山西索立得工贸有限公司

Shanxi Solid Industrial Co.,Ltd.

SOLID FLANGES

Solid

For years
we supply customers
quality goods with quick delivery,
we are still
trying our best to do better and better.
Your demand
is what we supply
Shanxi Solid Industrial Co.,Ltd.---
The company
you can reply on to be competitive!

We are the castings specialist,
we are the pipeline specialist!

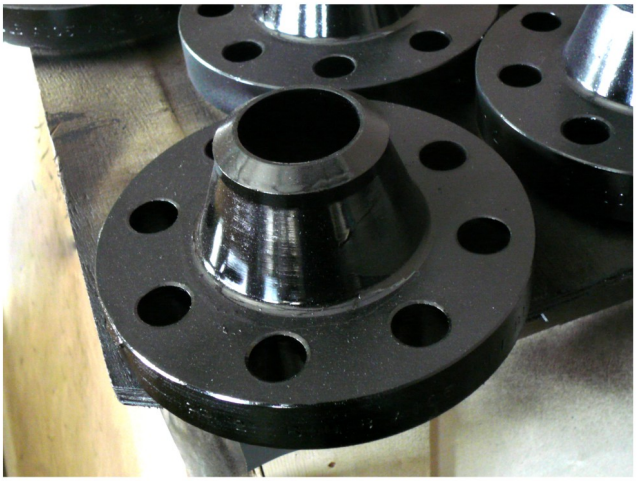
SHANXI SOLID INDUSTRIAL CO LTD

Company Profile

SHANXI SOLID INDUSTRIAL CO.,LTD. is located in the heavy industry province of Shanxi, China with rich resources of pig irons, steel, coke and other industrial raw materials .

SHANXI SOLID INDUSTRIAL CO.,LTD. is founded in 2006.We are one of the leading manufacturers in China which specialize in manufacturing flanges. We have the top-ranking stream –lined production facilities including lathe, drilling machine and so on. We can make flanges according to various international standards such as ANSI, ASTM, ASME, BS, JIS, GB, etc. Meanwhile, we also can make flanges according customers' drawings and samples. Our products are widely used in pipeline system for drinkable water, sewage, oil, gas, chemical plants and so on, and they have been widely exported to Europe, Middle East, South East Asia, Africa, Middle and South America for years. Up to now, we have exported our products to more than seventy countries, they are well accepted by the customers and have won good reputation both at home and aboard.

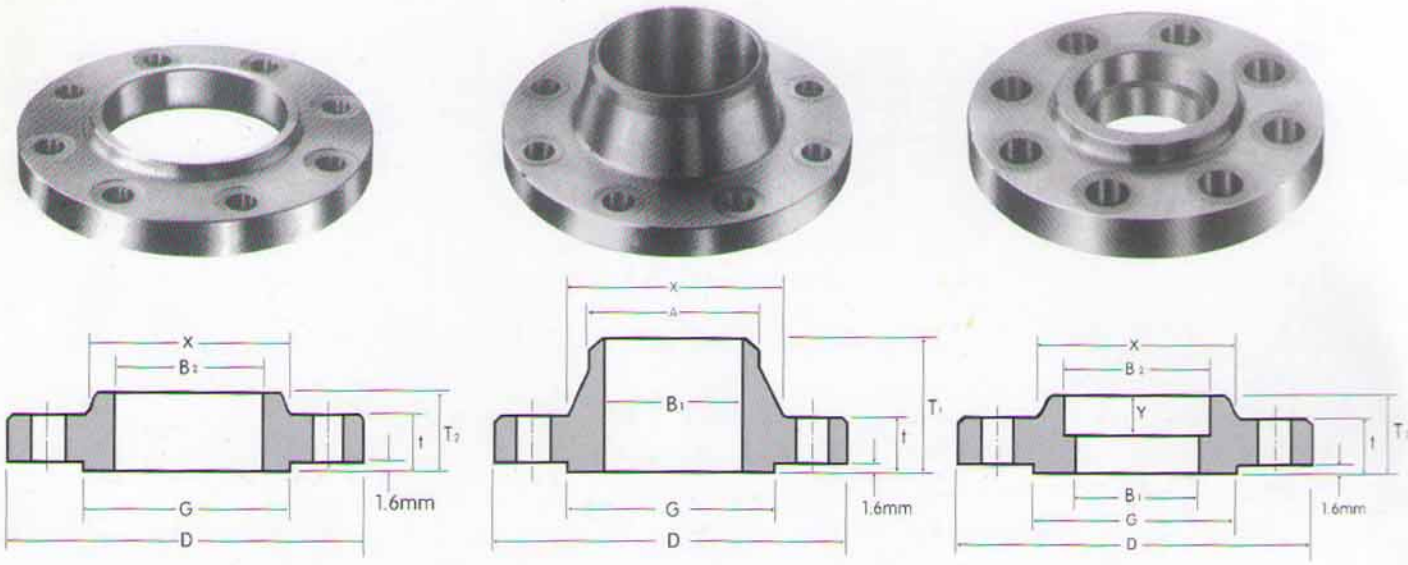
The business principle of Shanxi Solid Industrial Co.,LTD is credit and sincerity . We are eager to get your inquiries and to establish long term mutual benefit cooperation relationship. We have our advantage in manufacturing and you have your advantages in sales, we are sure with our working together we can get one "win-win" situation .We hope we can grow together!



ANSI FLANGES

Class 150 Flanges
Class 300 Flanges
Class 600 Flanges

ANSI CLASS 150 FLANGES



SLI-ON **WELDING NECK** **SOCKET WELDING**

ANSI B16.5 FORGED FLANGES

Unit:mm

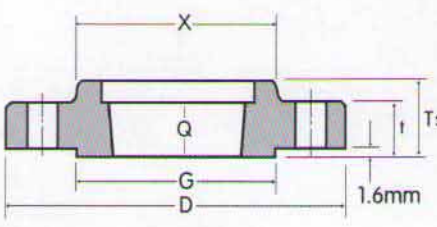
Nominal Pipe Size	Outside Diam	O.D.of Raised Face	Diam at Base of Hub	Thick-ness	BORE			LENGTH THRU HUB			Diam.of Hub at Bevel	Radius of Fillet	Thread Length
					Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
	D	G	X	T	B1	B2	B3	T1	T2	T3	A	R	Q
1/2	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	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	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
11/4	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
11/2	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	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
21/2	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	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
31/2	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	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	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	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	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	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	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	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	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	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	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	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

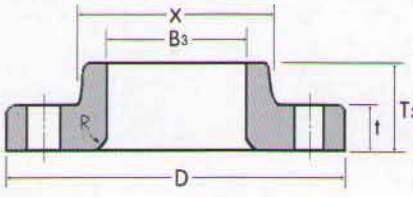
Notes:

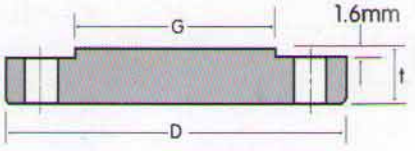
(1) For the 'Bore' (B_1) other than Standard Wall Thickness,refer to page 18.

(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_1),(T_2).

(3) For Slip-on,Threaded,Socket Welding and Lap Joint Flanges,the hubs can be shaped either vertical from base top or tapered within thelimits of 7 degrees







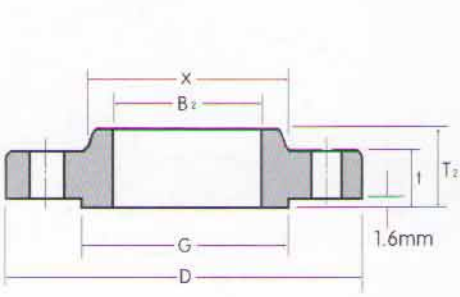
THREADED **LAP JOINT** **BLIND**

Unit:mm

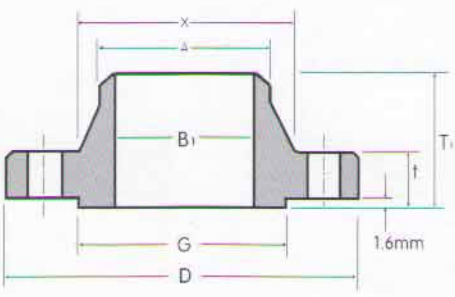
Nominal Pipe Size	Depth of Socket	DRILLING			BOLTING				APPROXIMATE WEIGHT									
		Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	Machine Bolt Length	Stud Bolt Length		Welding Neck		Slip-on and Threaded		Lap Join		Blind		Socket Welding	
	Y					Raised Face	Raised Face	Ring Joint	Kg	IP	Kg	IP	Kg	IP	Kg	IP	Kg	IP
1/2	9.7	60.5	4	15.7	1/2	50.8	57.2	–	0.52	1.10	0.47	1.00	0.51	1.00	0.47	1.00	0.47	1.00
3/4	11.2	69.9	4	15.7	1/2	50.8	63.5	–	0.92	1.60	0.75	1.30	0.70	1.40	0.63	1.40	0.76	1.30
1	12.7	79.2	4	15.7	1/2	57.2	63.5	76.2	1.10	2.40	0.86	1.90	0.93	1.80	0.95	2.10	0.87	1.90
11/4	14.2	88.9	4	15.7	1/2	57.2	69.9	82.6	1.40	3.10	1.40	2.40	1.40	2.00	1.40	2.70	1.43	2.40
11/2	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
2	17.5	120.7	4	19.1	5/8	69.9	82.6	95.3	2.80	5.70	2.26	5.00	2.38	5.20	2.64	5.80	2.33	5.00
21/2	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	20.6	152.4	4	19.1	5/8	76.2	88.9	101.6	5.18	11.40	4.00	8.50	4.04	8.90	5.00	10.80	4.15	8.90
31/2	22.4	177.8	8	19.1	5/8	76.2	88.9	101.6	5.50	12.00	5.00	11.00	4.99	11.00	5.90	13.00	5.00	11.00
4	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	7.50	16.30	5.99	13.20
5	23.9	215.9	8	22.4	3/4	82.6	95.3	108.0	8.91	19.60	6.51	13.70	6.44	14.00	9.00	19.30	6.96	14.70
6	26.9	241.3	8	22.4	3/4	82.6	101.6	114.3	11.26	24.80	7.81	16.30	7.70	16.70	12.00	24.90	8.41	17.60
8	31.8	298.5	8	22.4	3/4	88.9	108.0	120.7	18.00	39.00	13.00	27.30	12.66	27.90	20.00	43.90	13.93	29.30
10	33.3	362.0	12	25.4	7/8	101.6	114.3	127.0	25.00	54.70	17.10	37.70	17.00	37.00	30.00	64.80	19.50	43.00
12	39.6	431.8	12	25.4	7/8	101.6	120.7	133.4	38.98	85.90	27.68	61.00	28.30	62.40	44.00	96.30	29.03	64.00
14	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	64.00	140.00	38.56	85.00
16	44.5	539.8	16	28.4	1	114.3	133.4	146.1	64.41	142.00	45.00	93.00	52.98	116.80	78.00	170.00	47.32	98.00
18	49.3	577.9	16	31.8	11/8	127.0	146.1	158.8	74.84	165.00	54.00	109.60	68.00	130.00	95.00	209.00	58.72	120.00
20	54.1	635.0	20	31.8	11/8	139.7	158.8	171.5	89.36	197.00	73.00	140.00	85.00	159.00	125.00	272.00	77.81	155.00
24	63.5	749.3	20	35.1	11/4	152.4	171.5	184.2	119.66	263.80	96.00	199.50	120.00	218.30	190.00	415.00	100.75	210.00

(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 1degree.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 is sizes through 3 inch ,over 3 inch is at the manufacturer's option.

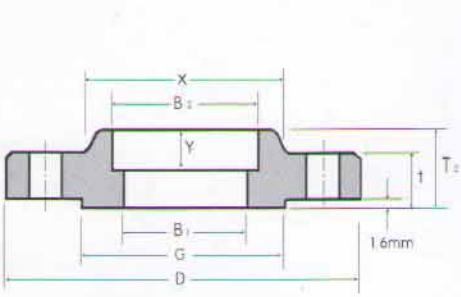
ANSI CLASS 300 FLANGES



SLI-ON



WELDING NECK



SOCKET WELDING

ANSI B16.5 FORGED FLANGES

Unit:mm

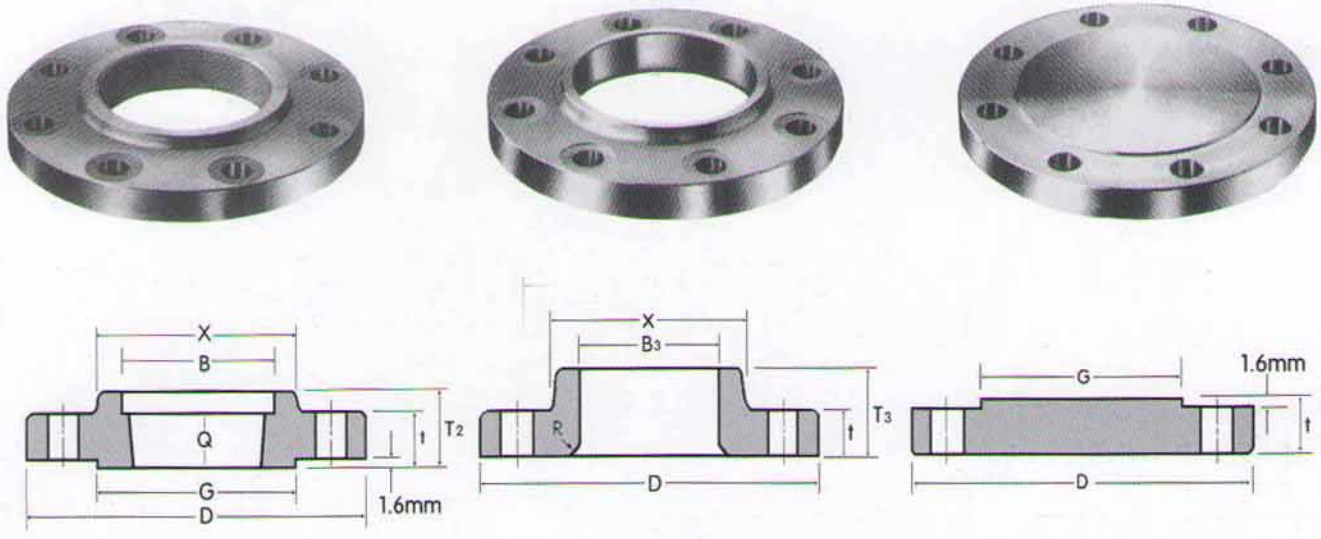
Nominal Pipe Size	Outside Diam	Diam at Base of Hub	O.D.of Raised Face	Thick-ness	BORE				LENGTH THRU HUB			Diam.of Hub at Bevel	Radius of Fillet	Thread Length
					Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Counter Bore Min Threaded Min	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
	D	X	G	t	B_1	B_2	B_3	B	T_1	T_2	T_3	A	R	Q
1/2	95	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	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	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	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	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	191	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	210	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	229	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	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	318	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	445	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	521	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	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	648	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	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	775	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	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' (B_1) other than Standard Wall Thickness, refer to page 18.

(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_1),(T_2).

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



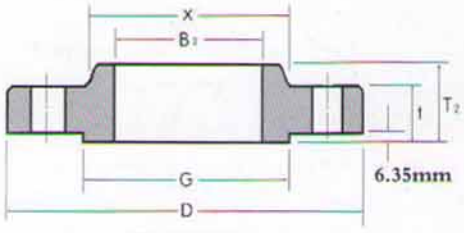
THREADED **LAP JOINT** **BLIND**

Unit:mm

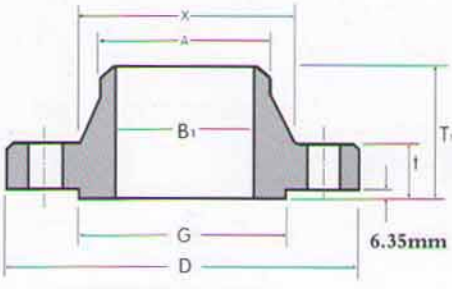
Nominal Pipe Size	Depth of Socket	DRILLING			BOLTING				Welding Neck		APPROXIMATE WEIGHT							
						Machine Bolt Length	Stud Bolt Length		Slip–on and Threaded				Lap Join		Blind		Socket Welding	
	Y	Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	Raised Face	Raised Face	Ring Joint	Kg	IP	Kg	IP	Kg	IP	Kg	IP	Kg	IP
1/2	9.7	66.5	4	15.7	1/2	57.2	63.5	76.2	0.80	1.70	0.62	1.40	0.61	1.30	0.65	1.40	0.62	1.40
3/4	11.2	82.6	4	19.1	5/8	63.5	76.2	88.9	1.40	3.00	1.30	2.50	1.15	2.50	1.40	2.50	1.34	2.60
1	12.7	88.9	4	19.1	5/8	63.5	76.2	88.9	1.64	3.60	1.50	3.10	1.38	3.00	1.50	3.00	1.55	3.20
11/4	14.2	98.6	4	19.1	5/8	69.9	82.6	95.3	2.10	4.50	1.70	3.70	1.66	3.70	2.80	3.90	1.76	3.80
11/2	15.7	114.3	4	22.4	3/4	76.2	88.9	101.6	3.06	6.70	2.60	5.60	2.52	5.60	2.80	5.90	2.69	5.80
2	17.5	127.0	8	19.1	5/8	76.2	88.9	101.6	3.50	7.50	3.30	6.20	2.79	6.20	3.30	6.80	3.14	6.50
21/2	19.1	149.4	8	22.4	3/4	82.6	101.6	114.3	5.31	11.70	4.50	9.40	4.22	9.30	5.40	10.50	4.74	9.90
3	20.6	168.1	8	22.4	3/4	88.9	108.0	120.7	7.32	16.10	5.90	12.80	5.78	12.70	7.00	14.90	6.29	13.70
31/2	22.4	184.2	8	22.4	3/4	95.3	108.0	127.0	8.20	18.00	7.72	17.00	7.72	17.00	9.53	21.00		
4	23.9	200.2	8	22.4	3/4	95.3	114.3	127.0	11.30	24.90	10.13	22.30	10.07	22.20	12.00	26.50		
5	23.9	235.0	8	22.4	3/4	108.0	120.7	133.4	15.12	33.30	13.00	27.70	12.52	27.60	16.00	35.20		
6	26.9	269.7	12	22.4	3/4	108.0	120.7	139.7	20.00	43.40	17.04	35.40	15.95	35.20	22.00	46.70		
8	31.8	330.2	12	25.4	7/8	120.7	139.7	152.4	30.48	67.20	26.00	54.00	24.37	53.70	36.00	76.30		
10	33.3	387.4	16	28.4	1	139.7	158.8	171.5	43.74	96.40	34.16	75.30	39.92	88.00	55.34	122.00		
12	39.6	450.9	16	31.8	11/8	146.1	171.5	184.2	64.41	142.00	51.26	113.00	58.70	129.40	80.00	174.00		
14	41.4	514.4	20	31.8	11/8	158.8	177.8	190.5	88.30	194.70	75.00	159.00	83.46	184.00	110.00	236.00		
16	44.5	571.5	20	35.1	11/4	165.1	190.5	203.2	115.00	249.00	94.00	199.30	106.14	234.00	139.25	307.00		
18	49.3	628.7	24	35.1	11/4	171.5	196.9	209.6	143.00	305.00	109.00	240.30	133.95	295.30	178.00	396.00		
20	54.1	685.8	24	35.1	11/4	184.2	203.2	222.3	175.00	369.00	136.00	300.00	157.65	347.60	223.17	492.00		
24	63.5	812.8	24	41.1	11/2	203.2	228.6	254.0	260.00	519.00	245.00	449.70	240.40	530.00	355.00	754.00		

(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 1degree.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 is sizes through 3 inch ,over 3 inch is the manufacturer's option.

