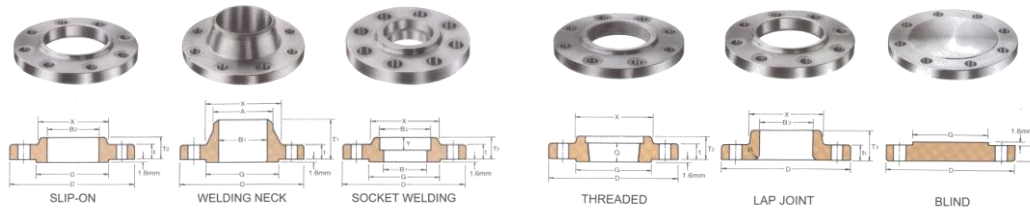


### CLASS 150 FLANGES



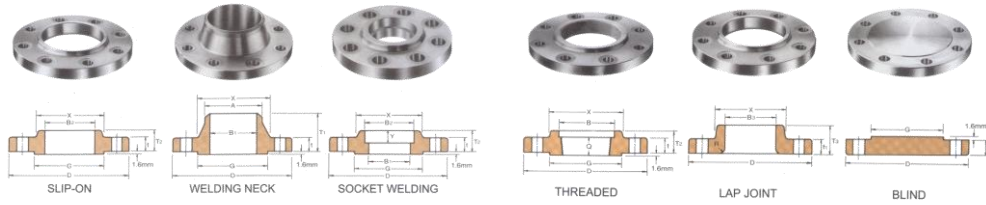
### ANSI B16.5 FORGED FLANGES Class 150 Normal Flanges

Unit: mm

Nominal Pipe Size	BORE																LENGTH THRU HUB				Drilling										Approximate Weight										Nominal Pipe Size
	Outside Diam	O.D. of Raised face	Diam of Base of Hub	Thick-ness Flange	Lap Joint thick-ness	Welding Neck Socket Welding		Slip-on Socket Welding	Lap Joint	Welding Neck		Slip-on Threaded Socket Welding	Lap Joint	Diam of Hub of Bevel	Radius of Filler	Thread Length	Depth of Socket	Bolt Circle Diam		Number of Holes	Diam of Holes	Diam of Bolts (inch)	Machine Bolt Length			Welding Neck		Slip-on and Threaded		Lap Joint		Blind		Socket Welding							
						B <sub>1</sub>	B <sub>2</sub>			T <sub>1</sub>	T <sub>2</sub>							T <sub>1</sub>	T <sub>2</sub>				A	R	Q	Y	Raised Face	Raised Face	Ring Joint	Kg	lb	Kg	lb	Kg	lb	Kg	lb	Kg	lb	Kg	
1/2	89	35.1	30.2	9.6	11.2	15.7	22.4	22.9	46.2	14.1	15.7	21.3	3	15.7	9.7	60.5	4	15.7	1/2	50.8	57.2	---	0.51	1.10	0.47	1.00	0.51	1.00	0.47	1.00	0.47	1.00	0.47	1.00	0.47	1.00	1/2				
3/4	99	42.9	38.1	11.1	12.7	20.8	27.7	28.2	50.7	14.1	15.7	26.7	3	15.7	11.2	69.9	4	15.7	1/2	80.8	63.5	---	0.73	1.60	0.58	1.30	0.64	1.40	0.63	1.40	0.59	1.30	0.59	1.30	0.59	1.30	3/4				
1	108	50.8	49.3	12.6	14.2	26.7	34.5	35.1	54.0	15.9	17.5	33.5	3.0	17.5	12.7	79.2	4	15.7	1/2	57.2	63.5	76.2	1.07	2.40	0.86	1.90	0.93	1.80	0.94	2.10	0.87	1.90	0.87	1.90	0.87	1.90	1				
1 1/4	117	63.5	58.7	14.1	15.7	35.1	43.2	43.7	55.6	19.0	20.6	42.2	4.8	20.6	14.2	88.9	4	15.7	1/2	57.2	69.9	82.6	1.40	3.10	1.08	2.40	1.16	2.00	1.23	2.70	1.11	2.40	1.11	2.40	1 1/4						
1 1/2	127	73.2	65.0	15.9	17.5	40.9	49.5	50.0	60.4	20.8	22.4	48.3	6.4	22.4	15.7	98.6	4	15.7	1/2	63.5	69.9	82.6	1.81	4.00	1.41	3.10	1.51	3.30	1.62	3.60	1.45	3.20	1.45	3.20	1 1/2						
2	152	91.9	77.7	17.5	19.1	52.6	62.0	62.5	61.9	23.8	25.4	60.5	7.9	25.4	17.5	120.7	4	19.1	5/8	69.9	82.6	95.3	2.59	5.70	2.26	5.00	2.38	5.20	2.64	5.80	2.33	5.00	2.33	5.00	2						
2 1/2	178	104.6	90.4	20.8	22.4	62.7	74.7	75.4	68.3	26.8	28.4	73.2	7.9	28.4	19.1	139.7	4	19.1	5/8	76.2	88.9	101.6	4.28	9.40	3.43	7.60	3.60	7.90	4.06	9.00	3.55	7.80	3.55	7.80	2 1/2						
3	191	127.0	108.0	22.3	23.9	78.0	90.7	91.4	68.3	28.6	30.2	88.9	9.7	30.2	20.6	152.4	4	19.1	5/8	76.2	88.9	101.6	5.18	11.40	3.87	8.50	4.04	8.90	4.90	10.80	4.02	8.90	4.02	8.90	3						
