
20 x20 x10	508.0	273.1	4.78	3.40	5.54	4.19					381	333
20 x20 x8	508.0	219.1	4.78	2.77	5.54	3.76					381	324
22 x22 x20	559.0	508.0	4.78	4.78	5.54	5.54					419	406
22 x22 x18	559.0	457.0	4.78	4.19	5.54	4.78					419	394
22 x22 x16	559.0	406.4	4.78	4.19	5.54	4.78					419	381
22 x22 x14	559.0	355.6	4.78	3.96	5.54	4.78					419	381
22 x22 x12	559.0	323.9	4.78	3.96	5.54	4.57					419	371
22 x22 x10	559.0	273.1	4.78	3.40	5.54	4.19					419	359
24 x24 x22	610.0	559.0	5.54	4.78	6.35	5.54					423	432
24 x24 x20	610.0	508.0	5.54	4.78	6.35	5.54					432	432
24 x24 x18	610.0	457.0	5.54	4.19	6.35	4.78					432	419
24 x24 x16	610.0	406.4	5.54	4.19	6.35	4.78					432	406
24 x24 x14	610.0	355.6	5.54	3.96	6.35	4.78					432	406
24 x24 x12	610.0	323.9	5.54	3.96	6.35	4.57					432	397
24 x24 x10	610.0	273.1	5.54	3.40	6.35	4.19					432	384

ASME B 16.9

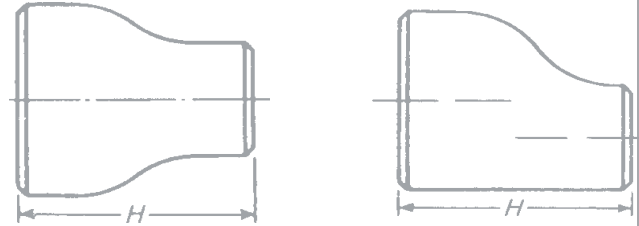
Concentric and Eccentric Reducers



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness Pipe Schedule / mm.								Length
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	H
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S		mm
3/4 x 1/2	26.7	21.3	1.65	1.65	2.11	2.11	2.87	2.77	3.91	3.73	38
3/4 x 3/8	26.7	17.1			2.11	1.65	2.87	2.31	3.91	3.20	38
1 x 3/4	33.4	26.7	1.65	1.65	2.77	2.11	3.38	2.87	4.55	3.91	51
1 x 1/2	33.4	21.3	1.65	1.65	2.77	2.11	3.38	2.77	4.55	3.73	51
1.1/4 x 1	42.2	33.4	1.65	1.65	2.77	2.77	3.56	3.38	4.85	4.55	51
1.1/4 x 3/4	42.2	26.7	1.65	1.65	2.77	2.11	3.56	3.287	4.85	3.91	51
1.1/4 x 1/2	42.2	21.3	1.65	1.65	2.77	2.11	3.56	2.77	4.85	3.73	51
1.1/2 x 1.1/4	48.3	42.2	1.65	1.65	2.77	2.77	3.68	3.56	5.08	4.85	64
1.1/2 x 1	48.3	33.4	1.65	1.65	2.77	2.77	3.68	3.38	5.08	4.55	64
1.1/2 x 3/4	48.3	26.7	1.65	1.65	2.77	2.11	3.68	2.87	5.08	3.91	64
1.1/2 x 1/2	48.3	21.3	1.65	1.65	2.77	2.11	3.68	2.77	5.08	3.73	64
2 x 1.1/2	60.3	48.3	1.65	1.65	2.77	2.77	3.91	3.68	5.54	5.08	76
2 x 1.1/4	60.3	42.2	1.65	1.65	2.77	2.77	3.91	3.56	5.54	4.85	76
2 x 1	60.3	34	1.65	1.65	2.77	2.77	3.91	3.38	5.54	4.55	76
2 x 3/4	60.3	26.7	1.65	1.65	2.77	2.11	3.91	2.87	5.54	3.91	76
2.1/2 x 2	73.0	60.3	2.11	1.65	3.05	2.77	5.16	3.91	7.01	5.54	89
2.1/2 x 1.1/2	73.0	48.3	2.11	1.65	3.05	2.77	5.16	3.68	7.01	5.08	89
2.1/2 x 1.1/4	73.0	42.2	2.11	1.65	3.05	2.77	5.16	3.56	7.01	4.85	89
2.1/2 x 1	73.0	33.4	2.11	1.65	3.05	2.77	5.16	3.38	7.01	4.55	89
3 x 2.1/2	88.9	73.0	2.11	2.11	3.05	3.05	5.49	5.16	7.62	7.01	89
3 x 2	88.9	60.3	2.11	1.65	3.05	2.77	5.49	3.91	7.62	5.54	89
3 x 1.1/2	88.9	48.3	2.11	1.65	3.05	2.77	5.49	3.68	7.62	5.08	89
3 x 1.1/4	88.9	42.2	2.11	1.65	3.05	2.77	5.49	3.56	7.62	4.85	89

ASME B 16.9

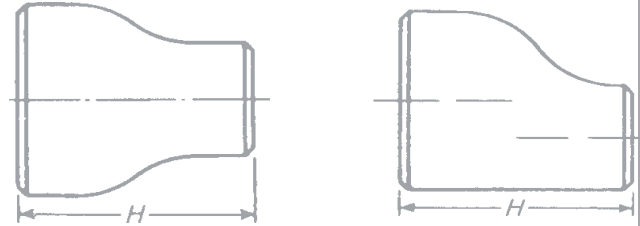
Concentric and Eccentric Reducers



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness Pipe Schedule / mm.								Length H
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S		mm
3.1/2 x 3	101.6	88.9	2.11	2.11	3.05	3.05	5.74	5.49	8.08	7.62	102
3.1/2 x 2.1/2	101.6	73.0	2.11	2.11	3.05	3.05	5.74	5.16	8.08	7.01	102
3.1/2 x 2	101.6	60.3	2.11	1.65	3.05	2.77	5.74	3.91	8.08	5.54	102
3.1/2 x 1.1/2	101.6	48.3	2.11	1.65	3.05	2.77	5.74	3.68	8.08	5.08	102
3.1/2 x 1.1/4	101.6	42.2	2.11	1.65	3.05	2.77	5.74	3.56	8.08	4.85	102
4 x 3.1/2	114.3	101.6	2.11	2.11	3.05	3.05	6.02	5.74	8.56	8.08	102
4 x 3	114.3	88.9	2.11	2.11	3.05	3.05	6.02	5.49	8.56	7.62	102
4 x 2.1/2	114.3	73.0	2.11	2.11	3.05	3.05	6.02	5.16	8.56	7.01	102
4 x 2	114.3	60.3	2.11	1.65	3.05	2.77	6.02	3.91	8.56	5.54	102
4 x 1.1/2	114.3	48.3	2.11	1.65	3.05	2.77	6.02	3.68	8.56	5.08	102
5 x 4	141.3	114.3	2.77	2.11	3.40	3.05	6.55	6.02	9.53	8.56	127
5 x 3.1/2	141.3	101.6	2.77	2.11	3.40	3.05	6.55	5.74	9.53	8.08	127
5 x 3	141.3	88.9	2.77	2.11	3.40	3.05	6.55	5.49	9.53	7.62	127
5 x 2.1/2	141.3	73.0	2.77	2.11	3.40	3.05	6.55	5.16	9.53	7.01	127
5 x 2	141.3	60.3	2.77	1.65	3.40	2.77	6.55	3.91	9.53	5.54	127
6 x 5	168.3	141.3	2.77	2.77	3.40	3.40	7.11	6.55	10.97	9.53	140
6 x 4	168.3	114.3	2.77	2.11	3.40	3.05	7.11	6.02	10.97	8.56	140
6 x 3.1/2	168.3	101.6	2.77	2.11	3.40	3.05	7.11	5.74	10.97	8.08	140
6 x 3	168.3	88.9	2.77	2.11	3.40	3.05	7.11	5.49	10.97	7.62	140
6 x 2.1/2	168.3	73.0	2.77	2.11	3.40	3.05	7.11	5.16	10.97	7.01	140
8 x 6	219.1	168.3	2.77	2.77	3.76	3.40	8.18	7.11	12.70	10.97	152
8 x 5	219.1	141.3	2.77	2.77	3.76	3.40	8.18	6.55	12.70	9.53	152
8 x 4	219.1	114.3	2.77	2.11	3.76	3.05	8.18	6.02	12.70	8.56	152
8 x 3.1/2	219.1	101.6	2.77	2.11	3.76	3.05	8.18	5.74	12.70	8.08	152

ASME B 16.9

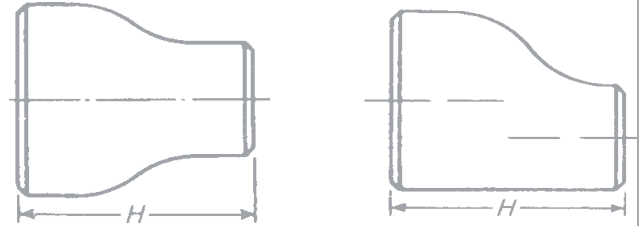
Concentric and Eccentric Reducers



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness Pipe Schedule / mm.								Length
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	H
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S		mm
10 x 8	273.1	219.1	3.40	2.77	4.19	3.76	9.27	8.18	12.70	12.70	178
10 x 6	273.1	168.3	3.40	2.77	4.19	3.40	9.27	7.11	12.70	10.97	178
10 x 5	273.1	141.3	3.40	2.77	4.19	3.40	9.27	6.55	12.70	9.53	178
10 x 4	273.1	114.3	3.40	2.11	4.19	3.05	9.27	6.02	12.70	8.56	178
12 x 10	323.9	273.1	3.96	3.40	4.57	4.19	9.53	9.27	12.70	12.70	203
12 x 8	323.9	219.1	3.96	2.77	4.57	3.76	9.53	8.18	12.70	12.70	203
12 x 6	323.9	168.3	3.96	2.77	4.57	3.40	9.53	7.11	12.70	10.97	203
12 x 5	323.9	141.1	3.96	2.77	4.57	3.40	9.53	6.55	12.70	9.53	203
14 x 12	355.6	323.9	3.96	3.96	4.78	4.57					330
14 x 10	355.6	273.1	3.96	3.40	4.78	4.19					330
14 x 8	355.6	219.1	3.96	2.77	4.78	3.76					330
14 x 6	355.6	168.3	3.96	2.77	4.78	3.40					330
16 x 14	406.4	355.6	4.19	3.96	4.78	4.78					356
16 x 12	406.4	323.9	4.19	3.96	4.78	4.57					356
16 x 10	406.4	273.1	4.19	3.40	4.78	4.19					356
16 x 8	406.4	219.1	4.19	2.77	4.78	3.76					356
18 x 16	457.0	406.4	4.19	4.19	4.78	4.78					381
18 x 14	457.0	355.6	4.19	3.96	4.78	4.78					381
18 x 12	457.0	323.9	4.19	3.96	4.78	4.57					381
18 x 10	457.0	273.1	4.19	3.40	4.78	4.19					381

ASME B 16.9

Concentric and Eccentric Reducers



Nominal Pipe Size (NPS)	Outside Diameter Pipe		Wall Thickness of pipe Schedule / mm.								Length H
	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	Large End	Small End	
Inch	mm	mm	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S		mm
20 x 18	508.0	457.0	4.78	4.19	5.54	4.78					508
20 x 16	508.0	406.4	4.78	4.19	5.54	4.78					508
20 x 14	508.0	355.6	4.78	3.96	5.54	4.78					508
20 x 12	508.0	323.9	4.78	3.96	5.54	4.57					508
22 x 20	559.0	508.0	4.78	4.78	5.54	5.54					508
22 x 18	559.0	457.0	4.78	4.19	5.54	4.78					508
22 x 16	559.0	406.4	4.78	4.19	5.54	4.78					508
22 x 14	559.0	355.6	4.78	3.96	5.54	4.78					508
24 x 22	610.0	559.0	5.54	4.78	6.35	5.54					508
24 x 20	610.0	508.0	5.54	4.78	6.35	5.54					508
24 x 18	610.0	457.0	5.54	4.19	6.35	4.78					508
24 x 16	610.0	406.4	5.54	4.19	6.35	4.78					508
30 x 24	762	610.0	6.35	5.54	7.92	6.35					610
30 x 20	762	508.0	6.35	4.78	7.92	5.54					610

ASME B 16.9

Caps

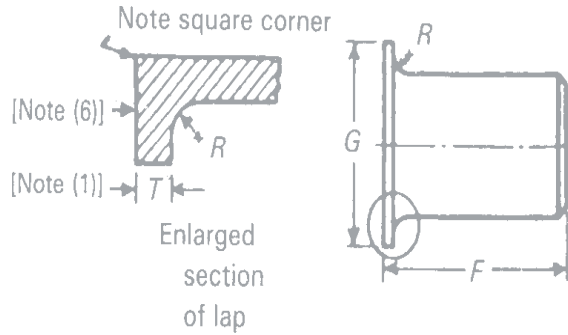


Caps made in according to ANSI / ASME B 16.9 shall be shaped ellipsoidal and conform to the shape requirements as given in the ASME Boiler and Pressure Vessel Code.

Nominal Pipe Size (NPS)	Outside Diameter Pipe	Wall thickness of Pipe Schedule / mm				E		Theoretical Weights kg / piece		
		Inch	mm	5 S	10 S	40 S	80 S	10 - 80S	160/XXS	10 S	40 S	80 S
1/2"	21.3	1.65	2.11	2.77	3.73	25	25	0.11	0.30	0.30
3/4"	26.7	1.65	2.11	2.87	3.91	25	25	0.16	0.30	0.30
1"	33.4	1.65	2.77	3.38	4.55	38	38	0.25	0.30	0.30
1.1/4"	42.2	1.65	2.77	3.56	4.85	38	38	0.31	0.40	0.40
1.1/2"	48.3	1.65	2.77	3.68	5.08	38	38	0.38	0.50	0.60
2"	60.3	1.65	2.77	3.91	5.54	38	45	0.43	0.70	0.70
2.1/2"	73.0	2.11	3.05	5.16	7.01	38	51	0.45	0.70	1.00
3"	88.9	2.11	3.05	5.49	7.62	51	63,5	0.55	1.00	1.40
3.1/2"	101.6	2.11	3.05	5.74	8.08	64	76,2	0.74	1.40	1.80
4"	114.3	2.11	3.05	6.02	8.56	64	76,2	0.80	1.60	2.00
5"	141.3	2.77	3.40	6.55	9.53	76	89	1.20	2.30	3.00
6"	168.3	2.77	3.40	7.11	10.97	89	102	1.70	3.60	4.00
8"	219.1	2.77	3.76	8.18	12.70	102	127	2.90	5.50	7.00
10"	273.0	3.40	4.19	9.27	12.70	127	153	4.10	10.00	12.00
12"	323.9	3.96	4.57	9.53	12.70	152	177,8	7.10	14.00	18.00
14"	355.6	3.96	4.78			165	191			
16"	406.4	4.19	4.78			178	203,2			
18"	457.0	4.19	4.78			203	229			
20"	508.0	4.78	5.54			229	254			
22"	559.0	4.78	5.54			254	254			
24"	610.0	5.54	6.35			267	305			

ASME B 16.9

Lap Joint Stub Ends



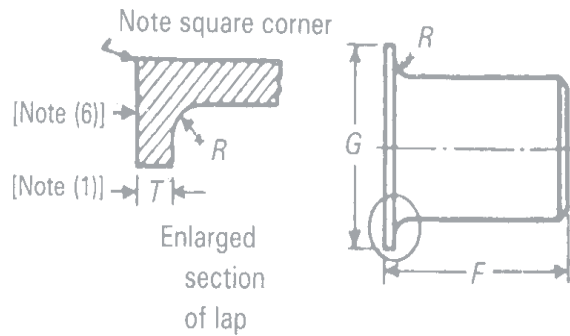
Notes :

- (1) The minimum lap thickness T shall not be less than nominal pipe wall thickness.
- (2) When used with high pressure flanges, it may be necessary to increase the length of stub ends in NPS 12 and larger. Such increases in length shall be a matter of agreement between manufacturer and purchaser.
- (3) When special facings such as tongue and groove, male and female, etc., are employed, additional lap thickness must be provided and such additional thickness shall be in addition to (not included in) the basic length F.
- (4) These dimensions conform to the radius established for lap joint flanges in ANSI B 16.5, Pipe Flanges and Flanged Fittings.
- (5) These dimensions conform to standard machined facings shown in ANSI B 16.5. The back face of the lap shall be machined to conform to the surface on which it seats. Where ring joint facings are to be applied, use dimensions as given in ANSI B 16.5.

Nominal Pipe Size (NPS)	Outside Dia. Pipe	Wall thickness of Pipe Schedule / mm				Length (1) , (2) F	Radius of Fillet (3) R		Diameter of Lap (4) G		Outside Diameter of Barrel	
		5 S	10 S	40 S	80 S		Min.	Nom. & Max.	Min.	Nom. & Max.	Min.	Max.
Inch	mm					mm	mm	mm	mm	mm	mm	
1/2"	21.3	1.65	2.11	2.77	3.73	51 / 76	2	3	34	35	20.55	22.76
3/4"	26.7	1.65	2.11	2.87	3.91	51 / 76	2	3	42	43	25.88	28.09
1"	33.4	1.65	2.77	3.38	4.55	51 / 102	2	3	50	51	32.61	34.95
1.1/4"	42.2	1.65	2.77	3.56	4.85	51 / 102	4	5	63	64	41.38	43.59
1.1/2"	48.3	1.65	2.77	3.68	5.08	51 / 102	5	6	72	73	47.47	49.94
2"	60.3	1.65	2.77	3.91	5.54	64 / 152	7	8	91	92	59.54	62.38
2.1/2"	73.0	2.11	3.05	5.16	7.01	64 / 152	7	8	104	105	72.24	75.34
3"	88.9	2.11	3.05	5.49	7.62	64 / 152	9	10	126	127	88.11	91.34
3.1/2"	101.6	2.11	3.05	5.74	8.08	76 / 152	9	10	139	140	100.81	104.04
4"	114.3	2.11	3.05	6.02	8.56	76 / 152	9	11	156	157	113.51	116.66
5"	141.3	2.77	3.40	6.55	9.53	76 / 203	9	11	185	186	140.51	144.35
6"	168.3	2.77	3.40	7.11	10.97	89 / 203	11	13	215	216	167.49	171.27
8"	219.1	2.77	3.76	8.18	12.70	102 / 203	11	13	269	270	218.29	222.07
10"	273.0	3.40	4.19	9.27	12.70	127 / 254	11	13	322	324	272.26	277.19
12"	323.9	3.96	4.57	9.53	12.70	152 / 254	11	13	379	381	323.06	327.99
14"	355.6	3.96	4.78			152 / 305	11	13	411	413	354.81	359.92
16"	406.4	4.19	4.78			152 / 305	11	13	468	470	405.61	410.97
18"	457.0	4.19	4.78			152 / 305	11	13	531	533	456.41	462.03
20"	508.0	4.78	5.54			152 / 305	11	13	582	584	507.21	514.10
22"	559.0	4.78	5.54			152 / 305	11	13	690	692	558.01	564.90
24"	610.0	5.54	6.35			152 / 305					608.81	615.70

MSS - SP43

Lap Joint Stub Ends



- Notes:
- (A) = Minimum lap thickness shall not be less than nominal thickness
 - (B) = Contact faces of stub ends shall have a modified spiral or concentric serration.
 - (1) = See Table Tolerances for minimum and maximum dimensions of outside diameter at bevel.
 - (2) = These lengths and radii for use with Schedule 40S or thinner pipe.

