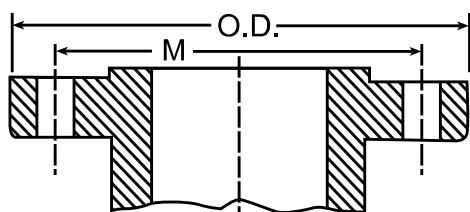


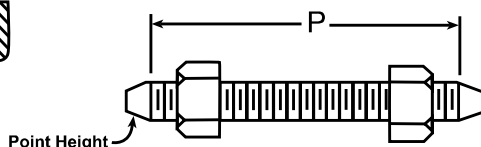
CLASS 150 STEEL PIPE FLANGES



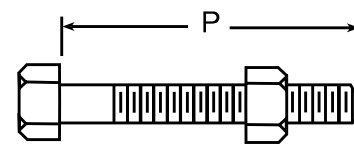
For Ring Type Joint Facing Dimension information see page 148.



Flange



Stud Bolt



Machine Bolt

Bolting Pattern and Bolt Lengths								
Pipe Size	Outside Diameter	Drilling				Length of Bolts		
		Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt Holes	Diameter of Bolts	Stud Bolts Raised Face 0.06 in.	Stud Bolts Ring Joint	Machine Bolts Raised Face 0.06 in.
	O.D.	M				P	P	P

ASME B16.5

1/2	3.50	2.38	5/8	4	1/2	2.25	*	2.00
3/4	3.88	2.75	5/8	4	1/2	2.50	*	2.00
1	4.25	3.12	5/8	4	1/2	2.50	3.00	2.25
1 1/4	4.62	3.50	5/8	4	1/2	2.75	3.25	2.25
1 1/2	5.00	3.88	5/8	4	1/2	2.75	3.25	2.50
2	6.00	4.75	3/4	4	5/8	3.25	3.75	2.75
2 1/2	7.00	5.50	3/4	4	5/8	3.50	4.00	3.00
3	7.50	6.00	3/4	4	5/8	3.50	4.00	3.00
3 1/2	8.50	7.00	3/4	8	5/8	3.50	4.00	3.00
4	9.00	7.50	3/4	8	5/8	3.50	4.00	3.00
5	10.00	8.50	7/8	8	3/4	3.75	4.25	3.25
6	11.00	9.50	7/8	8	3/4	4.00	4.50	3.25
8	13.50	11.75	7/8	8	3/4	4.25	4.75	3.50
10	16.00	14.25	1	12	7/8	4.50	5.00	4.00
12	19.00	17.00	1	12	7/8	4.75	5.25	4.00
14	21.00	18.75	1 1/8	12	1	5.25	5.75	4.50
16	23.50	21.25	1 1/8	16	1	5.25	5.75	4.50
18	25.00	22.75	1 1/4	16	1 1/8	5.75	6.25	5.00
20	27.50	25.00	1 1/4	20	1 1/8	6.25	6.75	5.50
24	32.00	29.50	1 3/8	20	1 1/4	6.75	7.25	6.00

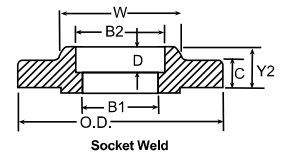
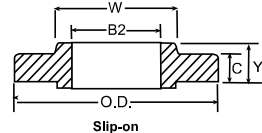
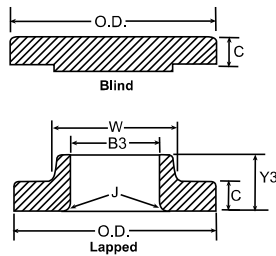
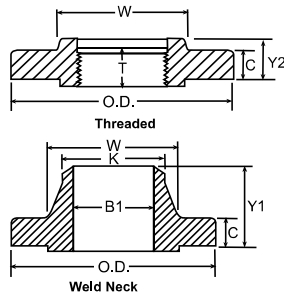
ASME B16.47 Series A

30	38.75	36.00	1 3/8	28	1 1/4	Formula for determining bolt lengths (P) see page 159.		
36	46.00	42.75	1 5/8	32	1 1/2			
42	53.00	49.50	1 5/8	36	1 1/2			
48	59.50	56.00	1 5/8	44	1 1/2			

ASME B16.47 Series B

30	34.94	33.31	7/8	44	3/4	Formula for determining bolt lengths (P) see page 159.		
36	41.62	39.75	1	44	7/8			
42	48.25	46.12	1 1/8	48	1			
48	54.81	52.56	1 1/4	44	1 1/8			

For Ring Type Joint Facing Dimension information see page 148.



