



Company profile



Introduction:

Keshav Industries is a leading manufacturer and supplier of high-quality flanges for industrial applications. Our company was founded in 2018, and since then, we have been committed to providing the highest quality products and services to our customers.

Product Range:

We offer a wide range of flanges, including weld neck, slip-on, threaded, socket weld, lap joint, and blind flanges, in various sizes and materials such as stainless steel, carbon steel, and alloy steel. Our products are designed and manufactured to meet industry standards such as ASME, ANSI, API, and DIN.

Manufacturing Process:

We use advanced machinery and manufacturing processes to ensure the quality and precision of our flanges. Our manufacturing process includes cutting, forging, machining, and testing to ensure that each flange meets our strict quality control standards.

Quality Control:

We are committed to ensuring the highest level of quality in all our products. We have a dedicated quality control team that inspects every flange during each stage of the manufacturing process to ensure compliance

with industry standards. We also conduct various tests such as pressure testing, hardness testing, and visual inspections to ensure the quality and durability of our products.

Industry Experience:

Our flanges are used in various industries such as oil and gas, petrochemicals, power generation, and pharmaceuticals. We have experience working with customers in different industries, and our expertise allows us to provide customized solutions to meet their specific requirements.

Customer Service:

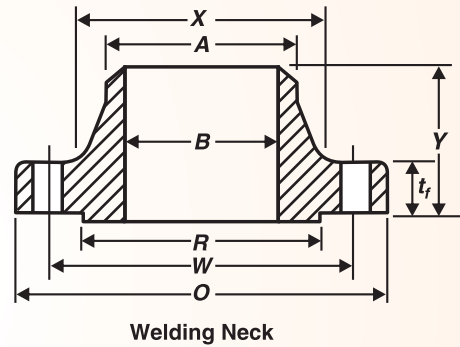
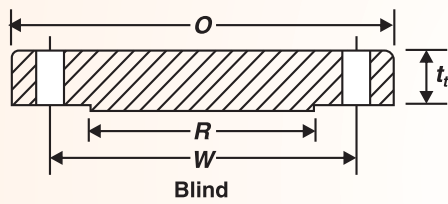
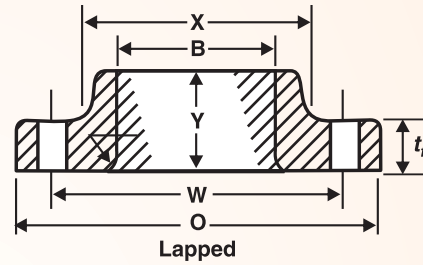
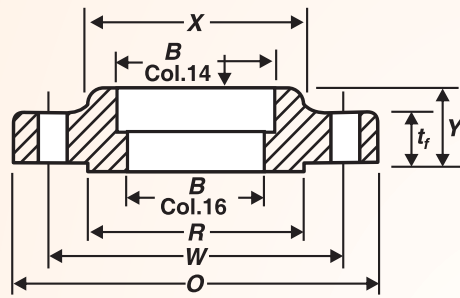
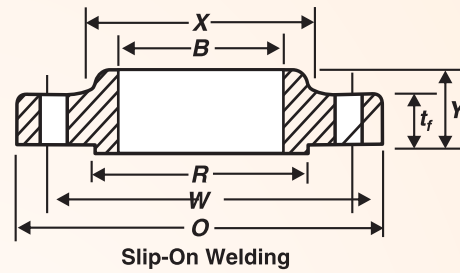
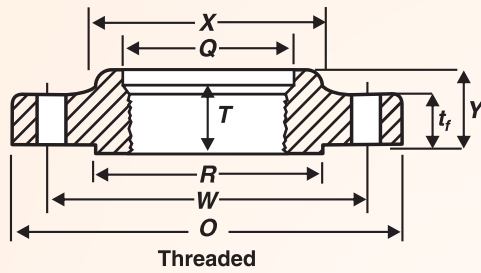
We pride ourselves on providing exceptional customer service. Our team is always ready to assist customers with any questions or concerns they may have. We offer a flexible delivery schedule, competitive pricing, and after-sales support to ensure customer satisfaction.

Mission Statement:

Our mission is to provide high-quality flanges that meet the needs of our customers and exceed their expectations. We are committed to continuous improvement and innovation in our manufacturing processes, products, and services. We strive to maintain long-term relationships with our customers based on trust, reliability, and mutual respect.



DIMENSIONS OF CLASS 150 FLANGES



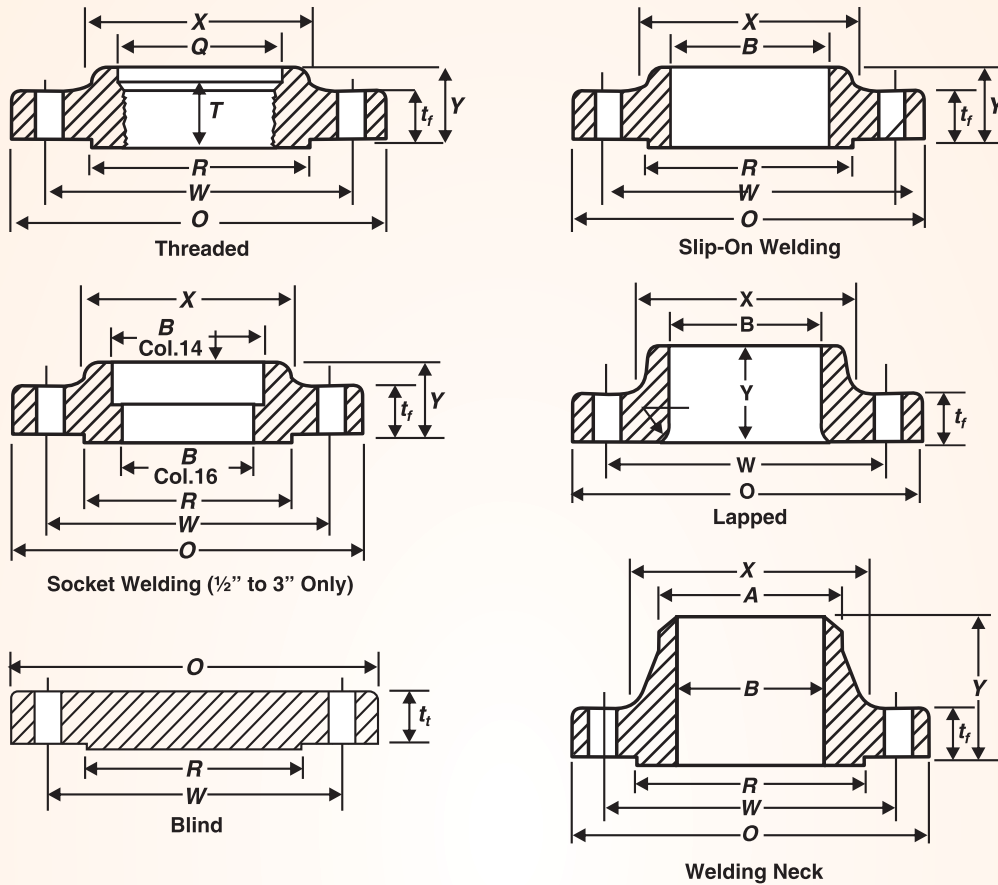
DIMENSIONS OF CLASS 150 FLANGES

1	2	3	4			6	7	8	9			12			15	16	17	18
			Drilling						Length Thru Hub			Bore						
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange Min., t _f	Diameter of Bolt Circle W	Diameter of Bolt Holes	Number of Bolts	Diameter of Hub, X	Hub Diameter Beginning of Chamfer Welding Neck, A	Threaded Slip-On/Socket Welding, Y	Lapped, Y	Welding Neck, Y	Threaded Length Threaded Min., T	Slip-On/Socket Welding Min., B	Lapped Min., B	Welding Neck/Socket Welding, B [Note (2)]	Corner Radius of Bore of Lapped Flange and Pipe, r	Depth of Socket, D	Diameter of RF R	
1/2	89.0	11.2	60.3	15.9	4	30	21.3	14	16	46	16	22.2	22.9	15.8	3	10	34.9	
3/4	98.5	12.7	69.9	15.9	4	38	26.7	14	16	51	16	27.7	28.2	20.9	3	11	42.9	
1	108.0	14.3	79.4	15.9	4	49	33.4	16	17	54	17	34.5	34.9	26.6	3	13	50.8	
1 1/4	117.5	15.9	88.9	15.9	4	59	42.2	19	21	56	21	43.2	43.7	35.1	5	14	63.5	
1 1/2	127.0	17.5	98.4	15.9	4	65	48.3	21	22	60	22	49.5	50.0	40.9	6	16	73.0	
2	152.5	19.1	120.7	19.1	4	78	60.3	24	25	62	25	61.9	62.5	52.5	8	17	92.1	
2 1/2	178.0	22.3	139.7	19.1	4	90	73.0	27	29	68	29	74.6	75.4	62.7	8	19	104.8	
3	190.5	23.9	152.4	19.1	4	108	88.9	29	30	68	30	90.7	91.4	77.9	10	21	127.0	
3 1/2	216.0	23.9	177.8	19.1	8	122	101.6	30	32	70	32	103.4	104.1	90.1	10	....	139.7
4	228.5	23.9	190.5	19.1	8	135	114.3	32	33	75	33	116.1	116.8	102.3	11	....	157.2
5	254.0	23.9	215.9	22.3	8	164	141.3	35	36	87	36	143.8	144.4	128.2	11	....	185.7
6	279.0	25.4	241.3	22.3	8	192	168.3	38	40	87	40	170.7	171.4	154.1	13	....	215.9
8	343.0	28.6	298.5	22.3	8	246	219.1	43	44	100	44	221.5	222.2	202.7	13	....	269.9
10	406.5	30.2	362.0	25.4	12	305	273.0	48	49	100	49	276.2	277.4	254.6	13	....	323.8
12	482.5	31.8	431.8	25.4	12	365	323.8	54	56	113	56	327.0	328.2	304.8	13	....	381.0
14	533.5	35.0	476.3	28.6	12	400	355.6	56	79	125	57	359.2	360.2	To be Specified by Purchaser	13	....	412.8
16	597.0	36.6	539.8	28.6	16	457	406.4	62	87	125	64	410.5	411.2		13	....	469.9
18	635.0	39.7	577.9	31.8	16	505	457.0	67	97	138	68	461.8	462.3		13	....	533.4
20	698.5	42.9	635.0	31.8	20	559	508.0	71	103	143	73	513.1	514.4		13	....	584.2
24	813.0	47.7	749.3	35.0	20	663	610.0	81	111	151	83	616.0	616.0		13	....	692.2

NOTE: (1) Height of RF 2 mm

(2) Dimensions in Column 16 correspond to the inside diameters of pipe as given in ASME B36. 10M for Standard Wall pipe. Thickness of Standard Wall is the same as Schedule 40 in sizes NPS 10 and smaller. These bore sizes are furnished unless otherwise specified by the purchaser.

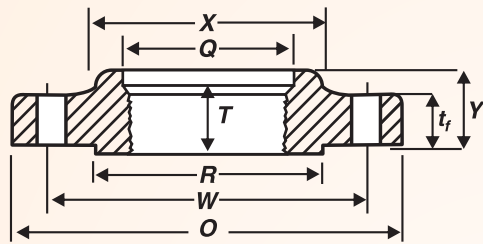
DIMENSIONS OF CLASS 300 FLANGES



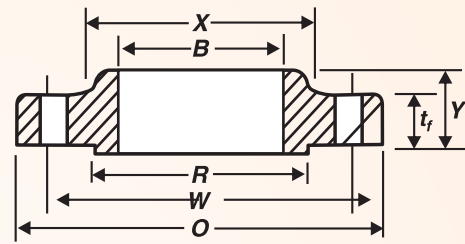
DIMENSIONS OF CLASS 300 FLANGES																				
1	2	3	4			6	7	8			11	12			14	15	16	17	18	19
			Drilling	Drilling	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Threaded/Slip-On/Socket Welding, Y	Lapped, Y		Welding Neck, Y	Threaded Length Thru Hub, T	Slip-On/Socket Welding, B							Lapped, B	Welding Neck/Socket Welding, B [Note (2)]	Corner Radius of Bore of Lapped Flange and Pipe, r	Counter-bore Threaded FLANGE Min., Q	Depth of Socket, D	Diameter of RF, R
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange Min., t_f	Diameter of Bolt Circle W	Diameter of Bolt Holes	Number of Bolts	Diameter of Hub, X	Hub Diameter Beginning of Chamfer Welding Neck, A	Threaded/Slip-On/Socket Welding, Y	Lapped, Y	Welding Neck, Y	Threaded Length Thru Hub, T	Slip-On/Socket Welding, B	Lapped, B	Welding Neck/Socket Welding, B [Note (2)]	Corner Radius of Bore of Lapped Flange and Pipe, r	Counter-bore Threaded FLANGE Min., Q	Depth of Socket, D	Diameter of RF, R		
1/2	95.5	14.3	66.7	15.9	4	38	21.3	24	22	51	16	22.2	22.9	15.8	3	23.6	10	34.9		
3/4	117.5	15.9	82.6	19.1	4	48	26.7	24	25	56	16	27.7	28.2	20.9	3	29.0	11	42.9		
1	124.0	17.5	88.9	19.1	4	54	33.4	25	27	60	18	34.5	34.9	26.6	3	35.8	13	50.8		
1 1/4	133.5	19.1	98.4	19.1	4	64	42.2	25	27	64	21	43.2	43.7	35.1	5	44.4	14	63.5		
1 1/2	155.5	20.7	114.3	22.2	4	70	48.3	29	30	67	23	49.5	50.0	40.9	6	50.3	16	73.0		
2	165.0	22.3	127.0	19.0	8	84	60.3	32	33	68	29	61.9	62.5	52.5	8	63.5	17	92.1		
2 1/2	190.5	25.4	149.2	22.3	8	100	73.0	37	38	75	32	74.6	75.4	62.7	8	76.2	19	104.8		
3	209.5	28.6	168.3	22.3	8	117	88.9	41	43	78	32	90.7	91.4	77.9	10	92.2	21	127.0		
3 1/2	228.5	30.2	184.2	22.3	8	133	101.6	43	44	79	37	103.4	104.1	90.1	10	104.9	....	139.7	
4	254.0	31.8	200.0	22.3	8	146	114.3	46	48	84	37	116.1	116.8	102.3	11	117.6	....	157.2	
5	279.5	35.0	235.0	22.3	8	178	141.3	49	51	97	43	143.8	144.4	128.2	11	144.4	....	185.7	
6	317.5	36.6	269.9	22.3	12	206	168.3	51	52	97	47	170.7	171.4	154.1	13	171.4	....	215.9	
8	381.0	41.3	330.2	25.4	12	260	219.1	60	62	110	51	221.5	222.2	202.7	13	222.2	....	269.9	
10	444.5	47.7	387.4	28.6	16	321	273.0	65	95	116	56	276.2	277.4	254.6	13	276.2	....	323.8	
12	520.5	50.8	450.8	31.8	16	375	323.8	71	102	129	61	327.0	328.2	304.8	13	328.6	....	381.0	
14	584.0	54.0	514.4	31.8	20	425	355.6	75	111	141	64	359.2	360.2	To be Specified by Purchaser	13	360.4	....	412.8	
16	647.5	57.2	571.5	35.0	20	483	406.4	81	121	144	69	410.5	411.2	To be Specified by Purchaser	13	411.2	....	469.9	
18	711.0	60.4	628.6	35.0	24	533	457.0	87	130	157	70	461.8	462.3	To be Specified by Purchaser	13	462.0	....	533.4	
20	774.5	63.5	685.8	35.0	24	587	508.0	94	140	160	74	513.1	514.4	To be Specified by Purchaser	13	512.8	....	584.2	
24	914.5	69.9	812.8	41.3	24	702	610.0	105	152	167	83	616.0	616.0	To be Specified by Purchaser	13	614.4	....	692.2	

