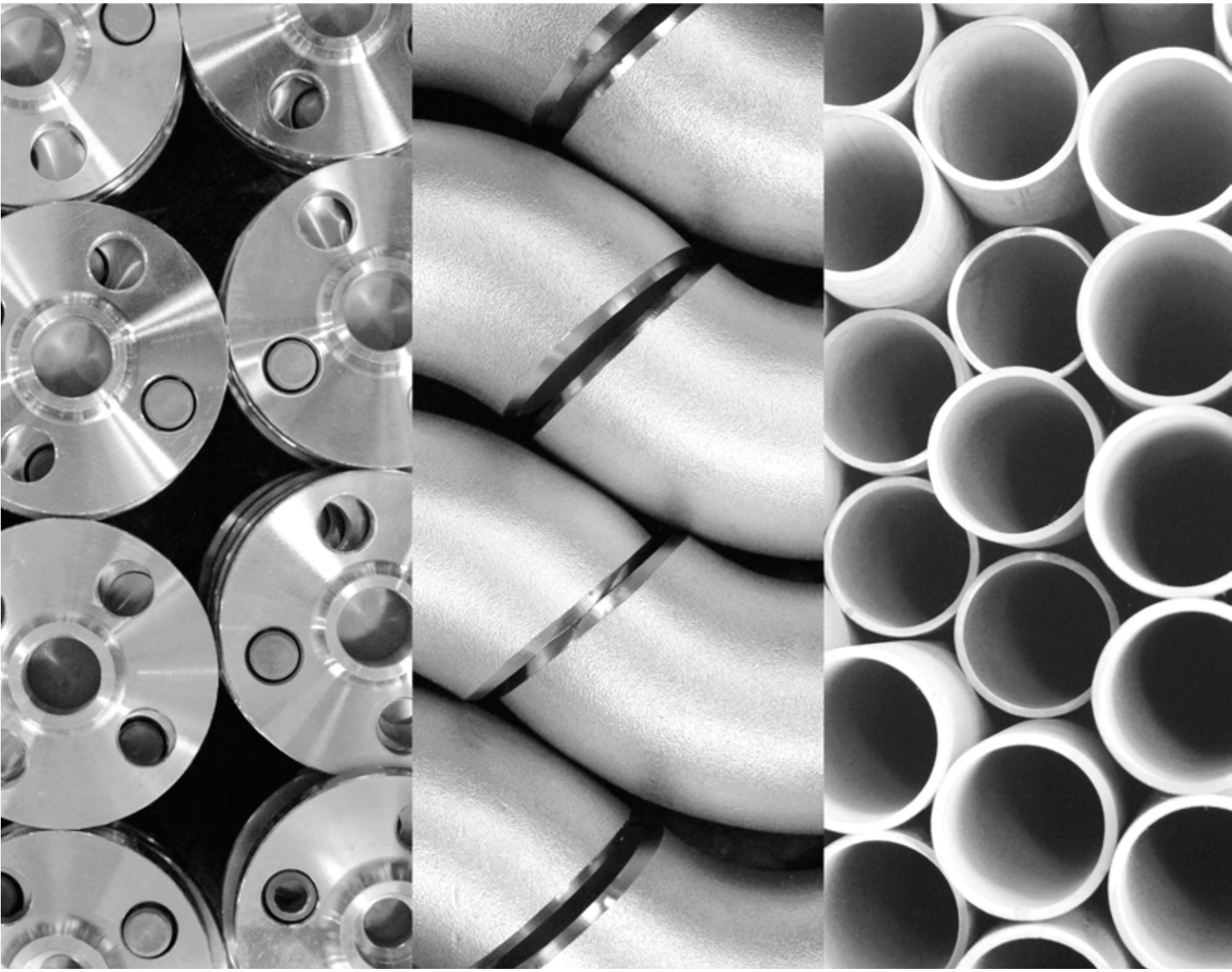
PURA PIPING



Building Connections that Last

Updated on: 2026.10.15

The PURA Brand

PURA Piping is a manufacturer of pipes, flanges and fittings.

We strive to create value for our customers by delivering reliable products at competitive cost – manufacturing at efficient factories in strategic locations, and performing centralized quality control in Singapore.

By delivering reliably over the years, PURA earned the recognition and trust from regional leading companies in marine, oil & gas and process industries.

Working closely with our clients, we build connections that last.

Complying to Specification / Standards:

S/No	Material	Specification	Grade	Standard
1	Carbon Steel	ASTM A53/API 5L/ASTM A106	Gr.B	ASME B36.10M
2	Stainless Steel	ASTM A312	TP 304/304L	ASME B36.10M/B36.19
			TP 316/316L	
3	Butt-Weld Fittings	ASTM A234/234M	A234-WPB	ASME B16.9
		ASTM A403/403M	WP304/304L	
			WP316/316L	
		JIS G3452	SGP	-
4	Flanges	ASTM A105/105M	A105N	ASME B16.5/ EN 1092-1/JIS B 2220
		ASTM A403/403M	F304/304L	
			F316/316L	
		JIS G3101	SS400	EN 1092-1/JIS B 2220
		DIN 17100	ST37.2	
5	Forged Fitting	ASTM A105/105M	A105N	ASME B16.11/ MSS SP-83/ MSS SP-97
		ASTM A182/182M	F304/304L	
			F316/316L	
6	Low Pressure Fitting	ASTM A351/351M	CF8(SS304)	ISO 4144
			CF8M(SS316)	

Range of Products Available:

Types of Pipe Finishing:



Black Steel

Black steel pipes that comes with a black paint coating for protection.



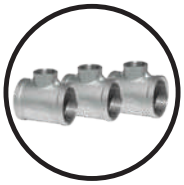
Galvanized

Black steel pipes that comes with a layer of zinc through hot dipping galvanizing process.



Stainless Steel

Types of Fittings:



Low Pressure Fittings



Flanges

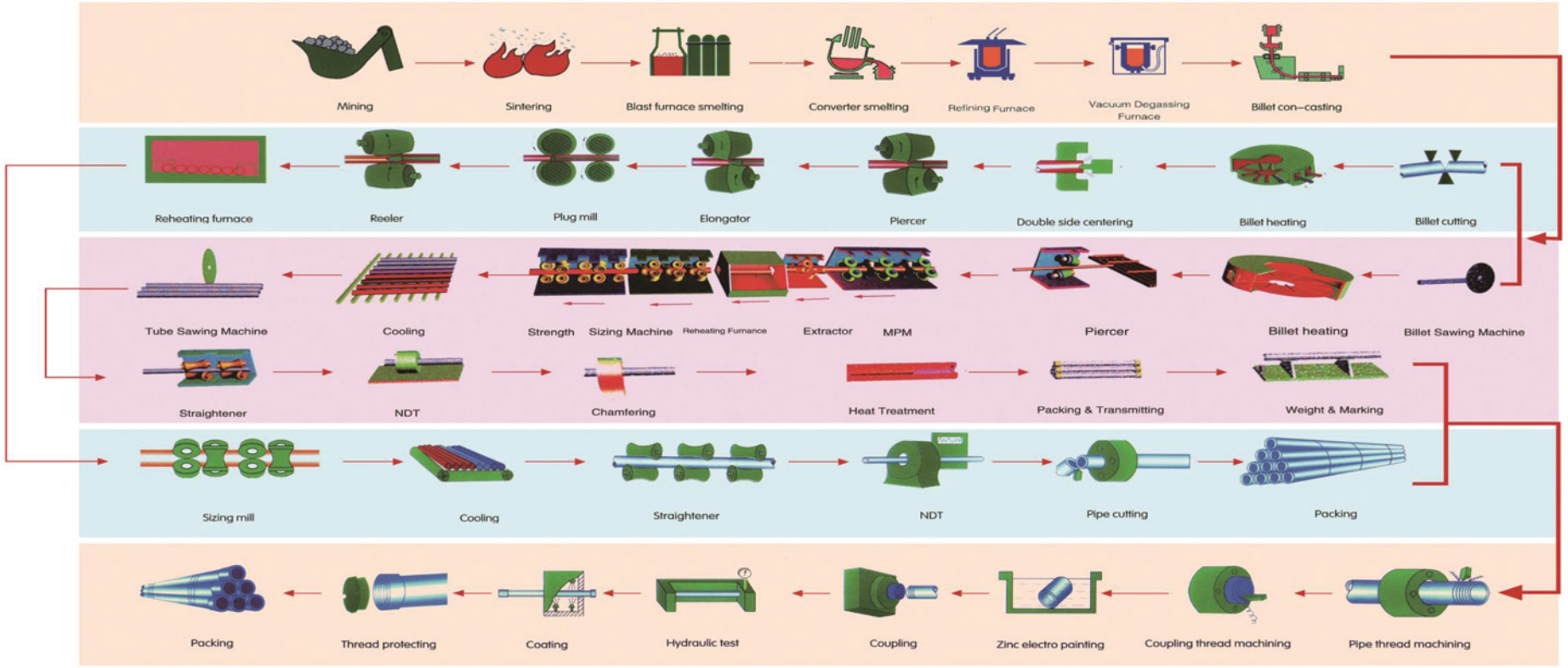


Forged Fittings



Butt-Welding Pipe Fittings

Process flow chart



PURA PIPING

Project Reference

Our Steel Pipe System are seen applied in these various project references:



ST Marine


GSK


UMC


WEST Infrastructure Upgrade Project



Housing Development Board



Alcon



Carousell


Siltronic



Abbott

SPgroup

ANG MO KIO DISTRICT COOLING PLANT


PUB Water Hub @ Toh Guan


Pfizer



SingTel Data Center

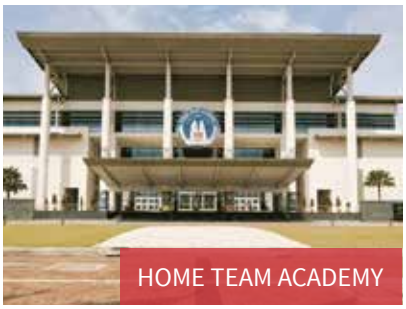


MSD

Project Reference

Our Steel Pipe System are seen applied in these various project references:


INFINEON


HOME TEAM ACADEMY


3M Singapore



MICRON 10A



GIVAUDAN



Keppel Offshore & Marine


Global Foundries



REC Solar Plant @ Jurong Island


Resort World Sentosa


Woodlands Health Campus


Soitec Microelectronic Singapore

Project Reference

Our Steel Pipe System are seen applied in these various project references:



Changi Airbase



Google



Toppan


Ardentec


Ge Aerospace


Singapore Institute of Technology (SIT)



Pall Microelectronics



RedMart



Takeda


Gali Batu Bus Depot


Singapore University of Technology and Design (SUTD)

Project Reference

Our Steel Pipe System are seen applied in these various project references:


AbbVie


Mandai Resort


IMM Shopping Mall


JTC CleanTech Three @ CleanTech Park


National University of Singapore (NUS)


Marina Bay Sands



Tengah Airbase


Penguin Shipyard



Aperia Mall



Orchard Central


WuXi Biologics

Project Reference

Our Steel Pipe System are seen applied in these various project references:


Woodlands Civic Centre



PLQ Mall


Ministry of Trade & Industry


Changi Naval Base



AMD


BANYAN BWWT PLANT PROJECT AT JURONG ISLAND



Norvatis


Singapore Aviation Academy


Serangoon Polyclinic


Vanguard International Semiconductor Corporation


Teh Yih Jia Food Manufacturing


Khoo Teck Puat Hospital



Pasir Ris Polyclinic


Woodlands Health Campus



Sengkang General Hospital


Union Square Residences


Miliken Asia


PSA

Project Reference

Our Steel Pipe System are seen applied in these various project references:



Silicon Box


Princeton Digital Group Data Center


CCK Singtel Data Center



MICRON MSH Gas System



Vantive Manufacturing


PharmaGend Global Medical Services


Halliburton Singapore


Kuraray Asia Pacific

PURA PIPING

Pipes



PIPE DIMENSIONS

API 5L Grade B / ASTM A53 / ASTM A106 / ASTM A312

OD's = mm
Wall thickness = mm
Weight = kg/m (plain end mass)

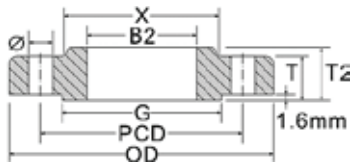
Nominal Pipe Size Inches	OD mm	ASME B36.19				ASME B36.10												
		5s	10s	40s	80s	10	20	30	STD	40	60	XS	80	100	120	140	160	XXS
1/8"	10.3		1.24 0.28	1.73 0.36	2.41 0.48	1.24 0.28		1.45 0.32	1.73 0.37	1.73 0.37		2.41 0.47	2.41 0.47					
1/4"	13.7		1.65 0.51	2.24 0.64	3.02 0.80	1.65 0.49		1.85 0.54	2.24 0.63	2.24 0.63		3.02 0.80	3.02 0.80					
3/8"	17.1		1.65 0.64	2.31 0.86	3.20 1.12	1.65 0.63		1.85 0.70	2.31 0.84	2.31 0.84		3.20 1.10	3.20 1.10					
1/2"	21.3	1.65 0.82	2.11 1.01	2.77 1.30	3.73 1.65	2.11 1.00		2.41 1.12	2.77 1.27	2.77 1.27		3.73 1.62	3.73 1.62				4.78 1.95	7.47 2.55
3/4"	26.7	1.65 1.04	2.11 1.31	2.87 1.71	3.91 2.24	2.11 1.28		2.41 1.44	2.87 1.69	2.87 1.69		3.91 2.20	3.91 2.20				5.56 2.90	7.82 3.64
1"	33.4	1.65 1.33	2.77 2.13	3.38 2.55	4.55 3.29	2.77 2.09		2.90 2.18	3.38 2.50	3.38 2.50		4.55 3.24	4.55 3.24				6.35 4.24	9.09 5.45
1¼"	42.2	1.65 1.68	2.77 2.76	3.56 3.46	4.85 4.56	2.77 2.69		2.97 2.87	3.56 3.39	3.56 3.39		4.85 4.47	4.85 4.47				6.35 5.61	9.70 7.77
1½"	48.3	1.65 1.95	2.77 3.11	3.68 4.13	5.08 5.51	2.77 3.11		3.18 3.53	3.68 4.05	3.68 4.05		5.08 5.41	5.08 5.41				7.14 7.25	10.15 9.56
2"	60.3	1.65 2.44	2.77 4.01	3.91 5.54	5.54 7.63	2.77 3.93		3.18 4.48	3.91 5.44	3.91 5.44		5.54 7.48	5.54 7.48				8.74 11.11	11.07 13.44
2½"	73.0	2.11 3.77	3.05 5.36	5.16 8.81	7.01 11.64	3.05 5.26		4.78 8.04	5.16 8.63	5.16 8.63		7.01 11.41	7.01 11.41				9.53 14.92	14.02 20.39
3"	88.9	2.11 4.60	3.05 6.59	5.49 11.52	7.62 15.59	3.05 6.46		4.78 9.92	5.49 11.29	5.49 11.29		7.62 15.27	7.62 15.27				11.13 21.35	15.24 27.68
3½"	101.6	2.11 5.29	3.05 7.55	5.74 13.57	8.08 19.01	3.05 7.41		4.78 11.41	5.74 13.57	5.74 13.57		8.08 18.63	8.08 18.63				- -	- -
4"	114.3	2.11 5.96	3.05 8.52	6.02 16.40	8.56 22.77	3.05 8.37		4.78 12.91	6.02 16.07	6.02 16.07		8.56 22.32	8.56 22.32		11.13 28.32		13.49 33.54	17.12 41.03
5"	141.3	2.77 9.67	3.40 11.82	6.55 22.20	9.53 31.59	3.40 11.56			6.55 21.77	6.55 21.77		9.53 30.97	9.53 30.97		12.70 40.38		15.88 49.11	19.05 57.43
6"	168.3	2.77 11.55	3.40 14.13	7.11 28.83	10.97 43.42	3.40 13.83			7.11 28.26	7.11 28.26		10.97 42.56	10.97 42.56		14.27 54.20		18.26 67.56	21.95 79.22
8"	219.1	2.77 15.09	3.76 20.37	8.18 43.39	12.70 65.95	3.76 19.97	6.35 33.31	7.04 36.81	8.18 42.55	8.18 42.55	10.31 53.08	12.70 64.64	12.70 64.64	15.09 75.92	18.26 90.44	20.62 100.92	23.01 111.27	22.23 107.92
10"	273.1	3.40 23.08	4.19 28.34	9.27 61.52	12.70 83.19	4.19 27.78	6.35 41.77	7.80 51.03	9.27 60.31	9.27 60.31	12.70 81.55	12.70 81.55	15.09 96.01	18,26 114.75	21.44 133.06	25.40 155.15	28.58 172.33	25.40 155.15
12"	323.9	3.96 31.89	4.57 36.73	9.53 75.32	12.70 99.43	4.57 35.98	6.35 49.73	8.38 65.20	9.53 73.88	10.31 79.73	14.27 108.96	12.70 97.46	17.48 132.08	21.44 159.91	25.40 186.97	28.58 208.14	33.32 238.76	25.40 186.97
14"	355.6	3.96 35.06	4.78 42.14	9.53 81.33	12.70 107.40	6.35 54.69	7.92 67.90	9.53 81.33	9.53 81.33	11.13 94.55	15.09 126.70	12.70 107.39	19.05 158.10	23.83 194.96	27.79 224.65	31.75 253.56	35.71 281.70	
16"	406.4	4.19 42.41	4.78 48.26	9.53 93.27	12.70 123.31	6.35 62.64	7.92 77.83	9.53 93.27	9.53 93.27	12.70 123.30	16.66 160.12	12.70 123.30	21.44 203.53	26.19 245.56	30.96 286.64	36.53 333.19	40.49 365.35	
18"	457.2	4.19 47.77	4.78 54.36	9.53 108.37	12.70 140.62	6.35 70.57	7.92 87.71	11.13 122.38	9.53 105.16	14.27 155.80	19.05 205.74	12.70 139.15	23.83 254.57	29.36 309.62	34.93 363.56	39.67 408.26	45.24 459.37	
20"	508.0	4.78 60.46	5.54 70.00	9.53 117.15	12.70 155.13	6.35 78.55	9.53 117.15	12.70 155.12	9.53 117.15	15.09 183.42	20.62 247.83	12.70 155.12	26.19 311.17	32.54 381.53	38.10 441.49	44.45 508.11	50.01 564.81	
22"	558.8	4.78 66.57	5.54 77.06	- -	- -	6.35 86.54	9.53 129.13	12.70 171.09	9.53 129.13	- -	22.23 294.25	12.70 171.09	28.58 373.83	34.93 451.42	41.28 527.02	47.63 600.63	53.98 672.26	
24"	609.6	5.54 84.16	6.35 96.37	9.53 141.12	12.7 187.07	6.35 94.53	9.53 141.12	14.27 209.64	9.53 141.12	17.48 255.41	24.61 355.26	12.70 187.06	30.96 442.08	38.89 547.71	46.02 640.03	52.37 720.15	59.54 808.22	
26"	660.4					7.92 127.36	12.70 202.72	- -	9.53 152.87	- -		12.70 202.72						
28"	711.2					7.92 137.32	12.70 218.69	15.88 271.21	9.53 164.85	- -		12.70 218.69						
30"	762.0	6.35 120.72	7.92 150.36			7.92 147.28	12.70 234.67	15.88 292.18	9.53 176.84	- -		12.70 234.67						
32"	812.8					7.92 157.24	12.70 250.64	15.88 312.15	9.53 188.82	17.48 342.91		12.70 250.64						
34"	863.6					7.92 167.20	12.70 266.61	15.88 332.12	9.53 200.31	17.48 364.90		12.70 266.61						
36"	914.4					7.92 170.96	12.70 282.27	15.88 351.70	9.53 212.56	19.05 420.42		12.70 282.27						
38"	965.2								9.53 224.54			12.70 298.24						
40"	1016.0								9.53 236.53			12.70 314.22						
42"	1066.8								9.53 248.52			12.70 330.19						
44"	1117.8								9.53 260.50			12.70 346.16						
46"	1168.4								9.53 272.25			12.70 351.82						
48"	1219.2								9.53 284.24			12.70 377.79						

PURA PIPING

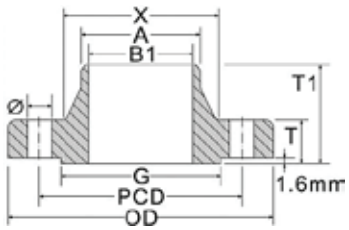
Flanges



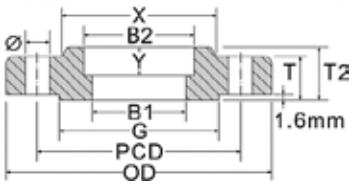
Slip-on



Welding Neck



Socket Welding



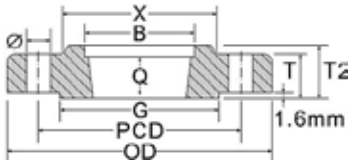
Flanges | Class 150 | ANSI B16.5

Unit: mm

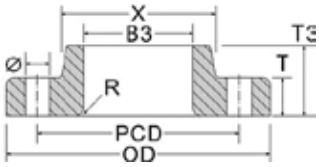
Nominal Pipe Size		Outside Dia.	Outside Dia. Raised Face	Dia. at Base of Hub	Thickness	Bore			Length Thru Hub			Dia. of Hub at Bevel	Radius of Fillet	Threaded Length
						Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
INCH	DN	OD	G	X	T	B1	B2	B3	T1	T2	T3	A	R	Q
1/2"	15A	89	35.1	30.2	11.2	15.7	22.4	22.9	47.8	15.7	15.7	21.3	3.0	15.7
3/4"	20A	99	42.9	38.1	12.7	20.8	27.7	28.2	52.3	15.7	15.7	26.7	3.0	15.7
1"	25A	108	50.8	49.3	14.2	26.7	34.5	35.1	55.6	17.5	17.5	33.5	3.0	17.5
1.1/4"	32A	117	63.5	58.7	15.7	35.1	43.2	43.7	57.2	20.6	20.6	42.2	4.8	20.6
1.1/2"	40A	127	73.2	65.0	17.5	40.9	49.5	50.0	62.0	22.4	22.4	48.3	6.4	22.4
2"	50A	152	91.9	77.7	19.1	52.6	62.0	62.5	63.5	25.4	25.4	60.5	7.9	25.4
2.1/2"	65A	178	104.6	90.4	22.4	62.7	74.7	75.4	69.9	28.4	28.4	73.2	7.9	28.4
3"	80A	191	127.0	108.0	23.9	78.0	90.7	91.4	69.9	30.2	30.2	88.9	9.7	30.2
3.1/2"	90A	216	139.7	122.2	23.9	90.2	103.4	104.1	71.4	31.8	31.8	101.6	9.7	31.8
4"	100A	229	157.2	134.9	23.9	102.4	116.1	116.8	76.2	33.3	33.3	114.3	11.2	33.3
5"	125A	254	185.7	163.6	23.9	128.3	143.8	144.5	88.9	36.6	36.6	141.2	11.2	36.6
6"	150A	279	215.9	192.0	25.4	154.2	170.7	171.5	88.9	39.6	39.6	168.4	12.7	39.6
8"	200A	343	269.7	246.1	28.4	202.7	221.5	222.3	101.6	44.5	44.5	219.2	12.7	44.5
10"	250A	406	323.9	304.8	30.2	254.5	276.4	277.4	101.6	49.3	49.3	273.1	12.7	49.3
12"	300A	483	381.0	365.3	31.8	304.8	327.2	328.2	114.3	55.6	55.6	323.9	12.7	55.6
14"	350A	533	412.8	400.1	35.1	336.6	359.2	360.2	127.0	57.2	79.2	355.6	12.7	57.2
16"	400A	597	469.9	457.2	36.6	387.4	410.5	411.2	127.0	63.5	87.4	406.4	12.7	63.5
18"	450A	635	533.4	505.0	39.6	438.2	461.8	462.3	139.7	68.3	96.8	457.2	12.7	68.3
20"	500A	699	584.2	558.8	42.9	489.0	513.1	514.4	144.5	73.2	103.1	508.0	12.7	73.2
24"	600A	813	692.2	663.4	47.8	590.6	616.0	616.0	152.4	82.6	111.3	609.6	12.7	82.6

Note:
1. Class 150 flanges except Lap Joint will be furnished with 0.06" (1.6mm) raised face, which is included in "Thickness" (T) and "Length through Hub" (T1)(T2).
2. For Slip-on, Threaded, Socket Welding and Lap Joint Flanges, the hubs can be shapes either vertical from base to top or tapered within the limits of 7 degrees.

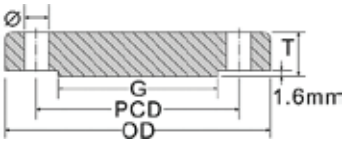
Threaded



Lap Joint



Blind



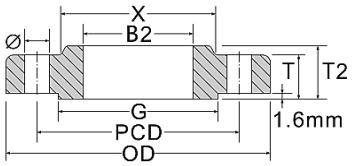
Flanges | Class 150 | ANSI B16.5

Unit: mm

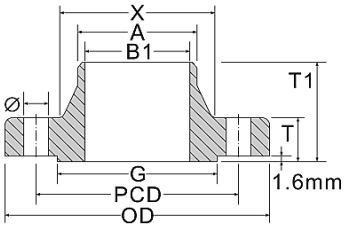
Depth of Socket	Drilling			Bolting				Approx Weight					Nominal Pipe Size	
	Bolt Circle Dia.	Number of Holes	Dia. of Holes	Dia. of Bolt	Machine Bolt Length Raised Face	Stud Bolt Length		Welding Neck	Slip-on and Threaded	Lap Joint	Blind	Socket Welding		
						Raised Face	Raised Joint							
Y	PCD		Ø					KG					DN	INCH
9.7	60.5	4	15.7	1/2"	50.8	57.2	-	0.51	0.47	0.51	0.47	0.47	15A	1/2"
11.2	69.9	4	15.7	1/2"	50.8	63.5	-	0.73	0.58	0.64	0.63	0.59	20A	3/4"
12.7	79.2	4	15.7	1/2"	57.2	63.5	76.2	1.07	0.86	0.93	0.94	0.87	25A	1"
14.2	88.9	4	15.7	1/2"	57.2	69.9	82.6	1.40	1.08	1.16	1.23	1.11	32A	1.1/4"
15.7	98.6	4	15.7	1/2"	63.5	69.9	82.6	1.81	1.41	1.51	1.62	1.45	40A	1.1/2"
17.5	120.7	4	19.1	5/8"	69.9	82.6	95.3	2.59	2.26	2.38	2.64	2.33	50A	2"
19.1	139.7	4	19.1	5/8"	76.2	88.9	101.6	4.28	3.43	3.60	4.06	3.55	65A	2.1/2"
20.6	152.4	4	19.1	5/8"	76.2	88.9	101.6	5.18	3.87	4.04	4.90	4.02	80A	3"
22.4	177.8	8	19.1	5/8"	76.2	88.9	101.6	5.45	4.99	4.99	5.90	4.99	90A	3.1/2"
23.9	190.5	8	19.1	5/8"	76.2	88.9	101.6	7.32	5.75	5.96	7.41	5.99	100A	4"
23.9	215.9	8	22.4	3/4"	82.6	95.3	108.0	8.91	6.22	6.44	8.76	6.68	125A	5"
26.9	241.3	8	22.4	3/4"	82.6	101.6	114.3	11.26	7.38	7.59	11.31	7.99	150A	6"
31.8	298.5	8	22.4	3/4"	88.9	108.0	120.7	17.68	12.36	12.66	19.92	13.29	200A	8"
33.3	362.0	12	25.4	7/8"	101.6	114.3	127.0	24.79	17.10	16.78	29.39	19.50	250A	10"
39.6	431.8	12	25.4	7/8"	101.6	120.7	133.4	38.98	27.68	28.30	43.70	29.03	300A	12"
41.4	476.3	12	28.4	1"	114.3	133.4	146.1	51.71	35.20	41.50	59.42	38.56	350A	14"
44.5	539.8	16	28.4	1"	114.3	133.4	146.1	64.41	42.18	52.98	77.11	44.49	400A	16"
49.3	577.9	16	31.8	1.1/8"	127.0	146.1	158.8	74.84	49.71	59.00	94.80	54.43	450A	18"
54.1	635.0	20	31.8	1.1/8"	139.7	158.8	171.5	89.36	65.50	72.12	123.38	70.31	500A	20"
63.5	749.3	20	35.1	1.1/4"	152.4	171.5	184.2	119.66	90.50	99.02	188.24	95.25	600A	24"

Note:
3. Blind Flanges may be made wth the same hub as that used for Slip-on Flanges or without hub.
4. The gasket surface and backside (bearing surface for bolting) are made parallel within 1 degree. To accomplish prallelism, spot facing is carried out according to MSS SP-9, without reducing thickness(T).
5. Depth of Socket (Y) is covered by ANSI B16.5 only in sizes through 3 inch, over 3 inch is at the manufacturer's option.

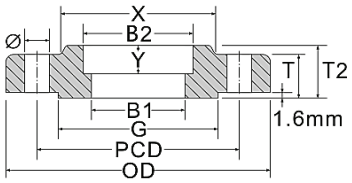
Slip-on



Welding Neck



Socket Welding



Flanges | Class 300 | ANSI B16.5

Unit : mm

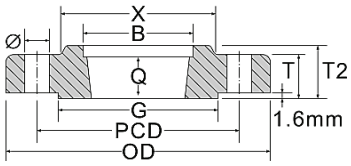
Nominal Pipe Size		Out-side Dia.	Out-side Dia. of Raised Face	Dia. at Base of Hub	Bore				Thick-ness	Length Thru Hub			Dia. of Hub at Bevel	Radius of Fillet	Threaded Length
					Counter Bore Min.	Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint		Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
INCH	DN	OD	G	X	B	B1	B2	B3	T	T1	T2	T3	A	R	Q
1/2"	15A	95	35.1	38.1	23.6	15.7	22.4	22.9	14.2	52.3	22.4	22.4	21.3	3.0	15.7
3/4"	20A	117	42.9	47.8	29.0	20.8	27.7	28.2	15.7	57.2	25.4	25.4	26.7	3.0	15.7
1"	25A	124	50.8	53.8	35.8	26.7	34.5	35.1	17.5	62.0	26.9	26.9	33.5	3.0	17.5
1.1/4"	32A	133	63.5	63.5	44.5	35.1	43.2	43.7	19.1	65.0	26.9	26.9	42.2	4.8	20.6
1.1/2"	40A	155	73.2	69.9	50.5	40.9	49.5	50.0	20.6	68.3	30.2	30.2	48.3	6.4	22.4
2"	50A	165	91.9	84.1	63.5	52.6	62.0	62.5	22.4	69.9	33.3	33.3	60.5	7.9	28.4
2.1/2"	65A	191	104.6	100.1	76.2	62.7	74.7	75.4	25.4	76.2	38.1	38.1	73.2	7.9	31.8
3"	80A	210	127.0	117.3	92.2	78.0	90.7	91.4	28.4	79.2	42.9	42.9	88.9	9.7	31.8
3.1/2"	90A	229	139.7	133.4	104.9	90.2	103.4	104.1	30.2	81.0	44.5	44.5	101.6	9.7	36.6
4"	100A	254	157.2	146.1	117.6	102.4	116.1	116.8	31.8	85.9	47.8	47.8	114.3	11.2	36.6
5"	125A	279	185.7	177.8	144.5	128.3	143.8	144.5	35.1	98.6	50.8	50.8	141.2	11.2	42.9
6"	150A	318	215.9	206.2	171.5	154.2	170.7	171.5	36.6	98.6	52.3	52.3	168.4	12.7	46.0
8"	200A	381	269.7	260.4	222.3	202.7	221.5	222.3	41.1	111.3	62.0	62.0	219.2	12.7	50.8
10"	250A	445	323.9	320.5	276.4	254.5	276.4	277.4	47.8	117.3	66.5	95.3	273.1	12.7	55.6
12"	300A	521	381.0	374.7	328.7	304.8	327.2	328.2	50.8	130.0	73.2	101.6	323.9	12.7	60.5
14"	350A	584	412.8	425.5	360.4	336.6	359.2	360.2	53.8	142.7	76.2	111.3	355.6	12.7	63.5
16"	400A	648	469.9	482.6	411.2	387.4	410.5	411.2	57.2	146.1	82.6	120.7	406.4	12.7	68.3
18"	450A	711	533.4	533.4	462.0	438.2	461.8	462.3	60.5	158.8	88.9	130.0	457.2	12.7	69.9
20"	500A	775	584.2	587.2	512.8	489.0	513.1	514.4	63.5	162.1	95.3	139.7	508.0	12.7	73.2
24"	600A	914	692.2	701.5	614.4	590.6	616.0	616.0	69.9	168.1	106.4	152.4	609.6	12.7	82.6

Note:

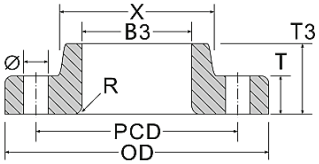
1.Class 300 flanges except Lap Joint will be furnished with 0.06"(1.6mm) raised face,which is included in "Thickness"(T) and "Length through Hub"(T1)(T2).

2.For Slip-on,Threaded,Socket Welding and Lap Joint Flanges,the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.

