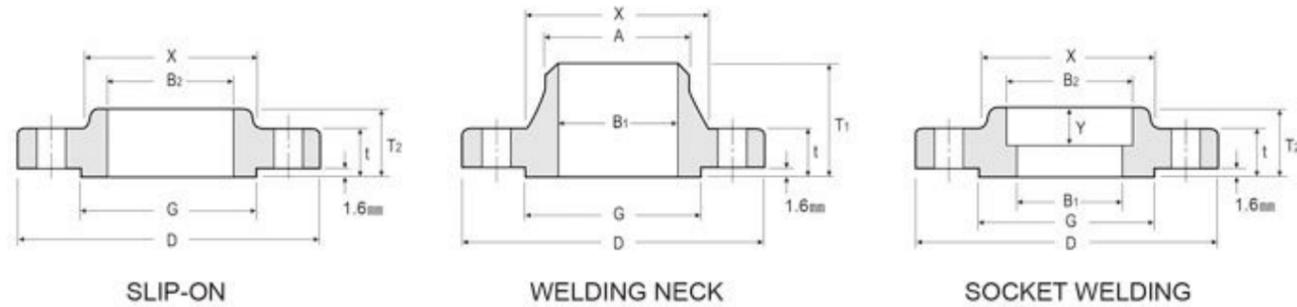


## 美标法兰参数系列

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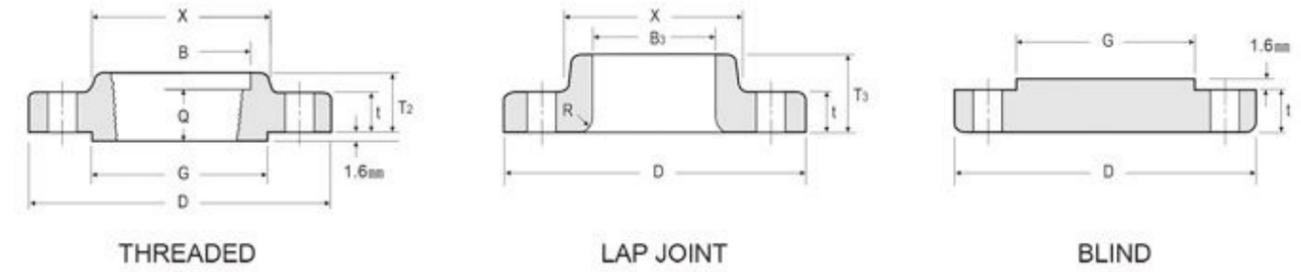
**CLASS 150 FLANGES**  
ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	Outside Diam. D	Diam. at Base of Hub X	O.D of Raised Face G	Thick-ness t	BORE			LENGTH THRU HUB			Diam. of Hub at Bevel A	Radius of Fillet R	Thread Length Q
					Welding Neck Socket Welding B1	Slip-on Socket Welding B2	Lap Joint B3	Welding Neck T1	Slip-on Threaded Socket Welding T2	Lap Joint T3			
1/2	88.9	30.2	35.1	11.2	15.7	22.4	22.9	47.8	15.7	15.7	21.3	3.0	15.7
3/4	98.6	38.1	42.9	12.7	20.8	27.7	28.2	52.3	15.7	15.7	26.7	3.0	15.7
1	108	49.3	50.8	14.2	26.7	34.5	35.1	55.6	17.5	17.5	33.5	3.0	17.5
1 1/4	117.3	58.7	63.5	15.7	35.1	43.2	43.7	57.2	20.6	20.6	42.2	4.8	20.6
1 1/2	127	65.0	73.2	17.5	40.9	49.5	50.0	62.0	22.4	22.4	48.3	6.4	22.4
2	152.4	77.7	91.9	19.1	52.6	62.0	62.5	63.5	25.4	25.4	60.5	7.9	25.4
2 1/2	177.8	90.4	104.6	22.4	62.7	74.7	75.4	69.9	28.4	28.4	73.2	7.9	28.4
3	190.5	108.0	127.0	23.9	78.0	90.7	91.4	69.9	30.2	30.2	88.9	9.7	30.2
3 1/2	215.9	122.2	139.7	23.9	90.2	103.4	104.1	71.4	31.8	31.8	101.6	9.7	31.8
4	228.6	134.9	157.2	23.9	102.4	116.1	116.8	76.2	33.3	33.3	114.3	11.2	33.3
5	254	163.6	185.7	23.9	128.3	143.8	144.5	88.9	36.6	36.6	141.2	11.2	36.6
6	279.4	192.0	215.9	25.4	154.2	170.7	171.5	88.9	39.6	39.6	168.4	12.7	39.6
8	342.9	246.1	269.7	28.4	202.7	221.5	222.3	101.6	44.5	44.5	219.2	12.7	44.5
10	406.4	304.8	323.9	30.2	254.5	276.4	277.4	101.6	49.3	49.3	273.1	12.7	49.3
12	482.6	365.3	381.0	31.8	304.8	327.2	328.2	114.3	55.6	55.6	323.9	12.7	55.6
14	533.4	400.1	412.8	35.1	336.6	359.2	360.2	127.0	57.2	79.2	355.6	12.7	57.2
16	596.9	457.2	469.9	36.6	387.4	410.5	411.2	127.0	63.5	87.4	406.4	12.7	63.5
18	635	505.0	533.4	39.6	438.2	461.8	462.3	139.7	68.3	96.8	457.2	12.7	68.3
20	698.5	558.8	584.2	42.9	489.0	513.1	514.4	144.5	73.2	103.1	508.0	12.7	73.2
24	812.8	663.4	692.2	47.8	590.6	616.0	616.0	152.4	82.6	111.3	609.6	12.7	82.6

Notes:

- (1) For the 'Bore'(B1) other than Standard Wall Thickness, refer to page 83.
- (2) 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).
- (3) 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.

