



PUNJAB HYDRAULICS PVT.LTD.

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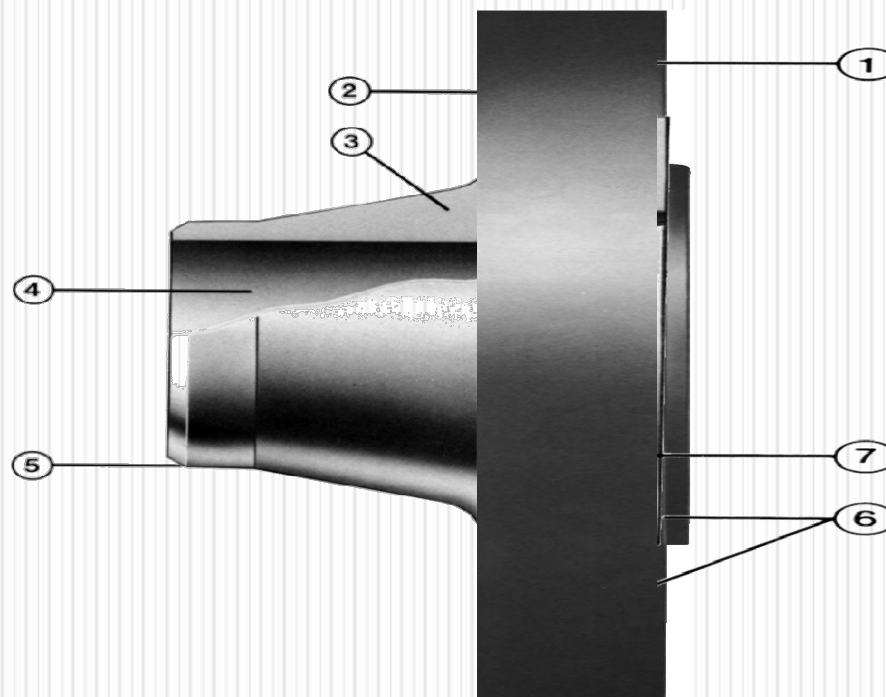
Contact Number : +913346031940

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PRODUCTS CATALOGUES OF FLANGES

1. Holes accurately drilled for ease of assembly
2. Spot facing ensures seating of fasteners true and square
3. Grain flow controlled for maximum strength.
4. Smooth accurate bore for unrestricted flow.
5. Machined bevel and land facilitate good welding.
6. All faces machined within tolerances to ensure true alignment.
7. Full identification of size, pressure class, material and heat code.



Company Info :

A big organization in Kolkata, Dealing in stainless steel Flanges for Oil refineries , Gas Companies and drifters the most efficient and reliable choice for customers around the India.

Our company founded 1994. Products have been produced with a commitment to designing methods and solutions focused on productivity, reliability and safety.

With a network of 150 dealers around the India and 600 workers in our company. If you are interested for dealer of Flanges, kindly contact to our office.



MATERIAL AND MANUFACTURING STANDARDS :

The manufacturing of forged steel flanges is governed by industry standards written by (1) the American Society for Testing and Materials (ASTM); (2) the American National Standards Institute (ANSI); (3) the Manufacturer's Standardization Society of the Valve and Fittings Industry (MSS); (4) the American Petroleum Institute (API); (5) the Canadian Standards Association (CSA); (6) the American Society of Mechanical Engineers (ASME); and (7) the Pipe Fabrication Institute (PFI). They cover specifications for materials, methods of manufacture, dimensions and quality control procedures. PHPL forged steel flanges conform to all applicable standards.

ASTM SPECIFICATION :

ASTM specifications are, basically, materials specifications. They regulate approved raw materials from which flanges can be made - ingots, or blooms, billets, slabs or bars. In addition, they govern the methods of manufacture, quality control procedures and markings of forged steel flanges. ASTM specifications are divided into five categories:

A105 - Carbon grades for high temperature service

A181 - Carbon grades for general service

•A182 - Alloy and stainless grades for high temperature service A350 - Carbon and alloy grades for low temperature service

* PHPL flanges are available in a wide range of alloy and stainless steels, including grades F304, F304L, F316, F316L. Please refer to PHPL catalogue "Stainless Steel Flanges" for the popular Classes 150 and 300 (PN 20 and 50).