Nominal Pipe size (NPS)	Outside Diameter Pipe (1)	Wall thickness of Pipe Schedule / mm			Length F (2)	Diameter of Lap G (2)		Radius of Fillet (2)		
		5 S	10 S	40 S		Min.	Nom. & Max.	A Min.	A Nom. & Max.	B Max.
Inch	mm				mm	mm	mm	mm	mm	mm
1/2"	21.3	1.65	2.11	2.77	51	34	35	2	3	0.8
3/4"	26.7	1.65	2.11	2.87	51	42	43	2	3	0.8
1"	33.4	1.65	2.77	3.38	51	50	51	2	3	0.8
1.1/4"	42.2	1.65	2.77	3.56	51	63	64	4	5	0.8
1.1/2"	48.3	1.65	2.77	3.68	51	72	73	5	6	0.8
2"	60.3	1.65	2.77	3.91	64	91	92	7	8	0.8
2.1/2"	73.0	2.11	3.05	5.16	64	104	105	7	8	0.8
3"	88.9	2.11	3.05	5.49	64	126	127	9	10	0.8
3.1/2"	101.6	2.11	3.05	5.74	76	139	140	9	10	0.8
4"	114.3	2.11	3.05	6.02	76	156	157	9	11	0.8
5"	141.3	2.77	3.40	6.55	76	185	186	9	11	1.6
6"	168.3	2.77	3.40	7.11	89	215	216	11	13	1.6
8"	219.1	2.77	3.76	8.18	102	269	270	11	13	1.6
10"	273.0	3.40	4.19	9.27	127	322	324	11	13	1.6
12"	323.9	3.96	4.57	9.53	152	379	381	11	13	1.6
14"	355.6	3.96	4.78		152	411	413	11	13	1.6
16"	406.4	4.19	4.78		152	468	470	11	13	1.6
18"	457.0	4.19	4.78		152	531	533	11	13	1.6
20"	508.0	4.78	5.54		152	582	584	11	13	1.6
24"	610.0	5.54	6.35		152	690	692	11	13	1.6

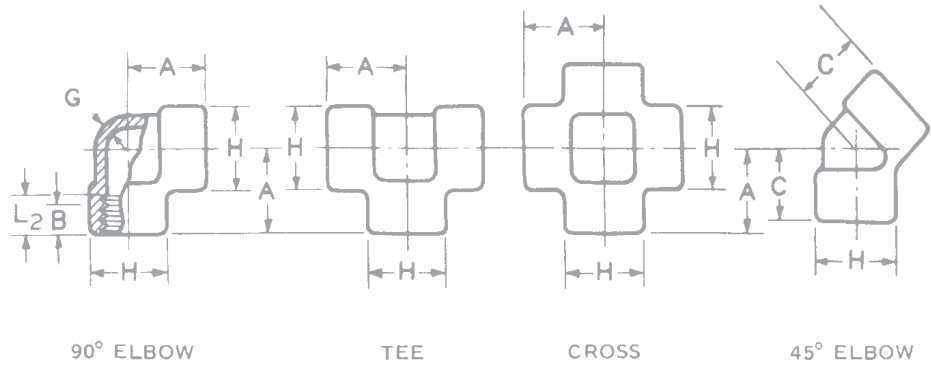


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ANSI B16.11

Threaded Fittings

Dimensions 2000 - 3000 - 6000 Lbs



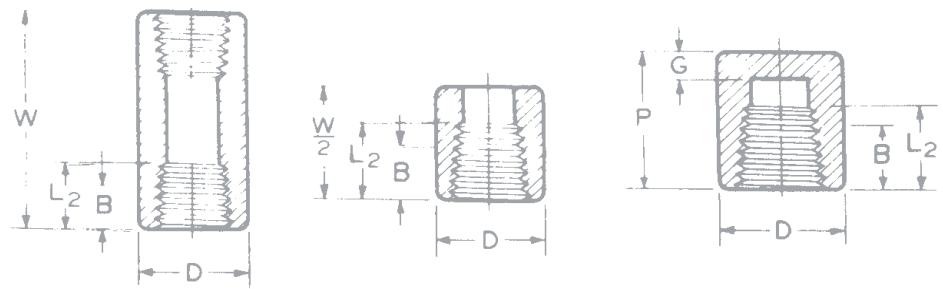
Note : Dimension B is minimum length of perfect thread. The length of useful thread shall not be less than L2. See ANSI B2.1 Section 8.

Nom. Pipe Size	Center to End Elbows, Tees and Crosses A			Center to End 45 Degrees Elbow C			Outside Diameter of Band H			Minimum Wall Thickness G			Length of Thread Min. (1)	
	2000	3000	6000	2000	3000	6000	2000	3000	6000	2000	3000	6000	B	L2
1/8"	21	21	25	17	17	19	22	22	25	3.0	3.0	6.5	6.5	6.5
1/4"	21	25	29	17	19	22	22	25	33	3.0	3.5	6.5	8.0	10.0
3/8"	25	29	33	19	22	25	25	33	38	3.0	3.5	7.0	9.0	10.5
1/2"	29	33	38	22	25	29	33	38	46	3.0	4.0	8.0	11.0	13.5
3/4"	33	38	44	25	29	33	38	46	56	3.0	4.5	8.5	12.5	14.0
1"	38	44	51	29	33	35	46	56	62	3.5	5.0	10.0	14.5	17.5
1-1/4"	44	51	60	33	35	43	56	62	75	4.0	5.5	10.5	17.0	18.0
1.1/2"	51	60	64	35	43	44	62	75	84	4.0	5.5	11.0	18.0	18.5
2"	60	64	83	43	45	52	75	84	102	4.5	7.0	12.0	19.0	19.0
2.1/2"	76	83	95	52	52	64	92	102	121	5.5	7.5	15.5	23.5	29.0
3"	86	95	106	64	64	79	110	121	146	6.0	9.0	16.5	26.0	30.5
4	106	114	114	79	79	79	146	152	152	6.5	11.0	18.5	27.5	33.0

ANSI B16.11

Threaded Fittings

Dimensions 2000 - 3000 - 6000 Lbs



COUPLING

HALF-COUPLING

CAP

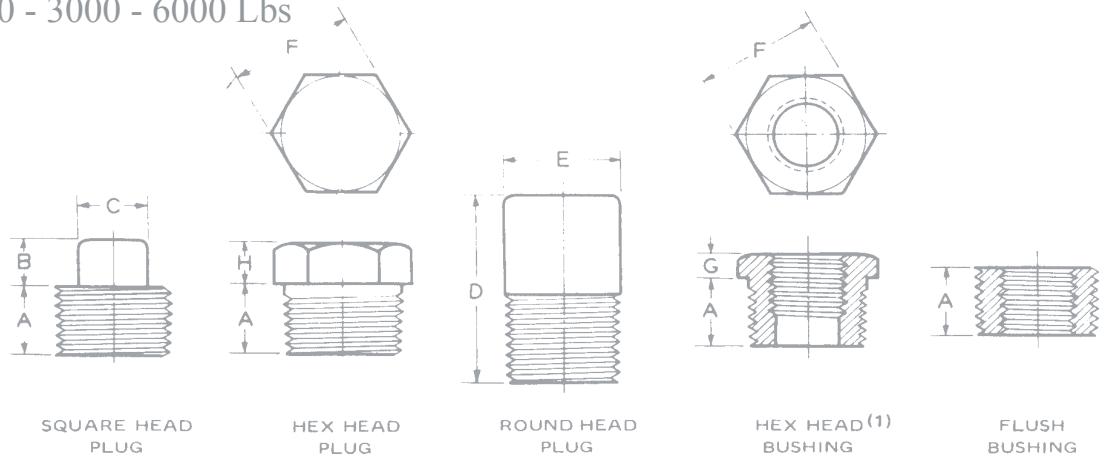
Note : Class 2000 and NPS 1/8" Class 6000 Half and Full Couplings and Caps are not included in this Standard.

Nom. Pipe Size	End to End Couplings W		End to End Caps P		Outside Diameter D		End Wall Thickness G Min.		Length of Thread Min. (1)	
	3000	& 6000	3000	6000	3000	6000	3000	6000	B	L2
1/8"	32		19		16	22	5.0		6.5	6.5
1/4"	35		25	27	19	25	5.0	6.5	8.0	10.0
3/8"	38		25	27	22	32	5.0	6.5	9.0	10.5
1/2"	48		32	33	29	38	6.5	8.0	11.0	13.5
3/4"	51		37	38	35	44	6.5	8.0	12.5	14.0
1"	60		41	43	44	57	9.5	11.0	14.5	17.5
1-1/4"	67		44	46	57	64	9.5	11.0	17.0	18.0
1.1/2"	79		44	48	64	76	11.0	12.5	18.0	18.5
2"	86		48	51	76	92	12.5	16.0	19.0	19.0
2.1/2"	92		60	64	92	108	16.0	19.0	23.5	29.0
3"	108		65	68	108	127	19.0	22.0	26.0	30.5
4	121		68	75	140	159	22.0	28.5	27.5	33.0

ANSI B16.11

Threaded Fittings

Dimensions 2000 - 3000 - 6000 Lbs

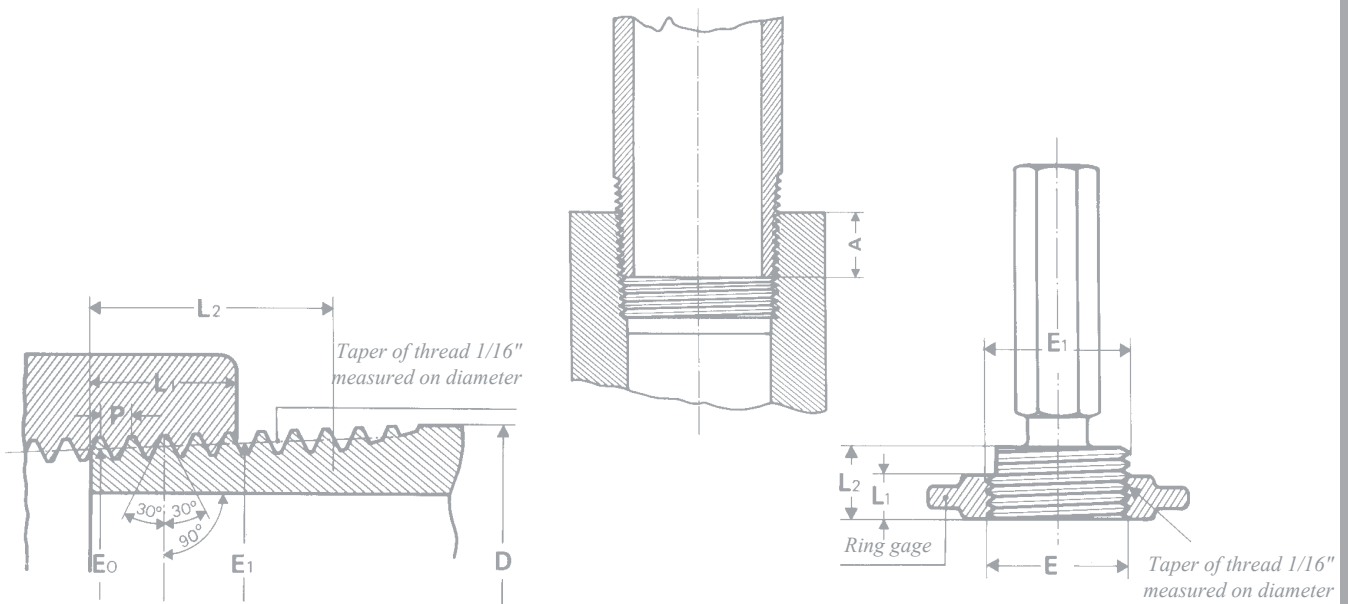


Note : Hex Head Bushings of one-size reduction should not be used in services wherein they might be subject to harmful loads and forces other than internal pressures

Nom. Pipe Size	Length Minimum A	Plugs Square Head		Plugs Round Head		Hex Plugs and Bushings		
		Height of Square Minimum B	Width Flats Minimum C	Nominal Diameter Head E	Length Minimum D	Width Flats Nominal F	Hex Height (Min.)	
							Bushing G	Plug H
1/8"	9.5	6	7.0	10	35	11.0		6
1/4"	11.0	6	9.5	13	41	16.0	3	6
3/8"	12.5	8	11.0	17	41	17.5	4	8
1/2"	14.5	10	14.5	21	44	22.0	5	8
3/4"	16.0	11	16.0	27	44	27.0	6	10
1"	19.0	13	20.5	33	51	35.0	6	10
1-1/4"	20.5	14	24.0	43	51	44.5	7	14
1.1/2"	20.5	16	28.5	48	51	51.0	8	16
2"	22.0	17	33.5	60	64	63.5	9	17
2.1/2"	27.0	19	38.0	73	70	76.0	10	19
3"	28.5	21	43.0	89	70	89.0	10	21
4	32.0	25	63.5	114	76	117.5	13	25

ANSI B 2.1

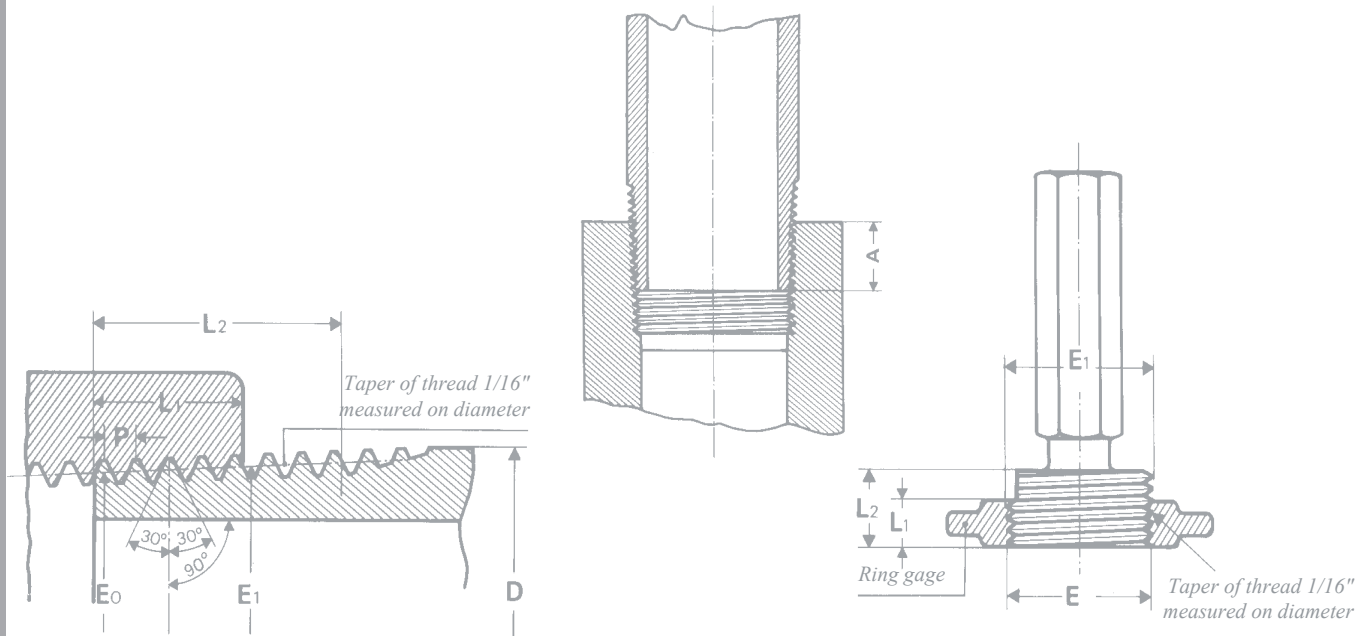
NPT Thread



Nominal Pipe Size	Outside diameter of Pipe	Number of Threads per Inch	Pitch of thread	Pitch diameter at external thread end	Pitch diameter at internal thread end	Effective threads length	Length of hand tightening	Increase in diameter per thread	Length of wrench tightening
Inches	D mm	N	P mm	E0 mm	E1 mm	L2 mm	L1 mm	mm	A mm
1/8	10.29	27	0.940	9.233	9.489	6.703	4.102	0.0586	6.9
1/4	13.72	18	1.411	12.126	12.487	10.205	5.786	0.0881	10
3/8	17.14	18	1.411	15.545	15.926	10.358	6.096	0.0881	10.3
1/2	21.34	14	1.814	19.264	19.772	13.556	8.128	0.1132	13.6
3/4	26.67	14	1.814	24.579	25.117	13.860	8.610	0.1132	14.1
1	33.40	11.5	2.209	30.826	31.461	17.343	10.160	0.1379	16.8
1.1/4	42.16	11.5	2.209	39.551	40.218	17.952	10.668	0.1379	17.3
1.1/2	48.26	11.5	2.209	45.621	46.287	18.377	10.668	0.1379	17.3
2	60.32	11.5	2.209	57.633	58.325	19.215	11.074	0.1379	17.7
2.1/2	73.02	8	3.175	69.076	70.159	28.892	17.322	0.1983	23.7
3	88.90	8	3.175	84.852	86.068	30.480	19.456	0.1983	25.8
3.1/2	101.60	8	3.175	97.472	98.776	31.750	20.853	0.1983	27.2
4	114.30	8	3.175	110.093	111.433	33.020	21.437	0.1983	27.8

ANSI B 2.1

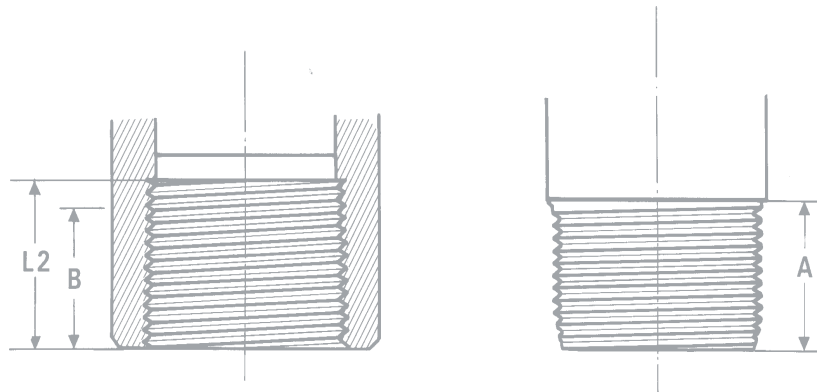
NPT Thread



Nominal Pipe Size	Outside diameter of Pipe	Number of Threads per Inch	Pitch of thread	Pitch diameter at external thread end	Pitch diameter at internal thread end	Effective threads length	Length of hand tightening	Increase in diameter per thread	Length of wrench tightening
Inches	D Inches	N	P Inches	E0 Inches	E1 Inches	L2 Inches	L1 Inches	Inches	A Inches
1/8	0.405	27	0.03704	0.36351	0.37360	0.2639	0.1615	0.00231	0.2726
1/4	0.540	18	0.05556	0.47739	0.49163	0.4018	0.2278	0.00347	0.3945
3/8	0.675	18	0.05556	0.61201	0.62701	0.4078	0.240	0.00347	0.4067
1/2	0.840	14	0.07143	0.75843	0.77843	0.5337	0.320	0.00446	0.5343
3/4	1.050	14	0.07143	0.96768	0.98887	0.5457	0.339	0.00543	0.5533
1	1.315	11.5	0.08696	1.21363	1.23863	0.6828	0.400	0.00543	0.6609
1.1/4	1.660	11.5	0.08696	1.55713	1.58338	0.7068	0.420	0.00543	0.6809
1.1/2	1.900	11.5	0.08696	1.79609	1.82234	0.7235	0.420	0.00543	0.6809
2	2.375	11.5	0.08696	2.26902	2.29627	0.7565	0.436	0.00781	0.6969
2.1/2	2.875	8	0.12500	2.71953	2.76216	1.1375	0.682	0.00781	0.9320
3	3.500	8	0.12500	3.34062	3.38850	1.2000	0.766	0.00781	1.016
3.1/2	4.000	8	0.12500	3.83750	3.88881	1.2500	0.821	0.00781	1.071
4	4.500	8	0.12500	4.33438	4.38712	1.3000	0.844	0.00781	1.094

ANSI B 2.1

Length of thread

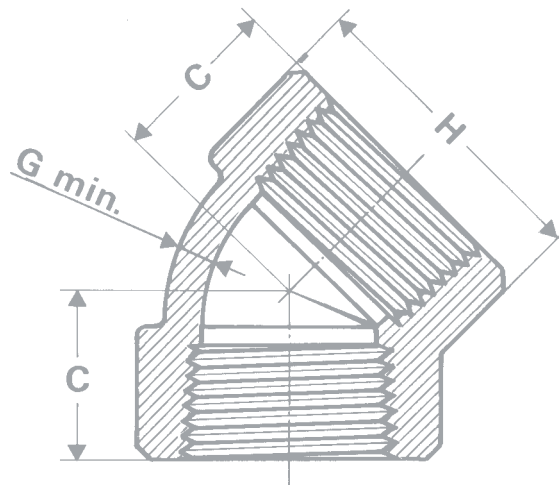


Nominal Pipe Size	Internal Thread				External Thread	
	B minimal		L2 minimal		A minimal	
	mm	inches	inches	inches	mm	inches
1/8	6.5	0.25	0.25	0.2639	9.5	0.38
1/4	8.0	0.32	0.32	0.4018	11.0	0.44
3/8	9.0	0.36	0.36	0.4078	12.5	0.50
1/2	11.0	0.43	0.43	0.5337	14.5	0.56
3/4	12.5	0.50	0.50	0.5457	16.0	0.62
1	14.5	0.58	0.58	0.6828	19.0	0.75
1.1/4	17.0	0.67	0.67	0.7068	20.5	0.81
1.1/2	18.0	0.70	0.70	0.7235	20.5	0.81
2	19.0	0.75	0.75	0.7565	22.0	0.88
2.1/2	23.5	0.93	0.93	1.138	27.0	1.06
3	26.0	1.02	1.02	1.200	28.5	1.12
4	27.5	1.09	1.09	1.300	32.0	1.25

ANSI B 16.11

45 degrees Elbows

3000 / 6000 Lbs

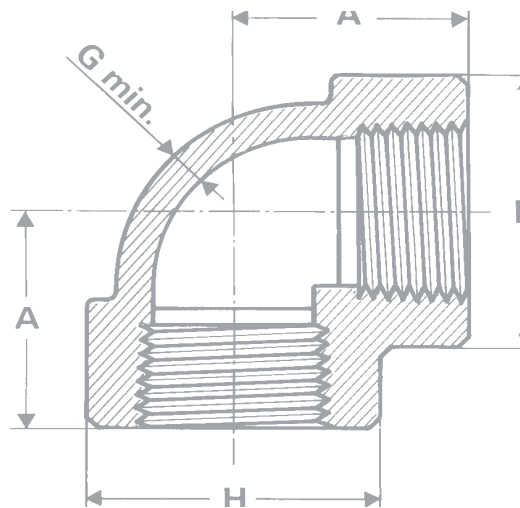


Nominal Pipe Size	3000						6000					
	C		H		G		C		H		G	
	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
1/4	19	0.75	25	1.00	3.5	0.130	22	0.88	33	1.31	6.5	0.260
3/8	22	0.88	33	1.31	3.5	0.138	25	1.00	38	1.50	7.0	0.275
1/2	25	1.00	38	1.50	4.0	0.161	29	1.12	46	1.81	8.0	0.321
3/4	29	1.12	46	1.81	4.5	0.170	33	1.31	56	2.19	8.5	0.336
1	33	1.31	56	2.19	5.0	0.196	35	1.38	62	2.44	10.0	0.391
1.1/4	35	1.38	62	2.44	5.5	0.208	43	1.69	75	2.97	10.5	0.417
1.1/2	43	1.69	75	2.97	5.5	0.219	44	1.72	84	3.31	11.0	0.436
2	45	1.72	84	3.31	7.0	0.281	52	2.06	102	4.00	12.0	0.476
2.1/2	52	2.06	102	4.00	7.5	0.301	64	2.50	121	4.75	15.5	0.602
3	64	2.50	121	4.75	9.0	0.348	79	3.12	146	5.75	16.5	0.655
4	79	3.12	152	6.00	11.0	0.440	79	3.12	152	6.00	18.5	0.735