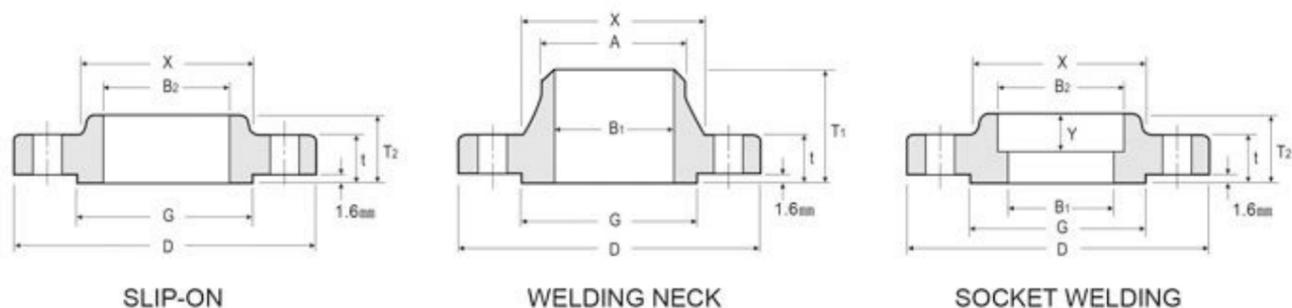


**CLASS 150 FLANGES**  
ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	Depth of Socket Y	DRILLING			BOLTING			APPROXIMATE WEIGHT							
		Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	Stud Bolt Length			Welding Neck			Slip-on and Threaded	Lap Joint	Blind	Socket Welding
						Machine Bolt Length	Stud Bolt Length	Ring Joint	SCH40	SCH80	SCH160				
1/2	9.7	60.5	4	15.7	1/2	50.8	57.2	-	0.60	0.60	0.60	0.47	0.51	0.47	0.47
3/4	11.2	69.9	4	15.7	1/2	50.8	63.5	-	0.90	0.90	0.90	0.58	0.64	0.63	0.59
1	12.7	79.2	4	15.7	1/2	57.2	63.5	76.2	1.14	1.18	1.24	0.86	0.93	0.94	0.87
1 1/4	14.2	88.9	4	15.7	1/2	57.2	69.9	82.6	1.41	1.48	1.54	1.08	1.16	1.23	1.11
1 1/2	15.7	98.6	4	15.7	1/2	63.5	69.9	82.6	1.81	1.90	2.01	1.41	1.51	1.62	1.45
2	17.5	120.7	4	19.1	5/8	69.9	82.6	95.3	2.72	2.84	3.07	2.26	2.38	2.64	2.33
2 1/2	19.1	139.7	4	19.1	5/8	76.2	88.9	101.6	4.45	4.70	4.98	3.43	3.6	4.07	3.55
3	20.6	152.4	4	19.1	5/8	76.2	88.9	101.6	5.22	5.54	5.90	3.87	4.04	4.92	4.02
3 1/2	22.4	177.8	8	19.1	5/8	76.2	88.9	101.6	6.40	6.76	7.46	5.20	5.24	5.90	5.24
4	23.9	190.5	8	19.1	5/8	76.2	88.9	101.6	7.49	7.96	8.90	5.75	5.96	7.41	5.99
5	23.9	215.9	8	22.4	3/4	82.6	95.3	108.0	9.53	10.54	12.04	6.26	6.44	8.76	6.68
6	26.9	241.3	8	22.4	3/4	82.6	101.6	114.3	11.80	13.12	15.11	7.38	7.65	11.40	8.60
8	31.8	298.5	8	22.4	3/4	88.9	108.0	120.7	19.10	21.34	25.84	12.36	12.66	20.10	13.60
10	33.3	362.0	12	25.4	7/8	101.6	114.3	127.0	24.50	28.85	35.74	17.10	17.4	29.39	19.50
12	39.6	431.8	12	25.4	7/8	101.6	120.7	133.4	39.90	46.80	58.01	27.68	28.3	43.80	29.10
14	41.4	476.3	12	28.4	1	114.3	133.4	146.1	51.80	62.58	77.60	35.2	41.5	59.42	40.90
16	44.5	539.8	16	28.4	1	114.3	133.4	146.1	64.50	79.42	98.82	45.5	52.98	77.40	47.17
18	49.3	577.9	16	31.8	1 1/8	127.0	146.1	158.8	74.90	97.63	124.32	49.71	59	94.8	54.43
20	54.1	635.0	20	31.8	1 1/8	139.7	158.8	171.5	89.40	120.44	154.18	66.5	72.12	123.4	70.31
24	63.5	749.3	20	35.1	1 1/4	152.4	171.5	184.2	121.70	169.37	223.92	90.5	99.42	188.24	95.25

- (4) Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.
- (5) The gasket surface and 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).
- (6) Depth of Socket (Y) is covered by ANSI B16.5 only in sizes through 3 inch, over 3 inch is at the manufacture's option.



## CLASS 300 FLANGES

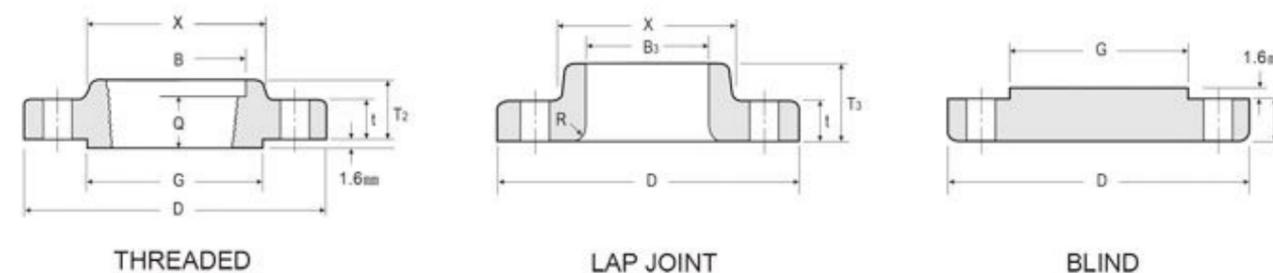
ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	Outside Diam. D	Diam. at Base of Hub X	O.D of Raised Face G	Thick-ness t	BORE				LENGTH THRU HUB			Diam. of Hub at Bevel A	Radius of Fillet R	Thread Length Q
					Welding Neck Socket Welding B1	Slip-on Socket Welding B2	Lap Joint B3	Counter Bore Min. Threaded Min. B	Welding Neck T1	Slip-on Threaded Socket Welding T2	Lap Joint T3			
1/2	95.3	38.1	35.1	14.2	15.7	22.4	22.9	23.6	52.3	22.4	22.4	21.3	3.0	15.7
3/4	117.3	47.8	42.9	15.7	20.8	27.7	28.2	29.0	57.2	25.4	25.4	26.7	3.0	15.7
1	124	53.8	50.8	17.5	26.7	34.5	35.1	35.8	62.0	26.9	26.9	33.5	3.0	17.5
1 1/4	133.4	63.5	63.5	19.1	35.1	43.2	43.7	44.5	65.0	26.9	26.9	42.2	4.8	20.6
1 1/2	155.4	69.9	73.2	20.6	40.9	49.5	50.0	50.5	68.3	30.2	30.2	48.3	6.4	22.4
2	165.1	84.1	91.9	22.4	52.6	62.0	62.5	63.5	69.9	33.3	33.3	60.5	7.9	28.4
2 1/2	190.5	100.1	104.6	25.4	62.7	74.7	75.4	76.2	76.2	38.1	38.1	73.2	7.9	31.8
3	209.6	117.3	127.0	28.4	78.0	90.7	91.4	92.2	79.2	42.9	42.9	88.9	9.7	31.8
3 1/2	228.6	133.4	139.7	30.2	90.2	103.4	104.1	104.9	81.0	44.5	44.5	101.6	9.7	36.6
4	254	146.1	157.2	31.8	102.4	116.1	116.8	117.6	85.9	47.8	47.8	114.3	11.2	36.6
5	279.4	177.8	185.7	35.1	128.3	143.8	144.5	144.5	98.6	50.8	50.8	141.2	11.2	42.9
6	317.5	206.2	215.9	36.6	154.2	170.7	171.5	171.5	98.6	52.3	52.3	168.4	12.7	46.0
8	381	260.4	269.7	41.1	202.7	221.5	222.3	222.3	111.3	62.0	62.0	219.2	12.7	50.8
10	444.5	320.5	323.9	47.8	254.5	276.4	277.4	276.4	117.3	66.5	95.3	273.1	12.7	55.6
12	520.7	374.7	381.0	50.8	304.8	327.2	328.2	328.7	130.0	73.2	101.6	323.9	12.7	60.5
14	584.2	425.5	412.8	53.8	336.6	359.2	360.2	360.4	142.7	76.2	111.3	355.6	12.7	63.5
16	647.7	482.6	469.9	57.2	387.4	410.5	411.2	411.2	146.1	82.6	120.7	406.4	12.7	68.3
18	711.2	533.4	533.4	60.5	438.2	461.8	462.3	462.0	158.8	88.9	130.0	457.2	12.7	69.9
20	774.7	587.2	584.2	63.5	489.0	513.1	514.4	512.8	162.1	95.3	139.7	508.0	12.7	73.2
24	914.4	701.5	692.2	69.9	590.6	616.0	616.0	614.4	168.1	106.4	152.4	609.6	12.7	82.6