NOTE: (1) Height of RF 2 mm
 (2) Dimensions in Column 16 correspond to the inside diameters of pipe as given in ASME B36. 10M for Standard Wall pipe. Thickness of Standard Wall is the same as Schedule 40 in sizes NPS 10 and smaller. These bore sizes are furnished unless otherwise specified by the purchaser.

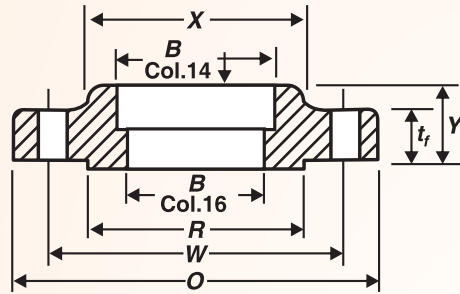
DIMENSIONS OF CLASS 400 FLANGES



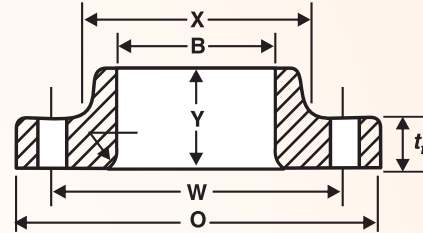
Threaded



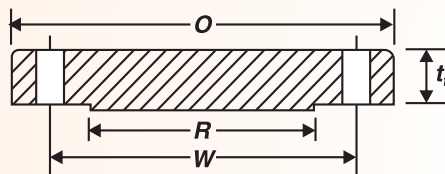
Slip-On Welding



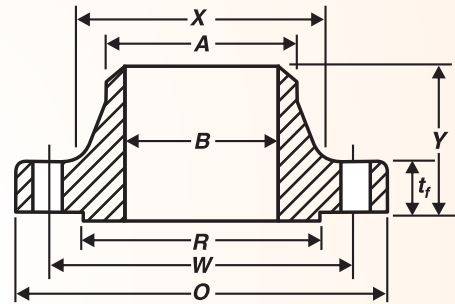
Socket Welding (1/2" to 2 1/2" Only)



Lapped



Blind



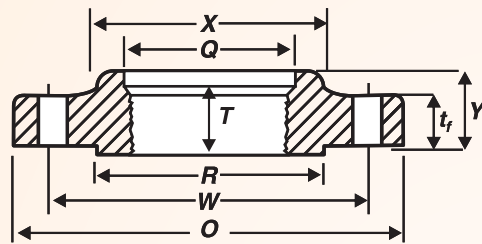
Welding Neck

DIMENSIONS OF CLASS 400 FLANGES

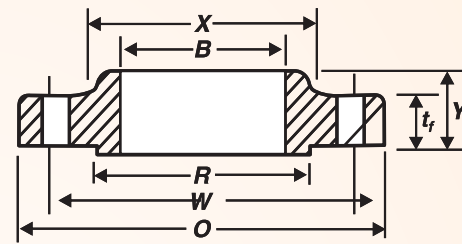
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Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t _f	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/Length Threaded Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Counter-bore Threaded FLANGE Min., Q	Diameter of RF R	Socket, Weld D
				Diameter of Bolt Circle W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded/Slip-On/ Y	Lapped, Y	Welding Meck, Y		Slip-On/ Min., B	Lapped Min., B	Socket Weld/ Welding, Neck, B				
1/2	95	14.3	38	66.7	15.9	4	21.3	22	22	52	16	22.2	22.9		3	23.6	34.9	10
3/4	115	15.9	48	82.6	19.0	4	26.7	25	25	57	16	27.7	28.2		3	29.0	42.9	11
1	125	17.5	54	88.9	19.0	4	33.4	27	27	62	18	34.5	34.9		3	35.8	50.8	13
1 1/4	135	20.7	64	98.4	19.0	4	42.2	29	29	67	21	43.2	43.7		5	44.4	63.5	14
1 1/2	155	22.3	70	114.3	22.2	4	48.3	32	32	70	23	49.5	50.0		6	50.6	73.0	16
2	165	25.4	84	127.0	19.0	8	60.3	37	37	73	29	61.9	62.5		8	63.5	92.1	17
2 1/2	190	28.6	100	149.2	22.2	8	73.0	41	41	79	32	74.6	75.4		8	76.2	104.8	19
3	210	31.8	117	168.3	22.2	8	88.9	46	46	83	35	90.7	91.4		10	92.2	127.0	
3 1/2	230	35.0	133	184.2	25.4	8	101.6	49	49	86	40	103.4	104.1	To be Specified by Purchaser	10	104.9	139.7	
4	255	35.0	146	200.0	25.4	8	114.3	51	51	89	37	116.1	116.8		11	117.6	157.2	
5	280	38.1	178	235.0	25.4	8	141.3	54	54	102	43	143.8	144.4		11	144.4	185.7	
6	320	41.3	206	269.9	25.4	12	168.3	57	57	103	46	170.7	171.4		13	171.4	215.9	
8	380	47.7	260	330.0	28.6	12	219.1	68	68	117	51	221.5	222.2		13	222.2	269.9	
10	445	54.0	321	387.4	31.8	16	273.0	73	102	124	56	276.2	277.4		13	276.2	323.8	
12	520	57.2	375	450.8	35.0	16	323.8	79	108	137	61	327.0	328.2		13	328.6	381.0	
14	585	60.4	425	514.4	35.0	20	355.6	84	117	149	64	359.2	360.2		13	360.4	412.8	
16	650	63.5	483	571.5	38.1	20	406.4	94	127	152	69	410.5	411.2		13	411.2	469.9	
18	710	66.7	533	628.6	38.1	24	457.0	98	137	165	70	461.8	462.3		13	462.0	533.4	
20	775	69.9	587	685.8	41.3	24	508.0	102	146	168	74	513.1	514.4		13	512.8	584.2	
24	915	76.2	702	812.8	47.7	24	610.0	114	159	175	83	616.0	616.0		13	614.4	692.2	

NOTE: (1) Height of RF 7 mm

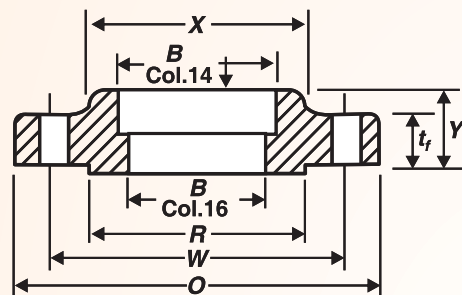
DIMENSIONS OF CLASS 600 FLANGES



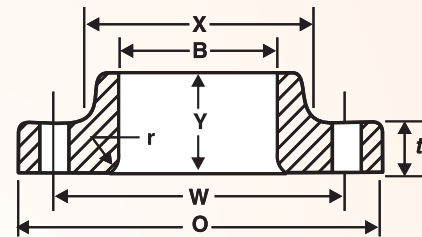
Threaded



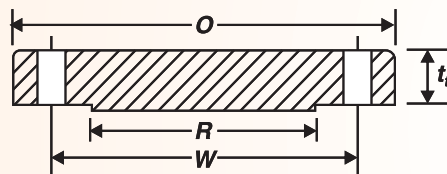
Slip-On Welding



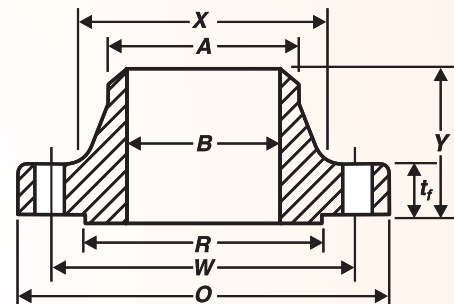
Socket Welding (1/2" to 2 1/2" Only)



Lapped



Blind



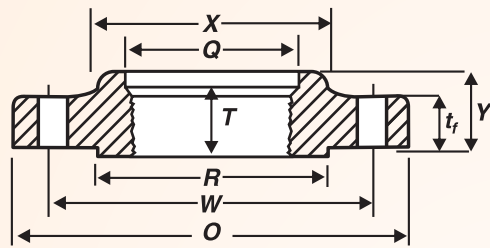
Welding Neck

DIMENSIONS OF CLASS 600 FLANGES

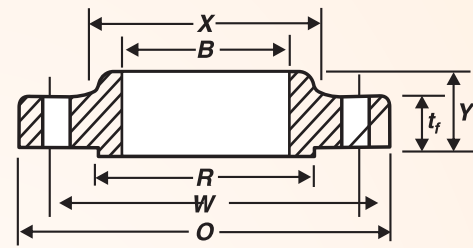
DIMENSIONS OF CLASS 600 FLANGES																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t _f	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/Length Threaded Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Counter-bore Threaded FLANGE Min., Q	Depth of Socket, D	Diameter of RF R
				Diameter of Bolt Circle, W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded/Slip-On/Socket Welding, Y	Lapped, Y	Welding Meck, Y		Slip-On/Socket Welding Min., B	Lapped Min., B	Welding Neck/Socket Welding, B				
1/2	95.5	14.3	38	66.7	15.9	4	21.3	22	22	52	16	22.2	22.9		3	23.6	10	34.9
3/4	117.5	15.9	48	82.6	19.1	4	26.7	25	25	57	16	27.7	28.2		3	29.0	11	42.9
1	124.0	17.5	54	88.9	19.1	4	33.4	27	27	62	18	34.5	34.9		3	35.8	13	50.8
1 1/4	133.5	20.7	64	98.4	19.1	4	42.2	29	29	67	21	43.2	43.7		5	44.4	14	63.5
1 1/2	155.5	22.3	70	114.3	22.3	4	48.3	32	32	70	23	49.5	50.0		6	50.6	16	73.0
2	165.0	25.4	84	127.0	19.1	8	60.3	37	37	73	29	61.9	62.5		8	63.5	17	92.1
2 1/2	190.5	28.6	100	149.2	22.3	8	73.0	41	41	79	32	74.6	75.4		8	76.2	19	104.8
3	209.5	31.8	117	168.3	22.3	8	88.9	46	46	83	35	90.7	91.4		10	92.2	21	127.0
3 1/2	228.5	35.0	133	184.2	25.4	8	101.6	49	49	86	40	103.4	104.1		10	104.9	....	139.7
4	273.0	38.1	152	215.9	25.4	8	114.3	54	51	102	42	116.1	116.8		11	117.6	....	157.2
5	330.0	44.5	189	266.7	28.6	8	141.3	60	54	114	48	143.8	144.4	To be Specified by Purchaser	11	144.4	....	185.7
6	355.5	47.7	222	292.1	28.6	12	168.3	67	57	117	51	170.7	171.4		13	171.4	....	215.9
8	419.0	55.6	273	349.2	31.8	12	219.1	76	68	133	58	221.5	222.2		13	222.2	....	269.9
10	508.0	63.5	343	431.8	35.0	16	273.0	86	102	152	66	276.2	277.4		13	276.2	....	323.8
12	559.0	66.7	400	489.0	35.0	20	323.8	92	108	156	70	327.0	328.2		13	328.6	....	381.0
14	603.5	69.9	432	527.0	38.1	20	355.6	94	117	165	74	359.2	360.2		13	360.4	....	412.8
16	686.0	76.2	495	603.2	41.3	20	406.4	106	127	178	78	410.5	411.2		13	411.2	....	469.9
18	743.0	82.6	546	654.0	44.5	20	457.0	117	137	184	80	461.8	462.3		13	462.0	....	533.4
20	813.0	88.9	610	723.9	44.5	24	508.0	127	146	190	83	513.1	514.4	13	512.8	....	584.2	
24	940.0	101.6	718	838.2	50.8	24	610.0	140	159	203	93	616.0	616.0	13	614.4	....	692.2	