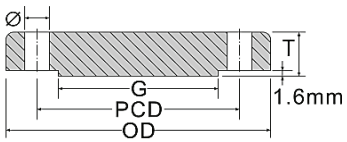
Threaded



Lap Joint



Blind



Flanges | Class 300 | ANSI B16.5

Unit : mm

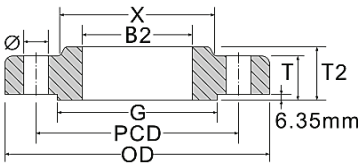
Depth of Socket	Drilling			Bolting				Approx Weight					Nominal Pipe Size	
	Bolt Circle Dia.	Number of Holes	Dia. of Holes	Dia. of Bolt	Machine Bolt Length Raised Face	Stud Bolt Length		Welding Neck	Slip-on and Threaded	Lap Joint	Blind	Socket Welding		
						Raised Face	Ring Joint							
Y	PCD		Ø					KG					DN	INCH
9.7	66.5	4	15.7	1/2"	57.2	63.5	76.2	0.78	0.62	0.61	0.62	0.62	15A	1/2"
11.2	82.6	4	19.1	5/8"	63.5	76.2	88.9	1.34	1.15	1.15	1.16	1.19	20A	3/4"
12.7	88.9	4	19.1	5/8"	63.5	76.2	88.9	1.64	1.39	1.38	1.42	1.44	25A	1"
14.2	98.6	4	19.1	5/8"	69.9	82.6	95.3	2.06	1.67	1.66	1.79	1.73	32A	1.1/4"
15.7	114.3	4	22.4	3/4"	76.2	88.9	101.6	3.06	2.53	2.52	2.68	2.62	40A	1.1/2"
17.5	127.0	8	19.1	5/8"	76.2	88.9	101.6	3.40	2.80	2.79	3.09	2.94	50A	2"
19.1	149.4	8	22.4	3/4"	82.6	101.6	114.3	5.31	4.25	4.22	4.75	4.49	65A	2.1/2"
20.6	168.1	8	22.4	3/4"	88.9	108.0	120.7	7.32	5.81	5.78	6.79	6.20	80A	3"
22.4	184.2	8	22.4	3/4"	95.3	108.0	127.0	8.17	7.72	7.72	9.53	-	90A	3.1/2"
23.9	200.2	8	22.4	3/4"	95.3	114.3	127.0	11.30	10.13	10.07	12.00	-	100A	4"
23.9	235.0	8	22.4	3/4"	108.0	120.7	133.4	15.12	12.58	12.52	15.96	-	125A	5"
26.9	269.7	12	22.4	3/4"	108.0	120.7	139.7	19.68	16.04	15.95	21.20	-	150A	6"
31.8	330.2	12	25.4	7/8"	120.7	139.7	152.4	30.48	24.50	24.37	34.60	-	200A	8"
33.3	387.4	16	28.4	1"	139.7	158.8	171.5	43.74	34.16	39.92	55.34	-	250A	10"
39.6	450.9	16	31.8	1.1/8"	146.1	171.5	184.2	64.41	51.26	58.70	78.90	-	300A	12"
41.4	514.4	20	31.8	1.1/8"	158.8	177.8	190.5	88.30	72.12	83.46	107.05	-	350A	14"
44.5	571.5	20	35.1	1.1/4"	165.1	190.5	203.2	112.94	90.40	106.14	139.25	-	400A	16"
49.3	628.7	24	35.1	1.1/4"	171.5	196.9	209.6	138.34	109.00	133.95	176.90	-	450A	18"
54.1	685.8	24	35.1	1.1/4"	184.2	203.2	222.3	167.37	136.00	157.65	223.17	-	500A	20"
63.5	812.8	24	41.1	1.1/2"	203.2	228.6	254.0	235.41	204.00	240.40	342.00	-	600A	24"

3.Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.

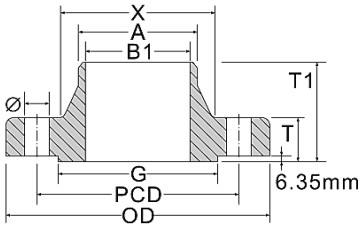
4.The gasket surface amd backside(bearing surface for bolting)are made parallel within 1 degree.To accomplish parallelism,spot facing is carried out according to MSS SP-9,without reducing thickness(T).

5.Depth of Socket(Y) is covered by ANSI B16.5 only in sizes through 3 inch,over 3 inch is at the manufacturer's option.

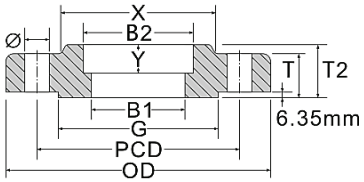
Slip-on



Welding Neck



Socket Welding



Flanges | Class 600 | ANSI B16.5

Unit : mm

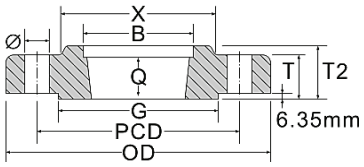
Nominal Pipe Size		Out-side Dia.	Out-side Dia. of Raised Face	Dia. at Base of Hub	Bore				Thick-ness	Length Thru Hub			Dia. of Hub at Bevel	Radius of Fillet	Threaded Length
					Counter Bore Min.	Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint		Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
INCH	DN	OD	G	X	B	B1	B2	B3	T	T1	T2	T3	A	R	Q
1/2"	15A	95	35.1	38.1	23.6		22.4	22.9	14.2	52.3	22.4	22.4	21.3	3.0	15.7
3/4"	20A	117	42.9	47.8	29.0		27.7	28.2	15.7	57.2	25.4	25.4	26.7	3.0	15.7
1"	25A	124	50.8	53.8	35.8		34.5	35.1	17.5	62.0	26.9	26.9	33.5	3.0	17.5
1.1/4"	32A	133	63.5	63.5	44.5		43.2	43.7	20.6	66.5	28.4	28.4	42.2	4.8	20.6
1.1/2"	40A	155	73.2	69.9	50.5		49.5	50.0	22.4	69.9	31.8	31.8	48.3	6.4	22.4
2"	50A	165	91.9	84.1	63.5	See	62.0	62.5	25.4	73.2	36.6	36.6	60.5	7.9	28.4
2.1/2"	65A	191	104.6	100.1	76.2	Note	74.7	75.4	28.4	79.2	41.1	41.1	73.2	7.9	31.8
3"	80A	210	127.0	117.3	92.2	(1)	90.7	91.4	31.8	82.6	46.0	46.0	88.9	9.7	35.1
3.1/2"	90A	229	139.7	133.4	104.9	to	103.4	104.1	35.1	85.9	49.3	49.3	101.6	9.7	39.6
4"	100A	273	157.2	152.4	117.6	be	116.1	116.8	38.1	101.6	53.8	53.8	114.3	11.2	41.1
5"	125A	330	185.7	189.0	144.5	Speci-	143.8	144.5	44.5	114.3	60.5	60.5	141.2	11.2	47.8
6"	150A	356	215.9	222.3	171.5	fied	170.7	171.5	47.8	117.3	66.5	66.5	168.4	12.7	50.8
8"	200A	419	269.7	273.1	222.3	by	221.5	222.3	55.6	133.4	76.2	76.2	219.2	12.7	57.2
10"	250A	508	323.9	342.9	276.4	Purcha-	276.4	277.4	63.5	152.4	85.9	111.3	273.1	12.7	65.0
12"	300A	559	381.0	400.1	328.7	ser	327.2	328.2	66.5	155.4	91.9	117.3	323.9	12.7	69.9
14"	350A	603	412.8	431.8	360.4		359.2	360.2	69.9	165.1	93.7	127.0	355.6	12.7	73.2
16"	400A	686	469.9	495.3	411.2		410.5	411.2	76.2	177.8	106.4	139.7	406.4	12.7	77.7
18"	450A	743	533.4	546.1	462.0		461.8	462.3	82.6	184.2	117.3	152.4	457.2	12.7	79.2
20"	500A	813	584.2	609.6	512.8		513.1	514.4	88.9	190.5	127.0	165.1	508.0	12.7	82.6
24"	600A	940	692.2	717.6	614.4		616.0	616.0	101.6	203.2	139.7	184.2	609.6	12.7	91.9

Note:

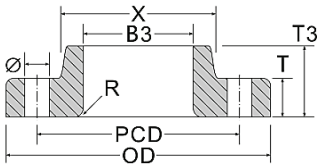
1.Class 600 flanges except Lap Joint will be furnished with 0.25"(6.35mm) raised face,which is included in "Thickness"(T) and "Length through Hub"(T1)(T2).

2.For Slip-on,Threaded,and Lap Joint Flanges,the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.

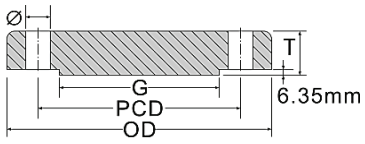
Threaded



Lap Joint



Blind



Flanges | Class 600 | ANSI B16.5

Unit : mm

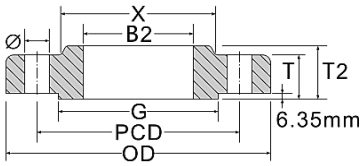
Depth of Socket	Drilling			Bolting				Approx Weight					Nominal Pipe Size	
	Bolt Circle Dia.	Number of Holes	Dia. of Holes	Dia. of Bolt	Stud Bolt Length			Welding Neck	Slip-on and Threaded	Lap Joint	Blind	Socket Welding		
					0.25" Raised Face	Male/Female Tongue Groove	Ring Joint							
Y	PCD		Ø					KG					DN	INCH
9.7	66.5	4	15.7	1/2"	76.2	69.9	76.2	0.90	0.91	0.80	0.91	0.91	15A	1/2"
11.2	82.6	4	19.1	5/8"	88.9	82.6	88.9	1.59	1.40	1.36	1.40	1.36	20A	3/4"
12.7	88.9	4	19.1	5/8"	88.9	82.6	88.9	1.90	1.70	1.59	1.81	1.81	25A	1"
14.2	98.6	4	19.1	5/8"	95.3	88.9	95.3	2.49	2.27	2.04	2.40	2.60	32A	1.1/4"
15.7	114.3	4	22.4	3/4"	108.0	101.6	108.0	3.63	3.10	2.95	3.40	3.18	40A	1.1/2"
17.5	127.0	8	19.1	5/8"	108.0	101.6	108.0	4.54	3.63	3.63	4.40	3.90	50A	2"
19.1	149.4	8	22.4	3/4"	120.7	114.3	120.7	6.35	5.44	4.99	6.80	5.90	65A	2.1/2"
20.6	168.1	8	22.4	3/4"	127.0	120.7	127.0	8.16	7.26	6.35	8.90	7.40	80A	3"
22.4	184.2	8	25.4	7/8"	139.7	133.4	139.7	11.80	9.53	9.08	13.17	-	90A	3.1/2"
23.9	215.9	8	25.4	7/8"	146.1	139.7	146.1	16.78	14.97	14.06	18.60	-	100A	4"
23.9	266.7	8	28.4	1"	165.1	158.8	165.1	30.87	28.50	27.50	30.84	-	125A	5"
26.9	292.1	12	28.4	1"	171.5	165.1	171.5	36.77	36.32	35.38	38.00	-	150A	6"
31.8	349.3	12	31.8	1.1/8"	190.5	184.2	196.9	50.80	44.00	50.80	62.20	-	200A	8"
33.3	431.8	16	35.1	1.1/4"	215.9	209.6	215.9	86.26	76.20	74.00	102.00	-	250A	10"
39.6	489.0	20	35.1	1.1/4"	222.3	215.9	222.3	102.51	97.52	108.86	132.00	-	300A	12"
41.4	527.1	20	38.1	1.3/8"	235.0	228.6	235.0	121.56	102.00	111.00	158.00	-	350A	14"
44.5	603.3	20	41.1	1.1/2"	254.0	247.7	254.0	177.06	149.82	165.71	224.73	-	400A	16"
49.3	654.1	20	44.5	1.5/8"	273.1	266.7	273.1	215.65	180.10	194.00	285.00	-	450A	18"
54.1	723.9	24	44.5	1.5/8"	285.3	279.4	292.1	267.86	231.54	258.78	365.00	-	500A	20"
63.5	838.2	24	50.8	1.7/8"	330.2	323.9	336.6	372.00	330.00	362.00	533.45	-	600A	24"

3.Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.

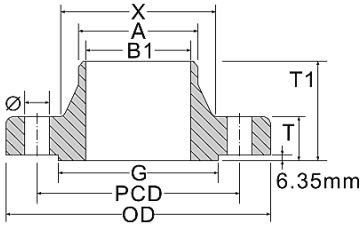
4.The gasket surface amd backside(bearing surface for bolting)are made parallel within 1 degree.To accomplish parallelism,spot facing is carried out according to MSS SP-9,without reducing thickness(T).

5.Depth of Socket(Y) is covered by ANSI B16.5 only in sizes through 3 inch,over 3 inch is at the manufacturer's option.

Slip-on



Welding Neck



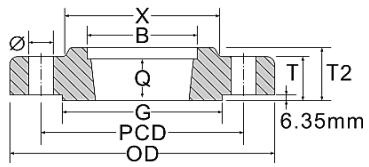
Flanges | Class 900 | ANSI B16.5

Unit : mm

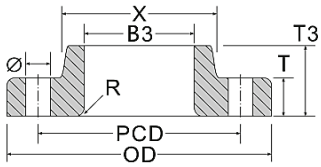
Nominal Pipe Size		Outside Dia.	Outside Dia. of Raised Face	Dia. at Base of Hub	Bore				Thick-ness	Length Thru Hub			Dia. of Hub at Bevel
					Counter Bore Min.	Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint		Welding Neck	Slip-on Threaded Socket Welding	Lap Joint	
INCH	DN	OD	G	X	B	B1	B2	B3	T	T1	T2	T3	A
1/2"	15A	121	35.1	38.1	23.6		22.4	22.9	22.4	60.5	31.8	31.8	21.3
3/4"	20A	130	42.9	44.5	29.0		27.7	28.2	25.4	69.9	35.1	35.1	26.7
1"	25A	149	50.8	52.3	35.8		34.5	35.1	28.4	73.2	41.1	41.1	33.5
1.1/4"	32A	159	63.5	63.5	44.5		43.2	43.7	28.4	73.2	41.1	41.1	42.2
1.1/2"	40A	178	73.2	69.9	50.5		49.5	50.0	31.8	82.6	44.5	44.5	48.3
2"	50A	216	91.9	104.6	63.5	See	62.0	62.5	38.1	101.6	57.2	57.2	60.5
2.1/2"	65A	244	104.6	124.0	76.2	Note	74.7	75.4	41.1	104.6	63.5	63.5	73.2
3"	80A	241	127.0	127.0	92.2	(1)	90.7	91.4	38.1	101.6	53.8	53.8	88.9
4"	100A	292	157.2	158.8	117.6	to	116.1	116.8	44.5	114.3	69.9	69.9	114.3
5"	125A	349	185.7	190.5	144.5	be	143.8	144.5	50.8	127.0	79.2	79.2	141.2
6"	150A	381	215.9	235.0	171.5	Specified	170.7	171.5	55.6	139.7	85.9	85.9	168.4
8"	200A	470	269.7	298.5	222.3	by	221.5	222.3	63.5	162.1	101.6	114.3	219.2
10"	250A	546	323.9	368.3	276.4	purcha-	276.4	277.4	69.9	184.2	108.0	127.0	273.1
12"	300A	610	381.0	419.1	328.7	ser	327.2	328.2	79.2	200.2	117.3	142.7	323.9
14"	350A	641	412.8	450.9	360.4		359.2	360.2	85.9	212.9	130.0	155.4	355.6
16"	400A	705	469.9	508.0	411.2		410.5	411.2	88.9	215.9	133.4	165.1	406.4
18"	450A	787	533.4	565.2	462.0		461.8	462.3	101.6	228.6	152.4	190.5	457.2
20"	500A	857	584.2	622.3	512.8		513.1	514.4	108.0	247.7	158.8	209.6	508.0
24"	600A	1041	692.2	749.3	614.4		616.0	616.0	139.7	292.1	203.2	266.7	609.6

1. Class 900 flanges except Lap Joint will be furnished with 0.25"(6.35mm) raised face,which is included in "Thickness"(T) and "Length through Hub"(T1)(T2).
2. For Slip-on,Threaded,and Lap Joint Flanges,the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.

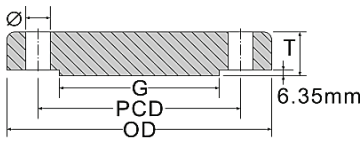
Threaded



Lap Joint



Blind



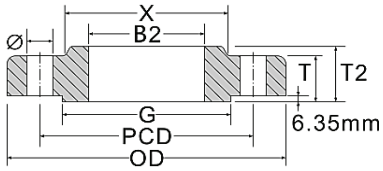
Flanges | Class 900 | ANSI B16.5

Unit : mm

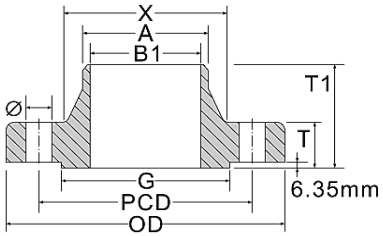
Radius of Fillet	Threaded Length	Drilling			Bolting				Approx Weight				Nominal Pipe Size	
		Bolt Circle Dia.	Number of Holes	Dia. of Holes	Dia. of Bolt	Stud Bolt Length			Welding Neck	Slip-on and Threaded	Lap Joint	Blind		
						0.25" Raised Face	Male/Female Tongue Groove	Ring Joint						
R	Q	PCD		Ø					KG				DN	INCH
3.0	22.4	82.6	4	22.4	3/4"	108.0	101.6	108.0	2.10	1.81	1.81	1.90	15A	1/2"
3.0	25.4	88.9	4	22.4	3/4"	114.3	108.0	114.3	2.72	2.40	2.30	2.70	20A	3/4"
3.0	28.4	101.6	4	25.4	7/8"	127.0	120.7	127.0	3.86	3.41	3.40	4.09	25A	1"
4.8	30.2	111.3	4	25.4	7/8"	127.0	120.7	127.0	4.54	4.10	4.09	4.54	32A	1.1/4"
6.4	31.8	124.0	4	28.4	1"	139.7	133.4	139.7	5.90	5.45	5.40	5.90	40A	1.1/2"
7.9	38.1	165.1	8	25.4	7/8"	146.1	139.7	146.1	10.89	9.98	9.53	11.34	50A	2"
7.9	47.8	190.5	8	28.4	1"	158.8	152.4	158.8	16.33	15.80	13.15	16.00	65A	2.1/2"
9.7	41.1	190.5	8	25.4	7/8"	146.1	139.7	146.1	15.00	11.80	11.34	13.17	80A	3"
11.2	47.8	235.0	8	31.8	1.1/8"	171.5	165.1	171.5	23.13	23.20	22.60	24.50	100A	4"
11.2	53.8	279.4	8	35.1	1.1/4"	190.5	184.2	190.5	38.50	37.65	36.74	39.46	125A	5"
12.7	57.2	317.5	12	31.8	1.1/8"	190.5	184.2	196.9	49.89	48.30	47.50	51.50	150A	6"
12.7	63.5	393.7	12	38.1	1.3/8"	222.3	215.9	222.3	79.45	75.00	86.00	89.00	200A	8"
12.7	71.4	469.9	16	38.1	1.3/8"	235.0	228.6	235.0	118.04	111.13	125.64	131.54	250A	10"
12.7	76.2	533.4	20	38.1	1.3/8"	254.0	247.7	254.0	157.00	146.00	167.00	187.00	300A	12"
12.7	82.6	558.8	20	41.1	1.1/2"	273.1	266.7	292.1	181.60	172.36	180.07	224.07	350A	14"
12.7	85.9	616.0	20	44.5	1.5/8"	285.8	279.4	298.5	224.73	192.95	211.11	272.40	400A	16"
12.7	88.9	685.8	20	50.8	1.7/8"	323.9	317.5	333.6	308.72	272.40	295.10	385.90	450A	18"
12.7	91.9	749.3	20	53.8	2"	349.3	342.9	362.0	376.82	331.42	367.74	488.00	500A	20"
12.7	101.6	901.7	20	66.5	2.1/2"	438.2	431.8	457.2	685.00	632.00	700.00	905.00	600A	24"

3. Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.
4. The gasket surface amd backside(bearing surface for bolting)are made parallel within 1 degree.To accomplish parallelism,spot facing is carried out according to MSS SP-9,without reducing thickness(T).
5. Dimensions of size 1/2" through 2.1/2" are the same as for Class 1500 Flanges.
6. *M/F (Male/Female).

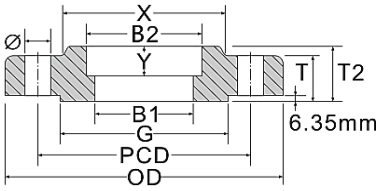
Slip-on



Welding Neck



Socket Welding



Flanges | Class 1500 | ANSI B16.5

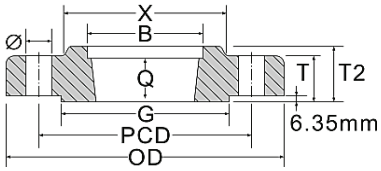
Unit: mm

Nominal Pipe Size		Out-side Dia.	Out-side Dia. of Raised Face	Dia. at Base of Hub	Bore				Thick-ness	Length Thru Hub			Dia. of Hub at Bevel	Radius of Fillet	Threaded Length
					Counter Bore Min.	Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint		Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
INCH	DN	OD	G	X	B	B1	B2	B3	T	T1	T2	T3	A	R	Q
1/2"	15A	121	35.1	38.1	23.6	See Note (1) to be Specified by Purchaser	22.4	22.9	22.4	60.5	31.8	31.8	21.3	3.0	22.4
3/4"	20A	130	42.9	44.5	29.0		27.7	28.2	25.4	69.9	35.1	35.1	26.7	3.0	25.4
1"	25A	149	50.8	52.3	35.8		34.5	35.1	28.4	73.2	41.1	41.1	33.5	3.0	28.4
1.1/4"	32A	159	63.5	63.5	44.5		43.2	43.7	28.4	73.2	41.1	41.1	42.2	4.8	30.2
1.1/2"	40A	178	73.2	69.9	50.5		49.5	50.0	31.8	82.6	44.5	44.5	48.3	6.4	31.8
2"	50A	216	91.9	104.6	63.5		62.0	62.5	38.1	101.6	57.2	57.2	60.5	7.9	38.1
2.1/2"	65A	244	104.6	124.0	76.2		74.7	75.4	41.1	104.6	63.5	63.5	73.2	7.9	47.8
3"	80A	267	127.0	133.4	92.2		90.7	91.4	47.8	117.3	73.2	73.2	88.9	9.7	50.8
4"	100A	311	157.2	162.1	117.6		116.1	116.8	53.8	124.0	90.4	90.4	114.3	11.2	57.2
5"	125A	375	185.7	196.9	144.5		143.8	144.5	73.2	155.4	104.6	104.6	141.2	11.2	63.5
6"	150A	394	215.9	228.6	171.5		170.7	171.5	82.6	171.5	119.1	119.1	168.4	12.7	69.9
8"	200A	483	269.7	292.1	222.3		221.5	222.3	91.9	212.9	142.7	142.7	219.2	12.7	76.2
10"	250A	584	323.9	368.3	276.4		276.4	277.4	108.0	254.0	158.8	177.8	273.1	12.7	84.1
12"	300A	673	381.0	450.9	328.7		327.2	328.2	124.0	282.4	180.8	218.9	323.9	12.7	91.9
14"	350A	749	412.8	495.3	360.4		359.2	360.2	133.4	298.5	-	241.3	355.6	12.7	-
16"	400A	826	469.9	552.5	411.2		410.5	411.2	146.1	311.2	-	260.4	406.4	12.7	-
18"	450A	914	533.4	596.9	462.0		461.8	462.3	162.1	327.2	-	276.4	457.2	12.7	-
20"	500A	984	584.2	641.4	512.8		513.1	514.4	177.8	355.6	-	292.1	508.0	12.7	-
24"	600A	1168	692.2	762.0	614.4		616.0	616.0	203.2	406.4	-	330.2	609.6	12.7	-

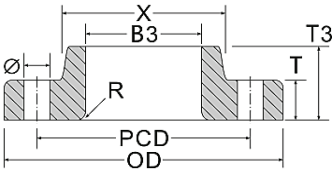
Note:

1. Class 1500 flanges except Lap Joint will be furnished with 0.25" (6.35mm) raised face,which is included in "Thickness" (T) and "Length through Hub" (T1)(T2).
2. For Slip-on, Threaded,Socket Welding and Lap Joint Flanges, the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.

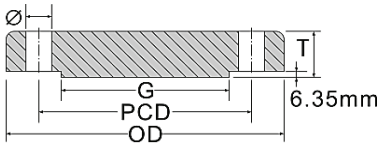
Threaded



Lap Joint



Blind



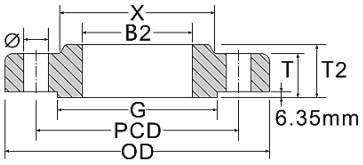
Flanges | Class 1500 | ANSI B16.5

Unit: mm

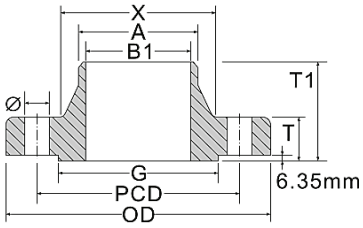
Depth of Socket	Drilling			Bolting				Approx Weight					Nominal Pipe Size	
	Bolt Circle Dia.	Number of Holes	Dia. of Holes	Dia. of Bolt	Stud Bolt Length			Welding Neck	Slip-on and Threaded	Lap Joint	Blind	Socket Welding		
					0.25" Raised Face	Male/Female Tongue Groove	Ring Joint							
Y	PCD		Ø					KG					DN	INCH
9.7	82.6	4	22.4	3/4"	108.0	101.6	108.0	2.10	1.80	1.80	1.90	1.81	15A	1/2"
11.2	88.9	4	22.4	3/4"	114.3	108.0	114.3	2.72	2.27	2.27	2.72	2.81	20A	3/4"
12.7	101.6	4	25.4	7/8"	127.0	120.7	127.0	3.86	3.40	3.40	4.08	3.61	25A	1"
14.2	111.3	4	25.4	7/8"	127.0	120.7	127.0	4.54	4.10	4.09	4.30	4.99	32A	1.1/4"
15.7	124.0	4	28.4	1"	139.7	133.4	139.7	5.90	5.45	5.40	5.90	6.76	40A	1.1/2"
17.5	165.1	8	25.4	7/8"	146.1	139.7	146.1	10.89	10.50	9.53	11.30	10.89	50A	2"
19.1	190.5	8	28.4	1"	158.8	152.4	158.8	16.34	15.80	13.15	16.00	16.34	65A	2.1/2"
20.6	203.2	8	31.8	1.1/8"	177.8	171.5	177.8	21.79	21.77	17.24	21.79	-	80A	3"
23.9	241.3	8	35.1	1.1/4"	196.9	190.5	196.9	31.30	31.00	29.00	33.11	-	100A	4"
23.9	292.1	8	41.1	1.1/2"	247.7	241.3	247.7	59.02	58.80	54.00	60.00	-	125A	5"
26.9	317.5	12	38.1	1.3/8"	260.4	254.0	266.7	74.91	74.00	62.00	75.00	-	150A	6"
31.8	393.7	12	44.5	1.5/8"	292.1	285.8	323.9	123.83	117.73	129.73	136.98	-	200A	8"
33.3	482.6	12	50.8	1.7/8"	336.6	330.2	342.9	205.93	197.49	220.19	229.97	-	250A	10"
39.6	571.5	16	53.8	2"	374.7	368.3	387.4	306.00	264.00	286.02	316.00	-	300A	12"
41.4	635.0	16	60.5	2.1/4"	406.4	400.1	425.5	416.00	-	404.06	421.00	-	350A	14"
44.5	704.9	16	66.5	2.1/2"	444.5	438.2	569.9	567.50	-	522.10	559.00	-	400A	16"
49.3	774.7	16	73.2	2.3/4"	495.3	489.0	527.1	736.00	-	669.65	761.00	-	450A	18"
54.1	831.9	16	79.2	3"	539.8	533.4	565.2	929.00	-	805.85	967.00	-	500A	20"
63.5	990.6	16	91.9	3.1/2"	616.0	609.6	647.7	1504.00	-	1285.55	1568.00	-	600A	24"

3. Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.
4. The gasket surface amd backside (bearing surface for bolting) are made parallel within 1 degree. To accomplish parallelism, spot facing is carried out according to MSS SP-9,without reducing thickness (T).
5. Dimensions of size 1/2" through 2.1/2" are the same as for Class 900 Flanges.
6. Depth of Socket(Y) is covered by ANSI B16.5 only in sizes through 2.1/2 inch,over 2.1/2 inch is at the manufacturer's option.

Slip-on



Welding Neck



Flanges | Class 2500 | ANSI B16.5

Unit : mm

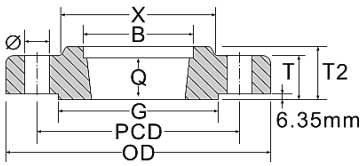
Nominal Pipe Size		Outside Dia.	Outside Dia. of Raised Face	Dia. at Base of Hub	Bore				Thick-ness	Length Thru Hub			Dia. of Hub at Bevel
					Counter Bore Min.	Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint		Welding Neck	Slip-on Threaded Socket Welding	Lap Joint	
INCH	DN	OD	G	X	B	B1	B2	B3	T	T1	T2	T3	A
1/2"	15A	133	35.1	42.9	23.6		22.4	22.9	30.2	73.2	39.6	39.6	21.3
3/4"	20A	140	42.9	50.8	29.0		27.7	28.2	31.8	79.2	42.9	42.9	26.7
1"	25A	159	50.8	57.2	35.8		34.5	35.1	35.1	88.9	47.8	47.8	33.5
1.1/4"	32A	184	63.5	73.2	44.5		43.2	43.7	38.1	95.3	52.3	52.3	42.2
1.1/2"	40A	203	73.2	79.2	50.5	To	49.5	50.0	44.5	111.3	60.5	60.5	48.3
2"	50A	235	91.9	95.3	63.5	be	62.0	62.5	50.8	127.0	69.9	69.9	60.5
2.1/2"	65A	267	104.6	114.3	76.2	Specified	74.7	75.4	57.2	142.7	79.2	79.2	73.2
3"	80A	305	127.0	133.4	92.2	by	90.7	91.4	66.5	168.1	91.9	91.9	88.9
4"	100A	356	157.2	165.1	117.6	Purcha-	116.1	116.8	76.2	190.5	108.0	108.0	114.3
5"	125A	419	185.7	203.2	144.5	ser	143.8	144.5	91.9	228.6	130.0	130.0	141.2
6"	150A	483	215.9	235.0	171.5		170.7	171.5	108.0	273.1	152.4	152.4	168.4
8"	200A	552	269.7	304.8	222.3		221.5	222.3	127.0	317.5	177.8	177.8	219.2
10"	250A	673	323.9	374.7	276.4		276.4	277.4	165.1	419.1	228.6	228.6	273.1
12"	300A	762	381.0	441.5	328.7		327.2	328.2	184.2	463.6	254.0	254.0	323.9

Note:

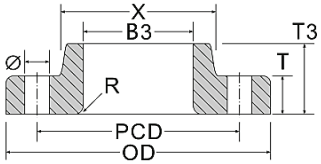
1.Class 2500 flanges except Lap Joint will be furnished with 0.25"(6.35mm) raised face,which is included in "Thickness"(T) and "Length through Hub"(T1)(T2).

2.For Slip-on,Threaded,and Lap Joint Flanges,the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.

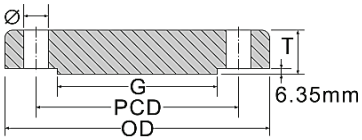
Threaded



Lap Joint



Blind



Flanges | Class 2500 | ANSI B16.5

Unit : mm

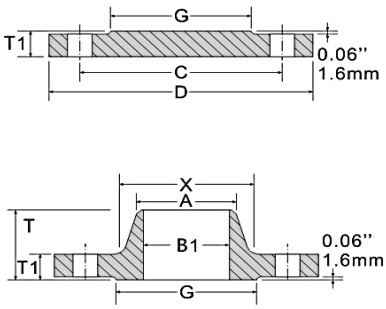
Radius of Fillet	Threaded Length	Drilling			Bolting				Approx Weight				Nominal Pipe Size	
		Bolt Circle Dia.	Number of Holes	Dia. of Holes	Dia. of Bolt	Stud Bolt Length			Welding Neck	Slip-on and Threaded	Lap Joint	Blind		
						0.25" Raised Face	Male/Female Tongue Groove	Ring Joint						
R	Q	PCD		Ø					KG				DN	INCH
3.0	28.4	88.9	4	22.4	3/4"	120.7	114.3	120.7	3.18	3.18	3.00	3.18	15A	1/2"
3.0	31.8	95.3	4	22.4	3/4"	127.0	120.7	127.0	4.08	4.08	3.63	4.54	20A	3/4"
3.0	35.1	108.0	4	25.4	7/8"	139.7	133.4	139.7	5.45	5.44	4.99	5.44	25A	1"
4.8	38.1	130.0	4	28.4	1"	152.4	146.1	152.4	9.07	8.16	7.26	8.16	32A	1.1/4"
6.4	44.5	146.1	4	31.8	1.1/8"	171.5	165.1	171.5	11.35	11.00	9.99	10.44	40A	1.1/2"
7.9	50.8	171.5	8	28.4	1"	177.8	171.5	177.8	19.07	17.25	16.80	17.71	50A	2"
7.9	57.2	196.9	8	31.8	1.1/8"	196.9	190.5	203.2	23.61	24.97	24.06	25.42	65A	2.1/2"
9.7	63.5	228.6	8	35.1	1.1/4"	222.3	215.9	228.6	42.68	37.68	36.32	39.04	80A	3"
11.2	69.9	273.1	8	41.1	1.1/2"	254.0	247.7	260.4	64.00	58.00	54.48	60.38	100A	4"
11.2	76.2	323.9	8	47.8	1.3/4"	298.5	292.1	311.2	110.68	95.25	92.53	101.15	125A	5"
12.7	82.6	368.3	8	53.8	2"	342.9	336.6	355.6	176.46	146.51	143.01	156.63	150A	6"
12.7	95.3	438.2	12	53.8	2"	381.0	374.7	393.7	261.27	219.99	213.38	240.62	200A	8"
12.7	108.0	539.8	12	66.5	2.1/2"	489.0	482.6	508.0	484.43	419.57	408.60	465.36	250A	10"
12.7	120.7	619.3	12	73.2	2.3/4"	539.8	533.4	558.8	692.35	590.20	572.95	664.06	300A	12"

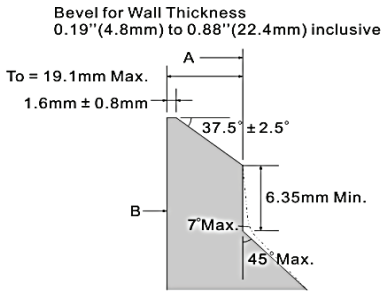
3.Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.

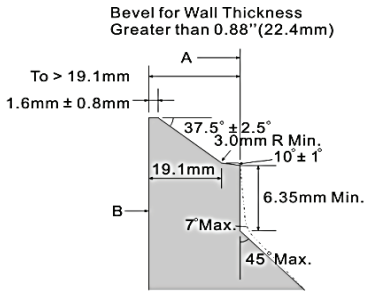
4.The gasket surface amd backside(bearing surface for bolting)are made parallel within 1 degree.To accomplish parallelism,spot facing is carried out according to MSS SP-9,without reducing thickness(T).

5.Class 2500 Slip-on Flanges are not covered by ANSI B16.5,Slip-on Flanges are the manufacturer's option.

6.*M/F (Male/Female).







Note:
*Or I inch at manufacturer's option.
**Flanges sizes 24"(609.6mm) and smaller may be furnished with 37-1/2° bevel at manufacturer'soption.