**Notes:**

- (1) For the 'Bore'(B1) other than Standard Wall Thickness, refer to page 83.
- (2) 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).
- (3) 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.



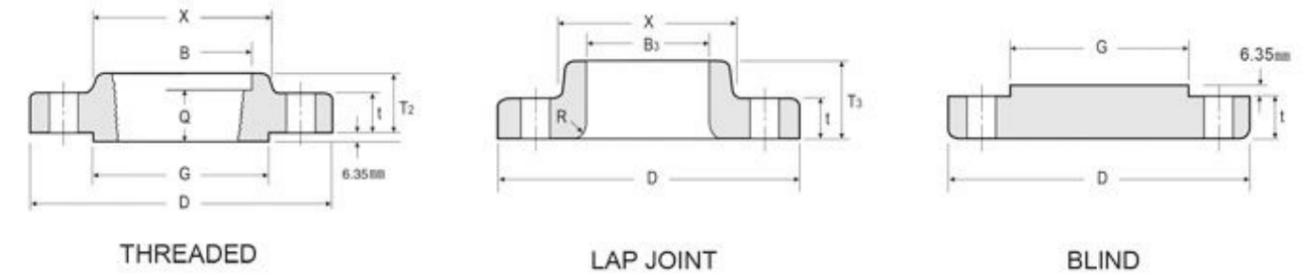
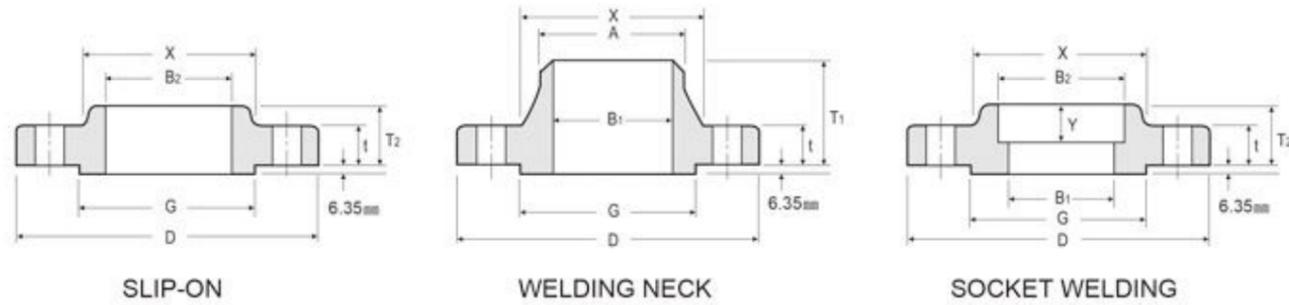
## CLASS 300 FLANGES

ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	Depth of Socket Y	DRILLING			BOLTING			APPROXIMATE WEIGHT							
		Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	Stud Bolt Length			Welding Neck			Slip-on and Threaded	Lap Joint	Blind	Socket Welding
						Machine Bolt Length	Raised Face	Ring Joint	SCH40	SCH80	SCH160				
1/2	9.7	66.5	4	15.7	1/2	57.2	63.5	76.2	0.91	0.91	0.91	0.63	0.63	0.63	0.63
3/4	11.2	82.6	4	19.1	5/8	63.5	76.2	88.9	1.36	1.36	1.36	1.16	1.16	1.16	1.19
1	12.7	88.9	4	19.1	5/8	63.5	76.2	88.9	1.82	1.87	1.93	1.39	1.39	1.42	1.44
1 1/4	14.2	98.6	4	19.1	5/8	69.9	82.6	95.3	2.27	2.35	2.41	1.75	1.75	1.88	1.75
1 1/2	15.7	114.3	4	22.4	3/4	76.2	88.9	101.6	3.18	3.28	3.40	2.53	2.53	2.68	2.62
2	17.5	127.0	8	19.1	5/8	76.2	88.9	101.6	3.36	3.49	3.75	2.90	2.91	3.22	2.94
2 1/2	19.1	149.4	8	22.4	3/4	82.6	101.6	114.3	5.45	5.72	6.02	4.25	4.25	4.80	4.49
3	20.6	168.1	8	22.4	3/4	88.9	108.0	120.7	7.32	7.52	8.94	5.92	5.94	6.89	6.2
3 1/2	22.4	184.2	8	22.4	3/4	95.3	108.0	127.0	8.93	9.31	10.10	7.72	7.74	9.53	
4	23.9	200.2	8	22.4	3/4	95.3	114.3	127.0	12.10	12.62	13.69	10.13	10.15	11.2	
5	23.9	235.0	8	22.4	3/4	108.0	120.7	133.4	16.30	17.42	19.08	12.58	12.6	15.96	
6	26.9	269.7	12	22.4	3/4	108.0	120.7	139.7	20.40	21.86	24.07	16.04	16.05	21.40	
8	31.8	330.2	12	25.4	7/8	120.7	139.7	152.4	31.30	33.75	38.69	24.5	24.53	34.6	
10	33.3	387.4	16	28.4	1	139.7	158.8	171.5	45.40	50.43	58.38	34.16	39.92	53.50	
12	39.6	450.9	16	31.8	1 1/8	146.1	171.5	184.2	64.50	72.35	85.10	51.26	58.7	78.9	
14	41.4	514.4	20	31.8	1 1/8	158.8	177.8	190.5	93.50	105.61	122.49	72.12	83.46	107.5	
16	44.5	571.5	20	35.1	1 1/4	165.1	190.5	203.2	113.10	130.25	152.56	90.4	106.14	139.25	
18	49.3	628.7	24	35.1	1 1/4	171.5	196.9	209.6	138.90	164.74	195.07	109	133.95	176.9	
20	54.1	685.8	24	35.1	1 1/4	184.2	203.2	222.3	167.70	202.32	240.17	136	157.65	223.17	
24	63.5	812.8	24	41.1	1 1/2	203.2	228.6	254.0	238.68	288.15	348.28	204	240.4	342	