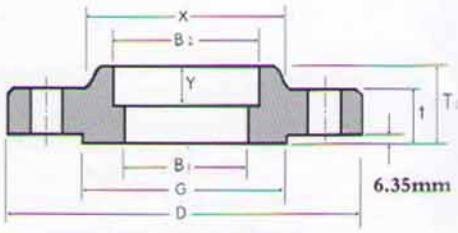
ANSI CLASS 600 FLANGES



SLI-ON



WELDING NECK



SOCKET WELDING

ANSI B16.5 FORGED FLANGES

Unit:mm

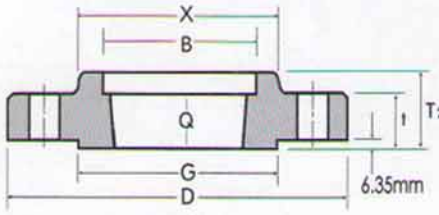
Nominal Pipe Size	Outside Diam	Diam at Base of Hub	O.D.of Raised Face	Thick-ness	BORE				LENGTH THRU HUB			Diam.of Hub at Bevel	Radius of Fillet	Thread Length
					Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Counter Bore Min	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
	D	X	G	t	B_1	B_2	B_3	B	T_1	T_2	T_3	A	R	Q
1/2	95	38.1	35.1	14.2	See Note(1) To be specified by purchaser.	22.4	22.9	23.6	52.3	22.4	22.4	21.3	3.0	15.7
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
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
11/4	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
11/2	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
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
21/2	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
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
31/2	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
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
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
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
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
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	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
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
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
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	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
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

Notes:

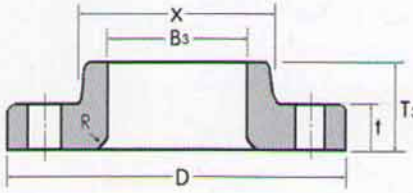
(1) For the inside diameter of pipes (correponding to 'Bore'(B_1) of Welding Neck Flanges), refer to page 18.

(2) Class 600 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_1),(T_2).

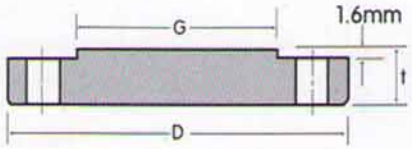
(3) For Slip-on ,Threaded,Lap Joint and Socket Wekding Alanges,the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.



THREADED



LAP JOINT



BLIND

Unit:mm

Nominal Pipe Size	Depth of Socket	DRILLING			BOLTING				APPROXIMATE WEIGHT									
						Stud Bolt Length			Welding Neck		Slip-on and Threaded		Lap Join		Blind		Socket Welding	
	Y	Bolt Circle Diam	Number of Holes	Diam of Holes	Diam of Bolts (inch)	0.25 Raised Face	Male-Female Tongue-Groove	Ring Joint	Kg	lb	Kg	lb	Kg	lb	Kg	lb	Kg	lb
1/2	9.7	66.5	4	15.7	1/2	76.2	69.9	76.2	0.98	2.00	0.98	2.00	0.98	1.80	0.98	2.00	0.98	2.00
3/4	11.2	82.6	4	19.1	5/8	88.9	82.6	88.9	1.60	3.50	1.40	3.00	1.40	3.00	1.40	3.00	1.36	3.00
1	12.7	88.9	4	19.1	5/8	88.9	82.6	88.9	2.20	4.00	2.00	3.70	2.00	3.50	2.00	4.00	2.11	4.00
11/4	14.2	98.6	4	19.1	5/8	95.3	88.9	95.3	2.80	5.50	2.70	5.00	2.70	4.50	2.70	5.30	3.03	5.70
11/2	15.7	114.3	4	22.4	3/4	108.0	101.6	108.0	3.80	8.00	3.80	6.80	3.80	6.50	3.80	7.50	3.88	7.00
2	17.5	127.0	8	19.1	5/8	108.0	101.6	108.0	4.54	10.00	4.10	8.00	4.00	8.00	4.60	9.70	4.37	8.60
21/2	19.1	149.4	8	22.4	3/4	120.7	114.3	120.7	8.20	14.00	5.90	12.00	5.90	11.00	6.80	15.00	6.36	13.00
3	20.6	168.1	8	22.4	3/4	127.0	120.7	127.0	8.80	18.00	7.30	16.00	7.30	14.00	8.90	19.60	7.44	16.30
31/2	22.4	184.2	8	25.4	7/8	139.7	133.4	139.7	12.00	26.00	9.53	21.00	9.40	20.00	13.17	29.00		
4	23.9	215.9	8	25.4	7/8	146.1	139.7	146.1	17.00	37.00	17.00	33.00	17.00	31.00	18.60	41.00		
5	23.9	266.7	8	28.4	1	165.1	158.8	165.1	31.00	68.00	29.00	62.80	29.00	60.60	30.84	68.00		
6	26.9	292.1	12	28.4	1	171.5	165.1	171.5	36.77	80.00	36.32	80.00	36.00	78.00	39.00	83.80		
8	31.8	349.3	12	31.8	11/8	190.5	184.2	196.9	55.00	112.00	52.00	97.00	52.00	112.00	64.00	137.00		
10	33.3	431.8	16	35.1	11/4	215.9	209.6	215.9	90.00	190.00	77.00	168.00	77.00	163.00	102.00	224.90		
12	39.6	489.0	20	35.1	11/4	222.3	215.9	222.3	110.00	226.00	97.52	215.00	108.86	240.00	132.00	291.00		
14	41.4	527.1	20	38.1	13/8	235.0	228.6	235.0	127.00	268.00	102.00	224.80	113.00	244.70	159.00	348.30		
16	44.5	603.3	20	41.1	11/2	254.0	247.7	254.0	177.06	290.00	149.82	330.20	165.71	365.30	224.73	495.40		
18	49.3	654.1	20	44.5	15/8	273.1	266.7	273.1	215.65	475.40	182.00	412.30	197.00	427.70	285.00	628.30		
20	54.1	723.9	24	44.5	15/8	285.8	279.4	292.1	267.86	590.50	231.54	510.50	260.00	570.50	365.00	804.70		
24	63.5	838.2	24	50.8	17/8	330.2	323.9	336.6	372.00	820.00	330.00	725.50	370.00	798.00	565.00	1176.0		

(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 1degree.To accomplish parallelism,spot facing is carried out according to MSS SP-9, Without reducing thickness (t).

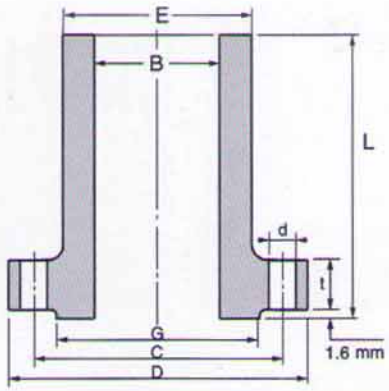
(6) Depth of Socket (Y) is covered by ANSI B16.5 only is sizes through 3 inch ,over 3 inch is the manufacturer's option.

LONG WELDING NECKS FLANGES

Class 150 Flanges
Class 300 Flanges
Class 400 Flanges
Class 600 Flanges

CLASS 150 FLANGES

LONG WELDING NECK



Unit:mm

Nominl Pipe Size	Out side Diameter	O.D.of Raised Face	Hud Diameter at Bevel	Diameter of Bore	Thickhess of Flange Min.	Length Through Hub	DRILLING		
							Diameter of Bolt Circie	Number of Holes	Diameter of Holes
	D	G	E	B	t	L	C		d
1/2	89	35.1	30.2	12.7	11.2	228.6	60.5	4	15.7
3/4	99	42.9	38.1	19.1	12.7	228.6	69.9	4	15.7
1	108	50.8	50.8	25.4	14.2	228.6	79.2	4	15.7
1 1/4	117	63.5	60.5	31.8	15.7	228.6	88.9	4	15.7
1 1/2	127	73.2	66.5	38.1	17.5	228.6	98.6	4	15.7
2	152	91.9	82.6	50.8	19.1	228.6	120.7	4	19.1
2 1/2	178	104.6	95.3	63.5	22.4	228.6	139.7	4	19.1
3	191	127.0	108.0	76.2	23.9	228.6	152.4	4	19.1
3 1/2	216	139.7	124.0	88.9	23.9	228.6	177.8	8	19.1
4	229	157.2	139.7	101.6	23.9	304.8	190.5	8	19.1
5	254	185.7	165.1	127.0	23.9	304.8	215.9	8	22.4
6	279	215.9	196.9	152.4	25.4	304.8	241.3	8	22.4
8	343	269.7	247.7	203.2	28.4	304.8	298.5	8	22.4
10	406	323.9	304.8	254.0	30.2	304.8	362.0	12	25.4
12	483	381.0	365.3	304.8	31.8	304.8	431.8	12	25.4
14	533	412.8	406.4	355.6	35.1	304.8	476.3	12	28.4
16	597	469.9	457.2	406.4	36.6	304.8	539.8	16	28.4
18	635	533.4	508.0	457.2	39.6	304.8	577.9	16	31.8
20	699	584.2	558.8	508.0	42.9	304.8	635.0	20	31.8
24	813	692.2	666.8	609.6	47.8	304.8	749.3	20	35.1

CLASS 300 FLANGES

LONG WELDING NECK

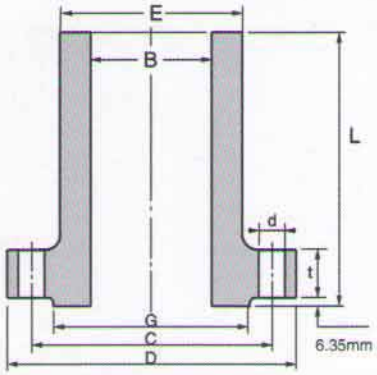
Unit:mm

Nominl Pipe Size	Out side Diameter	HudDiameter at Bevel	O.D.of Raised Face	Thickhess of Flange Min.	Diameter Flange Min	Length Through Hub	DRILLING		
							Diameter of Bolt Circie	Number of Holes	Diameter of Holes
	D	E	G	t	B	L	C		d
1/2	95	38.1	35.1	14.2	12.7	228.6	66.5	4	15.7
3/4	117	47.8	42.9	15.7	19.1	228.6	82.6	4	19.1
1	124	53.8	50.8	17.5	25.4	228.6	88.9	4	19.1
1 1/4	133	63.5	63.5	19.1	31.8	228.6	98.6	4	19.1
1 1/2	155	69.9	73.2	20.6	38.1	228.6	114.3	4	22.4
2	165	84.1	91.9	22.4	50.8	228.6	127.0	8	19.1
2 1/2	191	100.1	104.6	25.4	63.5	228.6	149.4	8	22.4
3	210	117.3	127.0	28.4	76.2	228.6	168.1	8	22.4
3 1/2	229	133.4	139.7	30.2	88.9	228.6	184.2	8	22.4
4	254	146.1	157.2	31.8	101.6	304.8	200.2	8	22.4
5	279	177.8	185.7	35.1	127.0	304.8	235.0	8	22.4
6	318	206.2	215.9	36.6	152.4	304.8	269.7	12	22.4
8	381	260.4	269.7	41.1	203.2	304.8	330.2	12	25.4
10	445	320.5	323.9	47.8	254.0	304.8	387.4	16	28.4
12	521	374.7	381.0	50.8	304.8	304.8	450.9	16	31.8
14	584	425.5	412.8	53.8	355.6	304.8	514.4	20	31.8
16	648	482.6	469.9	57.2	406.4	304.8	571.5	20	35.1
18	711	533.4	533.4	60.5	457.2	304.8	628.7	24	35.1
20	775	587.2	584.2	63.5	508.0	304.8	685.8	24	35.1
24	914	701.5	692.2	69.9	609.6	304.8	812.8	24	41.1

Notes: (1) Bore (B) is the same as nominal pinpe size.
(2) Welding necks longer than listed are available in all sizes on special order.

CLASS 400 FLANGES

LONG WELDING NECK



Unit:mm

Nominl Pipe Size	Out side Diameter	O.D.of Raised Face	Hud Diameter at Bevel	Diameter of Bore	Thickness of Flange Min.	Length Through Hub	DRILLING		
							Diameter of Bolt Circie	Number of Holes	Diameter of Holes
	D	G	E	B	t	L	C		d
1 1 1/4 1 1/2 2 2 1/2 3 3 1/2	Use Class 600 dimensions in these								
4	254	157.2	146.1	101.6	35.1	304.8	200.2	8	25.4
5	279	185.7	177.8	127.0	38.1	304.8	235.0	2	25.4
6	318	215.9	206.2	152.4	41.1	304.8	269.7	12	25.4
8	381	269.7	260.4	203.2	47.8	304.8	330.2	12	28.4
10	445	323.9	320.5	254.0	53.8	304.8	387.4	16	31.8
12	521	381.0	374.7	304.8	57.2	304.8	450.9	16	35.1
14	584	412.8	425.5	355.6	60.5	304.8	514.4	20	35.1
16	648	469.9	482.6	406.4	63.5	304.8	571.5	24	38.1
18	711	533.4	533.4	457.2	66.5	304.8	628.7	24	38.1
20	775	584.2	587.2	508.0	69.9	304.8	685.8	24	41.1
24	914	692.2	701.5	609.6	76.2	304.8	812.8	24	47.8

CLASS 600 FLANGES

LONG WELDING NECK

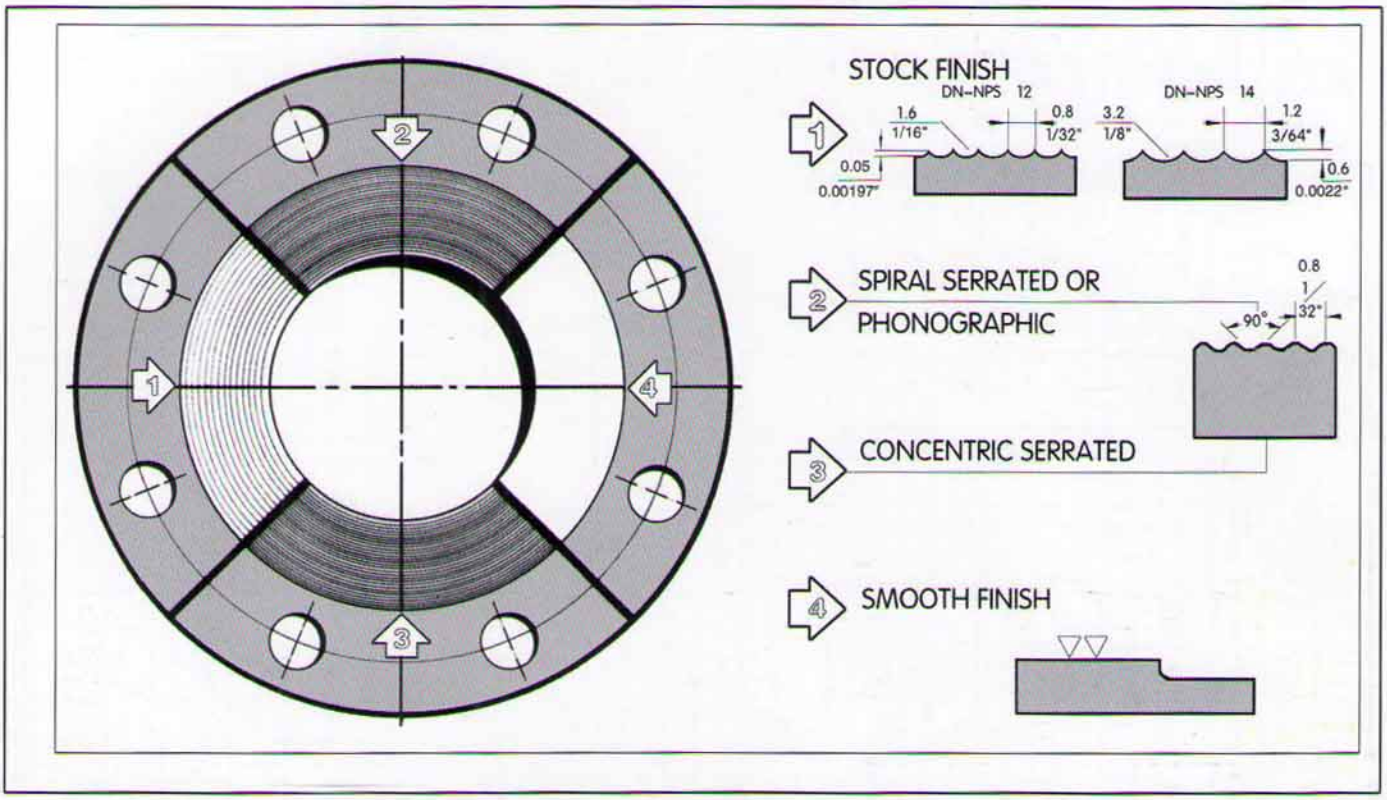
Unit:mm

Nominl Pipe Size	Out side Diameter	HudDiameter at Bevel	O.D.of Raised Face	Diameter of Bore	Thickness of Flange Min.	Length Through Hub	DRILLING		
							Diameter of Bolt Circie	Number of Holes	Diameter of Holes
	D	E	G	B	t	L	C		d
1	124	53.8	50.8	25.4	17.5	228.6	88.9	4	19.1
1 1/4	133	63.5	63.5	31.8	20.6	228.6	98.6	4	19.1
1 1/2	155	69.9	73.2	38.1	22.4	228.6	114.3	4	22.4
2	165	84.1	91.9	50.8	25.4	228.6	127.0	8	19.1
2 1/2	191	100.1	104.6	63.5	28.4	228.6	149.4	8	22.4
3	210	117.3	127.0	76.2	31.8	228.6	168.1	8	22.4
3 1/2	229	133.4	139.7	88.9	35.1	228.6	184.2	8	25.4
4	273	152.4	157.2	101.6	38.1	304.8	215.9	8	25.4
5	330	190.5	185.7	127.0	44.5	304.8	266.7	8	28.4
6	356	222.3	215.9	152.4	47.8	304.8	292.1	12	28.4
8	419	273.1	269.7	203.2	55.6	304.8	349.3	12	31.8
10	508	342.9	323.9	254.0	63.5	304.8	431.8	16	35.1
12	559	400.1	381.0	304.8	66.5	304.8	489.0	20	35.1
14	603	431.8	412.8	355.6	69.9	304.8	527.1	20	38.1
16	686	495.3	469.9	406.4	76.2	304.8	603.3	20	41.1
18	743	546.1	533.4	457.2	82.6	304.8	654.1	20	44.5
20	813	609.6	584.2	508.0	88.9	304.8	723.9	24	44.5
24	940	717.6	692.2	609.6	101.6	304.8	838.2	24	50.8

Notes: (1) Bore (B) is the same as nominal pepe size.
(2) Welding necks longer than are available in all sizes on special order.

