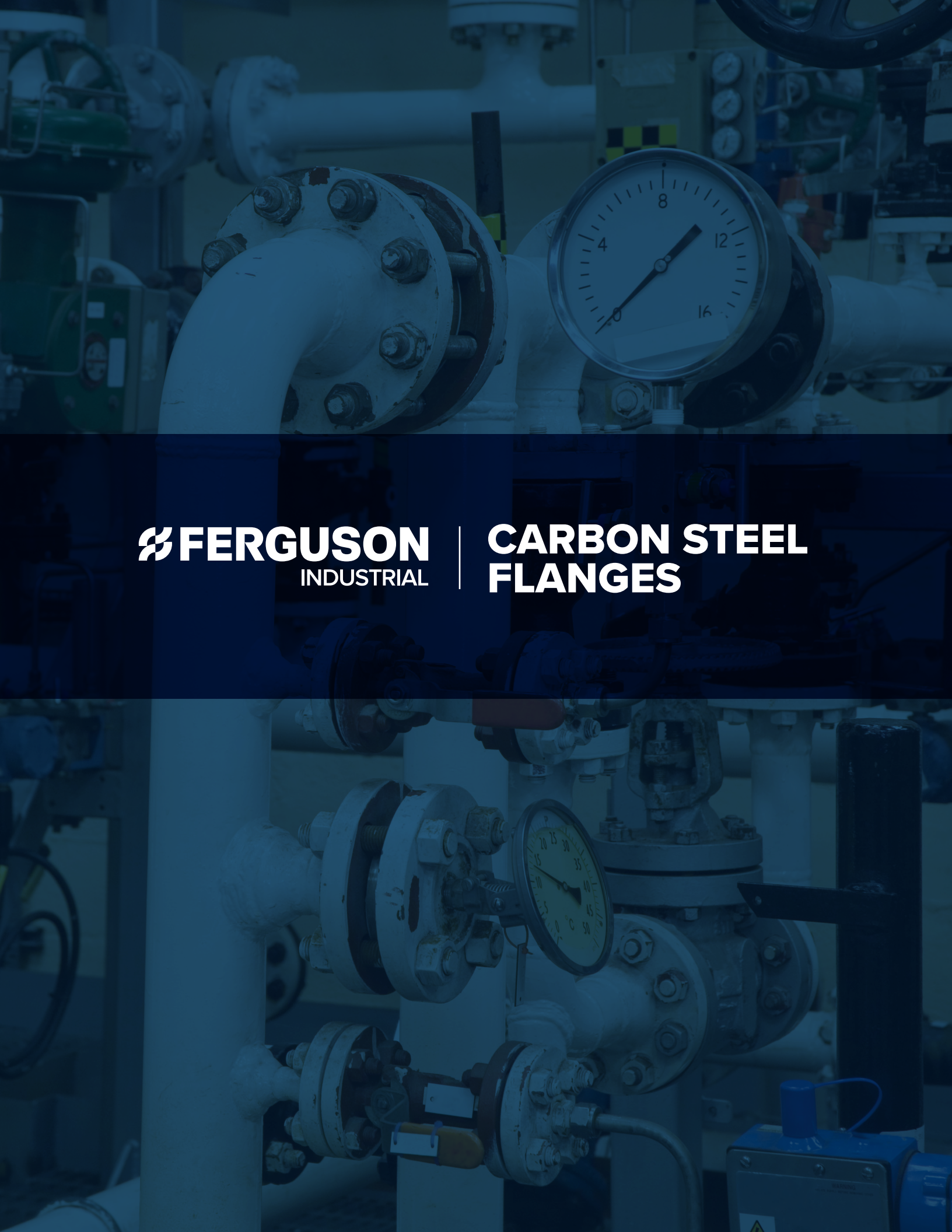
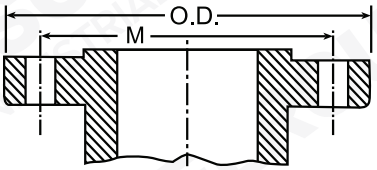