- (4) Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.
- (5) The gasket surface and 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).
- (6) Depth of Socket (Y) is covered by ANSI B16.5 only in sizes through 3 inch, over 3 inch is at the manufacture's option.



## CLASS 600 FLANGES

ANSI B16.5 FORGED FLANGES

## CLASS 600 FLANGES

ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	Outside Diam. D	Diam. at Base of Hub X	O.D of Raised Face G	Thick-ness t	BORE				LENGTH THRU HUB			Diam. of Hub at Bevel A	Radius of Fillet R	Thread Length Q
					Welding Neck Socket Welding B1	Slip-on Socket Welding B2	Lap Joint B3	Counter Bore Min. B	Welding Neck T1	Slip-on Threaded Socket Welding T2	Lap Joint T3			
1/2	95.3	38.1	35.1	14.2		22.4	22.9	23.6	52.3	22.4	22.4	21.3	3.0	15.7
3/4	117.3	47.8	42.9	15.7		27.7	28.2	29.0	57.2	25.4	25.4	26.7	3.0	15.7
1	124	53.8	50.8	17.5		34.5	35.1	35.8	62.0	26.9	26.9	33.5	3.0	17.5
1 1/4	133.4	63.5	63.5	20.6		43.2	43.7	44.5	66.5	28.4	28.4	42.2	4.8	20.6
1 1/2	155.4	69.9	73.2	22.4		49.5	50.0	50.5	69.9	31.8	31.8	48.3	6.4	22.4
2	165.1	84.1	91.9	25.4		62.0	62.5	63.5	73.2	36.6	36.6	60.5	7.9	28.4
2 1/2	190.5	100.1	104.6	28.4		74.7	75.4	76.2	79.2	41.1	41.1	73.2	7.9	31.8
3	209.6	117.3	127.0	31.8		90.7	91.4	92.2	82.6	46.0	46.0	88.9	9.7	35.1
3 1/2	228.6	133.4	139.7	35.1		103.4	104.1	104.9	85.9	49.3	49.3	101.6	9.7	39.6
4	273.1	152.4	157.2	38.1		116.1	116.8	117.6	101.6	53.8	53.8	114.3	11.2	41.1
5	330.2	189.0	185.7	44.5		143.8	144.5	144.5	114.3	60.5	60.5	141.2	11.2	47.8
6	355.6	222.3	215.9	47.8		170.7	171.5	171.5	117.3	66.5	66.5	168.4	12.7	50.8
8	419.1	273.1	269.7	55.6		221.5	222.3	222.3	133.4	76.2	76.2	219.2	12.7	57.2
10	508	342.9	323.9	63.5		276.4	277.4	276.4	152.4	85.9	111.3	273.1	12.7	65.0
12	558.8	400.1	381.0	66.5		327.2	328.2	328.7	155.4	91.9	117.3	323.9	12.7	69.9
14	603.3	431.8	412.8	69.9		359.2	360.2	360.4	165.1	93.7	127.0	355.6	12.7	73.2
16	685.8	495.3	469.9	76.2		410.5	411.2	411.2	177.8	106.4	139.7	406.4	12.7	77.7
18	743	546.1	533.4	82.6		461.8	462.3	462.0	184.2	117.3	152.4	457.2	12.7	79.2
20	812.8	609.6	584.2	88.9		513.1	514.4	512.8	190.5	127.0	165.1	508.0	12.7	82.6
24	939.8	717.6	692.2	101.6		616.0	616.0	614.4	203.2	139.7	184.2	609.6	12.7	91.9

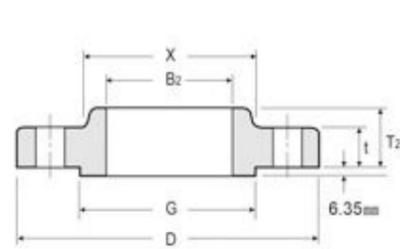
**Notes:**

- (1) For the inside diameter of pipes (corresponding to 'Bore' (B1) of Welding Neck Flanges), refer to page 83.
- (2) 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).
- (3) 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.