ANSI B 16.11

90 degrees Elbows

3000 / 6000 Lbs

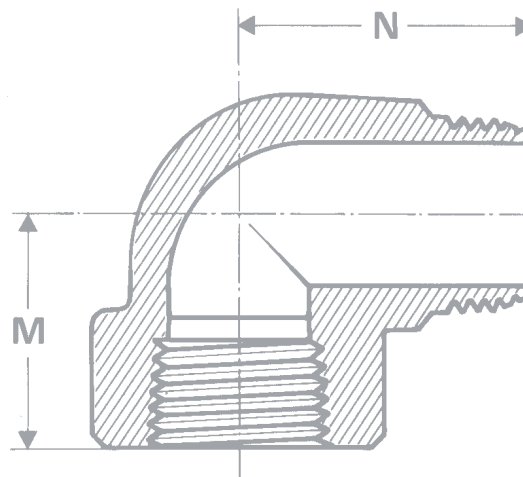


Nominal Pipe Size	3000						6000					
	C		H		G		C		H		G	
	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
1/4	25	0.97	25	1.00	3.5	0.130	29	1.12	33	1.31	6.5	0.260
3/8	29	1.12	33	1.31	3.5	0.138	33	1.31	38	1.50	7.0	0.275
1/2	33	1.31	38	1.50	4.0	0.161	38	1.50	46	1.81	8.0	0.321
3/4	38	1.50	46	1.81	4.5	0.170	44	1.75	56	2.19	8.5	0.336
1	44	1.75	56	2.19	5.0	0.196	51	2.00	62	2.44	10.0	0.391
1.1/4	51	2.00	62	2.44	5.5	0.208	60	2.38	75	2.97	10.5	0.417
1.1/2	60	2.38	75	2.97	5.5	0.219	64	2.50	84	3.31	11.0	0.436
2	64	2.50	84	3.31	7.0	0.281	83	3.25	102	4.00	12.0	0.476
2.1/2	83	3.25	102	4.00	7.5	0.301	95	3.75	121	4.75	15.5	0.602
3	95	3.75	121	4.75	9.0	0.348	106	4.19	146	5.75	16.5	0.655
4	114	4.50	152	6.00	11.0	0.440	114	4.50	152	6.00	18.5	0.735

ANSI B 16.11

90 degrees Street Elbows

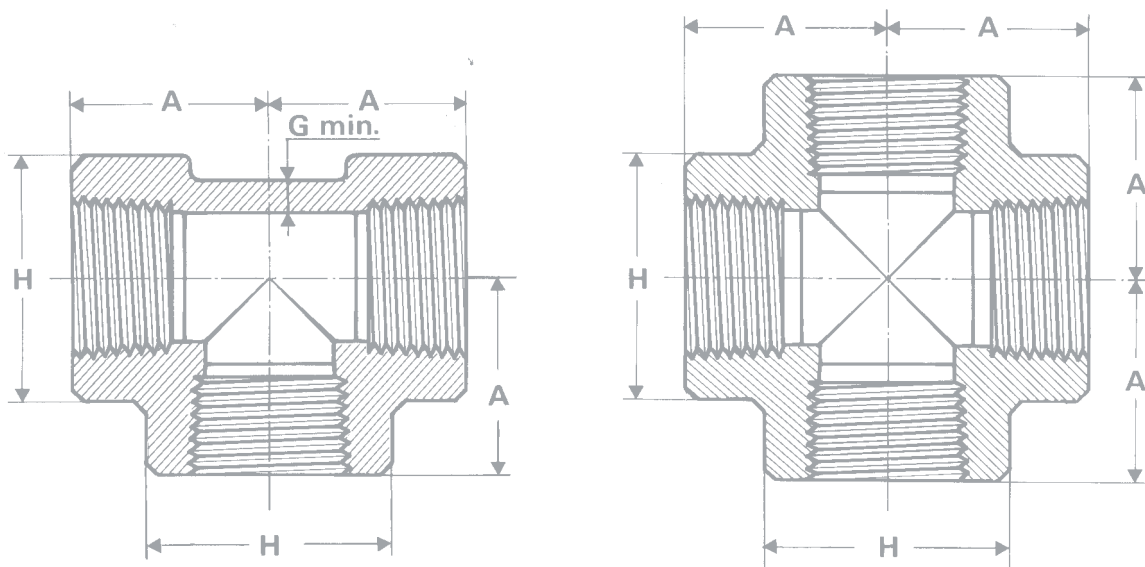
3000 / 6000 Lbs



Nominal Pipe Size	3000				6000			
	M (1)		N (1)		M (1)		N (1)	
	mm	inches	mm	inches	mm	inches	mm	inches
1/4	24.6	0.97	26.5	1.05	28.5	1.12	32.0	1.26
3/8	28.5	1.12	32.0	1.26	33.5	1.31	35.5	1.39
1/2	33.5	1.31	35.5	1.39	38.0	1.50	41.0	1.61
3/4	38.0	1.50	41.0	1.61	44.5	1.75	50.0	1.97
1	44.5	1.75	50.0	1.97	50.8	2.00	61.0	2.40
1.1/4	50.8	2.00	61.0	2.40	57.5	2.27	70.0	2.75
1.1/2	57.5	2.27	70.0	2.75	63.5	2.50	82.5	3.25
2	63.5	2.50	82.5	3.25	82.5	3.25	110.0	4.33

ANSI B 16.11

Tee's & Crosses
3000 / 6000 Lbs

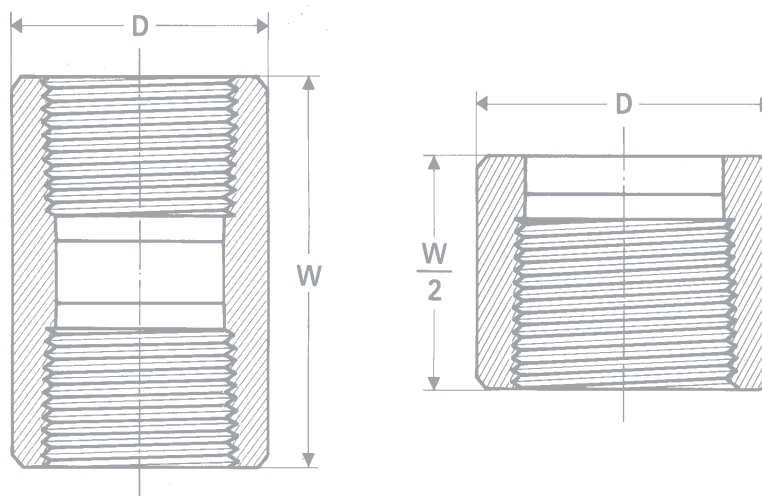


Nominal Pipe Size	3000						6000					
	A		H		G		A		H		G	
	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
1/4	25	0.97	25	1.00	3.5	0.130	29	1.12	33	1.31	6.5	0.260
3/8	29	1.12	33	1.31	3.5	0.138	33	1.31	38	1.50	7.0	0.275
1/2	33	1.31	38	1.50	4.0	0.161	38	1.50	46	1.81	8.0	0.321
3/4	38	1.50	46	1.81	4.5	0.170	44	1.75	56	2.19	8.5	0.336
1	44	1.75	56	2.19	5.0	0.196	51	2.00	62	2.44	10.0	0.391
1.1/4	51	2.00	62	2.44	5.5	0.208	60	2.38	75	2.97	10.5	0.417
1.1/2	60	2.38	75	2.97	5.5	0.219	64	2.50	84	3.31	11.0	0.436
2	64	2.50	84	3.31	7.0	0.281	83	3.25	102	4.00	12.0	0.476
2.1/2	83	3.25	102	4.00	7.5	0.301	95	3.75	121	4.75	15.5	0.602
3	95	3.75	121	4.75	9.0	0.348	106	4.19	146	5.75	16.5	0.655
4	114	4.50	152	6.00	11.0	0.440	114	4.50	152	6.00	18.5	0.735

ANSI B 16.11

Half & Full Couplings

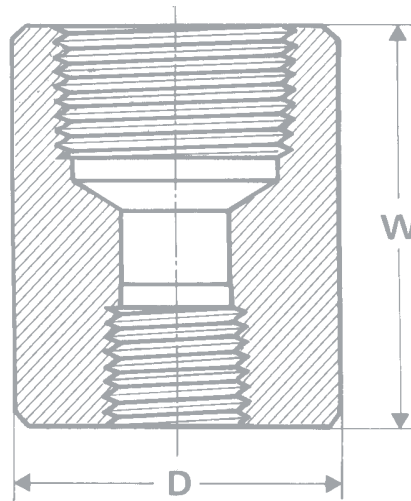
3000 / 6000 Lbs



Nominal Pipe Size	3000				6000			
	W		D		W		D	
	mm	inches	mm	inches	mm	inches	mm	inches
1/4	35	1.38	19	0.75	35	1.38	25	1.00
3/8	38	1.50	22	0.88	38	1.50	32	1.25
1/2	48	1.88	29	1.12	48	1.88	38	1.50
3/4	51	2.00	35	1.38	51	2.00	44	1.75
1	60	2.38	44	1.75	60	2.38	57	2.25
1.1/4	67	2.62	57	2.25	67	2.62	64	2.50
1.1/2	79	3.12	64	2.50	79	3.12	76	3.00
2	86	3.38	76	3.00	86	3.38	92	3.62
3	92	3.62	92	3.62	92	3.62	108	4.25
4	108	4.25	108	4.25	108	4.25	127	5.00

ANSI B 16.11

Reducing Couplings
3000 / 6000 Lbs

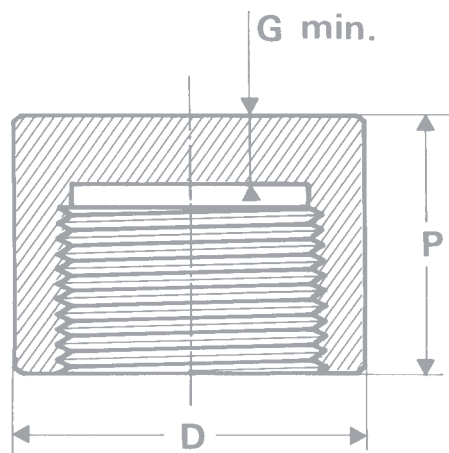


Nominal pipe size	3000				6000			
	W		D		W		D	
	mm	inches	mm	inches	mm	inches	mm	inches
3/8x1/4	38.10	1.50	22.35	0.88	38.10	1.50	31.75	1.25
1/2x3/8	47.75	1.88	28.45	1.12	47.75	1.88	38.10	1.50
1/2x1/4	47.75	1.88	28.45	1.12	47.75	1.88	38.10	1.50
3/4x1/2	50.80	2.00	35.05	1.38	50.80	2.00	44.45	1.75
3/4x1/4	50.80	2.00	35.05	1.38	50.80	2.00	44.45	1.75
1x3/4	60.45	2.38	44.45	1.75	60.45	2.38	57.15	2.25
1x1/2	60.45	2.38	44.45	1.75	60.45	2.38	57.15	2.25
1x1/4	60.45	2.38	44.45	1.75	60.45	2.38	57.15	2.25
1.1/4x1	66.55	2.62	57.15	2.25	66.55	2.62	63.50	2.50
1.1/2x1	79.25	3.12	63.50	2.50	79.25	3.12	76.20	3.00
1.1/2x3/4	79.25	3.12	63.50	2.50	79.25	3.12	76.20	3.00
1.1/2x1/2	79.25	3.12	63.50	2.50	79.25	3.12	76.20	3.00
2x1.1/2	85.85	3.38	76.20	3.00	85.85	3.38	91.95	3.62
2x1	85.85	3.38	76.20	3.00	85.85	3.38	91.95	3.62
2.1/2x2	91.95	3.62	91.95	3.62	91.95	3.62	107.95	4.25
3x2	107.95	4.25	107.95	4.25	107.95	4.25	127.00	5.00
4x3	120.65	4.75	139.70	5.50	120.65	4.75	158.75	6.25
4x2	120.65	4.75	139.70	5.50	120.65	4.75	158.75	6.25

ANSI B 16.11

Caps

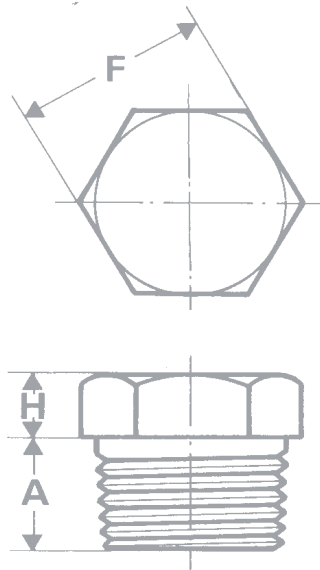
3000 / 6000 Lbs



Nominal Pipe Size	3000						6000					
	P		D		G		P		D		G	
	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
1/4	25	1.00	19	0.75	5.0	0.19	27	1.06	25	1.00	6.5	0.25
3/8	25	1.00	22	0.88	5.0	0.19	27	1.06	32	1.25	6.5	0.25
1/2	32	1.25	29	1.12	6.5	0.25	33	1.31	38	1.50	8.0	0.31
3/4	37	1.44	35	1.38	6.5	0.25	38	1.50	44	1.75	8.0	0.31
1	41	1.62	44	1.75	9.5	0.38	43	1.69	57	2.25	11.0	0.44
1.1/4	44	1.75	57	2.25	9.5	0.38	46	1.81	64	2.50	11.0	0.44
1.1/2	44	1.75	64	2.50	11.0	0.44	48	1.88	76	3.00	12.5	0.50
2	48	1.88	76	3.00	12.5	0.50	51	2.00	92	3.62	16.0	0.62
2.1/2	60	2.38	92	3.62	16.0	0.62	64	2.50	108	4.25	19.0	0.75
3	65	2.56	108	4.25	19.0	0.75	68	2.69	127	5.00	22.0	0.88
4	68	2.69	140	5.50	22.0	0.88	75	2.94	159	6.25	28.5	1.12

ANSI B 16.11

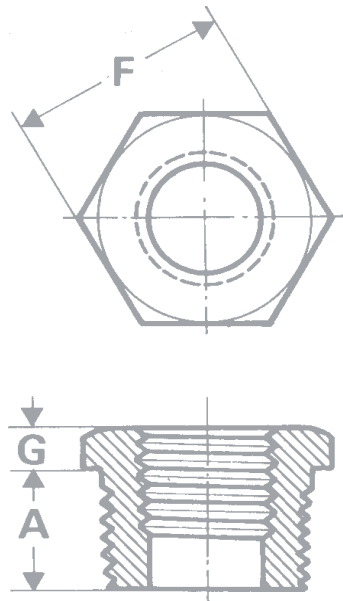
Hexagonal Head Bushings
3000 / 6000 Lbs



Nominal Pipe Size	3000 & 6000					
	A minimal		F nominal		H minimal	
	mm	inches	mm	inches	mm	inches
1/4	11.0	0.44	16.0	0.62	6	0.25
3/8	12.5	0.50	17.5	0.69	8	0.31
1/2	14.5	0.56	22.0	0.88	8	0.31
3/4	16.0	0.62	27.0	1.06	10	0.38
1	19.0	0.75	35.0	1.38	10	0.38
1.1/4	20.5	0.81	44.5	1.75	14	0.56
1.1/2	20.5	0.82	51.0	2.00	16	0.62
2	22.0	0.88	63.5	2.50	17	0.69
2.1/2	27.0	2.06	76.0	3.00	19	0.75
3	28.5	1.12	89.0	3.50	21	0.81
4	32.0	1.25	117.5	4.62	25	1.00

ANSI B 16.11

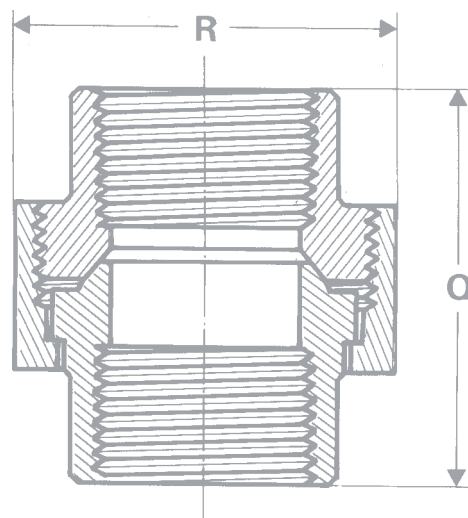
Hexagonal Head Bushings
3000 / 6000 Lbs



Nominal pipe size	3000 & 6000					
	A minimal		F nominal		G minimal	
	mm	inches	mm	inches	mm	inches
3/8x1/4	12.5	0.50	17.5	0.69	4	0.16
1/2x3/8	14.5	0.56	22.0	0.88	5	0.19
1/2x1/4	14.5	0.56	22.0	0.88	5	0.19
3/4x1/2	16.0	0.62	27.0	1.06	6	0.22
3/4x1/4	16.0	0.62	27.0	1.06	6	0.22
1x3/4	19.0	0.75	35.0	1.38	6	0.25
1x1/2	19.0	0.75	35.0	1.38	6	0.25
1x1/4	19.0	0.75	35.0	1.38	6	0.25
1.1/4x1	20.5	0.81	44.5	1.75	7	0.28
1.1/2x1	20.5	0.81	51.0	2.00	8	0.31
1.1/2x3/4	20.5	0.81	51.0	2.00	8	0.31
1.1/2x1/2	20.5	0.81	51.0	2.00	8	0.31
2x1.1/2	22.0	0.88	63.5	2.50	9	0.34
2x1	22.0	0.88	63.5	2.50	9	0.34
2.1/2x2	27.0	1.06	76.0	3.00	10	0.38
3x2	28.5	1.12	89.0	3.50	10	0.41
4x3	32.0	1.25	117.5	4.62	13	0.50
4x2	32.0	1.25	117.5	4.62	13	0.50

ANSI B 16.11

Female - Female Unions
3000 / 6000 Lbs

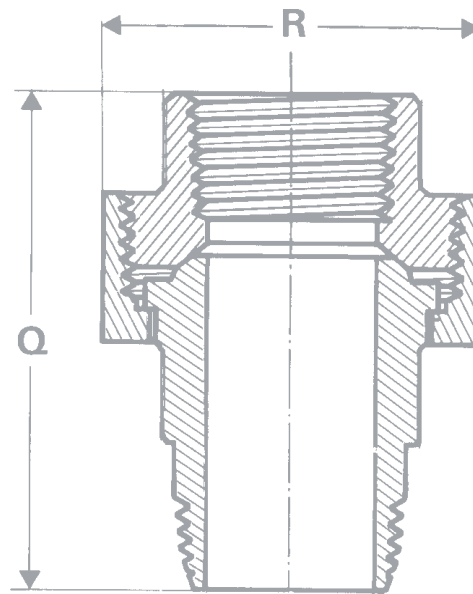


Nominal Pipe Size	3000				6000			
	Q		R		Q		R	
	mm	inches	mm	inches	mm	inches	mm	inches
1/4	42.5	1.76	36.0	1.42	54.0	2.13	46.0	1.81
3/8	47.5	1.87	41.0	1.62	57.0	2.25	51.0	2.00
1/2	52.0	2.05	46.0	1.81	69.0	2.72	60.0	2.36
3/4	57.0	2.25	56.0	2.20	72.0	2.84	72.0	2.84
1	63.0	2.48	65.0	2.56	80.0	3.15	80.0	3.15
1.1/4	70.0	2.76	78.0	3.07	89.0	3.50	94.0	3.70
1.1/2	78.0	3.07	86.0	3.39	108.0	4.25	100.0	3.94
2	89.0	3.50	103.0	4.06	114.0	4.49	122.0	4.80
2.1/2	114.0	4.49	122.0	4.80	130.0	5.13	144.0	5.67
3	130.0	5.12	144.0	5.67	150.0	5.91	180.0	7.09
4	150.0	5.91	180.0	7.09				