NOTE: (1) Height of RF 7 mm

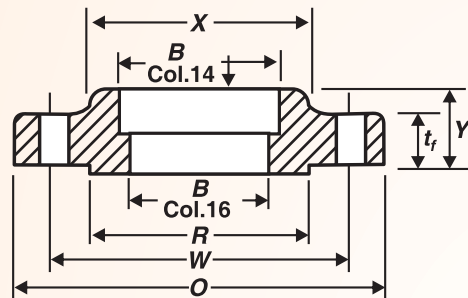
DIMENSIONS OF CLASS 900 FLANGES



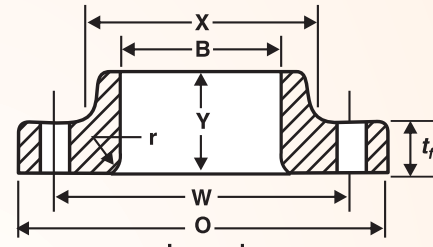
Thread (NPS ½" to 2 ½" Only)



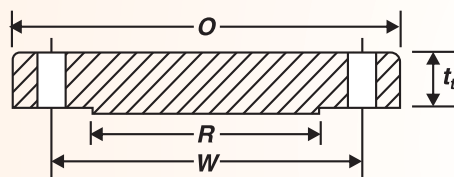
Slip-On Welding (NPS ½" to 2 ½" Only)



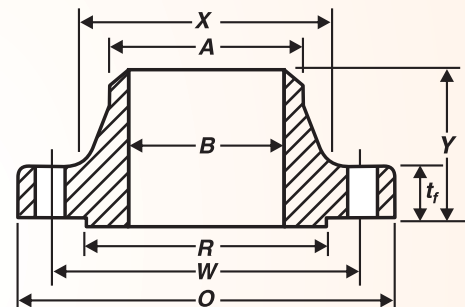
Socket Welding (½" to 2½" Only)



Lapped



Blind



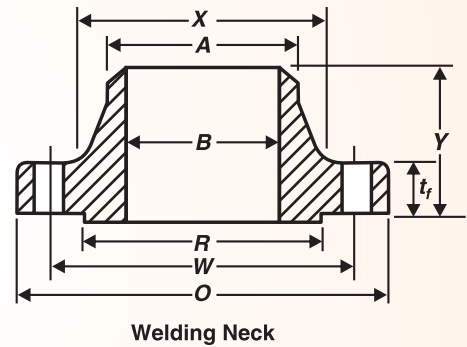
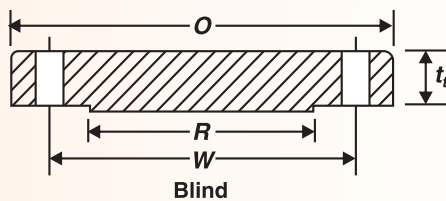
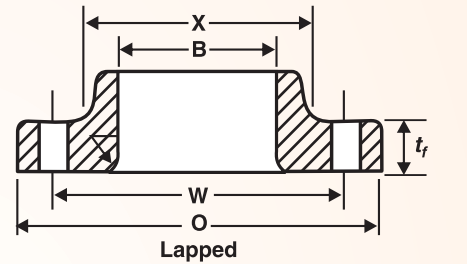
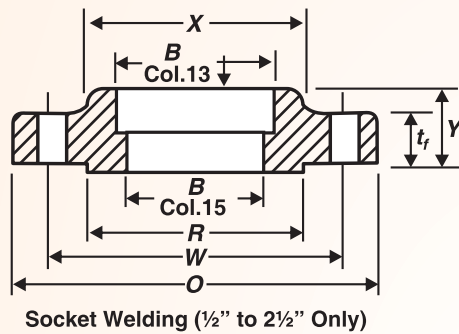
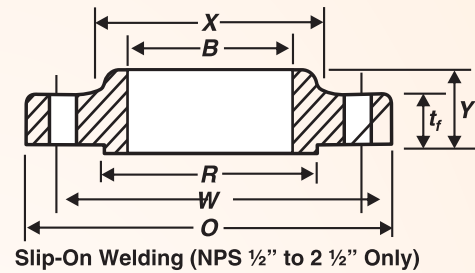
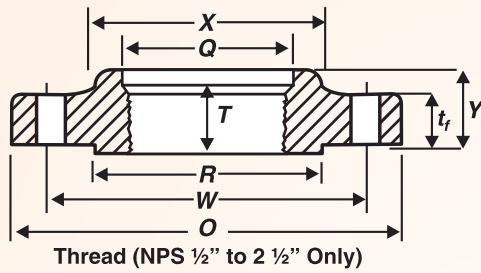
Welding Neck

DIMENSIONS OF CLASS 900 FLANGES

DIMENSIONS OF CLASS 900 FLANGES																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t _f	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded Length Threaded Flange Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Counter-bore Threaded FLANGE Min., Q	Diameter of RF R	Socket, Weld D
				Diameter of Bolt Circle, W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded/ Slip-On/ Y	Lapped, Y	Welding Neck, Y		Slip-On/ Min., B	Lapped Min., B	Welding Neck/ B				
½	120.7	22.3	38	82.6	22.3	4	21.3	32	32	60	23	22.2	22.9		3	23.6	34.9	10
¾	130.0	25.4	44	88.9	22.3	4	26.7	35	35	70	26	27.7	28.2		3	29.0	42.9	11
1	149.4	28.6	52	101.6	25.4	4	33.4	41	41	73	29	34.5	34.9		3	35.8	50.8	13
1¼	158.8	28.6	64	111.1	25.4	4	42.2	41	41	73	31	43.2	43.7		5	44.4	63.5	14
1½	177.8	31.8	70	123.8	28.6	4	48.3	44	44	83	32	49.5	50.0		6	50.6	73.0	16
2	215.9	38.1	105	165.1	25.4	8	60.3	57	57	102	39	61.9	62.5		8	63.5	92.1	17
2½	244.3	41.3	124	190.5	28.6	8	73.0	64	64	105	48	74.6	75.4		8	76.2	104.8	19
3	241.3	38.1	127	190.5	25.4	8	88.9	54	54	102	42	90.7	91.4		10	92.2	127.0	
4	292.1	44.5	159	235.0	31.8	8	114.3	70	70	114	48	116.1	116.8		11	117.6	139.7	
5	349.3	50.8	190	279.4	35.0	8	141.3	79	79	127	54	143.8	144.4	To be Specified by Purchaser	11	144.4	157.2	
6	381.0	55.6	235	317.5	31.8	12	168.3	86	86	140	58	170.7	171.4		13	171.4	185.7	
8	469.9	63.5	298	393.7	38.1	12	219.1	102	114	162	64	221.5	222.2		13	222.2	215.9	
10	546.1	69.9	368	469.9	38.1	16	273.0	108	127	184	72	276.2	277.4		13	276.2	269.9	
12	609.5	79.4	419	533.4	38.1	20	323.8	117	143	200	77	327.0	328.2		13	328.6	323.8	
14	641.4	85.8	451	558.8	41.3	20	355.6	130	156	213	83	359.2	360.2		13	360.4	381.0	
16	704.9	88.9	508	616.0	44.5	20	406.4	133	165	216	86	410.5	411.2	13	411.2	412.8		
18	787.4	101.6	565	685.8	50.8	20	457.0	152	190	229	89	461.8	462.3	13	462.0	469.9		
20	857.3	108.0	622	749.3	54.0	20	508.0	159	210	248	93	513.1	514.4	13	512.8	533.4		
24	1041.4	139.7	749	901.7	66.7	20	610.0	203	267	292	102	616.0	616.0	13	614.4	584.2		
																692.2		

NOTE: (1) Height of RF 7 mm

DIMENSIONS OF CLASS 1500 FLANGES

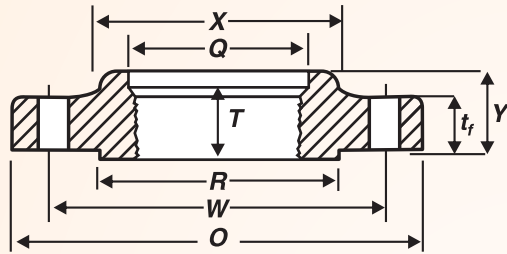


DIMENSIONS OF CLASS 1500 FLANGES

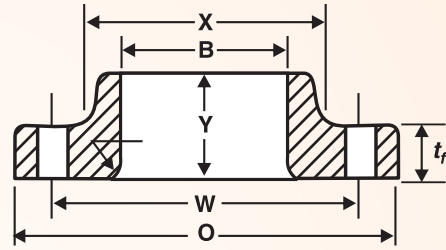
1	2	3	4	Drilling			8	Length Thru Hub			12	Bore			16	17	18	19
				5	6	7		9	10	11		13	14	15				
½	120.7	22.3	38	82.6	22.3	4	21.3	32	32	60	23	22.2	22.9	3	23.6	10	34.9	
¾	130.0	25.4	44	88.9	22.3	4	26.7	35	35	70	26	27.7	28.2	3	29.0	11	42.9	
1	149.4	28.6	52	101.6	25.4	4	33.4	41	41	73	29	34.5	34.9	3	35.8	13	50.8	
1¼	158.8	28.6	64	111.1	25.4	4	42.2	41	41	73	31	43.2	43.7	5	44.4	14	63.5	
	177.8																73.0	
1½		31.8	70	123.8	28.6	4	48.3	44	44	83	32	49.5	50.0	6	50.6	16		
2	215.9	38.1	105	165.1	25.4	8	60.3	57	57	102	39	61.9	62.5	8	63.5	17	92.1	
2½	244.3	41.3	124	190.5	28.6	8	73.0	64	64	105	48	74.6	75.4	8	76.2	19	104.8	
3	266.7	47.7	133	203.2	31.8	8	88.9	73	117	91.4	10	127.0	
4	311.2	54.0	162	241.3	35.0	8	114.3	90	124	116.8	11	139.7	
																	157.2	
5	374.7	73.1	197	292.1	41.3	8	141.3	105	156	144.4	11		
6	393.7	82.6	229	317.5	38.1	12	168.3	119	171	171.4	13	185.7	
8	482.6	92.1	292	393.7	44.5	12	219.1	143	213	222.2	13	215.9	
10	584.2	108.0	368	482.6	50.8	12	273.0	178	254	277.4	13	269.9	
12	673.1	123.9	451	571.5	54.0	16	323.8	219	283	328.2	13	323.8	
																	381.0	
14	749.3	133.4	495	635.0	60.4	16	355.6	241	298	360.2	13		
16	825.5	146.1	552	704.8	66.7	16	406.4	260	311	411.2	13	412.8	
18	914.4	162.0	597	774.7	73.0	16	457.0	276	327	462.3	13	469.9	
20	984.3	177.8	641	831.8	79.4	16	508.0	292	356	514.4	13	533.4	
24	1168.4	203.2	762	990.6	92.1	16	610.0	330	406	616.0	13	584.2	
																	692.2	

NOTE: (1) Height of RF 7 mm

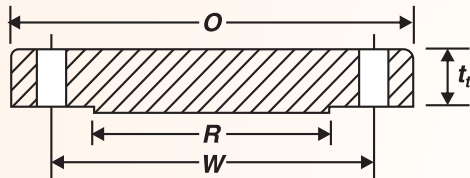
DIMENSIONS OF CLASS 2500 FLANGES



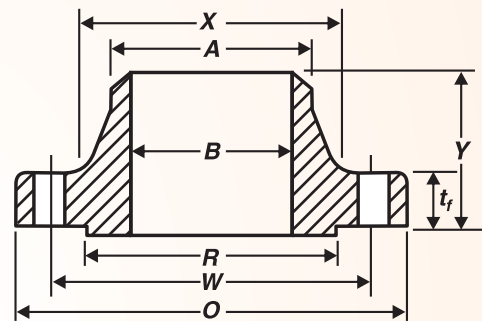
Thread (NPS ½" to 2 ½" Only)



Lapped



Blind



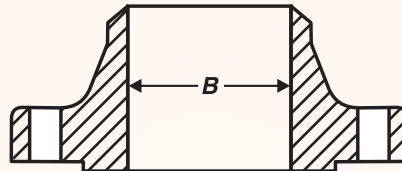
Welding Neck

DIMENSIONS OF CLASS 2500 FLANGES

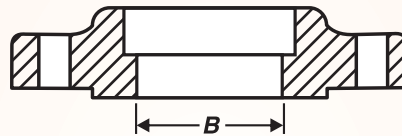
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t _f	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Throw Hub			Threaded/Length Threaded Min., T	Bore		Corner Radius of Bore of Lapped Flange and Pipe, r	Counter-bore Threaded Flange Min., Q	Diameter of RF R
				Diameter of Bolt Circle W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded, Y	Lapped, Y	Welding Neck, Y		Lapped, Min., B	Welding Neck/Socket Welding, B			
½	133.4	30.2	48	88.9	22.3	4	21.3	40	40	73	29	22.9		3	23.6	34.9
¾	139.7	31.8	51	95.2	22.3	4	26.7	43	43	79	32	28.2		3	29.0	42.9
1	158.8	35.0	57	108.0	25.4	4	33.4	48	48	89	35	34.9		3	35.8	50.8
1¼	184.2	38.1	73	130.2	28.6	4	42.2	52	52	95	39	43.7		5	44.4	63.5
1½	203.2	44.5	79	146.0	31.8	4	48.3	60	60	111	45	50.0		6	50.6	73.0
2	235.0	50.9	95	171.4	28.6	8	60.3	70	70	127	51	62.5		8	63.5	92.1
2½	266.7	57.2	114	196.8	31.8	8	73.0	79	79	143	58	75.4	To be Specified by Purchaser	8	76.2	104.8
3	304.8	66.7	133	228.6	35.0	8	88.9	...	92	168	...	91.4		10	...	127.0
4	355.6	76.2	165	273.0	41.3	8	114.3	...	108	190	...	116.8	11	...	139.7	
5	419.1	92.1	203	323.8	47.7	8	141.3	...	130	229	...	144.4	11	...	157.2	
6	482.6	108.0	235	368.3	54.0	8	168.3	...	152	273	...	171.4	13	...	185.7	
8	552.5	127.0	305	438.2	54.0	12	219.1	...	178	318	...	222.2	13	...	215.9	
10	673.1	165.1	375	539.8	66.7	12	273.0	...	229	419	...	277.4	13	...	269.9	
12	762.0	184.2	441	619.1	73.0	12	323.8	...	254	464	...	328.2	13	...	323.8	