STANDARD FINISH

STANDARD FLNISHES for Face of Flangge(ANSI 16.5)



STOCK FINISH: The most widely used of any gasket finish、because、praceically、is suitable for all ordinary service conditions.This is a con-tinuous spiral groove.Flanges sizes 12" (304.8mm) and smaller,are produced with a1/16" round-nosed tool at a feed of 1/32" per revolution. For sizes 14"(355.6mm) and larger ,the finish is made with 1/8" round-nosed tool at a feed of 3/64" per revolution.

SPIRAL SERRATED OR PHONOGRAPHIC:This finish is produced by using a 90° round-nosed tool.

CONCENTRIC SERRATED: This finish a produced by using a 90° round-nosed tool.

SMOOTH FINISH:The cutting tool employed shall have an approximate 0.06" radius.

The resultant surface finish shall have a 125μ inch to 250μ inch (ANSI B 16.5 para 6,4,4)

1. RAISED FACE,AND LARGE MALE AND FEMALE

Either a serrated-concentric or serrated-spiral finish having from 45 to 55 grooves per inch is used.

The cutting tool employed has an approximate 0.06 in. radius. The resultant surface finish shall have a 125μinch (3.2μm).to 250μ inch (6.4μm) approximate roughness.

2. TONGUE AND GROOVE,AND SMALL MALE AND FEMALE

The gasket contact surface does not exceed 125μin. (3.2μm) roughness.

3. RING JOINT

The inside wall surface of gasket groove does not exceed 63μin (1.6μm) roughness.

4. BLIND

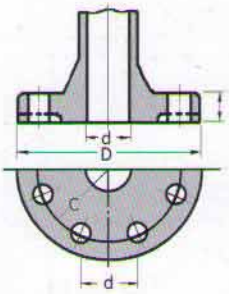
Blind flanges need not be faced in the center if, when this center part is raised, its diameter is at least 1 in.

smaller than the inside diameter of fittings of the corresponding pressure class. When the center part is depressed,its diameter is not greater than the inside diameter of the corresponding pressure class fittings. Machining of the depressed center is not required.

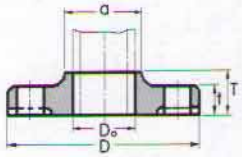
TOLERANCE

ANSI B16.5 FORGED FLANGES

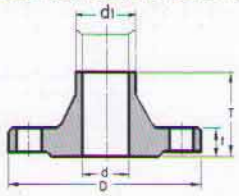
SOLID FLANGE



SLIP–ON FLANGE

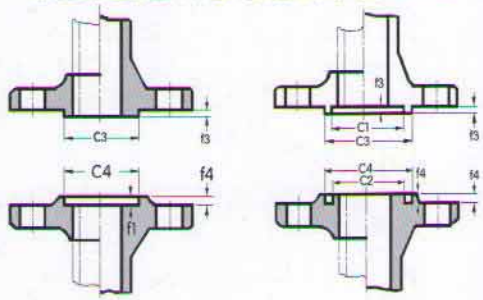


WELDING NECK FLANNGE



TYPE OF GASKET SURFACE

MALE & FEMALE TYPE TONGUE & GROOVE TYPE



THREAD,SOCKET–WELDING, SLIP–ON,LAP JOINT AND BLIND.

Outside Diameter	When O.D. is 24" or less	±1/16"(1.6mm)★
	When O.D. is Over 24"	±1/8" (3.2mm)★
Inside Diameter	Threaded	Within limits on boring gauge
	Socket–Welding. Slip–on and Lap joint	10" & Smaller +1/32" (0.8mm).–0" 12" & Larger +1/16"(1.6mm).–0"
Outside Diameter of Hub	5" and Smaller	+3/32" (2.4mm)★ –1/32" (0.8mm)
	6" and Larger	+5/32" (4.0mm) –1/32" (0.8mm)
Diameter of Contact Face	1/16" Raised Face	±1/32" (0.8mm)
	1/4" Raised Face Tongue & Groove Male, Female	±1/64" (0.4mm)
Diameter of Counterbore	Same as for Inside Diamleter	
Drilling	Bolt Circle	±1/16" (1.6mm)
	Bolt Hole Spacing	±1/32" (0.8mm)
	Eccentricity of Bolt Circle with Respect to Facing	2 1/2" Smaller 1/32" (0.8mm) Max. 3" & Larger 1/16" (1.6mm) Max.
	Eccentricity of Bolt Circle with Respect to Bore	1/32" (0.8mm) Max.★
	Eccentricity of Facing with Respect to Bore	1/32" (0.8mm) Max.★
Thickness	18" and Smaller	+1/8" (3.2mm).–0"
	20" and Larger	+3/16" (4.8mm),–0"
Length Thru Hub	10" and Smaller	±1/16" (1.6mm)
	12" and Larger	±1/8" (3.2mm)

WELDING NECK

Outside Diameter	When O.D. is 24" or less	±1/16"(1.6mm)★
	When O.D. is Over 24"	±1/8" (3.2mm)★
Inside Diameter	10" and Smaller	±1/32" (0.8mm)
	12" thru 18"	±1/16" (1.6mm)
	20" and Larger	+1/8" (3.2mm) –1/16" (1.6mm)
Diameter of Contact Face	1 16" Raised Face	±1/32" (0.8mm)
	1 4" Raised Face Tongue & Groove Male,Female	±1/64" (0.4mm)
Diameter of Hub at Base	When Hub Base is 24" or Smaller	±1/16" (1.6mm)★
	When Hub Base is Over 24"	±1/8" (3.2mm)★
Diameter of Hub at point of Welding	5" and Smaller	+3/32" (2.4mm), –1/32" (0.8mm)
	6" and Larger	+5/32" (4.0mm), –1/32" (0.8mm)
Drilling	Bolt Circle	±1/16" (1.6mm)
	Bolt Hole Spacing	±1/32" (0.8mm)
	Eccentricity of Bolt Circle with Respect to Facing	2 1/2" & Smaller 1/32" (0.8mm) Max. 3" & Larger 1/16" (1.6mm) Max.
	Eccentricity of Bolt Circle with Respect to Bore	1/32" (0.8mm) Max.★
	Eccentricity of Facing with Respect to Bore	1/32" (0.8mm) Max.★
Thickness	18" and Smaller	+1/8" (3.2mm).–0"
	20" and Larger	+3/16" (4.8mm),–0"
Length Thru Hub	10" and Smaller	±1/16" (1.6mm)
	12" and Larger	±1/8" (3.2mm)

Notes: ★This tolerance is not covered in ANSI B16.5, but maker's option

COMPARISION FLANGE BORES

Unit:mm

NORMAL PIPE SIZE	O.D		SCH10		SCH20		SCH30		STD	SCH40		SCH60		XH	SCH80		SCH100		SCH120		SCH140		SCH160		XXH
	JIS	ANSI	JIS	ANSI	JIS	ANSI	JIS	ANSI	ANSI	JIS	ANSI	JIS	ANSI	ANSI	JIS	ANSI	JIS	ANSI	JIS	ANSI	JIS	ANSI	JIS	ANSI	ANSI
1/2"	21.7	21.34	–	–	–	–	–	–	15.789	16.1	15.789	15.3	–	13.87	14.3	13.87	–	–	–	–	–	–	12.3	11.84	6.4
3/4"	27.2	26.67	–	–	–	–	–	–	20.929	21.4	20.929	20.4	–	18.85	19.4	18.85	–	–	–	–	–	–	16.2	15.60	11.02
1"	34.0	33.40	–	–	–	–	–	–	26.65	27.2	26.65	26.2	–	24.31	25.0	24.31	–	–	–	–	–	–	21.2	20.70	15.22
11/4"	42.7	42.16	–	–	–	–	–	–	35.05	35.5	35.05	33.7	–	32.46	32.9	32.46	–	–	–	–	–	–	29.9	29.47	22.76
11/2"	48.6	48.26	–	–	–	–	–	–	40.89	41.2	40.89	39.6	–	38.10	38.4	38.1	–	–	–	–	–	–	34.4	33.99	27.94
2"	60.5	60.33	–	–	54.1	–	–	–	52.5	52.7	52.50	50.7	–	49.25	49.5	49.25	–	–	–	–	–	–	43.1	42.90	38.18
21/2"	76.3	73.03	–	–	67.3	–	–	–	62.713	65.9	62.71	64.3	–	59.00	62.3	59.00	–	–	–	–	–	–	57.3	53.98	44.98
3"	89.1	88.90	–	–	80.1	–	–	–	77.93	78.1	77.93	75.9	–	73.66	73.9	73.66	–	–	–	–	–	–	66.9	66.65	58.42
31/2"	101.6	101.60	–	–	92.6	–	–	–	90.12	90.2	90.12	87.6	–	85.45	85.4	85.45	–	–	–	–	–	–	76.2	–	–
4"	114.3	114.30	–	–	104.5	–	–	–	102.26	102.3	102.26	100.1	–	97.18	97.1	97.18	–	–	92.1	92.05	–	–	87.3	87.33	80.06
5"	139.8	141.30	–	–	129.6	–	–	–	128.19	126.6	128.19	123.6	–	122.25	120.8	122.25	–	–	114.4	115.90	–	–	108.0	109.55	103.20
6"	165.2	168.28	–	–	154.2	–	–	–	154	151	154.0	146.6	–	146.33	143.2	146.33	–	–	136.6	139.73	–	–	128.8	131.8	124.38
8"	216.3	219.08	–	–	203.5	206.38	202.3	205.0	202.72	199.9	202.72	195.7	198.45	193.68	190.9	193.68	186.1	188.95	179.9	182.60	175.1	177.83	170.3	173.05	174.63
10"	267.4	273.05	–	–	254.5	260.35	251.7	257.45	254.51	248.7	254.51	242.0	247.65	247.65	237.2	242.93	230.9	236.58	224.5	230.23	216.5	222.25	210.2	219.50	–
12"	318.5	323.85	–	–	305.7	311.15	301.7	307.09	304.8	297.9	303.23	289.9	295.30	298.45	283.7	288.95	275.7	281.03	267.7	273.05	261.3	266.7	251.9	257.20	–
14"	355.6	355.60	342.8	342.9	339.8	339.70	336.6	336.55	336.55	333	333.35	325.4	325.48	330.2	317.6	317.50	308.0	308.0	300.0	300.08	292.0	292.1	284.2	284.18	–
16"	406.4	406.40	393.6	393.7	390.6	390.53	387.4	387.35	387.35	381.0	381.0	373.4	373.07	381.0	363.6	363.58	353.0	354.03	344.6	344.53	333.4	333.35	325.4	325.48	–
18"	457.2	457.20	444.4	444.5	441.4	441.33	435.0	434.95	438.15	428.6	428.65	419.2	419.1	431.8	409.6	409.6	398.4	398.48	387.4	387.35	377.8	377.85	366.8	366.73	–
20"	508.0	508.0	495.2	495.3	489.0	489.95	482.6	482.60	488.95	477.8	477.88	466.8	466.75	482.6	455.6	455.63	443.0	442.93	431.8	431.80	419.2	419.10	408.0	408.03	–
24"	–	609.6	–	–	–	590.55	–	581.05	590.55	–	574.8	–	560.43	584.2	–	547.73	–	531.83	–	517.55	–	504.85	–	490.58	–
30"	–	762.0	–	–	–	736.6	–	730.25	742.95	–	–	–	–	736.6	–	–	–	–	–	–	–	–	–	–	–

MATERIAL SPECIFCATIONS

ANSI B16.5(ASTM STANDARD)

ASTM	Grade	Classification	CHEMICAL COMPOSITION								MECHANICAL PROPERTIES				
			C %	Mn %	P Max %	S Max %	Si %	Ni %	Cr %	Mo %	T.S. Min. psi (kg/mm²)	Y.S. Min. psi (kg/mm²)	EL. Min. %	Red Min. %	HB
A-105*		CarbonSteel	MAX 0.35	0.60~1.05	0.040	0.050	MAX 0.35	MAX 0.40	MAX 0.30	MAX 0.12	70.000 (49.2)	36.000 (25.3)	22	30	MAX 187
A-181	60	Carbon Steel	MAX 0.35	MAX 0.90	0.050	0.050	MAX (0.35)				60.000 (42.2)	30.000 (21.1)	22	35	
A-181	70	Carbon Steel	MAX 0.35	MAX 0.90	0.050	0.050	MAX (0.35)				70.000 (49.2)	36.000 (25.3)	18	24	
A-182	F1	1/2Mo	MAX 0.28	0.6~0.90	0.045	0.045	0.15~0.35			0.44~0.65	70.000 (49.2)	40.000 (28.1)	20	30	143~192
A-182	F5	5cr-1/2 Mo	MAX 0.15	0.30~0.60	0.030	0.030	MAX 0.50	MAX 0.50	4.0~6.00	0.44~0.65	70.000 (49.2)	40.000 (28.1)	20	35	143~217
A-182	F5a	5cr-1/2 Mo	MAX 0.25	MAX 0.6	0.040	0.030	MAX 0.50	MAX 0.50	4.0~6.0	0.44~0.65	90.000 (63.3)	65.000 (45.7)	22	50	187~248
A-182	F11-1	11/4Cr-1/2 Mo	0.05~0.15	0.30~0.60	0.030	0.030	0.50~1.00		1.00~1.50	0.44~0.65	60.000 (42.2)	30.000 (21.1)	20	45	121~174
A-182	F11-2	11/4Cr-1/2 Mo	0.10~0.20	0.30~0.80	0.040	0.040	0.5~1.00		1.00~1.50	0.44~0.65	70.000 (49.2)	40.000 (28.1)	20	30	143~207
A-182	F11-3	11/4Cr-1/2 Mo	0.10~0.20	0.30~0.80	0.040	0.040	0.5~1.00		1.00~1.50	0.44~0.65	75.000 (52.7)	45.000 (31.6)	20	30	156~207
A-182	F12-1	1Cr-1/2 Mo	0.05~0.15	0.30~0.60	0.045	0.045	MAX 0.5		0.80~1.25	0.44~0.65	60.000 (42.2)	30.000 (21.1)	20	45	121~174
A-182	F12-2	1Cr-1/2 Mo	0.10~0.20	0.30~0.80	0.040	0.040	0.10~0.60		0.80~1.25	0.44~0.65	70.000 (49.2)	40.000 (28.1)	20	30	143~207
A-182	F11	11/4Cr-1/2 Mo	0.10~0.20	0.30~0.60	0.040	0.040	0.5~1.00		1.00~1.50	0.44~0.65	70.000 (49.2)	40.000 (28.1)	20	30	143~207
A-182	F12	1Cr-1/2 Mo	0.10~0.20	0.30~0.80	0.040	0.040	0.1~0.6		0.8~1.25	0.44~0.65	70.000 (49.2)	40.000 (28.1)	20	30	143~207
A-182	F22	21/4Cr-1 Mo	MAX 0.15	0.30~0.60	0.040	0.040	MAX 0.50		2.00~2.50	0.87~1.13	75.000 (52.7)	45.000 (31.6)	20	30	156~207
A-182	F304	18Cr-8 Ni	MAX 0.08	MAX 2.00	0.040	0.030	MAX 1.00	8.00~11.00	18.00~20.00		75.000 (52.7)	30.000 (21.1)	30	50	
A-182	F304L	18Cr-8 Ni LoW	MAX 0.035	MAX 2.00	0.040	0.030	MAX 1.00	8.00~13.00	18.00~20.00		70.000 (49.2)	25.000 (17.6)	30	50	
A-182	F316	18Cr-8 Ni Mo	MAX 0.08	MAX 2.00	0.040	0.030	MAX 1.00	10.00~14.00	16.00~18.00	2.00~3.00	75.000 (52.7)	30.000 (21.7)	30	50	
A-182	F316L	18Cr-8 Ni Mo-LoW	MAX 0.035	MAX 2.00	0.040	0.030	MAX 1.00	10.00~15.00	16.00~18.00	2.00~3.00	65.000 (45.7)	25.000 (17.6)	30	50	
A-182	F321	18Cr-8 Ni Ti	MAX 0.08	MAX 2.00	0.030	0.030	MAX 1.00	9.00~12.00	Min 17.00		75.000 (52.7)	30.000 (21.1)	30	50	
A-182	F347	18Cr-8 Ni Cb	MAX 0.08	MAX 2.00	0.030	0.030	MAX 1.00	9.00~13.00	17.00~20.00		75.000 (52.7)	30.000 (21.1)	30	50	
A-350*	LF1	Carbon Steel	MAX 0.30	0.75~1.05	0.035	0.040	0.15~0.30	MAX 0.40	MAX 0.30	MAX 0.12	60.000~85.000 (42.2~59.7)	30.000 (21.1)	25	38	
A-350*	LF2	Carbon Steel	MAX 0.30	MAX 1.35	0.035	0.040	0.15~0.30	MAX 0.40	MAX 0.30	MAX 0.12	70.000~95.000 (49.2~66.8)	36.000 (25.3)	22	30	
A-350*	LF3	31/2 Ni	MAX 0.20	MAX 0.90	0.035	0.040	0.20~0.35	3.25~3.75	MAX 0.30	MAX 0.12	70.000~95.000 (49.2~66.8)	37.500 (26.4)	22	35	

*OTHER FLEMENTS:copper(0.40%MAX.),Vanadium(0.03%MAX.),Columbium(0.02%MAX.)