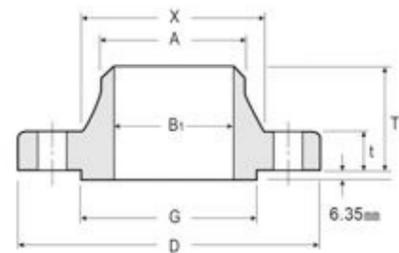
Unit:mm

Nominal Pipe Size	Depth of Socket Y	DRILLING			BOLTING			APPROXIMATE WEIGHT							
		Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	Stud Bolt Length			Welding Neck			Slip-on and Threaded	Lap Joint	Blind	Socket Welding
						0.25" Raised Face	Male-Female Tongue-Groove	Ring Joint	SCH40	SCH80	SCH160				
1/2	9.7	66.5	4	15.7	1/2	76.2	69.9	76.2	1.36	1.36	1.36	0.91	0.91	0.91	0.91
3/4	11.2	82.6	4	19.1	5/8	88.9	82.6	88.9	1.59	1.63	1.67	1.4	1.4	1.4	1.36
1	12.7	88.9	4	19.1	5/8	88.9	82.6	88.9	1.82	1.87	1.94	1.7	1.7	1.81	1.81
1 1/4	14.2	98.6	4	19.1	5/8	95.3	88.9	95.3	2.50	2.59	2.66	2.27	2.27	2.4	2.6
1 1/2	15.7	114.3	4	22.4	3/4	108.0	101.6	108.0	3.63	3.74	3.88	3.1	3.1	3.4	3.18
2	17.5	127.0	8	19.1	5/8	108.0	101.6	108.0	4.54	4.69	4.98	3.71	3.85	4.4	3.9
2 1/2	19.1	149.4	8	22.4	3/4	120.7	114.3	120.7	6.36	6.66	7.00	5.44	5.44	6.8	5.9
3	20.6	168.1	8	22.4	3/4	127.0	120.7	127.0	8.17	8.58	9.04	7.26	7.26	8.9	7.4
3 1/2	22.4	184.2	8	25.4	7/8	139.7	133.4	139.7	12.00	12.44	13.28	9.53	9.53	13.17	
4	23.9	215.9	8	25.4	7/8	146.1	139.7	146.1	16.80	17.46	18.79	14.97	15.40	18.6	
5	23.9	266.7	8	28.4	1	165.1	158.8	165.1	30.90	32.27	34.30	28.5	29	30.84	
6	26.9	292.1	12	28.4	1	171.5	165.1	171.5	36.77	34.93	37.69	36.32	36.5	33.80	
8	31.8	349.3	12	31.8	1 1/8	190.5	184.2	196.9	50.90	53.98	60.16	44	50.8	62.2	
10	33.3	431.8	16	35.1	1 1/4	215.9	209.6	215.9	86.26	92.59	103.34	76.2	82	102	
12	39.6	489.0	20	35.1	1 1/4	222.3	215.9	222.3	102.60	112.36	128.19	97.52	108.86	132	
14	41.4	527.1	20	38.1	1 3/8	235.0	228.6	235.0	121.60	136.13	156.38	102	111.20	158	
16	44.5	603.3	20	41.1	1 1/2	254.0	247.7	254.0	177.10	198.70	226.80	149.82	165.71	224.13	
18	49.3	654.1	20	44.5	1 5/8	273.1	266.7	273.1	215.70	246.66	283.01	180.1	219.4	285	
20	54.1	723.9	24	44.5	1 5/8	285.8	279.4	292.1	268.00	310.23	356.13	231.54	258.8	365	
24	63.5	838.2	24	50.8	1 7/8	330.2	323.9	336.6	372.00	495.71	512.38	330	362	536.80	

- (4) Blind Flanges may with the same hub as that used for Slip-on Flanges or without hub.
- (5) The gasket surface and 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).
- (6) Dimensions of sizes 1/2" through 3 1/2" are the same as for Class 400 Flanges.
- (7) Depth of Socket (Y) is covered by ANSI B16.5 only in sizes through 3 inch, over 3 inch is at the manufacture's option.



SLIP-ON



WELDING NECK

## CLASS 900 FLANGES

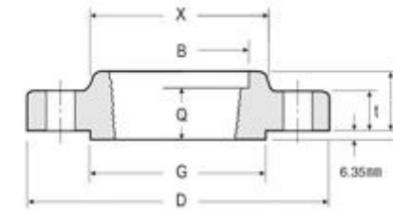
ANSI B16.5 FORGED FLANGES

Unit:mm

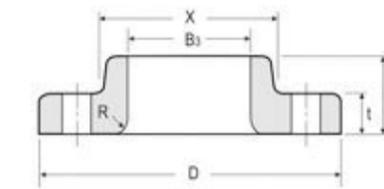
Nominal Pipe Size	Outside Diam. D	Diam. at Base of Hub X	O.D of Raised Face G	Thick-ness t	BORE				LENGTH THRU HUB			Diam. of Hub at Bevel A
					Welding Neck B1	Slip-on B2	Lap Joint B3	Counter Bore Min. B	Welding Neck T1	Slip-on Threaded Socket Welding T2	Lap Joint T3	
1/2	120.7	38.1	35.1	22.4		22.4	22.9	23.6	60.5	31.8	31.8	21.3
3/4	130	44.5	42.9	25.4		27.7	28.2	29.0	69.9	35.1	35.1	26.7
1	149.4	52.3	50.8	28.4		34.5	35.1	35.8	73.2	41.1	41.1	33.5
1 1/4	158.8	63.5	63.5	28.4		43.2	43.7	44.5	73.2	41.1	41.1	42.2
1 1/2	177.8	69.9	73.2	31.8		49.5	50.0	50.5	82.6	44.5	44.5	48.3
2	215.9	104.6	91.9	38.1		62.0	62.5	63.5	101.6	57.2	57.2	60.5
2 1/2	244.3	124.0	104.6	41.1		74.7	75.4	76.2	104.6	63.5	63.5	73.2
3	241.3	127.0	127.0	38.1		90.7	91.4	92.2	101.6	53.8	53.8	88.9
4	292.1	158.8	157.2	44.5		116.1	116.8	117.6	114.3	69.9	69.9	114.3
5	349.3	190.5	185.7	50.8		143.8	144.5	144.5	127.0	79.2	79.2	141.2
6	381	235.0	215.9	55.6		170.7	171.5	171.5	139.7	85.9	85.9	168.4
8	469.9	298.5	269.7	63.5		221.5	222.3	222.3	162.1	101.6	114.3	219.2
10	546.1	368.3	323.9	69.9		276.4	277.4	276.4	184.2	108.0	127.0	273.1
12	609.6	419.1	381.0	79.2		327.2	328.2	328.7	200.2	117.3	142.7	323.9
14	641.4	450.9	412.8	85.9		359.2	360.4	360.4	212.9	130	155.4	355.6
16	704.9	508.0	469.9	88.9		410.5	411.2	411.2	215.9	133.4	165.1	406.4
18	787.4	565.2	533.4	101.6		461.8	462.3	462.0	228.6	152.4	190.5	457.2
20	857.3	622.3	584.2	108.0		513.1	514.4	512.8	247.7	158.8	209.6	508.0
24	1041.4	749.3	692.2	139.7		616.0	616.0	614.4	292.1	203.2	266.7	609.6