3 1/2	216	139.7	122.2	22.3	23.9	90.2	103.4	104.1	69.8	30.2	31.8	101.6	9.7	31.8	22.4	177.8	8	19.1	5/8	76.2	88.9	101.6	5.45	12.00	4.99	11.00	4.99	11.00	5.90	13.00	4.99	11.00	4.99	11.00	3 1/2						
4	229	157.2	134.9	22.3	23.9	102.4	116.1	116.8	74.6	31.7	33.3	114.3	11.2	33.3	23.9	190.5	8	19.1	5/8	76.2	88.9	101.6	7.32	16.10	5.75	12.70	5.96	13.00	7.41	16.30	5.99	13.20	5.99	13.20	4						
5	254	185.7	163.6	22.3	23.9	128.3	143.8	144.5	87.3	35.0	36.6	141.2	11.2	36.6	23.9	215.9	8	22.4	1/2	82.6	95.3	108.0	8.91	19.60	6.22	13.70	6.44	14.00	8.76	19.30	6.68	14.70	6.68	14.70	5						
6	279	215.9	192.0	23.8	25.4	154.2	170.7	171.5	87.3	38.0	39.6	168.4	12.7	39.6	26.9	241.3	8	22.4	1/2	82.6	101.6	114.3	11.26	24.80	7.38	16.30	7.59	16.70	11.31	24.90	7.99	17.60	7.99	17.60	6						
8	343	269.7	246.1	26.8	38.4	202.7	221.5	222.3	100.0	72.9	44.5	219.2	12.7	44.5	31.8	298.5	8	22.4	1/2	88.9	108.0	120.7	17.68	39.00	12.36	27.30	12.66	27.90	19.92	43.90	13.29	29.30	13.29	29.30	8						
10	416	323.9	304.8	28.6	30.2	254.5	276.4	277.4	100.0	47.7	49.3	273.1	12.7	49.3	33.3	362.0	12	25.4	7/8	101.6	114.3	127.0	24.79	54.70	17.10	37.70	16.78	37.00	29.39	64.80	19.50	43.00	19.50	43.00	10						
12	483	381.0	365.3	30.2	31.8	304.8	327.2	328.2	112.7	54.0	55.6	323.9	12.7	55.6	39.6	431.8	12	25.4	7/8	101.6	120.7	134	38.98	85.90	27.68	61.00	28.30	62.40	43.70	96.30	29.03	64.00	29.03	64.00	12						
14	535	412.8	400.1	33.5	35.1	336.6	359.2	360.2	125.4	55.6	79.2	355.6	12.7	57.2	41.4	476.3	12	28.4	1	114.3	133.4	146.1	51.71	114.00	35.20	77.60	41.50	91.50	59.42	140.00	38.56	85.00	38.56	85.00	14						
16	597	469.9	457.2	35.0	36.6	387.4	410.5	411.2	125.4	61.9	87.4	406.4	12.7	63.5	44.5	539.8	16	28.4	1	114.3	133.4	146.1	64.41	142.00	42.18	93.00	52.98	116.80	77.11	170.00	44.49	98.00	44.49	98.00	16						
18	635	533.4	505.0	38.0	39.6	438.2	461.8	462.3	138.1	66.7	96.4	457.2	12.7	68.3	49.3	577.9	16	31.8	1 1/6	127.0	146.1	158.8	74.84	165.00	49.71	109.60	59.00	130.00	94.80	209.00	54.43	120.00	54.43	120.00	18						
20	699	584.2	558.8	41.3	42.9	489.0	513.1	514.4	142.9	71.6	103.1	508.0	12.7	73.2	54.1	635.0	20	31.8	1 1/6	39.7	158.8	171.5	89.36	197.00	65.50	140.00	72.12	159.00	123.38	272.00	70.31	155.00	70.31	155.00	20						
24	813	692.2	663.4	46.2	47.8	590.6	616.0	616.0	150.8	81.0	111.3	609.6	12.7	82.6	63.5	749.3	20	35.1	1 1/2	152.4	171.5	184.2	119.66	263.80	90.50	199.50	99.02	218.30	188.24	415.00	95.25	210.00	95.25	210.00	24						