*The sum of Cu,Ni,Cr and Mo shall not be exceed 1.00%

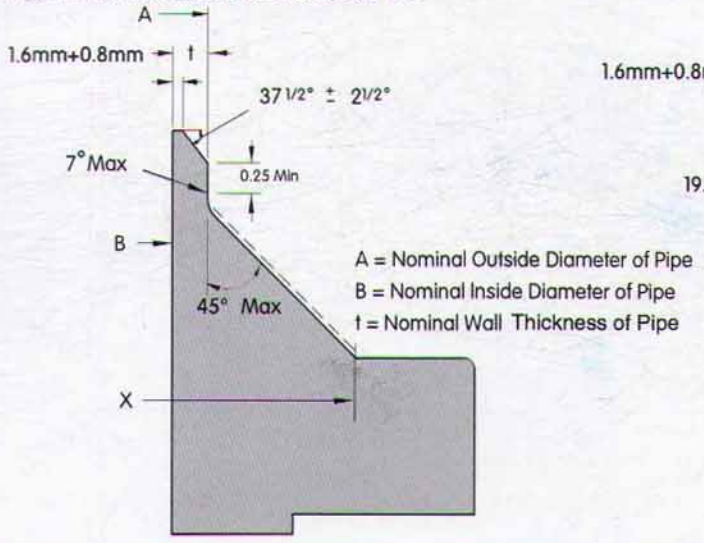
*The sum of Cr and Mo shall not be exceed 0.32%

The AMERICAN STANDARD FLANGES are manufactured conforming to the ANSI B16.5 (Table 1A "LIST OF MATERIAL SPECIFICATIONS"),satisfying the above requirements.

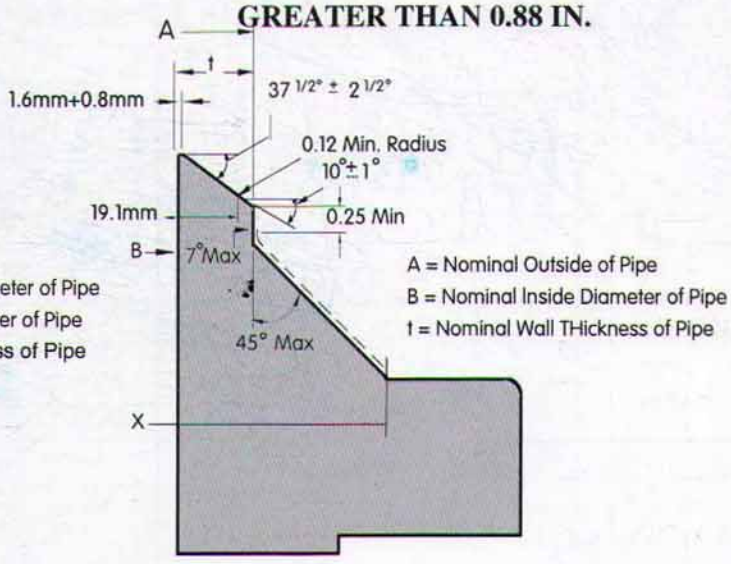
WELDING ENDS

ANSI B16.5 FORGED FLANGES

BEVEL FOR WALL THICKNESS(t) 0.19 IN.TO 0.88 IN.INCLUSIVE



BEVEL FOR WALL THICKNESS (t) GREATER THAN 0.88 IN.

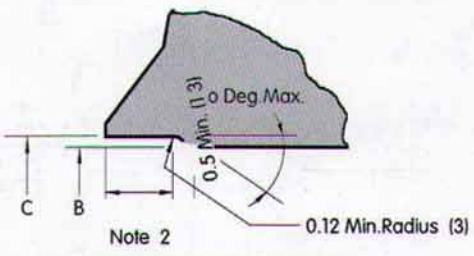


Notes:

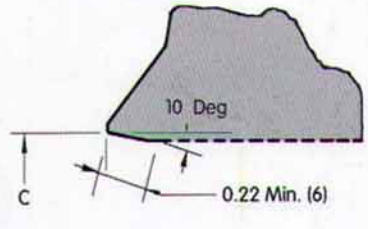
When the thickness of the hub at the bevel is greater than that of the pipe to which the flange is joined and the additional theckness is provided on the outside diameter,a tsper weld having a slop not exceeding 1 to 3 may be employed or,alternatively, the greater outside diameter may be tapered, at the same maximum slope or less,from a point on the welding bevel equal to the OD at the mating pipe. Similarly,when the greater thickness is provided on the inside of the flange ,it shall be taper–bored from the welding end at a slope not exceeding 1 to 3.

When flanges covered by this standard are intended for services with light wall, higher strength pipe, the thickness of the hub at the bevel may be greater than that of the pipe to which the flange is joined.Under these conditions a single taper hub may be provided and the outside diameter of the hub at the base(Dimension X) may also be modified.

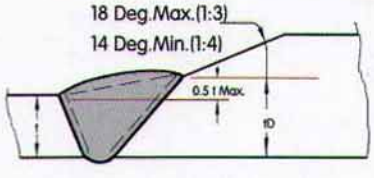
The additional thickness may be provided on either inside or partially on each side, but the total additional thickness shall not exceed one–half times the nominal wall thickness of intended mating pipe.



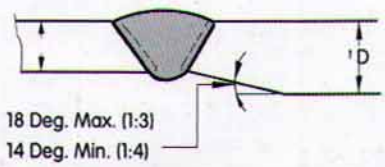
INSIDE CONTOUR FOR USE WITH RECTANGULAR BACKING RING



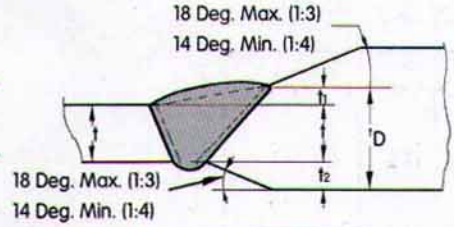
INSIDE CONTOUR FOR USE WITH TAPER BACKING RING



BEVEL FOR OUTSIDE THICKNESS



BEVEL FOR INSIDE THICKNESS



BEVEL FOR COMBINED THICKNESS

Notes:

(1) When the materials joined have equal minimum specified yield strength ,there shall be no restriction on the minimum slope.

(2) Neither t1,t2,nor their sum (t1+t2) shall exceed 0.5t.

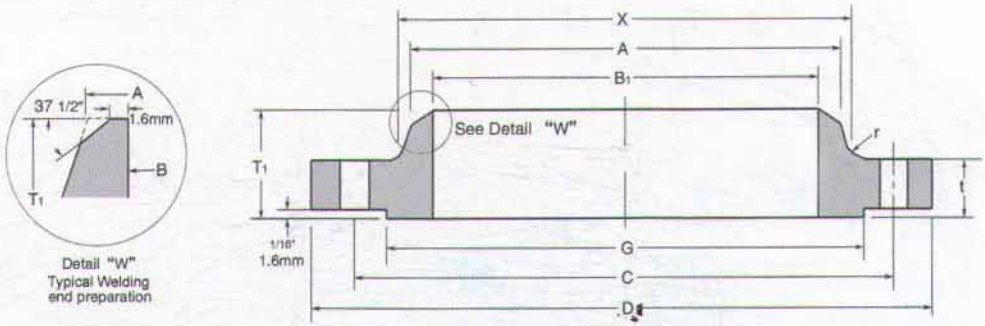
(3) When the minimum specified yield strengths of the sectios to be joined are unequal,the value of to shall at least equal t times the ratio of minimum specified yield strength of the pipe to minimum spicified yield strength of the flange.

ANSI/ASME B16.47 SERIESE B FLANGES(API 605)

Class 75、150 Flanges
Class 300 Flanges
Class 600 Flanges
Class 900 Flanges

API CLASS 75 FLANGES

ASME B16.47 SER.B(API605)



Unit:mm

Nomina Pipe Size	Outside Diam.	O.D.of Raised Face	Diam. at Base of Hub	Thick-ness	BORE Wall Thickness 6.35mm	BORE Wall Thickness 9.5mm	BORE Wall Thickness 12.7mm	Length Thru Hub	Thick-ness	Radius at Base of Hub	DRILLING Bolt Circle Diam.	DRILLING Number of Holes	DRILLING Diam. of Holes	Approximate Weight Pounds(kg)
	D	G X	t	B1		T1	A r	C						
26	762	704.9	676.1	33.3	647.7	641.4	635.0	58.7	661.9	7.9	723.9	36	19.1	63.9 (29.01)
28	813	755.7	726.9	33.3	698.5	692.2	685.8	62.0	712.7	7.9	774.7	40	19.1	68.3 (31.01)
30	864	806.5	777.7	33.3	749.3	743.0	736.6	65.0	763.5	7.9	825.5	44	19.1	777.2 (35.05)
32	914	857.3	828.5	35.1	800.1	793.8	787.4	69.9	814.3	7.9	876.3	48	19.1	105.8 (48.03)
34	965	908.1	879.3	35.1	850.9	844.6	838.2	73.2	865.1	7.9	927.1	52	19.1	110.2 (50.03)
36	1034	965.2	935.0	36.6	850.9	895.4	889.0	85.9	915.9	9.7	992.1	40	22.4	136.7 (62.06)
38	1084	1016.0	985.8	38.1	952.5	946.2	939.8	88.9	966.7	9.7	1042.9	40	22.4	154.3 (70.05)
40	1135	1066.8	1036.6	38.1	1003.3	997.0	990.6	91.9	1017.5	9.7	1093.7	44	22.4	163.1 (74.05)
42	1186	1117.6	1087.4	39.6	1054.1	1047.8	1041.4	95.3	1068.3	9.7	1144.5	48	22.4	169.8 (77.09)
44	1251	1174.8	1140.0	42.9	1104.9	1049.4	1143.0	104.6	1119.1	9.7	1203.5	36	25.4	180.8 (82.08)
46	1302	1225.6	1190.8	44.5	1155.7	1149.4	1143.0	108.0	1169.9	9.7	1254.3	40	25.4	231.5(105.01)
48	1353	1276.4	1241.6	46.0	1206.5	1200.2	1193.8	111.3	1220.7	9.7	1305.1	44	25.4	264.6(120.03)
50	1403	1327.2	1293.9	47.8	1257.3	1251.0	1244.6	115.8	1271.5	9.7	1355.9	44	25.4	295.8(134.28)
52	1457	1378.0	1344.7	47.8	1308.1	1301.8	1295.4	120.7	1322.3	9.7	1409.7	48	25.4	313.2(142.18)
54	1508	1428.8	1397.0	49.3	1358.9	1352.6	1346.2	125.5	1373.1	9.7	1460.5	48	25.4	396.8(180.15)
56	1575	1485.9	1450.8	50.8	1409.7	1403.4	1397.0	134.9	1423.9	11.2	1521.0	40	28.4	406.6(184.58)
58	1626	1536.7	1501.6	52.3	1460.5	1454.2	1447.8	138.2	1474.7	11.2	1571.8	44	28.4	430.8(195.56)
60	1676	1587.5	1552.4	55.6	1511.3	1505.0	1498.6	144.5	1525.5	11.2	1622.6	44	28.4	463.0(210.20)

API CLASS 150 FLANGES

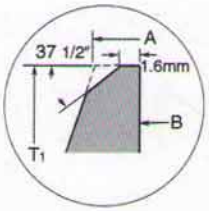
Unit:mm

Nomina Pipe Size	Out-side Diam.	O.D.of Raised Face	Diam. at Base of Hub	Diam. of Hub at Bevel	BORE Wall Thickness 6.35mm	BORE Wall Thickness 9.5mm	BORE Wall Thickness 12.7mm	Length Thru Hub	Thick-ness	Radius at Base of Hub	DRILLING Bolt Circle Diam.	DRILLING Number of Holes	DRILLING Diam. of Holes	Approximate Weight Pounds(kg)
	D	G X	t	B1		T1	A r	C						
26	786	711.2	684.3	41.1	647.7	641.4	635.0	88.9	661.9	9.7	744.5	36	22.4	114.6 (52.03)
28	837	762.0	735.1	44.5	698.5	692.2	685.8	95.3	712.7	9.7	795.3	40	22.4	127.9 (58.07)
30	887	812.8	787.4	44.5	749.3	743.0	736.6	100.1	763.5	9.7	846.1	44	22.4	143.3 (65.06)
32	941	863.6	839.7	46.0	800.1	793.8	787.4	108.0	814.3	9.7	900.2	48	22.4	187.4 (85.08)
34	1005	920.8	892.0	49.3	850.9	844.6	838.2	110.2	865.1	9.7	957.3	40	25.4	220.5(100.11)
36	1057	971.6	944.6	52.3	901.7	895.4	889.0	117.3	915.9	9.7	1009.7	44	25.4	253.5(115.09)
38	1124	1022.4	997.0	53.8	952.5	946.2	939.8	124.0	968.2	9.7	1069.8	40	28.4	297.5(135.07)
40	1175	1079.5	1049.3	55.6	1003.3	997.0	990.6	128.5	1019.0	9.7	1120.6	44	28.4	330.7(150.14)
42	1226	1130.3	1101.9	58.7	1054.1	1047.8	1041.4	133.4	1069.8	11.2	1171.4	48	28.4	363.8(165.17)
44	1276	1181.1	1152.7	60.5	1104.9	1098.6	1092.2	136.7	1120.6	11.2	1222.2	52	31.8	440.9(200.17)
46	1341	1234.9	1205.0	62.0	1155.7	1149.4	1143.0	144.5	1171.4	11.2	1284.2	40	31.8	463.0(210.20)
48	1392	1289.1	1257.3	65.0	1206.5	1200.2	1193.8	149.4	1222.2	11.2	1335.0	44	31.8	529.1(240.21)
50	1443	1339.9	1308.1	68.3	1257.3	1251.0	1244.6	153.9	1273.0	11.2	1385.8	48	31.8	552.4(250.27)
52	1494	1390.7	1360.4	69.9	1308.1	1301.8	1295.4	157.2	1323.8	11.2	1436.6	52	31.8	585.9(265.77)
54	1549	1441.5	1412.7	71.4	1358.9	1352.6	1346.2	162.1	1374.6	11.2	1492.3	56	31.8	683.4(310.26)
56	1600	1492.3	1465.3	73.2	1409.7	1403.4	1397.0	166.6	1425.4	14.2	1543.1	60	31.8	674.8(306.08)
58	1675	1543.1	1516.1	74.7	1460.5	1454.2	1447.8	174.8	1476.2	14.2	1611.4	48	35.1	810.6(367.76)
60	1726	1600.2	1570.0	76.2	1511.3	1505.0	1498.6	179.3	1527.0	14.2	1662.2	52	35.1	903.9(410.37)

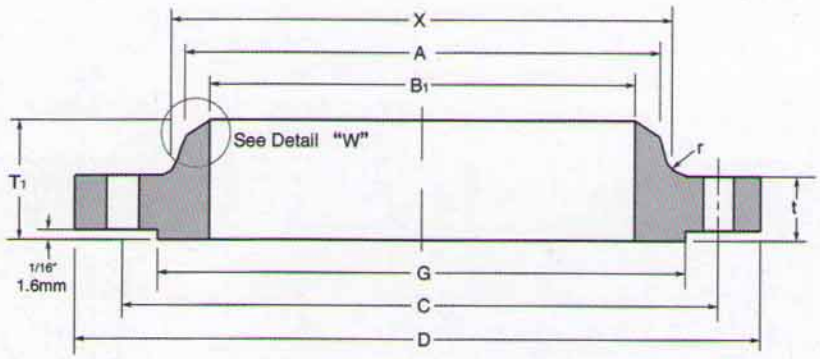
Notes:
(1) 'Bore'(B1) of flanges is shall be specified by the purchaser.
(2) Class 75 flanges will be furnished with 0.06"(1.6mn)raised face .whech is included in 'Thickness'(t) and 'Length through Hub'(T1).

API CLASS 300 FLANGES

ASME B 16.47



Detail "W"
TypicalWelding
end preparation



Unit:mm

Nominal Pipe Size	Outside Diam.	O.D.of Raised Face	Diam. at Base of Hub	Diam. of Hub at Bevel	BORE			Length Thru Hub	Thick-ness	Radius at Base of Hub	DRILLING			Approximate Weight Pounds(kg)
					Wall Thickness						Bolt Circle Diam.	Number of Holes	Diam. of Holes	
					6.35mm	9.5mm	12.7mm							
	D G	X	A	B_1		T_1 t	r	C						
26	867	736.6	701.5	665.2	647.7	641.4	635.0	144.5	88.9	14.2	803.1	32	35.1	440.9 (200.17)
28	921	787.4	755.7	716.0	698.5	692.2	685.8	149.4	88.9	14.2	857.3	36	35.1	463.0 (210.20)
30	991	844.6	812.8	768.4	749.3	743.0	736.6	158.0	93.7	14.2	920.8	36	38.1	595.2 (270.22)
32	1054	901.7	863.6	819.2	800.1	793.8	787.4	168.1	103.1	15.7	977.9	32	41.1	727.5 (330.29)
34	1108	952.5	917.4	870.0	850.9	844.6	838.2	173.0	103.1	15.7	1031.7	36	41.1	793.7 (360.34)
36	1171	1009.7	965.2	920.8	901.7	895.4	889.0	180.8	103.1	15.7	1089.2	32	44.5	903.9 (410.37)
38	1222	1060.5	1016.0	971.6	952.5	946.2	939.8	192.0	111.3	15.7	1140.0	36	44.5	1256.6 (570.50)
40	1273	1114.6	1066.8	1022.4	1003.3	997.0	990.6	198.4	115.8	15.7	1190.8	40	44.5	1455.0 (660.57)
42	1334	1168.4	1117.6	1074.7	1054.1	1047.8	1041.4	204.7	119.1	15.7	1244.6	36	47.8	1587.3 (720.63)
44	1384	1219.2	1173.2	1125.5	1104.9	1098.6	1092.2	214.4	127.0	15.7	1295.4	40	47.8	1763.7 (800.72)
46	1461	1270.0	1128.9	1176.3	1155.7	1149.4	1143.0	222.3	128.5	15.7	1365.3	36	50.8	2138.5 (970.88)
48	1511	1327.2	1277.9	1227.1	1206.5	1200.2	1193.8	223.8	128.5	15.7	1416.1	40	50.8	2182.5 (990.86)
50	1562	1378.0	1330.5	1277.9	1257.3	1251.0	1244.6	235.0	138.2	15.7	1466.9	44	50.8	2308.2(1047.92)
52	1613	1428.8	1382.8	1328.7	1308.1	1301.8	1295.4	242.8	142.7	15.7	1517.7	48	50.8	2453.3(1113.79)
54	1673	1479.6	1435.1	1379.5	1358.9	1352.6	1346.2	239.8	136.7	15.7	1577.8	48	50.8	2557.3(1161.01)
56	1765	1536.7	1493.8	1422.4	1409.7	1403.4	1397.0	268.2	153.9	17.5	1651.0	36	60.5	2942.9(133.601)
58	1827	1593.9	1547.9	1481.1	1460.5	1454.2	1447.8	274.6	153.9	17.5	1712.0	40	60.5	3144.5(1427.60)
60	1878	1651.0	1598.7	1531.9	1511.3	1505.0	1498.6	271.5	150.9	17.5	1763.8	40	60.5	3196.7(1451.30)

Notes:

(1) 'Bore' (B_1) of flanges is shall be specified by the purchaser.