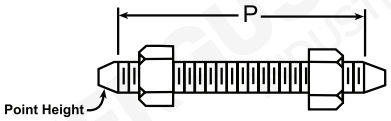
FERGUSON INDUSTRIAL

CARBON STEEL FLANGES

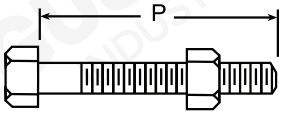
CLASS 150 STEEL PIPE FLANGES



Flange



Stud Bolt



Machine Bolt

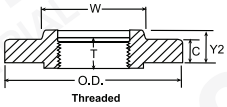
Bolting Pattern and Bolt Lengths								
Pipe Size	Outside Diameter	Drilling				Length of Bolts		
		Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt Holes	Diameter of Bolts	Stud Bolts Raised Face 0.06 in.	Stud Bolts Ring Joint	Machine Bolts Raised Face 0.06 in.
	O.D.	M				P	P	P
ASME B16.5								
½	3.50	2.38	⅝	4	½	2.25	*	2.00
¾	3.88	2.75	⅝	4	½	2.50	*	2.00
1	4.25	3.12	⅝	4	½	2.50	3.00	2.25
1 ¼	4.62	3.50	⅝	4	½	2.75	3.25	2.25
1 ½	5.00	3.88	⅝	4	½	2.75	3.25	2.50
2	6.00	4.75	¾	4	⅝	3.25	3.75	2.75
2 ½	7.00	5.50	¾	4	⅝	3.50	4.00	3.00
3	7.50	6.00	¾	4	⅝	3.50	4.00	3.00
3 ½	8.50	7.00	¾	8	⅝	3.50	4.00	3.00
4	9.00	7.50	¾	8	⅝	3.50	4.00	3.00
5	10.00	8.50	⅞	8	¾	3.75	4.25	3.25
6	11.00	9.50	⅞	8	¾	4.00	4.50	3.25
8	13.50	11.75	⅞	8	¾	4.25	4.75	3.50
10	16.00	14.25	1	12	⅞	4.50	5.00	4.00
12	19.00	17.00	1	12	⅞	4.75	5.25	4.00
14	21.00	18.75	1 ⅛	12	1	5.25	5.75	4.50
16	23.50	21.25	1 ⅛	16	1	5.25	5.75	4.50
18	25.00	22.75	1 ¼	16	1 ⅛	5.75	6.25	5.00
20	27.50	25.00	1 ¼	20	1 ⅛	6.25	6.75	5.50
24	32.00	29.50	1 ⅜	20	1 ¼	6.75	7.25	6.00
ASME B16.47 Series A								
30	38.75	36.00	1 ⅜	28	1 ¼			
36	46.00	42.75	1 ⅝	32	1 ½			
42	53.00	49.50	1 ⅝	36	1 ½			
48	59.50	56.00	1 ⅝	44	1 ½			
ASME B16.47 Series B								
30	34.94	33.31	⅞	44	¾			
36	41.62	39.75	1	44	⅞			
42	48.25	46.12	1 ⅛	48	1			
48	54.81	52.56	1 ¼	44	1 ⅛			

NOTES

1. All dimensions are in inches.
2. All flanges conform to ASTM A105/ASME SA105.
3. All flanges 1/2”-24” conform to ASME B16.5
4. All flanges 30” and larger conform to ASME B16.47.
5. Blind flanges may be produced with or without hubs.
6. Calculated flange weights on **page 15.**

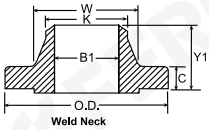
* This size and thickness does not correspond to any pipe schedule number.