NOTE: (1) Height of RF 7 mm

BORE (w.r.t) SCHEDULES



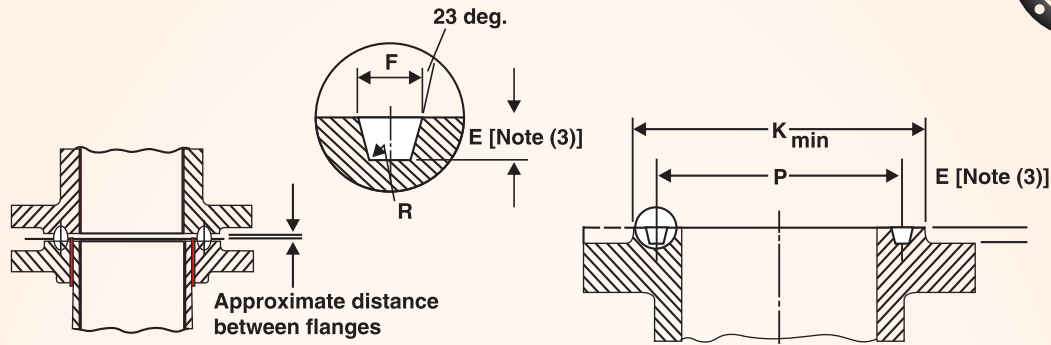
Welding Neck



Socket Welding (½ to 3 Only)

BORE (w.r.t) SCHEDULES															
N.P	PIPE DIA	5S	10/10S	20	30	STD	40/40S	XS	60	80/80S	100	120	140	160	XXS
½	21.3	18.0	17.0	N.A.	16.4	15.7	15.7	13.8	N.A.	13.8	N.A.	N.A.	N.A.	11.7	6.3
¾	26.7	23.4	22.4	N.A.	21.8	20.9	20.9	18.8	N.A.	18.8	N.A.	N.A.	N.A.	15.5	11.0
1	33.4	30.1	27.8	N.A.	27.6	26.6	26.6	24.3	N.A.	24.3	N.A.	N.A.	N.A.	20.7	15.2
1¼	42.2	38.9	36.6	N.A.	36.2	35.0	35.0	32.5	N.A.	32.5	N.A.	N.A.	N.A.	29.5	22.8
1½	48.3	45.0	42.7	N.A.	41.9	40.9	40.9	38.1	N.A.	38.1	N.A.	N.A.	N.A.	34.0	28
2	60.3	57.0	54.7	N.A.	53.9	52.4	52.4	49.2	N.A.	49.2	N.A.	N.A.	N.A.	42.8	38.1
2½	73.0	68.7	66.9	N.A.	63.4	62.6	62.6	58.9	N.A.	58.9	N.A.	N.A.	N.A.	53.9	44.9
3	88.9	84.6	82.8	N.A.	79.3	77.9	77.9	73.6	N.A.	73.6	N.A.	N.A.	N.A.	66.6	58.4
3½	101.6	97.3	95.5	N.A.	92.0	90.1	90.1	85.4	N.A.	85.4	N.A.	N.A.	N.A.	N.A.	N.A.
4	114.3	110.0	108.2	N.A.	104.7	102.2	102.2	97.1	N.A.	97.1	N.A.	92.0	N.A.	87.3	80.0
5	141.3	135.7	134.5	N.A.	N.A.	128.2	128.2	122.2	N.A.	122.2	N.A.	115.9	N.A.	109.5	103.2
6	168.3	162.7	161.5	N.A.	N.A.	154.0	154.0	146.3	N.A.	146.3	N.A.	139.7	N.A.	131.7	124.4
8	219.1	213.5	211.5	206.4	205.0	202.7	202.7	193.7	198.4	193.7	188.9	182.5	177.8	173.0	174.6
10	273.0	266.2	264.6	260.3	257.4	254.4	254.4	247.6	247.6	242.8/247.6	236.4	230.1	222.2	215.8	222.2
12	323.8	315.8	314.6	311.1	307.0	304.7	303.1/303.7	298.4	295.2	288.8/298.4	280.9	273	266.6	257.1	273
14	355.6	347.6	342.9/346.0	339.7	336.5	336.5	333.3	330.2	325.4	317.5	307.9	300.0	292.1	284.1	N.A.
16	406.4	398.0	393.7/396.8	390.5	387.3	387.3	381	381	373.0	363.5	354.0	344.4	333.3	325.4	N.A.
18	457.2	448.6	443.3/447.6	441.1	434.7	437.9	428.4	431.6	418.9	409.3	398.2	387.1	377.6	366.5	N.A.
20	508.0	498.4	495.3/496.9	488.9	482.6	488.9	477.8	482.6	466.7	455.6	442.9	431.8	419.1	407.9	N.A.
22	559.0	549.4	546.3/547.7	539.9	533.6	539.9	N.A.	533.6	514.5	501.8	489.1	476.4	463.7	451.0	N.A.
24	610	598.9	597.3	590.9	581.4	590.9	575.0	584.6	560.7	548.0	532.2	517.9	505.2	490.9	N.A.

DIMENSION OF RING-JOINT FACINGS
(ALL PRESSURE RATING CLASSES) AS PER ASME B16.5 - 2003

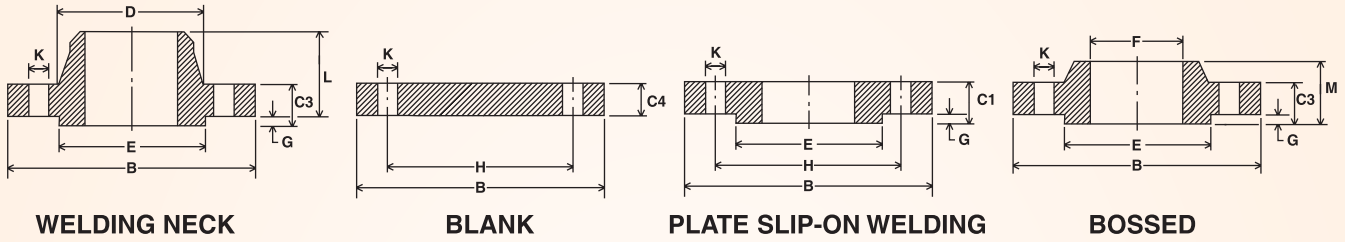


DIMENSION OF RING-JOINT FACINGS (ALL PRESSURE RATING CLASSES)
AS PER ASME B16.5 - 2003

DIMENSION OF RING-JOINT FACINGS (ALL PRESSURE RATING CLASSES) AS PER ASME B16.5 - 2003																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Nominal Size							Groove Number	Groove Dimensions			Radius at Bottom, R	Diameter of Raised Portion, K				
Class 150 NPS	Class 300 NPS	Class 400 NPS	Class 600 NPS	Class 900 NPS	Class 1500 NPS	Class 2500 NPS		Groove Diameter, P	Depth, E	Width, F		Class 150	Class 300 400 600	Class 900	Class 1500	Class 2500
....	1/2	....	1/2	....	....	....	R11	34.14	5.54	7.14	0.8	....	51.0	....	....	....
....	....	....	....	....	1/2	....	12	39.67	6.35	8.74	0.8	....	....	....	60.5	....
....	3/4	....	3/4	....	....	1/2	13	42.88	6.35	8.74	0.8	....	63.5	....	....	65.0
....	....	....	....	....	3/4	....	14	44.45	6.35	8.74	0.8	....	....	....	66.5	....
1	....	....	....	....	....	....	15	47.63	6.35	8.74	0.8	63.5	....	....	....	....
....	1	....	1	....	1	3/4	16	50.80	6.35	8.74	0.8	....	70.0	....	71.5	73.0
1 1/4	....	....	....	....	....	....	17	57.15	6.35	8.74	0.8	73.0	....	....	....	....
....	1 1/4	....	1 1/4	....	1 1/4	1	18	60.33	6.35	8.74	0.8	....	79.5	....	81.0	82.5
1 1/2	....	....	....	....	....	....	19	65.07	6.35	8.74	0.8	82.5	....	....	....	....
....	1 1/2	....	1 1/2	....	1 1/2	....	20	68.27	6.35	8.74	0.8	....	90.5	....	92.0	....
....	....	....	....	....	....	1 1/4	21	72.23	7.92	11.91	0.8	....	....	....	....	102
2	....	....	....	....	....	....	22	82.55	6.35	8.74	0.8	102	....	....	....	....
....	2	....	2	....	....	1 1/2	23	82.55	7.92	11.91	0.8	....	108	....	....	114
....	....	....	....	....	2	....	24	95.25	7.92	11.91	0.8	....	....	....	124	....
2 1/2	....	....	....	....	....	....	25	101.60	6.35	8.74	0.8	121	....	....	....	....
....	2 1/2	....	2 1/2	....	....	2	26	101.60	7.92	11.91	0.8	....	127	....	....	133
....	....	....	....	....	2 1/2	....	27	107.95	7.92	11.91	0.8	....	....	....	137	....
....	....	....	....	....	....	2 1/2	28	111.13	9.52	13.49	0.8	....	....	....	....	149
3	....	....	....	....	....	....	29	114.30	6.35	8.74	0.8	133	....	....	....	....
....	(2)	....	(2)	....	....	....	30	117.48	7.92	11.91	0.8	....	....	....	....	....
....	3 (2)	....	3 (2)	3	....	....	31	123.83	7.92	11.91	0.8	....	146	156	....	....
....	....	....	....	....	....	3	32	127.00	9.53	13.49	1.5	....	....	....	....	....168
3 1/2	....	....	....	....	....	....	33	131.78	6.35	8.74	0.8	154	....	....	....	....
....	3 1/2	....	3 1/2	....	....	....	34	131.78	7.92	11.91	0.8	....	159	....	....	....
....	....	....	....	....	3	....	35	136.53	7.92	11.91	0.8	....	....	....	168	....
4	....	....	....	....	....	....	36	149.23	6.35	8.74	0.8	171	....	....	....	....
....	4	4	4	4	....	....	37	149.23	7.92	11.91	0.8	....	175	181	....	....
....	....	....	....	....	....	4	38	157.18	11.13	16.66	1.5	....	....	....	....	203
....	....	....	....	....	4	....	39	161.93	7.92	11.91	0.8	....	....	....	194	....
5	....	....	....	....	....	....	40	171.45	6.35	8.74	0.8	194	....	....	....	....
....	5	5	5	5	....	....	41	180.98	7.92	11.91	0.8	....	210	216	....	....
....	....	....	....	....	....	5	42	190.50	12.70	19.84	1.5	....	....	....	....	241
6	....	....	....	....	....	....	43	193.69	6.35	8.74	0.8	219	....	....	....	....
....	....	....	....	....	5	....	44	193.68	7.92	11.91	0.8	....	....	....	229	....
....	6	6	6	6	....	....	45	211.12	7.92	11.91	0.8	....	241	241	....	....
....	....	....	....	....	6	....	46	211.14	9.53	13.49	1.5	....	....	....	248	....
....	....	....	....	....	....	6	47	228.60	12.70	19.84	1.5	....	....	....	....	279
8	....	....	....	....	....	....	48	247.65	6.35	8.74	0.8	273	....	....	....	....
....	8	8	8	8	....	....	49	269.88	7.92	11.91	0.8	....	302	308	....	....

NOTE: (1) USE CLASS 600 FOR SIZES NPS 1/2 TO NPS 3 1/2 FOR CLASS 400
(2) USE CLASS 1500 FOR SIZES NPS 1/2 TO NPS 2 1/2 FOR CLASS 900
(3) Height of raised portion is equal to the depth of groove dimension E, but is not subjected to the tolerance for E, Former full-face contour E may be used.
(4) For ring joints with lapped flanges in Classes 300 and 600, ring and groove number R30 is used instead of R31.

TOLERANCES: E (depth) + 0.4, -0.0 F (width) ± 0.2 P (pitch diameter) ± 0.13 R (radius at bottom) R ≤ 2 + 0.8, -0.0 R > 2 ± 0.8 23 deg (angle) ± 1/2 deg



PN 6

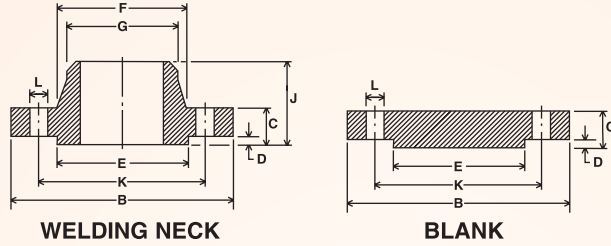
NOMINAL PIPE SIZE	OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	FLANGE THICKNESS			HUB DIAMETER W/NECK	RAISED FACE DIAMETER	SLIP ON BORE	RAISED FACE THICKNESS	DRILLING DATA			LENGTH THROUGH HUB		NOMINAL PIPE SIZE
			PLATE	BOSSED & W/NECK	BLIND					BOLT CIRCLE DIAMETER	NUMBER OF HOLES	DIAMETER OF HOLES	OVERALL THICKNESS (W/NECK)	OVERALL THICKNESS (BOSSED)	
mm. (in)	A	B	C1	C3	C4	D	E	F	G	H	J	K	L	M	mm. (in)
15 (1/2)	21.3	80	12	12	12	30	40	22.3	2	55	4	11	30	20	15 (1/2)
20 (3/4)	26.7	90	14	14	14	38	50	27.6	2	65	4	11	32	24	20 (3/4)
25 (1)	33.4	100	14	14	14	42	60	34.5	2	75	4	11	35	24	25 (1)
32 (1 1/4)	42.2	120	16	14	14	55	70	43.1	2	90	4	14	35	26	32 (1 1/4)
40 (1 1/2)	48.3	130	16	14	14	62	80	49.5	3	100	4	14	38	26	40 (1 1/2)
50 (2)	60.3	140	16	14	14	74	90	61.9	3	110	4	14	38	28	50 (2)
65 (2 1/2)	73	160	16	14	14	88	110	74.6	3	130	4	14	38	32	65 (2 1/2)
80 (3)	88.9	190	18	16	16	102	128	90.8	3	150	4	18	42	34	80 (3)
100 (4)	114.3	210	18	16	16	130	148	116.0	3	170	4	18	45	40	100 (4)
125 (5)	141.3	240	20	18	18	155	178	143.7	3	200	8	18	48	44	125 (5)
150 (6)	168.3	265	20	18	18	184	202	170.8	3	225	8	18	48	44	150 (6)
200 (8)	219.1	320	22	20	20	236	258	221.4	3	280	8	18	55	44	200 (8)
250 (10)	273.1	375	24	22	22	290	312	276.3	3	335	12	18	60	44	250 (10)
300 (12)	323.8	440	24	22	22	342	365	327.1	4	395	12	22	62	44	300 (12)
350 (14)	355.6	490	26	22	22	385	415	359.1	4	445	12	22	62	-	350 (14)
400 (16)	406.4	540	28	22	22	438	465	410.4	4	495	16	22	65	-	400 (16)
450 (18)	457	595	30	24	24	492	520	461.7	4	550	16	22	65	-	450 (18)
500 (20)	508	645	30	24	24	538	570	513.0	4	600	20	22	68	-	500 (20)
600 (24)	610	755	32	24	34	640	670	615.9	5	705	20	26	70	-	600 (24)