ANSI B 16.11

Male - Female Unions

3000 / 6000 Lbs

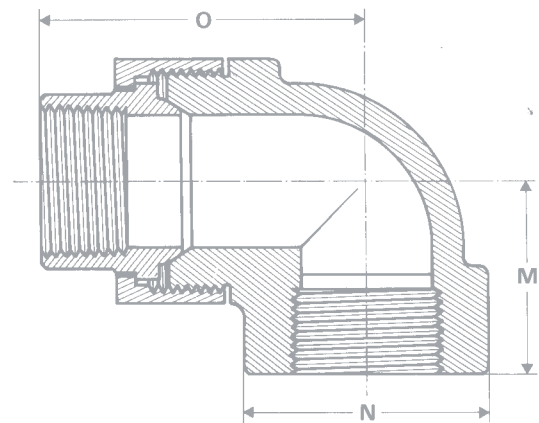
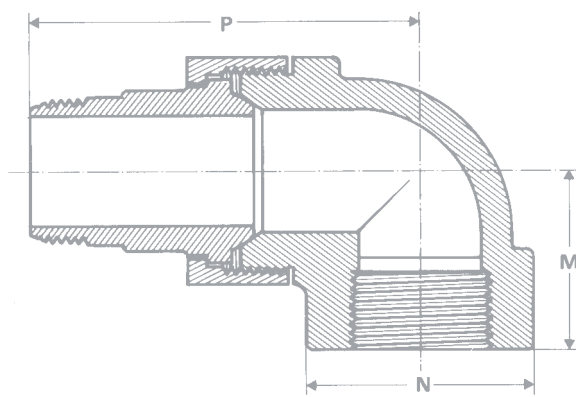


Nominal Pipe Size	3000				6000			
	Q (1)		R (1)		Q (1)		R (1)	
	mm	inches	mm	inches	mm	inches	mm	inches
1/4	63.0	2.48	32.0	1.26	72.5	2.86	46.0	1.81
3/8	69.0	2.72	38.0	1.50	77.0	3.03	51.0	2.00
1/2	77.0	3.03	46.0	1.81	94.5	3.72	60.0	2.36
3/4	80.0	3.15	51.0	2.00	98.5	3.88	72.0	2.84
1	97.0	3.82	60.0	2.36	108.0	4.25	80.0	3.15
1.1/4	101.0	3.98	72.0	2.84	120.0	4.72	94.0	3.70
1.1/2	110.0	4.33	80.0	3.15	138.0	5.44	100.0	3.94
2	120.0	4.72	94.0	3.70	146.0	5.75	122.0	4.80

ANSI B 16.11

Union Elbows

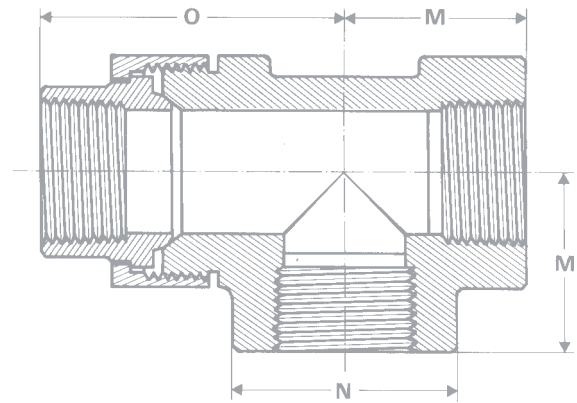
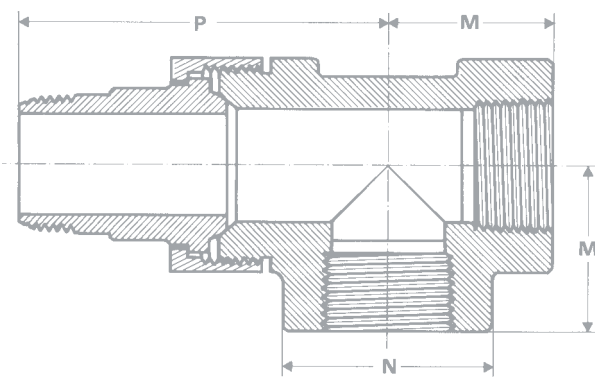
3000 Lbs



Nominal Pipe Size		1/4	3/8	1/2	3/4	1	1.1/4	1.1/2	2
M (1)	mm	28.5	28.5	33	38	44.5	60.5	60.5	63.5
	inches	1.12	1.12	1.30	1.50	1.75	2.38	2.38	2.50
N (1)	mm	34	34	38	46.5	56.5	76	76	92
	inches	1.34	1.34	1.50	1.83	2.22	3.00	3.00	3.62
O (1)	mm	51	54	65	67	80	97	101	109
	inches	2.02	2.13	2.56	2.64	3.15	3.19	3.97	4.29
P (1)	mm	69	72	88	90	108	126	132	140
	Inches	2.72	2.83	3.47	3.55	4.25	4.96	5.20	5.51

ANSI B 16.11

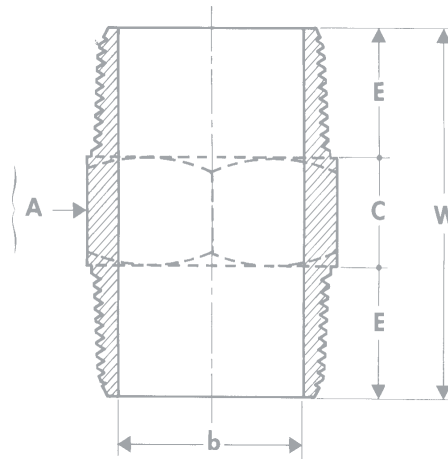
Union Tee's
3000 Lbs



Nominal Pipe Size		1/4	3/8	1/2	3/4	1	1.1/4	1.1/2	2
M (1)	mm	28.5	28.5	33	38	44.5	60.5	60.5	63.5
	inches	1.12	1.12	1.30	1.50	1.75	2.38	2.38	2.50
N (1)	mm	34	34	38	46.5	56.5	76	76	92
	inches	1.34	1.34	1.50	1.83	2.22	3.00	3.00	3.62
O (1)	mm	51	54	65	67	80	97	101	109
	inches	2.02	2.13	2.56	2.64	3.15	3.19	3.97	4.29
P (1)	mm	69	72	88	90	108	126	132	140
	Inches	2.72	2.83	3.47	3.55	4.25	4.96	5.20	5.51

ANSI B 16.11

Hexagonal Nipples
3000 / 6000 Lbs

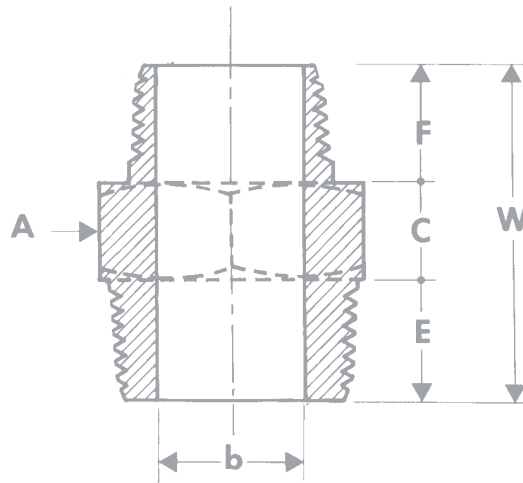


Nominal Size		A min.		E min.		C min.		W min.		B			
Inches	mm	mm	inch	mm	inch	mm	inch	mm	inch	3000		6000	
										mm	inch	mm	inch
1/8	6	11	0.43	10	0.39	6	0.24	26	1.02	5	0.20	2	0.08
1/4	8	15	0.59	15	0.59	6	0.24	36	1.42	8	0.31	6	0.24
3/8	10	18	0.71	16	0.63	8	0.31	40	1.57	11	0.43	8	0.31
1/2	15	22	0.87	20	0.79	8	0.31	48	1.89	14	0.55	11	0.43
3/4	20	27	1.06	21	0.83	10	0.39	52	2.05	19	0.75	13	0.51
1	25	35	1.38	25	0.98	10	0.39	60	2.36	24	0.94	17	0.67
1.1/2	40	50	1.97	26	1.02	16	0.63	68	2.68	38	1.50	30	1.18
2	50	62	2.44	27	1.06	17	0.67	71	2.80	49	1.93	39	1.54

ANSI B 16.11

Reducing Hexagonal Nipples

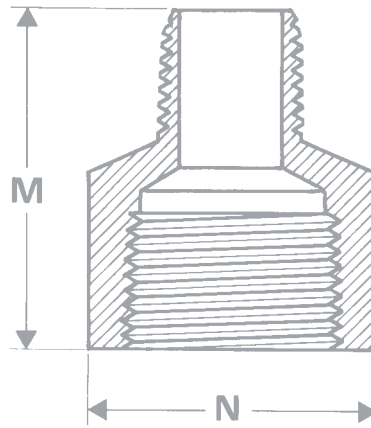
3000 / 6000 Lbs



Nominal Size		A min.		E min.		F min.		C min.		W min.		B			
												3000		6000	
inches	mm	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
1/4x1/8	8x6	15	0.59	15	0.59	10	0.39	6	0.24	31	1.22	5	0.20	2	0.08
3/8x1/4	10x8	18	0.71	16	0.63	15	0.59	8	0.31	39	1.54	8	0.31	6	0.24
1/2x3/8	15x10	22	0.87	20	0.79	16	0.63	8	0.31	44	1.73	11	0.43	8	0.31
1/2x1/4	15x8	22	0.87	20	0.79	15	0.59	8	0.31	43	1.69	8	0.31	6	0.24
3/4x1/2	20x15	27	1.06	21	0.83	20	0.79	9	0.35	50	1.97	14	0.55	11	0.43
3/4x3/8	20x10	27	1.06	21	0.83	16	0.63	9	0.35	46	1.81	11	0.43	8	0.31
1x3/4	25x20	35	1.38	25	0.98	21	0.83	10	0.39	56	2.20	19	0.75	13	0.51
1x1/2	25x15	35	1.38	25	0.98	20	0.79	10	0.39	55	2.17	14	0.55	11	0.43
1.1/2x1	40x25	50	1.97	26	1.02	25	0.98	16	0.63	67	2.64	24	0.94	17	0.67
1.1/2x3/4	40x20	50	1.97	26	1.02	21	0.83	16	0.63	63	2.48	19	0.75	13	0.51
1.1/2x1/2	40x15	50	1.97	26	1.02	20	0.79	16	0.63	62	2.44	14	0.55	11	0.43
2x1.1/2	50x40	62	2.44	27	1.06	26	1.02	17	0.67	70	2.76	38	1.50	30	1.18
2x1	50x25	62	2.44	27	1.06	25	0.98	18	0.71	70	2.76	24	0.94	17	0.67
2x3/4	50x20	62	2.44	27	1.06	21	0.83	17	0.67	65	2.60	19	0.75	13	0.51
2x1/2	50x15	62	2.44	27	1.06	20	0.79	18	0.71	65	2.60	14	0.55	11	0.43

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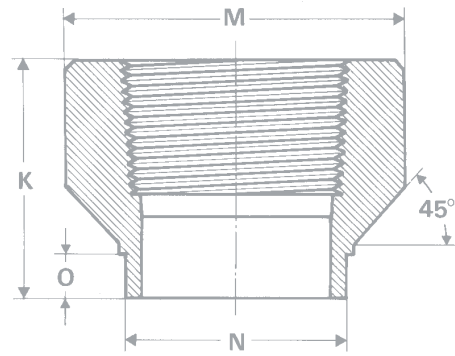
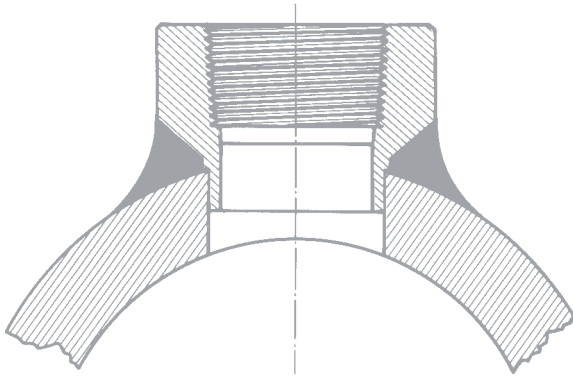
Male & Female Reducers
3000 Lbs



Nominal Pipe Size	3000			
	N (1)		M (1)	
	mm	inches	mm	inches
3/8x1/4	38	1.50	22	0.87
1/2x3/8	46	1.81	28	1.10
1/2x1/4	46	1.81	28	1.10
3/4x1/2	51	2.01	35	1.38
3/4x1/4	60	2.36	45	1.77
1x3/4	60	2.36	45	1.77
1x1/2	60	2.36	45	1.77
1x1/4	68	2.68	57	2.24
1.1/4x1	70	2.76	65	2.56
1.1/2x1	70	2.76	65	2.56
1.1/2x3/4	70	2.76	65	2.56
1.1/2x1/2	75	2.95	76	2.99
2x1	75	2.95	76	2.99
2.1/2x2	95	3.74	95	3.74
3x2	100	3.94	110	4.33
4x3	110	4.33	140	5.51
4x2	110	4.33	140	5.51

ANSI B 16.11

Welding Bosses
3000 / 6000 Lbs

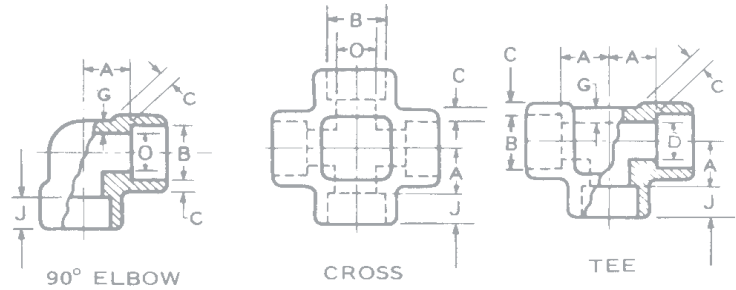


Nominal Pipe Size	3000 - 6000					
	K (1)		M (1)		N (1)	
	mm	inches	mm	inches	mm	inches
1/4	30.5	1.20	28.0	1.10	14.0	0.55
3/8	30.5	1.20	32.0	1.26	17.4	0.69
1/2	33.5	1.32	38.0	1.50	21.6	0.85
3/4	35.0	1.38	44.5	1.75	26.9	1.06
1	43.0	1.69	57.5	2.26	33.6	1.32
1.1/4	48.0	1.89	63.5	2.50	42.4	1.67
1.1/2	51.0	2.00	76.1	3.00	48.5	1.91
2	57.5	2.26	92.0	3.62	60.9	2.40

ANSI B16.11

Socket Weld Fittings

Dimensions 3000 - 6000 - 9000 Lbs



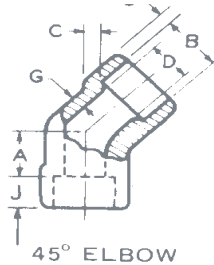
- 1] Average of Socket Wall Thickness around periphery shall not be less than listed values. Minimum values are permitted in localized areas.
- 2] Upper and lower values for each size are the respective maximum and minimum dimensions.

Nom. Pipe Size	Socket Bore (2) B	Bore Diameter of Fitting (2) D			Socket Wall Thickness - C (1)						Body Wall Thickness - G			
		Pressure Class Designation			Pressure Class Designation						Pressure Class Designation			
		3000			6000		9000		3000	6000	9000	3000	6000	9000
		3000	6000	9000	Ave.	Min.	Ave.	Min.	Ave.	Min.	Min.	Min.	Min.	
1/8"	10.90 10.65	7.6 6.1	4.8 3.2		3.20	3.20	3.95	3.45			2.40	3.15		
1/4"	14.35 14.10	10.0 8.5	7.1 5.6		3.80	3.30	4.60	4.00			3.00	3.70		
3/8"	17.80 17.55	13.3 11.8	9.9 8.4		4.00	3.50	5.05	4.35			3.20	4.00		
1/2"	21.95 21.70	16.6 15.0	12.5 11.0	7.2 5.6	4.65	4.10	5.95	5.20	9.35	8.20	3.75	4.80	7.45	
3/4"	27.30 27.05	21.7 20.2	16.3 14.8	11.8 10.3	4.90	4.25	6.95	6.05	9.80	8.55	3.90	5.55	7.80	
1"	34.05 33.80	27.4 25.9	21.5 19.9	16.0 14.5	5.70	5.00	7.90	6.95	11.40	9.95	4.55	6.35	9.10	
1-1/4"	42.80 42.55	35.8 34.3	30.2 28.7	23.5 22.0	6.05	5.30	7.90	6.95	12.15	10.60	4.85	6.35	9.70	
1.1/2"	48.90 48.65	41.7 40.1	34.7 33.2	28.7 27.2	6.35	5.55	8.90	7.80	12.70	11.15	5.10	7.15	10.15	
2"	61.35 61.10	53.5 51.7	43.6 42.1	38.9 37.4	6.95	6.05	10.90	9.50	13.85	12.15	5.55	8.75	11.05	
2.1/2"	74.20 73.80	64.2 61.2			8.75	7.65					7.00			
3"	90.15 89.80	79.5 46.4			9.50	8.30					7.60			
4"	115.80 115.45	103.8 100.7			10.70	9.35					8.55			

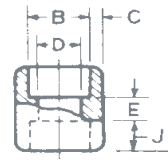
ANSI B16.11

Socket Weld Fittings

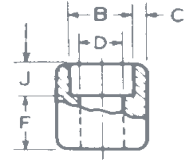
Dimensions 3000 - 6000 - 9000 Lbs



45° ELBOW



COUPLING



HALF-COUPLING

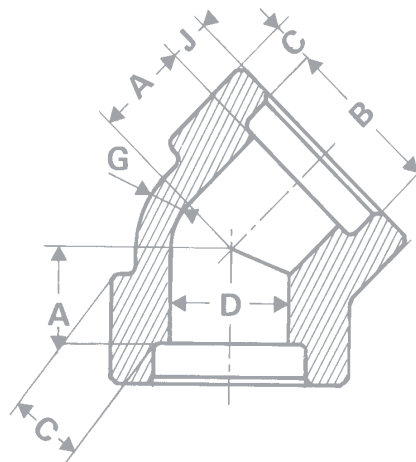
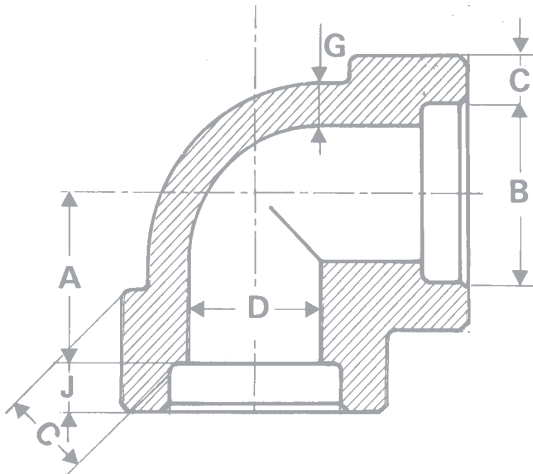
- 1] Average of Socket Wall Thickness around periphery shall not be less than listed values. Minimum values are permitted in localized areas.
- 2] Upper and lower values for each size are the respective maximum and minimum dimensions.