CLASS 150 STEEL PIPE FLANGES

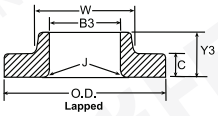


Threaded

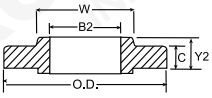
Blind



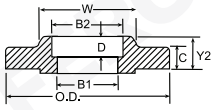
Weld Neck



Lapped



Slip-on



Socket Weld

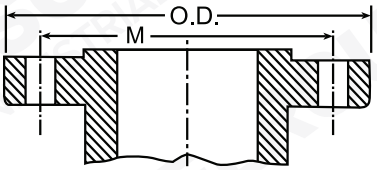
Pipe Size	Outside Diameter of Flange	Thickness of Flange (Min.)		Thickness of Lap Joint (Min.)	Diameter of Hub*	Diameter of Weld Neck	Length Through Hub			Thread Length (Min.)	Bore			Lap Joint Radius	Depth of Socket
							Threaded, Slip-on & Socket Weld	Lap Joint	Weld Neck		Slip-on & Socket Weld (Min.)	Lap Joint (Min.)	Weld Neck & Socket Weld		
	O.D.	C		C	W	K	Y2	Y3	Y1	T	B2	B3	B1 ▲	J	D
ASME B16.5															
½	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
¾	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 ¼	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 ½	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 ½	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 ½	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	
		WN	BLD												
ASME B16.47 Series A															
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						
		WN	BLD												
ASME B16.47 Series B															
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	2.5	3.00		49.50	48.12			5.82						

NOTES

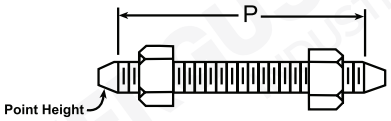
* A taper shall not exceed 7 degrees on threaded, slip-on and lapped flanges.

▲ Dimensions listed for socket weld and weld neck flanges are for Standard bore unless specified by purchaser.

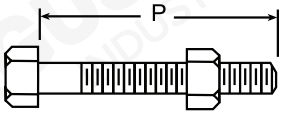
CLASS 300 STEEL PIPE FLANGES



Flange



Stud Bolt



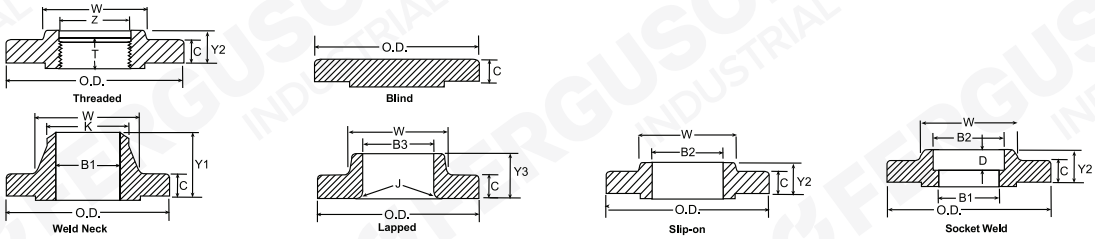
Machine Bolt

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								
½	3.75	2.62	⅝	4	½	2.50	3.00	2.25
¾	4.62	3.25	¾	4	⅝	3.00	3.50	2.50
1	4.88	3.50	¾	4	⅝	3.00	3.50	2.50
1 ¼	5.25	3.88	¾	4	⅝	3.25	3.75	2.75
1 ½	6.12	4.50	⅞	4	¾	3.50	4.00	3.00
2	6.50	5.00	¾	8	⅝	3.50	4.00	3.00
2 ½	7.50	5.88	⅞	8	¾	4.00	4.50	3.25
3	8.25	6.62	⅞	8	¾	4.25	4.75	3.50
3 ½	9.00	7.25	⅞	8	¾	4.25	5.00	3.75
4	10.00	7.88	⅞	8	¾	4.50	5.00	3.75
5	11.00	9.25	⅞	8	¾	4.75	5.25	4.25
6	12.50	10.62	⅞	12	¾	4.75	5.50	4.25
8	15.00	13.00	1	12	⅞	5.50	6.00	4.75
10	17.50	15.25	1 ⅛	16	1	6.25	6.75	5.50
12	20.50	17.75	1 ¼	16	1 ⅛	6.75	7.25	5.75
14	23.00	20.25	1 ¼	20	1 ⅛	7.00	7.50	6.25
16	25.50	22.50	1 ⅜	20	1 ¼	7.50	8.00	6.50
18	28.00	24.75	1 ⅜	24	1 ¼	7.75	8.25	6.75
20	30.50	27.00	1 ⅜	24	1 ¼	8.00	8.75	7.25
24	36.00	32.00	1 ⅝	24	1 ½	9.00	10.00	8.00
ASME B16.47 Series A								
30	43.00	39.25	1 ⅞	28	1 ¾			
36	50.00	46.00	2 ⅛	32	2			
42	50.75	47.50	1 ¾	32	1 ⅝			
48	57.75	54.00	2	32	1 ⅞			
ASME B16.47 Series B								
30	39.00	36.25	1 ½	36	1 ⅜			
36	46.12	42.88	1 ¾	32	1 ⅝			
42	52.50	49.00	1 ⅞	36	1 ¾			
48	59.50	55.75	2	40	1 ⅞			