PN 10

NOMINAL PIPE SIZE	OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	FLANGE THICKNESS			HUB DIAMETER W/NECK	RAISED FACE DIAMETER	SLIP ON BORE	RAISED FACE THICKNESS	DRILLING DATA			LENGTH THROUGH HUB		NOMINAL PIPE SIZE
			PLATE	BOSSED & W/NECK	BLIND					BOLT CIRCLE DIAMETER	NUMBER OF HOLES	DIAMETER OF HOLES	OVERALL THICKNESS (W/NECK)	OVERALL THICKNESS (BOSSED)	
mm. (in)	A	B	C1	C3	C4	E	F	G	H	J	K	L	M	N	mm. (in)
USE PN 16 FOR SIZES BELOW 200mm															
200 (8)	219.1	340	24	24	24	246	268	221.4	3	295	8	22	62	44	200 (8)
250 (10)	273.1	395	26	26	26	298	320	276.3	3	350	12	22	68	46	250 (10)
300 (12)	323.8	445	26	26	26	350	370	327.1	4	400	12	22	68	46	300 (12)
350 (14)	355.6	505	28	26	26	400	430	359.1	4	460	16	22	68	53	350 (14)
400 (16)	406.4	565	32	26	26	456	482	410.4	4	515	16	26	72	57	400 (16)
450 (18)	457	615	36	28	28	502	532	461.7	4	565	20	26	72	63	450 (18)
500 (20)	508	670	38	28	28	559	585	513.0	4	620	20	26	75	67	500 (20)
600 (24)	610	780	42	28	34	658	685	615.9	5	725	20	30	80	75	600 (24)

- NOTES:-
1. DIMENSIONS ARE IN MM
 2. LARGER SIZES AVAILABLE ON REQUEST
 3. AVAILABLE WITH OR WITHOUT RAISED FACE
 4. WELD NECK BORE IS EQUAL TO PIPE

ASME B16.47 - 1996 Series B Class 150



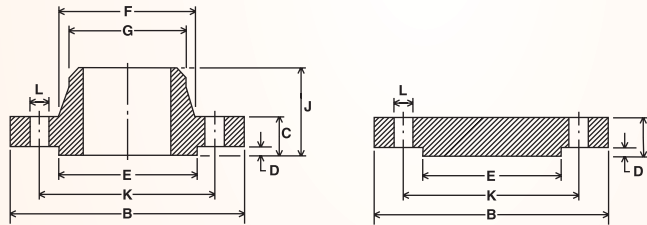
CLASS 150

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN W NECK	THICKNESS OF FLANGE MIN BLIND	RAISED FACE THICKNESS	RAISED FACE DIAMETER	HUB DIAMETER	HUB DIA. START OF CHAMFER	LENGTH THROUGH HUB	DRILLING DATA			NOMINAL PIPE SIZE	
mm.	(in)										K	L	M	mm.	(in)
650	(26)	660.4	785.9	41.1	44.5	1.6	711.2	684.3	661.9	88.9	744.5	22.4	36	650	(26)
700	(28)	711.2	836.7	44.5	47.8	1.6	762.0	735.1	712.7	95.3	795.3	22.4	40	700	(28)
750	(30)	762.0	887.5	44.5	50.8	1.6	812.8	787.4	763.5	100.1	846.1	22.4	44	750	(30)
800	(32)	812.8	941.3	46.0	53.8	1.6	863.6	839.7	814.3	108.0	900.2	22.4	48	800	(32)
850	(34)	863.6	1004.8	49.3	57.2	1.6	920.8	892.0	865.1	110.2	957.3	25.4	40	850	(34)
900	(36)	914.4	1057.1	52.3	58.7	1.6	971.6	944.6	915.9	117.3	1009.7	25.4	44	900	(36)
950	(38)	965.2	1124.0	53.8	63.5	1.6	1022.4	997.0	968.2	124.0	1069.8	28.4	40	950	(38)
1000	(40)	1016.0	1174.8	55.6	66.5	1.6	1079.5	1049.3	1019.0	128.5	1120.6	28.4	44	1000	(40)
1050	(42)	1066.8	1225.6	58.7	68.3	1.6	1130.3	1101.9	1069.8	133.4	1171.4	28.4	48	1050	(42)
1100	(44)	1117.6	1276.4	60.5	71.4	1.6	1181.1	1152.7	1120.6	136.7	1222.2	28.4	52	1100	(44)
1150	(46)	1168.4	1341.4	62.0	74.7	1.6	1234.9	1205.0	1171.4	144.5	1284.2	31.8	40	1150	(46)
1200	(48)	1219.2	1392.2	65.0	77.7	1.6	1289.1	1257.3	1222.2	149.4	1335.0	31.8	44	1200	(48)
1250	(50)	1270.0	1443.0	68.3	80.8	1.6	1339.9	1308.1	1273.0	153.9	1385.8	31.8	48	1250	(50)
1300	(52)	1320.8	1493.8	69.9	84.1	1.6	1390.7	1360.4	1323.8	157.2	1436.6	31.8	52	1300	(52)
1350	(54)	1371.6	1549.4	71.4	87.4	1.6	1441.5	1412.7	1374.6	162.1	1492.3	31.8	56	1350	(54)
1400	(56)	1422.4	1600.2	73.2	90.4	1.6	1492.3	1465.3	1425.4	166.6	1543.1	31.8	60	1400	(56)
1450	(58)	1473.2	1674.9	74.7	93.5	1.6	1543.1	1516.1	1476.2	174.8	1611.4	35.1	48	1450	(58)
1500	(60)	1524.0	1725.7	76.2	96.8	1.6	1600.2	1570.0	1527.0	179.3	1662.2	35.1	52	1500	(60)

- NOTES:- 1. DIMENSIONS ARE IN MM
 2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE
 3. RING TYPE JOINT ALSO AVAILABLE

Previously API 605

ASME B16.47 - 1996 Series B Class 300

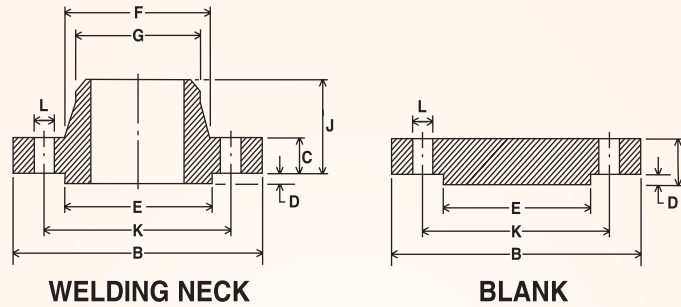


CLASS 300

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN W NECK	THICKNESS OF FLANGE MIN BLIND	RAISED FACE THICKNESS	RAISED FACE DIAMETER	HUB DIAMETER	HUB DIA. START OF CHAMFER	LENGTH THROUGH HUB	DRILLING DATA			NOMINAL PIPE SIZE	
mm.	(in)										K	L	M	mm.	(in)
650	(26)	660.4	866.6	88.9	88.9	1.6	736.6	701.5	665.2	144.5	803.1	35.1	32	650	(26)
700	(28)	711.2	920.8	88.9	88.9	1.6	787.4	755.7	716.0	149.4	857.3	35.1	36	700	(28)
750	(30)	762.0	990.6	93.7	93.7	1.6	844.6	812.8	768.4	158.0	920.8	38.1	36	750	(30)
800	(32)	812.8	1054.1	103.1	103.1	1.6	901.7	863.6	819.2	168.1	977.9	41.1	32	800	(32)
850	(34)	863.6	1107.9	103.1	103.1	1.6	952.5	917.4	870.0	173.0	1031.7	41.1	36	850	(34)
900	(36)	914.4	1171.4	103.1	103.1	1.6	1009.7	965.2	920.8	180.8	1089.2	44.5	32	900	(36)
950	(38)	965.2	1222.2	111.3	111.3	1.6	1060.5	1016.0	971.6	192.0	1140.0	44.5	36	950	(38)
1000	(40)	1016.0	1273.0	115.8	115.8	1.6	1114.6	1066.8	1022.4	198.4	1190.8	44.5	40	1000	(40)
1050	(42)	1066.8	1333.5	119.1	119.1	1.6	1168.4	1117.6	1074.7	204.7	1244.6	47.8	36	1050	(42)
1100	(44)	1117.6	1384.3	127.0	127.0	1.6	1219.2	1173.2	1125.5	214.4	1295.4	47.8	40	1100	(44)
1150	(46)	1168.4	1460.5	128.5	130.0	1.6	1270.0	1228.9	1176.3	222.3	1365.3	50.8	36	1150	(46)
1200	(48)	1219.2	1511.3	128.5	134.9	1.6	1327.2	1277.9	1227.1	223.8	1416.1	50.8	40	1200	(48)
1250	(50)	1270.0	1562.1	138.2	139.7	1.6	1378.0	1330.5	1277.9	235.0	1466.9	50.8	44	1250	(50)
1300	(52)	1320.8	1612.9	142.7	144.3	1.6	1428.8	1382.8	1328.7	242.8	1517.7	50.8	48	1300	(52)
1350	(54)	1371.6	1673.4	136.7	149.4	1.6	1479.6	1435.1	1379.5	239.8	1577.8	50.8	48	1350	(54)
1400	(56)	1422.4	1765.3	153.9	157.0	1.6	1536.7	1493.8	1430.3	268.2	1651.0	60.5	36	1400	(56)
1450	(58)	1473.2	1827.3	153.9	162.1	1.6	1593.9	1547.9	1481.1	274.6	1713.0	60.5	40	1450	(58)
1500	(60)	1524.0	1878.1	150.9	166.6	1.6	1651.0	1598.7	1531.9	271.5	1763.8	60.5	40	1500	(60)

- NOTES:- 1. DIMENSIONS ARE IN MM
 2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE
 3. RING TYPE JOINT ALSO AVAILABLE

Previously API 605



CLASS 600

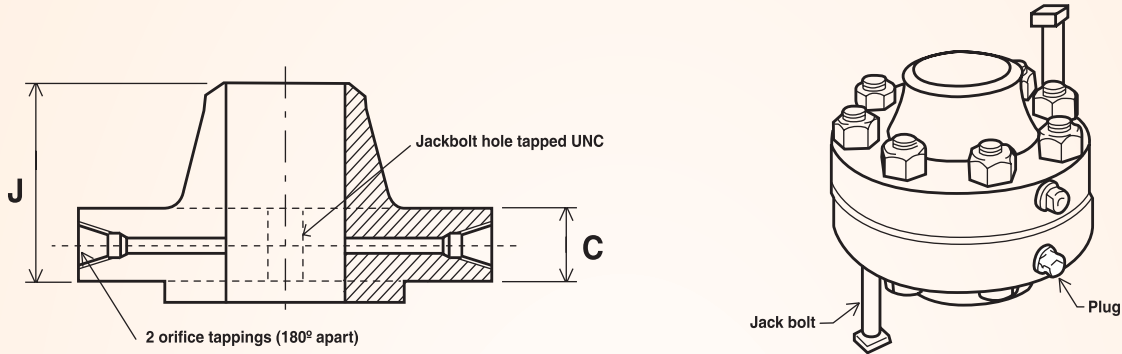
NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN W NECK	THICKNESS OF FLANGE MIN BLIND	RAISED FACE THICKNESS	RAISED FACE DIAMETER	HUB DIAMETER	HUB DIA. START OF CHAMFER	LENGTH THROUGH HUB	DRILLING DATA			NOMINAL PIPE SIZE	
mm.	(in)										A	B	C	C1	D	E	F	G	J	K	L	M	mm.	(in)
650	(26)	660.4	889.0	111.3	111.3	6.4	726.9	698.5	660.4	180.8	806.5	44.5	28	650	(26)
700	(28)	711.2	952.5	115.8	115.8	6.4	784.4	752.3	711.2	190.5	863.6	47.8	28	700	(28)
750	(30)	762.0	1022.4	125.5	127.0	6.4	841.2	806.5	762.0	204.7	927.1	50.8	28	750	(30)
800	(32)	812.8	1085.9	130.0	134.9	6.4	895.4	860.6	812.8	215.9	984.3	53.8	28	800	(32)
850	(34)	863.6	1162.1	141.2	144.3	6.4	952.5	914.4	863.6	233.4	1054.1	60.5	24	850	(34)
900	(36)	914.4	1212.9	146.1	150.9	6.4	1009.7	968.2	914.4	242.8	1104.9	60.5	28	900	(36)

CLASS 900

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN W NECK	THICKNESS OF FLANGE MIN BLIND	RAISED FACE THICKNESS	RAISED FACE DIAMETER	HUB DIAMETER	HUB DIA. START OF CHAMFER	LENGTH THROUGH HUB	DRILLING DATA			NOMINAL PIPE SIZE	
mm.	(in)										A	B	C	C1	D	E	F	G	J	K	L	M	mm.	(in)
650	(26)	660.4	1022.4	134.9	153.9	6.4	762.0	743.0	660.4	258.8	901.7	66.5	20	650	(26)
700	(28)	711.2	1104.9	147.6	166.6	6.4	819.2	797.1	711.2	276.4	971.6	73.2	20	700	(28)
750	(30)	762.0	1181.1	155.4	176.0	6.4	876.3	850.9	762.0	289.1	1035.1	79.2	20	750	(30)
800	(32)	812.8	1238.3	160.3	185.7	6.4	927.1	908.1	812.8	303.3	1092.2	79.2	20	800	(32)
850	(34)	863.6	1314.5	171.5	195.1	6.4	990.6	962.2	863.6	319.0	1155.7	85.9	20	850	(34)
900	(36)	914.4	1346.2	173.0	201.7	6.4	1028.7	1016.0	914.4	325.4	1200.2	79.2	24	900	(36)

- NOTES:-
1. DIMENSIONS ARE IN MM
 2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE
 3. RING TYPE JOINT ALSO AVAILABLE

Previously API 605



Tapping Bore size:
 100nb & over: 12.7mm
 80nb 9.5mm, 65nb & less: 6.3mm.