Flanges | Class 150 | ANSI/ASME B16.47 Series A

Unit : mm

Nominal Pipe Size		Outside Dia.	OD of Raised Face	Dia. at Base of Hub	Thick-ness	Bore Wall Thickness		Length Thru Hub	Dia. of Hub at Bevel	Radius of Fillet	Drilling Bolt Circle Dia.	Number of Holes	Dia. of Holes
						9.5mm	12.7mm						
INCH	DN	D	G	X	T1	B1		T	A	R	C		
26"	650A	870	749.3	676.1	68.3	641.4	635.0	120.7	660.4	9.7	806.5	24	34.9
28"	700A	927	800.1	726.9	71.4	692.2	685.8	125.5	711.2	11.2	863.6	28	34.9
30"	750A	984	857.3	781.1	74.7	743.0	736.6	136.7	762.0	11.2	914.4	28	34.9
32"	800A	1060	914.4	831.9	81.0	793.8	787.4	144.5	812.8	11.2	977.9	28	41.3
34"	850A	1111	965.2	882.7	82.6	844.6	838.2	149.4	863.6	12.7	1028.7	32	41.3
36"	900A	1168	1022.4	933.5	90.4	895.4	889.0	157.2	914.4	12.7	1085.9	32	41.3
38"	950A	1238	1073.2	990.6	87.4	946.2	939.8	157.2	965.2	12.7	1149.4	32	41.3
40"	1000A	1289	1124.0	1041.4	90.4	997.0	990.6	163.6	1016.0	12.7	1200.2	36	41.3
42"	1050A	1346	1193.8	1092.2	96.8	1047.8	1041.4	171.5	1066.8	12.7	1257.3	36	41.3
44"	1100A	1403	1244.6	1143.0	101.6	1098.6	1092.2	177.8	1117.6	12.7	1314.5	40	41.3
46"	1150A	1454	1295.4	1196.8	103.1	1149.4	1143.0	185.7	1168.4	12.7	1365.3	40	41.3
48"	1200A	1511	1358.9	1247.6	108.0	1200.2	1193.8	192.0	1219.2	12.7	1422.4	44	41.3
50"	1250A	1568	1409.7	1301.8	111.3	1251.0	1244.6	203.2	1270.0	12.7	1479.6	44	47.6
52"	1300A	1626	1460.5	1352.6	115.8	1301.8	1295.4	209.6	1320.8	12.7	1536.7	44	47.6
54"	1350A	1683	1511.3	1403.4	120.7	1352.6	1346.2	215.9	1371.6	12.7	1593.9	44	47.6
56"	1400A	1746	1574.8	1457.5	124.0	1403.4	1397.0	228.6	1422.4	12.7	1651.0	48	47.6
58"	1450A	1803	1625.6	1508.3	128.5	1454.2	1447.8	235.0	1473.2	12.7	1708.2	48	47.6
60"	1500A	1854	1676.4	1559.1	131.8	1505.0	1498.6	239.8	1524.0	12.7	1759.0	52	47.6

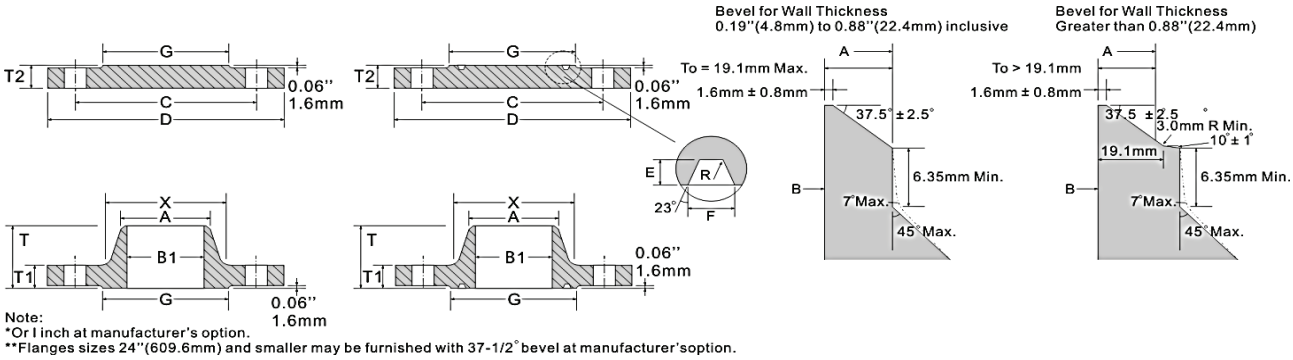
Note:

1.Class 150 flanges will be furnished with 0.06"(1.6mm) raised face,which is included in "Thickness"(T1) and "Length through Hub"(T).

2.Dimensional tolerances are accordance with ANSI B16.5.

3.Maximum Pressure Rating for raised face flanges is 285 psi(19.5 BARS) at atmospheric temperature.

4.Flange dimensions of size 12"(304.8mm) through 24"(609.6mm) flanges (except 22"(558.8mm)) are in accordance with ANSI B16.5.



Note:
*Or I inch at manufacturer's option.
**Flanges sizes 24"(609.6mm) and smaller may be furnished with 37-1/2° bevel at manufacturer'soption.

Flanges | Class 300 | ANSI/ASME B16.47 Series A

Unit : mm

Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore		Length Thru Hub	Dia. of Hub at Bevel	Radius of Fillet	Drilling			Pitch Dia.	Groove Dimensions			Dia. of Raised Face	Ring and Groove No.
					Weld-ing Neck	Blind	Wall Thickness					Bolt Circle Dia.	No. of Holes	Dia. of Holes		Width	Depth	Radius		
							9.5mm	12.7mm												
INCH	DN	D	G	X	T1	T2	B1		T	A	R	C			P	F	E	R1	K	
26"	650A	972	749.3	720.9	79.5	84.1	641.4	635.0	184.2	660.4	9.7	876.3	28	44.5	749.3	19.8	12.7	1.5	809.8	R93
28"	700A	1035	800.1	774.7	85.9	90.4	692.2	685.8	196.9	711.2	11.2	939.8	28	44.5	800.1	19.8	12.7	1.5	860.6	R94
30"	750A	1092	857.3	827.0	92.2	95.3	743.0	736.6	209.6	762.0	11.2	997.0	28	47.6	857.3	19.8	12.7	1.5	917.4	R95
32"	800A	1149	914.4	881.1	98.6	100.1	793.8	787.4	222.3	812.8	11.2	1054.1	28	50.8	914.4	23.0	14.3	1.5	984.3	R96
34"	850A	1207	965.2	936.8	101.6	104.9	844.6	838.2	231.9	863.6	12.7	1104.9	28	50.8	965.2	23.0	14.3	1.5	1035.1	R97
36"	900A	1270	1022.4	990.6	104.9	111.3	895.4	889.0	241.3	914.4	12.7	1168.4	32	54.0	1022.4	23.0	14.3	1.5	1092.2	R98
38"	950A	1168	1028.7	993.6	108.0	108.0	946.2	939.8	180.8	965.2	12.7	1092.2	32	41.1						
40"	1000A	1238	1085.9	1047.8	114.3	114.3	997.0	990.6	193.5	1016.0	12.7	1155.7	32	44.5						
42"	1050A	1289	1136.7	1098.6	119.1	119.1	1047.8	1041.4	200.2	1066.8	12.7	1206.5	32	44.5						
44"	1100A	1353	1193.8	1149.4	124.0	124.0	1098.6	1092.2	206.2	1117.6	12.7	1263.7	32	47.8						
46"	1150A	1416	1244.6	1203.5	128.5	128.5	1149.4	1143.0	215.9	1168.4	12.7	1320.8	28	50.8						
48"	1200A	1467	1301.8	1254.3	133.4	133.4	1200.2	1193.8	223.8	1219.2	12.7	1371.6	32	50.8						
50"	1250A	1530	1358.9	1305.1	139.7	139.7	1251.0	1244.6	231.9	1270.0	12.7	1428.8	32	54.0						
52"	1300A	1581	1409.7	1355.9	144.5	144.5	1301.8	1295.4	238.3	1320.8	12.7	1479.6	32	54.0						
54"	1350A	1657	1466.9	1409.7	152.4	152.4	1352.6	1346.2	252.5	1371.6	12.7	1549.4	28	60.3						
56"	1400A	1708	1517.7	1463.5	153.9	153.9	1403.4	1397.0	260.4	1422.4	12.7	1600.2	28	60.3						
58"	1450A	1759	1574.8	1514.3	158.8	158.8	1454.2	1447.8	266.7	1473.2	12.7	1651.0	32	60.3						
60"	1500A	1810	1625.6	1565.1	163.6	163.6	1505.0	1498.6	273.1	1524.0	12.7	1701.8	32	60.3						

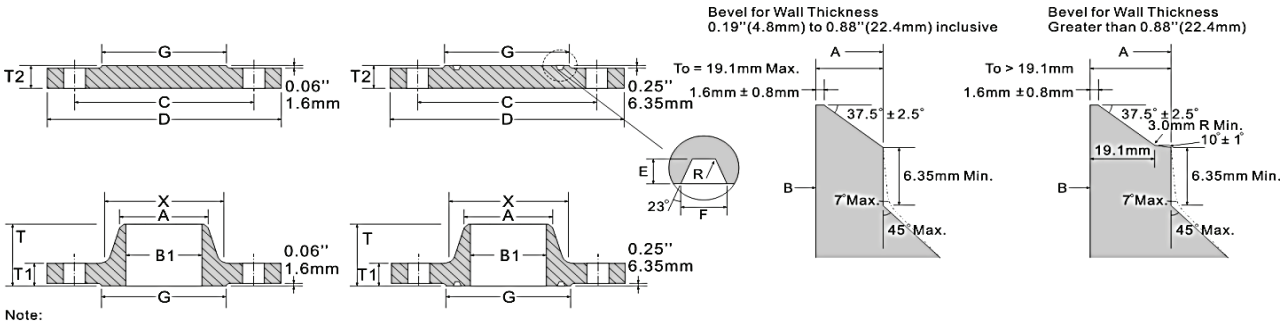
Note:

1.Class 300 flanges will be furnished with 0.06"(1.6mm) raised face,which is included in "Thickness"(T1) and "Length through Hub"(T).

2.Dimensional tolerances are accordance with ANSI B16.5.

3.Maximum Pressure Rating for raised face flanges is 740 psi(51 BARS) at atmospheric temperature.

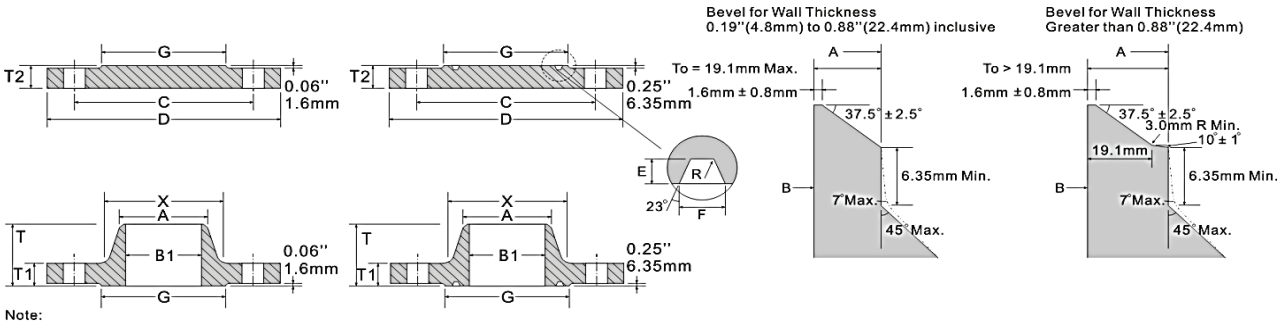
4.Flange dimensions of size 12"(304.8mm) through 24"(609.6mm) flanges (except 22"(558.8mm)) are in accordance with ANSI B16.5.



Note:
*Or I inch at manufacturer's option.
**Flanges sizes 24"(609.6mm) and smaller may be furnished with 37-1/2° bevel at manufacturer'soption.

Flanges | Class 600 | ANSI/ASME B16.47 Series A

Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore		Length Thru Hub	Dia. of Hub at Bevel	Radius of Fillet	Drilling			Pitch Dia.	Groove Dimensions			Dia. of Raised Face	Ring and Groove No.
					Weld-ing Neck	Blind	Wall Thickness					Bolt Circle Dia.	No. of Holes	Dia. of Holes		Width	Depth	Radius		
							9.5mm	12.7mm												
INCH	DN	D	G	X	T1	T2	B1		T	A	R	C			P	F	E	R1	K	
26"	650A	1016	747.8	749.3	108.0	125.5	641.4	635.0	222.3	660.4	12.7	914.4	28	50.8	749.3	19.8	12.7	1.5	809.8	R93
28"	700A	1073	803.1	800.1	111.3	131.8	692.2	685.8	235.0	711.2	12.7	965.2	28	54.0	800.1	19.8	12.7	1.5	860.6	R94
30"	750A	1130	862.1	857.3	114.3	139.7	743.0	736.6	247.7	762.0	12.7	1022.4	28	54.0	857.3	19.8	12.7	1.5	917.4	R95
32"	800A	1194	917.4	914.4	117.3	147.6	793.8	787.4	260.4	812.8	12.7	1079.5	28	60.3	914.4	23.0	14.3	1.5	984.3	R96
34"	850A	1245	973.1	965.2	120.7	153.9	844.6	838.2	269.7	863.6	14.2	1130.3	28	60.3	965.2	23.0	14.3	1.5	1035.1	R97
36"	900A	1314	1031.7	1022.4	124.0	162.1	895.4	889.0	282.4	914.4	14.2	1193.8	28	66.7	1022.4	23.0	14.3	1.5	1092.2	R98
38"	950A	1270	1022.4	1054.1	152.4	155.4	946.2	939.8	254.0	965.2	14.2	1162.1	28	60.3						
40"	1000A	1321	1073.2	1111.3	158.8	162.1	997.0	990.6	263.7	1016.0	14.2	1212.9	32	60.3						
42"	1050A	1403	1127.3	1168.4	168.1	171.5	1047.8	1041.4	279.4	1066.8	14.2	1282.7	28	66.7						
44"	1100A	1454	1181.1	1225.6	173.0	177.8	1098.6	1092.2	289.1	1117.6	14.2	1333.5	32	66.7						
46"	1150A	1511	1234.9	1276.4	179.3	185.7	1149.4	1143.0	300.0	1168.4	14.2	1390.7	32	66.7						
48"	1200A	1594	1289.1	1333.5	189.0	195.3	1200.2	1193.8	316.0	1219.2	14.2	1460.5	32	73.0						
50"	1250A	1679	1343.2	1384.3	196.9	203.2	1251.0	1244.6	328.7	1270.0	14.2	1524.0	28	79.4						
52"	1300A	1721	1394.0	1435.1	203.2	209.6	1301.8	1295.4	336.6	1320.8	14.2	1574.8	32	79.4						
54"	1350A	1778	1447.8	1492.3	209.6	217.4	1352.6	1346.2	349.3	1371.6	14.2	1632.0	32	79.4						
56"	1400A	1854	1501.6	1543.1	217.4	225.6	1403.4	1397.0	362.0	1422.4	15.7	1695.5	32	85.7						
58"	1450A	1905	1552.4	1600.2	222.3	231.6	1454.2	1447.8	369.8	1473.2	15.7	1746.3	32	85.7						
60"	1500A	1994	1609.9	1657.4	233.4	242.8	1505.0	1498.6	388.9	1524.0	17.5	1822.5	28	92.1						



Note:
*Or I inch at manufacturer's option.
**Flanges sizes 24"(609.6mm) and smaller may be furnished with 37-1/2° bevel at manufacturer'soption.

Flanges | Class 900 | ANSI/ASME B16.47 Series A

Unit : mm

Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore		Length Thru Hub	Dia. of Hub at Bevel	Radius of Fillet	Drilling			Pitch Dia.	Groove Dimensions			Dia. of Raised Face	Ring and Groove No.
					Welding Neck	Blind	Wall Thickness					Bolt Circle Dia.	No. of Holes	Dia. of Holes		Width	Depth	Radius		
							9.5mm	12.7mm												
INCH	DN	D	G	X	T1	T2	B1		T	A	R	C			P	F	E	R1	K	
26"	650A	1086	774.7	749.3	139.7	160.3	641.4	635.0	285.8	660.4	11.2	952.5	20	73.0	749.3	30.2	17.5	2.3	831.9	R100
28"	700A	1168	831.9	800.1	142.7	171.5	692.2	685.8	298.5	711.2	12.7	1022.4	20	79.4	800.1	33.3	17.5	2.3	889.0	R101
30"	750A	1232	889.0	857.3	149.4	182.4	743.0	736.6	311.2	762.0	12.7	1085.9	20	79.4	857.3	33.3	17.5	2.3	946.2	R102
32"	800A	1314	946.2	914.4	158.8	193.5	793.8	787.4	330.2	812.8	12.7	1155.7	20	85.7	914.4	33.3	17.5	2.3	1003.3	R103
34"	850A	1397	1006.3	965.2	165.1	204.7	844.6	838.2	349.3	863.6	14.2	1225.6	20	92.1	965.2	36.5	20.6	2.3	1066.8	R104
36"	900A	1461	1063.8	1022.4	171.5	214.4	895.4	889.0	362.0	914.4	14.2	1289.1	20	92.1	1022.4	36.5	20.6	2.3	1124.0	R105
38"	950A	1461	1073.2	1098.6	190.5	215.9	946.2	939.8	352.6	965.2	19.1	1289.1	20	92.1						
40"	1000A	1511	1127.3	1162.1	196.9	223.8	997.0	990.6	363.5	1016.0	20.6	1339.9	24	92.1						
42"	1050A	1562	1176.3	1212.9	206.2	231.6	1047.8	1041.4	371.3	1066.8	20.6	1390.7	24	92.1						
44"	1100A	1648	1234.9	1270.0	214.4	242.8	1098.6	1092.2	390.7	1117.6	22.4	1463.5	24	98.4						
46"	1150A	1734	1292.4	1333.5	225.6	275.5	1149.4	1143.0	411.0	1168.4	22.4	1536.7	24	104.8						
48"	1200A	1784	1343.2	1384.3	233.4	263.7	1200.2	1193.8	419.1	1219.2	23.9	1587.5	24	104.8						

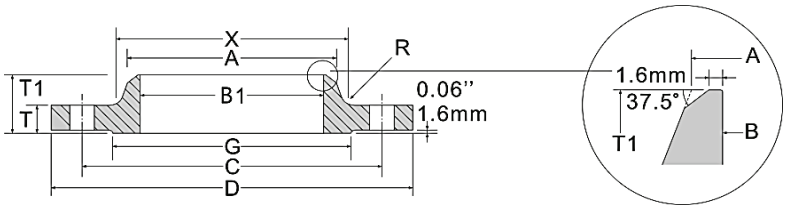
Note:

1.Class 900 flanges will be furnished with 0.25"(6.35mm) raised face,which is included in "Thickness"(T1) and "Length through Hub"(T).

2.Dimensional tolerances are accordance with ANSI B16.5.

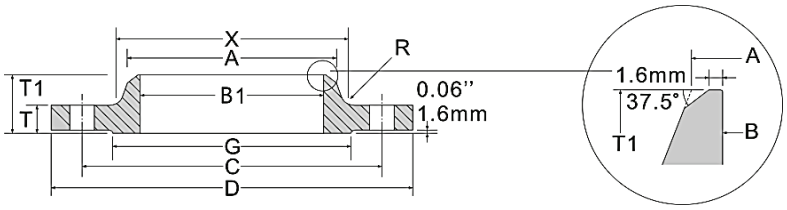
3.Maximum Pressure Rating for raised face flanges is 2220 psi(153.1 BARS) at atmospheric temperature.

4.Flange dimensions of size 12"(304.8mm) through 24"(609.6mm) flanges (except 22"(558.8mm)) are in accordance with ANSI B16.5.



Flanges | Class 75 | ANSI/ASME B16.47 Series B (API 605)

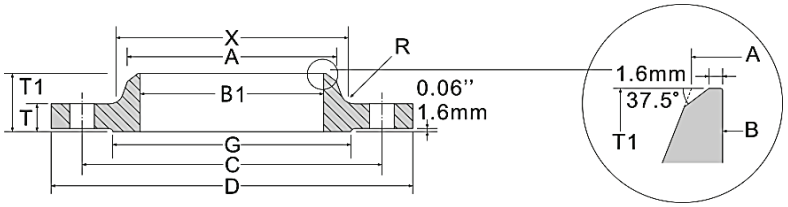
Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore			Length Thru Hub	Dia. of Hub at Bevel	Radius at Base of Hub	Drilling			Approx Weight
					WN RF	BL	Wall Thickness (mm)						Bolt Circle Dia.	No. of Holes	Dia. of Holes	
							6.35	9.50	12.70							
INCH	DN	D	G	X	T		B1			T1	A	R	C			KG
26"	650A	762	704.9	676.1	33.3	33.3	647.7	641.4	635.0	58.7	661.9	7.9	723.9	36	19.1	29.0
28"	700A	813	755.7	726.9	33.3	33.3	698.5	692.2	685.8	62.0	712.7	7.9	774.7	40	19.1	31.0
30"	750A	864	806.5	777.7	33.3	33.3	749.3	743.0	736.6	65.0	763.5	7.9	825.5	44	19.1	35.1
32"	800A	914	857.3	828.5	35.1	30.6	800.1	793.8	787.4	69.9	814.3	7.9	876.3	48	19.1	48.0
34"	850A	965	908.1	879.3	35.1	38.1	850.9	844.6	838.2	73.2	865.1	7.9	927.1	52	19.1	50.0
36"	900A	1034	965.2	935.0	36.6	42.4	901.7	895.4	889.0	85.9	915.9	9.7	992.1	40	22.2	62.1
38"	950A	1084	1016.0	985.8	38.1	44.5	952.5	946.2	939.8	88.9	966.7	9.7	1042.9	40	22.2	70.1
40"	1000A	1135	1066.8	1036.6	38.1	44.5	1003.3	997.0	990.6	92.2	1017.5	9.7	1093.7	44	22.2	74.1
42"	1050A	1186	1117.6	1087.4	39.6	47.8	1054.1	1047.8	1041.4	95.3	1068.3	9.7	1144.5	48	22.2	77.1
44"	1100A	1251	1174.8	1140.0	42.9	49.3	1104.9	1098.6	1092.2	104.9	1119.1	9.7	1203.5	36	25.4	82.1
46"	1150A	1302	1225.6	1190.8	44.5	50.8	1155.7	1149.4	1143.0	108.0	1169.9	9.7	1254.3	40	25.4	105.0
48"	1200A	1353	1276.4	1241.6	46.0	45.1	1206.5	1200.2	1193.8	111.3	1220.7	9.7	1305.1	44	25.4	120.0
50"	1250A	1403	1327.2	1293.9	47.8	55.6	1257.3	1251.0	1244.6	115.8	1271.5	9.7	1355.9	44	25.4	134.3
52"	1300A	1457	1378.0	1344.7	47.8	57.2	1308.1	1301.8	1295.4	120.7	1322.3	9.7	1409.7	48	25.4	142.2
54"	1350A	1508	1428.8	1397.0	49.3	60.5	1358.9	1352.6	1346.2	125.5	1373.1	9.7	1460.5	48	25.4	180.2
56"	1400A	1575	1485.9	1450.8	50.8	62.0	1409.7	1403.4	1397.0	134.9	1423.9	11.2	1521.0	40	28.6	184.6
58"	1450A	1626	1536.7	1501.6	52.3	63.5	1460.5	1454.2	1447.8	138.2	1474.7	11.2	1571.8	44	28.6	195.6
60"	1500A	1676	1587.5	1552.4	55.6	66.8	1511.3	1505.0	1498.6	144.5	1525.5	11.2	1622.6	44	28.6	210.2



Flanges | Class 150 | ANSI/ASME B16.47 Series B (API 605)

Unit : mm

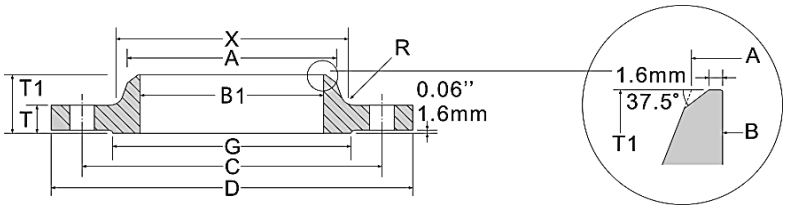
Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore			Length Thru Hub	Dia. of Hub at Bevel	Radius at Base of Hub	Drilling			Approx Weight
					WN RF	BL	Wall Thickness (mm)						Bolt Circle Dia.	No. of Holes	Dia. of Holes	
							6.35	9.50	12.70							
INCH	DN	D	G	X	T		B1			T1	A	R	C			KG
26"	650A	786	711.2	684.3	41.4	44.5	647.7	641.4	635.0	88.9	661.9	9.7	744.5	36	22.2	52.0
28"	700A	837	762.0	735.1	44.5	47.8	698.5	692.2	685.8	95.3	712.7	9.7	795.3	40	22.2	58.1
30"	750A	887	812.8	787.4	44.5	50.8	749.3	743.0	736.6	100.1	763.5	9.7	846.1	44	22.2	65.1
32"	800A	941	863.6	839.7	46.0	54.1	800.1	793.8	787.4	108.0	814.3	9.7	900.2	48	22.2	85.1
34"	850A	1005	920.8	892.0	49.3	57.2	850.9	844.6	838.2	110.2	865.1	9.7	957.3	40	25.4	100.1
36"	900A	1057	971.6	944.6	52.3	58.7	901.7	895.4	889.0	117.6	915.9	9.7	1009.7	44	25.4	115.1
38"	950A	1124	1022.4	997.0	54.1	63.5	952.5	946.2	939.8	124.0	968.2	9.7	1069.8	40	28.6	135.1
40"	1000A	1175	1079.5	1049.3	55.6	66.8	1003.3	997.0	990.6	128.5	1019.0	9.7	1120.6	44	28.6	150.1
42"	1050A	1226	1130.3	1101.9	58.7	68.3	1054.1	1047.8	1041.4	133.4	1069.8	11.2	1171.4	48	28.6	165.2
44"	1100A	1276	1181.1	1152.7	60.5	71.4	1104.9	1098.6	1092.2	136.7	1120.6	11.2	1222.2	52	28.6	200.2
46"	1150A	1341	1234.9	1205.0	62.0	74.7	1155.7	1149.4	1143.0	144.5	1171.4	11.2	1284.2	40	31.8	210.2
48"	1200A	1392	1289.1	1231.9	65.0	77.7	1206.5	1200.2	1193.8	149.4	1222.2	11.2	1335.0	44	31.8	240.2
50"	1250A	1443	1339.9	1308.1	68.3	81.0	1257.3	1251.0	1244.6	153.9	1273.0	11.2	1385.8	48	31.8	250.3
52"	1300A	1494	1390.7	1360.4	69.9	84.1	1308.1	1301.8	1295.4	157.2	1323.8	11.2	1436.6	52	31.8	265.8
54"	1350A	1549	1441.5	1412.7	71.4	87.4	1358.9	1352.6	1346.2	162.1	1374.6	11.2	1492.3	56	31.8	310.3
56"	1400A	1600	1492.3	1465.3	73.2	90.4	1409.7	1403.4	1397.0	166.6	1425.4	14.2	1543.1	60	31.8	306.1
58"	1450A	1675	1543.1	1516.1	74.7	93.5	1460.5	1454.2	1447.8	174.8	1476.2	14.2	1611.4	48	34.9	367.8
60"	1500A	1726	1600.2	1570.0	76.2	96.8	1511.3	1505.0	1498.6	179.3	1527.0	14.2	1662.2	52	34.9	410.4



Flanges | Class 300 | ANSI/ASME B16.47 Series B (API 605)

Unit : mm

Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore			Length Thru Hub	Dia. of Hub at Bevel	Radius at Base of Hub	Drilling			Approx Weight
					WN RF	BL	Wall Thickness (mm)						Bolt Circle Dia.	No. of Holes	Dia. of Holes	
							6.35	9.50	12.70							
INCH	DN	D	G	X	T		B1			T1	A	R	C			KG
26"	650A	867	736.6	701.5	88.9	88.9	647.7	641.4	635.0	144.5	665.2	14.2	803.1	32	34.9	200.2
28"	700A	921	787.4	755.7	88.9	88.9	698.5	692.2	685.8	149.4	716.0	14.2	857.3	36	35.1	210.2
30"	750A	991	844.6	812.8	93.7	93.7	749.3	743.0	736.6	158.0	768.4	14.2	920.8	36	38.1	270.2
32"	800A	1054	901.7	863.6	103.1	103.1	800.1	793.8	787.4	168.1	819.2	15.7	977.9	32	41.3	330.3
34"	850A	1108	952.5	917.4	103.1	103.1	850.9	844.6	838.2	173.0	870.0	15.7	1031.7	36	41.3	360.3
36"	900A	1171	1009.7	965.2	103.1	103.1	901.7	895.4	889.0	180.8	920.8	15.7	1089.2	32	44.5	410.4
38"	950A	1222	1060.5	1016.0	111.0	111.0	952.5	946.2	939.8	192.0	971.6	15.7	1140.0	36	44.5	570.5
40"	1000A	1273	1114.6	1066.8	115.8	115.8	1003.3	997.0	990.6	198.4	1022.4	15.7	1190.8	40	44.5	660.6
42"	1050A	1334	1168.4	1117.6	119.1	119.1	1054.1	1047.8	1041.4	204.7	1074.7	15.7	1244.5	36	47.6	720.6
44"	1100A	1384	1219.2	1173.2	127.0	127.0	1104.9	1098.6	1092.2	214.4	1125.5	15.7	1295.4	40	47.6	800.7
46"	1150A	1461	1270.0	1228.9	128.5	130.0	1155.7	1149.4	1143.0	222.3	1176.3	15.7	1365.3	36	50.8	970.9
48"	1200A	1511	1327.2	1277.9	128.5	134.9	1206.5	1200.2	1193.8	223.8	1227.1	15.7	1416.1	40	50.8	990.9
50"	1250A	1562	1378.0	1330.5	138.2	139.7	1257.3	1251.0	1244.6	235.0	1277.9	15.7	1466.9	44	50.8	1047.9
52"	1300A	1613	1428.8	1382.8	142.7	144.0	1308.1	1301.8	1295.4	242.8	1328.7	15.7	1517.7	48	50.8	1113.8
54"	1350A	1673	1479.6	1435.1	136.7	149.1	1358.9	1352.6	1346.2	239.8	1379.5	15.7	1577.8	48	50.8	1161.0
56"	1400A	1765	1536.7	1493.8	153.9	157.0	1409.7	1403.4	1397.0	268.2	1430.3	17.5	1651.0	36	60.3	1336.1
58"	1450A	1827	1593.9	1547.9	153.9	161.8	1460.5	1454.2	1447.8	274.6	1481.1	17.5	1712.0	40	60.3	1427.6
60"	1500A	1878	1651.0	1598.7	150.9	166.6	1511.3	1505.0	1498.6	271.5	1531.9	17.5	1763.8	40	60.3	1451.3



Flanges | Class 400 | ANSI/ASME B16.47 Series B (API 605)

Unit : mm

Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore			Length Thru Hub	Dia. of Hub at Bevel	Radius at Base of Hub	Drilling			Approx Weight
					WN RF	BL	Wall Thickness (mm)						Bolt Circle Dia.	No. of Holes	Dia. of Holes	
							6.35	9.50	12.70							
INCH	DN	D	G	X	T		B1			T1	A	R	C			KG
26"	650A	851	711.2	688.8	88.9	88.9	647.7	641.4	635.0	149.4	660.4	11.2	781.1	28	38.1	-
28"	700A	914	762.0	739.6	95.3	95.3	698.5	692.2	685.8	158.8	711.2	12.7	838.2	24	41.3	-
30"	750A	972	819.2	793.8	101.6	101.6	749.3	743.0	736.6	169.9	762.0	12.7	895.4	28	41.3	-
32"	800A	1035	873.3	844.6	107.0	108.0	800.1	793.8	787.4	179.3	812.8	12.7	952.5	28	44.5	-
34"	850A	1086	927.1	898.7	111.3	111.3	850.9	844.6	838.2	187.5	863.6	14.2	1003.3	32	44.5	-
36"	900A	1156	980.9	952.5	119.1	119.1	901.7	895.4	889.0	200.2	914.4	14.2	1066.8	28	47.6	-

Flanges | Class 600 | ANSI/ASME B16.47 Series B (API 605)

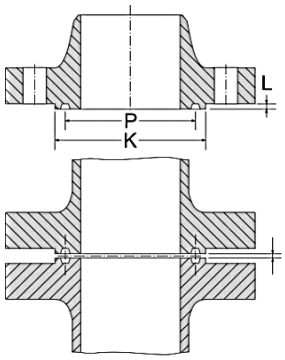
Unit : mm

Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore			Length Thru Hub	Dia. of Hub at Bevel	Radius at Base of Hub	Drilling			Approx Weight
					WN RF	BL	Wall Thickness (mm)						Bolt Circle Dia.	No. of Holes	Dia. of Holes	
							6.35	9.50	12.70							
INCH	DN	D	G	X	T		B1			T1	A	R	C			KG
26"	650A	889	726.9	698.5	111.3	111.3	647.7	641.4	635.0	180.8	660.4	12.7	806.5	28	44.5	-
28"	700A	953	784.4	752.3	115.8	115.8	698.5	692.2	685.8	190.5	711.2	12.7	863.6	28	47.6	-
30"	750A	1022	841.2	806.5	125.5	127.0	749.3	743.0	736.6	204.7	762.0	12.7	927.1	28	50.8	-
32"	800A	1086	895.4	860.6	130.0	134.9	800.1	793.8	787.4	215.9	812.8	12.7	984.3	28	54.0	-
34"	850A	1162	952.5	914.4	141.2	144.3	850.9	844.6	838.2	233.4	863.6	14.2	1054.1	24	60.3	-
36"	900A	1213	1009.7	968.2	146.1	150.9	901.7	895.4	889.0	242.8	914.4	14.2	1104.9	28	60.3	-

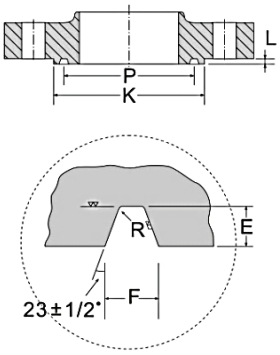
Flanges | Class 900 | ANSI/ASME B16.47 Series B (API 605)

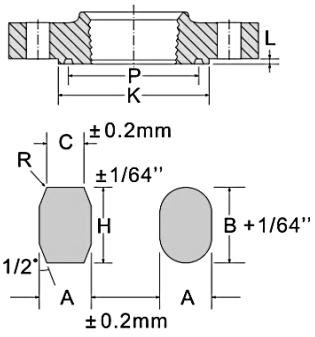
Unit : mm

Nominal Pipe Size		Out-side Dia.	OD of Raised Face	Dia. at Base of Hub	Thickness		Bore			Length Thru Hub	Dia. of Hub at Bevel	Radius at Base of Hub	Drilling			Approx Weight
					WN RF	BL	Wall Thickness (mm)						Bolt Circle Dia.	No. of Holes	Dia. of Holes	
							6.35	9.50	12.70							
INCH	DN	D	G	X	T		B1			T1	A	R	C			KG
26"	650A	1022	762.0	743.0	134.9	153.9	647.7	641.4	635.0	180.8	660.4	11.2	901.7	20	66.7	-
28"	700A	1105	819.2	797.1	147.6	166.6	698.5	692.2	685.8	190.5	711.2	12.7	971.6	20	73.0	-
30"	750A	1181	876.3	850.9	155.4	176.0	749.3	743.0	736.6	204.7	762.0	12.7	1035.1	20	79.4	-
32"	800A	1238	927.1	908.1	160.3	185.7	800.1	793.8	787.4	215.9	812.8	12.7	1092.2	20	79.4	-
34"	850A	1315	990.6	962.2	171.5	195.1	850.9	844.6	838.2	233.4	863.6	14.2	1155.7	20	85.7	-
36"	900A	1346	1028.7	1016.0	173.0	201.7	901.7	895.4	889.0	242.8	914.4	14.2	1200.2	24	79.4	-



Approximate Distance between Flanges





Octagonal Ring Oval Ring

Ring Joint Flanges Facing Dimensions | Class 150 | ANSI B16.5

Unit : mm

Nominal Pipe Size		Pitch Dia. of Ring and Groove	Width of Ring	Height of Ring		Width of Flat on Octagonal Rings	Width of Groove	Depth of Groove L	Diameter of Raised Face for Ring Joint or Lapped Min.	Ring Number	Approx Distance Between Flanges of Ring Joints When Ring is Compressed
				Oval	Octagonal						
INCH	DN	P	A	B	H	C	F	E	K		
1"	25A	48	8.0	14.3	12.7	5.2	8.7	6.4	63.5	R15	4.1
1.1/4"	32A	57	8.0	14.3	12.7	5.2	8.7	6.4	73.2	R17	4.1
1.1/2"	40A	65	8.0	14.3	12.7	5.2	8.7	6.4	82.6	R19	4.1
2"	50A	83	8.0	14.3	12.7	5.2	8.7	6.4	101.6	R22	4.1
2.1/2"	65A	102	8.0	14.3	12.7	5.2	8.7	6.4	120.7	R25	4.1
3"	80A	114	8.0	14.3	12.7	5.2	8.7	6.4	133.4	R29	4.1
3.1/2"	90A	132	8.0	14.3	12.7	5.2	8.7	6.4	153.9	R33	4.1
4"	100A	149	8.0	14.3	12.7	5.2	8.7	6.4	171.5	R36	4.1
5"	125A	172	8.0	14.3	12.7	5.2	8.7	6.4	193.5	R40	4.1
6"	150A	194	8.0	14.3	12.7	5.2	8.7	6.4	218.9	R43	4.1
8"	200A	248	8.0	14.3	12.7	5.2	8.7	6.4	273.1	R48	4.1
10"	250A	305	8.0	14.3	12.7	5.2	8.7	6.4	330.2	R52	4.1
12"	300A	381	8.0	14.3	12.7	5.2	8.7	6.4	406.4	R56	4.1
14"	350A	397	8.0	14.3	12.7	5.2	8.7	6.4	425.5	R59	3.0
16"	400A	454	8.0	14.3	12.7	5.2	8.7	6.4	482.6	R64	3.0
18"	450A	518	8.0	14.3	12.7	5.2	8.7	6.4	546.1	R68	3.0
20"	500A	559	8.0	14.3	12.7	5.2	8.7	6.4	596.9	R72	3.0
24"	600A	673	8.0	14.3	12.7	5.2	8.7	6.4	711.2	R76	3.0

Notes:

1.Unless other wise specified by the customer,Ring Type Joint Flanges will be furnished in accordance with these details.