MSS , API , AWWA , ANSI AND CSA STANDARDS :

ANSI, MSS and API standards govern flange dimensions and tolerances. ASME/ANSI B16.5, titled “Steel Pipe Flanges and Flanged Fittings”, is the basic standard. It covers forged steel flanges, sizes NPS 1/2 (DN 15) through NPS 24 (DN 600). CSA standard CAN3-Z245 12-M96 covers the manufacture, dimensions, tolerances and material requirements for pipe line flanges. ASME/ANSI B16.36 covers Orifice flanges. The following MSS, API and AWWA standards are written to supplement B16.5:

MSS SP-6:	Flange facings
MSS SP-9:	Spot facing for bronze, iron and steel flanges
MSS SP-25:	Marking of flanges
MSS SP-39:	Bolts and nuts for flanges
API6A:	Wellhead equipment
AWWA C207:	Hub flanges

The following codes are not flange specifications, but they influences the manufacture of forged steel flanges:

ASME:	Boiler and Pressure Vessel Code
ASME/ANSI B31.1:	Power Piping
ASME/ANSI B31.3:	Petroleum and refinery piping
ASME/ANSI B31.4:	Liquid petroleum transportation piping systems
ASME/ANSI B31.5:	Refrigeration piping
ASME/ANSI B31.8:	Gas transmission and distribution piping systems
ANSI/ASME B36.10M:	Standard for wrought steel pipe
ANSI/ASME B36.19M:	Standard for stainless steel pipe

ANSI/ASME B16.47: Large diameter pipe line flanges NPS 22 (DN 550) and NPS 26 (DN 650) through NPS 36 (DN900)

METRIC EQUIVALENTS :

The International System (SI) metric equivalent of British units are shown throughout this catalogue.

NPS (Nominal Pipe Size) = DN* (Nominal Diameter)

Operating Pressure Class = PN* (Pressure Number)

1 inch = 25.4 millimetres

1 pound, weight = 0.4536 kilograms

1 pound, pressure = 0.06895 bars

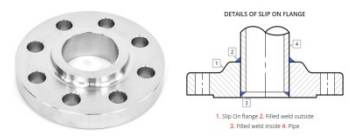
1 p.s.i., stress = 0.006895 megapascals (MPa)

*From the SI designations, Diamètre Nominal and Pression Nominale.

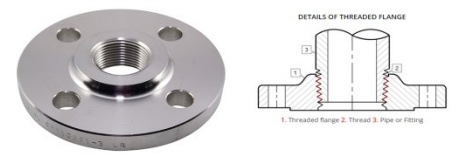




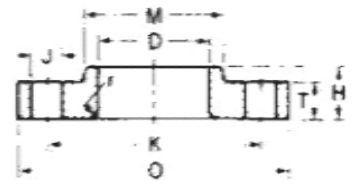
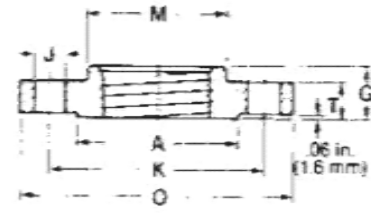
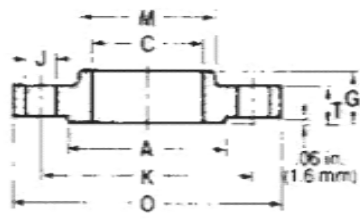
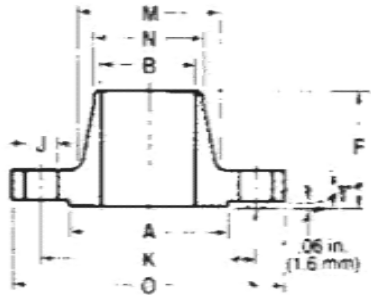
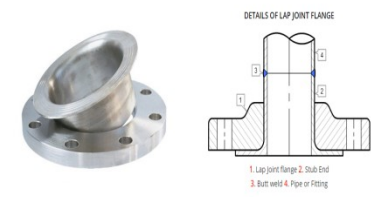
SLIP ON FLANGES