- Notes:
- (1) For the Bore (1) other Standard wall thickness, refer to page 56.
  - (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 (T<sub>1</sub>), (T<sub>2</sub>)
  - (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.
  - (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 manufacturers option.

### CLASS 300 FLANGES



### ANSI B16.5 FORGED FLANGES

Unit: mm

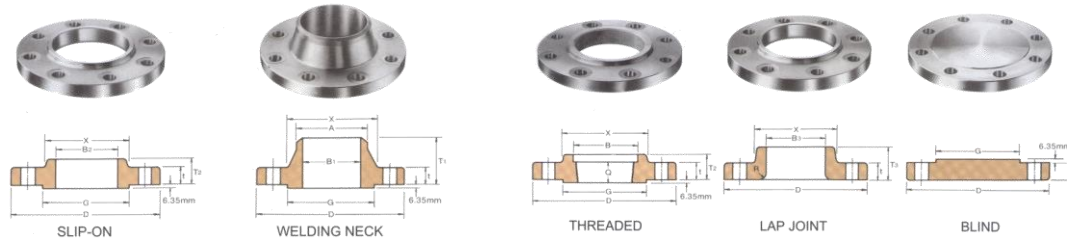
#### Class 300 Normal Flanges

Nominal Pipe Size	Outside Diam	Diam of Base of Hub	O.D. of Raised Face	Thick-ness	Lap Joint thick-ness	BORE				LENGTH THRU HUB			Diam of Hub of Bevel	Radius of Fillet	Thread Length	Depth of Socket	Drilling			Bolting			Approximate Weight								Nominal Pipe Size			
						Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Counter Bore Min. Threaded Mo	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint					Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (Inch)	Machine Bolt Length	Stud Bolt Length	Welding Neck		Slip-on and Threaded		Lap Joint		Blind			Socket Welding		
																							Kg	lb	Kg	lb	Kg	lb	Kg	lb		Kg	lb	Kg
1/2	95	38.1	35.1	12.6	14.2	15.7	22.4	22.9	23.6	50.8	20.8	22.4	21.3	3.0	15.7	9.7	66.5	4	15.7	3/8	57.2	63.5	76.2	0.78	1.7	0.62	1.4	0.61	1.3	0.62	1.4	0.62	1.4	1/2
3/4	117	47.8	42.9	14.1	15.7	20.8	27.7	28.2	29.0	55.6	23.8	25.4	26.7	3.0	15.7	11.2	82.6	4	19.1	8-Mar	63.5	76.2	88.9	1.34	3	1.15	2.5	1.15	2.5	1.16	2.5	1.19	2.6	3/4
1	124	53.8	50.8	15.9	17.5	26.7	34.5	35.1	35.8	60.4	25.3	26.9	33.5	3.0	17.5	12.7	88.9	4	19.1	8-May	63.5	76.2	88.9	1.64	3.6	1.39	3.1	1.38	3	1.42	3	1.44	3.2	1
1 1/4	133	63.5	63.5	17.5	19.1	35.1	43.2	43.7	44.5	63.5	25.3	26.9	42.2	4.8	20.6	14.2	98.6	4	19.1	8-May	69.9	82.6	95.3	2.06	4.5	1.67	3.7	1.66	3.7	1.79	3.9	1.73	3.8	1 1/4
1 1/2	155	69.9	73.2	19.0	20.6	40.9	49.5	50.0	50.5	66.7	28.6	30.2	48.3	6.4	22.4	15.7	114.3	4	22.4	1	76.2	88.9	101.6	3.06	6.7	2.53	5.6	2.52	5.6	2.68	5.9	2.62	5.8	1 1/2
2	165	84.1	91.9	20.8	22.4	52.6	62.0	62.5	63.5	68.3	31.7	33.3	60.5	7.9	25.4	17.5	127	8	19.1	8-May	76.2	88.9	101.6	3.4	7.5	2.8	6.2	2.79	6.2	3.09	6.8	2.94	6.5	2
2 1/2	191	100.1	104.6	23.8	25.4	62.7	74.7	75.4	76.2	74.6	36.5	38.1	73.2	7.9	28.4	19.1	149.4	8	22.4	1	82.6	101.6	114.3	5.31	11.7	4.25	9.4	4.22	9.3	4.75	10.5	4.49	9.9	2 1/2
3	210	117.3	127.0	26.8	28.4	78.0	90.7	91.4	92.2	77.6	41.3	42.9	88.9	9.7	30.2	20.6	168.1	8	22.4	1	88.9	108	120.7	7.32	16.1	5.81	12.8	5.78	12.7	6.79	14.9	6.2	13.7	3
3 1/2	229	133.4	139.7	28.6	30.2	90.2	103.4	104.1	104.9	79.4	42.9	44.5	101.6	9.7	31.8	22.4	184.2	8	22.4	1	95.3	108	127	8.17	18	7.72	17	7.72	17	9.53	21			3 1/2
4	254	146.1	157.2	30.2	31.8	102.4	116.1	116.8	117.6	84.3	46.2	47.8	114.3	11.2	33.3	23.9	200.2	8	22.4	1	95.3	114.3	127	11.3	24.9	10.13	22.3	10.07	22.2	12	26.5			4
5	279	177.8	185.7	33.5	35.1	128.3	143.8	144.5	144.5	97.0	49.2	50.8	141.2	11.2	36.6	23.9	235	8	22.4	1	108	120.7	133.4	15.12	33.3	12.58	27.7	12.52	27.6	15.96	35.2			5
6	318	206.2	215.9	35.0	36.6	154.2	170.7	171.5	171.5	97.0	50.7	52.3	168.4	12.7	39.6	26.9	269.7	12	22.4	1	108	120.7	139.7	19.68	43.4	16.04	35.4	15.95	35.2	21.2	46.7			6
8	381	260.4	269.7	39.5	41.1	202.7	221.5	222.3	222.3	109.7	60.4	62.0	219.2	12.7	44.5	31.8	330.2	12	25.4	8-Jul	120.7	139.7	152.4	30.48	67.2	24.5	54	24.37	53.7	34.6	76.3			8
10	445	320.5	323.9	46.2	47.8	254.5	276.4	277.4	276.4	115.7	64.9	65.3	273.1	12.7	49.3	33.3	387.4	16	28.4	1	139.7	158.8	171.5	43.47	96.4	34.16	75.3	39.92	88	55.34	122			10
12	521	374.7	381.0	49.2	50.8	304.8	327.2	328.2	328.7	128.4	71.6	71.6	323.9	12.7	55.6	39.6	450.9	16	31.8	1 1/8	146.1	171.5	184.2	64.41	142	51.26	113	58.7	129.4	78.9	174			12
14	584	425.5	412.8	52.2	53.8	336.6	359.2	360.2	360.4	141.4	74.6	74.6	355.6	12.7	57.2	41.4	514.4	20	31.8	1 1/8	158.8	177.8	190.5	88.3	194.7	72.12	159	83.46	184	107.05	236			14
16	648	482.6	469.9	55.6	57.2	387.4	410.5	411.2	411.2	144.5	81.0	81.0	406.4	12.7	63.5	44.5	571.5	20	35.1	1 1/2	165.1	190.5	203.2	112.94	249	90.4	199.3	106.14	234	139.25	307			16
18	711	533.4	533.4	58.9	60.5	438.2	461.8	462.3	462.0	157.2	87.3	87.3	457.2	12.7	68.3	49.3	628.7	24	35.1	1 1/2	171.5	196.9	209.6	138.34	305	109	240.3	133.95	295.3	176.9	396			18
20	775	587.2	584.2	61.9	63.5	489.0	513.1	514.4	512.8	160.5	93.7	93.7	508.0	12.7	73.2	54.1	668.8	24	35.1	1 1/2	184.2	203.2	222.3	167.37	369	136	300	157.65	347.6	223.17	492			20
24	914	701.5	692.2	68.3	69.9	590.6	616.0	616.0	614.4	166.5	104.8	104.8	609.6	12.7	82.6	63.5	812.8	24	41.1	1 1/2	203.2	228.6	254	235.41	519	204	449.7	240.4	530	342	754			24

Notes:

- (1) For the Bore (B<sub>1</sub>) other than Standard wall thickness, refer to page 56.
- (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 (T<sub>1</sub>), (T<sub>2</sub>)
- (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.
- (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 manufacturers option.