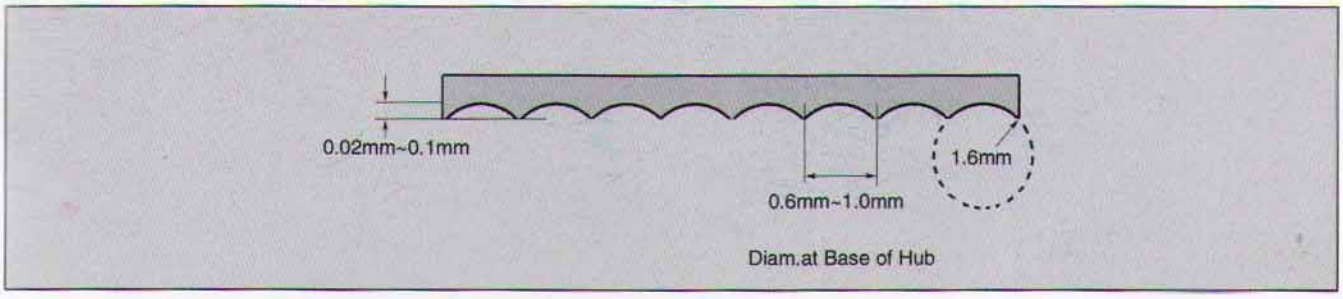
(2) Class 300 flanges will be furnished with 0.06"(1.6mm)raised face ,which is included in 'Thickness' (t) and 'Length through Hub' T_1).

FINISH & TOLERANCE

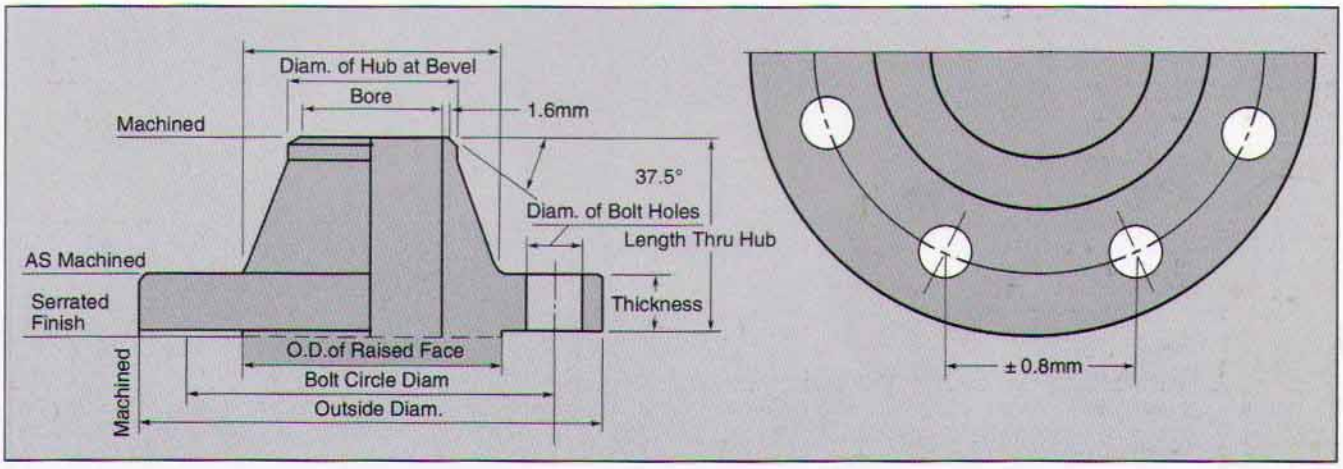
API 605 FORGED FLANGES

1. Standard Finishes for Contact Face of Flanges

The flange face shall have a serrated finish consisting of 20 to 40 grooves per inch,0.002 in.to 0.005 in.deep,cut spirally or concentrically with a round-nose tool.



2. Dimensional Tolerances for API 605 Flanges



Dimension	Tolerance
Outside diameter of raised face	±0.8mm
Flange thickness	+4.8mm, -0mm
Length thru hub	±3.0mm
Diam.of hub at bevel	+4.1mm,-0.8mm
Bolt circle diameter	±1.6mm
Center-to-center of adjacent bolt holes	±0.8mm
Bore	±3.0mm,-1.6mm
Outside diameter	±3.0mm
Diameter at base of hub	± 3.0mm

Notes:

(1)Flanges shall have bearing surfaces for bolting that are parallel to the flange face within 1 degree.Any back facing or spot facing required to accomplish parallelism between the flange face and nut bearing surface on the back of the flange shall not reduce the flange thickness.

(2)Tolerances for the welding end of a welding neck flange shall be in conformance with ANSI B16.25.

(3)Other tolerances than specified the table shall be in accordance with ANSI B16.5.

(4)The flange shall be either back-faced or spot-faced at the bolt-holes on the flange back if the nut bearing surface at the back of the flange is not parallel with the flange face within the tolerances listed in Note (1),if the fillet at the hub interferes with the nut bearing surface or if the flange theckness exceeds the minimum required thickness by more than 0.19 inch (4.8 millimeters). The nut bearing surface is the spot-facing diameter at the bolt-holes as given in MSS SP-9.Spot-facing shall be in accordance with MSS SP-9.

(5)Tolerances marked are not covered in API 605.

ANSI/ASME B16.47 SERIESE A FLANGES(MSS SP44)

Class 150 Flanges

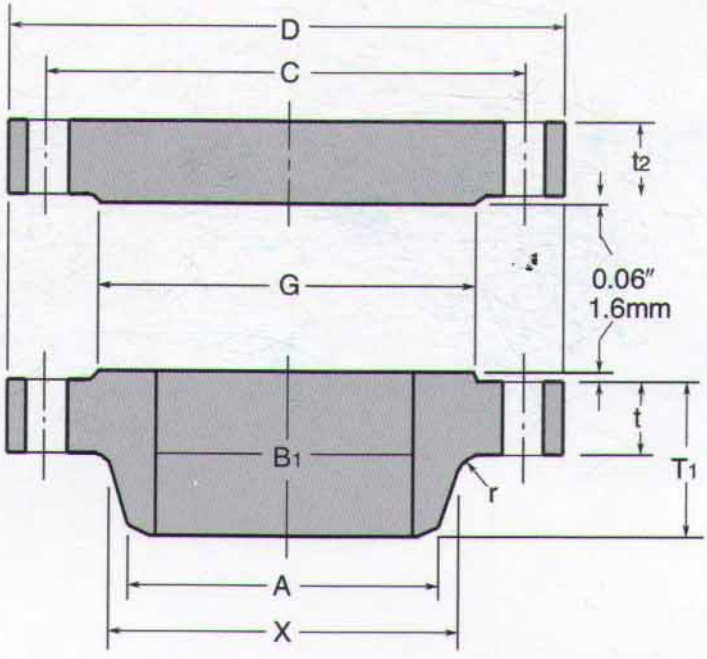
Class 300 Flanges

Class 600 Flanges

Class 900 Flanges

MSS CLASS 150 FLANGES

ASME B16.47 SERIESE A



Unit:mm

Nominal pipe Size	Outside Daim	O.D.of Raised Face	Diam. af Base of Hub	Thickness	BORE Wall Thickness	
					9.5mm	12.7mm
	D	G	X	t	B1	
26	870	749.3	676.1	68.3	641.4	635.0
28	927	800.1	726.9	71.4	692.2	685.8
30	984	857.3	781.1	74.7	743.0	736.6
32	1060	914.4	831.9	80.8	793.8	787.4
34	1111	965.2	882.7	82.6	844.6	838.2
36	1168	1022.4	933.5	90.4	895.4	889.0
38	1238	1073.2	990.6	87.4	946.2	939.8
40	1289	1124.0	1041.4	90.4	997.0	990.6
42	1346	1193.8	1092.2	96.8	1047.8	1041.4
44	1403	1244.6	1143.0	101.6	1098.6	1092.2
46	1454	1295.4	1196.8	103.1	1149.4	1143.0
48	1511	1358.9	1247.6	108.0	1200.2	1193.8
50	1568	1409.7	1301.8	111.3	1251.0	1244.6
52	1626	1460.5	1352.6	115.8	1301.8	1295.4
54	1683	1511.3	1403.4	120.7	1352.6	1346.2
56	1746	1574.8	1457.5	124.0	1403.4	1397.0
58	1803	1625.6	1508.3	128.5	1454.2	1447.8
60	1854	1676.4	1559.1	131.8	1505.0	1498.6

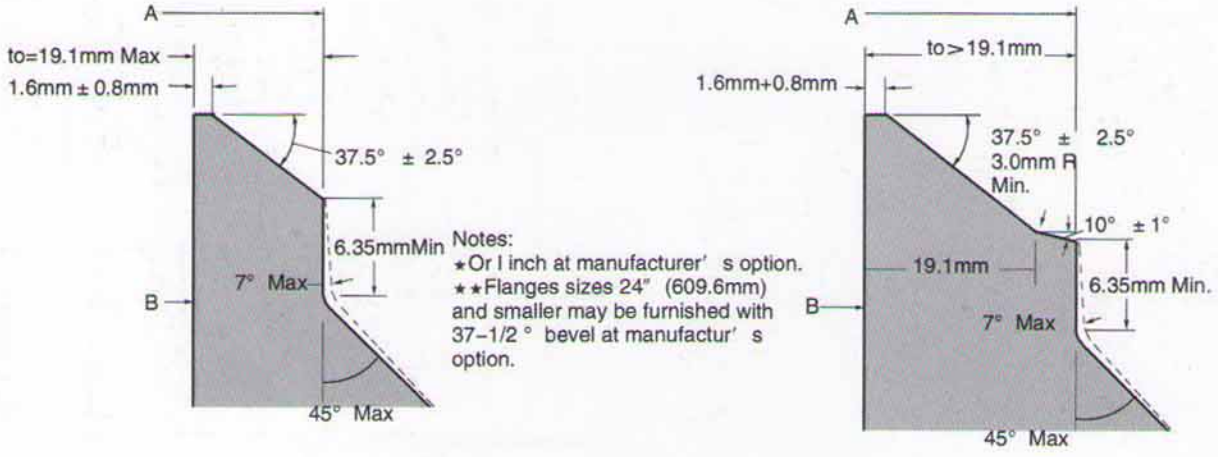
Notes:

(1) For the 'Bore'(B1) other than wall thickness 0.375" (9.5mm) and 0.500" (12.7mm), refer to page 18.

(2) Class 150 flanges will be furnished with 0.06" (1.6mm) raised face, raesed face,which is included in 'Thickness' (t) and 'Length through Hub' (T1).

(3) Dimensional tolerance are in accordance with ANSI B16.5

WELDING–ENDS FOR WELDING–NECK FLANGES



BEVEL FOR WELL THICKNESS (t) 0.19 IN.TO 0.88 IN.INCLUSIVE

BEVEL FOR WELL THICKNESS (t) GREATER THAN 0.88

Unit:mm

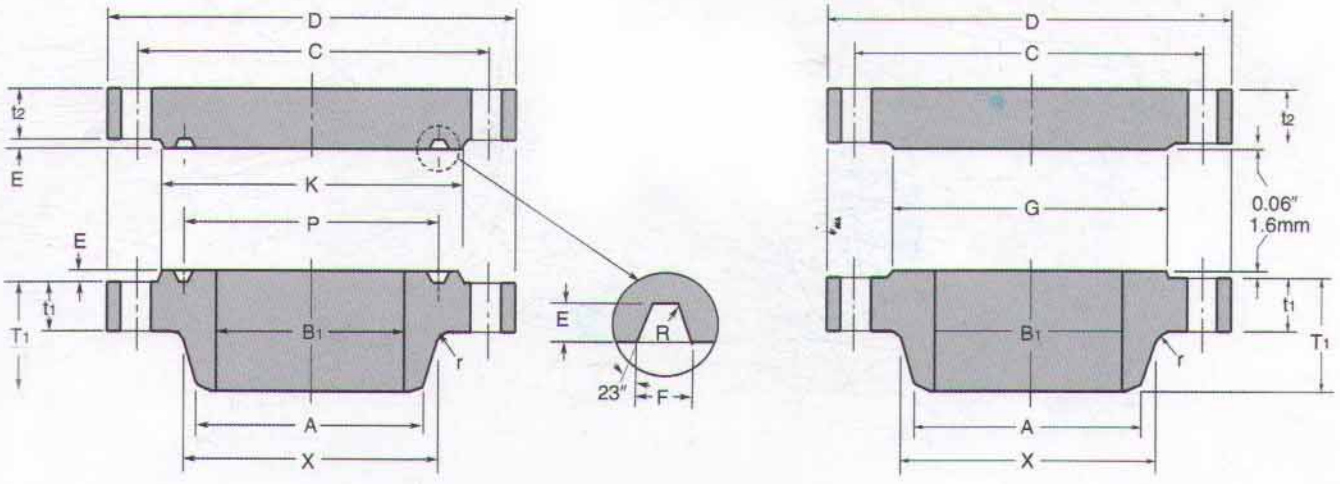
Nominal pipe size	Length thru Hub	Diam. of Hub Bevel	Radius of Fillet	DRILLING		
				Bolf Circle Diam.	Number of Holes	Diam. of Holes
	T1	A	r	C		
26	120.7	660.4	9.7	806.5	24	35.1
28	125.5	711.2	11.2	863.6	28	35.1
30	136.7	762.0	11.2	914.4	28	35.1
32	144.5	812.8	11.2	977.9	28	41.1
34	149.4	863.6	12.7	1028.7	32	41.1
36	157.0	914.4	12.7	1085.9	32	41.1
38	157.2	965.2	12.7	1149.4	32	41.1
40	163.6	1016.0	12.7	1200.2	36	41.1
42	171.5	1066.8	12.7	1257.3	36	41.1
44	177.8	1117.6	12.7	1314.5	40	41.1
46	185.7	1168.4	12.7	1365.3	40	41.1
48	192.0	1219.2	12.7	1422.4	44	41.1
50	203.2	1270.0	12.7	1479.6	44	47.8
52	209.6	1320.8	12.7	1536.7	44	47.8
54	215.9	1371.6	12.7	1593.9	44	47.8
56	228.6	1422.4	12.7	1651.0	48	47.8
58	235.0	1473.2	12.7	1708.2	48	47.8
60	239.8	1524.0	12.7	1759.0	52	47.8

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

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

MSS CLASS 300 FLANGES

ASME B16.47 SERIESE A



Unit:mm

Nominal pipe size	Outside Diam	O.D.of Raised Face	Diam of Base of Hub	Thickness		BORE		Length Thru Hub	Diam of Hub of Bevel	Radius of Fillef
				Welding Neck	Blind	Wall Thickness 9.5mm	Wall Thickness 12.7mm			
	D	G	X	t1	t2		B1	T1	A	r
26	972	749.3	720.9	79.2	84.1	641.4	635.0	184.2	660.4	9.7
28	1035	800.1	774.7	85.9	90.4	692.2	685.8	196.9	711.2	11.2
30	1092	857.3	827.0	91.9	95.3	743.0	736.6	209.6	762.0	11.2
32	1149	914.4	881.1	98.6	100.1	793.8	787.4	222.3	812.8	11.2
34	1207	965.2	936.8	101.6	104.6	844.6	838.2	231.6	863.6	12.7
36	1270	1022.4	990.6	104.6	111.3	895.4	889.0	241.3	914.4	12.7
38	1168	1028.7	993.6	108.0	108.0	946.2	939.8	180.8	965.2	12.7
40	1238	1085.9	1047.8	114.3	114.3	997.0	990.6	193.5	1016.0	12.7
42	1289	1136.7	1098.6	119.1	119.1	1047.8	1041.4	200.2	1066.8	12.7
44	1353	1193.8	1149.4	124.0	124.0	1198.6	1092.2	206.2	1117.6	12.7
46	1416	1244.6	1203.5	128.5	128.5	1149.4	1143.0	215.9	1168.4	12.7
48	1467	1301.8	1254.3	133.4	133.4	1200.2	1193.8	223.8	1219.2	12.7
50	1530	1358.9	1305.1	139.7	139.7	1251.0	1244.6	231.6	1270.0	12.7
52	1581	1409.7	1355.9	144.5	144.5	1301.8	1295.4	238.3	1320.8	12.7
54	1657	1466.9	1409.7	152.4	152.4	1352.6	1346.2	252.5	1371.6	12.7
56	1708	1517.7	1463.5	153.9	153.9	1403.4	1397.0	260.4	1422.4	12.7
58	1759	1574.8	1514.3	158.8	158.8	1454.2	1447.8	266.7	1473.2	12.7
60	1810	1625.6	1565.1	163.6	163.6	1505.0	1498.6	273.1	1524.0	12.7

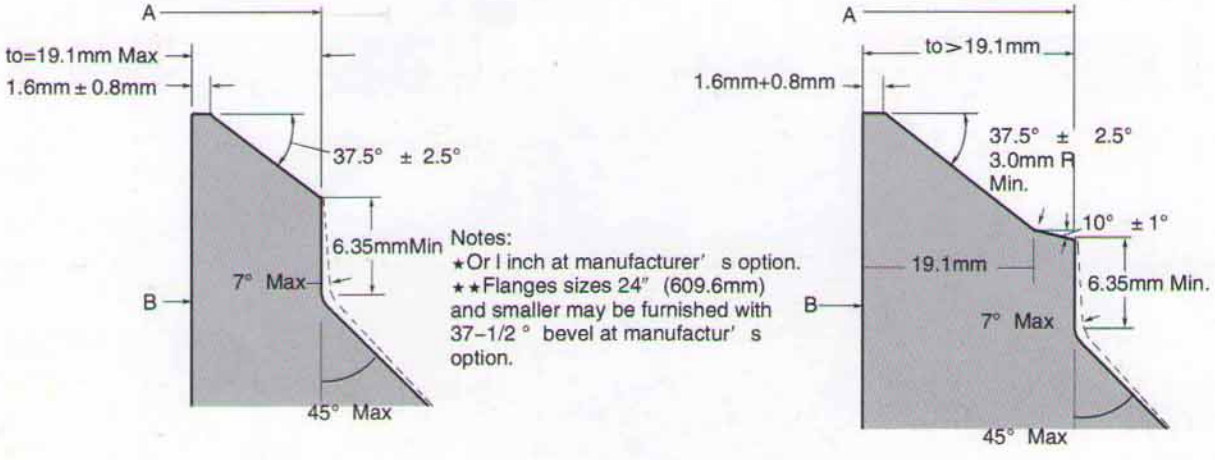
Notes:

(1) For the 'Bore'(B1)other than wall thickness 0.375"(9.5mm)and 0.5"(12.7mm),refer to page 18.