THREADED FLANGES



LAP JOINT FLANGES



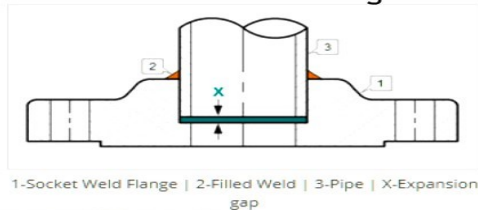
NPS	DN	FLANGE OUTSIDE DIAMETER	FLANGE ² THICKNESS MIN.	RAISED FACE DIA.	BORE			LENGTH TRU HUB ²		
					WELDING NECK & SOCKET WELDING	SLIP-ON & SOCKET WELD SOCKET MIN.	LAP JOINT MIN.	WELDING NECK	SLIP-ON, THREADED & SOCK. WELD	LAP JOINT
					B ³	C	D	F	G	H
1/2	15	3.50 89	.44 11.5	1.38 34.9	.62 15.8	.88 22.2	.90 22.9	1.88 47.6	.62 16	.62 16
3/4	20	3.88 98	.50 13.0	1.69 42.9	.82 20.8	1.09 27.8	1.11 28.2	2.06 52.4	.62 16	.62 16
1	25	4.25 108	.56 14.5	2.00 50.8	1.05 26.7	1.36 34.5	1.38 34.9	2.19 55.6	.69 17	.69 17
1 1/4	32	4.62 117	.62 16.0	2.50 63.5	1.38 35.1	1.70 43.2	1.72 43.7	2.25 57.1	.81 21	.81 21
1 1/2	40	5.00 127	.69 17.5	2.88 73.0	1.61 40.9	1.95 49.5	1.97 50.0	2.44 61.9	.88 22	.88 22
2	50	6.00 152	.75 19.5	3.62 92.1	2.07 52.6	2.44 61.9	2.46 62.5	2.50 63.5	1.00 25	1.00 25
2 1/2	65	7.00 178	.88 22.5	4.12 104.8	2.47 62.7	2.94 74.6	2.97 75.4	2.75 69.8	1.12 29	1.12 29
3	80	7.50 191	.94 24.0	5.00 127.0	3.07 78.0	3.57 90.7	3.60 91.4	2.75 69.8	1.19 30	1.19 30
3 1/2	90	8.50 216	.94 24.0	5.50 139.7	3.55 90.2	4.07 103.4	4.10 104.1	2.81 71.4	1.25 32	1.25 32
4	100	9.00 229	.94 24.0	61.9 157.2	4.03 102.4	4.57 116.1	4.60 116.8	3.00 76.2	1.31 33	1.31 33
5	125	10.00 254	.94 24.0	7.31 185.7	5.05 128.3	5.66 143.7	5.69 144.5	3.50 88.9	1.44 36	1.44 36
6	150	11.00 279	1.00 25.5	8.50 215.9	6.07 154.2	6.72 170.7	6.75 171.4	3.50 88.9	1.56 40	1.56 40
8	200	13.50 343	1.12 29.0	10.62 269.9	7.98 202.7	8.72 221.5	8.75 222.2	4.00 101.6	1.75 44	1.75 44
10	250	16.00 406	1.19 30.5	12.75 323.8	10.02 254.5	10.88 276.2	10.92 277.4	4.00 101.6	1.94 49	1.94 49
12	300	19.00 483	1.25 32.0	15.00 381.0	12.00 304.8	12.88 327.0	12.92 328.2	4.50 114.3	2.19 56	2.19 56
14	350	21.00 535	1.38 35.0	16.25 412.8	To be specified by purchaser	14.14 359.2	14.18 360.2	5.00 127.0	2.25 57	3.12 79
16	400	23.50 595	1.44 37.0	18.50 469.9		16.16 410.4	16.19 411.2	5.00 127.0	2.50 64	3.44 87
18	450	25.00 635	1.56 40.0	21.00 533.4		18.18 461.8	18.20 462.3	5.50 139.7	2.69 68	3.81 97
20	500	27.50 700	1.69 43.0	23.00 584.2		20.20 513.1	20.25 514.3	5.69 144.5	2.88 73	4.06 103
24	600	32.00 815	1.88 48.0	27.25 692.2		24.25 615.9	24.25 615.9	6.00 152.4	3.25 83	4.38 111