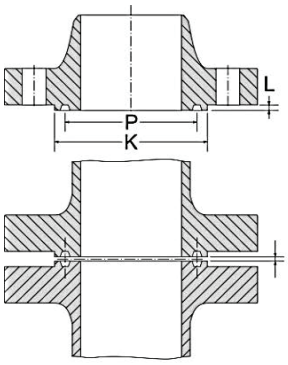
2.The depth of groove is added to the minimum flange thickness.

3.Raised face "L" is equal to groove dimension "E" but is not subject to tolerances for "E".

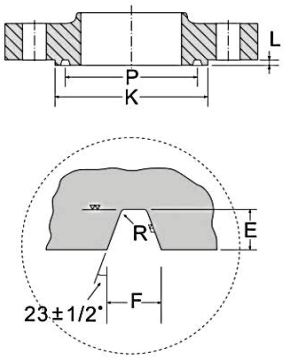
4.A plus tolerance of 3/64" in,for heights B and H is permitted providing the variation in the height of any given ring does not exceed 1/64" throughout its entire circumference.

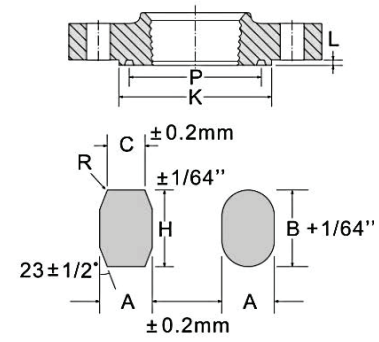
5.Dimension "R" is max.

6.Radius "R" is 1/16" for ring widths 7/8" and less and 3/32" for ring widths 1"(25.4mm) and over.



Approximate Distance between Flanges





Octagonal Ring Oval Ring

Ring Joint Flanges Facing Dimensions | Class 300/400/600 | ANSI B16.5

Unit : mm

Nominal Pipe Size		Pitch Dia. of Ring and Groove	Width of Ring	Height of Ring		Width of Flat on Octagonal Rings	Width of Groove	Depth of Groove	Diameter of Raised Face for Ring Joint or Lapped Min.	Ring Number	Approx Distance Between Flanges of Ring Joints When Ring is Compressed		
				Oval	Octagonal								
INCH	DN	P	A	B	H	C	F	E	K		300#	400#	600#
1/2"	15A	34	6.4	11.1	9.5	4.3	7.1	5.6	50.8	R11	3.0	-	3.0
3/4"	20A	43	8.0	14.3	12.7	5.2	8.7	6.4	63.5	R13	4.1	-	4.1
1"	25A	51	8.0	14.3	12.7	5.2	8.7	6.4	69.9	R16	4.1	-	4.1
1.1/4"	32A	60	8.0	14.3	12.7	5.2	8.7	6.4	79.5	R18	4.1	-	4.1
1.1/2"	40A	68	8.0	14.3	12.7	5.2	8.7	6.4	90.4	R20	4.1	-	4.1
2"	50A	83	11.1	17.5	15.9	7.7	11.9	7.9	108.0	R23	5.6	-	4.8
2.1/2"	65A	102	11.1	17.5	15.9	7.7	11.9	7.9	127.0	R26	5.6	-	4.8
3"	80A	124	11.1	17.5	15.9	7.7	11.9	7.9	146.1	R31	5.6	-	4.8
3.1/2"	90A	132	11.1	17.5	15.9	7.7	11.9	7.9	158.8	R34	5.6	-	4.8
4"	100A	149	11.1	17.5	15.9	7.7	11.9	7.9	174.8	R37	5.6	5.6	4.8
5"	125A	181	11.1	17.5	15.9	7.7	11.9	7.9	209.6	R41	5.6	5.6	4.8
6"	150A	211	11.1	17.5	15.9	7.7	11.9	7.9	241.3	R45	5.6	5.6	4.8
8"	200A	270	11.1	17.5	15.9	7.7	11.9	7.9	301.8	R49	5.6	5.6	4.8
10"	250A	324	11.1	17.5	15.9	7.7	11.9	7.9	355.6	R53	5.6	5.6	4.8
12"	300A	381	11.1	17.5	15.9	7.7	11.9	7.9	412.8	R57	5.6	5.6	4.8
14"	350A	419	11.1	17.5	15.9	7.7	11.9	7.9	457.2	R61	5.6	5.6	4.8
16"	400A	470	11.1	17.5	15.9	7.7	11.9	7.9	508.0	R65	5.6	5.6	4.8
18"	450A	533	11.1	17.5	15.9	7.7	11.9	7.9	574.8	R69	5.6	5.6	4.8
20"	500A	584	12.7	19.1	17.5	8.7	13.5	9.5	635.0	R73	5.6	5.6	4.8
24"	600A	692	15.9	22.2	20.7	10.5	16.7	11.1	749.3	R77	6.4	6.4	5.6

Notes:

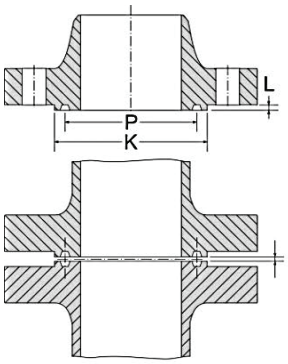
1.Unless other wise specified by the customer,Ring Type Joint Flanges will be furnished in accordance with these details.

2.The depth of groove is added to the minimum flange thickness.

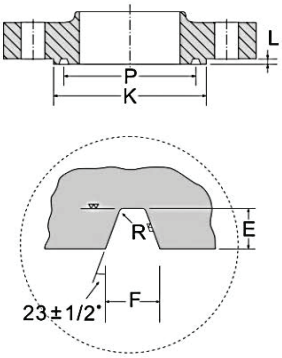
3.Raised face "L" is equal to groove dimension "E" but is not subject to tolerances for "E".

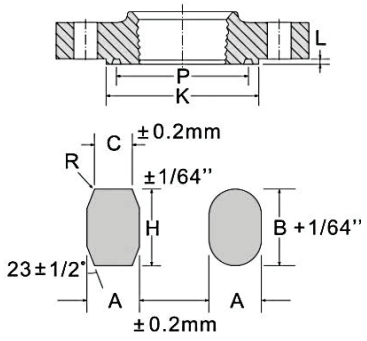
4.A plus tolerance of 3/64" in,for heights B and H is permitted providing the variation in the height of any given ring does not exceed 1/64" throughout its entire circumference.

5.Dimension "R" is max.



Approximate Distance between Flanges





Octagonal Ring Oval Ring

Ring Joint Flanges Facing Dimensions | Class 900 | ANSI B16.5

Unit : mm

Nominal Pipe Size		Pitch Dia. of Ring and Groove	Width of Ring	Height of Ring		Width of Flat on Octagonal Rings	Width of Groove	Depth of Groove	Diameter of Raised Face for Ring Joint or Lapped Min.	Ring Number	Approx Distance Between Flanges of Ring Joints When Ring is Compressed
				Oval	Octagonal						
INCH	DN	P	A	B	H	C	F	E	K		
1/2"	15A	For Size 2.1/2" and Smaller , Use Class 1500 Ring Joint Flanges.									
3/4"	20A										
1"	25A										
1.1/4"	32A										
1.1/2"	40A										
2"	50A										
2.1/2"	65A										
3"	80A	124	11.1	17.5	15.9	7.7	11.9	7.9	155.4	R31	4.1
4"	100A	149	11.1	17.5	15.9	7.7	11.9	7.9	180.8	R37	4.1
5"	125A	181	11.1	17.5	15.9	7.7	11.9	7.9	215.9	R41	4.1
6"	150A	211	11.1	17.5	15.9	7.7	11.9	7.9	241.3	R45	4.1
8"	200A	270	11.1	17.5	15.9	7.7	11.9	7.9	307.8	R49	4.1
10"	250A	324	11.1	17.5	15.9	7.7	11.9	7.9	362.0	R53	4.1
12"	300A	381	11.1	17.5	15.9	7.7	11.9	7.9	419.1	R57	4.1
14"	350A	419	15.9	22.2	20.7	10.5	16.7	11.1	466.9	R62	4.1
16"	400A	470	15.9	22.2	20.7	10.5	16.7	11.1	523.7	R66	4.1
18"	450A	533	19.1	25.4	23.8	11.1	19.8	12.7	593.9	R70	4.8
20"	500A	584	19.1	25.4	23.8	12.3	19.8	12.7	647.7	R74	4.8
24"	600A	692	25.4	33.4	31.8	17.3	27.0	15.9	771.7	R78	5.6

Notes:

1.Unless other wise specified by the customer,Ring Type Joint Flanges will be furnished in accordance with these details.

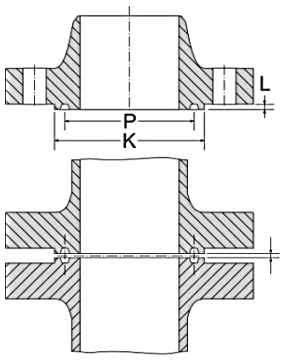
2.The depth of groove is added to the minimum flange thickness.

3.Raised face "L" is equal to groove dimension "E" but is not subject to tolerances for "E".

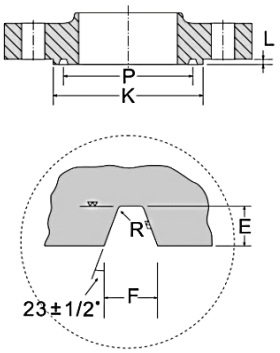
4.A plus tolerance of 3/64" in,for heights B and H is permitted providing the variation in the height of any given ring does not exceed 1/64" throughout its entire circumference.

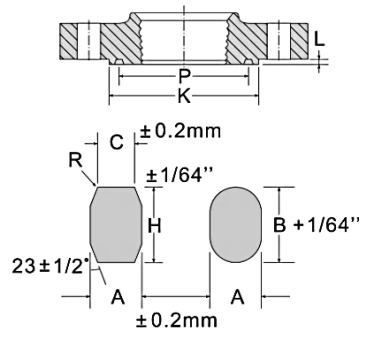
5.Dimension "R" is max.

6.Radius "R" is 1/16" for ring widths 7/8" and less and 3/32" for ring widths 1"(25.4mm) and over.



Approximate Distance between Flanges





Octagonal Ring Oval Ring

Ring Joint Flanges Facing Dimensions | Class 1500 | ANSI B16.5

Unit : mm

Nominal Pipe Size		Pitch Dia. of Ring and Groove	Width of Ring	Height of Ring		Width of Flat on Octagonal Rings	Width of Groove	Depth of Groove	Diameter of Raised Face for Ring Joint or Lapped Min.	Ring Number	Approx Distance Between Flanges of Ring Joints When Ring is Compressed
				Oval	Octagonal						
INCH	DN	P	A	B	H	C	F	E	K		
1/2"	15A	39.7	8	14.3	12.7	5.2	8.7	6.40	60.50	R12	4.10
3/4"	20A	44.5	8	14.3	12.7	5.2	8.7	6.40	66.80	R14	4.10
1"	25A	50.8	8	14.3	12.7	5.2	8.7	6.40	71.40	R16	4.10
1.1/4"	32A	60.3	8	14.3	12.7	5.2	8.7	6.40	81.00	R18	4.10
1.1/2"	40A	68.3	8	14.3	12.7	5.2	8.7	6.40	92.20	R20	4.10
2"	50A	95.3	11	17.5	15.9	7.7	11.9	7.90	124.00	R24	3.00
2.1/2"	65A	108.0	11	17.5	15.9	7.7	11.9	7.90	136.70	R27	3.00
3"	80A	136.5	11	17.5	15.9	7.7	11.9	7.90	168.40	R35	3.00
4"	100A	161.9	11	17.5	15.9	7.7	11.9	7.90	193.80	R39	3.00
5"	125A	193.7	11	17.5	15.9	7.7	11.9	7.90	228.60	R44	3.00
6"	150A	211.2	13	19.1	17.5	8.7	13.5	9.50	247.70	R46	3.00
8"	200A	269.9	16	22.2	20.7	10.5	16.7	11.10	317.50	R50	4.10
10"	250A	323.9	16	22.2	20.7	10.5	16.7	11.10	371.60	R54	4.10
12"	300A	381.0	22	28.6	27.0	14.8	23.0	14.30	438.20	R58	4.80
14"	350A	419.1	25	33.4	31.8	17.3	27.0	15.90	489.00	R63	5.60
16"	400A	469.9	29	36.5	34.9	19.8	30.2	17.50	546.10	R67	7.90
18"	450A	533.4	29	36.5	34.9	19.8	30.2	17.50	612.90	R71	7.90
20"	500A	584.2	32	39.7	38.1	22.3	33.4	17.50	673.10	R75	9.70
24"	600A	692.2	35	44.5	41.3	24.8	36.5	20.60	793.80	R79	11.20

Notes:

1.Unless other wise specified by the customer,Ring Type Joint Flanges will be furnished in accordance with these details.

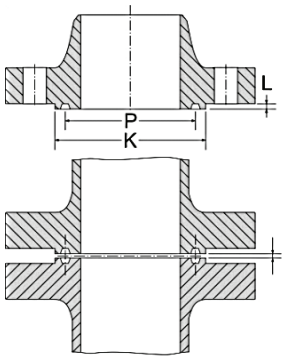
2.The depth of groove is added to the minimum flange thickness.

3.Raised face "L" is equal to groove dimension "E" but is not subject to tolerances for "E".

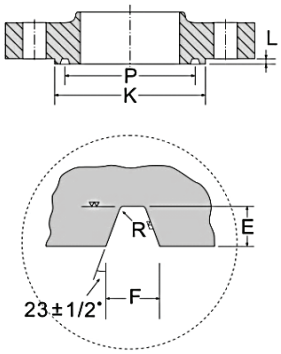
4.A plus tolerance of 3/64" in,for heights B and H is permitted providing the variation in the height of any given ring does not exceed 1/64" throughout its entire circumference.

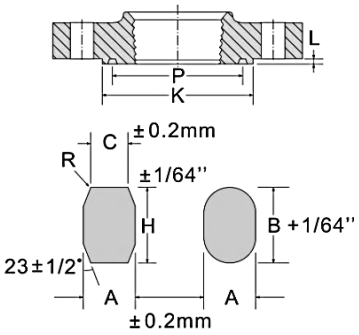
5.Dimension "R" is max.

6.Radius "R" is 1/16" for ring widths 7/8" and less and 3/32" for ring widths 1"(25.4mm) and over.



Approximate Distance between Flanges





Octagonal Ring Oval Ring

Ring Joint Flanges Facing Dimensions | Class 2500 | ANSI B16.5

Unit : mm

Nominal Pipe Size		Pitch Dia. of Ring and Groove	Width of Ring	Height of Ring		Width of Flat on Octagonal Rings	Width of Groove	Depth of Groove L	Diameter of Raised Face for Ring Joint or Lapped Min.	Ring Number	Approx Distance Between Flanges of Ring Joints When Ring is Compressed
				Oval	Octagonal						
INCH	DN	P	A	B	H	C	F	E	K		
1/2"	15A	42.9	8	14.3	12.7	5.2	8.7	6.40	65.00	R13	4.10
3/4"	20A	50.8	8	14.3	12.7	5.2	8.7	6.40	73.20	R16	4.10
1"	25A	60.3	8	14.3	12.7	5.2	8.7	6.40	82.60	R18	4.10
1.1/4"	32A	72.2	11	17.5	15.9	7.7	11.9	7.90	101.60	R21	3.00
1.1/2"	40A	82.6	11	17.5	15.9	7.7	11.9	7.90	114.30	R23	3.00
2"	50A	101.6	11	17.5	15.9	7.7	11.9	7.90	133.40	R26	3.00
2.1/2"	65A	111.1	13	19.1	17.5	8.7	13.5	9.50	149.40	R28	3.00
3"	80A	127.0	13	19.1	17.5	8.7	13.5	9.50	168.40	R32	3.00
4"	100A	157.2	16	22.2	20.7	10.5	16.7	11.10	203.20	R38	4.10
5"	125A	190.5	19	25.4	23.8	12.3	19.8	12.70	241.30	R42	4.10
6"	150A	228.6	19	25.4	23.8	12.3	19.8	12.70	279.40	R47	4.10
8"	200A	279.4	22	28.6	27.0	14.8	23.0	14.30	339.90	R51	4.80
10"	250A	342.9	29	36.5	34.9	19.8	30.2	17.50	425.50	R55	6.40
12"	300A	406.4	32	39.7	38.1	22.3	33.4	17.50	495.30	R60	7.90
4"	100A	157.2	16	22.2	20.7	10.5	16.7	11.10	203.20	R38	4.10
5"	125A	190.5	19	25.4	23.8	12.3	19.8	12.70	241.30	R42	4.10
6"	150A	228.6	19	25.4	23.8	12.3	19.8	12.70	279.40	R47	4.10
8"	200A	279.4	22	28.6	27.0	14.8	23.0	14.30	339.90	R51	4.80
10"	250A	342.9	29	36.5	34.9	19.8	30.2	17.50	425.50	R55	6.40
12"	300A	406.4	32	39.7	38.1	22.3	33.4	17.50	495.30	R60	7.90

Notes:

1.Unless other wise specified by the customer,Ring Type Joint Flanges will be furnished in accordance with these details.

2.The depth of groove is added to the minimum flange thickness.

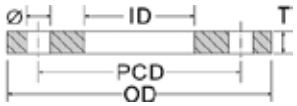
3.Raised face "L" is equal to groove dimension "E" but is not subject to tolerances for "E".

4.A plus tolerance of 3/64" in,for heights B and H is permitted providing the variation in the height of any given ring does not exceed 1/64" throughout its entire circumference.

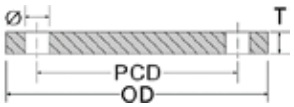
5.Dimension "R" is max.

6.Radius "R" is 1/16" for ring widths 7/8" and less and 3/32" for ring widths 1"(25.4mm) and over.

SOFF



BLFF

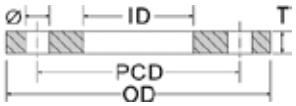


Flanges | 5K | Common Standard* (Modified from KS B1503/JIS 2220)

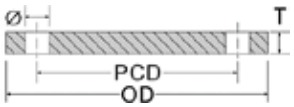
Unit: mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	Approx Weight	
								SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T	KG	
3/8"	10A	75	55	12	4	17.8	9	0.26	0.28
1/2"	15A	80	60	12	4	22.4	9	0.30	0.32
3/4"	20A	85	65	12	4	27.7	10	0.36	0.41
1"	25A	95	75	12	4	34.5	10	0.45	0.52
1.1/4"	32A	115	90	15	4	43.2	12	0.77	0.91
1.1/2"	40A	120	95	15	4	49.5	12	0.82	1.00
2"	50A	130	105	15	4	62.0	14	1.05	1.38
2.1/2"	65A	155	130	15	4	74.7	14	1.51	2.00
3"	80A	180	145	19	4	90.7	14	1.96	2.67
3.1/2"	90A	190	155	19	4	103.4	14	2.07	2.99
4"	100A	200	165	19	8	116.1	16	2.33	3.66
5"	125A	235	200	19	8	143.8	16	3.12	5.16
6"	150A	265	230	19	8	170.7	18	4.24	7.47
8"	200A	320	280	23	8	221.5	20	6.05	12.10
10"	250A	385	345	23	12	276.4	22	8.88	19.24
12"	300A	430	390	23	12	327.2	22	9.70	24.22
14"	350A	480	435	25	12	359.2	24	13.89	32.98
16"	400A	540	495	25	16	410.5	24	16.73	41.67
18"	450A	605	555	25	16	461.8	24	21.12	52.68
20"	500A	655	605	25	20	513.1	24	22.68	61.63
22"	550A	720	665	27	20	564.6	26	29.66	80.76
24"	600A	770	715	27	20	616.0	26	31.88	92.70
26"	650A	825	770	27	24	666.7	26	35.05	106.29
28"	700A	875	820	27	24	717.6	26	37.38	119.92
30"	750A	945	880	33	24	768.3	28	47.75	149.64
32"	800A	995	930	33	24	819.1	28	50.57	166.39
34"	850A	1045	980	33	24	869.9	28	53.37	183.99
36"	900A	1095	1030	33	24	920.7	30	60.15	216.93
40"	1000A	1195	1130	33	28	1022.3	32	69.53	275.71
44"	1100A	1305	1240	33	28	1123.9	32	80.76	329.96
48"	1200A	1420	1350	33	32	1225.5	34	100.55	415.35

SOFF



BLFF

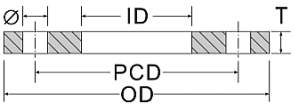


Flanges | 10K | Common Standard* (Modified from KS B1503/JIS 2220)

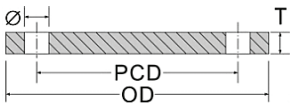
Unit: mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	Approx Weight	
								SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T	KG	
3/8"	10A	90	65	15	4	17.8	12	0.51	0.53
1/2"	15A	95	70	15	4	22.4	12	0.56	0.60
3/4"	20A	100	75	15	4	27.7	14	0.72	0.79
1"	25A	125	90	19	4	34.5	14	1.12	1.22
1.1/4"	32A	135	100	19	4	43.2	16	1.47	1.66
1.1/2"	40A	140	105	19	4	49.5	16	1.55	1.79
2"	50A	155	120	19	4	62.0	16	1.85	2.23
2.1/2"	65A	175	140	19	4	74.7	18	2.62	3.24
3"	80A	185	150	19	8	90.7	18	2.56	3.48
3.1/2"	90A	195	160	19	8	103.4	18	2.71	3.90
4"	100A	210	175	19	8	116.1	18	3.08	4.57
5"	125A	250	210	23	8	143.8	20	4.63	7.18
6"	150A	280	240	23	8	170.7	22	6.11	10.06
8"	200A	330	290	23	12	221.5	22	7.25	13.91
10"	250A	400	355	25	12	276.4	24	11.26	22.56
12"	300A	445	400	25	16	327.2	24	11.98	27.82
14"	350A	490	445	25	16	359.2	26	16.20	36.88
16"	400A	560	510	27	16	410.5	28	23.03	52.12
18"	450A	620	565	27	20	461.8	30	28.96	68.40
20"	500A	675	620	27	20	513.1	30	32.88	81.57
22"	550A	745	680	33	20	564.6	32	42.31	105.20
24"	600A	795	730	33	24	616.0	32	44.67	119.53
26"	650A	845	780	33	24	666.7	34	51.02	144.19
28"	700A	905	840	33	24	717.6	34	58.26	166.20
30"	750A	970	900	33	24	768.3	36	72.01	203.02
32"	800A	1020	950	33	28	819.1	36	75.23	224.14
34"	850A	1070	1000	33	28	869.9	36	79.38	247.33
36"	900A	1120	1050	33	28	920.7	38	88.14	286.72
40"	1000A	1235	1160	39	28	1022.3	40	107.90	365.62
44"	1100A	1345	1270	39	28	1123.9	42	130.32	457.38
48"	1200A	1465	1380	39	32	1225.5	44	161.59	568.98

SOFF



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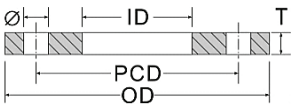


Flange | 16K | Common Standard* (Modified from KS B1503/JIS 2220)

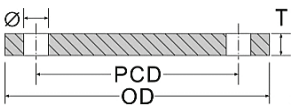
Unit : mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	Approx Weight	
								SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T	KG	
3/8"	10A	90	65	15	4	17.8	12	0.51	0.53
1/2"	15A	95	70	15	4	22.4	12	0.56	0.60
3/4"	20A	100	75	15	4	27.7	14	0.72	0.79
1"	25A	125	90	19	4	34.5	14	1.12	1.22
1.1/4"	32A	135	100	19	4	43.2	16	1.47	1.66
1.1/2"	40A	140	105	19	4	49.5	16	1.55	1.79
2"	50A	155	120	19	8	62.0	16	1.71	2.08
2.1/2"	65A	175	140	19	8	74.7	18	2.46	3.08
3"	80A	200	160	23	8	90.7	20	3.40	4.41
3.1/2"	90A	210	170	23	8	103.4	20	3.60	4.92
4"	100A	225	185	23	8	116.1	22	4.46	6.29
5"	125A	270	225	25	8	143.8	22	6.40	9.21
6"	150A	305	260	25	12	170.7	24	8.34	12.65
8"	200A	350	305	25	12	221.5	26	10.57	18.43
10"	250A	430	380	27	12	276.4	28	17.22	30.41
12"	300A	480	430	27	16	327.2	30	20.65	40.46
14"	350A	540	480	33	16	359.2	34	30.43	57.47
16"	400A	605	540	33	16	410.5	38	42.19	81.67
18"	450A	675	605	33	20	461.8	40	54.40	106.99
20"	500A	730	660	33	20	513.1	42	64.18	132.34
22"	550A	795	720	39	20	564.6	44	76.72	163.19
24"	600A	845	770	39	24	616.0	46	84.53	192.14
26"	650A	895	820	39	24	666.7	48	94.70	226.24
28"	700A	960	875	42	24	717.6	50	112.30	271.03
30"	750A	1020	935	42	24	768.3	52	130.73	319.96
32"	800A	1085	990	48	24	819.1	54	150.14	373.50
34"	850A	1135	1040	48	24	869.9	56	164.40	425.66
36"	900A	1185	1090	48	28	920.7	58	175.93	479.04
40"	1000A	1320	1210	56	28	1022.3	62	232.97	632.43
44"	1100A	1420	1310	56	32	1123.9	66	265.66	779.62
48"	1200A	1530	1420	56	32	1225.5	70	318.79	966.91

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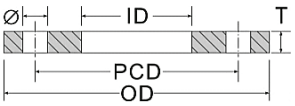


Flange | 20K | Common Standard* (Modified from KS B1503/JIS 2220)

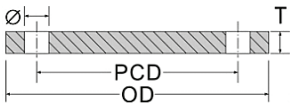
Unit : mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	Approx Weight	
								SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T	KG	
3/8"	10A	90	65	15	4	17.8	14	0.59	0.62
1/2"	15A	95	70	15	4	22.4	14	0.66	0.70
3/4"	20A	100	75	15	4	27.7	16	0.82	0.90
1"	25A	125	90	19	4	34.5	16	1.28	1.40
1.1/4"	32A	135	100	19	4	43.2	18	1.66	1.86
1.1/2"	40A	140	105	19	4	49.5	18	1.74	2.01
2"	50A	155	120	19	8	62.0	18	1.92	2.35
2.1/2"	65A	175	140	19	8	74.7	20	2.73	3.42
3"	80A	200	160	23	8	90.7	22	3.74	4.85
3.1/2"	90A	210	170	23	8	103.4	24	4.32	5.90
4"	100A	225	185	23	8	116.1	24	4.87	6.86
5"	125A	270	225	25	8	143.8	26	7.57	10.88
6"	150A	305	260	25	12	170.7	28	9.73	14.76
8"	200A	350	305	25	12	221.5	30	12.20	21.27
10"	250A	430	380	27	12	276.4	34	20.91	36.92
12"	300A	480	430	27	16	327.2	36	24.79	48.55
14"	350A	540	480	33	16	359.2	40	35.79	67.61
16"	400A	605	540	33	16	410.5	46	51.07	98.86
18"	450A	675	605	33	20	461.8	48	65.28	128.38
20"	500A	730	660	33	20	513.1	50	76.40	157.55
22"	550A	795	720	39	20	564.6	52	90.67	192.86
24"	600A	845	770	39	24	616.0	54	99.23	225.55
26"	650A	945	850	48	24	666.7	60	145.46	309.88
28"	700A	995	900	48	24	717.6	64	165.63	368.81
30"	750A	1080	970	56	24	768.3	68	209.97	457.43
32"	800A	1140	1030	56	24	819.1	72	245.65	543.46
34"	850A	1200	1090	56	24	869.9	74	277.38	622.61
36"	900A	1250	1140	56	28	920.7	76	293.78	690.95

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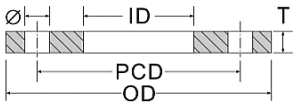


Flange | 30K | Common Standard* (Modified from KS B1503/JIS 2220)

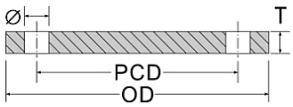
Unit : mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	Approx Weight	
								SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T	KG	
3/8"	10A	110	75	19	4	17.8	16	1.02	1.05
1/2"	15A	115	80	19	4	22.4	18	1.25	1.31
3/4"	20A	120	85	19	4	27.7	18	1.35	1.44
1"	25A	130	95	19	4	34.5	20	1.76	1.91
1.1/4"	32A	140	105	19	4	43.2	22	2.21	2.46
1.1/2"	40A	160	120	23	4	49.5	22	2.85	3.19
2"	50A	165	130	19	8	62.0	22	2.78	3.30
2.1/2"	65A	200	160	23	8	74.7	26	4.84	5.73
3"	80A	210	170	23	8	90.7	28	5.46	6.88
3.1/2"	90A	230	185	25	8	103.4	30	6.88	8.86
4"	100A	240	195	25	8	116.1	32	7.72	10.38
5"	125A	275	230	25	8	143.8	36	11.09	15.67
6"	150A	325	275	27	12	170.7	38	15.87	22.70
8"	200A	370	320	27	12	221.5	42	20.48	33.18
10"	250A	450	390	22	12	276.4	48	35.60	58.21
12"	300A	515	450	33	16	327.2	52	45.12	79.44
14"	350A	560	495	33	16	359.2	54	55.65	98.60
16"	400A	630	560	39	16	410.5	60	75.48	137.81

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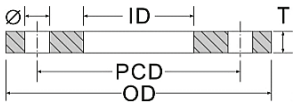


Flange | PN6 | EN1092-1 : 2018

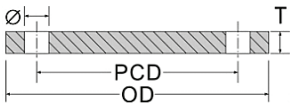
Unit : mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	
							Slip-on	Blind
INCH	DN	OD	PCD	Ø		ID	T	
3/8"	10A	75	50	11	4	17.8	12	12
1/2"	15A	80	55	11	4	22.4	12	12
3/4"	20A	90	65	11	4	27.7	14	14
1"	25A	100	75	11	4	34.5	14	14
1.1/4"	32A	120	90	14	4	43.2	16	14
1.1/2"	40A	130	100	14	4	49.5	16	14
2"	50A	140	110	14	4	62.0	16	14
2.1/2"	65A	160	130	14	4	74.7	16	14
3"	80A	190	150	18	4	90.7	18	16
4"	100A	210	170	18	4	116.1	18	16
5"	125A	240	200	18	8	143.8	20	18
6"	150A	265	225	18	8	170.7	20	18
8"	200A	320	280	18	8	221.5	22	20
10"	250A	375	335	18	12	276.4	24	22
12"	300A	440	395	22	12	327.2	24	22
14"	350A	490	445	22	12	359.2	26	22
16"	400A	540	495	22	16	410.5	28	22
18"	450A	595	550	22	16	461.8	30	24
20"	500A	645	600	22	20	513.1	30	24
24"	600A	755	705	26	20	616.0	32	30
28"	700A	860	810	26	24	717.6	-	-
32"	800A	975	920	30	24	819.1	-	-
36"	900A	1075	1020	30	24	920.7	-	-
40"	1000A	1175	1120	30	28	1022.3	-	-

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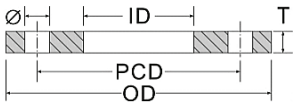


Flange | PN10 | EN1092-1 : 2018

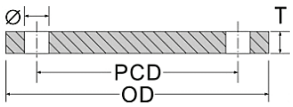
Unit : mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	
							Slip-on	Blind
INCH	DN	OD	PCD	Ø		ID	T	
3/8"	10A	90	60	14	4	17.8	14	16
1/2"	15A	95	65	14	4	22.4	14	16
3/4"	20A	105	75	14	4	27.7	16	18
1"	25A	115	85	14	4	34.5	16	18
1.1/4"	32A	140	100	18	4	43.2	18	18
1.1/2"	40A	150	110	18	4	49.5	18	18
2"	50A	165	125	18	4	62.0	20	18
2.1/2"	65A	185	145	18	4	74.7	20	18
3"	80A	200	160	18	4	90.7	20	20
4"	100A	220	180	18	8	116.1	22	20
5"	125A	250	210	18	8	143.8	22	22
6"	150A	285	240	22	8	170.7	24	22
8"	200A	340	295	22	8	221.5	24	24
10"	250A	395	350	22	12	276.4	26	26
12"	300A	445	400	22	12	327.2	26	26
14"	350A	505	460	22	16	359.2	30	26
16"	400A	565	515	26	16	410.5	32	26
18"	450A	615	565	26	20	461.8	36	28
20"	500A	670	620	26	20	513.1	38	28
24"	600A	780	725	30	20	616.0	42	34

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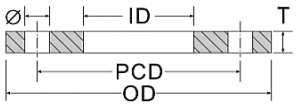
Flange | PN16 | EN1092-1 : 2018

Unit : mm

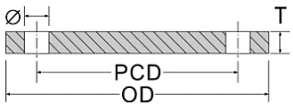
Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	
							Slip-on	Blind
INCH	DN	OD	PCD	Ø		ID	T	
3/8"	10A	90	60	14	4	17.8	14	16
1/2"	15A	95	65	14	4	22.4	14	16
3/4"	20A	105	75	14	4	27.7	16	18
1"	25A	115	85	14	4	34.5	16	18
1.1/4"	32A	140	100	18	4	43.2	18	18
1.1/2"	40A	150	110	18	4	49.5	18	18
2"	50A	165	125	18	4	62.0	20	18
2.1/2"	65A	185	145	18	4	74.7	20	18
3"	80A	200	160	18	8	90.7	20	20
4"	100A	220	180	18	8	116.1	22	20
5"	125A	250	210	18	8	143.8	22	22
6"	150A	285	240	22	8	170.7	24	22
8"	200A	340	295	22	12	221.5	26	24
10"	250A	405	355	26	12	276.4	29	26
12"	300A	460	410	26	12	327.2	32	28
14"	350A	520	470	26	16	359.2	35	30
16"	400A	580	525	30	16	410.5	38	32
18"	450A	640	585	30	20	461.8	42	40
20"	500A	715	650	33	20	513.1	46	44
24"	600A	840	770	36	20	616.0	55	54
28"	700A	910	840	36	24	716.2[1]	63	58
32"	800A	1025	950	39	24	817.8[1]	74	62
36"	900A	1125	1050	39	28	919.4[1]	82	64
40"	1000A	1255	1170	42	28	1021.0[1]	90	68

Note: [1]-Flange ID for certain sizes shall be defined by the purchaser as per EN 1092-1:2018.
The purchaser shall notify the required bore ID during order placement.