Orifice flanges are supplied in sets comprising:
 2 flanges, jack bolts and 1/2" npt hex head plugs in tapped hole.

Dimensions not shown here are shown in ANSI B16.5a

CLASS 300

CLASS 600

CLASS 900

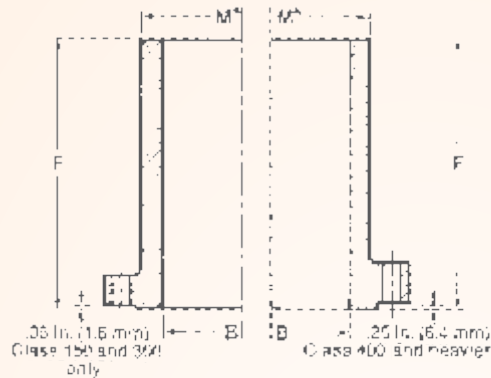
CLASS 1500

NOMINAL PIPE SIZE		THICKNESS		LENGTH THRU NECK		THICKNESS		LENGTH THRU NECK		THICKNESS		LENGTH THRU NECK		NOMINAL PIPE SIZE	
mm.	(in)	C	J	C	J	C	J	C	J	C	J	mm.	(in)	mm.	(in)
25	(1)	38.1	82.6	Use ANSI 300 in this range		Use ANSI 1500 in this range		38.1	82.6	38.1	88.9	25	(1)		
32	(1 1/4)	38.1	85.7					38.1	101.6			32	(1 1/4)		
40	(1 1/2)							41.1	104.6			40	(1 1/2)		
50	(2)	38.1	85.7					47.8	117.3			50	(1 1/2)		
65	(2 1/2)	38.1	88.9	38.1	101.6	44.5	114.3	65	(2 1/2)						
80	(3)	38.1	88.9					53.8	124.0	80	(3)				
100	(4)	38.1	92.1	38.1	101.6	55.6	139.7	82.6	171.5	100	(4)	100	(4)		
125	(5)	38.1	100.0	47.7	117.3	63.5	162.1	91.9	212.9	125	(5)	125	(5)		
150	(6)			55.6	133.4	69.9	184.2	108.0	254.0	150	(6)	150	(6)		
200	(8)	41.3	111.1	66.7	155.4	79.2	200.2	124.0	282.4	200	(8)	200	(8)		
250	(10)	47.7	117.5	69.9	165.1	85.9	212.9	133.4	298.5	250	(10)	250	(10)		
300	(12)	50.9	130.2	76.3	177.8	88.9	215.9	146.1	311.2	300	(12)	300	(12)		
350	(14)	54.0	142.9	82.6	184.2	101.6	228.6	162.1	327.2	350	(14)	350	(14)		
400	(16)	57.2	146.1	89.0	190.5	108.0	247.7	177.8	355.6	400	(16)	400	(16)		
450	(18)	60.4	158.8	101.7	203.2	139.7	292.1	203.2	406.4	450	(18)	450	(18)		
500	(20)	63.6	161.9							500	(20)	500	(20)		
600	(24)	69.9	168.3							600	(24)	600	(24)		

ALSO AVAILABLE IN LARGER SIZES AND RING JOINT FACING

- NOTES:-
1. WHERE RAISED FACE IS 1.6mm THEN THIS DIMENSION IS INCLUDED IN C, H & J
 2. WHERE RAISED FACE IS 6.4mm THEN IT IS ADDITIONAL TO G, H & J.
 3. BORE IS TO BE SPECIFIED BY THE PURCHASER
 4. JACK BOLT HOLES CAN BE SUPPLIED WITH TAPPED HOLES OR MILLED NUT SLOT
 5. SLIP ON FLANGES ALSO AVAILABLE

LONG WELDING NECKS

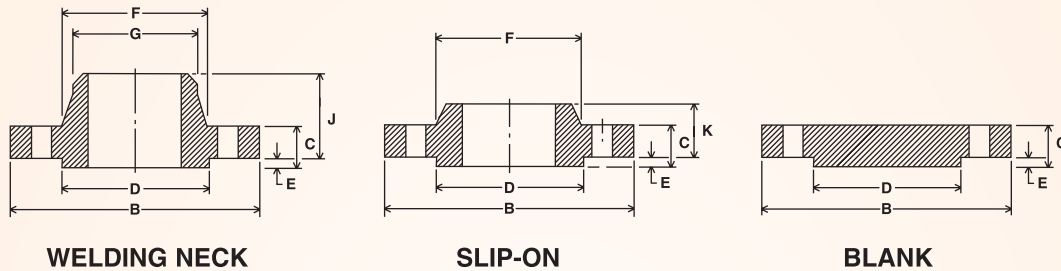


NOMINAL SIZE AND BORE B	LENGTH THRU HUB		HUB DIAMETER CLASS 150 PN 20 *M	WEIGHTS						
	CLASS 150 THRU 600	CLASS 900 THRU 2500		CLASS 150	CLASS 300	CLASS 400	CLASS 600	CLASS 900	CLASS 1500	CLASS 2500
	PN 20 THRU 100 F	PN 160 THRU 400 F		PN 20	PN 50	PN 64	PN 100	PN 160	PN 250	PN 400
1.00	9	9	2.00	8	10	11	11	15	15	20
25.4	229	229	50.8	3.6	4.5	5	5	7	7	9
1.25	9	9	2.38	10	14	14	14	18	18	30
31.8	229	229	60.3	4.5	6.5	6.5	6.5	8	8	13.5
1.50	9	9	2.62	12	17	17	17	23	23	38
38.1	229	229	66.7	5.5	7.7	7.7	7.7	10.5	10.5	17
2.00	9	9	3.25	17	19	21	21	44	44	55
50.8	229	229	82.6	7.7	9	9.5	9.5	20	20	25
2.50	9	12	3.75	22	28	29	29	72	72	85
63.5	229	305	95.3	10	13	13	13	32.5	32.5	38.5
3.00	9	12	4.25	26	36	38	38	65	84	125
76.2	229	305	108.0	12	16.5	17.5	17.5	29.5	38	57
3.50	9	-	4.88	32	45	48	48	-	-	-
88.9	229	-	123.8	14.5	20.5	21.5	22	-	-	-
4.00	12	12	5.50	47	54	67	80	98	118	185
101.6	305	305	139.7	21.5	24.5	30	36.5	44	53	84
5.00	12	12	6.50	58	86	90	128	143	195	300
127.0	305	305	165.1	26.5	39	41	58	65	88	135
6.00	12	12	7.75	77	108	115	158	199	235	450
152.4	305	305	196.9	35	49	52	72	90	106	203
8.00	12	12	9.75	103	150	160	215	310	366	600
203.2	305	305	247.7	47	68	72	98	140	165	270
10.00	12	12	12.00	144	218	230	343	356	594	1045
254.0	305	305	304.8	66	99	104	156	161	268	471
12.00	12	12	14.38	207	289	301	409	541	872	1420
304.8	305	305	365.1	94	131	136	186	244	393	639
14.00	12	12	16.00	212	342	357	432	568	1030	-
355.6	305	305	406.4	96	155	161	196	256	464	-
16.00	12	12	18.00	250	426	443	564	670	1335	-
406.4	305	305	457.2	114	193	199	256	302	601	-
18.00	12	12	20.00	274	493	513	654	949	1750	-
457.2	305	305	508.0	125	224	231	297	427	788	-
20.00	12	12	22.00	314	575	602	840	1040	2130	-
508.0	305	305	558.8	143	261	271	381	468	959	-
24.00	12	12	26.25	426	823	856	1100	1775	3180	-
609.6	305	305	666.8	194	374	385	499	799	1431	-

SPECIFICATIONS: Long Welding Necks conform to ASTM specification A-105. Except as shown above, Long Welding Necks conform dimensionally to ASME/ANSI Standard B16.5.

*Dimension "M" is given here for Class 150 Long Welding Necks only. For Class 300 and higher pressure ratings, outside diameter of the neck is the same as dimension "M" of ANSI flanges of comparable pressure rating.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS



CLASS 150

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	RAISED FACE DIAMETER	RAISED FACE THICKNESS	HUB DIAMETER	NECK DIAMETER	DRILLING DATA			LENGTH THROUGH HUB		NOMINAL PIPE SIZE			
		A	B	C	D	E	F	G	BOLT CIRCLE DIAMETER	NUMBER OF HOLES	DIAMETER OF HOLES	OVERALL THICKNESS (W.NECK)	OVERALL THICKNESS (BOSSSED)	J	K	mm. (in)	
Note 4		Note 4															
mm.	(in)															mm.	(in)
650	(26)	660.4	870.0	50.9	743.0	1.6	724.0	660.5	806.4	24	34.9	127.1	85.5	650	(26)		
700	(28)	711.2	927.2	52.4	793.8	1.6	781.1	711.3	863.6	28	34.9	128.6	87.5	700	(28)		
750	(30)	762.0	984.3	54.0	857.3	1.6	831.9	762.1	914.4	28	34.9	130.2	89.0	750	(30)		
800	(32)	812.8	1060.5	57.2	908.1	1.6	889.1	812.9	977.9	28	41.2	133.4	92.0	800	(32)		
850	(34)	863.6	1111.3	58.8	958.9	1.6	939.9	863.7	1028.7	32	41.2	135.0	93.5	850	(34)		
900	(36)	914.4	1168.5	60.4	1022.4	1.6	997.0	914.5	1085.8	32	41.2	136.6	95.5	900	(36)		
950	(38)	965.2	1238.3	60.4	1073.2	1.6	1060.5	965.3	1149.3	32	41.2	136.6	95.5	950	(38)		
1000	(40)	1016.0	1289.1	63.8	1124.0	1.6	1111.3	1016.1	1200.1	36	41.2	139.8	98.5	1000	(40)		
1050	(42)	1066.8	1346.3	66.7	1193.9	1.6	1168.5	1066.9	1257.3	36	41.2	142.9	101.5	1050	(42)		
1100	(44)	1117.6	1403.4	66.7	1244.7	1.6	1219.3	1117.7	1314.4	40	41.2	142.9	101.5	1100	(44)		
1150	(46)	1168.4	1454.2	68.3	1295.5	1.6	1270.1	1168.5	1365.2	40	41.2	144.5	103.0	1150	(46)		
1200	(48)	1219.2	1511.4	69.9	1359.0	1.6	1327.2	1219.3	1422.4	44	41.2	146.1	105.0	1200	(48)		

CLASS 300

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	RAISED FACE DIAMETER	RAISED FACE THICKNESS	HUB DIAMETER	NECK DIAMETER	DRILLING DATA			LENGTH THROUGH HUB		NOMINAL PIPE SIZE			
		A	B	C	D	E	F	G	BOLT CIRCLE DIAMETER	NUMBER OF HOLES	DIAMETER OF HOLES	OVERALL THICKNESS (W.NECK)	OVERALL THICKNESS (BOSSSED)	J	K	mm. (in)	
Note 4		Note 4															
mm.	(in)															mm.	(in)
650	(26)	660.4	971.6	79.4	749.4	1.6	720.8	666.8	876.3	28	44.4	184.2	184.2	650	(26)		
700	(28)	711.2	1035.1	85.8	800.2	1.6	774.8	717.6	939.8	28	44.4	196.9	196.9	700	(28)		
750	(30)	762.0	1092.3	92.1	857.3	1.6	827.1	768.4	996.9	28	47.6	209.6	209.6	750	(30)		
800	(32)	812.8	1149.4	98.5	914.5	1.6	881.1	819.2	1054.1	28	50.8	222.3	222.3	800	(32)		
850	(34)	863.6	1206.8	101.7	965.3	1.6	936.7	871.6	1104.9	28	50.8	231.8	231.8	850	(34)		
900	(36)	914.4	1270.1	104.8	1022.4	1.6	990.7	922.4	1168.4	32	53.9	241.4	241.4	900	(36)		

CLASS 600

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	RAISED FACE DIAMETER	RAISED FACE THICKNESS	HUB DIAMETER	NECK DIAMETER	DRILLING DATA			LENGTH THROUGH HUB		NOMINAL PIPE SIZE			
		A	B	C	D	E	F	G	BOLT CIRCLE DIAMETER	NUMBER OF HOLES	DIAMETER OF HOLES	OVERALL THICKNESS (W.NECK)	OVERALL THICKNESS (BOSSSED)	J	K	mm. (in)	
Note 4		Note 4															
mm.	(in)															mm.	(in)
650	(26)	660.4	1016.1	108.0	749.4	6.4	747.7	671.5	914.4	28	50.8	222.3	222.3	650	(26)		
700	(28)	711.2	1073.2	111.2	800.2	6.4	803.3	724.0	965.2	28	53.9	235.0	235.0	700	(28)		
750	(30)	762.0	1130.4	114.4	857.3	6.4	862.1	774.8	1022.3	28	53.9	247.7	247.7	750	(30)		
800	(32)	812.8	1193.9	117.5	914.5	6.4	917.6	825.8	1079.5	28	60.3	260.4	260.4	800	(32)		
850	(34)	863.6	1244.7	120.7	965.3	6.4	973.2	877.9	1130.3	28	60.3	269.9	269.9	850	(34)		
900	(36)	914.4	1314.5	123.9	1022.4	6.4	1031.9	928.7	1193.8	28	66.6	282.8	282.8	900	(36)		

- NOTES:-
1. DIMENSIONS ARE IN MM
 2. LARGER SIZES AVAILABLE ON REQUEST
 3. AVAILABLE WITH OR WITHOUT RAISED FACE
 4. THICKNESS DIMENSIONS INCLUDE RAISED FACE WHEN 1.6mm
THICKNESS DIMENSION DOES NOT INCLUDE RAISED FACE WHEN IT IS 6.4mm

Approximate Weights ANSI B16.5 Forged Flanges

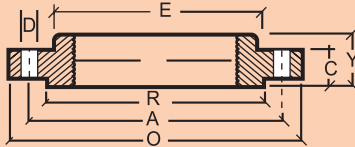
- NOTES:-
1. WEIGHTS ARE IN KILOGRAMS
 2. WEIGHTS SHOWN ARE APPROXIMATE FOR CARBON STEEL ONLY.
 3. ADD 5% TO WEIGHTS SHOWN FOR STAINLESS STEEL.