1. Socket Welding Flanges, sizes NPS 3 1/2 (DN 90) and larger are not covered by ASME/ANSI B16.5.
2. includes .06" (1.6 mm) raised face.
3. These dimensions correspond to inside diameters of pipe as given in ANSI/ASME B36.10M for Standard Wall Pipe. Thickness of Standard Wall is the same as Schedule 40 in size NPS 10 (DN 250) and smaller.

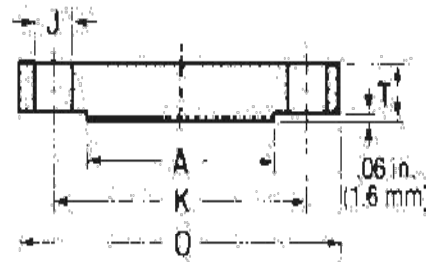
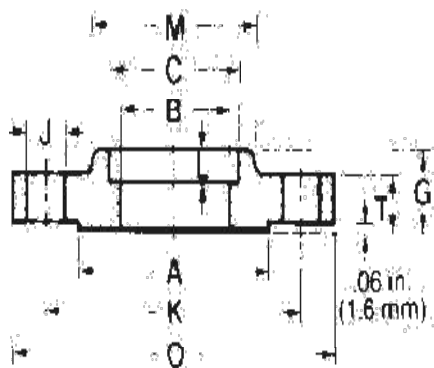
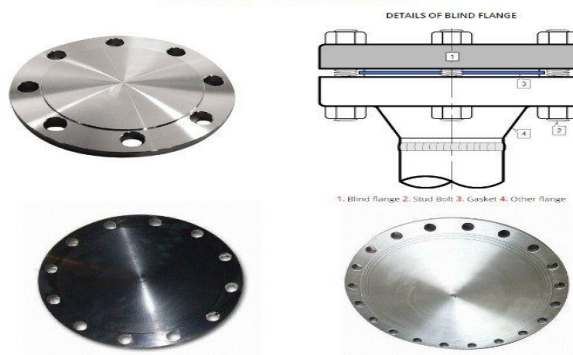
CLASS 150 (PN20) FLANGES

FORGED STEEL ASTM A-105 ¹ASME/ANSI B16.5

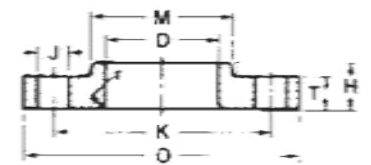
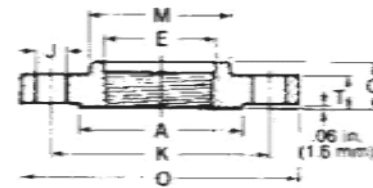
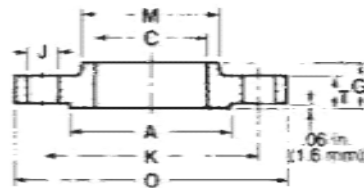
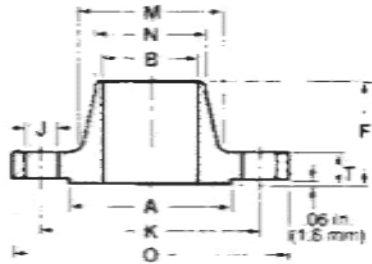
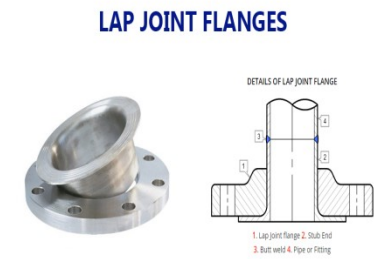
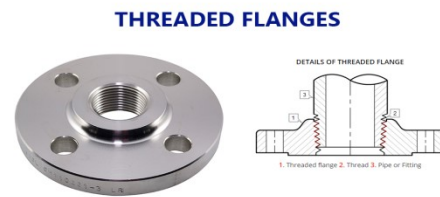
Socket Weld Flanges