Nom. Pipe Size	Depth of Socket Min. - J	Center To Bottom of Socket - A						Laying Lengths	
		90° Elbows, Tees and Crosses			45° Elbows			Couplings E	Half Couplings F
		Pressure Class Designation			Pressure Class Designation				
		3000	6000	9000	3000	6000	9000		
1/8"	10	12	12		9	9		8	17
		10	10		7	7		5	15
1/4"	10	12	17		9	9		8	17
		10	13		7	7		5	15
3/8"	10	15	17		9	13		9	19
		12	14		6	10		3	16
1/2"	10	17	21	27	13	14	17	13	24
		14	18	24	10	11	14	6	21
3/4"	13	21	24	30	14	16	21	13	25
		18	21	27	11	13	17	6	22
1"	13	24	29	34	16	19	23	17	31
		20	25	30	12	15	19	9	27
1-1/4"	13	29	34	37	19	23	24	17	32
		25	30	33	15	19	20	9	28
1.1/2"	13	34	40	40	23	27	28	17	34
		30	36	36	19	23	23	9	30
2"	16	40	43	56	27	31	31	23	43
		36	39	52	23	27	26	15	39
2.1/2"	16	44			31			24	45
		39			27			14	40
3"	16	60			34			24	47
		55			29			14	42
4"	19	69			44			24	50
		64			39			14	45

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90 & 45 Degrees Elbows

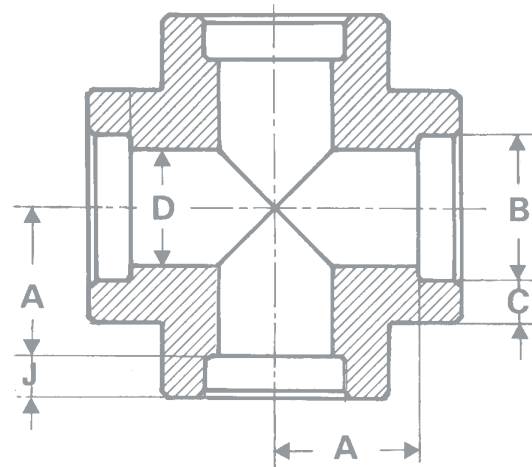
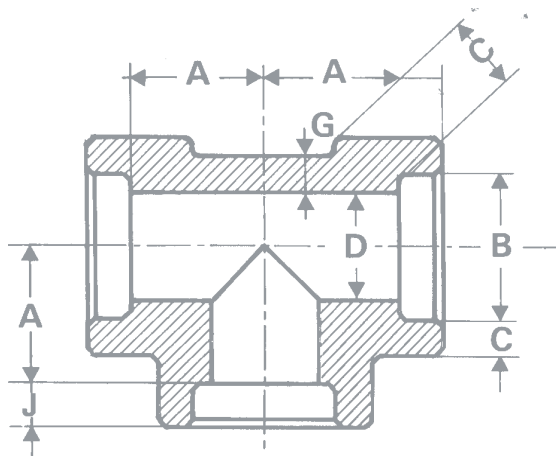
3000 / 6000 Lbs



Nominal Pipe Size	Center to Bottom of Socket - A								Tolerances +/-	
	90 Degrees Elbows				45 Degrees Elbows					
	3000		6000		3000		6000		mm	inches
	mm	inches	mm	inches	mm	inches	mm	inches		
1/4	11.0	0.44	13.5	0.53	8.0	0.31	8.0	0.31	1.0	0.03
3/8	13.5	0.53	15.5	0.62	7.5	0.31	11.5	0.44	1.5	0.06
1/2	15.5	0.62	19.5	0.75	11.5	0.44	12.5	0.50	1.5	0.06
3/4	19.5	0.75	22.5	0.88	12.5	0.50	14.5	0.56	1.5	0.06
1	22.0	0.88	27.0	1.06	14.0	0.56	17.0	0.69	2.0	0.08
1.1/4	27.0	1.06	32.0	1.25	17.0	0.69	21.0	0.81	2.0	0.08
1.1/2	32.0	1.25	38.0	1.50	21.0	0.81	25.0	1.00	2.0	0.08
2	38.0	1.50	41.0	1.62	25.0	1.00	29.0	1.12	2.0	0.08
2.1/2	41.5	1.62			29.0	1.12			2.5	0.10
3	57.5	2.25			31.5	1.25			2.5	0.10
4	66.5	2.62			41.5	1.62			2.5	0.10

ANSI B 16.11

Tees & Crosses
3000 / 6000 Lbs

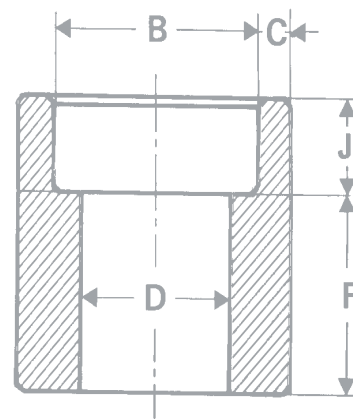
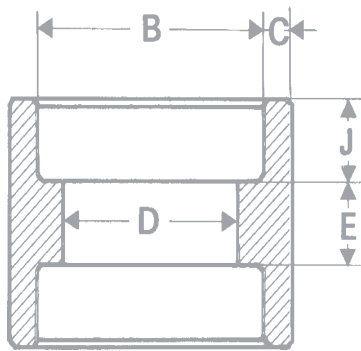


Nominal Pipe Size	Center to Bottom of Socket - A					
	3000		6000		Tolerances +/-	
	mm	inches	mm	inches	mm	inches
1/4	11.0	0.44	13.5	0.53	1.0	0.03
3/8	13.5	0.53	15.5	0.62	1.5	0.06
1/2	15.5	0.62	19.5	0.75	1.5	0.06
3/4	19.5	0.75	22.5	0.88	1.5	0.06
1	22.0	0.88	27.0	1.06	2.0	0.08
1.1/4	27.0	1.06	32.0	1.25	2.0	0.08
1.1/2	32.0	1.25	38.0	1.50	2.0	0.08
2	38.0	1.50	41.0	1.62	2.0	0.08
2.1/2	41.5	1.62			2.5	0.10
3	57.5	2.25			2.5	0.10
4	66.5	2.62			2.5	0.10

ANSI B 16.11

Full & Half Couplings

3000 / 6000 Lbs

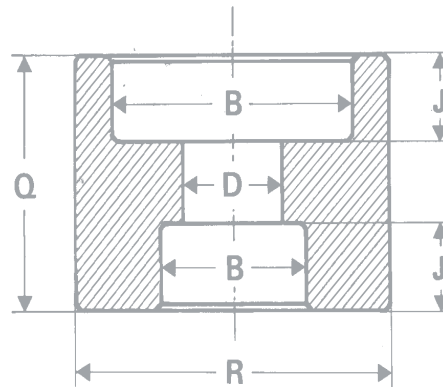


Nominal Pipe Size	Full Couplings - E						Half Couplings - F					
	3000		6000		Tol. +/-		3000		6000		Tol. +/-	
	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
1/4	6.5	0.25	6.5	0.25	1.5	0.06	16.0	0.62	16.0	0.62	1.0	0.03
3/8	6.0	0.25	6.0	0.25	3.0	0.12	17.5	0.69	17.5	0.69	1.5	0.06
1/2	9.5	0.38	9.5	0.38	3.5	0.12	22.5	0.88	22.5	0.88	1.5	0.06
3/4	9.5	0.38	9.5	0.38	3.5	0.12	23.5	0.94	23.5	0.94	1.5	0.06
1	13.0	0.50	13.0	0.50	4.0	0.16	29.0	1.12	29.0	1.12	2.0	0.08
1.1/4	13.0	0.50	13.0	0.50	4.0	0.16	30.0	1.19	30.0	1.19	2.0	0.08
1.1/2	13.0	0.50	13.0	0.50	4.0	0.16	32.0	1.25	32.0	1.25	2.0	0.08
2	19.0	0.75	19.0	0.75	4.0	0.16	41.0	1.62	41.0	1.62	2.0	0.08
2.1/2	19.0	0.75	19.0	0.75	5.0	0.20	42.5	1.69	42.5	1.69	2.5	0.10
3	19.0	0.75	19.0	0.75	5.0	0.20	44.5	1.75	44.5	1.75	2.5	0.10
4	19.0	0.75	19.0	0.75	5.0	0.20	47.5	1.88	47.5	1.88	2.5	0.10

ANSI B 16.11

Reducing Couplings

3000 / 6000 Lbs

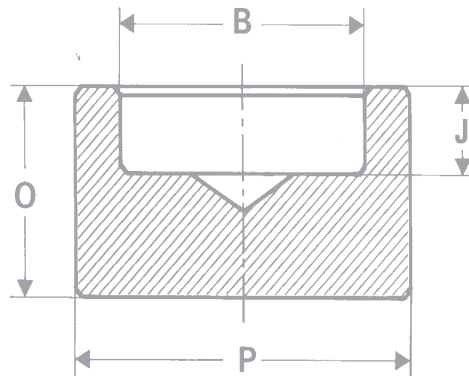


Nominal Pipe Size	3000				6000			
	Q		R		Q		R	
	mm	inches	mm	inches	mm	inches	mm	inches
3/8x1/4	25.4	1.00	24.9	0.98	25.4	1.00	26.7	1.05
1/2x3/8	28.7	1.13	31.0	1.22	28.7	1.13	33.0	1.30
1/2x1/4	28.7	1.13	31.0	1.22	28.7	1.13	33.0	1.30
3/4x1/2	35.0	1.38	36.0	1.42	35.0	1.38	40.1	1.58
3/4x1/4	35.0	1.38	36.0	1.42	35.0	1.38	40.1	1.58
1x3/4	38.1	1.50	45.2	1.78	38.1	1.50	50.0	1.97
1x1/2	38.1	1.50	45.2	1.78	38.1	1.50	50.0	1.97
1x1/4	38.1	1.50	45.2	1.78	38.1	1.50	50.0	1.97
1.1/4x1	38.1	1.50	55.1	2.17	38.1	1.50	57.9	2.28
1.1/2x1	38.1	1.50	60.0	2.36	38.1	1.50	65.0	2.56
1.1/2x3/4	38.1	1.50	60.0	2.36	38.1	1.50	65.0	2.56
1.1/2x1/2	38.1	1.50	60.0	2.36	38.1	1.50	65.0	2.56
2x1.1/2	51.3	2.02	74.9	2.95	51.3	2.02	82.0	3.23
2x1	51.3	2.02	74.9	2.95	51.3	2.02	82.0	3.23

ANSI B 16.11

Caps

3000 / 6000 Lbs

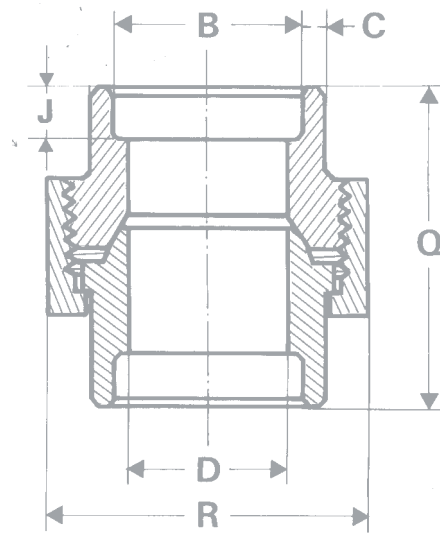


Nominal Pipe Size	3000				6000			
	O		P		O		P	
	mm	inches	mm	inches	mm	inches	mm	inches
1/4	15	0.59	22	0.87	17.5	0.69	23.1	0.91
3/8	17	0.67	26	1.02	19.1	0.75	26.7	1.05
1/2	19	0.75	32	1.26	22	0.87	34	1.34
3/4	23	0.91	38	1.50	26	1.02	41	1.61
1	26	1.02	45	1.77	28	1.10	50	1.97
1.1/4	28	1.10	55	2.17	30	1.18	58	2.28
1.1/2	30	1.18	65	2.56	32	1.26	66.5	2.62
2	36	1.42	75	2.95	38	1.50	85	3.35
2.1/2	38	1.50	92	3.62	42	1.65	100	3.94
3	42	1.65	110	4.33	45	1.77	120	4.72
4	48	1.89	140	5.51	51	2.01	150	5.91

ANSI B 16.11

Female - Female Unions

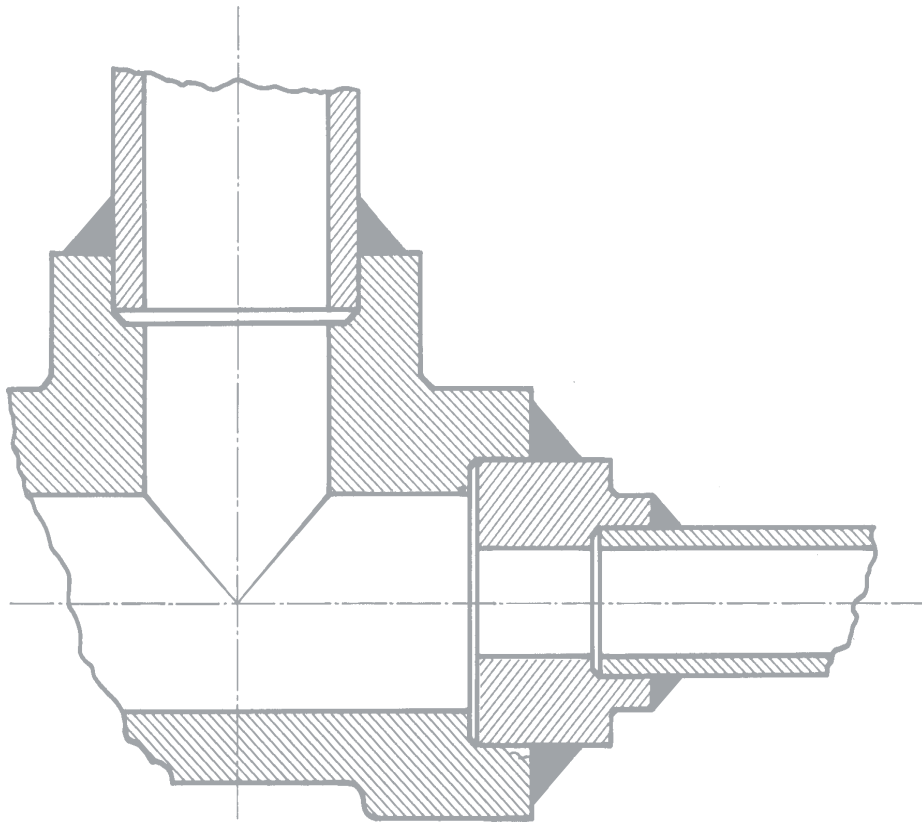
3000 / 6000 Lbs



Nominal Pipe Size	3000				6000			
	Q		R		Q		R	
	mm	inches	mm	inches	mm	inches	mm	inches
1/4	42.5	1.67	36.0	1.42	54.0	2.13	46.0	1.81
3/8	47.5	1.87	41.0	1.62	57.0	2.25	51.0	2.00
1/2	52.0	2.05	46.0	1.81	69.0	2.72	60.0	2.36
3/4	57.0	2.25	56.0	2.20	72.0	2.84	72.0	2.84
1	63.0	2.48	65.0	2.56	80.0	3.15	80.0	3.15
1.1/4	70.0	2.76	78.0	3.07	89.0	3.50	94.0	3.70
1.1/2	78.0	3.07	86.0	3.39	108.0	4.25	100.0	3.94
2	89.0	3.50	103.0	4.06	114.0	4.49	122.0	4.80
2.1/2	114.0	4.49	122.0	4.80				
3	130.0	5.12	144.0	5.67				
4	150.0	5.91	180.0	7.09				

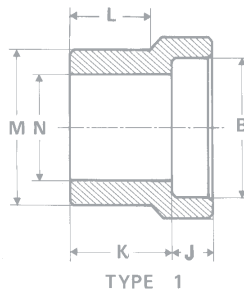
ASME B 16.11

Application of Reducing Insert in a SocketWeld Tee

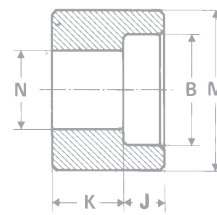


ASME B 16.11

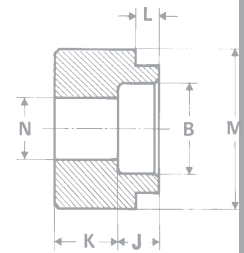
Reducing Inserts
3000 Lbs



TYPE 1



TYPE 2

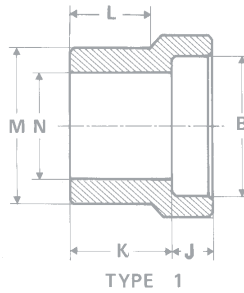


TYPE 3

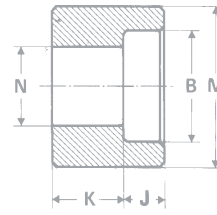
Nominal Pipe Size	Type	M		N		K		L	
		mm	inches	mm	inches	mm	inches	mm	inches
1/2 x 3/8	1	21.6	0.850	11	0.44	24	0.94	20	0.78
1/2x1/4	2	21.6	0.850	7.5	0.30	15.5	0.62		
1/2x1/8	3	21.6	0.850	5.5	0.22	15.5	0.62	7	0.28
3/4x1/2	1	26.9	1.060	14	0.56	27	1.06	22	0.87
3/4x3/8	2	26.9	1.060	11	0.44	15.5	0.62		
3/4x1/4	3	26.9	1.060	7.5	0.30	15.5	0.62	7	0.28
3/4x1/8	3	26.9	1.060	5.5	0.22	15.5	0.62	7	0.28
1x3/4	1	33.6	1.325	19	0.75	28.5	1.12	23	0.91
1x1/2	2	33.6	1.325	14	0.56	24	0.94		
1x3/8	3	33.6	1.325	11	0.44	23	0.90	7	0.28
1x1/4	3	33.6	1.325	7.5	0.30	24	0.94	7	0.28
1.1/4x1	1	42.4	1.670	24.5	0.97	31.5	1.25	24.5	0.97
1.1/4x3/4	2	42.4	1.670	19	0.75	22	0.87		
1.1/4x1/2	3	42.4	1.670	14	0.56	24.5	0.97	7	0.28
1.1/2x1.1/4	1	48.3	1.910	32.5	1.28	33.5	1.31	27	1.06
1.1/2x1	2	48.3	1.910	24.5	0.97	33.5	1.31		
1.1/2x3/4	3	48.3	1.910	19	0.75	22	0.87	8	0.32
1.1/2x1/2	3	48.3	1.910	14	0.56	26	1.03	7	0.28
2x1.1/2	2	60.9	2.400	38	1.50	27	1.06		
2x1.1/4	3	60.9	2.400	32.5	1.28	25.5	1.00	8	0.32
2x1	3	60.9	2.400	24.5	0.97	25.5	1.00	8	0.32
2x3/4	3	60.9	2.400	19	0.75	25.5	1.00	8	0.32
2x1/2	3	60.9	2.400	14	0.56	29.5	1.16	7	0.28
2.1/2x2	1	73.6	2.900	49	1.93	41.5	1.63	30	1.19
2.1/2x1.1/2	3	73.6	2.900	38	1.50	27.5	1.09	8	0.32
2.1/2x1.1/4	3	73.6	2.900	32.5	1.28	29.5	1.16	8	0.32
2.1/2x1	3	73.6	2.900	24.5	0.97	29.5	1.16	8	0.32
3x2.1/2	1	89.6	3.530	59	2.32	46	1.81	33.5	1.32
3x2	3	89.6	3.530	49	1.93	41.5	1.63	10	0.40
3x1.1/2	3	89.6	3.530	38	1.50	42	1.66	8	0.32
3x1.1/4	3	89.6	3.530	32.5	1.28	42.5	1.67	8	0.32
3x1	3	89.6	3.530	24.5	0.97	39	1.53	8	0.32

ASME B 16.11

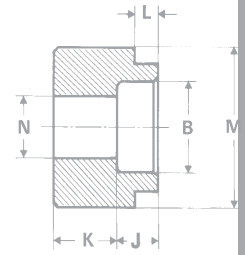
Reducing Inserts
6000 Lbs



TYPE 1



TYPE 2

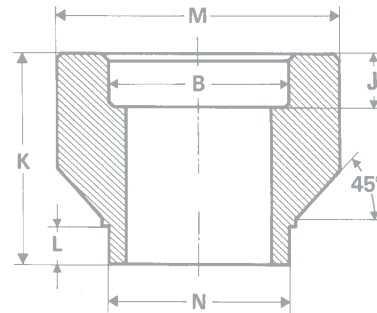
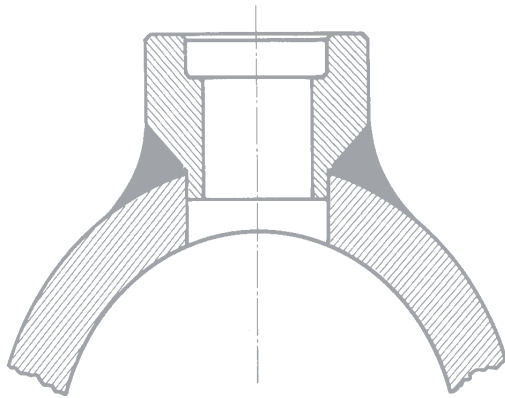


TYPE 3

Nominal Pipe Size	Type	M		N		K		L	
		mm	inches	mm	inches	mm	inches	mm	inches
1/2 x 3/8	1	21.6	0.850	11	0.44	30	1.19	21	0.83
1/2x1/4	1	26.9	1.060	12	0.47	33.5	1.31	23	0.90
1/2x1/8	2	26.9	1.060	11	0.44	25.5	1.00		
3/4x1/2	1	33.6	1.325	15.5	0.61	42	1.66	26	1.03
3/4x3/8	1	33.6	1.325	12	0.47	40	1.58	24	0.94
1x3/4	3	33.6	1.325	11	0.44	28.5	1.12	7	0.28
1x1/2	1	42.4	1.670	20.5	0.81	43	1.70	28	1.11
1x3/8	1	42.4	1.670	15.5	0.61	43	1.70	28	1.11
1x1/4	2	42.4	1.670	12	0.47	32	1.26		
1.1/4x1	3	42.4	1.670	11	0.44	32.5	1.28	7	0.28
1.1/4x3/4	1	48.5	1.910	29.5	1.16	51	2.01	32	1.27
1.1/4x1/2	1	48.5	1.910	20.5	0.81	49	1.93	28	1.11
1.1/2x1.1/4	2	48.5	1.910	15.5	0.61	35	1.38		
1.1/2x1	3	48.5	1.910	12	0.47	39	1.53	7	0.28
1.1/2x3/4	1	60.9	2.400	34	1.34	46	1.81	34	1.34
1.1/2x1/2	1	60.9	2.400	29.5	1.16	47.5	1.87	34	1.34
2x1.1/2	3	60.9	2.400	20.5	0.81	36	1.42	8	0.32
2x1.1/4	3	60.9	2.400	15.5	0.61	36	1.42	8	0.32
2x1	3	60.9	2.400	12	0.47	39	1.53	7	0.28
2x3/4	1	73.6	2.900	43	1.70	54	2.13	36	1.42
2x1/2	2	73.6	2.900	34	1.34	47.5	1.87		
2.1/2x2	3	73.6	2.900	29.5	1.16	42	1.66	8	0.32
2.1/2x1.1/2	3	73.6	2.900	20.5	0.81	44	1.73	8	0.32
2.1/2x1.1/4	3	73.6	2.900	15.5	0.61	44	1.73	8	0.32
2.1/2x1	3	73.6	2.900	12	0.47	46.5	1.83	7	0.28
3x2.1/2	1	89.6	3.530	54	2.13	63.5	2.50	38	1.50
3x2	2	89.6	3.530	43	1.70	54	2.13		
3x1.1/2	3	89.6	3.530	34	1.34	47.5	1.87	8	0.32
3x1.1/4	3	89.6	3.530	29.5	1.16	49.6	1.95	8	0.32
3x1	3	89.6	3.530	20.5	0.81	48.5	1.91	8	0.32