NOTES

1. All dimensions are in inches.
2. All flanges conform to ASTM A105/ASME SA105.
3. All flanges 1/2”-24” conform to ASME B16.5
4. All flanges 30” and larger conform to ASME B16.47.
5. Blind flanges may be produced with or without hubs.
6. Calculated flange weights on **page 16.**

CLASS 300 STEEL PIPE FLANGES



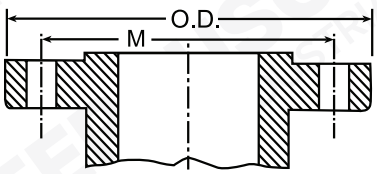
Pipe Size	Outside Diameter of Flange	Thickness of Flange (Min.)	Thickness of Lap Joint (Min.)	Diameter of Hub*	Diameter of Weld Neck	Length Through Hub			Thread Length (Min.)	Bore			Lap Joint Radius	Min. Counter Bore Threaded Flange	Depth of Socket
						Threaded, Slip-on & Socket Weld	Lap Joint	Weld Neck		Slip-on & Socket Weld (Min.)	Lap Joint (Min.)	Weld Neck & Socket Weld			
	O.D.	C	C	W	K	Y2	Y3	Y1	T	B2	B3	B1▲	J	Z	D
ASME B16.5															
½	3.75	0.50	0.56	1.50	0.84	0.81	0.88	2.00	0.62	0.88	0.90	0.62	0.12	0.93	0.38
¾	4.62	0.56	0.62	1.88	1.05	0.94	1.00	2.19	0.62	1.09	1.11	0.82	0.12	1.14	0.4
1	4.88	0.62	0.69	2.12	1.32	1.00	1.06	2.38	0.69	1.36	1.38	1.05	0.12	1.41	0.50
1 ¼	5.25	0.69	0.75	2.50	1.66	1.00	1.06	2.50	0.81	1.70	1.72	1.38	0.19	1.75	0.56
1 ½	6.12	0.75	0.81	2.75	1.90	1.13	1.19	2.63	0.88	1.95	1.97	1.61	0.25	1.98	0.62
2	6.50	0.81	0.88	3.31	2.38	1.25	1.31	2.69	1.12	2.44	2.46	2.07	0.31	2.50	0.69
2 ½	7.50	0.94	1.00	3.94	2.88	1.44	1.50	2.94	1.25	2.94	2.97	2.47	0.31	3.00	0.75
3	8.25	1.06	1.12	4.62	3.50	1.63	1.69	3.06	1.25	3.57	3.60	3.07	0.38	3.63	0.81
3 ½	9.00	1.12	1.19	5.25	4.00	1.69	1.75	3.13	1.44	4.07	4.10	3.55	0.38	4.13	
4	10.00	1.19	1.25	5.75	4.50	1.82	1.88	3.32	1.44	4.57	4.60	4.03	0.44	4.63	
5	11.00	1.31	1.38	7.00	5.56	1.94	2.00	3.82	1.69	5.66	5.69	5.05	0.44	5.69	
6	12.50	1.38	1.44	8.12	6.63	2.00	2.06	3.82	1.81	6.72	6.75	6.07	0.50	6.75	
8	15.00	1.56	1.62	10.25	8.63	2.38	2.44	4.32	2.00	8.72	8.75	7.98	0.50	8.75	
10	17.50	1.81	1.88	12.62	10.75	2.56	3.75	4.56	2.19	10.88	10.92	10.02	0.50	10.88	
12	20.50	1.94	2.00	14.75	12.75	2.82	4.00	5.06	2.38	12.88	12.92	12.00	0.50	12.94	
14	23.00	2.06	2.12	16.75	14.00	2.94	4.38	5.56	2.50	14.14	14.18	13.25	0.50	14.19	
16	25.50	2.19	2.25	19.00	16.00	3.19	4.75	5.69	2.69	16.16	16.19	15.25	0.50	16.19	
18	28.00	2.31	2.38	21.00	18.00	3.44	5.12	6.19	2.75	18.18	18.20	17.25	0.50	18.19	
20	30.50	2.44	2.50	23.12	20.00	3.69	5.50	6.32	2.88	20.20	20.25	19.25	0.50	20.19	
24	36.00	2.69	2.75	27.62	24.00	4.13	6.00	6.56	3.25	24.25	24.25	23.25	0.50	24.19	
		WN	BLD	**ASME B16.47 Series A**											
30	43.00	3.57	3.69		32.56	30.00		8.19							
36	50.00	4.07	4.32		39.00	36.00		9.44							
42	50.75	4.63	4.63		43.25	42.00		7.82							
48	57.75	5.19	5.19		49.38	48.00		8.75							
		WN	BLD	**ASME B16.47 Series B**											
30	39.00	3.63	3.63		32.00	30.25		6.16							
36	46.12	4.00	4.00		38.00	36.25		7.06							
42	52.50	4.63	4.63		44.00	42.31		8.00							
48	59.50	5.00	5.25		50.31	48.31		8.75							