### CLASS 400 FLANGES



### ANSI B16.5 FORGED FLANGES

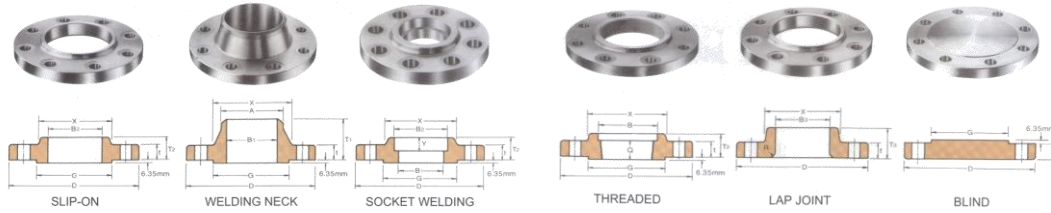
Unit: mm

#### Class 400 Normal Flanges

Nominal Pipe Size	Outside Diam	Diam of Base of Hub	O.D. of Raised face	Thick-ness	BORE										LENGTH THRU HUB			Diam of Hub of Bevel	Radius of Filet	thread length	Drilling			Bolting			Approximate Weight								Nominal Pipe Size
					Welding Neck	Slip-on	Lap Joint	Counter Bore Min.	Welding Neck	Slip-on and Threaded	Lap Joint	Boit Circle Diam	Number of Holes	Number 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	Kg	lb	Kg	lb	Kg	lb	Kg	lb						
																														B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	B	T <sub>1</sub>	
½	95	38.1	35.1	14.2		22.4	22.9	23.6	52.3	22.4	22.4	21.3	3	15.7	66.5	4	15.7	½	76.2	69.9	76.2	1.36	3.00	0.91	2.00	0.80	1.80	0.91	2.00	½					
¾	117	47.8	42.9	15.7		27.7	28.2	29.0	57.2	25.4	25.4	26.7	3	15.7	82.6	4	19.1	5/8	88.9	82.6	88.9	1.59	3.50	1.36	3.00	1.36	3.00	1.40	3.00	¾					
1	124	53.8	50.8	17.5		34.5	35.1	35.8	62.0	26.9	26.9	33.5	3	17.5	88.9	4	19.1	5/8	88.9	82.6	88.9	1.81	4.00	1.59	3.50	1.59	3.50	1.70	3.80	1					
1 ¼	133	63.5	63.5	20.6		43.2	43.7	44.5	66.5	28.4	28.4	42.2	4.8	20.6	98.6	4	19.1	5/8	95.3	88.9	95.3	2.50	5.50	2.10	4.60	2.04	4.50	2.27	5.00	1 ¼					
1 ½	155	69.9	73.2	22.4		49.5	50.0	50.5	69.9	31.8	31.8	48.3	6.4	22.4	114.3	4	22.4	¾	108.0	101.6	108.0	3.63	8.00	3.10	6.80	2.95	6.50	3.40	7.50	1 ½					
2	165	84.1	91.9	25.4		62.0	62.5	63.5	73.2	36.6	36.6	60.5	7.9	28.4	127.0	8	19.1	5/8	108.0	101.6	108.0	4.54	10.00	3.63	8.00	3.63	8.00	4.40	9.70	2					
2 ½	191	100.1	104.6	58.4		74.7	75.4	76.2	79.2	41.1	41.1	73.2	7.9	31.8	149.4	8	22.4	¾	120.7	114.3	120.7	6.35	14.00	5.44	12.00	4.99	11.00	6.80	15.00	2 ½					
3	210	117.3	127.0	31.8		90.7	91.4	92.2	82.6	46.0	46.0	88.9	9.7	35.1	168.1	8	22.4	¾	127.0	120.7	127.0	8.17	18.00	7.26	16.00	6.35	14.00	8.90	19.60	3					
3 ½	229	133.4	139.7	35.1		103.4	104.1	104.9	85.9	49.3	49.3	101.6	9.7	39.6	184.2	8	25.4	7/8	139.7	133.4	139.7	11.80	26.00	9.53	21.00	9.08	20.00	13.17	29.00	3 ½					
4	254	146.1	157.2	35.1		116.1	116.8	117.6	88.9	50.8	50.8	114.3	11.2	36.6	200.2	8	7/8	7/8	139.7	133.4	139.7	13.61	30.00	10.89	24.00	9.98	22.00	14.40	31.70	4					
5	279	177.8	185.7	38.1		143.8	144.5	144.5	101.6	53.8	53.8	141.2	11.2	42.9	235.0	8	25.4	7/8	146.1	139.7	146.1	17.69	39.00	14.07	31.00	13.15	29.00	19.50	43.00	5					
6	318	206.2	215.9	41.1		170.7	171.5	171.5	103.1	57.2	57.2	168.4	12.7	46.0	269.7	12	25.4	7/8	152.4	146.1	152.4	22.23	49.00	19.98	44.00	16.78	37.00	27.67	61.00	6					
8	381	260.4	269.7	47.8		221.5	222.3	22.3	117.3	68.3	68.3	219.2	12.7	50.8	330.2	12	28.4	1	171.5	165.1	171.5	35.38	78.00	30.40	67.00	26.16	59.00	45.36	100.00	8					
10	445	320.5	323.9	53.8		276.4	277.4	276.4	124.0	73.2	73.2	273.1	12.7	55.6	387.4	16	31.8	1 1/8	190.5	184.2	190.5	49.89	110.00	41.28	91.00	43.09	95.00	68.00	150.00	10					
12	521	374.7	381.0	57.2		327.2	328.2	328.7	136.7	79.2	79.2	323.9	12.7	60.5	450.9	16	35.1	1 ¼	203.2	196.9	203.2	72.57	160.00	59.02	130.00	68.95	152.00	98.00	216.00	12					
14	584	425.5	412.8	60.5		359.2	360.2	360.4	149.4	84.1	117.3	355.6	12.7	63.5	514.4	20	35.1	1 ¼	209.6	203.2	209.6	105.69	233.00	81.72	180.00	95.25	210.00	131.66	290.00	14					
16	648	482.6	469.9	63.5		410.5	411.2	411.2	152.4	93.7	127.0	406.4	12.7	68.3	571.5	20	38.1	1 3/8	222.3	215.9	222.3	133.30	294.00	106.69	235.00	127.00	280.00	167.00	368.00	16					
18	711	533.4	533.4	66.5		461.8	462.3	462.0	165.1	98.6	136.7	457.2	12.7	69.9	628.7	24	38.1	1 3/8	228.6	222.3	228.6	158.90	350.30	129.39	285.30	156.49	345.00	206.57	455.40	18					
20	775	587.2	584.2	69.9		513.1	514.4	512.8	168.1	101.6	146.1	508.0	12.7	73.2	685.8	24	41.1	1 ½	241.3	235.0	247.7	193.00	425.50	152.00	335.00	190.51	420.00	261.00	575.40	20					
24	914	701.5	692.2	76.2		616.0	616.0	614.4	174.8	114.3	158.8	609.6	12.7	82.6	812.8	24	47.8	1 ½	266.7	260.4	279.4	281.48	620.50	231.54	510.50	278.96	615.00	395.00	870.80	24					

- Notes:
- (1) For the inside diameter of pipes (corresponding to Bore (B<sub>1</sub>) of welding Neck Flanges), refer to page 56.
  - (2) Class 400 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 (T<sub>1</sub>), (T<sub>2</sub>)
  - (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.
  - (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 size 1/2" through 3 1/2" are the same as for class 600 Flanges.

### CLASS 600 FLANGES



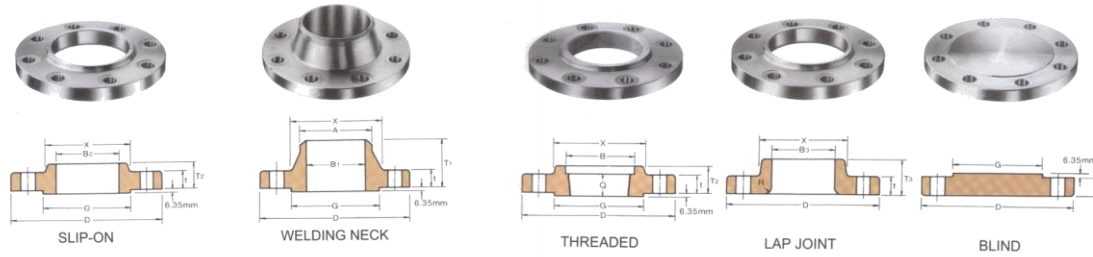
### ANSI B16.5 FORGED FLANGES Class 600 Normal Flanges