Class	Nominal Pipe Size		Slip On	Screwed	Socket Weld	Lap Joint	Blind	Welding Neck
	mm	inch						
150 #	15	(1/2)	0.45	0.45	0.91	0.45	0.91	0.91
	20	(3/4)	0.68	0.68	0.91	0.68	0.91	0.91
	25	(1)	0.91	0.91	0.91	0.91	0.91	1.14
	32	(1 1/4)	1.14	1.14	1.36	1.14	1.36	1.14
	40	(1 1/2)	1.36	1.36	1.36	1.36	1.36	1.81
	50	(2)	2.27	2.27	2.27	2.27	1.82	2.72
	65	(2 1/2)	3.63	3.63	3.18	3.63	3.18	4.54
	80	(3)	4.09	4.09	3.63	4.09	4.09	5.22
	90	(3 1/2)	4.99	4.99	4.99	4.99	5.9	5.45
	100	(4)	5.9	5.9	5.9	5.45	7.72	7.49
	125	(5)	6.81	6.81	6.81	5.9	9.08	9.53
	150	(6)	7.72	7.72	8.63	8.17	12.26	11.8
	200	(8)	12.71	12.71	13.62	12.71	21.34	19.07
	250	(10)	18.16	18.16	19.52	16.34	30.42	24.52
	300	(12)	27.69	27.69	29.06	27.24	55.84	39.95
	350	(14)	37.68	37.68	38.59	34.96	63.11	51.76
	400	(16)	48.12	48.12	42.22	47.22	84.9	64.47
450	(18)	49.49	49.49	54.48	66.28	98.52	74.90	
500	(20)	67.19	67.19	70.37	72.19	128.48	89.44	
600	(24)	92.62	92.62	95.34	88.53	188.41	121.67	
300 #	15	(1/2)	0.68	0.68	1.36	0.68	0.91	0.91
	20	(3/4)	1.14	1.14	1.36	1.14	1.36	1.36
	25	(1)	1.36	1.36	1.36	1.36	1.82	1.82
	32	(1 1/4)	2.04	2.04	1.82	2.04	2.72	2.27
	40	(1 1/2)	2.95	2.95	2.72	2.95	3.18	3.18
	50	(2)	3.18	3.18	3.18	3.18	3.63	3.63
	65	(2 1/2)	4.54	4.54	4.54	4.54	5.45	5.45
	80	(3)	5.9	5.9	5.9	6.58	7.26	8.17
	90	(3 1/2)	7.26	7.26	7.72	7.26	9.53	9.08
	100	(4)	10.67	10.67	9.99	10.9	12.71	12.03
	125	(5)	13.17	13.17		11.8	16.8	16.34
	150	(6)	16.34	16.34		17.25	21.79	20.43
	200	(8)	25.42	25.42		24.97	35.87	31.33
	250	(10)	34.96	34.96		39.95	55.39	45.4
	300	(12)	51.3	51.3		63.11	83.08	64.47
	350	(14)	72.19	72.19		83.54	109.41	93.52
	400	(16)	95.34	95.34		106.24	143.01	113.05
450	(18)	114.86	114.86		138.47	187.96	138.92	
500	(20)	139.38	139.38		170.25	233.18	167.53	
600	(24)	222.46	222.46		240.62	363.2	235.63	

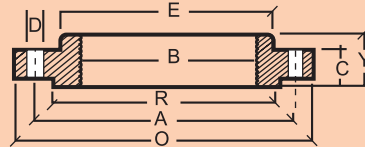
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Class	Nominal Pipe Size		Slip On	Screwed	Socket Weld	Lap Joint	Blind	Welding Neck	
	mm	inch							
600 #	15	(1/2)	0.91	0.91		0.91	0.91	1.36	
	20	(3/4)	1.36	1.36		1.36	1.36	1.59	
	25	(1)	1.59	1.59		1.59	1.82	1.82	
	32	(1 1/4)	2.04	2.04		2.04	2.72	2.50	
	40	(1 1/2)	2.95	2.95		2.95	3.63	3.63	
	50	(2)	3.63	3.63		3.63	4.54	4.54	
	65	(2 1/2)	5.45	5.45		4.99	6.81	6.36	
	80	(3)	6.81	6.81		6.36	9.08	8.17	
	90	(3 1/2)	9.53	9.53		9.08	13.17	11.80	
	100	(4)	14.98	14.98		14.07	18.61	16.80	
	125	(5)	28.60	28.60		28.60	30.87	30.87	
	150	(6)	36.32	36.32		35.41	39.04	33.14	
	200	(8)	44.04	44.04		50.85	63.11	50.85	
	250	(10)	80.36	80.36		88.53	104.87	85.81	
	300	(12)	97.61	97.61		108.96	133.93	102.60	
	900 #	15	(1/2)	2.72	2.72		2.72	1.82	3.18
20		(3/4)	2.72	2.72		2.72	2.72	3.18	
25		(1)	3.41	3.41		3.41	4.09	3.86	
32		(1 1/4)	4.54	4.54		4.54	4.54	4.54	
40		(1 1/2)	6.36	6.36		6.36	6.36	6.36	
50		(2)	9.99	9.99		9.53	11.35	10.90	
65		(2 1/2)	16.34	16.34		13.17	15.89	16.34	
80		(3)	14.07	14.07		11.35	14.53	13.17	
100		(4)	24.06	24.06		23.15	24.52	23.15	
125		(5)	37.68	37.68		36.77	39.50	39.04	
150		(6)	49.03	49.03		47.67	51.30	49.94	
200		(8)	78.09	78.09		85.35	89.44	84.90	
250		(10)	111.23	111.23		125.76	131.66	121.67	
300		(12)	148.00	148.00		168.43	187.50	168.89	
350		(14)	172.52	172.52		180.24	224.28	255.15	
400		(16)	208.38	208.39		221.55	281.03	310.99	
450	(18)	293.74	293.74		304.18	399.52	419.50		
500	(20)	359.57	359.57		394.07	502.58	528.46		
600	(24)	671.92	671.92		753.19	952.95	956.58		
1500 #	15	(1/2)	2.72	2.72		2.72	1.82	3.18	
	20	(3/4)	2.72	2.72		2.72	2.72	3.18	
	25	(1)	3.41	3.41		3.41	4.09	3.86	
	32	(1 1/4)	4.54	4.54		4.54	4.54	4.54	
	40	(1 1/2)	6.36	6.36		6.36	6.36	6.36	
	50	(2)	9.99	9.99		9.53	11.35	10.90	
	65	(2 1/2)	16.34	16.34		13.17	15.89	16.34	
	80	(3)	21.79	21.79		17.25	21.79	21.79	
	100	(4)	33.14	33.14		34.05	33.14	31.33	
	125	(5)	59.93	59.93		62.65	64.47	59.93	
	150	(6)	74.46	74.46		77.18	72.19	74.46	
	200	(8)	117.13	117.13		129.84	137.11	123.94	
	250	(10)	197.94	197.94		220.19	230.18	206.12	
	300	(12)	302.82	302.82		340.05	351.85	313.26	
	2500 #	15	(1/2)	3.18	3.18		3.18	3.18	3.63
		20	(3/4)	4.09	4.09		3.63	4.54	4.09
25		(1)	5.45	5.45		5.45	5.45	5.90	
32		(1 1/4)	8.17	8.17		7.72	8.17	9.08	
40		(1 1/2)	11.35	11.35		10.90	11.35	12.71	
50		(2)	17.25	17.25		16.80	17.71	19.07	
65		(2 1/2)	24.97	24.97		24.06	25.42	23.61	
80		(3)	37.68	37.68		36.32	39.04	42.68	
100		(4)	57.66	57.66		55.39	60.38	66.28	
125		(5)	95.34	95.34		92.62	101.24	110.78	
150		(6)	146.64	146.64		142.56	156.63	171.61	
200		(8)	220.19	220.19		213.83	241.98	261.50	
250		(10)	419.95	419.95		407.24	465.35	484.87	
300		(12)	590.20	590.20		572.95	644.66	730.03	

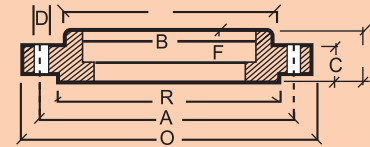
SLIP - ON FLANGE



WELDING NECK FLANGE



BLIND FLANGE



Material Specifications for forged Components as per ASTM (Flanges, Fittings & others)

	Chemical Composition									Physical Properties (Mandatory requirement)							
	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	Tensile strength	Yield Strength	Elong. %	Reduction of area %	Impact Values		Test Temp	BHN
				Max	Max					PSK(Kg/mm ²)	PSI(Kg/MM ²)			Min	Average			oF (oC)
A 105	0.35 Max	0.35 Max	0.60 1.05	0.035	0.040	0.40 Max	0.30 Max	0.12 Max		70000 (49.3)	36000 (25.35)	22	30				
A 350 LF1	0.30 Max	0.15 0.30	1.35 Max	0.035	0.040					60000 to 85000 (42.25 to 59.86)	36000 (21.13)	25	38	10 (14)	13 (18)	-20 (-28.9)	197 Max
A350 LF2	0.30 Max	0.15 0.30	1.35 Max	0.035	0.040					70000 to 95000 (49.3 to 66.9)	36000 (25.35)	22	30	12 (16)	15 (20)	-50(-45.6)	197 Max
A350LF3	0.20 Max	0.20 0.35	0.90 Max	0.035	0.040	3.25 3.75				70000 to 95000 (49.3 to 66.9)	37500 (26.4)	22	35	12 (16)	15 (20)	-150(-101.1)	197 Max
A182F1	0.28 Max	0.15 0.35	0.60 0.90	0.045	0.045			0.44 0.65		70000 (49.3)	40000 (28.17)	20	30	-	-	-	143 192
A182F12	0.10 0.20	0.10 0.60	0.30 0.80	0.040	0.040		0.80 1.25	0.44 0.65		70000 (49.3)	40000 (28.17)	20	30	-	-	-	143 207
A182F11	0.10 0.20	0.50 1.00	0.30 0.80	0.040	0.040		1.00 1.50	0.44 0.65		70000 (49.3)	40000 (28.17)	20	30	-	-	-	143 207
A182F22	0.15 Max	0.50 Max	0.30 0.60	0.040	0.040		2.02 2.50	0.87 1.13		75000 (52.8)	45000 (31.7)	20	30	-	-	-	156 207
A182F5	0.15 Max	0.50 Max	0.30 0.60	0.030	0.030	0.50 Max	4.0 6.0	0.44 0.65		70000 (49.3)	40000 (28.17)	20	35	-	-	-	143 217
A182F304	0.08 Max	1.00 Max	2.00 Max	0.040	0.030	8.00 11.00	18.00 20.00			75000 (52.8)	30000 (21.13)	30	50	-	-	-	-
A182F304L	0.035 Max	1.00 Max	2.00 Max	0.040	0.030	8.00 13.00	18.00 20.00			70000 (49.3)	25000 (17.6)	30	50	-	-	-	-
A182F316	0.08 Max	1.00 Max	2.00 Max	0.045	0.030	10.00 14.00	16.00 18.00	2.00 3.00		75000 (52.8)	30000 (21.33)	30	50	-	-	-	-
A182F316L	0.035 Max	1.00 Max	2.00 Max	0.040	0.030	10.00 15.00	16.00 18.00	2.00 3.00		70000 (49.3)	25000 (17.6)	30	50	-	-	-	-
A182F321	0.08 Max	1.00 Max	2.00 Max	0.040	0.030	9.00 12.00	17.00 Min			75000 (52.8)	30000 (21.33)	30	50	-	-	-	-
A182F316 Ti	0.08 Max	1.00 Max	2.00 Max	0.040	0.030	10.00 14.00	16.00 18.00	2.00 3.00		75000 (52.8)	30000 (21.13)	30	50	-	-	-	-

a) Grade F321 Ti shall have, Ti not less than 5 Times of C and not more than 0.70%

1 Facings

Required tolerances for various flange and flanged fitting facings are as follows:

- 1.1 Inside and outside diameter of large and small tongue and Groove and female, ± 0.5 mm
- 1.2 Outside diameter, 2.0 mm Raised face, ± 1.0 mm
- 1.3 Outsidediameter, 7.0 mm Raised face, ± 0.5 mm

2. Flange Thickness

Required tolerances for flange thickness are as follows.

- NPS ≤ 18 + 3.0,-0.0 MM
- NPS ≥ 20 + 5.0,-0.0 MM

The plus tolerances is applicable to bolting bearing surfaces whether as forged, as cast, spot-faced or back-faced.