NOTES

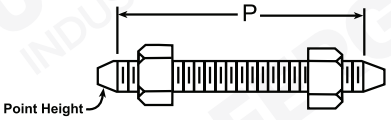
* A taper shall not exceed 7 degrees on threaded, slip-on and lapped flanges.

▲ Dimensions listed for socket weld and weld neck flanges are for Standard bore unless specified by purchaser.

CLASS 600 STEEL PIPE FLANGES



Flange



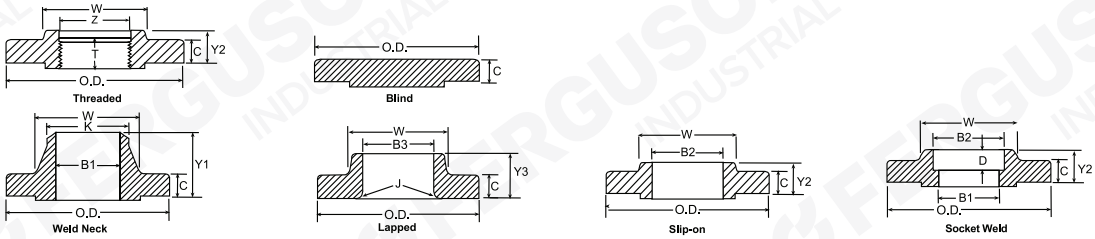
Stud Bolt

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	Raised Face 0.25 in.	Male & Female / Tongue & Groove	Ring Joint
	O.D.	M				P	P	P
ASME B16.5								
½	3.75	2.62	⅝	4	½	3.00	2.75	3.00
¾	4.62	3.25	¾	4	⅝	3.50	3.25	3.50
1	4.88	3.50	¾	4	⅝	3.50	3.25	3.50
1 ¼	5.25	3.88	¾	4	⅝	3.75	3.50	3.75
1 ½	6.12	4.50	⅞	4	¾	4.25	4.00	4.25
2	6.50	5.00	¾	8	⅝	4.25	4.00	4.25
2 ½	7.50	5.88	⅞	8	¾	4.75	4.50	4.75
3	8.25	6.62	⅞	8	¾	5.00	4.75	5.00
3 ½	9.00	7.25	1	8	⅞	5.50	5.25	5.50
4	10.75	8.50	1	8	⅞	5.75	5.50	5.75
5	13.00	10.50	1 ⅛	8	1	6.50	6.25	6.50
6	14.00	11.50	1 ⅛	12	1	6.75	6.50	6.75
8	16.50	13.75	1 ¼	12	1 ⅛	7.50	7.25	7.75
10	20.00	17.00	1 ⅜	16	1 ¼	8.50	8.25	8.50
12	22.00	19.25	1 ⅜	20	1 ¼	8.75	8.50	8.75
14	23.75	20.75	1 ½	20	1 ⅜	9.25	9.00	9.25
16	27.00	23.75	1 ⅝	20	1 ½	10.00	9.75	10.00
18	29.25	25.75	1 ¾	20	1 ⅝	10.75	10.50	10.75
20	32.00	28.50	1 ¾	24	1 ⅝	11.25	11.00	11.50
24	37.00	33.00	2	24	1 ⅞	13.00	12.75	13.25
ASME B16.47 Series A								
30	44.50	40.25	2 ⅛	28	2			
36	51.75	47.00	2 ⅝	28	2 ½			
42	55.25	50.50	2 ⅝	28	2 ½			
48	62.75	57.50	2 ⅞	32	2 ¾			
ASME B16.47 Series B								
30	40.25	36.50	2	28	1 ⅞			
36	47.75	43.50	2 ⅜	28	2 ¼			
42								
48								

NOTES

1. All dimensions are in inches.
2. All flanges conform to ASTM A105/ASME SA105.
3. All flanges 1/2"-24" conform to ASME B16.5
4. All flanges 30" and larger conform to ASME B16.47.
5. Blind flanges may be produced with or without hubs.
6. Calculated flange weights on **page 17.**