Unit: mm

Nominal Pipe Size	Outside Diam	Diam of Base of Hub	O.D. of Raised face	Thickness	BORE									LENGTH THRU HUB				Diam of Hub of Bevel	Radius of Filler	Thread Length	Depth of Socket	Drilling			Bolting			Approximate Weight										Nominal Pipe Size
					Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Counter Bore Mn.	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint	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	Kg	lb	Kg	lb	Kg	lb	Kg	lb	Kg	lb						
					B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	B	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	A	R	Q	Y																							
1/2	95	38.1	35.1	14.2	22.4	22.9	23.6	52.3	22.4	22.4	21.3	3.0	15.7	9.7	66.5	4	15.7	3/4	76.2	69.9	76.2	0.90	2.00	0.91	2.00	0.80	1.80	0.91	2.00	0.91	2.00	0.91	2.00	1/2				
3/4	117	47.8	42.9	15.7	27.7	28.2	29.0	57.2	25.4	25.4	26.7	3.0	15.7	11.2	82.6	4	19.1	5/8	88.9	82.6	88.9	1.59	3.50	1.40	3.00	1.36	3.00	1.40	3.00	1.36	3.00	1.36	3.00	3/4				
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	12.7	88.9	4	19.1	5/8	88.9	82.6	88.9	1.90	4.00	1.70	3.70	1.59	3.50	1.81	4.00	1.81	4.00	1.81	4.00	1				
1 1/4	133	63.5	63.5	20.6	43.2	43.7	44.5	66.5	28.4	28.4	42.2	4.8	20.6	14.2	98.6	4	19.1	5/8	95.3	88.9	95.3	2.49	5.50	2.27	5.00	2.04	4.50	2.40	5.30	2.60	5.70	2.60	5.70	1 1/4				
1 1/2	155	69.9	73.2	22.4	49.5	50.0	50.5	69.9	31.8	31.8	48.3	6.4	22.4	15.7	114.3	4	22.4	3/4	108.0	101.6	108.0	3.63	8.00	3.10	6.80	2.95	6.50	3.40	7.50	3.18	7.00	3.18	7.00	1 1/2				
2	165	84.1	91.9	25.4	62.0	62.5	63.5	73.2	36.6	36.6	60.5	7.9	28.4	17.5	127.0	8	19.1	5/8	108.0	101.6	108.0	4.54	10.00	3.63	8.00	3.63	8.00	4.40	9.70	3.90	8.60	3.90	8.60	2				
2 1/2	191	100.1	104.6	28.4	74.7	75.4	76.2	79.2	41.1	41.1	73.2	7.9	31.8	19.1	149.4	8	22.4	3/4	120.7	114.3	120.7	6.35	14.00	5.44	12.00	4.99	11.00	6.80	15.00	5.90	13.00	5.90	13.00	2 1/2				
3	210	117.3	127.0	31.8	90.7	91.4	92.2	82.6	46.0	46.0	88.9	9.7	35.1	20.6	168.1	8	22.4	3/4	127.0	120.7	127.0	8.16	18.00	7.26	16.00	6.35	14.00	8.90	19.60	7.40	16.30	7.40	16.30	3				
3 1/2	229	133.4	139.7	35.1	103.4	104.1	104.9	85.9	49.3	49.3	101.6	9.7	39.6	22.4	184.2	8	25.4	7/8	139.7	133.4	139.7	11.80	26.00	9.53	21.00	9.08	20.00	13.17	29.00					3 1/2				
4	273	152.4	157.2	38.1	116.1	116.8	117.6	101.6	53.8	53.8	114.3	11.2	41.1	23.9	215.9	8	25.4	7/8	146.1	139.7	146.1	16.78	37.00	14.97	33.00	14.06	31.00	18.60	41.00					4				
5	330	189.0	185.7	44.5	143.8	144.5	144.5	114.3	60.5	60.5	141.2	11.2	47.8	23.9	266.7	8	28.4	1	165.1	158.8	165.1	30.87	68.00	28.50	62.80	27.50	60.60	30.84	68.00					5				
6	356	222.3	215.9	47.8	170.7	171.5	171.5	117.3	66.5	66.5	168.4	12.7	50.8	26.9	292.1	12	28.4	1	171.5	165.1	171.5	36.77	80.00	36.32	80.00	35.38	78.00	38.00	83.80					6				
8	419	273.1	269.7	55.6	221.5	222.3	222.3	133.4	76.2	76.2	219.2	12.7	57.2	31.8	349.3	12	31.8	1 1/8	190.5	184.2	190.5	50.80	112.00	44.00	97.00	50.80	112.00	62.20	137.00					8				
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	33.3	431.8	16	35.1	1 1/4	215.9	209.6	215.9	86.26	190.00	76.20	168.00	74.00	163.00	102.00	224.90					10				
12	559	400.1	381.0	66.5	327.2	328.2	328.7	155.4	91.9	117.3	323.9	12.7	69.9	39.6	489.0	20	35.1	1 1/4	222.3	215.9	222.3	102.51	226.00	97.52	215.00	108.86	240.00	132.00	291.00					12				
14	603	431.8	412.8	69.9	359.2	360.2	360.4	165.1	93.7	127.0	355.6	12.7	73.2	41.4	527.1	20	38.1	1 3/8	235.0	228.6	235.0	121.56	268.00	102.00	224.80	111.00	244.70	158.00	348.30					14				
16	686	495.3	469.9	76.2	410.5	411.2	411.2	177.8	106.4	139.7	406.4	12.7	77.7	44.5	603.3	20	41.1	1 1/2	254.0	247.7	254.0	177.06	290.00	149.82	330.20	165.71	365.30	224.73	495.40					16				
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	49.3	654.1	20	44.5	1 5/8	273.1	266.7	273.1	215.65	475.40	180.10	412.30	194.00	427.70	285.00	628.30					18				
20	813	609.6	584.2	88.9	513.1	514.4	512.8	190.5	127.0	165.1	508.0	12.7	82.6	54.1	723.9	24	44.5	1 5/8	285.8	279.4	292.1	267.86	590.50	231.54	510.50	258.78	570.50	365.00	804.70					20				
24	940	717.6	692.2	101.6	616.0	616.0	614.4	203.2	139.7	184.2	609.6	12.7	91.9	63.5	838.2	24	50.8	1 7/8	330.2	323.9	336.6	372.00	820.00	330.00	725.50	362.00	798.00	533.45	1176.00					24				

- Notes:
- (1) For the inside diameter of pipes (corresponding to Bore (B<sub>1</sub>) of welding Neck Flanges), refer to page 56.
  - (2) Class 600 flanges except lap joint will be furnished with 0.25" (0.35mm) raised face, which is not included in Thickness (t) and length through Hub (T<sub>1</sub>), (T<sub>2</sub>).
  - (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 of 7 degrees.
  - (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 size 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 manufacturers option.