ANSI B 16.11

Welding Bosses
3000 / 6000 Lbs

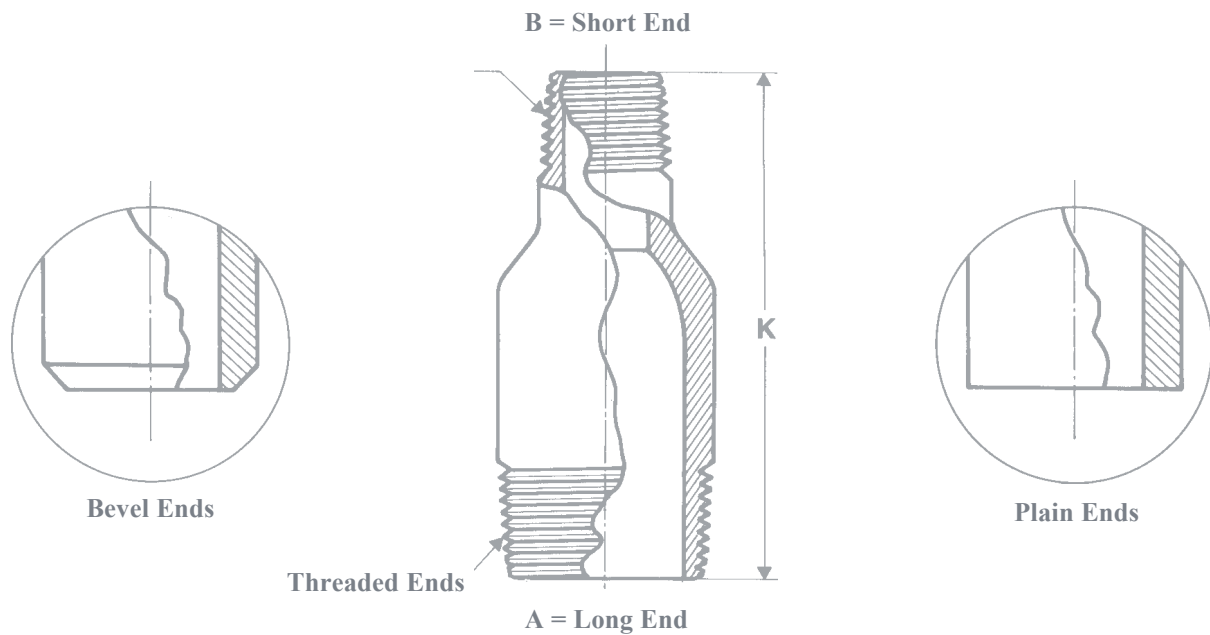


From 1/4" to 2" L= 9.5mm

Nominal Pipe Size	3000 -6000					
	K		M		N	
	mm	inches	mm	inches	mm	inches
1/4	30.5	1.20	28.0	1.10	14.0	0.55
3/8	30.5	1.20	32.0	1.26	17.4	0.69
1/2	33.5	1.32	38.0	1.50	21.6	0.85
3/4	35.0	1.38	44.5	1.75	26.9	1.06
1	43.0	1.69	57.5	2.26	33.6	1.32
1.1/4	48.0	1.89	63.5	2.50	42.4	1.67
1.1/2	51.0	2.00	76.1	3.00	48.5	1.91
2	57.5	2.26	92.0	3.62	60.9	2.40

MSS-SP95

Swaged Nipples

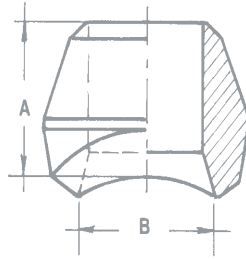


Nominal Pipe Sizes A x B	K		Thickness according to ANSI B 36.10		
	mm	inches			
3/8 x 1/4	63.5	2.50	Sch 40	Sch 80	-
1/2 x 3/8	63.5	2.75	Sch 40	Sch 80	-
1/2 x 1/4	63.5	2.75	Sch 40	Sch 80	-
3/4 x 1/2	76.2	3.00	Sch 40	Sch 80	Sch 160
3/4 x 3/8	76.2	3.00	Sch 40	Sch 80	-
1 x 3/4	88.9	3.50	Sch 40	Sch 80	Sch 160
1 x 1/2	88.9	3.50	Sch 40	Sch 80	Sch 160
1.1/4 x 1	102.6	4.00	Sch 40	Sch 80	Sch 160
1.1/2 x 1.1/4	114.3	4.50	Sch 40	Sch 80	Sch 160
1.1/2 x 1	114.3	4.50	Sch 40	Sch 80	Sch 160
1.1/2 x 3/4	114.3	4.50	Sch 40	Sch 80	Sch 160
2 x 1.1/2	165.1	6.50	Sch 40	Sch 80	Sch 160
2 x 1.1/4	165.1	6.50	Sch 40	Sch 80	Sch 160
2 x 1	165.1	6.50	Sch 40	Sch 80	Sch 160
2.1/2 x 2	177.8	7.00	Sch 40	Sch 80	Sch 160
3 x 2	203.2	8.00	Sch 40	Sch 80	Sch 160
4 x 3	228.6	9.00	Sch 40	Sch 80	Sch 160
4 x 2	228.6	9.00	Sch 40	Sch 80	Sch 160

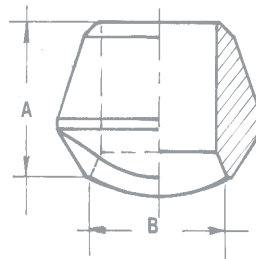
MSS-SP97

Welding Outlets

Sched. 40S



REDUCING SIZE



FULL SIZE

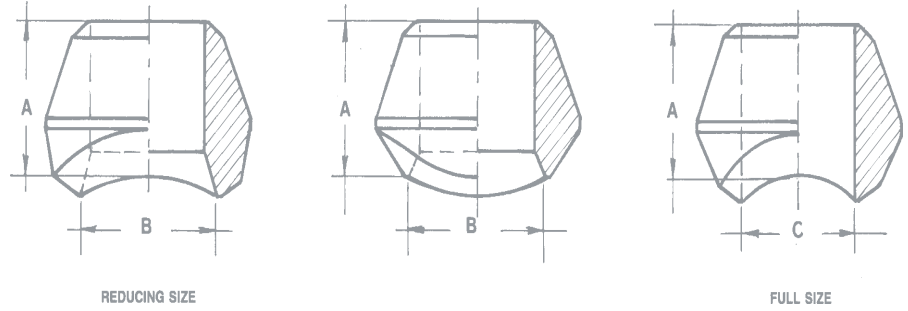
B has the same dimension for reducing and full sizes

Nominal Size	Reducing Size					Full Size		
	A		B		Weight	C		Weight
	mm	Inches	mm	Inches		mm	Inches	
1/8	16	5/8	16	5/8	0.04	-	-	-
1/4	16	5/8	16	5/8	0.04	-	-	-
3/8	19	3/4	19	3/4	0.07	-	-	-
1/2	19	3/4	24	15/16	0.08	16	5/8	0.07
3/4	22	7/8	30	1.3/16	0.12	20.5	13/16	0.12
1	27	1.1/16	36.5	1.7/16	0.22	26	1.1/32	0.18
1.1/4	32	1.1/4	44.5	1.3/4	0.36	35	1.3/8	0.32
1.1/2	33.5	15/16	51	2	0.45	41	1.5/8	0.36
2	38	1.1/2	65	2.9/16	0.8	52.5	2.1/16	0.7
2.1/2	41.5	1.5/8	76	3	1.15	62	2.7/16	1.1
3	44.5	1.3/4	93.5	3.11/16	1.8	78	3.1/16	1.7
3.1/2	47.5	1.7/8	101.5	4	2.5	90.5	3.9/16	2.25
4	51	2	120.5	4.3/4	2.9	101.5	4	3.05
5	57	2.1/4	141	5.9/16	4.6	128.5	5.1/16	4.85
6	60.5	2.3/8	170	6.11/16	7.	154	6.1/16	7.5
8	70	2.3/4	220.5	8.11/16	12	201.5	7.15/16	12.7
10	78	3.1/16	274.5	10.13/16	19.5	254	10	20
12	85.5	3.3/8	325.5	12.13/16	26.7	304.5	12	29.4
14	89	3.1/2	357	14.1/16	29.9	336.5	13.1/4	31.8
16	93.5	3.11/16	408	16.1/16	34	387.5	15.1/4	41.7
18	101.5	4	459	18.1/16	44	438	17.1/4	56.7
20	114.5	4.1/2	510	20.1/16	53.5	489	19.1/4	79.3
24	124	4.7/8	611	24.1/16	99.7	590.5	23.1/4	127

MSS-SP97

Welding Outlets

Sched. 80S

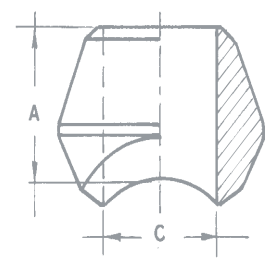
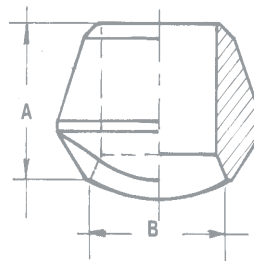
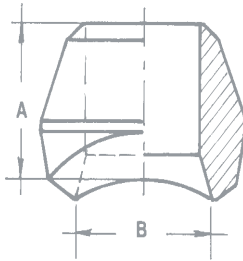


B has the same dimension for reducing and full sizes

Nominal Size	Reducing Size					Full Size		
	A		B		Weight	C		Weight
	mm	Inches	mm	Inches		mm	Inches	
1/8	16	5/8	16	5/8	0.04	-	-	-
1/4	16	5/8	16	5/8	0.04	-	-	-
3/8	19	3/4	19	3/4	0.07	-	-	-
1/2	19	3/4	24	1.5/16	0.09	14	9/16	0.07
3/4	22	7/8	30	1.3/16	0.14	19	3/4	0.12
1	27	1.1/16	36.5	1.7/16	0.21	24	15/16	0.18
1.1/4	32	1.1/4	44.5	1.3/4	0.4	32	1.1/4	0.32
1.1/2	33.5	1.5/16	51	2	0.5	38	1.1/2	0.4
2	38	1.1/2	65	2.9/16	0.79	49	1.15/16	0.72
2.1/2	41.5	1.5/8	76	3	1.18	59	2.5/16	1.13
3	44.5	1.3/4	93.5	3.11/16	1.85	73.5	2.7/8	1.85
3.1/2	47.5	1.7/8	101.5	4	2.54	85	3.5/16	2.3
4	51	2	120.5	4.3/4	2.9	97	3.13/16	3.4
5	57	2.1/4	141	5.9/16	4.7	122	4.13/16	5
6	78	3.1/16	170	6.11/16	10.4	146	5.3/4	10.4
8	87.5	3.7/16	220.5	8.11/16	20.4	193.5	7.5/8	21
10	93.5	3.11/16	265	10.7/16	24.8	247.5	9.3/4	25.4
12	100	3.15/16	316	12.7/16	35	298.5	11.3/4	35
14	105	4.1/8	351	13.13/16	37.7	330	13	39
16	113	4.7/16	402	15.13/16	46.2	381	15	52
18	119	4.11/16	452	17.13/16	58.9	432	17	59
20	127	5	503	19.13/16	71.5	482.5	19	84.7
24	140	5.1/2	605	23.13/16	141	584	23	146

MSS-SP97

Welding Outlets
Sched. 160 and XXS



REDUCING SIZE

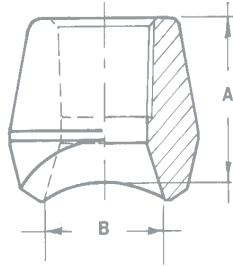
FULL SIZE

Suitable for schedule 160 run pipe. For schedule XXS pipes, dimension "C" varies to meet in valve of values.
Outlet sizes listed in the chart are suitable for schedule 160 and XXS run pipes. For 8" and over, always specify the run pipe thickness.

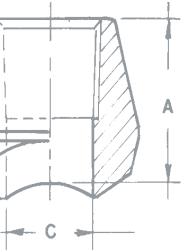
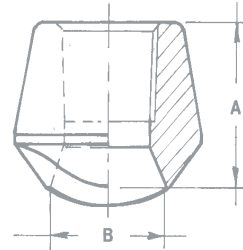
Nominal Size	Reducing Size					Full Size		
	A		B		Weight	C		Weight
	mm	Inches	mm	Inches		mm	Inches	
1/2	28.5	1.1/8	14	9/16	0.15	11.5	7/16	0.15
3/4	31.5	1.1/4	19	3/4	0.32	15.5	5/8	0.32
1	38	1.1/2	25.5	1	0.38	21	13/16	0.38
1.1/4	44.5	1.3/4	33.5	1.5/16	0.55	29.5	1.3/16	0.6
1.1/2	51	2	38	1.1/2	0.8	34	1.5/16	0.85
2	55.5	2.3/16	43	1.11/16	0.97	43	1.11/16	1
2.1/2	62	2.7/16	54	2.1/8	1.55	54	2.1/8	1.7
3	73	2.7/8	73	2.7/8	2.85	66.5	2.5/8	2.95
4	84	3.5/16	98.5	3.7/8	4.75	87	3.7/16	4.95
5	93.5	3.11/16	122	4.13/16	6.5	109.5	4.5/16	6.8
6	105	4.1/8	146	5.3/4	12.7	132	5.3/16	13.7

Other dimensions are available on request

MSS-SP97 Threaded Outlets 3000 Lbs



REDUCING SIZE



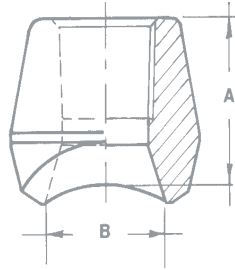
FULL SIZE

Suitable for schedule 40S and 80S run pipe.

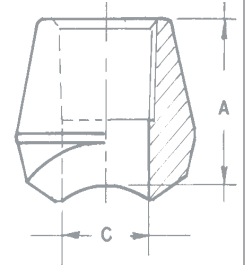
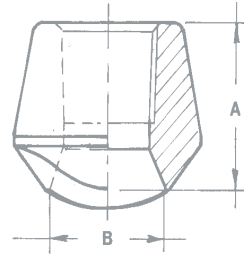
Nominal Size	Reducing Size					Full Size		
	A		B		Weight	C		Weight
	mm	Inches	mm	Inches		mm	Inches	
1/8	19	3/4	16	5/8	0.06	-	-	-
1/4	19	3/4	16	5/8	0.06	-	-	-
3/8	20.5	13/16	19	3/4	0.09	-	-	-
1/2	25.5	1	24	15/16	0.11	14	9/16	0.12
3/4	27	1.1/16	30	1.3/16	0.17	19	3/4	0.19
1	33.5	1.5/16	36.5	1.7/16	0.29	24	15/16	0.31
1.1/4	33.5	1.5/16	44.5	1.3/4	0.41	32	1.1/4	0.45
1.1/2	35	1.3/8	51	2	0.46	38	1.1/2	0.5
2	38	1.1/2	65	2.9/16	0.8	49	1.15/16	0.87
2.1/2	46	1.13/16	76	3	1.4	59	2.5/16	1.5
3	51	2	93.5	3.11/16	2	73.5	2.7/8	2.15
3.1/2	54	2.1/8	101.5	4	2.6	85	3.5/16	2.85
4	57	2.1/4	120.5	4.3/4	3.35	97	3.13/16	3.6

Other dimensions are available on request

MSS-SP97 Threaded Outlets 6000 Lbs



REDUCING SIZE



FULL SIZE

Available only for reducing size outlets

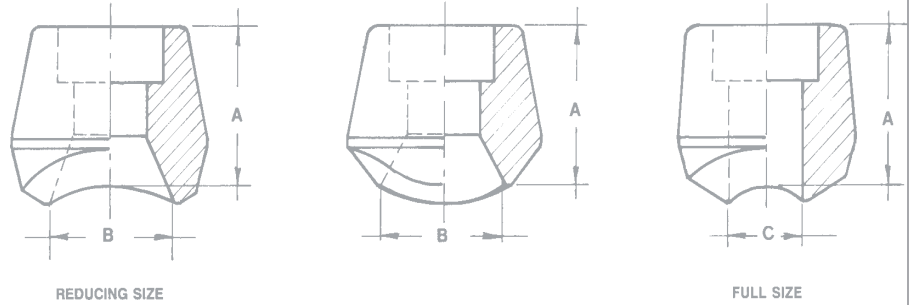
Nominal Size	Reducing Size					Full Size		
	A		B		Weight	mm	Inches	Weight
	mm	Inches	mm	Inches				
1/4	28.5	1.1/8	14	9/16	0.2			
3/8	28.5	1.1/8	14	9/16	0.2			
1/2	31.5	1.1/4	19	3/4	0.3			
3/4	36.5	1.7/16	25.5	1	0.5			
1	39.5	1.9/16	33.5	1.5/16	0.9			
1.1/4	39.5	1.9/16	38	1.1/2	0.85			
1.1/2	43	1.11/16	49	1.15/16	1.45			
2	52.5	2.1/16	59	2.5/16	2.75			

Other dimensions are available on request

MSS-SP97

Socket Weld Outlets

3000 Lbs



Suitable for schedule 40S and 80S run pipe.

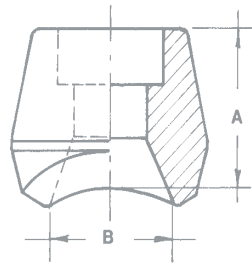
Nominal Size	Reducing Size					Full Size		
	A		B		Weight	C		Weight
	mm	Inches	mm	Inches		mm	Inches	
1/8	19	3/4	16	5/8	0.06	-	-	-
1/4	19	3/4	16	5/8	0.06	-	-	-
3/8	20.5	13/16	19	3/4	0.09	-	-	-
1/2	25.5	1	24	15/16	0.11	14	9/16	0.12
3/4	27	1.1/16	30	1.3/16	0.17	19	3/4	0.19
1	33.5	1.5/16	36.5	1.7/16	0.29	24	15/16	0.31
1.1/4	33.5	1.5/16	44.5	1.3/4	0.41	32	1.1/4	0.45
1.1/2	35	1.3/8	51	2	0.46	38	1.1/2	0.5
2	38	1.1/2	65	2.9/16	0.8	49	1.15/16	0.87
2.1/2	46	1.13/16	76	3	1.4	59	2.5/16	1.5
3	51	2	93.5	3.11/16	2	73.5	2.7/8	2.15
3.1/2	54	2.1/8	101.5	4	2.6	85	3.5/16	2.8
4	57	2.1/4	120.5	4.3/4	3.3	97	3.13/16	3.5

Other dimensions are available on request

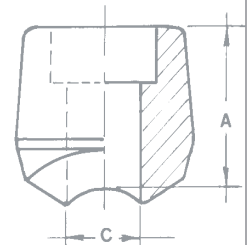
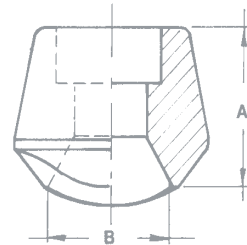
MSS-SP97

Socket Weld Outlets

6000 Lbs



REDUCING SIZE



FULL SIZE

Bore to suit schedule 160 pipe.

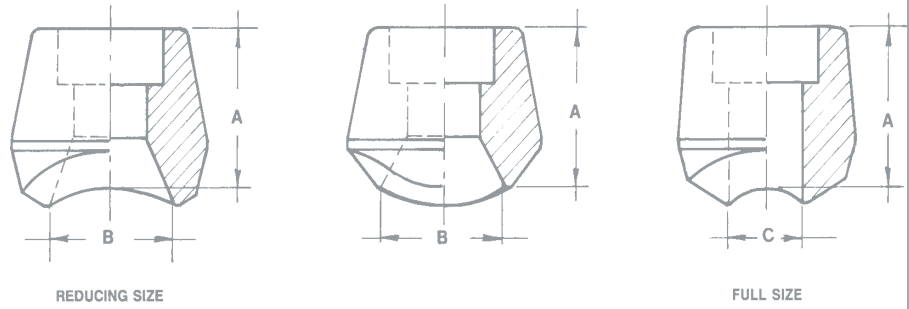
Nominal Size	Reducing Size					Weight		
	A		B					
	mm	Inches	mm	Inches				
1/4	28.5	1.1/8	14	9/16	0.2			
3/8	28.5	1.1/8	14	9/16	0.2			
1/2	31.5	1.1/4	19	3/4	0.3			
3/4	36.5	1.7/16	25.5	1	0.5			
1	39.5	1.9/16	33.5	1.5/16	0.9			
1.1/4	39.5	1.9/16	38	1.1/2	0.9			
1.1/2	43	1.11/16	49	1.15/16	1.45			
2	52.5	2.1/16	59	2.5/16	2.75			

Other dimensions are available on request

MSS-SP97

Socket Weld Outlets

9000 Lbs



Bore to suit XXS pipe.