CLASS 600 STEEL PIPE FLANGES



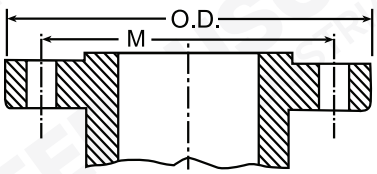
Pipe Size	Outside Diameter of Flange	Thickness of Flange (Min.)		Diameter of Hub*	Diameter of Weld Neck	Length Through Hub			Thread Length (Min.)	Bore			Lapped Flange Radius	Min. Counter Bore Threaded Flange	Depth of Socket
						Threaded, Slip-on & Socket Weld	Lap Joint	Weld Neck		Slip-on & Socket Weld (Min.)	Lap Joint (Min.)	Weld Neck & Socket Weld			
	O.D.	C		W	K	Y2	Y3	Y1	T	B2	B3	B1▲	J	Z	D
ASME B16.5															
½	3.75	0.56		1.50	0.84	0.88	0.88	2.06	0.62	0.88	0.90	.55	0.12	0.93	0.38
¾	4.62	0.62		1.88	1.05	1.00	1.00	2.25	0.62	1.09	1.11	.74	0.12	1.14	0.44
1	4.88	0.69		2.12	1.32	1.06	1.06	2.44	0.69	1.36	1.38	.96	0.12	1.41	0.50
1 ¼	5.25	0.81		2.50	1.66	1.12	1.12	2.62	0.81	1.70	1.72	1.28	0.19	1.75	0.56
1 ½	6.12	0.88		2.75	1.90	1.25	1.25	2.75	0.88	1.95	1.97	1.50	0.25	1.99	0.62
2	6.50	1.00		3.31	2.38	1.44	1.44	2.88	1.12	2.44	2.46	1.94	0.31	2.50	0.69
2 ½	7.50	1.12		3.94	2.88	1.62	1.62	3.12	1.25	2.94	2.97	2.32	0.31	3.00	0.75
3	8.25	1.25		4.62	3.50	1.81	1.81	3.25	1.38	3.57	3.60	2.90	0.38	3.63	0.81
3 ½	9.00	1.38		5.25	4.00	1.94	1.94	3.38	1.56	4.07	4.10	3.36	0.38	4.13	
4	10.75	1.50		6.00	4.50	2.12	2.12	4.00	1.62	4.57	4.60	3.83	0.44	4.63	
5	13.00	1.75		7.44	5.56	2.38	2.38	4.50	1.88	5.66	5.69	4.81	0.44	5.69	
6	14.00	1.88		8.75	6.63	2.62	2.62	4.62	2.00	6.72	6.75	5.76	0.50	6.75	
8	16.50	2.19		10.75	8.63	3.00	3.00	5.25	2.25	8.72	8.75	7.63	0.50	8.75	
10	20.00	2.50		13.50	10.75	3.38	4.38	6.00	2.56	10.88	10.92	9.75	0.50	10.88	
12	22.00	2.62		15.75	12.75	3.62	4.62	6.12	2.75	12.88	12.92	11.75	0.50	12.94	
14	23.75	2.75		17.00	14.00	3.69	5.00	6.50	2.88	14.14	14.18	13.00	0.50	14.19	
16	27.00	3.00		19.50	16.00	4.19	5.50	7.00	3.06	16.16	16.19	15.00	0.50	16.19	
18	29.25	3.25		21.50	18.00	4.62	6.00	7.25	3.12	18.18	18.20	17.00	0.50	18.19	
20	32.00	3.50		24.00	20.00	5.00	6.50	7.50	3.25	20.20	20.25	19.00	0.50	20.19	
24	37.00	4.00		28.25	24.00	5.50	7.25	8.00	3.62	24.25	24.25	23.00	0.50	24.19	
		WN	BLD						ASME B16.47 Series A						
30	44.50	4.50	5.50	33.94	30.00			9.75							
36	51.75	4.88	6.38	40.62	36.00			11.12							
42	55.25	6.62	6.75	44.38	42.00			11.00							
48	62.75	7.44	7.69	50.75	48.00			12.44							
		WN	BLD						ASME B16.47 Series B						
30	40.25	4.94	5.00	31.75	30.00			8.06							
36	47.75	5.75	5.94	38.12	36.00			9.56							
42															
48															

NOTES

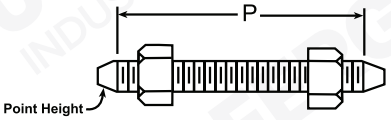
* A taper shall not exceed 7 degrees on threaded, slip-on and lapped flanges.

▲ Dimensions listed for socket weld and weld neck flanges are for Standard bore unless specified by purchaser.