### CLASS 900 FLANGES



### ANSI B16.5 FORGED FLANGES

Unit: mm

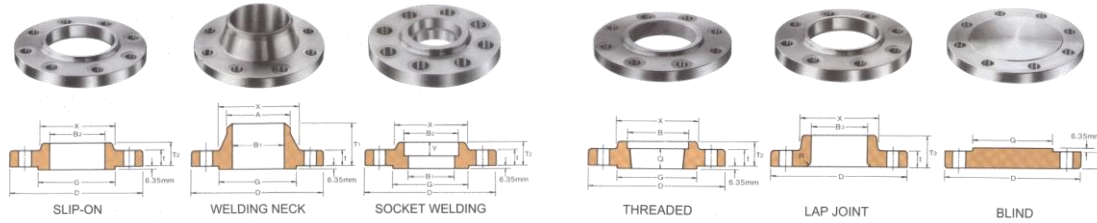
### Class 900 Normal Flanges

Nominal Pipe Size	Outside Diam	Diam of Base of Hub	O.D. of Raised face	Thick-ness	BORE			LENGTH THRU HUB			Diam of Hub of Bevel	Radius of Fillet	thread length	Drilling			Bolting			Approximate Weight								Nominal Pipe Size		
					Welding Neck	Slip-on	Lap Joint	Counter Bore Min.	Welding Neck	Slip-on Threaded				Lap Joint	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	Kg	lb	Kg	lb	Kg	lb		Kg	lb
					B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	B	T <sub>1</sub>	T <sub>2</sub>				T <sub>3</sub>	A	R	Q													
½	121	38.1	35.1	22.4	22.4	22.9	23.6	60.5	31.8	31.8	21.3	3	22.4	82.6	4	22.4	¾	108.0	101.6	108.0	2.10	4.60	1.81	4.00	1.81	4.00	1.90	4.20	½	
¾	130	44.5	42.9	25.4	27.7	28.2	29.0	69.9	35.1	35.1	26.7	3	25.4	88.9	4	22.4	¾	114.3	108.0	114.3	2.72	6.00	2.40	5.30	2.30	5.00	2.70	6.00	¾	
1	149	52.3	50.8	28.4	34.5	35.1	35.8	73.2	41.1	41.1	33.5	3	28.4	101.6	4	25.4	7/8	127.0	120.7	127.0	3.86	8.50	3.41	7.50	3.40	7.50	4.09	9.00	1	
1 ¼	159	63.5	63.5	28.4	43.2	43.7	44.5	73.2	41.1	41.1	42.2	4.8	30.2	111.3	4	25.4	7/8	127.0	120.7	127.0	4.54	10.00	4.10	9.00	4.09	9.00	4.54	10.00	1 ¼	
1 ½	178	69.9	73.2	31.8	49.5	50.0	50.5	82.6	44.5	44.5	48.3	6.4	31.8	124.0	4	28.4	1	139.7	133.4	139.7	5.90	13.00	5.45	12.00	5.40	11.90	5.90	13.00	1 ½	
2	216	104.6	91.9	38.1	62.0	62.5	63.5	101.6	57.2	57.2	60.5	7.9	38.1	165.1	8	25.4	7/8	146.1	139.7	146.1	10.89	24.00	9.98	22.00	9.53	21.00	11.34	25.00	2	
2 ½	244	124.0	104.6	41.1	74.7	75.4	76.2	104.6	63.5	63.5	73.2	7.9	47.8	190.5	8	28.4	1	158.8	152.4	158.8	16.33	36.00	15.80	34.80	13.15	29.00	16.00	35.30	2 ½	
3	241	127.0	127.0	38.1	90.7	91.4	92.2	101.6	53.8	53.8	88.9	9.7	41.1	190.5	8	25.4	7/8	146.1	139.7	146.1	15.00	33.00	11.80	26.00	11.34	25.00	13.17	29.00	3	
4	292	158.8	157.2	44.5	116.1	116.8	117.6	114.3	69.9	69.9	114.3	11.2	47.8	235.0	8	31.8	1 1/8	171.5	165.1	171.5	23.13	51.00	23.20	51.00	22.60	48.50	24.50	54.00	4	
5	349	190.5	185.7	50.8	143.8	144.5	144.5	127.0	79.2	79.2	141.2	11.2	53.8	279.4	8	35.1	1 ¼	190.5	184.2	190.5	38.50	84.90	37.65	83.00	36.74	81.00	39.46	87.00	5	
6	381	235.0	215.9	55.6	170.7	171.5	171.5	139.7	85.9	85.9	168.4	12.7	57.2	317.5	12	31.8	1 1/8	190.5	184.2	196.9	49.89	110.00	48.30	106.50	47.50	104.70	51.50	113.50	6	
8	470	298.5	269.7	63.5	221.5	222.3	222.3	162.1	101.6	114.3	219.2	12.7	63.5	393.7	12	38.1	1 3/8	222.3	215.9	222.3	79.45	175.00	75.00	166.30	86.00	189.60	89.00	106.20	8	
10	546	368.3	323.9	69.9	276.4	277.4	276.4	184.2	108.0	127.0	273.1	12.7	71.4	469.9	16	38.1	1 3/8	235.0	228.6	235.0	118.04	260.00	111.13	245.00	125.64	277.00	131.54	290.00	10	
12	610	419.1	381.0	79.2	327.2	328.2	328.7	200.2	117.3	142.7	323.9	12.7	76.2	533.4	20	38.1	1 3/8	254.0	247.7	254.0	157.00	346.00	146.00	321.80	167.00	368.00	187.00	412.30	12	
14	641	450.9	412.8	85.9	359.2	360.2	360.4	212.9	130.0	155.4	355.6	12.7	82.6	558.8	20	41.1	1 ½	273.1	266.7	292.1	181.60	400.40	172.36	380.00	180.07	397.00	224.07	494.00	14	
16	705	508.0	469.9	88.9	410.5	411.2	411.2	215.9	133.4	165.1	406.4	12.7	85.9	616.0	20	44.5	1 5/8	285.8	279.4	298.5	224.73	495.50	192.95	425.40	211.11	465.40	272.40	600.50	16	
18	787	565.2	533.4	101.6	461.8	462.3	462.0	228.6	152.4	190.5	457.2	12.7	88.9	685.8	20	50.8	1 7/8	323.9	317.5	333.6	308.72	680.60	272.40	600.50	295.10	650.60	385.90	850.80	18	
20	857	622.3	584.2	105.0	513.1	514.4	512.8	247.7	158.8	209.6	508.0	12.7	91.9	749.3	20	53.8	2	349.3	342.9	362.0	376.82	830.70	331.42	730.60	367.74	810.70	488.00	1076.00	20	
24	1041	749.3	692.2	139.7	616.0	616.0	614.4	292.1	203.2	266.7	609.6	12.7	101.6	901.7	20	66.5	2 ½	438.2	431.8	457.2	685.00	1510.00	632.00	1393.30	700.00	1543.00	905.00	1995.00	24	

**Notes:**

- (1) For the inside diameter of pipes (corresponding to Bore (B<sub>1</sub>) of welding Neck Flanges), refer to page 56.
- (2) Class 900 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 (T<sub>1</sub>), (T<sub>2</sub>).
- (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.
- (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.
- (6) Dimensions of size 1/2" through 2 1/2" are the same as for class 1500 Flanges.