### Notes:

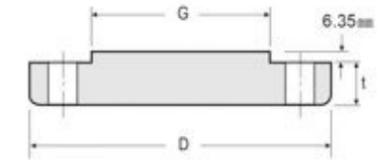
- (1) For the inside diameter of pipes (corresponding to 'Bore' (B1) of Welding Neck Flanges), refer to page 83.
- (2) Class 900 flanges except Lap Joint will be furnished with 0.25" (6.35mm) raised face, which is included in 'Thickness' (t) and 'Length through Hub' (T1), (T2).
- (3) For Slip-on, Threaded, 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

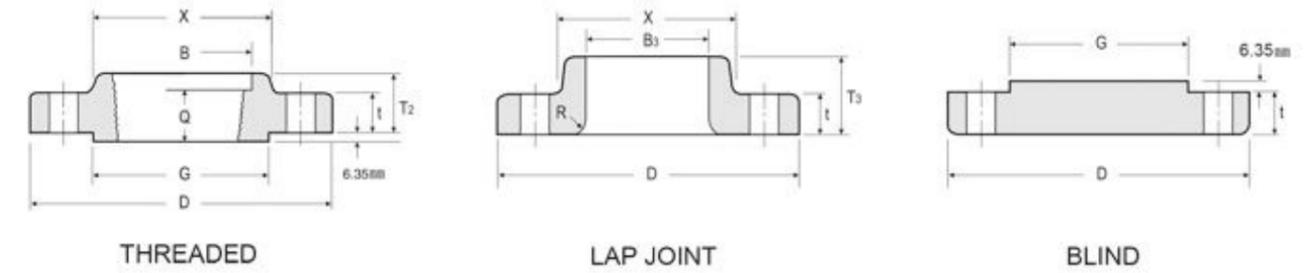
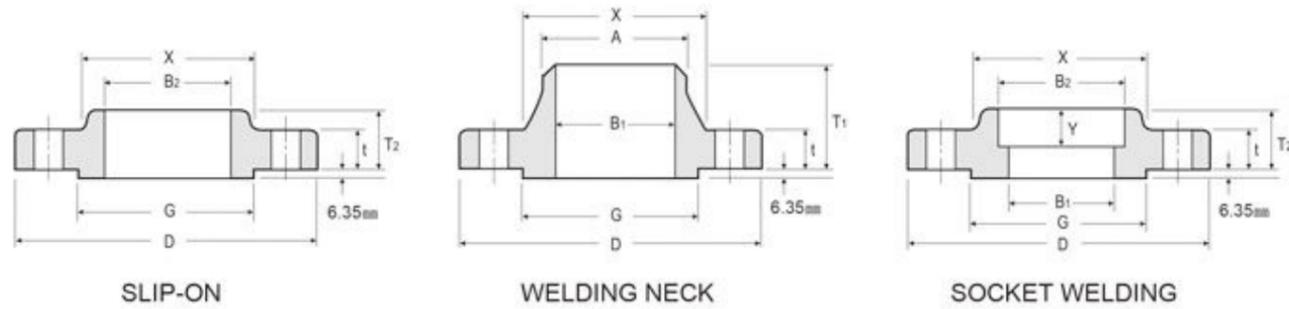
## CLASS 900 FLANGES

ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	Radius of fillet R	Thread Length Q	DRILLING			BOLTING			APPROXIMATE WEIGHT						
			Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	Stud Bolt Length			Welding Neck			Slip-on and Threaded	Lap Joint	Blind
							0.25" Raised Face	Male-Female Tongue-Groove	Ring Joint	SCH40	SCH80	SCH160			
1/2	3.0	22.4	82.6	4	22.4	3/4	108.0	101.6	108.0	3.10	3.10	3.10	1.81	1.8	1.9
3/4	3.0	25.4	88.9	4	22.4	3/4	114.3	108.0	114.3	3.18	3.18	3.18	2.4	2.4	2.7
1	3.0	28.4	101.6	4	25.4	7/8	127.0	120.7	127.0	3.86	3.92	4.00	3.50	3.60	4.09
1 1/4	4.8	30.2	111.3	4	25.4	7/8	127.0	120.7	127.0	4.54	4.64	4.71	4.1	4.1	4.54
1 1/2	6.4	31.8	124.0	4	28.4	1	139.7	133.4	139.7	6.36	6.49	6.65	5.52	5.55	5.93
2	7.9	38.1	165.1	8	25.4	7/8	146.1	139.7	146.1	10.90	11.10	11.50	9.98	9.98	11.34
2 1/2	7.9	47.8	190.5	8	28.4	1	158.8	152.4	158.8	16.30	16.69	17.14	15.8	15.8	16.00
3	9.7	41.1	190.5	8	25.4	7/8	146.1	139.7	146.1	15.00	15.50	16.10	11.8	11.8	13.17
4	11.2	47.8	235.0	8	31.8	1 1/8	171.5	165.1	171.5	23.20	23.94	25.43	23.2	23.2	24.5
5	11.2	53.8	279.4	8	35.1	1 1/4	190.5	184.2	190.5	39.10	40.62	42.86	37.65	36.74	39.46
6	12.7	57.2	317.5	12	31.8	1 1/8	190.5	184.2	196.9	49.90	52.06	55.33	48.3	49	51.5
8	12.7	63.5	393.7	12	38.1	1 3/8	222.3	215.9	222.3	84.90	88.61	96.09	75	86	89
10	12.7	71.4	469.9	16	38.1	1 3/8	235.0	228.6	235.0	121.70	129.87	142.79	111.3	125.64	131.54
12	12.7	76.2	533.4	20	38.1	1 3/8	254.0	247.7	254.0	157.00	169.48	189.74	146	167.00	187
14	12.7	82.6	558.8	20	41.1	1 1/2	273.1	266.7	292.1	181.00	199.62	225.55	172.36	180.07	224.07
16	12.7	85.9	616.0	20	44.5	1 5/8	285.8	279.4	298.5	225.00	251.11	285.08	192.95	211.10	272.4
18	12.7	88.9	685.8	20	50.8	1 7/8	323.9	317.5	333.6	309.00	347.24	392.13	272.4	295.10	385.9
20	12.7	91.9	749.3	20	53.8	2	349.3	342.9	362.0	377.00	431.59	490.91	331.42	367.70	488
24	12.7	101.6	901.7	20	66.5	2 1/2	438.2	431.8	457.2	685.00	778.36	885.21	632	703.70	905

- (4) Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.
- (5) The gasket surface and 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).
- (6) Dimensions of sizes 1/2" through 2 1/2" are the same as for Class 1500 Flanges.