BLIND FLANGES



NPS	DRILLING			DEPTH ¹ OF SOCKET	DIAMETER OF HUB		LAP JOINT FILLET RADIUS	APPROXIMATE WEIGHT			
	NO. OF	DIA. OF	DIA. OF		AT	AT		WELDING	SLIP-ON, THREADED & SOCKET WELDING ¹	BLIND	LAP
DN	HOLES	HOLES	CIRCLE	L	BASE	CHAMFER	r	NECK	WELDING ¹	BLIND	JOINT
1/2	4	.62	2.38	.38	1.19	.84	.12	2	1	1	1
15	4	16	60.3	10	30.2	21.4	3	0.9	.05	0.5	0.5
3/4	4	.62	2.75	.44	1.50	1.05	.12	2	2	2	2
20	4	16	69.8	11	38.1	26.6	3	0.9	0.9	0.9	0.9
1	4	.62	3.12	.50	1.94	1.32	.12	3	2	2	2
25	4	16	79.4	13	49.2	33.5	3	1.4	0.9	0.9	0.9
1 1/4	4	.62	3.50	.56	2.31	1.66	.19	3	3	3	3
32	4	16	88.9	14	58.7	42.1	5	1.4	1.4	1.4	1.4
1 1/2	4	.62	3.88	.62	2.56	1.90	.25	4	3	4	3
40	4	16	98.4	16	65.1	48.3	6	1.8	1.4	1.8	1.4
2	4	.75	4.75	.69	3.06	2.38	.31	6	5	5	5
50	4	20	120.6	17	77.6	60.4	8	2.7	2.3	2.3	2.3
2 1/2	4	.75	5.50	.75	3.56	2.88	.31	8	7	7	7
65	4	20	139.7	19	90.5	73.0	8	3.6	3.2	3.2	3.2
3	4	.75	6.00	.81	4.25	3.50	.38	10	8	9	8
80	4	20	152.4	21	107.9	88.9	10	4.5	3.6	4.1	3.6
3 1/2	8	.75	7.00	-	4.81	4.00	.38	12	11	13	11
90	8	20	177.8	-	122.2	101.6	10	5.4	5.0	5.9	5.0
4	8	.75	7.50	-	5.31	4.50	.44	15	13	17	13
100	8	20	190.5	-	134.9	114.3	11	6.8	5.9	7.7	5.9
5	8	.88	8.50	-	6.44	5.56	.44	19	15	20	15
125	8	23	215.9	-	163.5	141.3	11	8.6	6.8	9.1	6.8
6	8	.88	9.50	-	7.56	6.63	.50	24	19	26	19
150	8	23	241.3	-	192.1	168.3	13	10.9	8.6	11.8	8.6
8	8	.88	11.75	-	9.69	8.63	.50	39	30	45	30
200	8	23	298.4	-	246.1	219.1	13	17.7	13.6	20.4	13.6
10	12	1.00	14.25	-	12.00	10.75	.50	52	43	70	43
250	12	26	361.9	-	304.8	273.0	13	23.6	19.5	31.8	19.5
12	12	1.00	17.00	-	14.38	12.75	.50	80	64	110	64
300	12	26	431.8	-	365.1	323.8	13	36.3	29.0	49.9	29.0
14	12	1.12	18.75	-	15.75	14.00	.50	110	90	140	105
350	12	29	476.2	-	400.0	355.6	13	50.0	41.0	63.5	47.6
16	16	1.12	21.25	-	18.00	16.00	.50	140	98	180	140
400	16	29	539.7	-	457.2	406.4	13	64.0	44.5	81.6	63.5
18	16	1.25	22.75	-	19.88	18.00	.50	150	130	220	160
450	16	32	577.8	-	504.8	457.2	13	68.0	59.0	99.8	72.6
20	20	1.25	25.00	-	22.00	20.00	.50	180	165	285	195
500	20	32	635.0	-	558.8	508.0	13	81.6	75.0	129.0	88.5
24	20	1.38	29.50	-	26.12	24.00	.50	260	220	430	275
600	20	35	749.3	-	663.6	609.6	13	118	99.8	195.0	125.0