### CLASS 1500 FLANGES



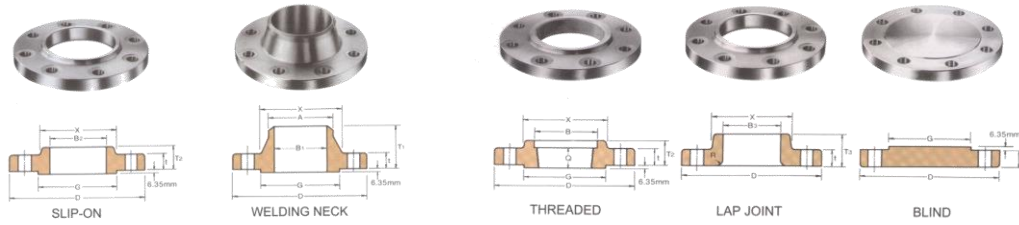
### ANSI B16.5 FORGED FLANGES Class 1500 Normal Flanges

Unit: mm

Nominal Pipe Size	Outside Diam	Diam of base of Hub	O.D. of Raised face	Thick-ness	BORE											LENGTH THRU HUB			Diam of Hub of Bevel	Radius of Filler	Thread Length	Depth of Socket	Drilling			Bolting			Approximate Weight								Nominal Pipe Size
					Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Counter Bore Min.	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint	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						
																B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>					B	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	A	R	Q	Y	0.25 Raised Face	Male female tongue-Groove	Ring Joint	Kg	lb	Kg	
1/2	121	38.1	35.1	22.4	22.4	22.9	23.6	60.5	31.8	31.8	21.3	3.0	22.4	9.7	82.6	4	22.4	%	108.0	101.6	108.0	2.10	4.60	1.80	4.00	1.80	4.00	1.90	4.00	1.81	4.00	%					
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	11.2	88.9	4	22.4	%	114.3	108.0	114.3	2.72	6.00	2.27	5.00	2.27	5.00	2.72	6.00	2.81	6.20	%					
1	149	52.3	50.8	28.4	34.5	35.1	35.8	73.2	41.1	41.1	33.5	3.0	28.4	12.7	101.6	4	25.4	7/8	127.0	120.7	127.0	3.86	8.50	3.40	7.50	3.40	7.50	4.08	9.00	3.61	8.00	1					
1 1/4	159	63.5	63.5	28.4	43.2	43.7	44.5	73.2	41.1	41.1	42.2	4.8	30.2	14.2	111.3	4	25.4	7/8	127.0	120.7	127.0	4.54	10.00	4.10	9.00	4.09	10.80	4.30	9.50	4.99	11.00	1 1/4					
1 1/2	178	69.9	73.2	31.8	49.5	50.0	50.5	82.6	44.5	44.5	48.3	6.4	31.8	15.7	124.0	4	28.4	1	139.7	133.4	139.7	5.90	13.00	5.45	12.00	5.40	11.90	5.90	13.00	6.76	14.90	1 1/2					
2	216	104.6	91.9	38.1	62.0	62.5	63.5	101.6	57.2	57.2	60.5	7.9	38.1	17.5	165.1	8	25.4	7/8	146.1	139.7	146.1	10.89	24.00	10.50	23.00	9.53	21.00	11.30	25.00	10.89	24.00	2					
2 1/2	244	124.0	104.6	41.1	74.7	75.4	76.2	104.6	63.5	63.5	73.2	7.9	47.8	19.1	190.5	8	28.4	1	158.8	152.4	158.8	16.34	36.00	15.80	34.80	13.15	29.00	16.00	35.30	16.34	36.00	2 1/2					
3	267	133.4	127.0	47.8	90.7	91.4	92.2	117.3	73.2	73.2	88.9	9.7	50.8	20.6	203.2	8	31.8	1 1/8	177.8	171.5	177.8	21.79	48.00	21.77	48.00	17.24	38.00	21.79	48.00			3					
4	311	162.1	157.2	53.8	116.1	116.8	117.6	124.0	90.4	90.4	114.3	11.2	57.2	23.9	241.3	8	35.1	1 1/2	196.9	190.5	196.9	31.30	69.00	31.00	68.40	29.00	63.90	33.11	73.00			4					
5	375	196.9	185.7	73.2	143.8	144.5	144.5	155.4	104.6	104.6	141.2	11.2	63.5	23.9	292.1	8	41.1	1 1/2	247.7	241.3	247.7	59.02	130.00	58.80	129.60	54.00	119.00	60.00	132.30			5					
6	394	228.6	215.9	82.6	170.7	171.5	171.5	171.5	119.1	119.1	168.4	12.7	69.9	26.9	317.5	12	38.1	1 3/8	260.4	254.0	266.7	74.91	165.00	74.00	163.00	62.00	136.70	75.00	165.30			6					
8	483	292.1	269.7	91.9	221.5	222.3	222.3	212.9	142.7	142.7	219.2	12.7	76.2	31.8	393.7	12	44.5	1 5/8	292.1	285.8	323.9	123.83	273.00	117.73	258.00	129.73	236.00	136.98	302.00			8					
10	584	368.3	323.9	108.0	276.4	277.4	276.4	254.0	158.8	177.8	273.1	12.7	84.1	33.3	482.6	12	50.8	1 7/8	336.6	330.2	342.9	205.93	454.00	197.49	435.40	220.19	485.40	229.97	507.00			10					
12	673	450.9	381.0	124.0	327.2	328.2	328.7	282.4	180.8	218.9	323.9	12.7	91.9	39.6	571.5	16	53.8	2	374.7	368.3	387.4	306.00	674.60	264.00	582.00	286.02	630.60	316.00	696.70			12					
14	749	495.3	412.8	133.4	359.2	360.2	360.4	298.5	-	241.3	355.6	12.7	-	41.4	635.0	16	60.5	2 1/2	406.4	400.1	425.5	416.00	917.00	-	-	404.06	890.80	421.00	928.00			14					
16	826	552.5	469.9	146.1	410.5	411.2	411.2	311.2	-	260.4	406.4	12.7	-	44.5	704.9	16	66.5	2 1/2	444.5	438.2	469.9	567.50	1250.00	-	-	522.10	1151.00	559.00	1232.70			16					
18	914	596.9	534.4	162.1	461.8	462.3	462.0	327.2	-	276.4	457.2	12.7	-	49.3	774.7	16	73.2	2 1/2	495.3	489.0	527.1	736.00	1622.60	-	-	669.65	1476.30	761.00	1677.70			18					
20	984	641.4	584.2	177.8	513.1	514.4	512.8	355.6	-	292.1	508.0	12.7	-	54.1	831.9	16	79.2	3	539.8	533.4	565.2	929.00	2048.00	-	-	805.85	1776.60	967.00	2131.80			20					
24	1168	762.0	692.2	203.2	616.0	616.0	614.4	406.4	-	330.2	609.6	12.7	-	63.5	990.6	16	91.9	3 1/2	616.0	609.6	647.7	1504.00	3315.70	-	-	1285.55	2834.00	1568.00	3456.80			24					