CLASS 900 STEEL PIPE FLANGES



Flange



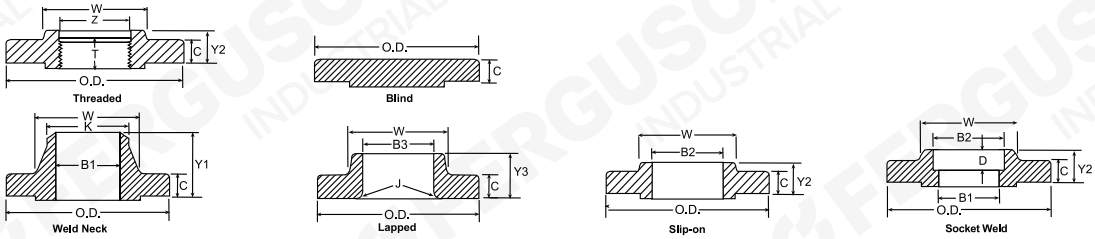
Stud Bolt

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	Raised Face 0.25 in.	Male & Female / Tongue & Groove	Ring Joint
	O.D.	M				P	P	P
ASME B16.5								
½	4.75	3.25	⅞	4	¾	4.25	4.00	4.25
¾	5.12	3.50	⅞	4	¾	4.50	4.25	4.50
1	5.88	4.00	1	4	⅞	5.00	4.75	5.00
1 ¼	6.25	4.38	1	4	⅞	5.00	4.75	5.00
1 ½	7.00	4.88	1 ⅛	4	1	5.50	5.25	5.50
2	8.50	6.50	1	8	⅞	5.75	5.50	5.75
2 ½	9.62	7.50	1 ⅛	8	1	6.25	6.00	6.25
3	9.50	7.50	1	8	⅞	5.75	5.50	5.75
4	11.50	9.25	1 ¼	8	1 ⅛	6.75	6.50	6.75
5	13.75	11.00	1 ⅜	8	1 ¼	7.50	7.25	7.50
6	15.00	12.50	1 ¼	12	1 ⅛	7.50	7.25	7.75
8	18.50	15.50	1 ½	12	1 ⅜	8.75	8.50	8.75
10	21.50	18.50	1 ½	16	1 ⅜	9.25	9.00	9.25
12	24.00	21.00	1 ½	20	1 ⅜	10.00	9.75	10.00
14	25.25	22.00	1 ⅝	20	1 ½	10.75	10.50	11.00
16	27.75	24.25	1 ¾	20	1 ⅝	11.25	11.00	11.50
18	31.00	27.00	2	20	1 ⅞	12.75	12.50	13.25
20	33.75	29.50	2 ⅛	20	2	13.75	13.50	14.25
24	41.00	35.50	2 ⅝	20	2 ½	17.25	17.00	18.00
ASME B16.47 Series A								
30	48.50	42.75	3 ⅛	20	3			
36	57.50	50.75	3 ⅝	20	3 ½			
42	61.50	54.75	3 ⅝	24	3 ½			
48	70.25	62.50	4 ⅛	24	4			
ASME B16.47 Series B								
30	46.50	40.75	3 ⅛	20	3			
36	53.00	47.25	3 ⅛	24	3			
42								
48								

NOTES

1. All dimensions are in inches.