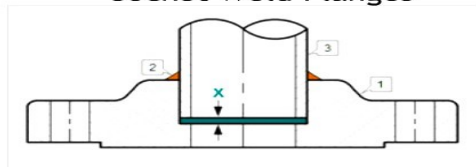
NPS	DN	FLANGE OUTSIDE DIAMETER	FLANGE ² THICKNESS MIN.	RAISED FACE DIA.	BORE				LENGTH THRU HUB ²		
					WELDING NECK & SOCKET WELDING	SLIP-ON & SOCKET WELD SOCKET MIN.	LAP JOINT MIN.	THREADED COUNTER- BORE MIN.	WELDING NECK	SLIP-ON, THREADED & SOCK. WELD	LAP JOINT
					B	C	D	E	F	G	H
1/2	15	3.75 95	.56 14.5	1.38 34.9	.62 15.8	.88 22.2	.90 22.9	.93 23.5	2.06 52.4	.88 22	.88 22
3/4	20	4.62 117	.62 16.0	1.69 42.9	.82 20.8	1.09 27.8	1.11 28.2	1.14 29.0	2.25 57.1	1.00 25	1.00 25
1	25	4.88 124	.69 17.5	2.00 50.8	1.05 26.6	1.36 34.5	1.38 34.9	1.41 36.0	2.44 61.9	1.06 27	1.06 27
1 1/4	32	5.25 133	.75 19.5	2.50 63.5	1.38 35.1	1.70 43.3	1.72 43.7	1.75 44.5	2.56 65.1	1.06 27	1.06 27
1 1/2	40	6.12 156	.81 21.0	2.88 73.0	1.61 40.9	1.95 49.6	1.97 50.0	1.99 50.5	2.69 68.3	1.19 30	1.19 30
2	50	6.50 165	.88 22.5	3.62 92.1	2.07 52.6	2.44 61.9	2.46 62.5	2.50 63.5	2.75 69.8	1.31 33	1.31 33
2 1/2	65	7.50 191	1.00 25.5	4.12 104.8	2.47 62.7	2.94 74.6	2.97 75.4	3.00 76	3.00 76.2	1.50 38	1.50 38
3	80	8.25 210	1.12 29.0	5.00 127.0	3.07 77.9	3.57 90.7	3.60 91.4	3.63 92	3.12 79.4	1.69 43	1.69 43
3 1/2	90	9.0 229	1.19 30.5	5.50 139.7	3.55 90.1	4.07 103.4	4.10 104.1	4.13 105	3.19 81.0	1.75 44	1.75 44
4	100	10.0 254	1.25 32.0	6.19 157.2	4.03 102.3	4.57 116.1	4.60 116.8	4.63 118	3.38 85.7	1.88 48	1.88 48
5	125	11.0 279	1.38 35.0	7.31 185.7	5.05 128.2	5.66 143.7	5.69 144.5	5.69 145	3.88 98.4	2.00 51	2.00 51
6	150	12.5 318	1.44 37.0	8.50 215.9	6.07 154.1	6.72 170.7	6.75 171.4	6.75 171	3.88 98.4	2.06 52	2.06 52
8	200	15.0 381	1.62 41.5	10.62 269.9	7.98 202.7	8.72 221.5	8.75 222.2	8.75 222	4.38 111.1	2.44 62	2.44 62
10	250	17.5 445	1.88 48.0	12.75 323.8	10.02 254.5	10.88 276.2	10.92 277.4	10.88 276	4.62 117.5	2.62 67	3.75 95
12	300	20.5 520	2.00 51.0	15.00 381.0	12.00 304.8	12.88 327.0	12.92 328.2	12.94 329	5.12 130.2	2.88 73	4.00 102
14	350	23.0 585	2.12 54.0	16.25 412.8	To be specified by purchaser	14.14 359.2	14.18 360.2	14.19 360	5.62 142.9	3.00 76	4.38 111
16	400	25.5 650	2.25 57.5	18.50 469.9		16.16 410.4	16.19 411.2	16.19 411	5.75 146.0	3.25 83	4.75 121
18	450	28.0 710	2.38 60.5	21.00 533.4		18.18 461.8	18.20 462.3	18.19 462	6.25 158.7	3.50 89	5.12 130
20	500	30.5 775	2.50 63.5	23.00 584.2		20.20 513.1	20.25 514.3	20.19 513	6.38 161.9	3.75 95	5.50 140
24	600	36.0 915	2.75 70.0	27.25 692.2		24.25 615.9	24.25 615.9	24.19 614	6.62 168.3	4.19 106	6.00 152