## CLASS 1500 FLANGES

ANSI B16.5 FORGED FLANGES

## CLASS 1500 FLANGES

ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	Outside Diam.	Diam. at Base of Hub	O.D. of Raised Face	Thick-ness	BORE				LENGTH THRU HUB			Diam. of Hub at Bevel	Radius of Fillet	Thread Length
					Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Counter Bore Min. Threaded Min.	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
1/2	120.7	38.1	35.1	22.4		22.4	22.9	23.6	60.5	31.8	31.8	21.3	3.0	22.4
3/4	130	44.5	42.9	25.4		27.7	28.2	29.0	69.9	35.1	35.1	26.7	3.0	25.4
1	149.4	52.3	50.8	28.4		34.5	35.1	35.8	73.2	41.1	41.4	33.5	3.0	28.4
1 1/4	158.8	63.5	63.5	28.4		43.2	43.7	44.5	73.2	41.1	41.1	42.2	4.8	30.2
1 1/2	177.8	69.9	73.2	31.8		49.5	50.0	50.5	82.6	44.5	44.5	48.3	6.4	31.8
2	215.9	104.6	91.9	38.1		62.0	62.5	63.5	101.6	57.2	57.2	60.5	7.9	38.1
2 1/2	244.3	124.0	104.6	41.1		74.7	75.4	76.2	104.6	63.5	63.5	73.2	7.9	47.8
3	266.7	133.4	127.0	47.8		90.7	91.4	92.2	117.3	73.2	73.2	88.9	9.7	50.8
4	311.2	162.1	157.2	53.8		116.1	116.8	117.6	124.0	90.4	90.4	114.3	11.2	57.2
5	374.7	196.9	185.7	73.2		143.8	144.5	144.5	155.4	104.6	104.6	141.2	11.2	63.5
6	393.7	228.6	215.9	82.6		170.7	171.5	171.5	119.1	119.1	119.1	168.4	12.7	69.9
8	482.6	292.1	269.7	91.9		221.5	222.3	222.3	212.9	142.7	142.7	219.2	12.7	76.2
10	584.2	368.3	323.9	108.0		276.4	277.4	276.4	254.0	158.8	177.8	273.1	12.7	84.1
12	673.1	450.9	381.0	124.0		327.2	328.2	328.7	282.4	180.8	218.9	323.9	12.7	91.9
14	749.3	495.3	412.8	133.4		359.2	360.2	360.4	298.5	-	241.3	355.6	12.7	-
16	825.5	552.5	469.9	146.1		410.5	411.2	411.2	311.2	-	260.4	406.4	12.7	-
18	914.4	596.9	533.4	162.1		461.8	462.3	462.0	327.2	-	276.4	457.2	12.7	-
20	984.3	641.4	584.2	177.8		513.1	514.4	512.8	355.6	-	292.1	508.0	12.7	-
24	1168.4	762.0	692.2	203.2		616.0	616.0	614.4	406.4	-	330.2	609.6	12.7	-

See Note(1)  
To be specified by purchaser

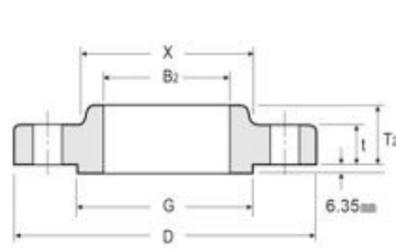
### Notes:

- (1) For the inside diameter of pipes (corresponding to 'Bore' (B1) of Welding Neck Flanges), refer to page 83.
- (2) Class 1500 flanges except Lap Joint will be furnished with 0.25" (6.35mm) raised face, which is not included in 'Thickness' (t) and 'Length through Hub' (T1), (T2).
- (3) For Slip-on, Threaded Lap Joint and Socket Welding Flanges, the hubs can be shaped either vertical from base to top or tapered within the limits 7 degrees.

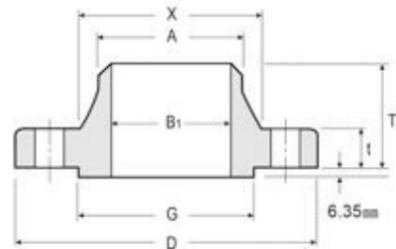
Unit:mm

Nominal Pipe Size	Depth of Socket	DRILLING			BOLTING			APPROXIMATE WEIGHT							
		Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	Stud Bolt Length			Welding Neck			Slip-on and Threaded	Lap Joint	Blind	Socket Welding
						0.25" Raised Face	Male-Female Tongue-Groove	Ring Joint	SCH40	SCH80	SCH160				
1/2	9.7	82.6	4	22.4	3/4	108.0	101.6	108.0	3.10	3.10	3.10	1.8	1.9	1.9	1.81
3/4	11.2	88.9	4	22.4	3/4	114.3	108.0	114.3	3.18	3.18	3.18	2.35	2.35	2.72	2.81
1	12.7	101.6	4	25.4	7/8	127.0	120.7	127.0	3.86	3.92	4.00	3.50	3.60	4.08	3.61
1 1/4	14.21	113	4	25.4	7/8	127.0	120.7	127.0	4.54	4.64	4.71	4.1	4.10	4.3	4.99
1 1/2	15.71	124.0	4	28.4	1	139.7	133.4	139.7	6.36	6.49	6.65	5.45	5.45	5.9	6.76
2	17.5	165.1	8	25.4	7/8	146.1	139.7	146.1	10.90	11.10	11.50	10.5	10.45	11.3	10.89
2 1/2	19.1	190.5	8	28.4	1	158.8	152.4	158.8	16.34	16.69	17.14	15.8	15.8	16	16.34
3	20.6	203.2	8	31.8	1 1/8	177.8	171.5	177.8	21.80	22.37	23.01	21.80	21.80	21.79	
4	23.9	241.3	8	35.1	1 1/4	196.9	190.5	196.9	31.30	32.10	33.71	33.10	34.10	33.11	
5	23.9	292.1	8	41.1	1 1/2	247.7	241.3	247.7	59.90	61.75	64.47	59.00	63.60	60	
6	26.9	317.5	12	38.1	1 3/8	260.4	254.0	266.7	74.19	77.13	81.12	74	77	75	
8	31.8	393.7	12	44.5	1 5/8	292.1	285.8	323.9	124.00	128.83	138.56	117.73	129.73	136.98	
10	33.3	482.6	12	50.8	1 7/8	336.6	330.2	342.9	206.00	217.16	234.82	197.50	220.19	229.97	
12	39.6	571.5	16	53.8	2	374.7	368.3	387.4	306	330.75	359.07	264	286.00	316.40	
14	41.4	635.0	16	60.5	2 1/4	406.4	400.1	425.5	416	431.88	467.94		404.10	421	
16	44.5	704.9	16	66.5	2 1/2	444.5	438.2	469.9	567	562.30	610.84		522.10	559	
18	49.3	774.7	16	73.2	2 3/4	495.3	489.0	527.1	736	741.28	790.00		670.00	761.60	
20	54.1	831.9	16	79.2	3	539.8	533.4	565.2	929	892.00	980.00		806.00	967	
24	63.5	990.6	16	91.9	3 1/2	616.0	609.6	647.7	1504	1430.00	1580.00		1285.5	1568	