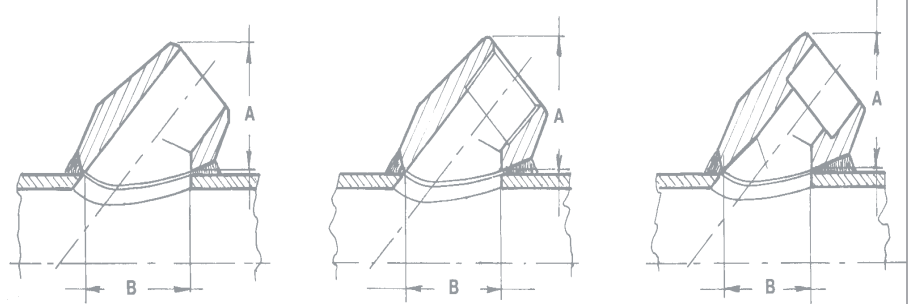
Nominal Size	Reducing Size					Weight		
	A		B					
	mm	Inches	mm	Inches				
1/2	31.5	1.1/4	19	3/4	0.32			
3/4	36.5	1.7/16	25.5	1	0.55			
1	39.5	1.9/16	33.5	1.5/16	0.95			
1.1/2	43	1.11/16	49	1.15/16	1.5			
2	52.5	2.1/16	59	2.5/16	2.9			

Other dimensions are available on request



MSS-SP97

Lateral Outlets
3000 - 6000 Lbs



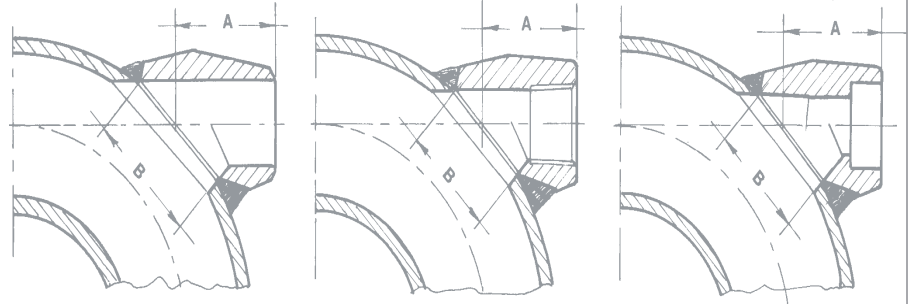
Nominal Size	3000 Lbs schedule 40S and 80S					6000 Lbs schedule 160 and XXS				
	A		B		Weight kg	A		B		Weight kg
	mm	Inches	mm	Inches		mm	Inches	mm	Inches	
1/4	39.5	1.9/16	36.5	1.7/16	0.23	39.5	1.9/16	36.5	1.7/16	0.35
3/8	39.5	1.9/16	36.5	1.7/16	0.23	39.5	1.9/16	36.5	1.7/16	0.35
1/2	39.5	1.9/16	36.5	1.7/16	0.3	46	1.13/16	44.5	1.3/4	0.4
3/4	46	1.13/16	41	1.5/8	0.35	54	2.1/8	54	2.1/8	0.67
1	56	2.3/16	51	2	0.53	63.5	2.1/2	66.5	2.5/8	1
1.1/4	63.5	2.1/2	66.5	2.5/8	0.86	70	2.3/4	76	3	1.32
1.1/2	71	2.13/16	73	2.7/8	1.2	85.5	3.3/8	105	4.1/8	2.8
2	92	3.5/8	96	3.13/16	2.4	95	3.3/4	111	4.3/8	3.6

Other dimensions are available on request

MSS-SP97

Outlets for Elbows

3000 - 6000 Lbs



Nominal Size	3000 Lbs schedule 40S and 80S					6000 Lbs schedule 160 and XXS				
	A		B		Weight kg	A		B		Weight kg
	mm	Inches	mm	Inches		mm	Inches	mm	Inches	
1/4	41	1.5/8	38	1.1/2	0.23	41	1.5/8	38	1.1/2	0.35
3/8	41	1.5/8	38	1.1/2	0.23	41	1.5/8	38	1.1/2	0.35
1/2	41	1.5/8	38	1.1/2	0.3	47.5	1.7/8	43	1.11/16	0.4
3/4	47.5	1.7/8	43	1.11/16	0.35	57	2.1/4	57	2.1/4	0.67
1	57	2.1/4	57	2.1/4	0.53	63.5	2.1/2	73	2.7/8	1
1.1/4	63.5	2.1/2	73	2.7/8	0.86	68	2.11/16	79.5	3.1/8	1.32
1.1/2	70	2.3/4	79.5	3.1/8	1.2	82.5	3.1/4	106.5	4.3/16	2.8
2	82.5	3.1/4	106.5	4.3/16	2.4	101.5	4	114.5	4.1/2	3.6

Other dimensions are available on request



Orifice Plates Raised Face

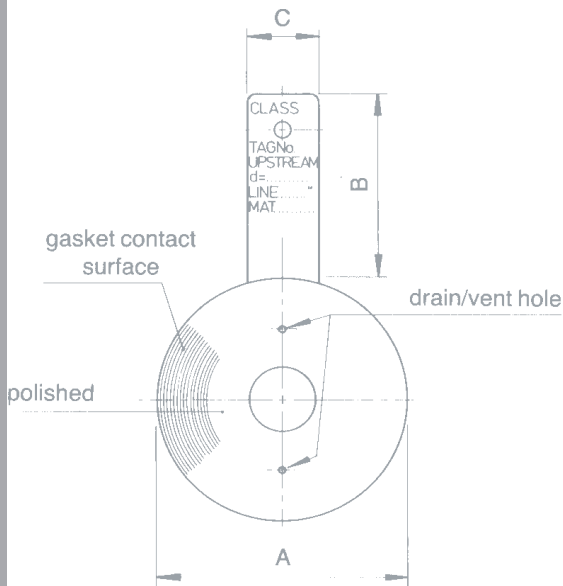


Execution : Meets AGA, ASME, BS, DIN, ISO and all clients requirements.

Types : Square edge, quarter circle, conical entrance, concentric, eccentric and segmental.

Options : Smooth or serrated gasket contact surface.
Drain- and/or venthole.
Computer calculations to any international standard.

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The orifice plates fully comply with below mentioned requirements.

- bore accuracy
- sharpness of bore edge
- concentricity of bore
- surface roughness
- plate flatness



Larger sizes on request

Line size		A											B	C	W	T		
		ANSI Class						DIN Nom.-pressure										
		150	300	600	900	1500	2500	NP10	NP16	NP25	NP40	NP64					NP100	
1/2"	15	48	54	54				53			63		102	32	1,5	0,4		
3/4"	20	57	67	67				63					102	32	1,5	0,4		
1"	25	67	73	73	79			73			84		102	32	1,5	0,4		
1.1/4"	32	76	83	83	88			84			89		102	32	1,5	0,6		
1.1/2"	40	86	95	95	98			94			104		102	32	2,0	0,8		
2"	50	105	111	111	143	146		107		113	119		102	32	2,5	1,0		
2.1/2"	65	124	130	130	165	168		127		138	144		102	32	3,0	1,0		
3"	80	137	149	149	168	174	196	142		148	154		102	32	3,0	1,5		
4"	100	175	181	194	207	209	235	162		168		174	180	114	38	3,0	1,5	
5"	125	197	216	241	248	254	279	192		194		210	217	114	38	3,0	1,5	
6"	150	222	251	267	289	282	317	218		224		247	257	114	38	3,0	1,5	
8"	200	279	308	321	359	353	387	273		284	290		309	324	127	38	6,0	3,5
10"	250	340	362	400	435	435	476	328	239	340	352	364	391	152	44	6,0	3,5	
12"	300	410	422	457	498	520	549	378	384	400	417	424	458	152	44	6,0	3,5	
14"	350	451	486	492	521	578		438	444	457	474	486	512	152	44	9,0	6,0	
16"	400	514	540	565	575	641		489	495	514	546	543	572	152	44	9,0	6,0	
18"	450	549	597	613	637	704								152	51	12,0	8,0	
20"	500	606	654	682	697	755		594	617	624	628	657	704	152	51	12,0	8,0	
24"	600	717	775	790	837	901		695	734	731	747	764	813	152	51	16,0	10,0	

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Orifice Plate Holders RTJ



Execution : Meets AGA, ASME, BS, DIN, ISO and all clients requirements.

Types of bore : Square edge, quarter circle, conical entrance, concentric, eccentric and segmental.

Options : Octagonal, oval or lens type ring.

Drain- and/or venthole.

Computer calculations to any international standard.

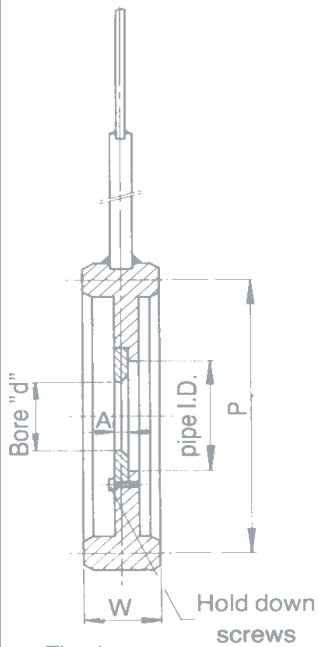


Fig. 1
Octagonal ring
to ANSI B16.20
except dim. "W"

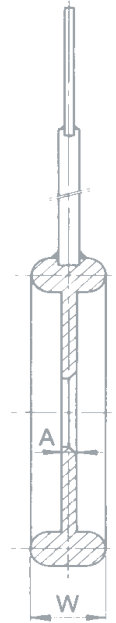


Fig. 2
Integral type Oval ring
to ANSI B 16.20 except dim. "W"



Fig. 3
Lens ring to DIN 2669
except dim. "W"

Ringnumbers as per ANSI B16.20					
Line	Size	Class			
		300	600	900	1500
2"	50	R23	R24	R24	R26
3"	80	R31	R31	R35	R32
4"	100	R37	R37	R39	R38
6"	150	R45	R45	R46	R47
8"	200	R49	R49	R50	R51
10"	250	R53	R53	R54	R55
12"	300	R57	R57	R58	R60
14"	350	R61	R62	R63	
16"	400	R65	R66	R67	
18"	450	R69	R70	R71	
20"	500	R73	R74	R75	
24"	600	R77	R78	R79	

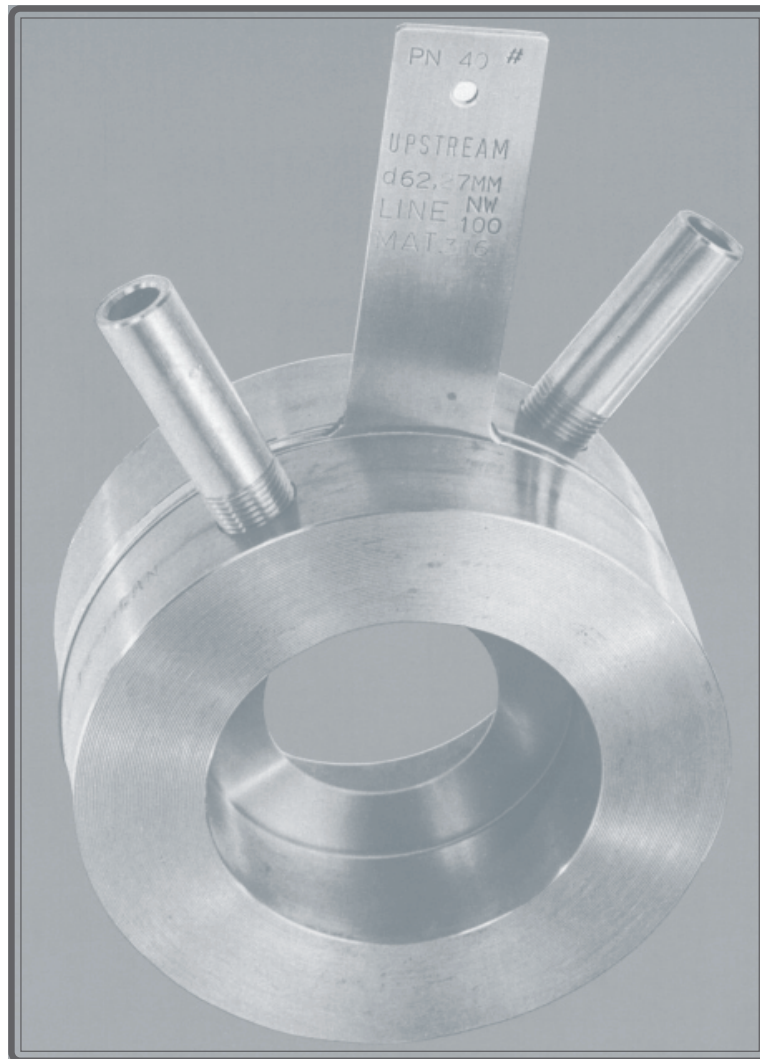
Ring	A	P	W	Ring	A	P	W
R22	3	82.55	26.5	R57	6	381.00	26.5
R24	3	95.25	26.5	R58	6	381.00	36.5
R26	3	101.60	26.5	R60	6	406.40	44.0
R31	3	123.82	26.5	R61	9	419.10	32.0
R32	3	127.00	26.5	R62	9	419.10	35.0
R35	3	136.52	26.5	R63	9	419.10	43.0
R37	3	149.22	26.5	R65	9	469.90	32.0
R38	3	157.16	30.0	R66	9	469.90	35.0
R39	3	161.92	26.5	R67	9	469.90	47.0
R45	3	211.14	26.5	R69	12	533.40	35.0
R46	3	211.14	26.5	R70	12	533.40	42.0
R47	3	228.60	32.0	R71	12	533.40	50.0
R49	6	269.88	26.5	R73	12	584.20	36.5
R50	6	269.88	32.0	R74	12	584.20	42.0
R51	6	279.40	36.0	R75	12	584.20	51.0
R53	6	323.85	26.5	R77	16	692.15	44.0
R54	6	323.85	32.0	R78	16	692.15	50.0
R55	6	342.90	42.0	R79	16	692.15	57.0



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Carrier Rings



Execution : Meets AGA, ASME, BS, DIN, ISO and all clients requirements.

Plate types : Square edge, quarter circle, conical entrance, concentric, eccentric and segmental.

Options : Flange taps, corner taps, ring chamber, integral.
Drain- and/or venthole in orifice plate.
Computer calculations to any international standard.
Gaskets other than flat gaskets.

Tappings are standard 1/2" NPT female (1 each per ring) but Socket Weld, Butt Weld and Flanged connections are optional.

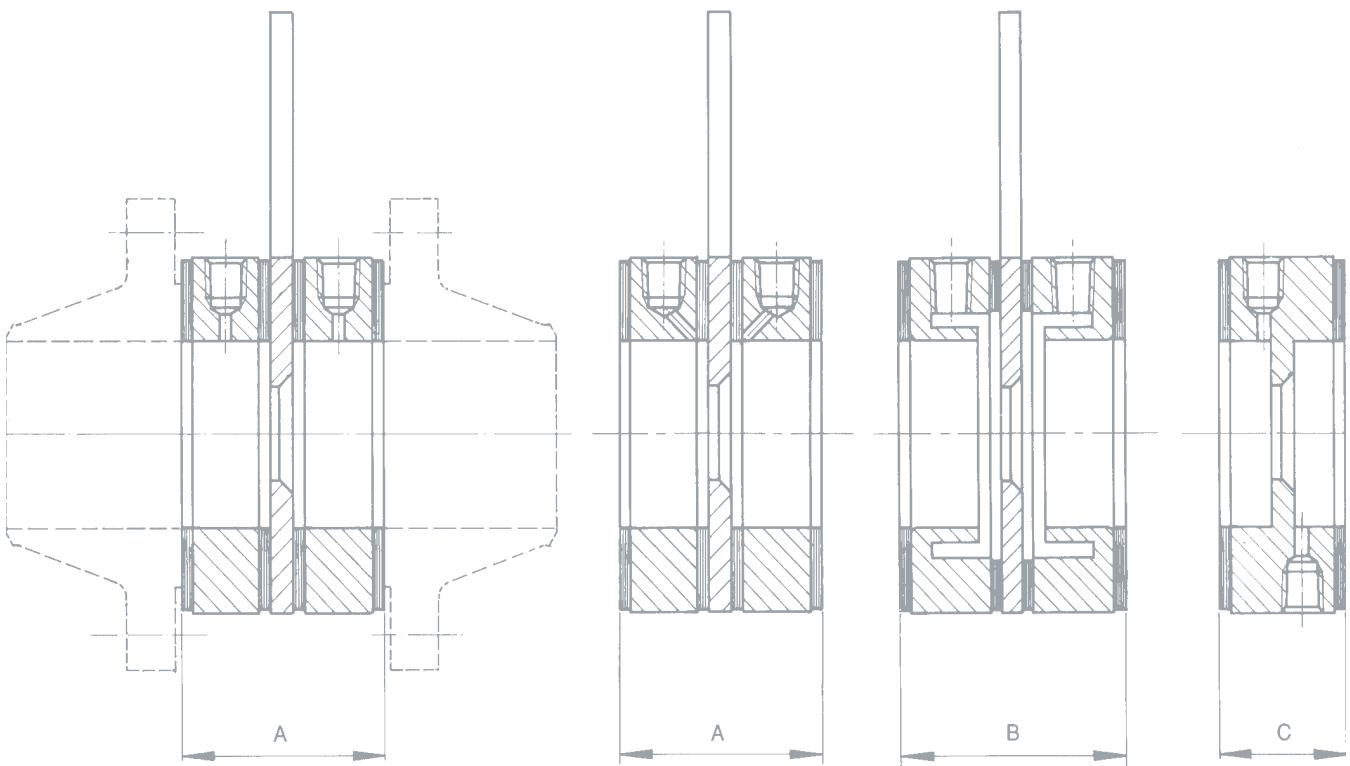


Fig. 1
Flange taps

Fig. 2
Corner taps

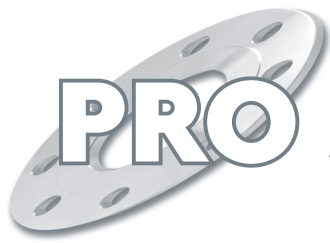
Fig. 3
Ring chambers

Fig. 4
Corner taps

Note: flanges by customer

Norm. Line Size	Inches	1/2"	3/4"	1"	1.1/4"	1.1/2"	2"	2.1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
A		84	84	84	84	84	85	85	85	85	85	85	88	88	88	91	91	94	94	98
B		84	84	84	84	84	85	85	85	85	85	85	88	88	88	91	91	94	94	98
C		40	40	40	40	40	41	41	41	41	41	41	44	44	46	49	51	54	54	60

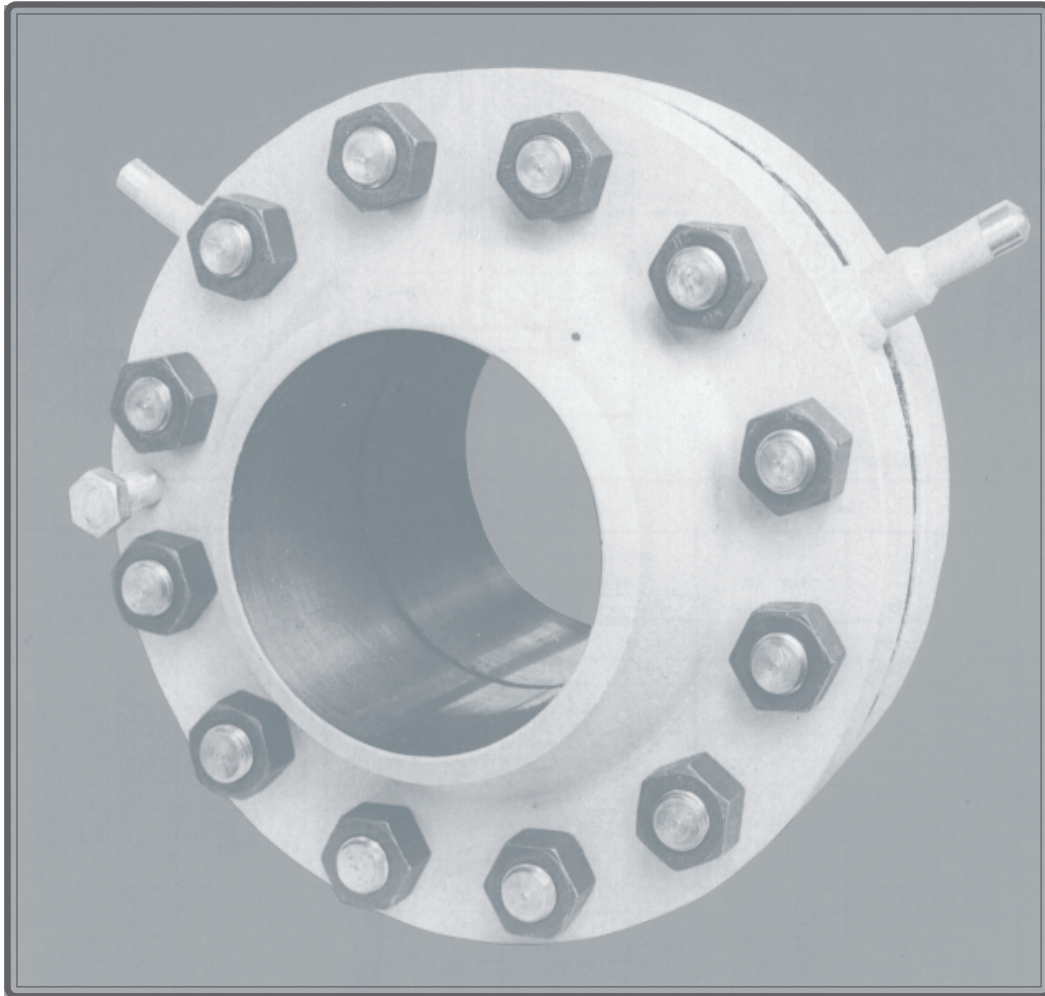
Dimensions A, B and C based on flat gaskets (1,5 mm thick)
Dimensions of orifice plates as per our Sheets



PRO Alloy bv



Orifice Flanges



Execution : Meets AGA, ANSI, ASME, BS, DIN, ISO and all clients requirements.