(2) Class 300 flanges will be furnished with 0.06"(1.6mm)raised face,which is included in 'Thickness'(t)'and 'Length through Hub'(T1).

(3) Dimensional tolerances are in accordance with ANSI B16.5.

WELDING–ENDS FOR WELDING–NECK FLANGES



BEVEL FOR WELL THICKNESS (t) 0.19 IN.TO 0.88 IN.INCLUSIVE

BEVEL FOR WELL THICKNESS (t) GREATER THAN 0.88 IN

Unit:mm

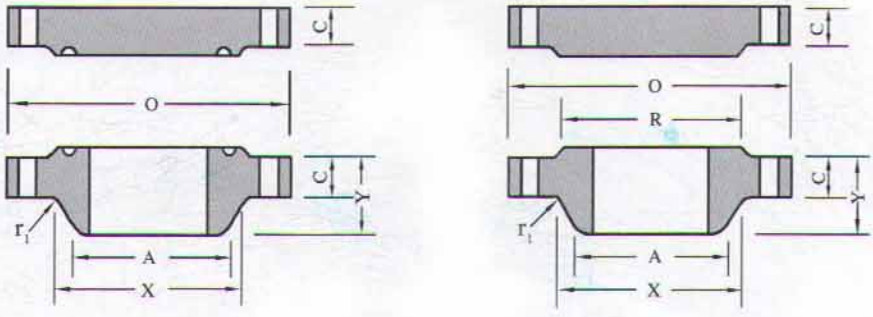
Nominal pipe Size	DRILLING			Pifch	GROOVE DIMENSIONS			Diam. of Raised Face	Ring and Groove Number
	Bolf Circle Diam	Number of Holes	Diam. Diam.	Diam	Widfh	Depth	Radius		
	C			P	F	E	R	K	
26	876.3	28	44.5	749.3	19.8	12.7	1.5	809.8	R93
28	939.8	28	44.5	800.1	19.8	12.7	1.5	860.6	R94
30	997.0	28	47.8	857.3	19.8	12.7	1.5	917.4	R95
32	1054.1	28	50.8	914.4	23.0	14.3	1.5	984.3	R96
34	1104.9	28	50.8	965.2	23.0	14.3	1.5	1035.1	R97
36	1168.4	32	53.8	1022.4	23.0	14.3	1.5	1092.2	R98
38	1092.2	32	41.1						
40	1155.7	32	44.5						
42	1206.5	32	44.5						
44	1263.7	32	47.8						
46	1320.8	28	50.8						
48	1371.6	32	50.8						
50	1428.8	32	53.8						
52	1479.6	32	53.8						
54	1549.4	28	60.5						
56	1600.2	28	60.5						
58	1651.0	32	60.5						
60	1701.8	32	60.5						

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

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

MSS CLASS 600 FLANGES

ASME B16.47 SERIESE A

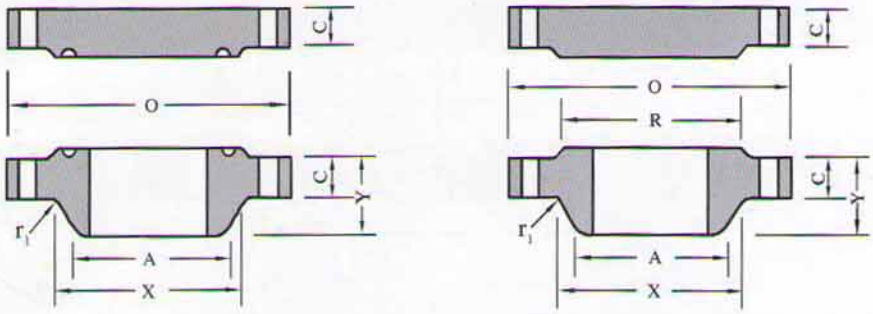


Unit:inch

Nominal Pipe Size	Outside Diam	Thickness		Length thraugh hud	Diam at Base of hub	Diam of hud at Bevel	Raised Face	钻孔 Bolt			Diam of Bolts	Fillet Radius min.
		WN	BL					Bolt circle	No.	Diam of Holes		R
	O	C	C	Y	X	A	R					r^1
26	40.00	4.25	4.94	8.75	29.44	26.00	29.50	36.00	28	2.00	$1^7/_8$	0.50
28	42.25	4.38	5.19	9.25	31.62	28.00	31.50	38.00	28	2.12	2	0.50
30	44.50	4.50	5.50	9.75	33.94	30.00	33.75	40.25	28	2.12	2	0.50
32	47.00	4.62	5.81	10.25	36.12	32.00	36.00	42.50	28	2.38	$2^1/_4$	0.50
34	49.00	4.75	6.06	10.62	38.31	34.00	38.00	44.50	28	2.38	$2^1/_4$	0.56
36	51.75	4.88	6.38	11.12	40.62	36.00	40.25	47.00	28	2.62	$2^1/_2$	0.56
38	50.00	6.00	6.12	10.00	40.25	38.00	41.50	45.75	28	2.38	$2^1/_4$	0.56
40	52.00	6.25	6.38	10.38	42.25	40.00	43.75	47.75	32	2.38	$2^1/_4$	0.56
42	55.25	6.62	6.75	11.00	44.38	42.00	46.00	50.50	28	2.62	$2^1/_2$	0.56
44	57.25	6.81	7.00	11.38	46.50	44.00	48.25	52.50	32	2.62	$2^1/_2$	0.56
46	59.50	7.06	7.31	11.81	48.62	46.00	50.25	54.75	32	2.62	$2^1/_2$	0.56
48	62.75	7.44	7.69	12.44	50.75	48.00	52.50	57.50	32	2.88	$2^3/_4$	0.56
50	65.75	7.75	8.00	12.94	52.88	50.00	54.50	60.00	28	3.12	3	0.56
52	67.75	8.00	8.25	13.25	54.88	52.00	56.50	62.00	32	3.12	3	0.56
54	70.00	8.25	8.56	13.75	57.00	54.00	58.75	64.25	32	3.12	3	0.56
56	73.00	8.56	8.88	14.25	59.12	56.00	60.75	66.75	32	3.38	$3^1/_4$	0.62
58	75.00	8.75	9.12	14.56	61.12	58.00	63.00	68.75	32	3.38	$3^1/_4$	0.62
60	78.50	9.19	9.56	15.31	63.38	60.00	65.25	71.75	28	3.62	$3^1/_2$	0.69

MSS CLASS 900 FLANGES

ASME B16.47 SERIESE A



Unit:inch

Nominal Pipe Size	Outside Diam	Thickness		Length thraugh hud	Diam at Base of hub	Diam of hud at Bevel	Raised Face	Bolt			Diam of Bolts	Fillet Radius min.
		WN	BL					Bolt circle	No.	Diam of Holes		R
	O	C	C	Y	X	A	R					r^1
26	42.75	5.50	6.31	11.25	30.50	26.00	29.50	37.50	20	2.88	2 3/4	0.44
28	46.00	5.62	6.75	11.75	32.75	28.00	31.50	40.25	20	3.12	3	0.50
30	48.50	5.88	7.18	12.25	35.00	30.00	33.75	42.75	20	3.12	3	0.50
32	51.75	6.25	7.62	13.00	37.25	32.00	36.00	45.50	20	3.38	3 1/4	0.50
34	55.00	6.50	8.06	13.75	39.62	34.00	38.00	48.25	20	3.62	3 1/2	0.56
36	57.50	6.75	8.44	14.25	41.88	36.00	40.25	50.75	20	3.62	3 1/2	0.56
38	57.50	7.50	8.50	13.88	42.25	38.00	43.25	50.75	20	3.62	3 1/2	0.75
40	59.50	7.75	8.81	14.31	44.38	40.00	45.75	52.75	24	3.62	3 1/2	0.81
42	61.50	8.12	9.12	14.62	46.31	42.00	47.75	54.75	24	3.62	3 1/2	0.81
44	64.88	8.44	9.56	15.38	48.62	44.00	50.00	57.62	24	3.88	3 3/4	0.88
46	68.25	8.88	10.06	16.18	50.88	46.00	52.50	60.50	24	4.12	4	0.88
48	70.25	9.19	10.38	16.50	52.88	48.00	54.50	62.50	24	4.12	4	0.94
50	...	...	...	...	...	...	...	...	...	...	...	...
52	...	...	...	...	...	...	...	...	...	...	...	...
54	...	...	...	...	...	...	...	...	...	...	...	...
56	...	...	...	...	...	...	...	...	...	...	...	...
58	...	...	...	...	...	...	...	...	...	...	...	...
60	...	...	...	...	...	...	...	...	...	...	...	...

DIN FLANGES

6 Bar Flanges

10 Bar Flanges

16 Bar Flanges

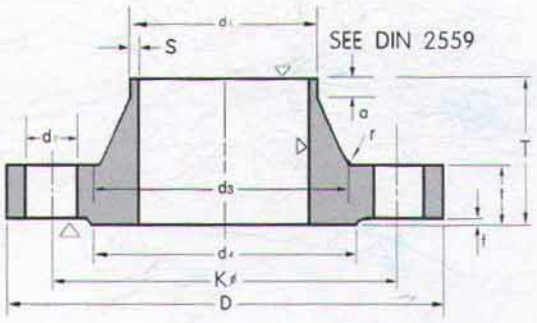
25 Bar Flanges

40 Bar Flanges

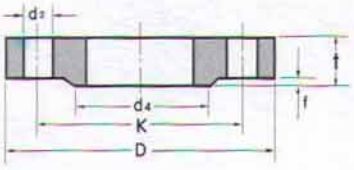
DIN 6Bar

Din 2573 Slip On Flanges
Din 2527 Blind Flanges
Din 2631 Welding Neck Flanges

WELDING NECK



SLIP-ON



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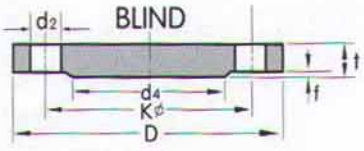


Unit:mm

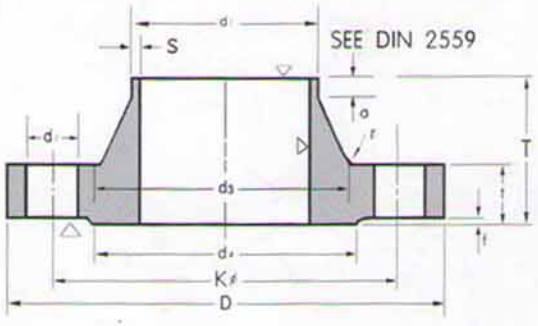
Bore		Common Dimension						Hub				Raised Face		Drilling				Approx. Weight(kg)	
Nominal Bore	d1	D	t Welding Neck	t Slip-on	t Blind	k	T	d3	s	r	a max	d4	f	Number of Bolf	Dia. of Bolf		d2	Din 2573	Din 2631
10	14 17.2*)	75	12	12	12	50	28	22 26	1.8	4	6	35	2	4	M10	–	11.5	0.036	0.335
15	20 21.3*)	80	12	12	12	55	30	28 30	2.0	4	6	40	2	4	M10	–	11.5	0.410	0.392
20	25 26.9*)	90	14	14	14	65	32	35 38	2.3	4	6	50	2	4	M10	–	11.5	0.600	0.592
25	30 33.7*)	100	14	14	14	75	35	40 42	2.6	4	6	60	2	4	M10	–	11.5	0.740	0.747
32	38 42.4*)	120	14	16	14	90	35	50 55	2.6	6	6	70	2	4	M12	(1/2")	14	1.19	1.05
40	44.5 48.3*)	130	14	16	14	100	38	58 62	2.6	6	7	80	3	4	M12	(1/2")	14	1.39	1.18
50	57 60.3*)	140	14	16	14	110	38	70 74	2.9	6	8	90	3	4	M12	(1/2")	14	1.53	1.34
65	76.1*)	160	14	16	14	130	38	88	2.9	6	9	110	3	4	M12	(1/2")	14	1.89	1.67
80	88.9*)	190	16	18	16	150	42	102	3.2	8	10	128	3	4	M16	(5/8")	18	2.98	2.71
100	108 114.3*)	210	16	18	16	170	45	122 130	3.6	8	10	148	3	4	M16	(5/8")	18	3.46	3.24
125	133 139.7*)	240	18	20	18	200	48	148 155	4.0	8	10	178	3	8	M16	(5/8")	18	4.60	4.49
150	159 168.3*)	265	18	20	18	225	48	172 184	4.5	10	12	202	3	8	M16	(5/8")	18	5.22	5.15
200	216 219.1*)	320	20	22	20	280	55	230 236	5.9	10	15	258	3	8	M16	(5/8")	18	7.15	7.78
250	267 273*)	375	22	24	22	335	60	282 290	6.2	12	15	312	3	12	M16	(5/8")	18	9.61	10.8
300	318 323.9*)	440	22	24	22	395	62	335 342	7.1	12	15	365	4	12	M20	(3/4")	23	12.6	14.0
350	355.6*) 368	490	22	26	22	445	62	385	7.1	12	15	415	4	12	M20	(3/4")	23	15.6	16.1
400	406.4*) 419	540	22	28	22	495	65	438	7.1	12	15	455	4	16	M20	(3/4")	23	18.4	18.3
500	508*) 521	645	24	30	24	600	68	538	7.1	12	15	570	4	20	M20	(3/4")	23	24.5	24.6
600	609.6*) 622	755	24			705	70	640	7.1	12	16	670	5	20	M24	(7/8")	27		
700	711.2* 720	860	24			810	70	740	7.1	12	16	775	5	24	M24	(7/8")	27		
800	812.8*) 820	975	24			920	70	842	7.1	12	16	880	5	24	M27	(1")	30		
900	914.4* 920	1075	26			1020	70	942	7.1	12	16	980	5	24	M27	(1")	30		
1000	1016*) 1020	1175	26			1120	70	1045	7.1	16	16	1080	5	28	M27	(1")	30		

Note: *Out side diameter of pipe complies with ISO recommendation R64.

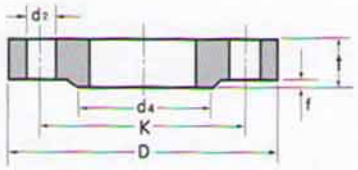
DIN 10Bar

Din 2576 Slip On Flanges
Din 2527 Blind Flanges
Din 2632 Welding Neck Flanges

WELDING NECK



SLIP-ON



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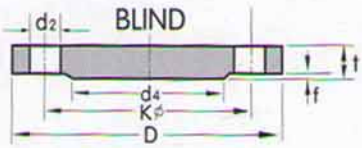


Unit:mm

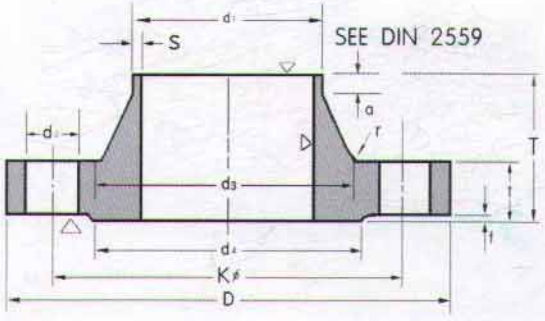
Bore		Common Dimension						Hub				Raised Face		Drilling				Approx. Weight(kg)	
Nominal Bore	d1	D	t Welding Neck	t Slip-on	t Blind	k	T	d3	s	r	a ≈	d4	f	Number of Bolf	Dia. of Bolf		d2	Din 2576	Din 2632
10	14 17.2*)	90	14	14	14	60	35	25 28	1.8	4	6	40	2	4	M12	(1/2")	14	0.163	0.580
15	20 21.3*)	95	14	14	14	65	35	30 32	2.0	4	6	45	2	4	M12	(1/2")	14	0.675	0.648
20	25 26.9*)	105	16	16	16	75	38	38 40	2.3	4	6	58	2	4	M12	(1/2")	14	0.947	0.952
25	30 33.7*)	115	16	16	16	85	38	42 45	2.6	4	6	68	2	4	M12	(1/2")	14	1.14	1.14
32	38 42.4*)	140	16	16	16	100	40	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	1.66	1.69
40	44.5 48.3*)	150	16	16	16	110	42	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	1.89	1.86
50	57 60.3*)	165	18	18	18	125	45	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	2.51	2.53
65	76.1*)	185	18	18	18	145	45	90	2.9	6	10	122	3	4	M16	(5/8")	18	3.00	3.06
80	88.9*)	200	20	20	20	160	50	105	3.2	8	10	138	3	4	M16	(5/8")	18	3.79	3.70
100	108 114.3*)	220	20	20	20	180	52	125 131	3.6	8	12	158	3	8	M16	(5/8")	18	4.20	4.62
125	133 139.7*)	250	22	22	22	210	55	150 156	4.0	8	12	188	3	8	M16	(5/8")	18	5.71	6.30
150	159 168.3*)	285	22	22	22	240	55	175 184	4.5	10	12	212	3	8	M20	(3/4")	23	6.72	7.75
200	216 219.1*)	340	24	24	24	295	62	232 235	5.9	10	16	268	3	8	M20	(3/4")	23	9.50	11.3
250	267 273*)	395	26	26	26	350	68	285 292	6.3	12	16	320	3	12	M20	(3/4")	23	12.5	14.7
300	318 323.9*)	445	26	26	28	400	68	335 344	7.1	12	16	370	4	12	M20	(3/4")	23	14.4	17.6
350	355.6*) 368	505	26	28	30	460	68	385	7.1	12	16	430	4	16	M20	(3/4")	23	20.6	23.6
400	406.4*) 419	565	26	32	32	515	72	440	7.1	12	16	482	4	16	M24	(7/8")	27	27.9	28.6
500	508*) 521	670	28	38	34	620	75	542	7.1	12	16	585	4	20	M24	(7/8")	27	41.1	38.1
600	609.6*) 622	780	28			725	80	642	7.1	12	18	685	5	20	M27	(1")	30		
700	711.2*) 720	895	30			840	80	745	8.0	12	18	800	5	24	M27	(1")	30		
800	812.8*) 820	1015	32			950	90	850	8.0	12	18	905	5	24	M30	(1 1/8")	33		
900	914.4* 920	1115	34			1050	95	950	10.0	12	20	1005	5	28	M30	(1 1/8")	33		
1000	1016*) 1020	1230	34			1160	95	1052	10.0	16	20	1110	5	28	M33	(1 1/4")	36		

Note: *Out side diameter of pipe complies with ISO recommendation R64.