Pipe Size	Outside Diameter of Flange	Thickness of Flange (Min.)	Thickness of Lap Joint (Min.)	Diameter of Hub*	Diameter of Weld Neck	Length Through Hub			Thread Length (Min.)	Bore			Lap Joint Radius	Depth of Socket
	O.D.	C	C	W	K	Threaded, Slip-on & Socket Weld	Lap Joint	Weld Neck	T	Slip-on & Socket Weld (Min.)	Lap Joint (Min.)	Weld Neck & Socket Weld	J	D
	O.D.	C	C	W	K	Y2	Y3	Y1	T	B2	B3	B1 ▲	J	D

ASME B16.5

1/2	3.50	0.38	0.44	1.19	0.84	0.56	0.62	1.81	0.62	0.88	0.90	0.62	0.12	0.38
3/4	3.88	0.44	0.50	1.50	1.05	0.56	0.62	2.00	0.62	1.09	1.11	0.82	0.12	0.44
1	4.25	0.50	0.56	1.94	1.32	0.62	0.69	2.12	0.69	1.36	1.38	1.05	0.12	0.50
1 1/4	4.62	0.56	0.62	2.31	1.66	0.75	0.81	2.19	0.81	1.70	1.72	1.38	0.19	0.56
1 1/2	5.00	0.62	0.69	2.56	1.90	0.81	0.88	2.38	0.88	1.95	1.97	1.61	0.25	0.62
2	6.00	0.69	0.75	3.06	2.38	0.94	1.00	2.44	1.00	2.44	2.46	2.07	0.31	0.69
2 1/2	7.00	0.81	0.88	3.56	2.88	1.06	1.12	2.69	1.12	2.94	2.97	2.47	0.31	0.75
3	7.50	0.88	0.94	4.25	3.50	1.12	1.19	2.69	1.19	3.57	3.60	3.07	0.38	0.81
3 1/2	8.50	0.88	0.94	4.81	4.00	1.19	1.25	2.75	1.25	4.07	4.10	3.55	0.38	
4	9.00	0.88	0.94	5.31	4.50	1.25	1.31	2.94	1.31	4.57	4.60	4.03	0.44	
5	10.00	0.88	0.94	6.44	5.56	1.38	1.44	3.44	1.44	5.66	5.69	5.05	0.44	
6	11.00	0.94	1.00	7.56	6.63	1.50	1.56	3.44	1.56	6.72	6.75	6.07	0.50	
8	13.50	1.06	1.12	9.69	8.63	1.69	1.75	3.94	1.75	8.72	8.75	7.98	0.50	
10	16.00	1.12	1.19	12.00	10.75	1.88	1.94	3.94	1.94	10.88	10.92	10.02	0.50	
12	19.00	1.19	1.25	14.38	12.75	2.12	2.19	4.44	2.19	12.88	12.92	12.00	0.50	
14	21.00	1.31	1.38	15.75	14.00	2.19	3.12	4.94	2.25	14.14	14.18	13.25	0.50	
16	23.50	1.38	1.44	18.00	16.00	2.44	3.44	4.94	2.50	16.16	16.19	15.25	0.50	
18	25.00	1.50	1.56	19.88	18.00	2.62	3.81	5.44	2.69	18.18	18.20	17.25	0.50	
20	27.50	1.62	1.69	22.00	20.00	2.81	4.06	5.62	2.88	20.20	20.25	19.25	0.50	
24	32.00	1.81	1.88	26.12	24.00	3.19	4.38	5.94	3.25	24.25	24.25	23.25	0.50	

ASME B16.47 Series A

	WN	BLD					
30	38.75	2.88	2.88	30.75	30.00	5.32	
36	46.00	3.50	3.50	36.75	36.00	6.13	
42	53.00	3.75	3.75	43.00	42.00	6.69	
48	59.50	4.19	4.19	49.12	48.00	7.50	

ASME B16.47 Series B

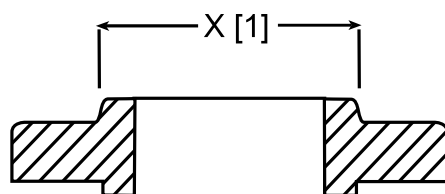
	WN	BLD					
30	34.94	1.69	1.94	31.00	30.06	3.88	
36	41.62	2.00	2.25	37.19	36.06	4.57	
42	48.25	2.25	2.65	43.38	42.12	5.19	
48	54.81	2.50	3.00	49.50	48.12	5.82	