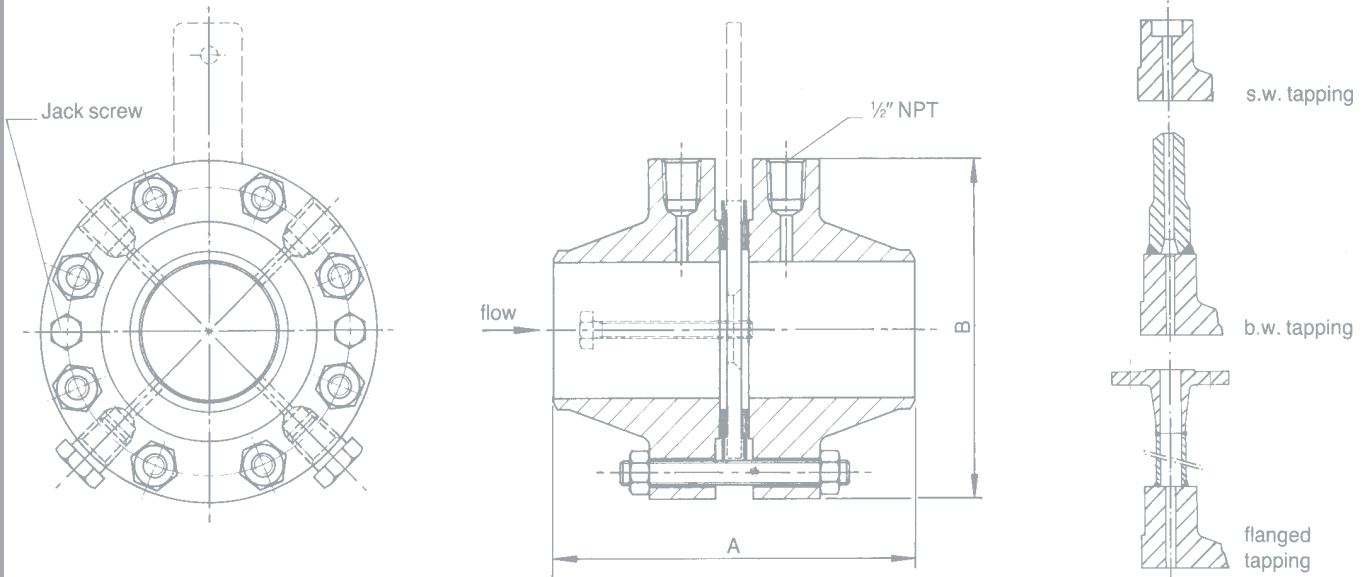
Types : Welding neck, slip on, threaded.

Finish : Stock, serrated, smooth raised face, R.T.J.

Class : 300, 600, 900, 1500, 2500 lbs.

Tappings : 1/2" NPT female (2 tappings per flange is standard). Also available: S.W., B.W. Nipples or Flanged.

Options : Flange taps, corner taps, incl. valves and/or condensate chambers.



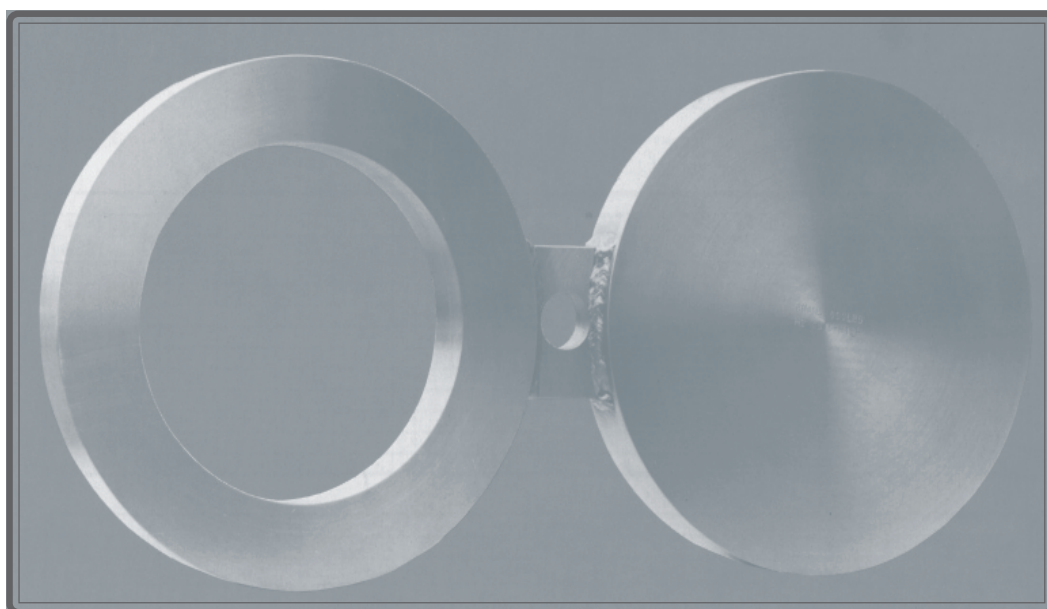
Note: orifice plate not included
 Dimensions A are based on orifice plate thickness as per our orifice plate brochure sheet and following gaskets
 - C.A.F. 1,5mm thick for class 300
 - Spiral wound 3mm thick for class 600

Class 300						Class 600					
Size	A	B	stud bolts number-size	weight per set complete		A	B	stud bolts number-size	weight per set complete		Size
				S.O.	W.N.				S.O.	W.N.	
1.1/2 "	177	156	4- 3/4"x130	11kg	13kg	181	156	4- 3/4"x140	11kg	13kg	1.1/2 "
2 "	177	165	8-5/8"x125	12kg	15kg	182	165	8-5/8"x135	12kg	15kg	2 "
3 "	184	210	8- 3/4"x130	20kg	22kg	188	210	8- 3/4"x140	20kg	22kg	3 "
4 "	190	254	8-3/4"x130	27kg	31kg	226	273	8-7/8"x150	40kg	45kg	4 "
6 "	206	318	12- 3/4"x130	45kg	50kg	258	356	12- 1"x180	85kg	90kg	6 "
8 "	231	381	12- 7/8"x145	60kg	70kg	291	419	12- 1.1/8"x200	125kg	130kg	8 "
10 "	245	444	16- 1"x165	90kg	100kg	329	508	16- 1.1/4"x220	185kg	205kg	10 "
12 "	269	521	16- 1.1/8"x175	130kg	150kg	337	559	20- 1.1/4"x230	220kg	245kg	12 "
14 "	298	584	20- 1.1/8"x185	180kg	195kg	358	603	20-1.3/8"x245	295kg	390kg	14 "
16 "	304	648	20- 1.1/4"x200	210kg	270kg	384	686	20- 1.1/2"x265	415kg	510kg	16 "
18 "	333	711	24- 1.1/4"x205	280kg	340kg	399	743	20- 1.5/8"x280	540kg	630kg	18 "
20 "	339	775	24- 1.1/4"x210	335kg	415kg	413	813	24- 1.5/8"x295	690kg	780kg	20 "
24 "	355	914	24- 1.1/2"x235	510kg	615kg	441	940	24- 1.7/8"x340	1000kg	1120kg	24 "
30 "	442	1092	28-1.3/4"x310	920kg	1060kg	518	1130	28- 2"x390	1360kg	1480kg	30 "

PRO Alloy bv



Spectacle Blinds, Spades and Spacers



Execution : Meets AGA, ASME, BS, DIN and all clients requirements.

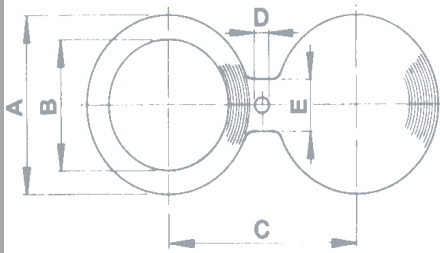
Finish : Raised Face.

Options : Lifting eyes for larger sizes.

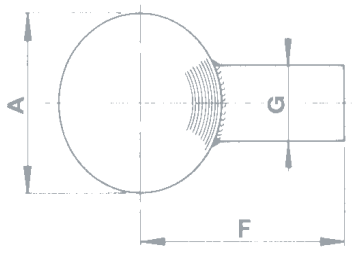
Carbon steel with medium contacted parts fully covered by a corrosion resistant lining.
W.P.S. and P.Q.R. available for large size welded items.



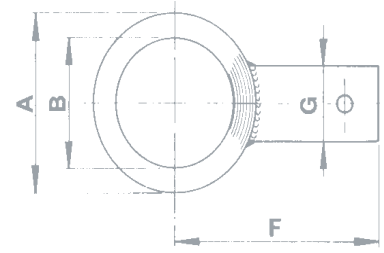
PRO Alloy bv



Spectacle plate



Blind



Spacer

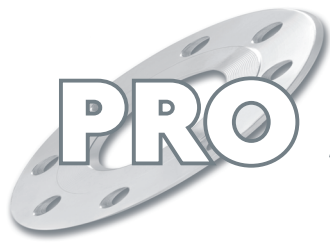
T1 = Thickness carbon steel
 T2 = Thickness stainless steel
 W = Weight spectacle in Kgs

ANSI class 150/PN20

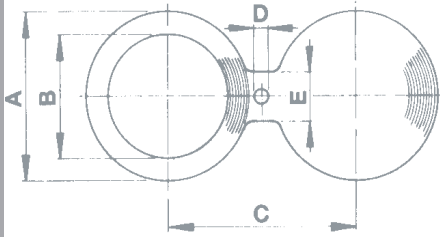
(inch) SIZE (mm)	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	48	57	67	86	105	137	175	222	279	340	410	451	515	550	605	720
B	14	21	27	41	52	78	103	154	203	254	303	343	394	445	495	597
C	60	70	79	98	120	152	190	241	298	362	432	476	540	578	635	749
D					20	20	20	22	22	26	26	30	30	33	33	36
E	26	32	38	52	64	86	114	148	188	154	190	208	176	188	162	194
F	126	131	136	145	155	171	202	225	267	322	357	378	410	427	455	512
G	32	32	32	32	32	32	38	38	38	44	44	44	44	51	51	51
T1	5	5	5	5	6	8	9	12	15	18	21	23	25	28	31	37
T2	4	4	4	4	4	6	7	10	12	15	18	20	23	26	29	34
W	0.2	0.25	0.35	0.50	0.90	2.0	3.6	7.2	13.9	23	39	50	68	83	107	178

ANSI class 300/PN50

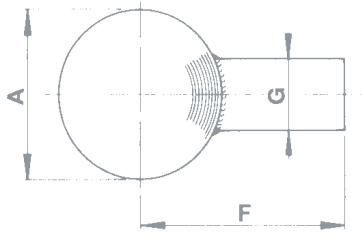
(inch) SIZE (mm)	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	54	67	73	95	111	149	181	251	308	362	422	486	540	595	655	775
B	14	21	27	41	52	78	103	154	203	254	303	343	394	445	495	597
C	66	83	89	114	127	168	200	270	330	387	451	514	571	628	686	813
D					20	22	22	22	26	30	33	33	36	36	36	42
E	30	36	42	58	68	96	118	112	138	118	138	124	140	126	140	168
F	129	136	139	150	158	177	205	240	281	333	363	395	422	450	480	540
G	32	32	32	32	32	32	38	38	38	44	44	44	44	51	51	51
T1	5	5	5	7	8	11	13	18	23	27	32	35	39	44	49	58
T2	4	4	4	5	6	8	10	15	19	24	28	33	37	42	47	56
W	0.20	0.35	0.40	0.90	1.4	3.3	5.6	13.6	25	38	61	86	116	153	205	336



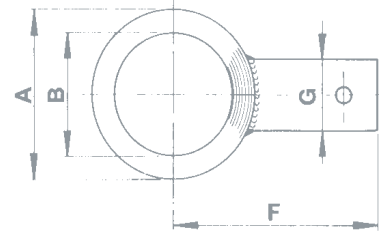
PRO Alloy bv



Spectacle plate



Blind



Spacer

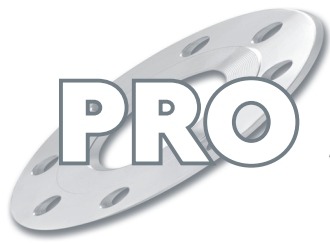
T1 = Thickness carbon steel
 T2 = Thickness stainless steel
 W = Weight spectacle in Kgs

ANSI class 600/PN100

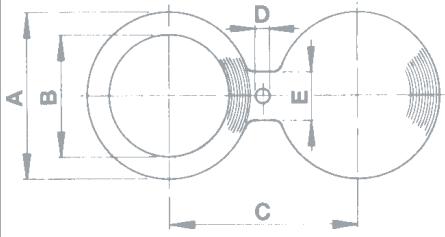
(inch) SIZE (mm)	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	54	67	73	95	111	149	194	267	321	400	457	492	565	613	682	790
B	14	21	27	41	52	78	103	154	203	254	303	343	394	445	495	597
C	66	82	89	114	127	168	216	292	349	432	489	527	603	654	724	838
D					20	22	26	30	33	36	36	39	42	45	45	52
E	30	36	42	58	68	96	126	116	140	128	114	122	144	155	140	164
F	129	136	139	150	158	177	211	248	288	352	381	398	435	459	493	547
G	32	32	32	32	32	32	38	38	38	44	44	44	44	51	51	51
T1	5	6	7	9	11	15	18	24	31	38	44	48	55	62	68	81
T2	4	4	4	6	8	12	15	21	27	33	39	44	53	60	67	80
W	0.20	0.40	0.55	1.2	1.9	4.5	9.1	21	38	69	99	122	184	205	281	435

ANSI class 900/PN150

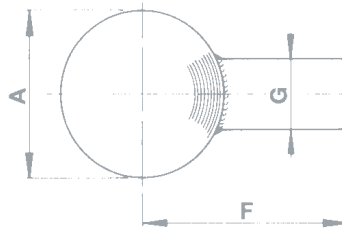
(inch) SIZE (mm)	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	64	70	79	98	143	168	206	289	359	435	498	520	575	637	697	837
B	14	21	27	41	52	78	103	154	203	254	303	343	394	445	495	597
C	82	89	101	124	165	190	235	317	393	470	533	559	616	686	750	902
D					26	26	33	33	39	39	39	39	42	45	52	67
E	34	40	44	56	90	108	132	124	156	140	124	130	144	158	174	210
F	134	137	142	151	174	186	217	259	307	370	401	412	440	471	501	571
G	32	32	32	32	32	32	38	38	38	44	44	44	44	51	51	51
T1	6	8	9	13	16	17	21	29	37	46	54	59	66	76	84	100
T2	4	5	6	10	13	14	18	25	33	41	48	54	61	69	76	92
W	0.35	0.55	0.80	1.7	4.6	6.5	11.9	30	58	101	149	171	229	292	382	655



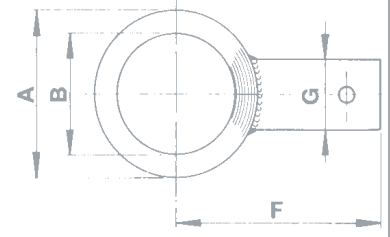
PRO Alloy bv



Spectacle plate



Blind



Spacer

T1 = Thickness carbon steel
 T2 = Thickness stainless steel
 W = Weight spectacle in Kgs

ANSI class 1500/PN250

(inch) SIZE (mm)	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	600
A	64	70	79	98	143	175	210	283	352	435	520	580	640	704	755	901
B	14	21	27	41	52	78	103	154	203	254	303	343	394	445	495	597
C	82	89	101	124	165	203	241	317	393	482	571	635	705	775	832	991
D					26	33	36	39	45	52	56	60	68	74	80	93
E	34	40	44	56	90	110	134	118	150	188	162	182	200	221	237	285
F	135	137	142	151	174	190	219	256	303	370	412	442	472	504	530	603
G	32	32	32	32	32	32	38	38	38	44	44	44	44	51	51	51
T1	6	8	9	13	16	21	27	37	47	58	69	75	85	96	107	128
T2	4	5	6	10	13	18	23	33	42	52	62	72	82	92	102	123
W	0.35	0.55	0.80	1.7	4.6	8.7	15.9	36	70	132	215	289	393	481	606	1027

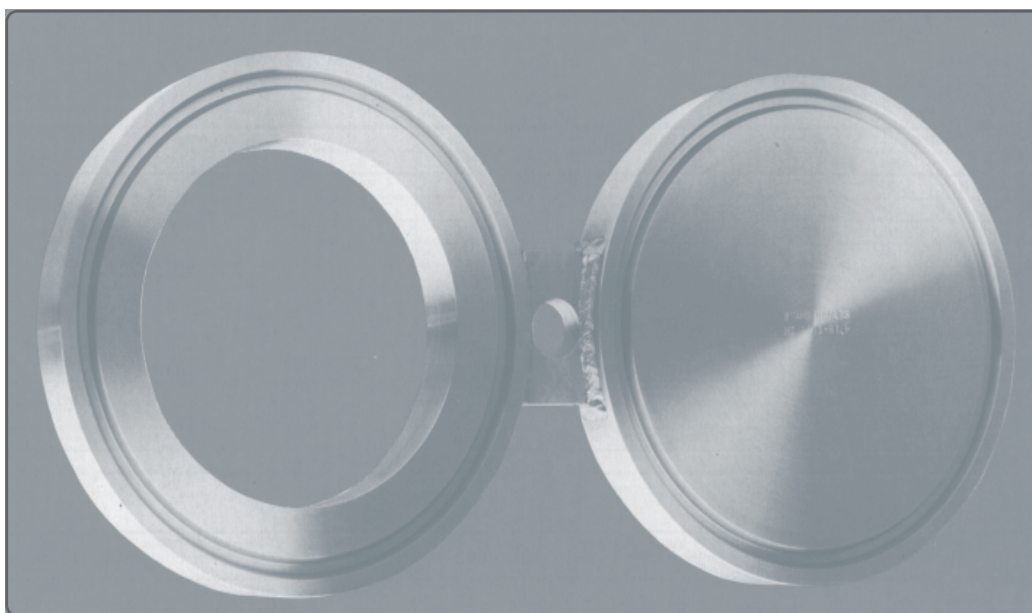
ANSI class 2500/PN420

(inch) SIZE (mm)	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	600
A	70	76	86	117	146	197	235	318	387	476	550					
B	14	21	27	41	52	78	103	154	203	254	303					
C	89	95	108	146	171	228	273	368	438	539	619					
D					30	36	42	56	56	68	76					
E	40	44	50	70	90	124	150	204	162	200	232					
F	137	140	145	161	175	201	232	273	321	390	427					
G	32	32	32	32	32	32	38	38	38	44	44					
T1	7	9	11	15	18	26	33	47	58	72	86					
T2	5	7	8	12	15	22	28	41	52	65	77					
W	0.5	0.75	1.2	2.9	5.4	14	25	64	108	200	316					

PRO Alloy bv



Spectacle Blinds, Spades and Spacers

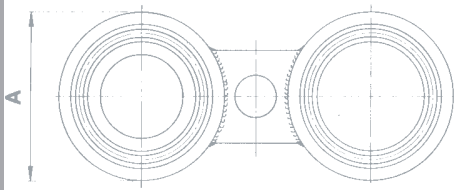


Execution : Meets AGA, ASME, BS, DIN and all clients requirements.

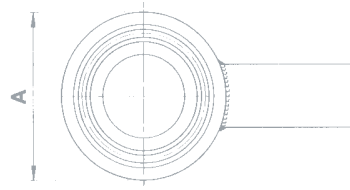
Finish : Female or male R.T.J.

Options : Lifting eyes for larger sizes.
Carbon steel with medium contacted parts fully covered by a corrosion resistant lining.
W.P.S. and P.Q.R. available.

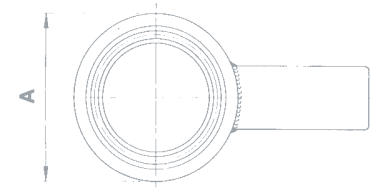
PRO Alloy bv



Spectacle plate



Spacer



Blind

LINE SIZE		ANSI class 600 / PN100				ANSI class 900 / PN150			
Inch	mm	R	A	W	T	R	A	W	T
2"	50	R23	108	4	26	R24	124	5	29
3"	80	R31	146	8	30	R31	156	9	34
4"	100	R37	175	10	34	R37	181	15	37
6"	150	R45	241	23	40	R45	241	30	45
8"	200	R49	301	40	46	R49	308	50	54
10"	250	R53	356	63	53	R53	362	75	62
12"	300	R57	413	95	61	R57	419	120	70
14"	350	R61	457	115	64	R62	467	165	80
16"	400	R65	508	155	70	R66	524	220	87
18"	450	R69	575	215	78	R70	594	320	100
20"	500	R73	635	290	86	R74	648	400	107
24"	600	R77		475	102	R78	772	665	127

R = ANSI Ringnumber

LINE SIZE		ANSI class 1500 / PN250				ANSI class 2500 / PN420			
Inch	mm	R	A	W	T	R	A	W	T
2"	50	R24	124	5	32	R26	133	9	43
3"	80	R35	168	13	40	R32	168	16	51
4"	100	R39	194	19	45	R38	203	27	62
6"	150	R46	248	38	56	R47	279	66	83
8"	200	R50	318	74	70	R51	340	113	98
10"	250	R54	371	112	80	R55	425	216	121
12"	300	R58	438	175	96	R60	495	324	135
14"	350	R63	489	247	105				
16"	400	R67	546	330	116				
18"	450	R71	613	445	127				
20"	500	R75	673	570	137				
24"	600	R79	794	915	162				