- Notes:
- (1) For the inside diameter of pipes (corresponding to Bore (B<sub>1</sub>) of welding Neck Flanges), refer to page 56.
  - (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 (T<sub>1</sub>), (T<sub>2</sub>)
  - (3) For Slip-on, Threaded and lap joint and socket welding Flanges, the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.
  - (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 size 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 manufacturers option.

### CLASS 2500 FLANGES



### ANSI B16.5 FORGED FLANGES

Unit: mm

#### Class 2500 Normal Flanges

Nominal Pipe Size	Outside Diam	Diam of Base of Hub	O.D. of Raised face	Thickness	BORE									LENGTH THRU HUB			Diam of Hub of Bevel	Radius of Filler	Thread Length	Drilling			Bolting						Approximate Weight						Nominal Pipe Size
					Welding Neck	Slip-on	Lap Joint	Counter Bore Min.	Welding Neck	Slip-on Threaded	Lap Joint	Bolt Circle Diam	Number of Holes	Diam of Holes	Stud Bolt Length					Welding Neck		Slip-on and Threaded		Lap Joint		Blind									
															Diam of Bolts (inch)	0.25 Raised Face				Male female tongue-Groove	Ring Joint	Kg	lb	Kg	lb	Kg	lb	Kg	lb						
					B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	B	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	A	R	Q																					
½	133	42.9	35.1	30.2		22.4	22.9	23.6	73.2	39.6	39.6	21.3	3.0	28.4	88.9	4	22.4	¾	120.7	114.3	120.7	3.18	7.00	3.18	7.00	3.00	6.60	3.18	7.00	½					
¾	140	50.8	42.9	31.8		27.7	28.2	29.0	79.2	42.9	42.9	26.7	3.0	31.8	95.3	4	22.4	¾	127.0	120.7	127.0	4.08	9.00	4.08	9.00	3.63	8.00	4.54	10.00	¾					
1	159	57.2	50.8	35.1		34.5	35.1	35.8	88.9	47.8	47.8	33.5	3.0	35.1	108.0	4	25.4	7/8	139.7	133.4	139.7	5.45	12.00	5.44	12.00	4.99	11.00	5.44	12.00	1					
1 ¼	184	73.2	63.5	38.1		43.2	43.7	44.5	95.3	52.3	52.3	42.2	4.8	38.1	130.0	4	28.4	1	152.4	146.1	152.4	9.07	20.00	8.16	18.00	7.26	16.00	8.16	18.00	1 ¼					
1 ½	203	79.2	73.2	44.5		49.5	50.0	50.5	111.3	60.5	60.5	48.3	6.4	44.5	146.1	4	31.8	1 1/8	171.5	165.1	171.5	11.35	25.00	11.00	24.30	9.99	22.00	10.44	23.00	1 ½					
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	171.5	8	28.4	1	177.8	171.5	177.8	19.70	42.00	17.25	38.00	16.80	37.00	17.71	39.00	2					
2 ½	267	114.3	104.6	57.2		74.7	75.4	76.2	142.7	79.2	79.2	73.2	7.9	57.2	196.9	8	31.8	1 1/8	196.9	190.5	203.2	23.61	52.00	24.97	55.00	24.06	53.00	25.42	56.00	2 ½					
3	305	133.4	127.0	66.5		90.7	91.4	92.2	168.1	91.9	91.9	88.9	9.7	63.5	228.6	8	35.1	1 ¼	222.3	215.9	228.6	42.68	94.00	37.68	83.00	36.32	80.00	39.04	86.00	3					
4	356	165.1	157.2	76.2		116.1	116.8	117.6	190.5	108.0	108.0	114.3	11.2	69.9	273.1	8	41.1	1 ½	254.0	247.7	260.4	64.00	141.00	58.00	127.90	54.48	120.00	60.38	133.00	4					
5	419	203.2	185.7	91.9		143.8	144.5	144.5	228.6	130.0	130.0	141.2	11.2	76.2	323.9	8	47.8	1 ½	298.5	292.1	311.2	110.68	244.00	95.25	210.00	92.53	204.00	101.15	223.00	5					
6	483	235.0	215.9	108.0		170.7	171.5	171.5	273.1	152.4	152.4	168.4	12.7	82.6	368.3	8	53.8	2	342.9	336.6	355.6	176.46	378.00	146.51	323.00	143.01	315.30	156.63	345.30	6					
8	552	304.8	269.7	127.0		221.5	222.3	222.3	317.5	177.8	177.8	219.2	12.7	95.3	438.2	12	53.8	2	381.0	374.7	393.7	261.27	576.00	219.99	485.00	213.38	470.40	240.62	530.50	8					
10	673	374.7	323.9	165.1		276.4	277.4	276.4	419.1	228.6	228.6	273.1	12.7	108.0	539.8	12	66.5	2 ½	489.0	482.6	508.0	484.43	1068.00	419.57	925.00	408.60	900.80	465.36	1026.00	10					
12	762	441.5	381.0	184.2		327.2	328.2	328.7	463.6	254.0	254.0	323.9	12.7	120.7	619.3	12	73.2	2 ½	539.8	533.4	558.8	692.35	1526.30	590.20	1301.00	572.95	1263.00	664.06	1464.00	12					

- Notes:
- (1) For the inside diameter of pipes (corresponding to Bore (B<sub>2</sub>) of welding Neck Flanges), refer to page 56.
  - (2) Class 2500 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 (T<sub>1</sub>), (T<sub>2</sub>).
  - (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.
  - (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 manufacturers option