3 Welding End Flange Ends and Hubs

3.1 Outside Diameter. Required tolerances for the nominal outside diameter dimension A of figs. Welding end of welding neck flanges are as follow:

- NPS ≤ 5 + 2.0,-1.0 mm
- NPS ≥ 6 + 4.0,-1.0 mm

3.2 Inside Diameter. Required tolerances for the nominal inside diameter of welding ends of welding neck flanges and smaller bore of socket welding flanges (dimension B in the referenced figures) are as follows.

- NPS ≤ 1 + 1.0 mm
- 12 \leq NPS ≤ 18 + 1.5 mm
- NPS ≥ 20 , + 3.0, 1.5 mm

3.3 Hub Thickness. Despite the tolerances specified for dimensions A and B, the thickness of the hub at the welding end shall not be less than 87½% of the nominal thickness of the Pipe, having an under tolerance of 2.5% for the pipe wall thickness to which the flange is to be attached, or the minimum wall thickness as specified by the purchaser.

4.0 Length Through Hub on Welding Neck Flanges

The required tolerances for the length through hubs on welding neck flanges are as follows.

- NPS ≤ 4 ± 1.5 mm
- 5 \leq NPS ≤ 10 + 1.5, -3.0mm
- NPS ≥ 12 , + 3.0, mm -5.0 mm

5.0 Flange Bore

5.1 Lapped, Slip-on, and Socket Welding Flange Bores.

The required tolerances for lapped, slip-on and socket welding flange bores are as follows.

- NPS ≤ 10 + 1.0, -0.0 mm
- NPS ≥ 12 + 1.5, -0.0 mm

5.2 Counterbores, Threaded Flanges. The required tolerances for threaded flange counterbores are as follows.

- NPS ≤ 10 + 1.0, -0.0 mm
- NPS ≥ 12 + 1.5, -0.0 mm

5.3 Counterbores, Socket Welding Flanges. The required tolerances for socket and counterbores is as follows.

- $\frac{1}{2} \leq$ NPS ≤ 3 ± 0.25 mm

6.0 Drilling and Facing

6.1 Bolt Circle Diameter. The required tolerance for all bolt circle diameters is ± 1.5 mm

6.2 Bolt Hole to Bolt Hole. The required tolerance for the center-to-center of adjacent bolt holes is ± 0.8 mm

6.3 Bolt Circle Concentricity. The required tolerances for concentricity between the flange bolt circle diameter and machined facing diameters are as follows.

- NPS $\leq 2\frac{1}{2}$ " 0.8 mm
- NPS ≥ 3 " 1.5 mm

British Standard Pipe Flanges DIMENSION OF PIPE FLANGES AS PER TABLE BS-10

Table D for working Steam Pressure upto 50 lbs per Sq. Inch.

Table E for working Steam Pressure 50 lb and upto 100 lb per Sq. Inch.

Nominal Pipe Size	O. D. of Pipe	Dia. of Flange	Dia. of Solt r-i le	No. of Solt	Dia. of Bolt	Thickness
1/2"	27/32"	3.3/4"	2.5/8"	4	1/2"	3/16"
3/4"	1.1/16"	4"	2.7/8"	4	1/2"	3/16"
1 "	1.11/32"	4.1/2"	3.1/4"	4	1/2"	3/16"
1.1/4"	1.11/16"	4.3/4"	3.7/16"	4	1/2"	1/4"
1.1/2"	1.29/32"	5.1/4"	3.7/8"	4	1/2"	1/4"
2"	2.3/8"	6"	4.1/2"	4	5/8"	5/16"
2.1/2"	3"	6.1/2"	5"	4	5/8"	5/16"
3"	3.1/2"	7.1/4"	5.3/4"	4	5/8"	3/8"
3.1/2"	4"	8"	6.1/2"	4	5/8"	3/8"
4"	4.1/2"	8.1/2"	7"	4	5/8"	3/8"
5"	5.1/2"	10"	8.1/4"	8	5/8"	1/2"
6"	6.1/2"	11"	9.1/4"	8	5/8"	1/2"
7"	7.1/2"	12"	10.1/4"	8	5/8"	1/2"
8"	8.5/8"	13.1/4"	11.1/2"	8	5/8"	1/2"
9"	9.5/8"	14.1/2"	12.3/4"	8	5/8"	5/8"
10"	10.3/4"	16"	14"	8	3/4"	5/8"
12"	12.3/4"	18"	16"	12	3/4"	5/8"
14"	14"	20.3/4"	18.1/2"	12	7/8"	3/4"
16"	16"	22.3/4"	20.1/2"	12	7/8"	3/4"
18"	18"	25.1/4"	23"	12	7/8"	7/8"
20"	20"	27.3/4"	25.1/4"	16	7/8"	1"
24"	24"	32.1/2"	29.3/4"	16	1"	1.1/8"

Nominal Pipe Size	Dia. of Flange	Dia. of Solt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	3.3/4"	2.5/8"	4	1/2"	1/4
3/4"	4"	2.7/8"	4	1/2"	1/4
1 "	4.1/2"	3.1/4"	4	1/2"	9/32
1.1/4"	4.3/4"	3.7/16"	4	1/2"	5/16
1.1/2"	5.1/4"	3.7/8"	4	1/2"	11/32
2"	6"	4.1/2"	4	5/8"	3/8
2.1/2"	6.1/2"	5"	4	5/8"	13/32
3"	7.1/4"	5.3/4"	4	5/8"	7/16
3.1/2"	8"	6.1/2"	8	5/8"	15/32
4"	8.1/2"	7"	8	5/8"	1/2
5"	10"	8.1/4"	8	5/8"	9/16
6"	11"	9.1/4"	8	3/4"	11/16
7"	12"	10.1/4"	8	3/4"	3/4
8"	13.1/4"	11.1/2"	8	3/4"	3/4
9"	14.1/2"	12.3/4"	12	3/4"	13/16
10"	16"	14"	12	3/4"	7/8
12"	18"	16"	12	7/8"	1
14"	20.3/4"	18.1/2"	12	7/8"	1
16"	22.3/4"	20.1/2"	12	7/8"	1
18"	25.1/4"	23"	16	7/8"	1.1/8
20"	27.3/4"	25.1/4"	16	7/8"	1.1/4
24"	32.1/2"	29.3/4"	16	1"	1.1/2

Table F for working Pressure above 100 and upto 150 lbs per Sq. Inch.

Table H for working Pressure above 150 and upto 550 lbs per Sq. Inch.

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	3.3/4"	2.5/8"	4	1/2"	3/8"
3/4"	4"	2.7/8"	4	1/2"	3/8"
1 "	4.3/4"	3.7/16"	4	5/8"	3/8"
1.1/4"	5.1/4"	3.7/8"	4	5/8"	1/2"
1.1/2"	5.1/2"	4.1/8"	4	5/8"	1/2"
2"	6.1/2"	5"	4	5/8"	5/8"
2.1/2"	7.1/4"	5.3/4"	8	5/8"	5/8"
3"	8"	6.1/2"	8	5/8"	5/8"
3.1/2"	8.1/2"	7"	8	5/8"	3/4"
4"	9"	7.1/2"	8	5/8"	3/4"
5"	11"	9.1/4"	8	5/8"	7/8"
6"	12"	10.1/4"	12	3/4"	7/8"
7"	13.1/4"	11.1/2"	12	3/4"	7/8"
8"	14.1/2"	12.3/4"	12	3/4"	1"
9"	16"	14"	12	7/8"	1"
10"	17"	15"	12	7/8"	1"
12"	19.1/4"	17.1/4"	16	7/8"	1.1/8"
14"	21.3/4"	19.1/2"	16	1"	1.1/4"
16"	24"	21.3/4"	20	1"	1.1/4"
18"	26.1/2"	24"	20	1.1/8"	1.3/8"
20"	29"	26.1/2"	24	1.1/8"	1.1/2"
24"	33.1/2"	30.3/4"	24	1.1/4"	1.5/8"

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	4.1/2"	3.1/4"	4	5/8"	1/2"
3/4"	4.1/2"	3.1/4"	4	5/8"	1/2"
1 "	4.3/4"	3.7/16"	4	5/8"	9/16"
1.1/4"	5.1/4"	3.7/8"	4	5/8"	11/16"
1.1/2"	5.1/2"	4.1/8"	4	5/8"	11/16"
2"	6.1/2"	5"	4	5/8"	3/4"
2.1/2"	7.1/4"	5.3/4"	8	5/8"	3/4"
3"	8"	6.1/2"	8	5/8"	7/8"
3.1/2"	8.1/2"	7"	8	5/8"	7/8"
4"	9"	7.1/2"	8	5/8"	1"
5"	11"	9.1/4"	8	3/4"	1.1/8"
6"	12"	10.1/4"	12	3/4"	1.1/8"
7"	13.1/4"	11.1/2"	12	3/4"	1.1/4"
8"	14.1/2"	12.3/4"	12	3/4"	1.1/4"
9"	16"	14"	12	7/8"	1.3/8"
10"	17"	15"	12	7/8"	1.3/8"
12"	19.1/4"	17.1/4"	16	7/8"	1.1/2"
14"	21.3/4"	19.1/2"	16	1"	1.5/8"
16"	24"	21.3/4"	20	1"	1.3/4"
18"	26.1/2"	24"	20	1.1/8"	1.7/8"
20"	29"	26.1/2"	24	1.1/8"	2"
24"	33.1/2"	30.3/4"	24	1.1/4"	2.1/4

British Standard Pipe Flanges

Table J: For working pressure above 250 lb and upto 250 lb per Sq. Inch. Table K: For working pressure above 350 lb and upto 450 lb per Sq. Inch

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness	Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	4.1/2"	3.1/4"	4	5/8"	5/8"	1/2"	4.1/2"	3.1/4"	4	5/8"	3/4"
3/4"	4.1/2"	3.1/4"	4	5/8"	5/8"	3/4"	4.1/2"	3.1/4"	4	5/8"	3/4"
1"	4.3/4"	3.7/16"	4	5/8"	3/4"	1"	4.3/5"	3.3/4"	4	5/8"	7/8"
1.1/4"	5.1/4"	3.7/8"	4	5/8"	3/4"	1.1/4"	5.1/4"	3.7/8"	4	5/8"	7/8"
1.1/2"	5.1/2"	4.1/8"	4	5/8"	7/8"	1.1/2"	5.1/6"	4.1/2"	4	3/4"	1"
2"	6.1/2"	5"	4	3/4"	1"	2"	6.1/2"	5"	8	5/8"	1"
2.1/2"	7.1/4"	5.3/4"	8	3/4"	1"	2.1/2"	7.1/4"	5.3/4"	8	3/4"	1.1/8"
3"	8"	6.1/2"	8	3/4"	1.1/4"	3"	8"	6.1/2"	8	3/4"	1.1/4"
3.1/2"	8.1/2"	7"	8	3/4"	1.1/4"	3.1/2"	9"	7.1/4"	8	7/8"	1.1/4"
4"	9"	7.1/2"	8	3/4"	1.3/8"	4"	9.1/2"	7.3/4"	8	7/8"	1.3/8"
5"	11"	9.1/4"	8	7/8"	1.1/2"	5"	11"	9.1/4"	12	7/8"	1.5/8"
6"	12"	10.1/4"	12	7/8"	1.1/2"	6"	12"	10.1/4"	12	7/8"	1.5/8"
7"	13.1/4"	11.1/2"	12	7/8"	1.5/8"	7"	13.1/2"	11.1/2"	12	1"	1.3/4"
8"	14.1/2"	12.3/4"	12	7/8"	1.5/8"	8"	14.1/2"	12.1/2"	12	1"	1.7/8"
9"	16"	14"	12	1"	1.3/4"	9"	16"	14"	16	1"	2"
10"	17"	15"	12	1"	1.7/8"	10"	17"	15"	16	1"	2"
12"	19.1/4"	17.1/4"	16	1"	2"	12"	19.1/4"	17"	16	1.1/8"	2.1/4"
14"	21.3/4"	19.1/2"	16	1.1/8"	2.1/8"	14"	22.1/2"	20"	16	1.1/4"	2.3/8"
16"	24"	21.3/4"	20	1.1/8"	2.1/4"	16"	24.3/4"	22.1/4"	20	1.1/4"	2.5/8"
18"	26.1/2"	24"	20	1.1/4"	2.3/8"	18"	26.1/4"	25.3/4"	20	1.3/8"	3"
20"	29"	26.1/2"	24	1.1/4"	2.1/2"	20"	31"	28	20	1.1/21"	3.1/4"
24"	33.1/2"	30.3/4"	24	1.3/8"	2.3/4"						

For 1/2" and 5/8" Bolts the diameters of the holes 1/16" in Larger than the bolts
For 3/4" bolts and sizes above, the diameter shall be 1/8" in Larger than the Bolts.

BRITISH STANDARD PIPE FLANGES PRESSURE-TEMPERATURE RATINGS FOR CARBON STEEL FLANGES TEMPERATURE

Table	°F 0-450	500	550	600	650	700	750	800	825	850	875	900	Max. Hydraulic Test Pressure
	-17.8 °C to 232.2	260.0	287.8	315.6	343.3	371.1	399	427	441	454	468	482	
D	100	95	85	80	70	65	55	50				-	150
E	200	185	170	155	140	130	115	100				-	300
F	300	280	255	235	215	195	170	150	-	-	-	-	450
H	500	465	430	395	355	320	285	250	215	180	150	115	750
J	700	650	600	550	500	450	400	350	300	255	210	160	1050
K	900	835	770	705	645	580	515	450	390	325	265	205	1350
R	1200	1115	1030	945	855	770	685	600	520	435	355	275	1800
S	1800	1670	1545	1415	1285	1155	1030	900	780	655	535	415	2700
T	2800	2600	2400	2200	2000	1800	1600	1400	1210	1026	835	645	4200

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KESHAV INDUSTRIES

Address: 1007/B1, TAPSVINAGAR SOCIETY,
STATION ROAD, KHAMBHAT - 388620

Phone No.: 7874499146

Email : keshavindustries1309@gmail.com