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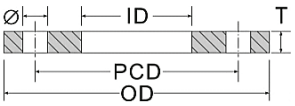


Flange | PN25 | EN1092-1 : 2018

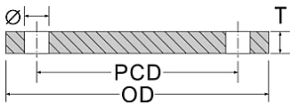
Unit : mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	
							Slip-on	Blind
INCH	DN	OD	PCD	Ø		ID	T	
3/8"	10A	90	60	14	4	17.8	14	16
1/2"	15A	95	65	14	4	22.4	14	16
3/4"	20A	105	75	14	4	27.7	16	18
1"	25A	115	85	14	4	34.5	16	18
1.1/4"	32A	140	100	18	4	43.2	18	18
1.1/2"	40A	150	110	18	4	49.5	18	18
2"	50A	165	125	18	4	62.0	20	20
2.1/2"	65A	185	145	18	8	74.7	22	22
3"	80A	200	160	18	8	90.7	24	24
4"	100A	235	190	22	8	116.1	26	24
5"	125A	270	220	26	8	143.8	28	26
6"	150A	300	250	26	8	170.7	30	28
8"	200A	360	310	26	12	221.5	32	30
10"	250A	425	370	30	12	276.4	35	32
12"	300A	485	430	30	16	327.2	38	34
14"	350A	555	490	33	16	359.2	42	38
16"	400A	620	550	36	16	410.5	48	40
20"	500A	730	660	36	20	513.1	58	51

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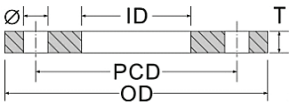


Flange | PN40 | EN1092-1 : 2018

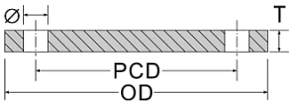
Unit : mm

Nominal Pipe Size		Outside Diameter	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Holes	Diameter of Bore	Thickness	
							Slip-on	Blind
INCH	DN	OD	PCD	Ø		ID	T	
3/8"	10A	90	60	14	4	17.8	14	16
1/2"	15A	95	65	14	4	22.4	14	16
3/4"	20A	105	75	14	4	27.7	16	18
1"	25A	115	85	14	4	34.5	16	18
1.1/4"	32A	140	100	18	4	43.2	18	18
1.1/2"	40A	150	110	18	4	49.5	18	18
2"	50A	165	125	18	4	62.0	20	20
2.1/2"	65A	185	145	18	8	74.7	22	22
3"	80A	200	160	18	8	90.7	24	24
4"	100A	235	190	22	8	116.1	26	24
5"	125A	270	220	26	8	143.8	28	26
6"	150A	300	250	26	8	170.7	30	28
8"	200A	375	320	30	12	221.5	36	36
10"	250A	450	385	33	12	276.4	42	38
12"	300A	515	450	33	16	327.2	52	42
14"	350A	580	510	36	16	359.2	58	46
16"	400A	660	585	39	16	410.5	65	50
20"	500A	755	670	42	20	513.1	-	57

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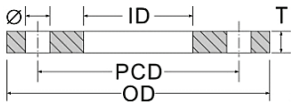


Flange | PN6 | Common Standard * (Modified from DIN 2573/2527)

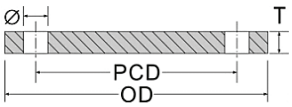
Unit : mm

Nominal Pipe Size		Outside Dia.	Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolt Holes	Dia. of Bore	Thickness		Approx Weight	
							Slip-on	Blind	SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T		KG	
3/8"	10A	75	50	12	4	17.8	12	12	0.35	0.37
1/2"	15A	80	55	12	4	22.4	12	12	0.39	0.43
3/4"	20A	90	65	12	4	27.7	14	14	0.58	0.65
1"	25A	100	75	12	4	34.5	14	14	0.71	0.81
1.1/4"	32A	120	90	14	4	43.2	16	14	1.16	1.18
1.1/2"	40A	130	100	14	4	49.5	16	14	1.35	1.39
2"	50A	140	110	14	4	62.0	16	14	1.48	1.62
2.1/2"	65A	160	130	14	4	74.7	16	14	1.90	2.14
3"	80A	190	150	18	4	90.7	18	16	2.95	3.43
4"	100A	210	170	18	4	116.1	18	16	3.25	4.22
5"	125A	240	200	18	8	143.8	20	18	4.23	6.10
6"	150A	265	225	18	8	170.7	20	18	4.75	7.51
8"	200A	320	280	18	8	221.5	22	20	6.88	12.31
10"	250A	375	335	18	12	276.4	24	22	8.93	18.55
12"	300A	440	395	23	12	327.2	24	22	11.87	25.40
14"	350A	490	445	23	12	359.2	26	22	16.79	31.70
16"	400A	540	495	23	16	410.5	28	22	19.79	38.40
18"	450A	595	550	23	16	461.8	30	22	24.47	46.87
20"	500A	645	600	23	20	513.1	30	24	26.29	59.99
24"	600A	755	705	27	20	616.0	30	24	32.55	82.18
28"	700A	860	810	27	24	717.6	-	-	-	-
32"	800A	975	920	30	24	819.1	-	-	-	-
36"	900A	1075	1020	30	24	920.7	-	-	-	-
40"	1000A	1175	1120	30	28	1022.3	-	-	-	-

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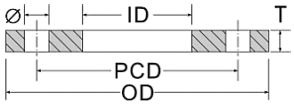


Flange | PN10 | Common Standard * (Modified from DIN 2576/2527)

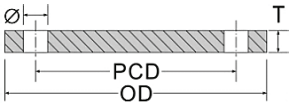
Unit : mm

Nominal Pipe Size		Outside Dia.	Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolt Holes	Dia. of Bore	Thickness		Approx Weight	
							Slip-on	Blind	SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T		KG	
3/8"	10A	90	50	14	4	17.8	14	14	0.60	0.63
1/2"	15A	95	65	14	4	22.4	14	14	0.67	0.71
3/4"	20A	105	75	14	4	27.7	16	16	0.93	1.01
1"	25A	115	85	14	4	34.5	16	16	1.11	1.23
1.1/4"	32A	140	100	18	4	43.2	16	16	1.62	1.81
1.1/2"	40A	150	110	18	4	49.5	16	18	1.85	2.35
2"	50A	165	125	18	4	62.0	18	18	2.45	2.88
2.1/2"	65A	185	145	18	4	74.7	18	18	3.03	3.65
3"	80A	200	160	18	4	90.7	20	20	3.76	4.77
4"	100A	220	180	18	8	116.1	20	20	3.99	5.65
5"	125A	250	210	18	8	143.8	22	22	5.32	8.13
6"	150A	285	240	23	8	170.7	22	22	6.49	10.44
8"	200A	340	295	23	8	221.5	24	24	9.22	16.48
10"	250A	395	350	23	12	276.4	26	26	11.75	23.99
12"	300A	445	400	23	12	327.2	26	28	13.56	33.09
14"	350A	505	460	23	16	359.2	28	30	20.29	45.60
16"	400A	565	515	26	16	410.5	32	32	27.60	60.84
18"	450A	615	565	26	20	461.8	34	34	31.74	76.45
20"	500A	670	620	26	20	513.1	38	34	40.32	91.26
24"	600A	780	725	30	20	616.0	40	38	52.02	138.31

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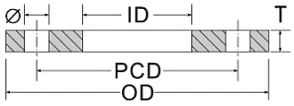


Flanges | PN16 | Common Standard* (Modified from DIN 2543/2527)

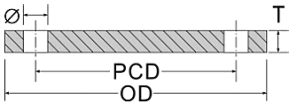
Unit: mm

Nominal Pipe Size		Outside Dia.	Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolt Holes	Dia. of Bore	Thickness		Approx Weight	
							Slip-on	Blind	SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T		KG	
3/8"	10A	90	60	14	4	17.8	14	14	0.60	0.63
1/2"	15A	95	65	14	4	22.4	14	14	0.67	0.71
3/4"	20A	105	75	14	4	27.7	16	16	0.93	1.01
1"	25A	115	85	14	4	34.5	16	16	1.11	1.23
1.1/4"	32A	140	100	18	4	43.2	16	16	1.62	1.81
1.1/2"	40A	150	110	18	4	49.5	16	16	1.85	2.09
2"	50A	165	125	18	4	62.0	18	18	2.45	2.88
2.1/2"	65A	185	145	18	4	74.7	18	18	3.03	3.65
3"	80A	200	160	18	8	90.7	20	20	3.60	4.61
4"	100A	220	180	18	8	116.1	20	20	3.99	5.65
5"	125A	250	210	18	8	143.8	22	22	5.32	8.13
6"	150A	285	240	23	8	170.7	22	22	6.49	10.44
8"	200A	340	295	23	12	221.5	24	24	8.91	16.16
10"	250A	405	355	23	12	276.4	26	26	13.03	25.27
12"	300A	460	410	27	12	327.2	28	28	16.54	35.02
14"	350A	520	470	27	16	359.2	30	30	23.99	47.85
16"	400A	580	525	30	16	410.5	32	32	30.28	63.52
18"	450A	640	585	30	20	461.8	36	34	39.58	82.08
20"	500A	715	650	33	20	513.1	36	34	50.20	102.59
24"	600A	840	770	36	20	616.0	40	36	74.04	150.85

SOFF



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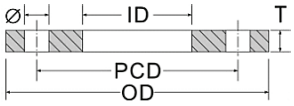


Flange | PN25 | Common Standard* (Modified from DIN 2544/2527)

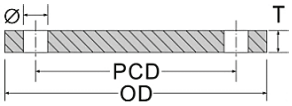
Unit : mm

Nominal Pipe Size		Outside Dia.	Dia. of Bolt Circle	Dia. of Bolt Circle	No. of Bolt Circle	Dia. of Bore	Thickness		Approx Weight	
							Slip-on	Blind	SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T		KG	
3/8"	10A	90	60	14	4	17.8	16	16	0.69	0.72
1/2"	15A	95	65	14	4	22.4	16	16	0.76	0.81
3/4"	20A	105	75	14	4	27.7	18	18	1.05	1.14
1"	25A	115	85	14	4	34.5	18	18	1.25	1.38
1.1/4"	32A	140	100	18	4	43.2	18	18	1.82	2.03
1.1/2"	40A	150	110	18	4	49.5	18	18	2.08	2.35
2"	50A	165	125	18	4	62.0	20	20	2.72	3.20
2.1/2"	65A	185	145	18	8	74.7	22	22	3.53	4.29
3"	80A	200	160	18	8	90.7	24	24	4.32	5.53
4"	100A	235	190	23	8	116.1	24	24	5.55	7.54
5"	125A	270	220	27	8	143.8	26	26	7.44	10.75
6"	150A	300	250	27	8	170.7	28	28	9.50	14.53
8"	200A	360	310	27	12	221.5	30	30	13.28	22.35
10"	250A	425	370	30	12	276.4	32	32	18.43	33.50
12"	300A	485	430	30	16	327.2	34	34	23.85	46.29
14"	350A	555	490	33	16	359.2	38	38	37.85	68.08
16"	400A	620	550	36	16	410.5	40	40	48.12	89.68
20"	500A	730	660	36	20	513.1	44	44	66.11	137.52

SOFF



BLFF



Flange | PN40 | Common Standard * (Modified from DIN 2545/2527)

Unit : mm

Nominal Pipe Size		Outside Dia.	Dia. of Bolt Circle	Dia. of Bolt Circle	No. of Bolt Circle	Dia. of Bore	Thickness		Approx Weight	
							Slip-on	Blind	SOFF	BLFF
INCH	DN	OD	PCD	Ø		ID	T		KG	
3/8"	10A	90	60	14	4	17.8	16	16	0.69	0.72
1/2"	15A	95	65	14	4	22.4	16	16	0.76	0.81
3/4"	20A	105	75	14	4	27.7	18	18	1.05	1.14
1"	25A	115	85	14	4	34.5	18	18	1.25	1.38
1.1/4"	32A	140	100	18	4	43.2	18	18	1.82	2.03
1.1/2"	40A	150	110	18	4	49.5	18	18	2.08	2.35
2"	50A	165	125	18	4	62.0	20	20	2.72	3.20
2.1/2"	65A	185	145	18	8	74.7	22	22	3.53	4.29
3"	80A	200	160	18	8	90.7	24	24	4.32	5.53
4"	100A	235	190	23	8	116.1	24	24	5.55	7.54
5"	125A	270	220	27	8	143.8	26	26	7.44	10.75
6"	150A	300	250	27	8	170.7	28	28	9.50	14.53
8"	200A	375	320	30	12	221.5	34	34	16.93	27.21
10"	250A	450	385	33	12	276.4	38	38	26.48	44.38
12"	300A	515	450	33	16	327.2	42	42	36.44	64.16
14"	350A	580	510	36	16	359.2	46	46	52.93	89.52
16"	400A	660	585	39	16	410.5	50	50	74.83	126.77
20"	500A	755	670	42	20	513.1	52	52	87.03	171.43

Tolerance | Flanges | ANSI B16.5

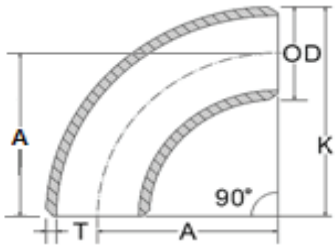
Threaded, Socket-Welding, Slip-on, Lap Joint and Blind		
Outside Diameter	24" or Less	±1.6mm
	Over 24"	±3.2mm
Inside Diameter	Threaded	Within Limites on Boring Gauge
	Socket-Welding Slip-on and Lap Joint	10" ans Smaller +0.8mm
		12" and Larger +1.6mm
Outside Diameter of Hub	12" and Smaller	+2.4mm -1.6mm
	14" and Larger	±3.2mm
Diameter of Contact Face	1/16" Raised Face	±0.8mm
	1/4" Raised Face Tongue and Groove Male,Female	±0.5mm
Diameter of Counterbore	Same as for Inside Diameter	
Drilling	Bolt Circle	±1.6mm
	Bolt Hole Spacing	±0.8mm
	Eccentricity of Bolt Circle with Respect of Facing	2.1/2" and Smaller 0.8mm Max.
		3" and Larger 1.6mm Max.
	Eccentricity of Facing with Respect to Bore	0.8mm Max.
	Eccentricity of Bolt Circle with Respect of Bore	0.8mm Max.
Thickness	18" and Smaller	+3.2mm -0mm
	20" and Larger	+4.8mm -0mm
Length Thru Hub	18" and Smaller	+3.2mm -0.8mm
	20" and Larger	+4.8mm -1.6mm

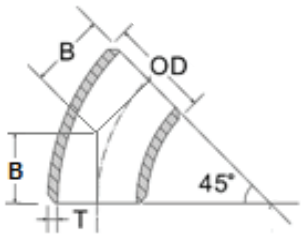
Welding Neck		
Outside Diameter	24" and Less	±1.6mm
	Over 24"	±3.2mm
Inside Diameter	10" and Smaller	+0.8mm
	12" to 18"	+1.6mm
	20" and Larger	+3.2mm -1.6mm
Diameter of Contact Face	1/16" Raised Face	±0.8mm
	1/4" Raised Face Tongue and Groove, Male & Female	±0.5mm
	When Hub Base is 24" or Less	±1.6mm
	When Hub Base is Over 24"	±3.2mm
Diameter of Hub at Poing of Welding	5" and Smaller	+2.4mm -0.8mm
	6" and Larger	+4.0mm -0.8mm
Drilling	Bolt Circle	±1.6mm
	Bolt Hole Spacing	±0.8mm
	Eccentricity of Bolt Circle with Respect of Facing	2.1/2" and Smaller 0.8mm Max.
		3" and Larger 1.6mm Max.
	Eccentricity of Facing with Respect to Bore	0.8mm Max.
	Eccentricity of Bolt Circle with Respect of Bore	0.8mm Max.
Thickness	18" and Smaller	±3.2mm
	20" and Larger	±4.8mm
Length Thru Hub	10" and Smaller	±1.6mm
	12" and Larger	±3.2mm

PURA PIPING

Butt Weld Fittings



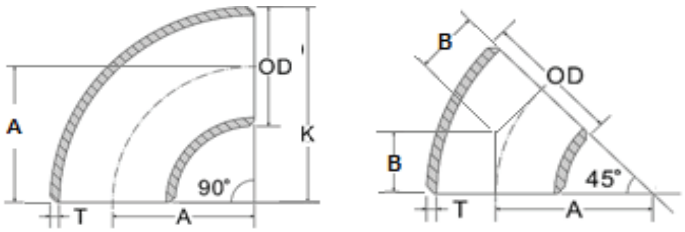




Elbow | Long Radius | ASME/ANSI B16.9

Nominal Pipe Size		Outside Diameter (mm)	Center to End		Back to Face	
					90°	45°
INCH	DN	ANSI	A	B	K	
1/2"	15A	21.3	38.0	16.0	48.0	-
3/4"	20A	26.7	38.0	19.0	51.0	-
1"	25A	33.4	38.0	22.0	56.0	-
1.1/4"	32A	42.2	48.0	25.0	70.0	-
1.1/2"	40A	48.3	57.0	29.0	83.0	-
2"	50A	60.3	76.0	35.0	106.0	-
2.1/2"	65A	73.0	95.0	44.0	132.0	-
3"	80A	88.9	114.0	51.0	159.0	-
3.1/2"	90A	101.6	133.0	57.0	184.0	-
4"	100A	114.3	152.0	64.0	210.0	-
5"	125A	141.3	190.0	79.0	262.0	-
6"	150A	168.3	229.0	95.0	313.0	-
8"	200A	219.1	305.0	127.0	414.0	-
10"	250A	273.0	381.0	159.0	518.0	-
12"	300A	323.8	457.0	190.0	619.0	-
14"	350A	355.6	533.0	222.0	711.0	-
16"	400A	406.4	610.0	254.0	813.0	-
18"	450A	457.0	686.0	286.0	914.0	-
20"	500A	508.0	762.0	318.0	1016.0	-
22"	550A	559.0	838.0	343.0	1118.0	-
24"	600A	610.0	914.0	381.0	1219.0	-
26"	650A	660.0	991.0	406.0	1320.8	-
28"	700A	711.0	1067.0	438.0	1422.4	-
30"	750A	762.0	1143.0	470.0	1524.0	-
32"	800A	813.0	1219.0	502.0	1625.6	-
34"	850A	864.0	1295.0	533.0	1727.2	-
36"	900A	914.0	1372.0	565.0	1828.8	-
38"	950A	965	1448	600	1930	-
40"	1000A	1016.0	1524	632	2032	-
42"	1050A	1067.0	1600	660	2134	-
44"	1100A	1118.0	1676	695	2236	-
46"	1150A	1168.0	1753	727	2336	-
48"	1200A	1219.0	1829	759	2438	-

Unit : mm

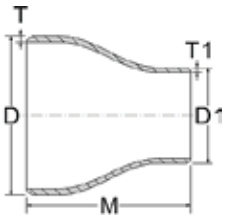


Elbow |Short Radius | ASME/ANSI B16.9

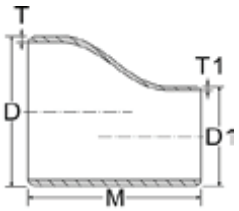
Nominal Pipe Size		Outside Diameter (mm)	Center to End		Back to Face
INCH	DN	ANSI	A	B	K
1/2"	15A	21.3	-	-	-
3/4"	20A	26.7	-	-	-
1"	25A	33.4	25.0	10.0	41.0
1.1/4"	32A	42.2	32.0	13.0	52.0
1.1/2"	40A	48.3	38.0	16.0	62.0
2"	50A	60.3	51.0	21.0	81.0
2.1/2"	65A	73.0	64.0	27.0	100.0
3"	80A	88.9	76.0	32.0	121.0
3.1/2"	90A	101.6	89.0	37.0	140.0
4"	100A	114.3	102.0	42.0	159.0
5"	125A	141.3	127.0	53.0	197.0
6"	150A	168.3	152.0	63.0	237.0
8"	200A	219.1	203.0	84.0	313.0
10"	250A	273.0	254.0	105.0	391.0
12"	300A	323.8	305.0	126.0	467.0
14"	350A	355.6	356.0	148.0	533.0
16"	400A	406.4	406.0	168.0	610.0
18"	450A	457.0	457.0	189.0	686.0
20"	500A	508.0	508.0	210.0	762.0
22"	550A	559.0	559.0	232.0	838.0
24"	600A	610.0	610.0	253.0	914.0
26"	650A	660.0	660.4	273.0	990.6
28"	700A	711.0	711.2	295.0	1066.8
30"	750A	762.0	762.0	316.0	1143.0
32"	800A	813.0	812.8	337.0	1219.2
34"	850A	864.0	863.8	358.0	1295.4
36"	900A	914.0	914.4	379.0	1371.6
38"	950A	965.0	965.0	-	-
40"	1000A	1016.0	1016.0	-	-
42"	1050A	1064.0	1064.0	-	-
44"	1100A	1118.0	1118.0	-	-
46"	1150A	1168.0	1168.0	-	-
48"	1200A	1219.0	1219.0	-	-

Unit : mm

Concentric



Eccentric

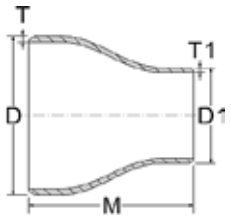


Concentric and Eccentric Reducers | ASME/ANSI B16.9

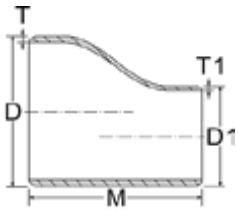
Nominal Pipe Size		Outside Diameter (mm)		Length
INCH	DN	ANSI D	ANSI D1	M
3/4" X 1/2"	20A X 15A	26.7	21.3	38
1" X 3/4"	25A X 20A	33.4	26.7	51
1" X 1/2"	25A X 15A	33.4	21.3	
1¼" X 1"	32A X 25A	42.2	33.4	51
1¼" X 3/4"	32A X 20A	42.2	26.7	
1¼" X 3/4"	32A X 15A	42.2	21.3	
1½" X 1¼"	40A X 32A	48.3	42.2	64
1½" X 1"	40A X 25A	48.3	33.4	
1½" X 3/4"	40A X 20A	48.3	26.7	
1½" X 1/2"	40A X 15A	48.3	21.3	
2" X 1½"	50A X 40A	60.3	48.3	76
2" X 1¼"	50A X 32A	60.3	42.2	
2" X 1"	50A X 25A	60.3	33.4	
2" X 3/4"	50A X 20A	60.3	26.7	
2" X 1/2"	50A X 15A	60.3	21.3	
2½" X 2"	65A X 50A	73.0	60.3	89
2½" X 1½"	65A X 40A	73.0	48.3	
2½" X 1¼"	65A X 32A	73.0	42.2	
2½" X 1"	65A X 25A	73.0	33.4	
3" X 2½"	80A X 65A	88.9	73.0	89
3" X 2"	80A X 50A	88.9	60.3	
3" X 1½"	80A X 40A	88.9	48.3	
3" X 1¼"	80A X 32A	88.9	42.2	
3" X 1"	80A X 25A	88.9	33.4	
3½" X 3"	90A X 80A	101.6	88.9	102
3½" X 2½"	90A X 65A	101.6	73.0	
3½" X 2"	90A X 50A	101.6	60.3	
3½" X 1½"	90A X 40A	101.6	48.3	
3½" X 1¼"	90A X 32A	101.6	42.2	
4" X 3½"	100A X 90A	114.3	101.6	102
4" X 3"	100A X 80A	114.3	88.9	
4" X 2½"	100A X 65A	114.3	73.0	

Unit : mm

Concentric



Eccentric

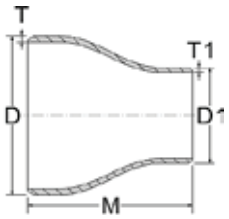


Concentric and Eccentric Reducers | ASME/ANSI B16.9

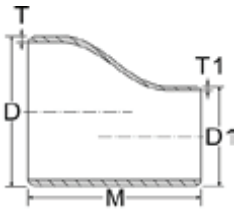
Nominal Pipe Size		Outside Diameter (mm)		Length
INCH	DN	ANSI D	ANSI D1	M
4" X 2"	100A X 50A	114.3	60.3	102
4" X 1½"	100A X 40A	114.3	48.3	
4" X 1¼"	100A X 32A	114.3	42.2	
4" X 1"	100A X 25A	114.3	33.4	
5" X4"	125A X 100A	141.3	114.3	127
5" x 3½"	125A X 90A	141.3	101.6	
5" x 3"	125A X 80A	141.3	88.9	
5" X 2½"	125A X 65A	141.3	73.0	
5" X 2"	125A X 50A	141.3	60.3	
6" X 5"	150A X 125A	168.3	141.3	140
6" X 4"	150A X 100A	168.3	114.3	
6" X 3½"	150A X 90A	168.3	101.6	
6" X 3"	150A X 80A	168.3	88.9	
6" X 2½"	150A X 65A	168.3	73.0	
6" X 2"	150A X 50A	168.3	60.3	
8" X 6"	200A X 150A	219.1	168.3	152
8" X 5"	200A X 125A	219.1	141.3	
8" X 4"	200A X 100A	219.1	114.3	
8" X 3½"	200A X 90A	219.1	101.6	
8" X 3"	200A X 80A	219.1	88.9	
10" X 8"	250A X 200A	273.0	219.1	178
10" X 6"	250A X 150A	273.0	168.3	
10 X 5"	250A X 125A	273.0	141.3	
10" X 4"	250A X 100A	273.0	114.3	
10" X 3"	250A X 80A	273.0	88.9	
12" X 10"	300A X 250A	323.8	273.0	203
12" X 8"	300A X 200A	323.8	219.1	
12" X 6"	300A X 150A	323.8	168.3	
12" X 5"	300A X 125A	323.8	141.3	
12" X 4"	300A X 100A	323.8	114.3	
14" X 12"	350A X 300A	355.6	323.8	330
14" X 10"	350A X 250A	355.6	273.0	

Unit : mm

Concentric



Eccentric

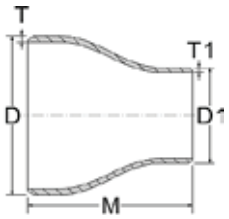


Concentric and Eccentric Reducers | ASME/ANSI B16.9

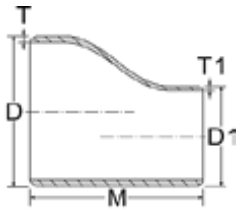
Nominal Pipe Size		Outside Diameter		Length
INCH	DN	ANSI D	ANSI D1	M
14" X 6"	350A X 150A	355.6	168.3	330
16" X 14"	400A X 350A	406.4	355.6	356
16" X 12"	400A X 300A	406.4	323.8	
16" X 10"	400A X 250A	406.4	273.0	
16" X 8"	400A X 200A	406.4	219.1	
16" X 6"	400A X 150A	406.4	168.3	
18" X 16"	450A X 400A	457.2	406.4	381
18" X 14"	450A X 350A	457.2	355.6	
18" X 12"	450A X 300A	457.2	323.8	
18" X 10"	450A X 250A	457.2	273.0	
18" X 8"	450A X 200A	457.2	219.1	
20" X 18"	500A X 450A	508.0	457.0	508
20" X 16"	500A X 400A	508.0	406.4	
20" X 14"	500A X 350A	508.0	355.6	
20" X 12"	500A X 300A	508.0	323.8	
20" X 10"	500A X 250A	508.0	273.0	
20" X 8"	500A X 200A	508.0	219.1	
22" X 20"	550A X 500A	558.8	508.0	508
22" X 18"	550A X 450A	558.8	457.0	
22" X 16"	550A X 400A	558.8	406.4	
22" X 14"	550A X 350A	558.8	355.6	
24" X 22"	600A X 550A	610.0	558.8	508
24" X 20"	600A X 500A	610.0	508.0	
24" X 18"	600A X 450A	610.0	457.0	
24" X 16"	600A X 400A	610.0	406.4	
24" X 14"	600A X 350A	610.0	355.6	

Unit : mm

Concentric



Eccentric

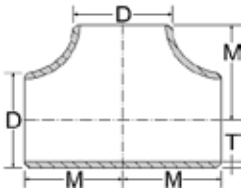


Concentric and Eccentric Reducers | ASME/ANSI B16.9

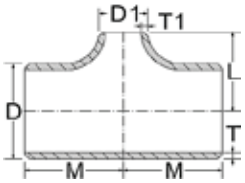
Nominal Pipe Size		Outside Diameter		Length
INCH	DN	ANSI D	ANSI D1	M
26" X 24"	650 X 600	660	610	610
26" X 22"	650 X 550	660	559	
26" X 20"	650 X 500	660	508	
26" X 18"	650 X 450	660	457	
28" X 26"	700 X 650	711	660	610
28" X 24"	700 X 600	711	610	
28" X 22"	700 X 550	711	559	
30" X 28"	750 X 700	762	711	610
30" X 26"	750 X 650	762	660	
30" X 24"	750 X 600	762	610	
30" X 22"	750 X 550	762	559	
32" X 30"	800 X 750	813	762	610
32" X 28"	800 X 700	813	711	
32" X 26"	800 X 650	813	660	
32" X 24"	800 X 600	813	610	
32" X 20"	800 X 500	813	508	
34" X 32"	850 X 800	864	813	610
34" X 30"	850 X 750	864	762	
34" X 28"	850 X 700	864	711	
34" X 26"	850 X 650	864	660	
36" X 34"	900 X 850	914	864	610
36" X 32"	900 X 800	914	813	
36" X 30"	900 X 750	914	762	
36" X 28"	900 X 700	914	711	
40" X 32"	1000 X 800	1016	813	

Unit : mm

Equal Tee



Reducing Tee

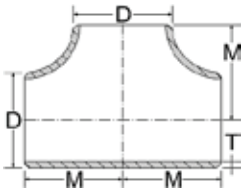


Equal and Reducing Tees | ASME/ANSI B16.9

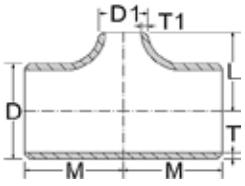
Nominal Pipe Size		Outside Diameter (mm)		Length	
INCH	DN	ANSI D	ANSI D1	M	L
1/2"	15A	21.3	-	25	25
3/4"	20A	26.7	-	29	29
3/4" X 1/2"	20A X 15A	26.7	21.3		
1"	25A	33.4	-	38	38
1" X 3/4"	25A X 20A	33.4	26.7		
1" X 1/2"	25A X 15A	33.4	21.3		
1.1/4"	32A	42.2	-	48	48
1.1/4" X 1"	32A X 25A	42.2	33.4		
1.1/4" X 3/4"	32A X 20A	42.2	26.7		
1.1/4" X 1/2"	32A X 15A	42.2	21.3		
1.1/2"	40A	48.3	-	57	57
1.1/2" X 1.1/4"	40A X 32A	48.3	42.2		
1.1/2" X 1"	40A X 25A	48.3	33.4		
1.1/2" X 3/4"	40A X 20A	48.3	26.7		
1.1/2" X 1/2"	40A X 15A	48.3	21.3		
2"	50A	60.3	-	64	64
2" X 1.1/2"	50A X 40A	60.3	48.3		60
2" X 1.1/4"	50A X 32A	60.3	42.2		54
2" X 1"	50A X 25A	60.3	33.4		51
2" X 3/4"	50A X 20A	60.3	26.7		45
2" X 1/2"	50A X 15A	60.3	21.3		45
2.1/2"	65A	73.0	-	76	76
2.1/2" X 2"	65A X 50A	73.0	60.3		70
2.1/2" X 1.1/2"	65A X 40A	73.0	48.3		67
2.1/2" X 1.1/4"	65A X 32A	73.0	42.2		64
2.1/2" X 1"	65A X 25A	73.0	33.4		54
3"	80A	88.9	-	86	85
3" X 2.1/2"	80A X 65A	88.9	73.0		83
3" X 2"	80A X 50A	88.9	60.3		76
3" X 1.1/2"	80A X 40A	88.9	48.3		79
3" X 1.1/4"	80A X 32A	88.9	42.2		70
3" X 1"	80A X 25A	88.9	33.4		66