WELDBEND NOTES

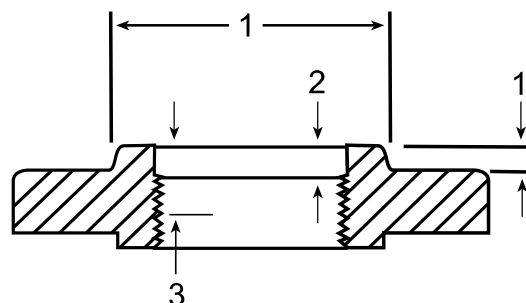
1. Standard flange facings on page 146.

6. Thread standards on page 156.

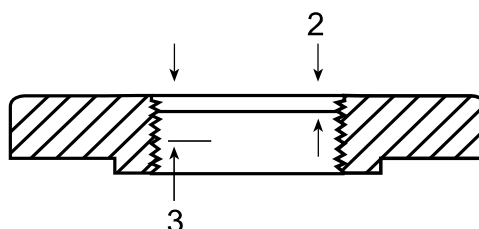
* A taper shall not exceed 7 degrees on threaded, slip-on and lapped flanges.



Slip-on



Threaded



Blind

Pipe Size	Smallest Size of Reducing Outlet Requiring Hub Flanges	
1	Group I	½
1 ¼		½
1 ½		½
2		1
2 ½		1 ¼
3		1 ¼
3 ½	Group II	1 ½
4		1 ½
5		1 ½
6		2 ½
8		3
10		3 ½
12	Group III	3 ½
14		3 ½
16		4
18		4
20		4
24		4

Note:

1. The hub dimensions shall be at least as large as those of the standard flanges of the size to which the reduction is being made, except flanges reducing to a size smaller than those Groups I, II and III may be made from blind flanges.
2. Class 150 flanges do not have a counter bore. Class 300 and higher pressure flanges will have depth of counter bore (q) of 0.25 in. for NPS 2 and smaller tapping and 0.38 in. for NPS 2 ½" and larger. The diameter (Q) of counter bore is the same as that given in the tables of threaded flanges for the corresponding tapping.
3. Minimum length of effective threads shall be at least equal to dimension (T) of the corresponding pressure class threaded flange as shown in tables, but do not necessarily extend to the face of the flange. For thread of threaded flanges, see page 158.

CLASS 150					
Pipe Size	Outside Diameter	Threaded & Slip-on	Weld Neck	Blind	Lap Joint
	O.D.				

ASME B16.5

½	3.50	2.00	2.00	2.00	1.00
¾	3.88	2.00	2.00	2.00	2.00
1	4.25	2.00	3.00	2.00	2.00
1 ¼	4.62	3.00	3.00	3.00	3.00
1 ½	5.00	3.00	4.00	4.00	3.00
2	6.00	5.00	6.00	5.00	5.00
2 ½	7.00	8.00	10.00	7.00	8.00
3	7.50	9.00	11.50	9.00	9.00
3 ½	8.50	12.00	12.00	13.00	11.00
4	9.00	13.00	16.50	17.00	13.00
5	10.00	15.00	21.00	20.00	15.00
6	11.00	19.00	26.00	27.00	19.00
8	13.50	30.00	42.00	47.00	30.00
10	16.00	43.00	54.00	70.00	43.00
12	19.00	64.00	88.00	123.00	64.00
14	21.00	90.00	114.00	140.00	105.00
16	23.50	106.00	140.00	180.00	140.00
18	25.00	130.00	165.00	220.00	160.00
20	27.50	165.00	197.00	285.00	195.00
24	32.00	220.00	268.00	430.00	275.00

ASME B16.47 Series A

30	38.75	—	400.00	982.00	—
36	46.00	—	640.00	1676.00	—
42	53.00	—	890.00	2381.00	—
48	59.50	—	1185.00	3348.00	—

ASME B16.47 Series B

30	34.94	—	150.00	543.00	—
36	41.62	—	240.00	890.00	—
42	48.25	—	345.00	1393.00	—
48	54.81	—	480.00	2045.00	—

WELDBEND NOTES

1. All dimensions are in inches.
2. All weights are in pounds and approximated or estimated.