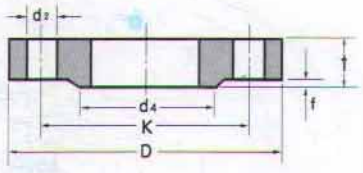
DIN 16Bar

Din 2543 Slip On Flanges
Din 2527 Blind Flanges
Din 2633 Welding Neck Flanges

WELDING NECK



SLIP–ON



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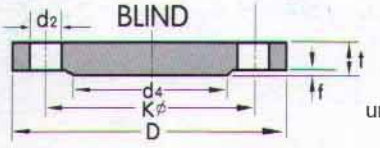


unit:mm

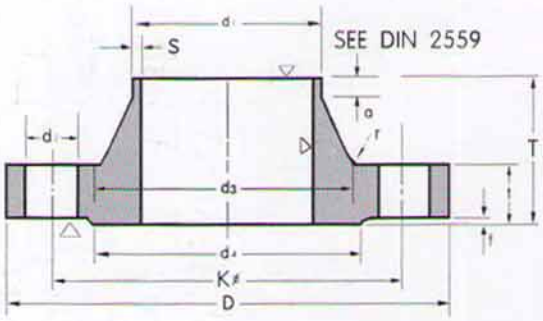
Bore		Common Dimension						Hub				Raised Face		Drilling				Approx. Weight(kg)	
Nominal Bore	d1	D	t Welding Neck	t Slip–on	t Blind	k	T	d3	s	r	a ≈	d4	f	Number of Bolf	Dia. of Bolf		d2	Din 2543	Din 2633
10	14 17.2*)	90	14		14	60	35	25 28	1.8	4	6	40	2	4	M12	(1/2")	14	0.63	0.580
15	20 21.3*)	95	14	14	14	65	35	30 32	2.0	4	6	45	2	4	M12	(1/2")	14	0.72	0.648
20	25 26.9*)	105	16	16	16	75	38	38 40	2.3	4	6	58	2	4	M12	(1/2")	14	1.01	0.952
25	30 33.7*)	115	16	16	16	85	38	42 45	2.6	4	6	68	2	4	M12	(1/2")	14	1.23	1.14
32	38 42.4*)	140	16	16	16	100	40	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	1.80	1.69
40	44.5 48.3*)	150	16	16	16	110	42	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	2.09	1.86
50	57 60.3*)	165	18	18	18	125	45	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	2.88	2.53
65	76.1*)	185	18	18	18	145	45	90	2.9	6	10	122	3	4	M16	(5/8")	18	3.66	3.06
80	88.9*)	200	20	20	20	160	50	105	2.2	8	10	138	3	8	M16	(5/8")	18	4.77	3.70
100	108 114.3*)	220	20	20	20	180	52	125 131	3.6	8	12	158	3	8	M16	(5/8")	18	5.65	4.62
125	133 139.7*)	250	22	22	22	210	55	150 156	4.0	8	12	188	3	8	M16	(5/8")	18	8.42	6.30
150	159 168.3*)	285	22	22	22	240	55	175 184	4.5	10	12	212	3	8	M20	(3/4")	23	10.4	7.75
200	216 219.1*)	340	24	24	24	295	62	232 235	5.9	10	16	268	3	12	M20	(3/4")	23	16.1	11.0
250	267 273*)	405	26	26	26	355	70	285 292	6.3	12	16	320	3	12	M24	(7/8")	27	24.9	15.6
300	318 323.9*)	460	28	28	28	410	78	338 344	7.1	12	16	378	4	12	M24	(7/8")	27	35.1	22.0
350	355.6*) 368	520	30	30	30	470	82	390	8.0	12	16	438	4	16	M24	(7/8")	27	47.8	31.2
400	406.4*) 419	580	32	32	32	525	85	445	8.0	12	16	490	4	16	M27	(1")	30	63.5	39.3
500	508*) 521	715	34	36	34	650	90	548	8.0	12	16	610	4	20	M30	(1/8")	33	102.0	61.0
600	609.6*) 622	840	36	40		770	95	652	8.8	12	18	725	5	20	M33	(1 1/4")	36		
700	711.2*) 720	910	36			840	100	755	8.8	12	18	795	5	24	M33	(1 1/4")	36		
800	812.8*) 820	1025	38			950	105	855	10.0	12	20	900	5	24	M36	(1 3/8")	39		
900	914.4* 920	1125	40			1050	110	955	10.0	12	20	1000	5	28	M36	(1 3/8")	39		
1000	1016*) 1020	1255	42			1170	120	1058	10.0	16	20	1115	5	28	M39	(1 1/2")	42		

Note: *Out side diameter of pipe complies with ISO recommendation R64.

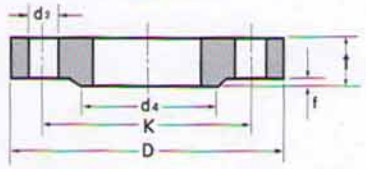
DIN 25Bar

Din 2544 Slip On Flanges
Din 2527 Blind Flanges
Din 2634 Welding Neck Flanges

WELDING NECK



SLIP-ON



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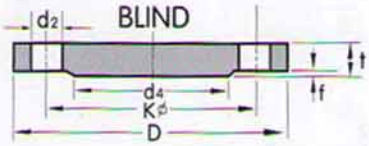


Unit:mm

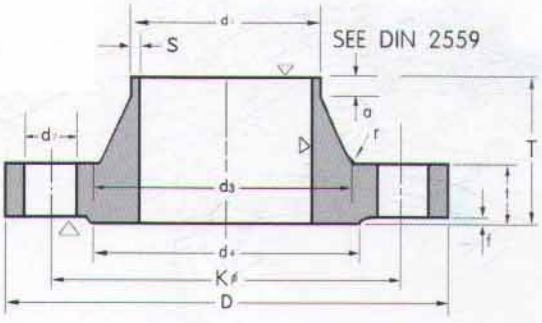
Bore		Common Dimension						Hub				Raised Face		Drilling				Approx. Weight(kg)	
Nominal Bore	d1	D	t			k	T	d3	s	r	a min	d4	f	Number of Bolf	Dia. of Bolf		d2	Din 2544	Din 2634
			Welding Neck	Slip-on	Blind														
10	14 17.2*)	90	16		16	60	35	25 28	1.8	4	6	40	2	4	M12	(1'/2")	14	0.72	0.661
15	20 21.3*)	95	16	16	16	65	38	30 32	2.0	4	6	45	2	4	M12	(1'/2")	14	0.81	0.746
20	25 26.9*)	105	18	18	18	75	40	38 40	2.3	4	6	58	2	4	M12	(1'/2")	14	1.24	1.06
25	30 33.7*)	115	18	18	18	85	40	42 46	2.6	4	6	68	2	4	M12	(1/2")	14	1.38	1.29
32	38 42.4*)	140	18	18	18	100	42	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	2.03	1.88
40	44.5 48.3*)	150	18	18	18	110	45	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	2.35	2.34
50	57 60.3*)	165	20	20	20	125	48	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	3.20	2.82
65	76.1*)	185	22	22	22	145	52	90	2.9	6	10	122	3	8	M16	(5/8")	18	4.29	3.74
80	88.9*)	200	24	24	24	160	58	105	3.2	8	12	138	3	8	M16	(5/8")	18	5.88	4.75
100	108 114.3*)	235	24	24	24	190	65	128 134	3.6	8	12	162	3	8	M20	(3/4")	23	7.54	6.52
125	133 139.7*)	270	26	26	26	220	68	155 162	4.0	8	12	188	3	8	M24	(7/8")	27	10.8	9.07
150	159 168.3*)	300	28	28	28	250	75	182 192	4.5	10	12	218	3	8	M24	(7/8")	27	14.5	11.8
200	216 219.1*)	360	30	30	30	310	80	240 244	6.3	10	16	278	3	12	M24	(7/8")	27	22.3	17.0
250	267 273*)	425	32	32	32	370	88	292 298	7.1	12	18	335	3	12	M27	(1")	30	33.5	24.4
300	318 323.9*)	485	34	34	34	430	92	345 352	8.0	12	18	395	4	16	M27	(1")	30	46.3	31.2
350	355.6*) 368	555	38	38	38	490	100	398	8.0	12	20	450	4	16	M30	(1'/8")	33	68.0	47.2
400	406.4*) 419	620	40	40	40	550	110	452	8.8	12	20	505	4	16	M33	(1'/4")	36	89.7	61.7
500	508*) 521	730	44	44	44	660	125	558	10.0	12	20	615	4	20	M33	(1'/4")	36	138.0	89.6
600	609.6*) 622	845	46			770	125	660	11.0	12	20	720	5	20	M36	(1'/8")	39		104.0
700	721.2*) 720	960	46			875	125	760	12.5	12	20	820	5	24	M39	(1'/2")	42		136.0
800	812.8*) 820	1085	50			990	135	865	14.2	12	22	930	5	24	M45	(1'/4")	48		186.0
900	914.4* 930	1185	54			1090	145	968	16.0	12	24	1030	5	28	M45	(1'/4")	48		236.0
1000	1016*) 1020	1320	58			1210	155	1070	17.5	16	24	1140	5	28	M52	(2")	56		307.0

Note: * Out side diameter of pipe complies with ISO recommendation R64.

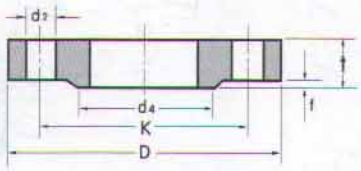
DIN 40Bar

Din 2545 Slip On Flanges
Din 2527 Blind Flanges
Din 2635 Welding Neck Flanges

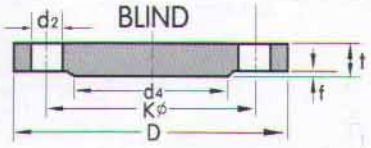
WELDING NECK



SLIP-ON



BLIND

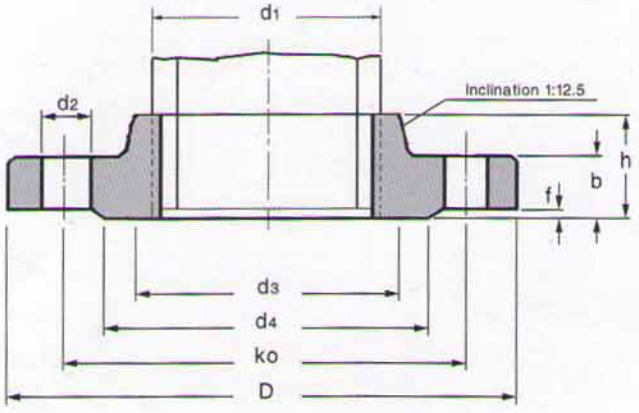


Unit:mm

Bore		Common Dimension						Hub				Raised Face		Drilling				Approx. Weight(kg)	
Nominal Bore		D	t			k	T	d_3	s	r	a ≈	d4	f	Number of Bolf	Dia. of Bolf		d_2	Din 2545	Din 2635
			Welding Neck	Slip-on No-Hub	Blind														
10	14 17.2*)	90	16		16	60	35	25 28	1.8	4	6	40	2	4	M12	(1¹/2")	14	0.72	0.661
15	20 21.3*)	95	16	16	16	65	38	30 32	2.0	4	6	45	2	4	M12	(1¹/2")	14	0.81	0.746
20	25 26.9*)	105	18	18	18	75	40	38 40	2.3	4	6	58	2	4	M12	(1¹/2")	14	1.24	1.06
25	30 33.7*)	115	18	18	18	85	40	42 46	2.6	4	6	68	2	4	M12	(1/2")	14	1.38	1.29
32	38 42.4*)	140	18	18	18	100	42	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	2.03	1.88
40	44.5 48.3*)	150	18	18	18	110	45	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	2.35	2.33
50	57 60.3*)	165	20	20	20	125	48	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	3.20	2.82
65	76.1*)	185	22	22	22	145	52	90	2.9	6	10	122	3	8	M16	(5/8")	18	4.29	3.74
80	88.9*)	200	24	24	24	160	58	105	3.2	8	12	138	3	8	M16	(5/8")	18	5.88	4.75
100	108 114.3*)	235	24	24	24	190	65	128 134	3.6	8	12	162	3	8	M20	(3/4")	23	7.54	6.52
125	133 139.7*)	270	26	26	26	220	68	155 162	4.0	8	12	188	3	8	M24	(7/8")	27	10.8	9.07
150	159 168.3*)	300	28	28	28	250	75	182 192	4.5	10	12	218	3	8	M24	(7/8")	27	14.5	11.80
(175)	(191) 193.7*)	350	32	32	32	295	82	215 218	5.6	10	15	260	3	12	M27	(1")	30	22.1	18.2
200	216 219.1*)	375	34	34	34	320	88	240 244	6.3	10	16	285	3	12	M27	(1")	30	27.2	21.5
250	267 273*)	450	38	38	38	385	105	298 306	7.1	12	18	345	3	12	M30	(1¹/8")	33	43.8	34.9
300	318 323.9*)	515	42	42	42	450	115	352 362	8.0	12	18	410	4	16	M30	(1¹/8")	33	63.3	49.7
350	355.6*)	580	46	46	46	510	125	408	8.8	12	20	465	4	16	M33	(1¹/4")	36	89.5	68.1
400	368 406.4*) 419	660	50	50	50	585	135	462	11.0	12	20	535	4	16	M36	(1³/8")	39	127.0	96.5
500	508*) 521	755	52	52	52	670	140	562	14.2	12	20	615	4	20	M39	(1¹/2")	42	172.0	117.0

Note: *Out side diameter of pipe complies with ISO recommendation R64.

DIN 2566 THREADED



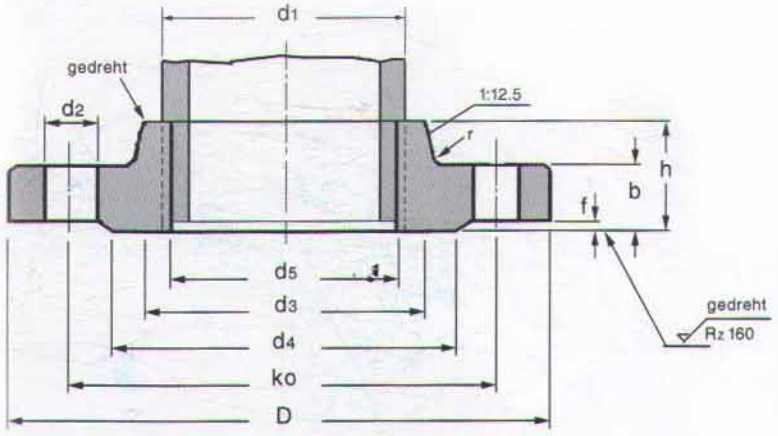
PIPE			FLANGE					NECK	RaisedFACE		BOLT				Approx. Weight (Kg)
DN		d1	Tnread according to DIN 2999	D	b	k	h	d_2	d_4	f	No	BOLT		d_2	
mm	Inches														
15	1/2"	22	R1/2"	95	14	65	20	35	45	2	4	M12	(1/2")	14	0.61
20	3/4"	27.6	R3/4"	105	16	75	24	45	58	2	4	M12	(1/2")	14	0.91
25	1"	34.4	R1"	115	16	85	24	52	68	2	4	M12	(1/2")	14	1.10
32	11/4"	43.1	R11/4"	140	16	100	26	60	78	2	4	M16	(5/8")	18	1.60
40	11/2"	49	R11/2"	150	16	110	26	70	88	3	4	M16	(5/8")	18	1.76
50	2"	61.1	R2"	165	18	125	28	85	102	3	4	M16	(5/8")	18	2.34
65	21/2"	77.1	R2/12"	185	18	145	32	105	122	3	4	M16	(5/8")	18	3.18
80	3"	90.3	R3"	200	20	160	34	118	138	3	8	M16	(5/8")	18	4.12
100	4"	115.9	R4"	220	20	180	38	140	158	3	8	M16	(5/8")	18	4.47
125	5"	141.6	R5"	250	22	210	40	168	188	3	8	M16	(5/8")	18	6.13
150	6"	170.5	R6"	285	22	240	44	195	212	3	8	M20	(3/4")	22	7.92

Matenal specihcauons according to RSt37.2(DIN 17100)

Tnread according to DIN 2999 (ISO 7.1)

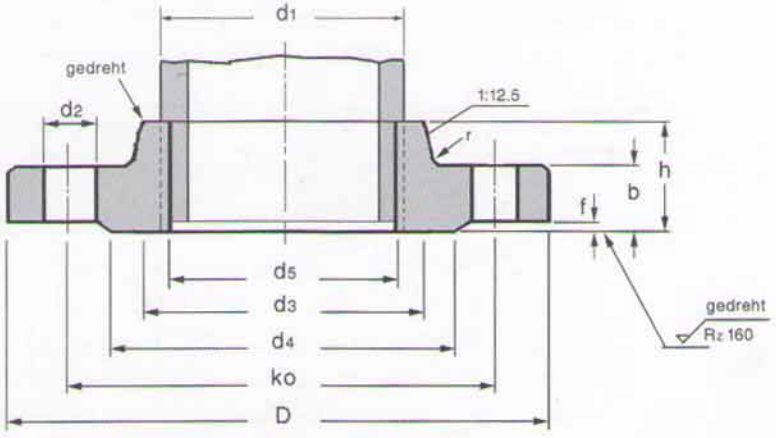
Marked on the edge:Brand;DIN 2566;DN/d1:Matenat:PN:heat n"

Flansch DIN 86029



Rohr–An–schluBme		Flansch					Ansatz		Dichtleiste		Schrauben			Gewicht (7.85kg/dm³) kg ≈
Nennweite DN	Rohr	D	d_5	b	k	h	d_3	r	d_4	f	Anzahl	Gewinde	d_2	
Fur Nennweiten 10 bis 175 sind SchweiBfiansche mit Ansach DIN 86030.Nenndruck 16,zu verwenden.														
200	219.1	340	222	24	295	44	247	6	268	3	8	M20	22	9.9
250	273	395	276	26	350	46	300	6	320	3	12	M20	22	12.7
300	323.9	445	327	26	400	46	352	6	370	4	12	M20	22	14.4
350	355.6	505	359	26	460	53	398	10	430	4	16	M20	22	22.3
400	406.4	565	410	26	515	57	448	10	482	4	16	M24	26	26.7
(450)	457	615	461	28	565	62	502	10	532	4	20	M24	26	32.3
500	508	670	512	28	620	67	652	10	585	4	20	M24	30	37.7
600	610	780	614	28	725	75	658	10	685	5	20	M27	30	48.8
700	711	895	716	30	840	77	760	10	800	5	24	M27	30	62.7
800	813	1015	818	32	950	84	864	10	905	5	24	M30	33	83.4
900	914	1115	920	34	1050	90	969	10	1000	5	28	M30	33	99.2
1000	1016	1230	1022	34	1160	92	1071	10	1110	5	28	M33	36	116.8
Eingeklammerte Nennweite moglichst vermeiden.														