Unit : mm

Equal Tee



Reducing Tee

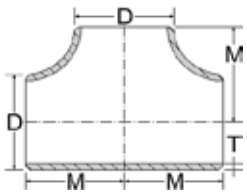


Equal and Reducing Tees | ASME/ANSI B16.9

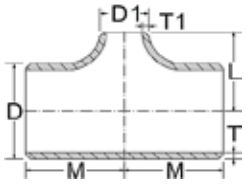
Nominal Pipe Size		Outside Diameter (mm)		Length	
INCH	DN	ANSI D	ANSI D1	M	L
3.1/2"	90A	101.6	-	95	95
3.1/2" X 3"	90A X 80A	101.6	88.9		93
3.1/2" X 2.1/2"	90A X 65A	101.6	73.0		89
3.1/2" X 2"	90A X 50A	101.6	60.3		83
3.1/2" X 1.1/2"	90A X 40A	101.6	48.3		79
3.1/2" X 1.1/4"	90A X 32A	101.6	42.2		77
4"	100A	114.3	-	105	105
4" X 3.1/2"	100A X 90A	114.3	101.6		102
4" X 3"	100A X 80A	114.3	88.9		98
4" X 2.1/2"	100A X 65A	114.3	73.0		95
4" X 2"	100A X 50A	114.3	60.3		89
4" X 1.1/2"	100A X 40A	114.3	48.3		86
4" X 1.1/4"	100A X 32A	114.3	42.2		84
4" X 1"	100A X 25A	114.3	33.4		79
5"	125A	141.3	-	124	124
5" X 4"	125A X 100A	141.3	114.3		117
5" X 3.1/2"	125A X 90A	141.3	101.6		114
5" X 3"	125A X 80A	141.3	88.9		111
5" X 2.1/2"	125A X 65A	141.3	73.0		108
5" X 2"	125A X 50A	141.3	60.3		105
6"	150A	168.3	-	143	143
6" X 5"	150A X 125A	168.3	141.3		137
6" X 4"	150A X 100A	168.3	114.3		130
6" X 3.1/2"	150A X 90A	168.3	101.6		127
6" X 3"	150A X 80A	168.3	88.9		124
6" X 2.1/2"	150A X 65A	168.3	73.0		121
6" X 2"	150A X 50A	168.3	60.3		116
8"	200A	219.1	-	178	178
8" X 6"	200A X 150A	219.1	168.3		168
8" X 5"	200A X 125A	219.1	141.3		162
8" X 4"	200A X 100A	219.1	114.3		156
8" X 3.1/2"	200A X 90A	219.1	101.6		152

Unit : mm

Equal Tee



Reducing Tee

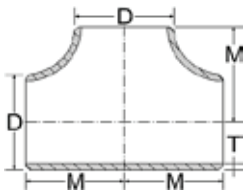


Equal and Reducing Tees | ASME/ANSI B16.9

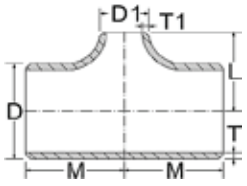
Nominal Pipe Size		Outside Diameter (mm)		Length	
INCH	DN	ANSI D	ANSI D1	M	L
8" X 3"	200A X 80A	219.1	88.9	178	151
10"	250A	273.0	-	216	216
10" X 8"	250A X 200A	273.0	219.1		203
10" X 6"	250A X 150A	273.0	168.3		194
10" X 5"	250A X 125A	273.0	141.3		191
10" X 4"	250A X 100A	273.0	114.3		184
10" X 3"	250A X 80A	273.0	88.9		-
12"	300A	323.8	-	254	254
12" X 10"	300A X 250A	323.8	273.0		241
12" X 8"	300A X 200A	323.8	219.1		229
12" X 6"	300A X 150A	323.8	168.3		219
12" X 5"	300A X 125A	323.8	141.3		216
12" X 4"	300A X 100A	323.8	114.3		214
14"	350A	355.6	-	279	279
14" X 12"	350A X 300A	355.6	323.8		270
14" X 10"	350A X 250A	355.6	273.0		257
14" X 8"	350A X 200A	355.6	219.1		248
14" X 6"	350A X 150A	355.6	168.3		238
16"	400A	406.4	-	305	305
16" X 14"	400A X 350A	406.4	355.6		305
16" X 12"	400A X 300A	406.4	323.8		296
16" X 10"	400A X 250A	406.4	273.0		283
16" X 8"	400A X 200A	406.4	219.1		273
16" X 6"	400A X 150A	406.4	168.3		264
18"	450A	457.0	-	343	343
18" X 16"	450A X 400A	457.0	406.4		330
18" X 14"	450A X 350A	457.0	355.6		330
18" X 12"	450A X 300A	457.0	323.8		321
18" X 10"	450A X 250A	457.0	273.0		308
18" X 8"	450A X 200A	457.0	219.1		299
20"	500A	508.0	-	381	381
20" X 18"	500A X 450A	508.0	457.0		368

Unit : mm

Equal Tee



Reducing Tee

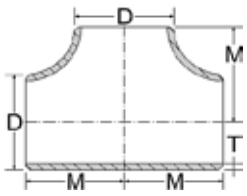


Equal and Reducing Tees | ASME/ANSI B16.9

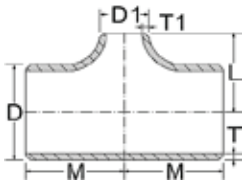
Nominal Pipe Size		Outside Diameter		Length	
INCH	DN	ANSI D	ANSI D1	M	L
20" X 16"	500A X 400A	508.0	406.4	381	356
20" X 14"	500A X 350A	508.0	355.6		356
20" X 12"	500A X 300A	508.0	323.8		346
20" X 10"	500A X 250A	508.0	273.0		333
20" X 8"	500A X 200A	508.0	219.1		322
22"	550A	558.8	-	419	419
22" X 20"	550A X 500A	558.8	508.0		406
22" X 18"	550A X 450A	558.8	457.0		394
22" X 16"	550A X 400A	558.8	406.4		381
22" X 14"	550A X 350A	558.8	355.6		381
22" X 12"	550A X 300A	558.8	323.8		372
24"	600A	610.0	-	432	432
24" X 22"	600A X 550A	610.0	558.8		432
24" X 20"	600A X 500A	610.0	508.0		432
24" X 18"	600A X 450A	610.0	457.0		419
24" X 16"	600A X 400A	610.0	406.4		406
24" X 14"	600A X 350A	610.0	355.6		406
24" X 12"	600A X 300A	610.0	323.8		397
26"	650A	660.4	-	495	495
26" X 24"	650A X 600A	660.4	610.0		483
26" X 22"	650A X 550A	660.4	558.8		470
26" X 20"	650A X 500A	660.4	508.0		457
26" X 18"	650A X 450A	660.4	457.0		445
26" X 16"	650A X 400A	660.4	406.4		432
26" X 14"	650A X 350A	660.4	355.6		432
28"	700A	711.2	-	521	521
28" X 26"	700A X 650A	711.2	660.4		521
28" X 24"	700A X 600A	711.2	610.0		508
28" X 22"	700A X 550A	711.2	558.8		495
28" X 20"	700A X 500A	711.2	508.0		483
28" X 18"	700A X 450A	711.2	457.0		470
28" X 16"	700A X 400A	711.2	406.4		457

Unit : mm

Equal Tee



Reducing Tee

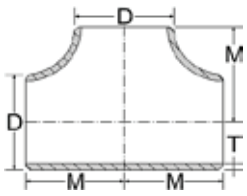


Equal and Reducing Tees | ASME/ANSI B16.9

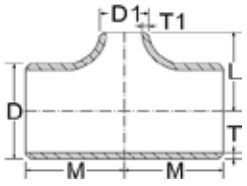
Nominal Pipe Size		Outside Diameter (mm)		Length	
INCH	DN	ANSI D	ANSI D1	M	L
28" X 14"	700 X 350	711	355.6	521	457
28" X 12"	700 X 300	711	323.9		448
30" X 30"	750 X 750	762	762	559	559
30" X 28"	750 X 700	762	711		546
30" X 26"	750 X 650	762	660		546
30" X 24"	750 X 600	762	610		533
30" X 22"	750 X 550	762	559		521
30" X 20"	750 X 500	762	508		508
30" X 18"	750 X 450	762	457		495
30" X 16"	750 X 400	762	406.4		483
30" X 14"	750 X 350	762	355.6		483
30" X 12"	750 X 300	762	323.9		473
30" X 10"	750 X 250	762	273		460
32" X 32"	800 X 800	813	813	597	597
32" X 30"	800 X 750	813	762		584
32" X 28"	800 X 700	813	711		572
32" X 26"	800 X 650	813	660		572
32" X 24"	800 X 600	813	610		559
32" X 22"	800 X 550	813	559		556
32" X 20"	800 X 500	813	508		533
32" X 18"	800 X 450	813	457		521
32" X 16"	800 X 400	813	406.4		508
32" X 14"	800 X 350	813	355.6		508
34" X 34"	850 X 850	864	864	635	635
34" X 32"	850 X 800	864	813		622
34" X 30"	850 X 750	864	762		610
34" X 28"	850 X 700	864	711		597
34" X 26"	850 X 650	864	660		597
34" X 24"	850 X 600	864	610		584
34" X 22"	850 X 550	864	559		572
34" X 20"	850 X 500	864	508		559
34" X 18"	850 X 450	864	457		546

Unit : mm

Equal Tee



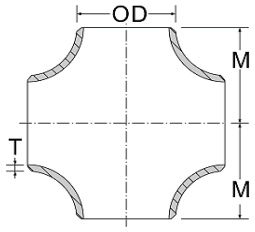
Reducing Tee



Equal and Reducing Tees | ASME/ANSI B16.9

Nominal Pipe Size		Outside Diameter (mm)		Length	
INCH	DN	ANSI D	ANSI D1	M	L
34" X 16"	850 X 350	864	406.4	635	533
36" X 36"	900 X 900	914	914		673
36" X 34"	900 X 850	914	864	673	660
36" X 32"	900 X 800	914	813		648
36" X 30"	900 X 750	914	762		635
36" X 28"	900 X 700	914	711		622
36" X 26"	900 X 650	914	660		622
36" X 24"	900 X 600	914	610		610
36" X 22"	900 X 550	914	559		597
36" X 20"	900 X 500	914	508		584
36" X 18"	900 X 450	914	457		572
36" X 16"	900 X 400	914	406.4		559
40" X 40"	1000 X 1000	1016	1016	749	749

Unit : mm

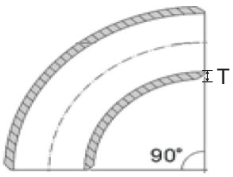


Equal Crosses | ASME/ANSI B16.9

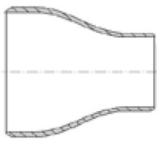
Nominal Pipe Size		Outside Diameter (mm)	Center to End
INCH	DN	ANSI	M
1/2"	15A	21.3	25
3/4"	20A	26.7	30
1"	25A	33.4	38
1.1/4"	32A	42.2	48
1.1/2"	40A	48.3	57
2"	50A	60.3	64
2.1/2"	65A	73.0	76
3"	80A	88.9	86
3.1/2"	90A	101.6	95
4"	100A	114.3	105
5"	125A	141.3	124
6"	150A	168.3	143
8"	200A	219.1	178
10"	250A	273.0	216
12"	300A	323.8	254
14"	350A	355.6	279
16"	400A	406.4	305
18"	450A	457.2	343
20"	500A	508.0	381
22"	550A	558.8	419
24"	600A	609.6	419

Unit : mm

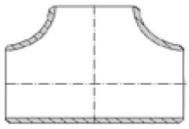
90° Elbow



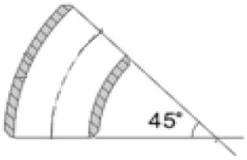
Conc Red



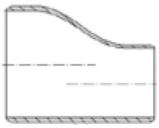
Eq Tee



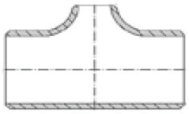
45° Elbow



Ecc Red



Red Tee



ASME B36.19/ASME B36.10

Unit : mm

Nominal Pipe Size		Outside Diameter (mm)		Nominal Wall Thickness (mm)													
INCH	DN	JIS	ANSI	SGP	S10s	S40s	S80s	S10	S20	S40	STD	S60	XS	S80	S120	S160	XXS
1/2"	15A	21.7	21.3	2.80	2.11	2.77	3.73	-	-	2.77	2.77	-	3.73	3.73	-	4.78	7.47
3/4"	20A	27.2	26.7	2.80	2.11	2.87	3.91	-	-	2.87	2.87	-	3.91	3.91	-	5.56	7.82
1"	25A	34.0	33.4	3.20	2.77	3.38	4.55	-	-	3.38	3.38	-	4.55	4.55	-	6.35	9.09
1.1/4"	32A	42.7	42.2	3.50	2.77	3.56	4.85	-	-	3.56	3.56	-	4.85	4.85	-	6.35	9.70
1.1/2"	40A	48.6	48.3	3.50	2.77	3.68	5.08	-	-	3.68	3.68	-	5.08	5.08	-	7.14	10.15
2"	50A	60.5	60.3	3.80	2.77	3.91	5.54	-	-	3.91	3.91	-	5.54	5.54	-	8.74	11.07
2.1/2"	65A	76.3	73.0	4.20	3.05	5.16	7.01	-	-	5.16	5.16	-	7.01	7.01	-	9.53	14.02
3"	80A	89.1	88.9	4.20	3.05	5.49	7.62	-	-	5.49	5.49	-	7.62	7.62	-	11.13	15.24
4"	100A	114.3	114.3	4.50	3.05	6.02	8.56	-	-	6.02	6.02	-	8.56	8.56	11.13	13.49	17.12
5"	125A	139.8	141.3	4.50	3.40	6.55	9.53	-	-	6.55	6.55	-	9.53	9.53	12.70	15.88	19.05
6"	150A	165.2	168.3	5.00	3.40	7.11	10.97	-	-	7.11	7.11	-	10.97	10.97	14.27	18.26	21.95
8"	200A	216.3	219.1	5.80	3.76	8.18	12.70	-	6.35	8.18	8.18	10.31	12.70	12.70	18.26	23.01	22.23
10"	250A	267.4	273.0	6.60	4.19	9.27	12.70	-	6.35	9.27	9.27	12.70	12.70	15.09	21.44	28.58	25.40
12"	300A	318.5	323.9	6.90	4.57	9.52	12.70	-	6.35	10.31	9.53	14.27	12.70	17.48	25.40	33.32	25.40
14"	350A	355.6	355.6	7.90	4.78	9.53	-	6.35	7.92	11.13	9.53	15.09	12.70	19.05	27.79	35.71	-
16"	400A	406.4	406.4	7.90	4.78	9.53	-	6.35	7.92	12.70	9.53	16.66	12.70	21.44	30.96	40.49	-
18"	450A	457.2	457.0	7.90	4.78	9.53	-	6.35	7.92	14.27	9.53	19.05	12.70	23.83	34.93	45.24	-
20"	500A	508.0	508.0	7.90	5.54	9.53	-	6.35	9.53	15.09	9.53	20.62	12.70	26.19	38.10	50.01	-
24"	600A	609.6	610.0	7.90	6.35	9.53	-	6.35	9.53	17.48	9.53	24.61	12.70	30.96	46.02	59.54	-
26"	650A	-	660.4	-	-	-	-	7.92	-	-	9.53	-	12.70	-	-	-	-
28"	700A	-	711.2	-	-	-	-	7.92	-	-	9.53	-	12.70	-	-	-	-
30"	750A	-	762.0	-	7.92	-	-	7.92	-	-	9.53	-	12.70	-	-	-	-
32"	800A	-	812.8	-	-	-	-	7.92	-	-	9.53	-	12.70	-	-	-	-
34"	850A	-	863.6	-	-	-	-	7.92	-	-	9.53	-	12.70	-	-	-	-
36"	900A	-	914.4	-	-	-	-	7.92	-	-	9.53	-	12.70	-	-	-	-
38"	950A	-	965.2	-	-	-	-	-	-	-	9.53	-	12.70	-	-	-	-
40"	1000A	-	1016.0	-	7.92[1]	-	-	-	-	-	9.53	-	12.70	-	-	-	-
42"	1050A	-	1066.8	-	-	-	-	-	-	-	9.53	-	12.70	-	-	-	-
44"	1100A	-	1117.8	-		-	-	-	-	-	9.53	-	12.70	-	-	-	-
46"	1150A	-	1168.4	-		-	-	-	-	-	9.53	-	12.70	-	-	-	-
48"	1200A	-	1219.2	-		-	-	-	-	-	9.53	-	12.70	-	-	-	-

Note: [1]-For Schedule 10S pipes, the wall thickness is not specified in ASME B36.19/ASME B36.10.
The required thickness shall be defined by the purchaser.

Elbow | Long Radius | ANSI B16.9

Nominal Pipe Size		Pressure												
		S/10	S/20	S/30	S/STD	S/40	S/60	S/XS	S/80	S/100	S/120	S/140	S/160	S/XXS
INCH	DN	KG												
1/2"	15A	-	-	-	0.08	0.08	-	0.10	0.10	-	-	-	0.12	0.15
3/4"	20A	-	-	-	0.08	0.08	-	0.10	0.10	-	-	-	0.13	0.17
1"	25A	-	-	-	0.15	0.15	-	0.19	0.19	-	-	-	0.25	0.33
1.1/4"	32A	-	-	-	0.16	0.16	-	0.34	0.34	-	-	-	0.42	0.60
1.1/2"	40A	-	-	-	0.36	0.36	-	0.49	0.49	-	-	-	0.65	0.86
2"	50A	-	-	-	0.65	0.65	-	0.90	0.90	-	-	-	1.35	1.62
2.1/2"	65A	-	-	-	1.30	1.30	-	1.71	1.71	-	-	-	2.25	3.00
3"	80A	-	-	-	2.00	2.00	-	2.75	2.75	-	-	-	4.00	5.00
3.1/2"	90A	-	-	-	3.00	3.00	-	4.00	4.00	-	-	-	-	-
4"	100A	-	-	-	4.00	4.00	-	5.00	5.00	-	7.00	-	8.00	10.00
5"	125A	-	-	-	7.00	7.00	-	9.00	9.00	-	12.00	-	15.00	18.00
6"	150A	-	-	-	10.00	10.00	-	15.00	15.00	-	20.00	-	25.00	29.00
8"	200A	-	16.00	18.00	21.00	21.00	26.00	31.00	31.00	37.00	44.00	49.00	55.00	52.00
10"	250A	-	25.00	31.00	37.00	37.00	50.00	49.00	58.00	70.00	80.00	95.00	105.00	94.00
12"	300A	-	36.00	47.00	54.00	58.00	80.00	71.00	95.00	115.00	135.00	150.00	175.00	135.00
14"	350A	46.00	57.00	69.00	69.00	80.00	108.00	91.00	133.00	195.00	180.00	215.00	240.00	-
16"	400A	61.00	75.00	90.00	90.00	120.00	155.00	119.00	196.00	240.00	276.00	320.00	360.00	-
18"	450A	77.00	95.00	133.00	114.00	170.00	223.00	151.00	275.00	335.00	395.00	440.00	500.00	-
20"	500A	95.00	141.00	186.00	141.00	220.00	300.00	186.00	375.00	460.00	530.00	610.00	680.00	-
22"	550A	115.00	171.00	226.00	171.00	-	390.00	226.00	495.00	595.00	695.00	795.00	890.00	-
24"	600A	136.00	203.00	302.00	203.00	370.00	512.00	270.00	640.00	790.00	920.00	1035.00	1165.00	-
26"	650A	200.00	322.00	405.00	249.00	-	-	322.00	-	-	-	-	-	-
28"	700A	232.00	375.00	458.00	289.00	-	-	375.00	-	-	-	-	-	-
30"	750A	265.00	431.00	526.00	333.00	-	-	431.00	-	-	-	-	-	-
32"	800A	302.00	491.00	600.00	379.00	-	-	491.00	-	-	-	-	-	-
34"	850A	342.00	555.00	680.00	428.00	-	-	555.00	-	-	-	-	-	-
36"	900A	382.00	621.00	760.00	480.00	-	-	621.00	-	-	-	-	-	-

Elbow | Short Radius | ANSI B16.9

Nominal Pipe Size		Pressure												
		S/10	S/20	S/30	S/STD	S/40	S/60	S/XS	S/80	S/100	S/120	S/140	S/160	S/XXS
INCH	DN	KG												
1/2"	15A	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4"	20A	-	-	-	-	-	-	-	-	-	-	-	-	-
1"	25A	-	-	-	0.10	0.10	-	0.13	0.13	-	-	-	0.17	0.21
1.1/4"	32A	-	-	-	0.17	0.17	-	0.22	0.22	-	-	-	0.28	0.39
1.1/2"	40A	-	-	-	0.24	0.24	-	0.32	0.32	-	-	-	0.43	0.57
2"	50A	-	-	-	0.44	0.44	-	0.60	0.60	-	-	-	0.90	1.10
2.1/2"	65A	-	-	-	0.87	0.87	-	1.15	1.15	-	-	-	1.50	2.05
3"	80A	-	-	-	1.35	1.35	-	1.83	1.83	-	-	-	2.60	3.10
3.1/2"	90A	-	-	-	1.90	1.90	-	2.65	2.65	-	-	-	-	-
4"	100A	-	-	-	2.60	2.60	-	3.60	3.60	-	4.60	-	5.41	6.60
5"	125A	-	-	-	4.40	4.40	-	6.20	6.20	-	8.00	-	9.90	15.00
6"	150A	-	-	-	7.00	7.00	-	10.00	10.00	-	13.00	-	16.00	19.00
8"	200A	-	11.00	12.00	14.00	14.00	17.00	21.00	21.00	25.00	29.00	33.00	36.00	35.00
10"	250A	-	17.00	21.00	24.00	24.00	33.00	33.00	39.00	46.00	54.00	62.00	70.00	62.00
12"	300A	-	24.00	32.00	36.00	39.00	53.00	47.00	64.00	77.00	90.00	100.00	115.00	90.00
14"	350A	31.00	39.00	46.00	46.00	53.00	71.00	61.00	90.00	110.00	126.00	142.00	160.00	-
16"	400A	40.00	50.00	60.00	60.00	79.00	103.00	79.00	130.00	157.00	184.00	213.00	235.00	-
18"	450A	51.00	64.00	88.00	76.00	113.00	148.00	100.00	185.00	223.00	262.00	300.00	332.00	-
20"	500A	63.00	94.00	124.00	94.00	147.00	200.00	124.00	250.00	305.00	353.00	408.00	452.00	-
22"	550A	77.00	114.00	151.00	114.00	-	260.00	151.00	330.00	400.00	464.00	530.00	591.00	-
24"	600A	91.00	136.00	202.00	136.00	245.00	341.00	180.00	424.00	526.00	614.00	691.00	775.00	-
26"	650A	-	-	-	-	-	-	-	-	-	-	-	-	-
28"	700A	-	-	-	-	-	-	-	-	-	-	-	-	-
30"	750A	-	-	-	-	-	-	-	-	-	-	-	-	-
32"	800A	-	-	-	-	-	-	-	-	-	-	-	-	-
34"	850A	-	-	-	-	-	-	-	-	-	-	-	-	-
36"	900A	-	-	-	-	-	-	-	-	-	-	-	-	-

Dimensional Tolerance According to ANSI B16.9 Standards

Unit : mm

For All Fittings				45/90° Elbows and Tees	Reducers	180° Elbows			Caps
Nominal Pipe Size	Outside Diameter at the Bevel	Inside Diameter at End	Thickness	Center to End	Length	Center to Center	Height	Alignment of Ends	Height
1/2" - 2.1/2"	+1.6 -0.8	±0.8	Not Less Than 87.5% of the Nominal Thickness	±2.0	±2.0	±6.0	±6.0	±1.0	±3.0
3" - 3.1/2"	±1.6	±1.6		±2.0	±2.0	±6.0	±6.0	±1.0	±3.0
4"	±1.6	±1.6		±2.0	±2.0	±6.0	±6.0	±1.0	±3.0
5" - 8"	+2.4 -1.6	±1.6		±2.0	±2.0	±6.0	±6.0	±1.0	±6.0
10" - 18"	+4.0 -3.2	±3.2		±2.0	±2.0	±10.0	±6.0	±2.0	±6.0
20" - 24"	+6.4 -4.8	±4.8		±2.0	±2.0	±10.0	±6.0	±2.0	±6.0
26" - 30"	+6.4 -4.8	±4.8		±3.0	±5.0	±10.0	±6.0	±2.0	±10.0
32" - 36"	+6.4 -4.8	±4.8		±5.0	±5.0	±10.0	±6.0	±2.0	±10.0

Angularity Tolerance According to ANSI B16.9 standards

Unit : mm

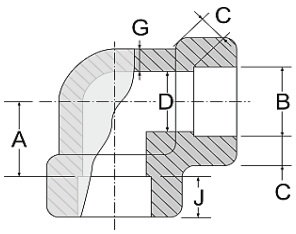
Nominal Pipe Size	Off Angle Q	Off Plane P
1/2" - 4"	±1	±2
5" - 8"	±2	±4
10" - 12"	±3	±5
14" - 16"	±3	±6
18" - 24"	±4	±10
26" - 30"	±5	±10
32" - 36"	±5	±13

PURA PIPING

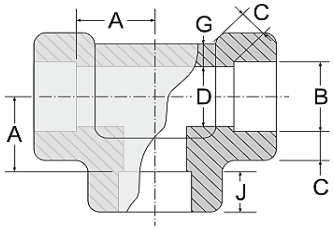
Forged Fittings



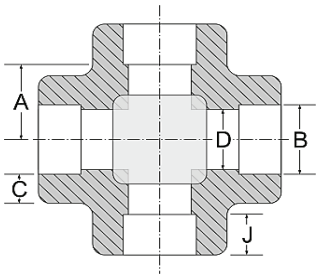
90° Elbow



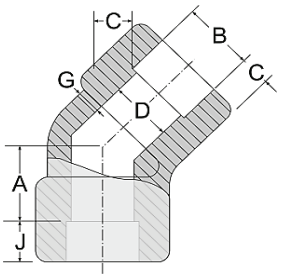
Tee



Cross



45° Elbow



90° ELBOW / 45° ELBOW / TEE / CROSS | Socket Weld | ASME B16.11

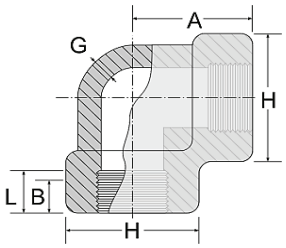
Unit : mm

Nominal Pipe Size		Socket Bore Dia.	Bore Diameter of Fittings		Socket Wall Thickness				Body Wall Thickness		Center to Bottom of Socket				Depth of Socket
					Ave.	Min.	Ave.	Min.	Min.	Min.	90° Elbows Tees , Crosses		45° Elbows		
			Class Designation												
			3000	6000	3000		6000		3000	6000	3000	6000	3000	6000	
INCH	DN	B	D		C				G		A				J
1/8"	6A	~ 10.8 11.2	~ 6.1 7.6	~ 3.2 4.8	3.18	3.18	3.96	3.43	2.41	3.15	11.0	11.0	8.0	8.0	9.5
1/4"	8A	~ 14.2 14.6	~ 8.5 10.0	~ 5.6 7.1	3.78	3.30	4.60	4.01	3.02	3.68	11.0	13.5	8.0	8.0	9.5
3/8"	10A	~ 17.6 18.0	~ 11.8 13.3	~ 8.4 9.9	4.01	3.50	5.03	4.37	3.20	4.01	13.5	15.5	8.0	11.0	9.5
1/2"	15A	~ 21.8 22.2	~ 15.0 16.6	~ 11.0 12.5	4.67	4.09	5.97	5.18	3.73	4.78	15.5	19.0	11.0	12.5	9.5
3/4"	20A	~ 27.2 27.6	~ 20.2 21.7	~ 14.8 16.3	4.90	4.27	6.96	6.04	3.91	5.56	19.0	22.5	13.0	14.0	12.5
1"	25A	~ 33.9 34.3	~ 25.9 27.4	~ 19.9 21.5	5.69	4.98	7.92	6.93	4.55	6.35	22.5	27.0	14.0	17.5	12.5
1.1/4"	32A	~ 42.7 43.1	~ 34.3 35.8	~ 28.7 30.2	6.07	5.28	7.92	6.93	4.85	6.35	27.0	32.0	17.5	20.5	12.5
1.1/2"	40A	~ 48.8 49.2	~ 40.1 41.6	~ 33.2 34.7	6.35	5.54	8.92	7.80	5.08	7.14	32.0	38.0	20.5	25.5	12.5
2"	50A	~ 61.2 61.7	~ 51.7 53.3	~ 42.1 43.6	6.93	6.04	10.92	9.50	5.54	8.74	38.0	41.0	25.5	28.5	16.0
2.1/2"	65A	~ 73.9 74.4	~ 61.2 64.2	-	8.76	7.67	-	-	7.01	-	41.0	-	28.5	-	16.0
3"	80A	~ 89.8 90.3	~ 76.4 79.4	-	9.52	8.30	-	-	7.62	-	57.0	-	32.0	-	16.0
4"	100A	~ 115.2 115.7	~ 100.7 103.8	-	10.69	9.35	-	-	8.56	-	66.5	-	41.0	-	16.0

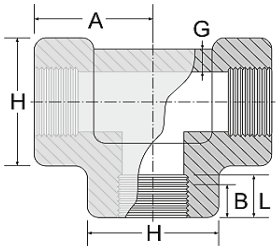
Note:

1. Average of Socket Wall Thickness around periphery shall be no less than listed values.The minimum values are permitted in localized areas.
2. Upper and Lower values for each size are the respective maximum and minimum dimensions.

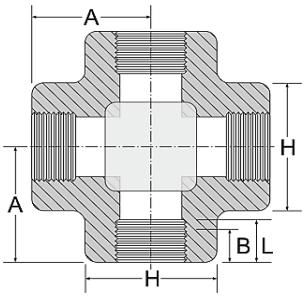
90° Elbow



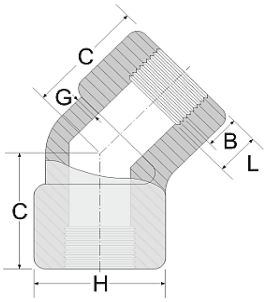
Tee



Cross



45° Elbow



90° ELBOW / 45° ELBOW / TEE / CROSS | Threaded | ASME B16.11

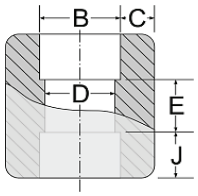
Unit : mm

Nominal Pipe Size		Center to End				Outside Diameter of Band		Minimum Wall Thickness		Length of Threaded	
		90° Elbows Tees, Crosses		45° Elbows							
		Class Designation									
		3000	6000	3000	6000	3000	6000	3000	6000	Min.	
INCH	DN	A				H		G		B	L
1/8"	6A	21	25	17	19	22	25	3.18	6.35	6.4	6.7
1/4"	8A	25	28	19	22	25	33	3.30	6.60	8.1	10.2
3/8"	10A	28	33	22	25	33	38	3.51	6.98	9.1	10.4
1/2"	15A	33	38	25	28	38	46	4.09	8.15	10.9	13.6
3/4"	20A	38	44	28	33	46	56	4.32	8.53	12.7	13.9
1"	25A	44	51	33	35	56	62	4.98	9.93	14.7	17.3
1.1/4"	32A	51	60	35	43	62	75	5.28	10.59	17.0	18.0
1.1/2"	40A	60	64	43	44	75	84	5.56	11.07	17.8	18.4
2"	50A	64	83	44	52	84	102	7.14	12.09	19.0	19.2
2.1/2"	65A	83	95	52	64	102	121	7.65	15.29	23.6	28.9
3"	80A	95	106	64	79	121	146	8.84	16.64	25.9	30.5
4"	100A	114	114	79	79	152	152	11.18	18.67	27.7	33.0

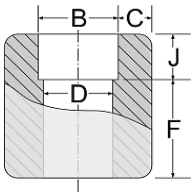
Note:

1.Dimension B is minimum length of perdect thread.The length of useful thread (B plus threads fully formed roots and flat crests) shall not be less than L (effective length of external thread) required by American National Standard for Pipe Threads (ANSI/ASME B1.20.1).

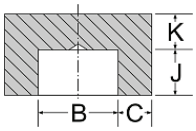
Coupling



Half Coupling



Cap



Coupling / Half Coupling / Cap | Socket Weld | ASME B16.11

Unit : mm

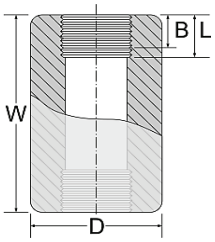
Nominal Pipe Size		Socket Bore Diameter	Socket Wall Thickness				Bore Diameter of Fittings		Laying Length		Tolerances			Depth of Socket	End Wall Thickness	
			Ave.	Min.	Ave.	Min.									Class Designation	
			Class Designation						Couplings	Half Couplings						
			3000		6000		3000	6000						Min.	3000	6000
INCH	DN	B	C				D		E	F	A	E	F	J	K	
1/8"	6A	~ 10.8 11.2	3.18	3.18	3.96	3.43	~ 6.1 7.6	~ 3.2 4.8	6.5	16.0	1.0	1.5	1.0	9.5	4.8	6.4
1/4"	8A	~ 14.2 14.6	3.78	3.30	4.60	4.01	~ 8.5 10.0	~ 5.6 7.1	6.5	16.0	1.0	1.5	1.0	9.5	4.8	6.4
3/8"	10A	~ 17.6 18.0	4.01	3.50	5.03	4.37	~ 11.8 13.3	~ 8.4 9.9	6.5	17.5	1.5	3.0	1.5	9.5	4.8	6.4
1/2"	15A	~ 21.8 22.2	4.67	4.09	5.97	5.18	~ 15.0 16.6	~ 11.0 12.5	9.5	22.5	1.5	3.0	1.5	9.5	6.4	7.9
3/4"	20A	~ 27.2 27.6	4.90	4.27	6.96	6.04	~ 20.2 21.7	~ 14.8 16.3	9.5	24.0	1.5	3.0	1.5	12.5	6.4	7.9
1"	25A	~ 33.9 34.3	5.69	4.98	7.92	6.93	~ 25.9 27.4	~ 19.9 21.5	12.5	28.5	2.0	4.0	2.0	12.5	9.6	11.2
1.1/4"	32A	~ 42.7 43.1	6.07	5.28	7.92	6.93	~ 34.3 35.8	~ 28.7 30.2	12.5	30.0	2.0	4.0	2.0	12.5	9.6	11.2
1.1/2"	40A	~ 48.8 49.2	6.35	5.54	8.92	7.80	~ 40.1 41.6	~ 33.2 34.7	12.5	32.0	2.0	4.0	2.0	12.5	11.2	12.7
2"	50A	~ 61.20 61.70	6.93	6.04	10.92	9.50	~ 51.7 53.3	~ 42.1 43.6	19.0	41.0	2.0	4.0	2.0	16.0	12.7	15.7
2.1/2"	65A	~ 73.9 74.4	8.76	7.67	-	-	~ 61.2 64.2	~	19.0	43.0	2.5	5.0	2.5	16.0	15.7	19.0
3"	80A	~ 89.8 90.3	9.52	8.30	-	-	~ 76.4 79.4	~	19.0	44.5	2.5	5.0	2.5	16.0	19.0	22.4
4"	100A	~ 115.2 115.7	10.69	9.35	-	-	~ 100.7 103.8	~	19.0	48.0	2.5	5.0	2.5	19.0	22.4	28.4

Note:

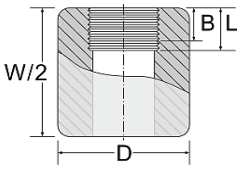
1.Average of Socket Wall Thickness around periphery shall be no less than listed values.The minimum values are permitted in localized areas.