1. Socket Welding Flanges, sizes NPS 3 1/2 (DN 90) and larger are not covered by ASME/ANSI B16.5.
2. Includes .06" (1.6 mm) raised face.
3. These dimensions correspond to inside diameters of pipe as given in ANSI/ASME B36.10M for Standard Wall Pipe. Thickness of Standard Wall is the same as Schedule 40 in size NPS 10 (DN 250) and smaller.

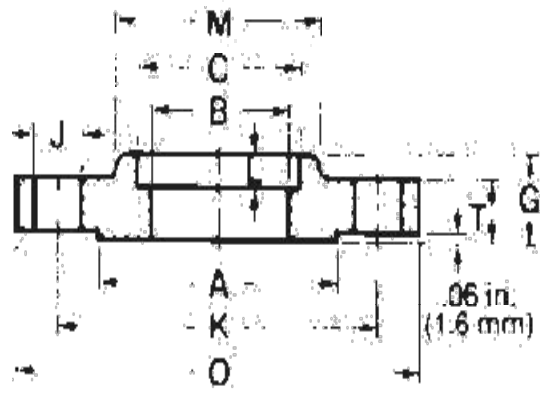
CLASS 300 (PN50) FLANGES

FORGED STEEL ASTM A-105 ¹ASME/ANSI B16.5

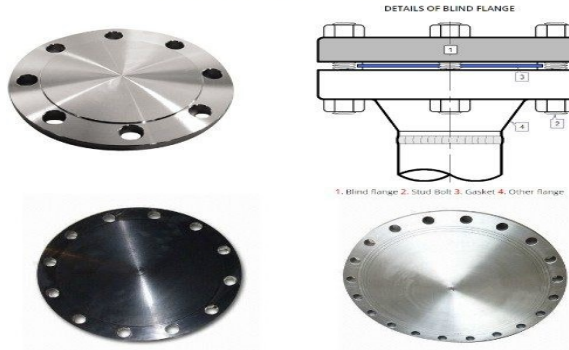
Socket Weld Flanges



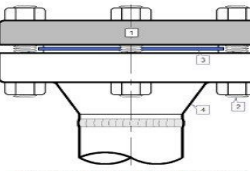
1-Socket Weld Flange | 2-Filled Weld | 3-Pipe | X-Expansion gap