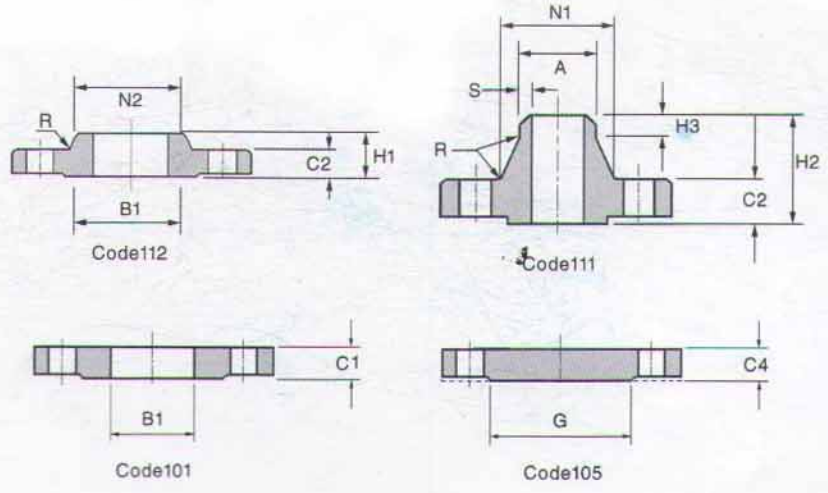
Flansch DIN 86030



Rohr-An-schluBme		Flansch					Ansatz		Dichtleiste		Schrauben			Gewicht (7.85kg/dm³) kg ≈
Nennweite DN	Rohr d_1	D	d_5	b	k	h	d_3	r	d_4	f	Anzahl	Gewinde	d_2	
10	17.2	90	17.7	14	60	20	30	4	40	2	4	M12	14	0.56
15	21.3	95	22	14	65	20	35	4	45	2	4	M12	14	0.64
20	26.9	105	27.6	16	75	24	45	4	58	2	4	M12	14	0.98
25	33.7	115	34.4	16	85	24	52	5	68	2	4	M12	14	1.12
32	42.4	140	43.1	16	100	26	60	5	78	2	4	M16	18	1.58
40	48.3	150	49	16	110	26	70	5	88	3	4	M16	18	1.77
50	60.3	165	61.1	18	125	28	85	5	102	3	4	M16	18	2.4
65	76.1	185	77.1	18	145	32	105	5	122	3	4	M16	18	3.1
80	88.9	200	90.3	20	160	34	118	5	138	3	8	M16	18	3.8
100	114.3	220	115.9	20	180	38	140	5	153	3	8	M16	18	4.3
125	139.7	250	141.6	22	210	40	160	5	188	3	8	M16	18	5.8
150	163.3	285	170.5	22	240	44	195	5	212	3	8	M20	22	7.1
(175)	193.7	315	196.1	24	270	44	224	6	242	3	8	M20	22	9.1
200	219.1	340	222	24	295	44	247	6	268	3	12	M20	22	9.7
250	273	405	276	26	355	46	300	6	320	3	12	M24	26	13.4
300	323.9	460	327	28	410	46	355	6	378	4	12	M24	26	17.3
350	355.6	520	359	30	470	57	400	10	438	4	16	M24	26	27.6
400	406.4	580	410	32	525	63	457	10	490	4	16	M27	30	36.0
(450)	457	640	461	34	585	68	505	10	550	4	20	M27	30	44.0
500	508	715	512	34	650	73	559	10	610	4	20	M30	33	56.4
600	610	840	614	36	770	83	664	10	725	5	20	M33	36	79.9
700	711	910	716	36	840	83	760	10	795	5	24	M33	36	75.7
800	813	1025	818	38	950	90	864	10	900	5	24	M36	39	97.6
900	914	1125	920	40	1050	94	969	10	1000	5	28	M36	39	114.6
1000	1016	1255	1022	42	1170	100	1073	10	1115	5	28	M39	42	151.2

Eingeklammerte Nennweite moglichst vermeiden.

BS 4504 PN 10

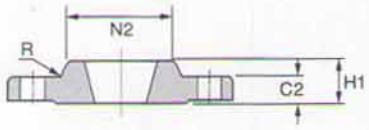


Unit:mm

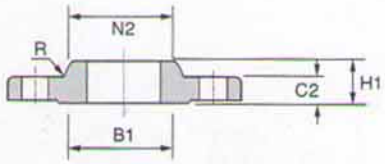
Table 10. Dimensions of PN10 flanges

Nominal size DN	Matingdimensions					Outside diameter of neck A	Bore diameters B1	Flange thickness			Diameter of shoulder G	Langths			Neck diameters		Radius R	Neck thickness S
	Outside diameter D	Diameter of bolt circle K	Diameter of bolt hole L	Bolting Number	Bolting Size			C1	C2	C4		H1	H2	H3	N1	N2		
Codes affect.ed	101, 105, 111, 112, 113,					111	101 112	101	111 112 113	105	105	112 113	111	111	111	112 113	111 112 113	111
10 15 20 25 32 40 50 65 80 100 125 150	Use PN dimensions																	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
200	340	295	22	8	M20	219.1	221.5	24	24	24	190	44	62	16	234	246	8	5.6
250	395	350	22	12	M20	273.0	276.5	26	26	26	235	46	68	16	288	298	10	6.3
300	445	400	22	12	M20	323.9	327.5	26	26	26	285	46	68	16	342	350	10	7.1
350	505	460	22	16	M20	355.6	359.5	28	26	26	325	53	68	16	390	400	10	7.1
400	565	515	26	16	M24	400.4	411.0	32	26	26	375	57	72	16	440	456	10	7.1
450	615	565	26	20	M24	457.0	467.0	36	28	28	425	63	72	16	488	502	12	7.1
500	670	620	26	20	M24	508.0	513.5	38	28	28	475	67	75	16	540	559	12	7.1
600	780	725	30	20	M27	610.0	616.5	42	28	34	575	75	80	18	640	658	12	7.1
700	895	840	30	24	M27	711.0	–	–	30	38	670	–	80	18	746	–	12	8.0
800	1015	950	33	24	M30	813.0	–	–	32	42	770	–	90	18	848	–	12	8.0
900	1115	1050	33	28	M30	914.0	–	–	34	46	860	–	95	20	948	–	12	10.0
1000	1230	1160	36	28	M33	1060.0	–	–	34	52	960	–	95	20	1050	–	12	10.0
1200	1455	1380	39	32	M36	1220.0	–	–	38	60	1160	–	115	25	1256	–	12	11.0
1400	1675	1590	42	36	M39	1420.0	–	–	42	–	–	–	120	25	1460	–	12	12.0
1600	1915	1820	48	40	M45	1620.0	–	–	46	–	–	–	130	25	1666	–	12	14.0
1800	2115	2020	48	44	M45	1820.0	–	–	50	–	–	–	140	30	1866	–	15	15.0
2000	2325	2230	48	48	M45	2020.0	–	–	54	–	–	–	150	30	2070	–	15	16.0
2200	2550	2440	56	52	M52	2220.0	–	–	58	–	–	–	160	35	2275	–	18	
2400	2760	2650	56	56	M52	2420.0	–	–	62	–	–	–	170	35	2478	–	18	
2600	2960	2850	56	60	M52	2620.0	–	–	66	–	–	–	180	40	2680	–	18	
2800	3180	3070	56	64	M52	2820.0	–	–	70	–	–	–	190	40	2882	–	18	
3000	3405	3290	62	68	M56	3020.0	–	–	75	–	–	–	200	45	3085	–	18	

BS 4504 PN 16



Code113



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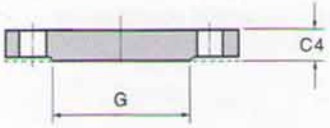
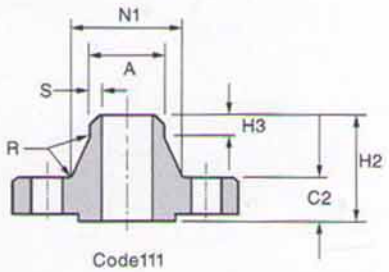


Code105



Code111

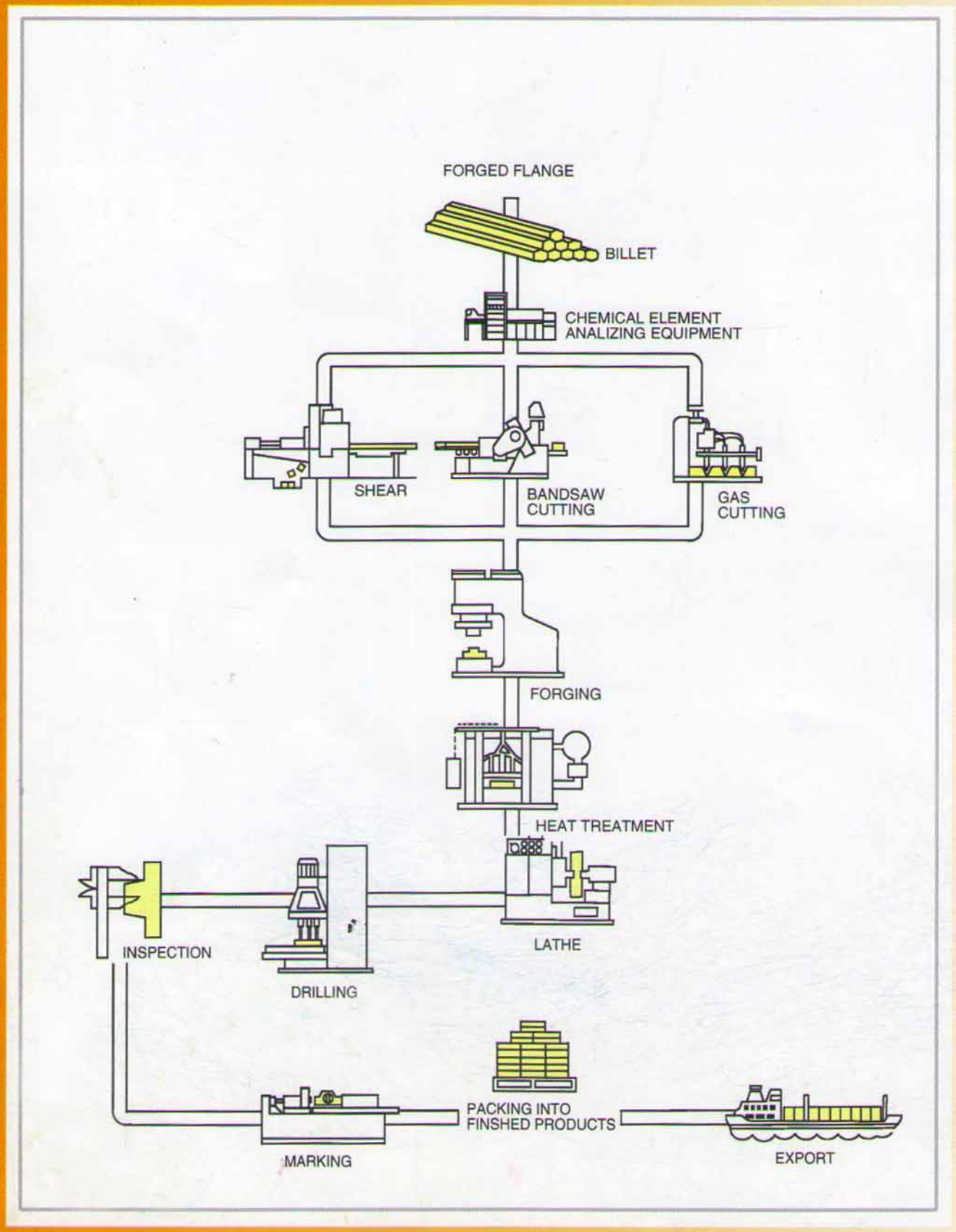
Unit:mm

Table 10. Dimensions of PN10 flanges

Nominal size DN	Matingbdimensions					Outside diameter of neck A	Bore diameters B1	Flange thickness			Diameter of shoulder G	Langths			Neck diameters		Radius R	Neck thickness S
	Outside diameter D	Diameter of bolt circle K	Diameter of bolt hole L	Bolting Number	Bolting Size			C1	C2	C4		H1	H2	H3	N1	N2		
Codes affect.ed	101, 105, 111, 112, 113,					111	101 112	101	111 112 113	105	105	112 113	111	111	111	112 113	111 112 113	111
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
10	90	60	14	4	M12	17.2	18.0	14	14	14	–	20	35	6	28	30	3	1.8
15	95	65	14	4	M12	21.3	22.0	14	14	14	–	20	35	6	32	35	3	2.0
20	105	75	14	4	M12	26.9	27.5	16	16	16	–	24	38	6	39	45	4	2.3
25	115	85	14	4	M12	33.7	34.5	16	16	16	–	24	38	6	46	52	4	2.6
32	140	100	18	4	M16	42.4	43.5	18	16	16	–	26	40	6	56	60	5	2.6
40	150	110	18	4	M16	48.3	49.5	18	16	16	–	26	42	7	64	70	5	2.6
50	165	125	18	4	M16	60.3	61.5	20	18	18	–	28	45	8	74	84	5	2.9
65	185	145	18	4	M16	76.1	77.5	20	18	18	55	32	45	10	92	104	6	2.9
80	200	160	18	8	M16	88.9	90.5	20	20	20	70	34	50	10	110	118	6	3.2
100	220	180	18	8	M16	114.3	116.5	22	20	20	90	40	52	12	130	140	6	3.6
125	250	210	18	8	M16	139.7	141.5	22	22	22	115	44	55	12	158	168	6	4.0
150	285	240	22	8	M20	168.3	170.5	24	22	22	140	44	55	12	184	195	8	4.5
200	340	295	22	12	M20	219.1	221.5	26	24	24	190	44	62	16	234	246	8	5.6
250	405	355	26	12	M24	273.0	276.5	29	26	26	235	46	70	16	288	298	10	6.3
300	460	410	26	12	M24	323.9	327.5	32	28	28	285	46	78	16	342	350	10	7.1
350	520	470	26	16	M24	355.6	359.0	35	30	30	325	57	82	16	390	400	10	8.0
400	580	525	30	16	M27	406.4	411.0	38	32	32	375	63	85	16	444	456	10	8.0
450	640	585	30	20	M27	457.0	462.0	42	34	36	425	68	87	16	490	502	12	8.0
500	715	650	33	20	M30	508.0	513.0	46	34	36	475	73	90	16	546	559	12	8.0
600	840	770	36	20	M33	610.0	616.5	52	36	44	575	83	95	18	650	658	12	8.8
700	910	840	36	24	M33	711.0	–	60*	36	48	670	83	100	18	750	760	12	8.8
800	1025	950	39	24	M36	813.0	–	68*	38	52	770	90	105	20	848	864	12	10.0
900	1125	1050	39	28	M36	914.0	–	76*	40	58	860	94	110	20	948	968	12	10.0
1000	1255	1170	42	28	M39	1016.0	–	84*	42	64	960	100	120	22	1056	1072	12	10.0
1200	1485	1390	48	32	M45	1220.0	–	98*	48	76	1160	–	130	30	1260	–	12	12.5
1400	1685	1590	48	36	M45	1420.0	–	–	52	–	–	–	145	30	1465	–	12	14.2
1600	1930	1820	56	40	M52	1620.0	–	–	58	–	–	–	160	35	1668	–	12	16.0
1800	2130	2020	56	44	M52	1820.0	–	–	62	–	–	–	170	35	1870	–	15	17.5
2000	2345	2230	62	48	M56	2020.0	–	–	66	–	–	–	190	40	2072	–	15	20.0

1. MATERIAL
2. PHYSICS AND CHEMISTRY TEST
3. MACHINE–FINSHING
4. RING MILL
5. PRODUCT INSPECTION CONTROL
6. CUTTING
7. PACKING TRANSPORTATION

MANUFACTURING PROCESS FOR FLANGES



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