2.Upper and lower values for each size are the respective maximum and minimum dimensions.

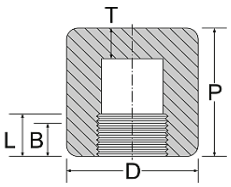
Coupling



Half Coupling



Cap



Coupling / Half Coupling / Cap | Threaded | ASME B16.11

Unit : mm

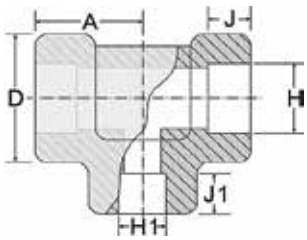
Nominal Pipe Size		End to End				Outside Diameter		End Wall Thickness		Length of Threaded	
		Class Designation									
		3000	6000	3000	6000	3000	6000	3000	6000		
		Couplings		Caps				Min.			
INCH	DN	W		P		D		T		B	L
1/8"	6A	32	32	19	-	16	22	4.8	-	6.4	6.7
1/4"	8A	35	35	25	27	19	25	4.8	6.4	8.1	10.2
3/8"	10A	38	38	25	27	22	32	4.8	6.4	9.1	10.4
1/2"	15A	48	48	32	33	28	38	6.4	7.9	10.9	13.6
3/4"	20A	51	51	37	38	35	44	6.4	7.9	12.7	13.9
1"	25A	60	60	41	43	44	57	9.7	11.2	14.7	17.3
1.1/4"	32A	67	67	44	46	57	64	9.7	11.2	17.0	18.0
1.1/2"	40A	79	79	44	48	64	76	11.2	12.7	17.8	18.4
2"	50A	86	86	48	51	76	92	12.7	15.7	19.0	19.2
2.1/2"	65A	92	92	60	64	92	108	15.7	19.0	23.6	28.9
3"	80A	108	108	65	68	108	127	19.0	22.4	25.9	30.5
4"	100A	121	121	68	75	140	159	22.4	28.4	27.7	33.0

Note:

1.Dimension B is minimum length of perdect thread.The length of useful thread (B plus threads fully formed roots and flat crests) shall not be less than L (effective length of external thread) required by American National Standard for Pipe Threads (ANSI/ASME B1.20.1).

2.Class 2000 and NPS 1/8 class 6000 coulpings,half couplings and caps are not included in this standard.

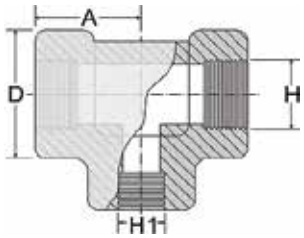
Reducing Tee



Reducing Tee | Socket Weld | ASME B16.11

Nominal Pipe Size		Internal Diameter				Depth of Socket		Center to End		Outside Dia. of Band	
								Class Designation			
		Max.	Min.	Max.	Min.			3000	6000	3000	6000
INCH	DN	H		H1		J	J1	A		D	
3/8" x 1/4"	10A x 8A	18.0	17.6	14.6	14.2	9.5	9.5	28	33	26	28
1/2" x 1/8"	15A x 6A	22.2	21.8	11.2	10.8	9.5	9.5	33	38	32	34
1/2" x 1/4"	15A x 8A	22.2	21.8	14.6	14.2	9.5	9.5	33	38	32	34
1/2" x 3/8"	15A x 10A	22.2	21.8	18.0	17.6	9.5	9.5	33	38	32	34
3/4" x 1/4"	20A x 8A	27.6	27.2	14.6	14.2	12.5	9.5	38	44	38	42
3/4" x 3/8"	20A x 10A	27.6	27.2	18.0	17.6	12.5	9.5	38	44	38	42
3/4" x 1/2"	20A x 15A	27.6	27.2	22.2	21.8	12.5	9.5	38	44	38	42
1" x 3/8"	25A x 10A	34.3	33.9	18.0	17.6	12.5	9.5	44	51	46	50
1" x 1/2"	25A x 15A	34.3	33.9	22.2	21.8	12.5	9.5	44	51	46	50
1" x 3/4"	25A x 20A	34.3	33.9	27.6	27.2	12.5	12.5	44	51	46	50
1.1/4" x 1/2"	32A x 15A	43.1	42.7	22.2	21.8	12.5	9.5	51	60	56	59
1.1/4" x 3/4"	32A x 20A	43.1	42.7	27.6	27.2	12.5	12.5	51	60	56	59
1.1/4" x 1"	32A x 25A	43.1	42.7	34.3	33.9	12.5	12.5	51	60	56	59
1.1/2" x 1/2"	40A x 15A	49.2	48.8	22.2	21.8	12.5	9.5	60	64	62	67
1.1/2" x 3/4"	40A x 20A	49.2	48.8	27.6	27.2	12.5	12.5	60	64	62	67
1.1/2" x 1"	40A x 25A	49.2	48.8	34.3	33.9	12.5	12.5	60	64	62	67
1.1/2" x 1.1/4"	40A x 32A	49.2	48.8	43.1	42.7	12.5	12.5	60	64	62	67
2" x 1/2"	50A x 15A	61.7	61.2	22.2	21.8	16.0	9.5	64	83	76	84
2" x 3/4"	50A x 20A	61.7	61.2	27.6	27.2	16.0	12.5	64	83	76	84
2" x 1"	50A x 25A	61.7	61.2	34.3	33.9	16.0	12.5	64	83	76	84
2" x 1.1/4"	50A x 32A	61.7	61.2	43.1	42.7	16.0	12.5	64	83	76	84
2" x 1.1/2"	50A x 40A	61.7	61.2	49.2	48.8	16.0	12.5	64	83	76	84
3" x 1.1/2"	80A x 40A	90.3	89.8	49.2	48.8	16.0	12.5	95	106	109	-
3" x 2"	80A x 50A	90.3	89.8	61.7	61.2	16.0	16.0	95	106	109	-
3" x 2.1/2"	80A x 65A	90.3	89.8	74.4	73.9	16.0	16.0	95	106	109	-

Reducing Tee

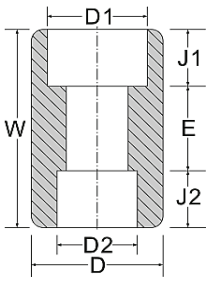


Reducing Tee | Threaded | ASME B16.11

Unit : mm

Nominal Pipe Size		Internal Diameter		Center to End		Outside Diameter of Band	
				Class Designation			
				3000	6000	3000	6000
INCH	DN	H	H1	A		D	
3/8" x 1/4"	10A x 8A	15	11	28	33	26	28
1/2" x 1/8"	15A x 6A	18	8	33	38	32	34
1/2" x 1/4"	15A x 8A	18	11	33	38	32	34
1/2" x 3/8"	15A x 10A	18	15	33	38	32	34
3/4" x 1/4"	20A x 8A	23	11	38	44	38	42
3/4" x 3/8"	20A x 10A	23	15	38	44	38	42
3/4" x 1/2"	20A x 15A	23	18	38	44	38	42
1" x 3/8"	25A x 10A	29	15	44	51	46	50
1" x 1/2"	25A x 15A	29	18	44	51	46	50
1" x 3/4"	25A x 20A	29	23	44	51	46	50
1.1/4" x 1/2"	32A x 15A	38	18	51	60	56	59
1.1/4" x 3/4"	32A x 20A	38	23	51	60	56	59
1.1/4" x 1"	32A x 25A	38	29	51	60	56	59
1.1/2" x 1/2"	40A x 15A	44	18	60	64	62	67
1.1/2" x 3/4"	40A x 20A	44	23	60	64	62	67
1.1/2" x 1"	40A x 25A	44	29	60	64	62	67
1.1/2" x 1.1/4"	40A x 32A	44	38	60	64	62	67
2" x 1/2"	50A x 15A	55	18	64	83	76	84
2" x 3/4"	50A x 20A	55	23	64	83	76	84
2" x 1"	50A x 25A	55	29	64	83	76	84
2" x 1.1/4"	50A x 32A	55	38	64	83	76	84
2" x 1.1/2"	50A x 40A	55	44	64	83	76	84
3" x 1.1/2"	80A x 40A	83	44	95	106	109	-
3" x 2"	80A x 50A	83	55	95	106	109	-
3" x 2.1/2"	80A x 65A	83	67	95	106	109	-

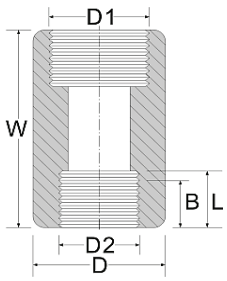
Reducing Coupling



Reducing Coupling | Socket Weld | ASME B16.11

Nominal Pipe Size		Internal Diameter				Depth of Socket		Laying Length	End to End Class Designation		Outside Diameter Class Designation	
		Max.	Min.	Max.	Min.				3000	6000	3000	6000
INCH	DN	D1		D2		J1	J2	E	W		D	
1/4" x 1/8"	8A x 6A	14.6	14.2	11.2	10.8	9.5	9.5	6.5	25.5	25.5	19	25
3/8" x 1/8"	10A x 6A	18.0	17.6	11.2	10.8	9.5	9.5	6.5	25.5	25.5	22	32
3/8" x 1/4"	10A x 8A	18.0	17.6	14.6	14.2	9.5	9.5	6.5	25.5	25.5	22	32
1/2" x 1/8"	15A x 6A	22.2	21.8	11.2	10.8	9.5	9.5	9.5	28.5	28.5	28	38
1/2" x 1/4"	15A x 8A	22.2	21.8	14.6	14.2	9.5	9.5	9.5	28.5	28.5	28	38
1/2" x 3/8"	15A x 10A	22.2	21.8	18.0	17.6	9.5	9.5	9.5	28.5	28.5	28	38
3/4" x 1/4"	20A x 8A	27.6	27.2	14.6	14.2	12.5	9.5	9.5	31.5	31.5	35	44
3/4" x 3/8"	20A x 10A	27.6	27.2	18.0	17.6	12.5	9.5	9.5	31.5	31.5	35	44
3/4" x 1/2"	20A x 15A	27.6	27.2	22.2	21.8	12.5	9.5	9.5	31.5	31.5	35	44
1" x 1/4"	25A x 8A	34.3	33.9	14.6	14.2	12.5	9.5	12.5	34.5	34.5	44	57
1" x 3/8"	25A x 10A	34.3	33.9	18.0	17.6	12.5	9.5	12.5	34.5	34.5	44	57
1" x 1/2"	25A x 15A	34.3	33.9	22.2	21.8	12.5	9.5	12.5	34.5	34.5	44	57
1" x 3/4"	25A x 20A	34.3	33.9	27.6	27.2	12.5	12.5	12.5	37.5	37.5	44	57
1.1/4" x 3/8"	32A x 10A	43.1	42.7	18.0	17.6	12.5	9.5	12.5	34.5	34.5	57	64
1.1/4" x 1/2"	32A x 15A	43.1	42.7	22.2	21.8	12.5	9.5	12.5	34.5	34.5	57	64
1.1/4" x 3/4"	32A x 20A	43.1	42.7	27.6	27.2	12.5	12.5	12.5	37.5	37.5	57	64
1.1/4" x 1"	32A x 25A	43.1	42.7	34.3	33.9	12.5	12.5	12.5	37.5	37.5	57	64
1.1/2" x 1/2"	40A x 15A	49.2	48.8	22.2	21.8	12.5	9.5	12.5	34.5	34.5	64	76
1.1/2" x 3/4"	40A x 20A	49.2	48.8	27.6	27.2	12.5	12.5	12.5	37.5	37.5	64	76
1.1/2" x 1"	40A x 25A	49.2	48.8	34.3	33.9	12.5	12.5	12.5	37.5	37.5	64	76
1.1/2" x 1.1/4"	40A x 32A	49.2	48.8	43.1	42.7	12.5	12.5	12.5	37.5	37.5	64	76
2" x 1/2"	50A x 15A	61.7	61.2	22.2	21.8	16.0	9.5	19.0	44.5	44.5	76	92
2" x 3/4"	50A x 20A	61.7	61.2	27.6	27.2	16.0	12.5	19.0	47.5	47.5	76	92
2" x 1"	50A x 25A	61.7	61.2	34.3	33.9	16.0	12.5	19.0	47.5	47.5	76	92
2" x 1.1/4"	50A x 32A	61.7	61.2	43.1	42.7	16.0	12.5	19.0	47.5	47.5	76	92
2" x 1.1/2"	50A x 40A	61.7	61.2	49.2	48.8	16.0	12.5	19.0	47.5	47.5	76	92
3" x 1"	80A x 25A	90.3	89.8	34.3	33.9	16.0	12.5	19.0	47.5	47.5	108	127
3" x 1.1/2"	80A x 40A	90.3	89.8	49.2	48.8	16.0	12.5	19.0	47.5	47.5	108	127
3" x 2"	80A x 50A	90.3	89.8	61.7	61.2	16.0	16.0	19.0	51.0	51.0	108	127
4" x 1.1/2"	100A x 40A	115.7	115.2	49.2	48.8	19.0	12.5	19.0	50.5	50.5	140	159

Reducing Coupling

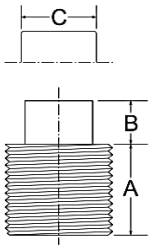


Reducing Coupling | Threaded | ASME B16.11

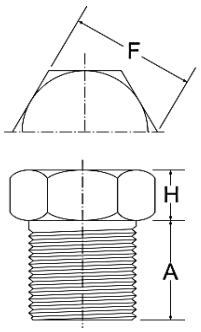
Unit : mm

Nominal Pipe Size		Internal Diameter		End to End		Outside Diameter		Length of Threaded	
				Class Designation					
		Min.		3000	6000	3000	6000		
INCH	DN	D1	D2	W		D		B	L
1/4" x 1/8"	8A x 6A	11	8	35	35	19	25	6.4	6.7
3/8" x 1/8"	10A x 6A	15	8	38	38	22	32	6.4	6.7
3/8" x 1/4"	10A x 8A	15	11	38	38	22	32	8.1	10.2
1/2" x 1/8"	15A x 6A	18	8	48	48	28	38	6.4	6.7
1/2" x 1/4"	15A x 8A	18	11	48	48	28	38	8.1	10.2
1/2" x 3/8"	15A x 10A	18	15	48	48	28	38	9.1	10.4
3/4" x 1/4"	20A x 8A	23	11	51	51	35	44	8.1	10.2
3/4" x 3/8"	20A x 10A	23	15	51	51	35	44	9.1	10.4
3/4" x 1/2"	20A x 15A	23	18	51	51	35	44	10.9	13.6
1" x 1/4"	25A x 8A	29	11	60	60	44	57	8.1	10.2
1" x 3/8"	25A x 10A	29	15	60	60	44	57	9.1	10.4
1" x 1/2"	25A x 15A	29	18	60	60	44	57	10.9	13.6
1" x 3/4"	25A x 20A	29	23	60	60	44	57	12.7	13.9
1.1/4" x 3/8"	32A x 10A	38	15	67	67	57	64	9.1	10.4
1.1/4" x 1/2"	32A x 15A	38	18	67	67	57	64	10.9	13.6
1.1/4" x 3/4"	32A x 20A	38	23	67	67	57	64	12.7	13.9
1.1/4" x 1"	32A x 25A	38	29	67	67	57	64	14.7	17.3
1.1/2" x 1/2"	40A x 15A	44	18	79	79	64	76	10.9	13.6
1.1/2" x 3/4"	40A x 20A	44	23	79	79	64	76	12.7	13.9
1.1/2" x 1"	40A x 25A	44	29	79	79	64	76	14.7	17.3
1.1/2" x 1.1/4"	40A x 32A	44	38	79	79	64	76	17.0	18.0
2" x 1/2"	50A x 15A	55	18	86	86	76	92	10.9	13.6
2" x 3/4"	50A x 20A	55	23	86	86	76	92	12.7	13.9
2" x 1"	50A x 25A	55	29	86	86	76	92	14.7	17.3
2" x 1.1/4"	50A x 32A	55	38	86	86	76	92	17.0	18.0
2" x 1.1/2"	50A x 40A	55	44	86	86	76	92	17.8	18.4
3" x 1"	80A x 25A	83	29	108	108	108	127	14.7	17.3
3" x 1.1/2"	80A x 40A	83	44	108	108	108	127	17.8	18.4
3" x 2"	80A x 50A	83	55	108	108	108	127	19.0	19.2
4" x 1.1/2"	100A x 40A	108	44	121	121	140	159	17.8	18.4

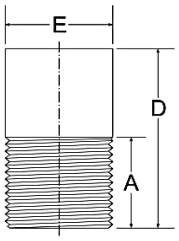
Square Head Plug



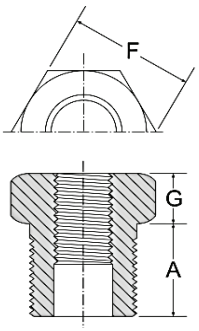
Hex Head Plug



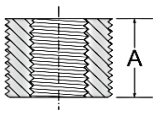
Round Head Plug



Hex Head Bushing



Flush Bushing



Plug / Bushing | ASME B16.11

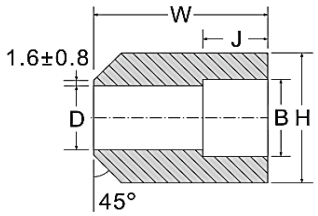
Unit : mm

Nominal Pipe Size		Length	Plug Square Head		Plugs Round Head		Hex Plugs and Bushings		
			Height of Square	Width Flats	Nominal Dia. of Head	Length	Nominal Width Flats	Hex Height	
			Min.			Min.		Bushing	Plug
								Min.	
INCH	DN	A	B	C	E	D	Flats	G	H
1/8"	6A	10	6	7	10	35	11	-	6.0
1/4"	8A	11	6	10	14	41	16	3.0	6.0
3/8"	10A	13	8	11	18	41	18	4.0	8.0
1/2"	15A	14	10	14	21	44	22	5.0	8.0
3/4"	20A	16	11	16	27	44	27	6.0	10.0
1"	25A	19	13	21	33	51	36	6.0	10.0
1.1/4"	32A	21	14	24	43	51	46	7.0	14.0
1.1/2"	40A	21	16	28	48	51	50	8.0	16.0
2"	50A	22	18	32	60	64	65	9.0	18.0
2.1/2"	65A	27	19	36	73	70	75	10.0	19.0
3"	80A	28	21	41	89	70	90	10.0	21.0
4"	100A	32	25	65	114	76	115	13.0	25.0

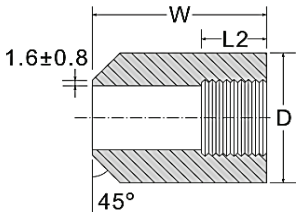
Note:

1. Hex head bushings of one soze reduction should not be used in services where they might be subjected to harmful loads and forces other than internal pressures.

Boss (Socket Weld)



Boss (Threaded)



Boss | Socket Weld | ASME B16.11

Unit : mm

Nominal Pipe Size		Diameter of Socket		Diameter of Bore		Depth of Socket		End to End		Outside Diameter		Weight
		Class Designation										
		3000	6000	3000	6000	3000	6000	3000	6000	3000	6000	
INCH	DN	B		D		J		W		H		KG
1/4"	8A	14.3	-	9.3	-	9.9	-	39.9	-	22.3	-	0.09
3/8"	10A	17.7	-	12.6	-	10.9	-	50.0	-	26.5	-	0.14
1/2"	15A	21.9	21.9	15.8	11.8	13.0	14.0	50.0	50.0	34.2	43.3	0.24
3/4"	20A	27.3	27.3	21.0	15.6	14.0	16.0	50.0	50.0	39.5	49.1	0.28
1"	25A	34.0	34.0	26.7	20.7	16.0	18.0	50.0	50.0	46.3	56.0	0.41
1.1/4"	32A	42.8	42.8	35.1	29.5	18.0	19.1	50.0	50.0	55.2	65.2	0.44
1.1/2"	40A	48.9	48.9	40.9	34.0	19.1	22.0	50.0	50.0	65.1	80.1	0.63
2"	50A	61.4	61.4	52.5	42.9	22.1	25.9	59.9	59.9	80.2	95.1	1.09

Note:

1.Socket dimensions in accordance with ASME B16.11.

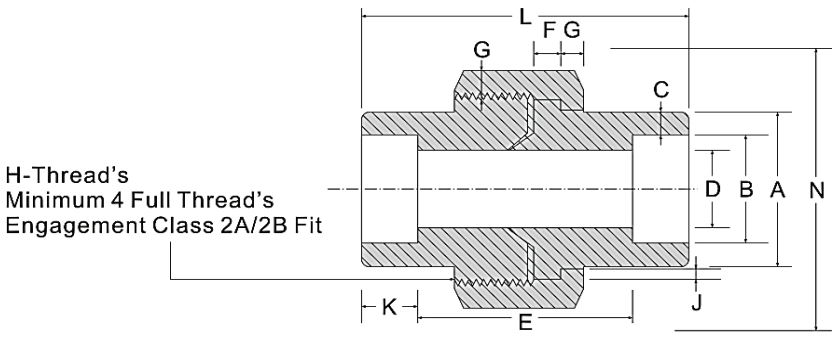
Boss | Threaded | ASME B16.11

Unit : mm

Nominal Pipe Size		Bore Diameter		End to End		Length of Threaded		Weight
		Class Designation						
		3000	6000	3000	6000	3000	6000	
INCH	DN	D		W		L2		KG
1/4"	8A	22.1	25.9	39.9	39.9	10.0	10.0	0.09
3/8"	10A	25.9	36.0	50.0	50.0	10.5	10.5	0.14
1/2"	15A	34.0	43.9	50.0	50.0	13.5	13.5	0.24
3/4"	20A	39.1	50.0	50.0	50.0	14.0	14.0	0.28
1"	25A	48.0	59.9	50.0	50.0	17.5	17.5	0.41
1.1/4"	32A	59.9	65.0	50.0	50.0	18.0	18.0	0.44
1.1/2"	40A	65.0	80.0	50.0	50.0	18.5	18.5	0.63
2"	50A	80.0	95.0	59.9	59.9	19.0	19.0	1.09

Note:

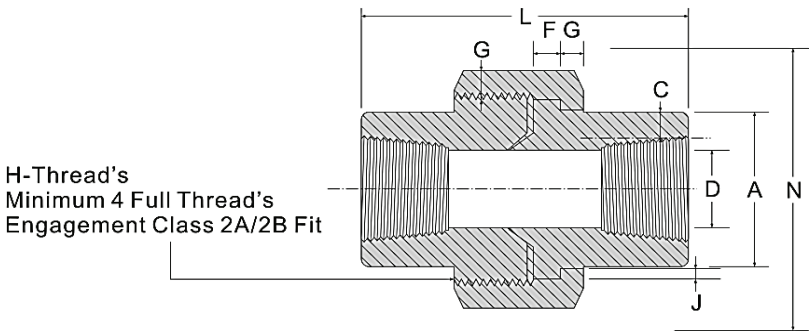
1. Thread in accordance with GB/T12716, GB7306, ASME B1.20.1.



Union | Socket | 3000# | MSS SP 83

Unit : mm

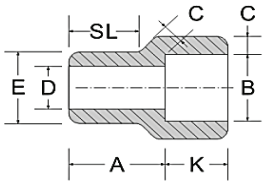
Nominal Pipe Size		Pipe End	Socket Bore	Socket Wall	Water Way Bore	Laying Length	Male Flange	Nut	Thrds Per Inch	Bearing	Depth of Socket	Length Assem.	Clear Assem. Nut	Weight
		Min.	Dia.	Min.			Min.		Max.	Min.		Nom.		
INCH	DN	A	B	C	D	E	F	G	H	J	K	L	N	KG
1/8"	6A	21.8	~ 10.67 11.18	3.18	~ 6.07 7.59	~ 19.1 22.4	3.18	3.18	16	1.24	9.7	41.4	50.8	0.28
1/4"	8A	21.8	~ 14.10 14.61	3.3	~ 10.01 8.48	~ 22.4 19.1	3.18	3.18	16	1.24	9.7	41.4	50.8	0.28
3/8"	10A	25.9	~ 17.53 18.03	3.51	~ 11.76 13.28	~ 20.6 26.9	3.43	3.43	14	1.37	9.7	46.0	55.9	0.28
1/2"	15A	31.2	~ 21.73 22.23	4.09	~ 15.04 16.56	~ 20.6 26.9	3.68	3.68	14	1.50	9.7	49.0	58.4	0.31
3/4"	20A	37.1	~ 27.05 27.56	4.27	~ 20.17 21.69	~ 25.4 31.8	4.06	4.06	11	1.68	12.7	56.9	66.0	0.46
1"	25A	45.5	~ 33.78 34.29	4.98	~ 25.88 27.41	~ 26.2 34.3	4.57	4.45	11	1.85	12.7	62.0	78.7	0.67
1.1/4"	32A	54.9	~ 42.55 43.05	5.28	~ 34.29 35.81	~ 32.5 40.6	5.33	5.21	11	2.13	12.7	71.1	94.0	1.03
1.1/2"	40A	61.5	~ 48.64 49.15	5.54	~ 40.13 41.66	~ 34.0 42.2	5.84	5.59	10	2.31	12.7	76.5	111.8	1.51
2"	50A	75.2	~ 61.11 61.62	6.05	~ 51.74 53.26	~ 37.3 45.5	6.60	6.35	10	2.69	15.7	86.1	132.1	2.43
2.1/2"	65A	91.7	~ 73.81 74.45	7.67	~ 61.19 64.24	~ 52.1 61.7	7.49	7.11	8	3.07	15.7	102.4	149.9	3.48
3"	80A	109.2	~ 89.79 90.42	8.31	~ 76.40 79.49	~ 53.6 63.8	8.26	8.00	8	3.53	15.7	109.0	175.3	5.25



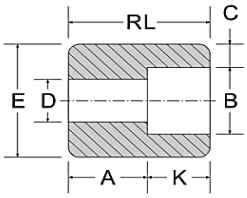
Union | Threaded | 3000# | MSS SP 83

Unit : mm

Nominal Pipe Size		Pipe End	Wall	Water Way Bore	Male Flange	Nut	Thrds. per Inch	Bearing	Length Assem.	Clear Assem. Nut	Weight
		Min.			Min.		Max.	Min.	Nom.		
INCH	DN	A	C	D	F	G	H	J	L	N	KG
1/8"	6A	14.7	2.41	~ 6.43 8.43	3.18	3.18	16	1.24	41.4	50.8	0.28
1/4"	8A	19.0	3.02	~ 9.45 11.13	3.18	3.18	16	1.24	41.4	50.8	0.28
3/8"	10A	22.9	3.20	~ 13.51 14.27	3.43	3.43	14	1.37	46.0	55.9	0.28
1/2"	15A	27.7	3.73	~ 17.07 17.86	3.68	3.68	14	1.50	49.0	58.4	0.31
3/4"	20A	33.5	3.91	~ 21.39 23.01	4.06	4.06	11	1.68	56.9	66.0	0.46
1"	25A	41.4	4.55	~ 27.74 28.98	4.57	4.45	11	1.85	62.0	78.7	0.67
1.1/4"	32A	50.5	4.85	~ 35.36 37.69	5.33	5.21	11	2.13	71.1	94.0	1.03
1.1/2"	40A	57.2	5.08	~ 41.20 43.54	5.84	5.59	10	2.31	76.5	111.8	1.51
2"	50A	70.1	5.54	~ 52.12 55.58	6.60	6.35	10	2.69	86.1	132.1	2.43
2.1/2"	65A	85.3	7.01	~ 64.31 66.27	7.49	7.11	8	3.07	102.4	149.9	3.48
3"	80A	102.4	7.62	~ 77.27 88.25	8.26	8.00	8	3.53	109.0	175.3	5.25



Design 1



Design 2

Reducing Insert | Socket Weld | MSS SP 79

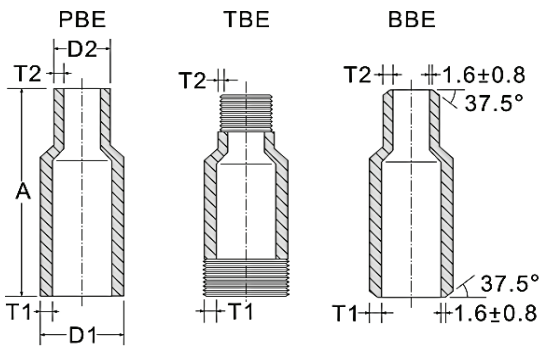
Nominal Pipe Size		Design Class Designation		Socket Dia.	Socket Depth	Shank Dia.	Laying Length		Bore		Wall Min.		Length		Length Min.	
		3000	6000		Min.		3000	6000	3000	6000	3000	6000	3000	6000	3000	6000
INCH	DN			B	K	D	A		D		C		SL		RL	
3/8" x 1/4"	10A x 8A	1	1	14.35	10	17.15	19	21	9.0	6.5	3.78	4.60	14	16	-	-
1/2" x 3/8"	15A x 10A	1	1	17.78	10	21.34	21	23	12.5	9.0	4.01	5.03	16	16	-	-
1/2" x 1/4"	15A x 8A	1	1	14.35	10	21.34	21	21	9.0	6.5	3.78	4.60	16	16	-	-
3/4" x 1/2"	20A x 15A	1	1	21.97	10	26.67	22	25	16.0	11.5	4.67	5.97	17	19	-	-
3/4" x 3/8"	20A x 10A	2	1	17.78	10	26.67	16	22	12.5	9.0	4.01	5.03	-	19	27.00	-
3/4" x 1/4"	20A x 8A	2	2	14.35	10	26.67	18	22	9.0	6.5	3.78	4.60	-	-	27.00	32
1" x 3/4"	25A x 20A	1	1	27.31	13	33.4	24	28	21.0	15.5	4.90	6.96	19	21	-	-
1" x 1/2"	25A x 15A	2	1	21.97	10	33.4	16	28	16.0	11.5	4.67	5.97	-	21	28.00	-
1" x 3/8"	25A x 10A	2	2	17.78	10	33.4	18	22	12.5	9.0	4.01	5.03	-	-	28.00	33
1" x 1/4"	25A x 8A	2	2	14.35	10	33.4	19	24	9.0	6.5	3.78	4.60	-	-	28.00	33
1.1/4" x 1"	32A x 25A	1	1	34.04	13	42.16	25	30	26.5	20.5	5.69	7.92	21	22	-	-
1.1/4" x 3/4"	32A x 20A	2	2	27.31	13	42.16	18	21	21.0	15.5	4.90	6.96	-	-	32.00	35
1.1/4" x 1/2"	32A x 15A	2	2	21.97	10	42.16	19	22	16.0	11.5	4.67	5.97	-	-	32.00	35
1.1/4" x 3/8"	32A x 10A	2	2	17.78	10	42.16	21	24	12.5	9.0	4.01	5.03	-	-	32.00	35
1.1/4" x 1/4"	32A x 8A	2	2	14.35	10	42.16	22	25	9.0	6.5	3.78	4.60	-	-	32.00	35
1.1/2" x 1.1/4'	40A x 32A	1	1	42.80	13	48.26	28	35	35.0	29.5	6.07	7.92	22	25	-	-
1.1/2" x 1"	40A x 25A	2	1	34.04	13	48.26	18	29	26.5	20.5	5.69	7.92	-	25	33.00	-
1.1/2" x 3/4"	40A x 20A	2	2	27.31	13	48.26	19	25	21.0	15.5	4.90	6.96	-	-	33.00	40
1.1/2" x 1/2"	40A x 15A	2	2	21.97	10	48.26	21	27	16.0	11.5	4.67	5.97	-	-	33.00	40
1.1/2" x 3/8"	40A x 10A	2	2	17.78	10	48.26	22	28	12.5	9.0	4.01	5.03	-	-	33.00	40
2" x 1.1/2"	50A x 40A	1	1	48.90	13	60.32	32	39	41.0	34.0	6.35	8.90	25	28	-	-
2" x 1.1/4"	50A x 32A	2	2	42.80	13	60.32	21	24	35.0	29.5	6.07	7.92	-	-	38.00	41
2" x 1"	50A x 25A	2	2	34.04	13	60.32	22	25	26.5	21.0	5.69	7.92	-	-	38.00	41
2" x 3/4"	50A x 20A	2	2	27.31	13	60.32	24	27	21.0	15.5	4.90	6.96	-	-	38.00	41
2" x 1/2"	50A x 15A	2	2	21.97	10	60.32	25	28	16.0	11.5	4.67	5.97	-	-	38.00	41
2.1/2" x 2"	65A x 50A	1	1	61.37	16	73.02	46	43	52.5	43.0	6.93	10.92	38	32	-	-
2.1/2" x 1.1/2'	65A x 40A	2	2	48.90	13	73.02	35	-	41.0	-	6.35	-	-	-	54.00	-
2.1/2" x 1.1/4'	65A x 32A	2	2	42.80	13	73.02	37	-	35.0	-	6.07	-	-	-	54.00	-
2.1/2" x 1"	65A x 25A	2	2	34.04	13	73.02	38	-	26.5	-	5.69	-	-	-	54.00	-
2.1/2" x 3/4"	65A x 20A	2	2	27.31	13	73.02	40	-	21.0	-	4.90	-	-	-	54.00	-
3" x 2.1/2"	80A x 65A	1	-	74.07	16	88.9	38	-	62.5	-	8.76	-	32	-	-	-
3" x 2"	80A x 50A	2	-	61.37	16	88.9	25	-	52.5	-	6.93	-	-	-	48.00	-
3" x 1.1/2"	80A x 40A	2	-	48.90	13	88.9	29	-	41.0	-	6.35	-	-	-	48.00	-
3" x 1.1/4"	80A x 32A	2	-	42.80	13	88.9	30	-	35.0	-	6.07	-	-	-	48.00	-
3" x 1"	80A x 25A	2	-	34.04	13	88.9	32	-	26.5	-	5.69	-	-	-	48.00	-
4" x 3"	100A x 80A	2	-	90.04	16	114.3	33	-	78.0	-	9.50	-	-	-	60.00	-
4" x 2.1/2"	100A x 65A	2	-	74.07	16	114.3	38	-	62.5	-	8.76	-	-	-	60.00	-
4" x 2"	100A x 50A	2	-	61.37	16	114.3	38	-	52.5	-	6.93	-	-	-	60.00	-
4" x 1.1/2"	100A x 40A	2	-	48.90	13	114.3	42	-	41.0	-	6.35	-	-	-	60.00	-
4" x 1.1/4"	100A x 32A	2	-	42.80	13	114.3	43	-	35.0	-	6.07	-	-	-	60.00	-

Note: At the option of the manufacturer Design 2 Reducer may be furnished in Design 1 configuration.