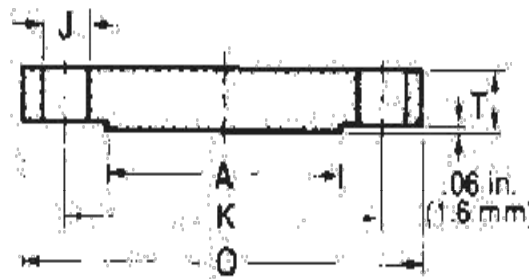
BLIND FLANGES



DETAILS OF BLIND FLANGE



1. Blind Flange 2. Stud Bolt 3. Gasket 4. Other Flange



NPS	DRILLING			DEPTH ¹ OF SOCKET	DIAMETER OF HUB		LAP JOINT FILLET RADIUS	APPROXIMATE WEIGHT			
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE		AT BASE	AT CHAMFER		WELDING NECK	SLIP-ON, THREADED & SOCKET WELDING ¹		LAP JOINT
DN		J	K	L	M	N	r				
1/2	4	.62	2.62	.38	1.50	.84	.12	2	2	2	2
15	4	16	66.7	10	38.1	21.4	3	0.9	0.9	0.9	0.9
3/4	4	.75	3.25	.44	1.88	1.05	.12	3	3	3	3
20	4	20	82.5	11	47.6	26.6	3	1.4	1.4	1.4	1.4
1	4	.75	3.50	.50	2.12	1.32	.12	4	3	3	3
25	4	.20	88.9	13	53.8	33.5	3	1.8	1.4	1.4	1.4
1 1/4	4	.75	3.88	.56	2.50	1.66	.19	5	4	4	4
32	4	20	98.4	14	63.5	42.1	5	2.3	1.8	1.8	1.8
1 1/2	4	.88	4.50	.62	2.75	1.90	.25	7	6	6	6
40	4	23	114.3	16	69.9	48.3	6	3.2	2.7	2.7	2.7
2	8	.75	5.00	.69	3.31	2.38	.31	9	7	8	7
50	8	20	127.0	17	84.1	60.3	8	4.1	3.2	3.6	3.2
2 1/2	8	.88	5.88	.75	3.94	2.88	.31	12	10	12	10
65	8	23	149.2	19	100.0	73.0	8	5.4	4.5	5.4	4.5
3	8	.88	6.62	.81	4.62	3.50	.38	15	13	16	13
80	8	23	168.3	21	117.5	88.9	10	6.8	5.9	7.3	5.9
3 1/2	8	.88	7.25	-	5.25	4.00	.38	18	17	21	17
90	8	23	184.1	-	133.3	101.6	10	8.2	7.7	9.5	7.7
4	8	.88	7.88	-	5.75	4.50	.44	25	22	27	22
100	8	23	200.0	-	146.0	114.3	11	11.3	10.0	12.2	10.0
5	8	.88	9.25	-	7.00	5.56	.44	32	28	35	28
125	8	23	234.9	-	177.8	141.3	11	14.5	12.7	15.9	12.7
6	12	.88	10.62	-	8.12	6.63	.50	42	39	50	39
150	12	23	269.9	-	206.4	168.3	13	19.0	17.7	22.7	17.7
8	12	1.00	13.0	-	10.25	8.63	.50	67	58	81	58
200	12	26	330.2	-	260.3	219.1	13	30.4	26.3	36.7	26.3
10	16	1.12	15.25	-	12.62	10.75	.50	91	81	125	91
250	16	29	387.3	-	320.7	273.0	13	41.3	36.7	56.7	41.3
12	16	1.25	17.75	-	14.75	12.75	.50	140	115	185	140
300	16	32	450.8	-	374.6	323.8	13	63.5	52.2	83.9	63.5
14	20	1.25	20.25	-	16.75	14.00	.50	180	165	250	190
350	20	32	514.3	-	425.5	355.6	13	81.6	74.8	113	86.2
16	20	1.38	22.50	-	19.00	16.00	.50	250	190	295	250
400	20	35	571.5	-	482.6	406.4	13	113	86.2	134	113
18	24	1.38	24.75	-	21.00	18.00	.50	320	250	395	295
450	24	35	628.6	-	533.4	457.2	13	145	113	179	134
20	24	1.38	27.00	-	23.12	20.00	.50	400	315	505	370
500	24	35	685.80	-	587.4	508.0	13	181	143	229	168
24	24	1.62	32.00	-	27.62	24.00	.50	580	475	790	550
600	24	42	812.80	-	701.7	609.6	13	263	215	358	249

1. Socket Welding Flanges, sizes NPS 3 1/2 (DN 90) and larger are not covered by ASME/ANSI B16.5.



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THANKS FOR YOUR VISIT!