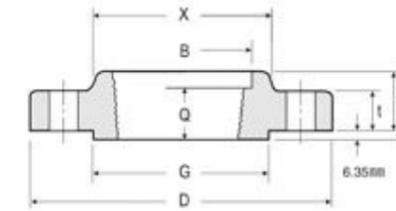
- (4) Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.
- (5) The gasket surface and backside (bearing surface for bolting) are made parallel within 1 degree. To accomplish parallelism, and facing is carried out according to MSS SP-9, without reducing thickness (t).
- (6) Dimensions of sizes 1/2" through 2 1/2" are the same as for Class 900 Flanges.
- (7) 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.



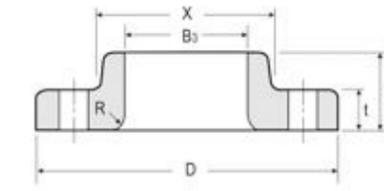
SLIP-ON



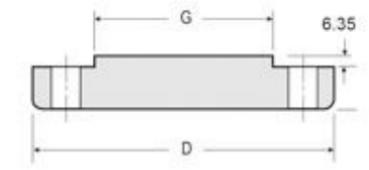
WELDING NECK



THREADED



LAP JOINT



BLIND

## CLASS 2500 FLANGES

ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	Outside Diam. D	Diam. at Base of Hub X	O.D of Raised Face G	Thick-ness t	BORE				LENGTH THRU HUB			Diam. of Hub at Bevel A	Radius of Fillet R	Thread Length Q
					Welding Neck Socket Welding B1	Slip-on Socket Welding B2	Lap Joint B3	Counter Bore Min. Threaded Min. B	Welding Neck T1	Slip-on Threaded Socket Welding T2	Lap Joint T3			
1/2	133.4	42.9	35.1	30.2		22.4	22.9	23.6	73.2	39.6	39.6	21.3	3.0	28.4
3/4	139.7	50.8	42.9	31.8		27.7	28.2	29.0	79.2	42.9	42.9	26.7	3.0	31.8
1	158.8	57.2	50.8	35.1		34.5	35.1	35.8	88.9	47.8	47.8	33.5	3.0	35.1
1 1/4	184.2	73.2	63.5	38.1		43.2	43.7	44.5	95.3	52.3	52.3	42.2	4.8	38.1
1 1/2	203.2	79.2	73.2	44.5		49.5	50.0	50.5	111.3	60.5	60.5	48.3	6.4	44.5
2	235	95.3	91.9	50.8		62.0	62.5	63.5	127.0	69.9	69.9	60.5	7.9	50.8
2 1/2	266.7	114.3	104.6	57.2		74.7	75.4	76.2	142.7	79.2	79.2	73.2	7.9	57.2
3	304.8	133.4	127.0	66.5		90.7	91.4	92.2	168.1	91.9	91.9	88.9	9.7	63.5
4	355.6	165.1	157.2	76.2		116.1	116.8	117.6	190.5	108.0	108.0	114.3	11.2	69.9
5	419.1	203.2	185.7	91.9		143.8	144.5	144.5	228.6	130.0	130.0	141.2	11.2	76.2
6	482.6	235.0	215.9	108.0		170.7	171.5	171.5	273.1	152.4	152.4	168.4	12.7	82.6
8	552.5	304.8	269.7	127.0		221.5	222.3	222.3	317.5	177.8	177.8	219.2	12.7	95.3
10	673.1	374.7	323.9	165.1		276.4	277.4	276.4	419.1	228.6	228.6	273.1	12.7	108.0
12	762	441.5	381.0	184.2		327.2	328.2	328.7	463.6	254.0	254.0	232.9	12.7	120.7

**Notes:**

- (1) For the inside diameter of pipes (corresponding to 'Bore' (B1) of Welding Neck Flanges.), refer to page 83.
- (2) 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).
- (3) 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.

## CLASS 2500 FLANGES

ANSI B16.5 FORGED FLANGES

Unit:mm

Nominal Pipe Size	DRILLING			BOLTING			APPROXIMATE WEIGHT				
	Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	Stud Bolt Length			Welding Neck	Slip-on and Threaded	Lap Joint	Blind
					0.25" Raised Face	Male-Female Tongue-Groove	Ring Joint				
1/2	88.9	4	22.4	3/4	120.7	114.3	120.7	3.63	3.20	3.20	3.11
3/4	95.3	4	22.4	3/4	127.0	120.7	127.0	4.09	4.08	4.08	4.54
1	108.0	4	25.4	7/8	139.7	133.4	139.7	5.90	5.44	5.44	5.44
1 1/4	130.0	4	28.4	1	152.4	146.1	152.4	9.08	8.16	8.16	8.16
1 1/2	146.1	4	31.8	1 1/8	171.5	165.1	171.5	12.70	11.00	11.00	10.44
2	171.5	8	28.4	1	177.8	171.5	177.8	19.10	17.25	17.25	17.71
2 1/2	196.9	8	31.8	1 1/8	196.9	190.5	203.2	23.60	25.00	25.00	25.42
3	228.6	8	35.1	1 1/4	222.3	215.9	228.6	42.70	37.70	37.70	39.04
4	273.1	8	41.1	1 1/2	254.0	247.7	260.4	66.30	58.00	58.00	60.38
5	323.9	8	47.8	1 3/4	298.5	292.1	311.2	110.80	95.30	95.30	101.15
6	368.3	8	53.8	2	342.9	336.6	355.6	176.46	146.51	147.00	156.63
8	438.2	12	53.8	2	381.0	374.7	393.7	261.50	220.00	220.00	240.62
10	539.8	12	66.5	2 1/2	489.0	482.6	508.0	484.50	421.00	421.00	465.36
12	619.3	12	73.2	2 3/4	539.8	533.4	558.8	730.00	590.00	590.00	664.1

- (4) Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.
- (5) The gasket surface and 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).
- (6) Class 2500 Slip-on Flanges are not covered by ANSI B16.5, slip-on flanges are at the manufacturer's option.