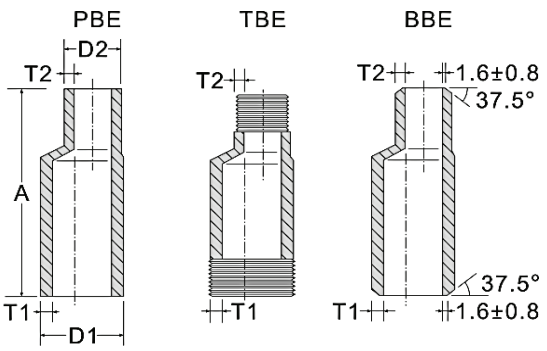
Tolerance

Laying Length	A	3/8"	- 3/4"	+1.5mm/-0.0mm
		1"	- 2"	+2.0mm/-0.0mm
		2.1/2"	- 4"	+2.5mm/-0.0mm
Socket Diam.	B	1/4"	- 2"	±0.25mm
		2.1/2"	- 3"	+0.4mm/-0.25mm
Bore	D	1/4"	- 2"	±0.8mm
		2.1/2"	- 3"	±1.5mm
Shank Diam.	SD	3/8"	- 1.1/2"	±0.25mm
		2"	- 3"	±0.5mm
		4"	-	±0.75mm
Shank Length	SL	3/8"	- 3/4"	+0.0mm/-1.5mm
		1"	- 2"	+0.0mm/-2.0mm
		2.1/2"	- 4"	+0.0mm/-2.5mm

Concentric



Eccentric

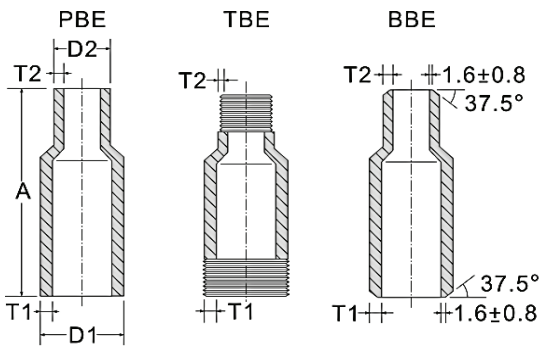


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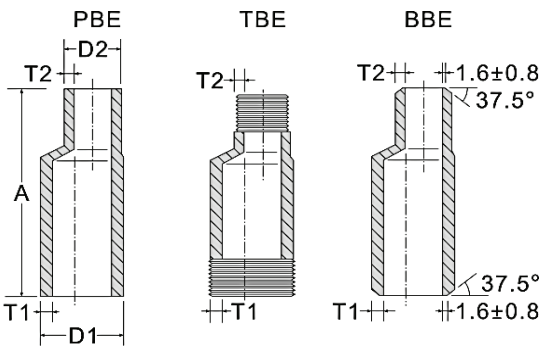
Unit : mm

Nominal Pipe Size		Outside Diameter		End to End	Wall Thickness							
		Large End	Small End		T1				T2			
INCH	DN	D1	D2	A	S40/STD	S80/XS	S160	XXS	S40/STD	S80/XS	S160	XXS
1/4" x 1/8"	8A x 6A	13.7	10.3	57	2.2	3.0	3.7	6.1	1.7	2.4	3.2	4.8
3/8" x 1/8"	10A x 6A	17.1	10.3	64	2.3	3.2	4.0	6.4	1.7	2.4	3.2	4.8
3/8" x 1/4"	10A x 8A	17.1	13.7	64	2.3	3.2	4.0	6.4	2.2	3.0	3.7	6.1
1/2" x 1/8"	15A x 6A	21.3	10.3	70	2.8	3.7	4.7	7.5	1.7	2.4	3.2	4.8
1/2" x 1/4"	15A x 8A	21.3	13.7	70	2.8	3.7	4.7	7.5	2.2	3.0	3.7	6.1
1/2" x 3/8"	15A x 10A	21.3	17.1	70	2.8	3.7	4.7	7.5	2.3	3.2	4.0	6.4
3/4" x 1/8"	20A x 6A	26.7	10.3	76	2.9	3.9	5.5	7.8	1.7	2.4	3.2	4.8
3/4" x 1/4"	20A x 8A	26.7	13.7	76	2.9	3.9	5.5	7.8	2.2	3.0	3.7	6.1
3/4" x 3/8"	20A x 10A	26.7	17.1	76	2.9	3.9	5.5	7.8	2.3	3.2	4.0	6.4
3/4" x 1/2"	20A x 15A	26.7	21.3	76	2.9	3.9	5.5	7.8	2.8	3.7	4.7	7.5
1" x 1/8"	25A x 6A	33.4	10.3	89	3.4	4.5	6.4	9.1	1.7	2.4	3.2	4.8
1" x 1/4"	25A x 8A	33.4	13.7	89	3.4	4.5	6.4	9.1	2.2	3.0	3.7	6.1
1" x 3/8"	25A x 10A	33.4	17.1	89	3.4	4.5	6.4	9.1	2.3	3.2	4.0	6.4
1" x 1/2"	25A x 15A	33.4	21.3	89	3.4	4.5	6.4	9.1	2.8	3.7	4.7	7.5
1" x 3/4"	25A x 20A	33.4	26.7	89	3.4	4.5	6.4	9.1	2.9	3.9	5.5	7.8
1.1/4" x 1/8"	32A x 6A	42.2	10.3	102	3.6	4.9	6.4	9.7	1.7	2.4	3.2	4.8
1.1/4" x 1/4"	32A x 8A	42.2	13.7	102	3.6	4.9	6.4	9.7	2.2	3.0	3.7	6.1
1.1/4" x 3/8"	32A x 10A	42.2	17.1	102	3.6	4.9	6.4	9.7	2.3	3.2	4.0	6.4
1.1/4" x 1/2"	32A x 15A	42.2	21.3	102	3.6	4.9	6.4	9.7	2.8	3.7	4.7	7.5
1.1/4" x 3/4"	32A x 20A	42.2	26.7	102	3.6	4.9	6.4	9.7	2.9	3.9	5.5	7.8
1.1/4" x 1"	32A x 25A	42.2	33.4	102	3.6	4.9	6.4	9.7	3.4	4.5	6.4	9.1
1.1/2" x 1/8"	40A x 6A	48.3	10.3	114	3.7	5.1	7.1	10.2	1.7	2.4	3.2	4.8
1.1/2" x 1/4"	40A x 8A	48.3	13.7	114	3.7	5.1	7.1	10.2	2.2	3.0	3.7	6.1
1.1/2" x 3/8"	40A x 10A	48.3	17.1	114	3.7	5.1	7.1	10.2	2.3	3.2	4.0	6.4
1.1/2" x 1/2"	40A x 15A	48.3	21.3	114	3.7	5.1	7.1	10.2	2.8	3.7	4.7	7.5
1.1/2" x 3/4"	40A x 20A	48.3	26.7	114	3.7	5.1	7.1	10.2	2.9	3.9	5.5	7.8
1.1/2" x 1"	40A x 25A	48.3	33.4	114	3.7	5.1	7.1	10.2	3.4	4.5	6.4	9.1
1.1/2" x 1.1/4"	40A x 32A	48.3	42.2	114	3.7	5.1	7.1	10.2	3.6	4.9	6.4	9.7
2" x 1/8"	50A x 6A	60.3	10.3	165	3.9	5.5	8.7	11.1	1.7	2.4	3.2	4.8
2" x 1/4"	50A x 8A	60.3	13.7	165	3.9	5.5	8.7	11.1	2.2	3.0	3.7	6.1
2" x 3/8"	50A x 10A	60.3	17.1	165	3.9	5.5	8.7	11.1	2.3	3.2	4.0	6.4
2" x 1/2"	50A x 15A	60.3	21.3	165	3.9	5.5	8.7	11.1	2.8	3.7	4.7	7.5
2" x 3/4"	50A x 20A	60.3	26.7	165	3.9	5.5	8.7	11.1	2.9	3.9	5.5	7.8
2" x 1"	50A x 25A	60.3	33.4	165	3.9	5.5	8.7	11.1	3.4	4.5	6.4	9.1
2" x 1.1/4"	50A x 32A	60.3	42.2	165	3.9	5.5	8.7	11.1	3.6	4.9	6.4	9.7
2" x 1.1/2"	50A x 40A	60.3	48.3	165	3.9	5.5	8.7	11.1	3.7	5.1	7.1	10.2
2.1/2" x 1/8"	65A x 6A	73.0	10.3	178	5.2	7.0	9.5	14.0	1.7	2.4	3.2	4.8
2.1/2" x 1/4"	65A x 8A	73.0	13.7	178	5.2	7.0	9.5	14.0	2.2	3.0	3.7	6.1
2.1/2" x 3/8"	65A x 10A	73.0	17.1	178	5.2	7.0	9.5	14.0	2.3	3.2	4.0	6.4

Concentric



Eccentric

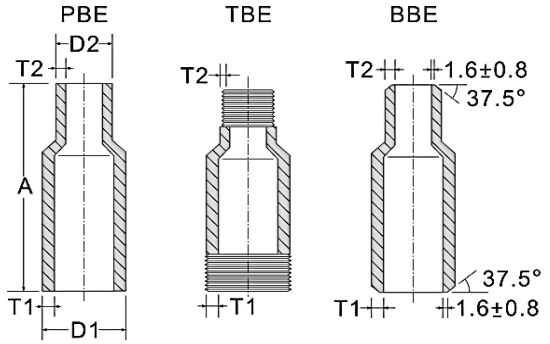


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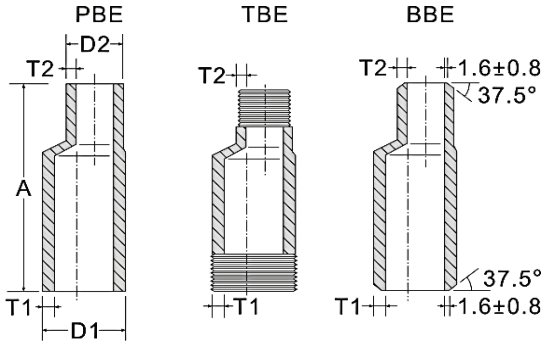
Unit : mm

Nominal Pipe Size		Outside Diameter		End to End	Wall Thickness							
		Large End	Small End		T1				T2			
INCH	DN	D1	D2	A	S40/STD	S80/XS	S160	XXS	S40/STD	S80/XS	S160	XXS
2.1/2" x 1/2"	65A x 15A	73.0	21.3	178	5.2	7.0	9.5	14.0	2.8	3.7	4.7	7.5
2.1/2" x 3/4"	65A x 20A	73.0	26.7	178	5.2	7.0	9.5	14.0	2.9	3.9	5.5	7.8
2.1/2" x 1"	65A x 25A	73.0	33.4	178	5.2	7.0	9.5	14.0	3.4	4.5	6.4	9.1
2.1/2" x 1.1/4"	65A x 32A	73.0	42.2	178	5.2	7.0	9.5	14.0	3.6	4.9	6.4	9.7
2.1/2" x 1.1/2"	65A x 40A	73.0	48.3	178	5.2	7.0	9.5	14.0	3.7	5.1	7.1	10.2
2.1/2" x 2"	65A x 50A	73.0	60.3	178	5.2	7.0	9.5	14.0	3.9	5.5	8.7	11.1
3" x 1/8"	80A x 6A	88.9	10.3	203	5.5	7.6	11.5	15.2	1.7	2.4	3.2	4.8
3" x 1/4"	80A x 8A	88.9	13.7	203	5.5	7.6	11.5	15.2	2.2	3.0	3.7	6.1
3" x 3/8"	80A x 10A	88.9	17.1	203	5.5	7.6	11.5	15.2	2.3	3.2	4.0	6.4
3" x 1/2"	80A x 15A	88.9	21.3	203	5.5	7.6	11.5	15.2	2.8	3.7	4.7	7.5
3" x 3/4"	80A x 20A	88.9	26.7	203	5.5	7.6	11.5	15.2	2.9	3.9	5.5	7.8
3" x 1"	80A x 25A	88.9	33.4	203	5.5	7.6	11.5	15.2	3.4	4.5	6.4	9.1
3" x 1.1/4"	80A x 32A	88.9	42.2	203	5.5	7.6	11.5	15.2	3.6	4.9	6.4	9.7
3" x 1.1/2"	80A x 40A	88.9	48.3	203	5.5	7.6	11.5	15.2	3.7	5.1	7.1	10.2
3" x 2"	80A x 50A	88.9	60.3	203	5.5	7.6	11.5	15.2	3.9	5.5	8.7	11.1
3" x 2.1/2"	80A x 65A	88.9	73.0	203	5.5	7.6	11.5	15.2	5.2	7.0	9.5	14.0
3.1/2" x 1/8"	90A x 6A	101.6	10.3	203	5.7	8.1	-	-	1.7	2.4	3.2	4.8
3.1/2" x 1/4"	90A x 8A	101.6	13.7	203	5.7	8.1	-	-	2.2	3.0	3.7	6.1
3.1/2" x 3/8"	90A x 10A	101.6	17.1	203	5.7	8.1	-	-	2.3	3.2	4.0	6.4
3.1/2" x 1/2"	90A x 15A	101.6	21.3	203	5.7	8.1	-	-	2.8	3.7	4.7	7.5
3.1/2" x 3/4"	90A x 20A	101.6	26.7	203	5.7	8.1	-	-	2.9	3.9	5.5	7.8
3.1/2" x 1"	90A x 25A	101.6	33.4	203	5.7	8.1	-	-	3.4	4.5	6.4	9.1
3.1/2" x 1.1/4"	90A x 32A	101.6	42.2	203	5.7	8.1	-	-	3.6	4.9	6.4	9.7
3.1/2" x 1.1/2"	90A x 40A	101.6	48.3	203	5.7	8.1	-	-	3.7	5.1	7.1	10.2
3.1/2" x 2"	90A x 50A	101.6	60.3	203	5.7	8.1	-	-	3.9	5.5	8.7	11.1
3.1/2" x 2.1/2"	90A x 65A	101.6	73.0	203	5.7	8.1	-	-	5.2	7.0	9.5	14.0
3.1/2" x 3"	90A x 80A	101.6	88.9	203	5.7	8.1	-	-	5.5	7.6	11.5	15.2
4" x 1/4"	100A x 8A	114.3	13.7	229	6.0	8.6	13.5	17.1	2.2	3.0	3.7	6.1
4" x 3/8"	100A x 10A	114.3	17.1	229	6.0	8.6	13.5	17.1	2.3	3.2	4.0	6.4
4" x 1/2"	100A x 15A	114.3	21.3	229	6.0	8.6	13.5	17.1	2.8	3.7	4.7	7.5
4" x 3/4"	100A x 20A	114.3	26.7	229	6.0	8.6	13.5	17.1	2.9	3.9	5.5	7.8
4" x 1"	100A x 25A	114.3	33.4	229	6.0	8.6	13.5	17.1	3.4	4.5	6.4	9.1
4" x 1.1/4"	100A x 32A	114.3	42.2	229	6.0	8.6	13.5	17.1	3.6	4.9	6.4	9.7
4" x 1.1/2"	100A x 40A	114.3	48.3	229	6.0	8.6	13.5	17.1	3.7	5.1	7.1	10.2
4" x 2"	100A x 50A	114.3	60.3	229	6.0	8.6	13.5	17.1	3.9	5.5	8.7	11.1
4" x 2.1/2"	100A x 65A	114.3	73.0	229	6.0	8.6	13.5	17.1	5.2	7.0	9.5	14.0
4" x 3"	100A x 80A	114.3	88.9	229	6.0	8.6	13.5	17.1	5.5	7.6	11.5	15.2
4" x 3.1/2"	100A x 90A	114.3	101.6	229	6.0	8.6	13.5	17.1	5.7	8.1	-	-

Concentric



Eccentric



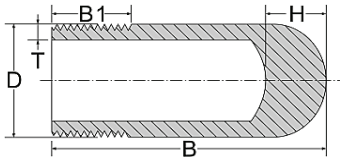
Tolerance

Unit : mm

Nominal Pipe Size		Overall Length	Outside Diameter at End		Wall Thickness
INCH	DN		Square Cut Ends	Other End Connections	See Note 1
1/8" - 3/8"	6A - 10A	± 2	+0.4 -0.8	-0.8	Not less than 87.5% of nominal wall thickness
1/2" - 1.1/2"	15A - 40A	± 2	+0.4 -0.8	+1.5-0.8	
2" - 2.1/2"	50A - 65A	± 3	±0.8	+1.5-0.8	
3" - 4"	80A - 100A	± 3	±0.8	±1.5	

Note:
1.Prior to threading or grooving.

PBE : Plain Both Ends
PSE : Plain Small Ends
PLE : Plain Large Ends
BBE : Bevel Both Ends
BSE : Bevel Small Ends
BLE : Bevel Large Ends
TBE : Thread Both Ends
TSE : Thread Small Ends
TLE : Thread Large Ends



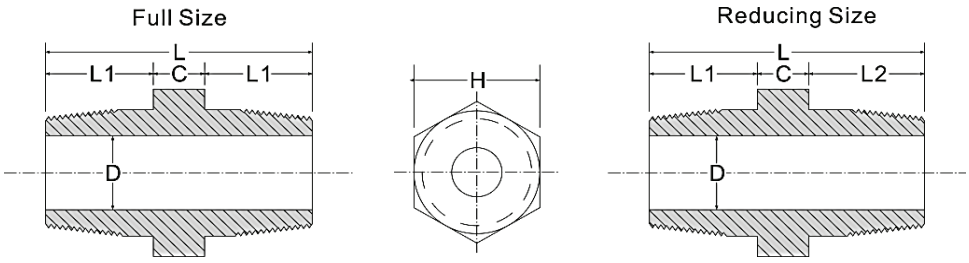
Bull Plug | Threaded | MSS SP 95

Nominal Pipe Size		Diameter	Length	Length of Threaded	Thickness			
					S40/STD	S80/XS	S160	XXS
INCH	DN	D	B	B1	T			H
1/8"	6A	10.3	34	9.5	1.7	2.4	3.2	4.8
1/4"	8A	13.7	34	11.0	2.2	3.0	3.7	14 6.1
3/8"	10A	17.1	57	12.5	2.3	3.2	4.0	6.4
1/2"	15A	21.3	64	14.5	2.8	3.7	4.7	14 7.5
3/4"	20A	26.7	70	16.0	2.9	3.9	5.5	7.8
1"	25A	33.4	76	19.0	3.4	4.5	6.4	18 9.1
1.1/4"	32A	42.2	83	20.5	3.6	4.9	6.4	9.7
1.1/2"	40A	48.3	89	20.5	3.7	5.1	7.1	18 10.2
2"	50A	60.3	102	22.0	3.9	5.5	8.7	11.1
2.1/2"	65A	73.0	127	27.0	5.2	7.0	9.5	20 14.0
3"	80A	88.9	152	28.5	5.5	7.6	11.5	15.2
4"	100A	114.3	178	32.0	6.0	8.6	13.5	20 17.1

Note:

1.Thread in accordance with ASME B1.20.1.

2.Wall thickness (T Min.) in accordance with ASME B36.10M.



Hex Nipple | Threaded | ANSI/ASME B1.20.1

Unit : mm

Nominal Pipe Size		Length of Hex Nut	Length of Threaded End	End to End	Interal Dia.	Dia. of Nex Nut	Weight
INCH	DN	C	L1	L	D	H	KG
1/8"	6A	6.0	10.0	26.0	4.0	12.0	0.03
1/4"	8A	8.0	14.0	36.0	6.7	17.0	0.04
3/8"	10A	8.0	14.0	36.0	8.9	19.0	0.05
1/2"	15A	9.0	19.0	47.0	11.9	24.0	0.09
3/4"	20A	10.0	19.0	48.0	16.0	30.0	0.15
1"	25A	11.0	24.0	59.0	20.1	35.0	0.27
1.1/4"	32A	12.0	24.0	60.0	27.9	46.0	0.45
1.1/2"	40A	14.0	24.0	62.0	32.0	50.0	0.62
2"	50A	16.0	26.0	68.0	39.9	65.0	1.03
2.1/2"	65A	18.0	38.0	94.0	55.1	80.0	1.51
3"	80A	20.0	40.0	100.0	65.0	95.0	2.22
4"	100A	24.5	40.0	105.0	85.0	125.5	4.00

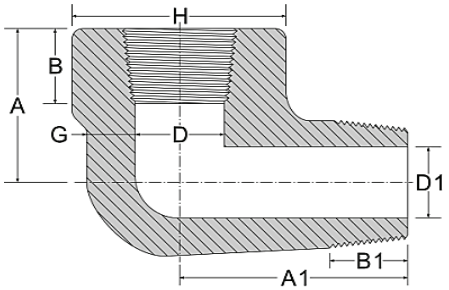
Reducing Hex Nipple | Threaded | ANSI/ASME B1.20.1

Unit : mm

Nominal Pipe Size		Length of Nex Nut	Length of Threaded End	Length of Large Threaded End	End to End	Internal Diameter	Diameter of Nex Nut	Weight
INCH	DN	C	L1	L2	L	Diameter	H	KG
3/8" x 1/4"	10A x 8A	8	14	14	36	6.7	19	0.05
1/2" x 1/4"	15A x 8A	9	19	14	42	6.7	24	0.09
1/2" x 3/8"	15A x 10A	9	19	14	42	8.9	24	0.09
3/4" x 1/4"	20A x 8A	10	19	14	43	6.7	30	0.15
3/4" x 3/8"	20A x 10A	10	19	14	43	8.9	30	0.15
3/4" x 1/2"	20A x 15A	10	19	19	48	11.9	30	0.15
1" x 3/8"	25A x 10A	11	24	14	49	8.9	34	0.27
1" x 1/2"	25A x 15A	11	24	19	54	11.9	34	0.27
1" x 3/4"	25A x 20A	11	24	19	54	16.0	34	0.27
1.1/4" x 1/2"	32A x 15A	12	24	19	55	11.9	46	0.45
1.1/4" x 3/4"	32A x 20A	12	24	19	55	16.0	46	0.45
1.1/4" x 1"	32A x 25A	12	24	24	60	20.1	46	0.45
1.1/2" x 3/4"	40A x 20A	14	24	19	57	16.0	50	0.62
1.1/2" x 1"	40A x 25A	14	24	24	62	20.1	50	0.62
1.1/2" x 1.1/4"	40A x 32A	14	24	24	62	27.9	50	0.62
2" x 1"	50A x 25A	16	26	24	66	20.1	65	1.03
2" x 1.1/4"	50A x 32A	16	26	24	66	27.9	65	1.03
2" x 1.1/2"	50A x 40A	16	26	24	66	32.0	65	1.03
2.1/2" x 1.1/4"	65A x 32A	18	38	24	80	27.9	80	1.51
2.1/2" x 1.1/2"	65A x 40A	18	38	24	80	32.0	80	1.51
2.1/2" x 2"	65A x 50A	18	38	26	82	39.9	80	1.51
3" x 2"	80A x 50A	20	40	24	84	32.0	95	2.22
3" x 2"	80A x 50A	20	40	26	86	39.9	95	2.22
3" x 2.1/2"	80A x 65A	20	40	38	98	55.1	95	2.22

Note:

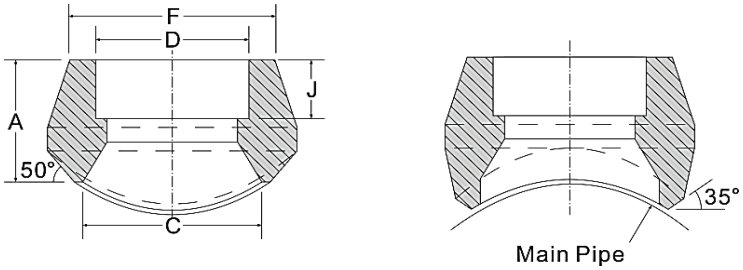
1. H.Size 2.1/2" and smaller are hexgonal bodies,size 3" is Octagonal body.



Street Elbow | Threaded | ASME B16.11

Unit : mm

Nominal Pipe Size		Outside Dia. of Bend		Center to End				Internal Diameter				Thickness		Length of Internal Thread		Length of External Thread	
		Class Designation															
		3000	6000	3000	6000	3000	6000	3000	6000	3000	6000	3000	6000	3000	6000	3000	6000
INCH	DN	H		A		A1		D		D1		G		B		B1	
1/4"	8A	25	33	22.2	25.4	31.7	38.1	11.2	11.2	7	3	3.3	6.6	8	8	10.3	10.3
3/8"	10A	33	38	25.4	28.6	38.1	41.2	14.5	14.5	9	4.7	3.51	6.98	9	9	10.4	10.4
1/2"	15A	38	46	28.6	34.9	41.2	47.6	15.7	15.7	13	6.3	4.09	8.15	11	11	13.6	13.6
3/4"	20A	46	56	34.9	44.5	47.6	57.2	20.9	20.9	16	11.1	4.32	8.53	12.5	12.5	13.8	13.8
1"	25A	56	62	44.5	50.8	57.2	66.7	26.6	26.6	20	15.2	4.98	9.93	14.5	14.5	17.3	17.3
1.1/4"	32A	62	75	50.8	54	66.7	71.4	35	35	28	22.8	5.28	10.59	17	17	18	18
1.1/2"	40A	75	84	54	63.5	71.4	84	40.9	40.9	30	27.9	5.56	11.07	18	18	18.4	18.4
2"	50A	84	-	63.5	-	84	-	52.5	-	40	-	7.14	-	19	-	19.3	-



Sockolet | 3000# | STD/XS | ANSI ASME B16.11

Unit : mm

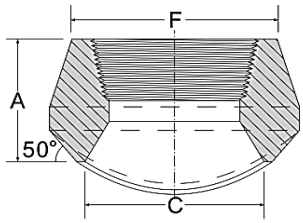
Out-Let Pipe NPS		A	C	D	F	J (Min.)
1/8"	6A	19	13.7	10.9	17.3	10
1/4"	8A	19	13.7	14.4	22	10
3/8"	10A	21	17.1	17.8	25.8	10
1/2"	15A	25	21.3	22	31.3	10
3/4"	20A	27	26.7	27.3	37.1	13
1"	25A	33	33.4	34.1	45.5	13
1.1/4"	32A	33	42.2	42.8	54.9	13
1.1/2"	40A	35	48.3	48.9	61.6	13
2"	50A	38	60.3	61.4	75.3	16
2.1/2"	65A	46	73	74.2	91.7	16
3"	80A	51	88.9	90.1	109.1	16
4"	100A	57	114.3	115.8	137.2	19

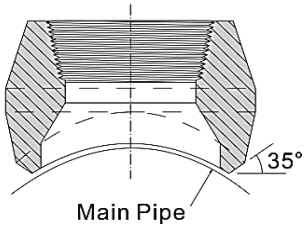
Sockolet | 6000# | S160/XXS | ANSI ASME B16.11

Out-Let Pipe NPS		A	C	D	F	J (Min.)
1/2"	15A	32	16.6	22	33.9	10
3/4"	20A	37	21.2	27.3	41.2	13
1"	25A	40	27	34.1	49.9	13
1.1/4"	32A	41	35.8	42.8	58.6	13
1.1/2"	40A	43	41.2	48.9	66.7	13
2"	50A	52	51.6	61.4	83.2	16

Note:

1. 3000# Out-let size 4" and less fit a number of run pipe sizes and the fittings are marked accordingly.





Threadedolet | 3000# | STD/XS | ANSI ASME B1.20.1

Unit : mm

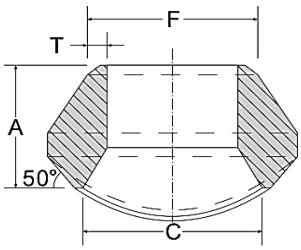
Out-Let Pipe NPS		A	C	F
1/8"	6A	19	13.7	17.3
1/4"	8A	19	13.7	22
3/8"	10A	21	17.1	25.8
1/2"	15A	25	21.3	31.3
3/4"	20A	27	26.7	37.1
1"	25A	33	33.4	45.5
1.1/4"	32A	33	42.2	54.9
1.1/2"	40A	35	48.3	61.6
2"	50A	38	60.3	75.3
2.1/2"	65A	46	73	91.7
3"	80A	51	88.9	109.1
4"	100A	57	114.3	137.2

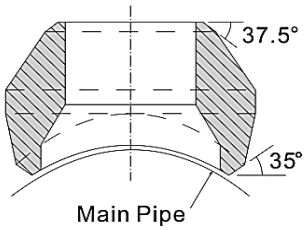
Threadedolet | 6000# | S160/XXS | ANSI ASME B1.20.1

Unit : mm

Out-Let Pipe NPS		A	C	F
1/2"	15A	32	16.6	33.9
3/4"	20A	37	21.2	41.2
1"	25A	40	27	49.9
1.1/4"	32A	41	35.8	58.6
1.1/2"	40A	43	41.2	66.7
2"	50A	52	51.6	83.2

Note:
1. 3000# Out-let size 4" and less fit a number of run pipe sizes and the fittings are marked accordingly.



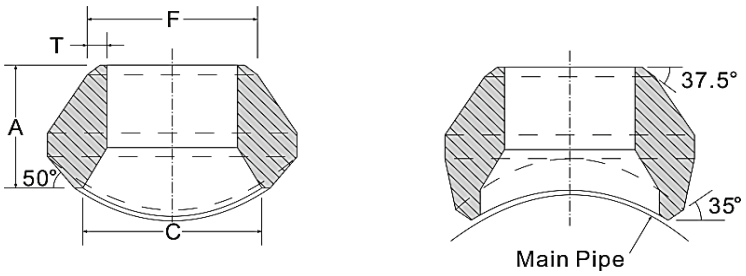


Weldolets | S40/STD | ANSI/ASME B16.26

Unit : mm

Out-Let Pipe NPS		A	C	F	T
1/8"	6A	16	13.7	10.3	1.73
1/4"	8A	16	13.7	13.7	2.24
3/8"	10A	19	17.1	17.1	2.31
1/2"	15A	19	21.3	21.3	2.77
3/4"	20A	22	26.7	26.7	2.87
1"	25A	27	33.4	33.4	3.38
1.1/4"	32A	32	42.2	42.2	3.56
1.1/2"	40A	33	48.3	48.3	3.68
2"	50A	38	60.3	60.3	3.91
2.1/2"	65A	41	73.0	73.0	5.16
3"	80A	44	88.9	88.9	5.49
3.1/2"	90A	48	101.6	101.6	5.74
4"	100A	51	114.3	114.3	6.02
5"	125A	57	141.3	141.3	6.55
6"	150A	60	168.3	168.3	7.11
8"	200A	70	219.3	219.3	8.11
10"	250A	78	273.1	273.1	9.27
12"	300A	86	323.9	323.9	9.53
14"	350A	89	355.6	355.6	9.53
16"	400A	94	406.4	406.4	9.53
18"	450A	97	457.2	457.2	9.53
20"	500A	102	508.0	508.0	9.53
24"	600A	116	609.6	609.6	9.53

Note:
1. Outlet size 4" and less fit a number of run pipe sizes and the fittings are marked accordingly.
2. Outlet size 5" and up order to specific size combination.

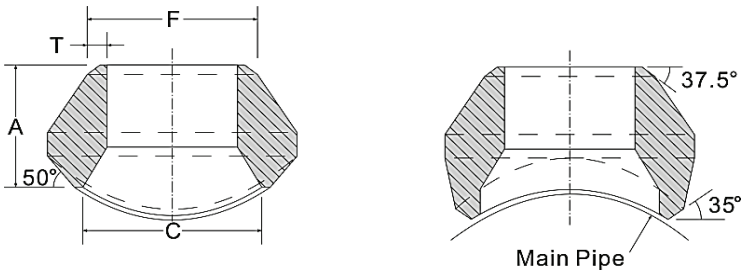


Weldolets | S80/XS | ANSI ASME B16.25

Unit : mm

Out-Let Pipe NPS		A	C	F	T
1/8"	6A	16	13.7	10.3	2.41
1/4"	8A	16	13.7	13.7	3.02
3/8"	10A	19	17.1	17.1	3.20
1/2"	15A	19	21.3	21.3	3.73
3/4"	20A	22	26.7	26.7	3.91
1"	25A	27	33.4	33.4	4.55
1.1/4"	32A	32	42.2	42.2	4.85
1.1/2"	40A	33	48.3	48.3	5.08
2"	50A	38	60.3	60.3	5.54
2.1/2"	65A	41	73.0	73.0	7.01
3"	80A	44	88.9	88.9	7.62
3.1/2"	90A	48	101.6	101.6	8.56
4"	100A	51	114.3	114.3	8.56
5"	125A	57	141.3	141.3	9.53
6"	150A	78	168.3	168.3	10.97
8"	200A	99	219.3	219.3	12.70
10"	250A	94	273.1	273.1	12.70
12"	300A	103	323.9	323.9	12.70
14"	350A	100	355.6	355.6	12.70
16"	400A	106	406.4	406.4	12.70
18"	450A	111	457.2	457.2	12.70
20"	500A	119	508.0	508.0	12.70
24"	600A	140	609.6	609.6	12.70

Note:
1. Outlet size 4" and less fit a number of run pipe sizes and the fittings are marked accordingly.
2. Outlet size 5" and up order to specific size combination.



Weldolets | S160/XXS | ANSI ASME B16.25

Unit : mm

Out-Let Pipe NPS		A	C	F	T (S160)	T (XXS)
1/2"	15A	28	13.8	21.3	4.78	7.47
3/4"	20A	32	18.9	26.7	5.56	7.82
1"	25A	38	24.3	33.4	6.35	9.09
1.1/4"	32A	44	32.5	42.2	6.35	9.70
1.1/2"	40A	51	38.1	48.3	7.14	10.15
2"	50A	55	49.2	60.3	8.74	11.07
2.1/2"	65A	62	59.0	73.0	9.53	14.02
3"	80A	73	73.7	88.9	11.13	15.24
4"	100A	84	97.2	114.3	13.49	17.12
5"	125A	94	122.2	141.3	15.88	19.05
6"	150A	105	146.4	168.3	18.26	21.95

Note:
1. Outlet size by order to specific size combation.

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Pipe Threading



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