2. All flanges conform to ASTM A105/ASME SA105.
3. All flanges 1/2”-24” conform to ASME B16.5
4. All flanges 30” and larger conform to ASME B16.47.
5. Blind flanges may be produced with or without hubs.
6. Calculated flange weights on **page 18.**

CLASS 900 STEEL PIPE FLANGES

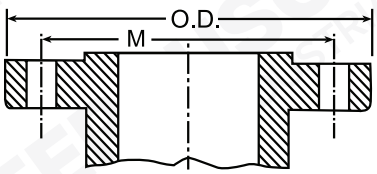


Pipe Size	Outside Diameter of Flange	Thickness of Flange (Min.)	Diameter of Hub*	Diameter of Weld Neck	Length Through Hub			Thread Length (Min.)	Bore			Lap Joint Radius	Min. Counter Bore Threaded Flange	Depth of Socket
					Threaded, Slip-on & Socket Weld	Lap Joint	Weld Neck		Slip-on & Socket Weld (Min.)	Lap Joint (Min.)	Weld Neck & Socket Weld			
	O.D.	C	W	K	Y2	Y3	Y1	T	B2	B3	B1	J	Z	D
ASME B16.5														
½	4.75	0.88	1.50	0.84	1.25	1.25	2.38	0.88	0.88	0.90	To be specified by the purchaser.	0.12	0.93	0.38
¾	5.12	1.00	1.75	1.05	1.38	1.38	2.75	1.00	1.09	1.11		0.12	1.14	0.44
1	5.88	1.12	2.06	1.32	1.62	1.62	2.88	1.12	1.36	1.38		0.12	1.41	0.50
1 ¼	6.25	1.12	2.50	1.66	1.62	1.62	2.88	1.19	1.70	1.72		0.19	1.75	0.56
1 ½	7.00	1.25	2.75	1.90	1.75	1.75	3.25	1.25	1.95	1.97		0.25	1.99	0.62
2	8.50	1.50	4.12	2.38	2.25	2.25	4.00	1.50	2.44	2.46		0.31	2.50	0.69
2 ½	9.62	1.62	4.88	2.88	2.50	2.50	4.12	1.88	2.94	2.97		0.31	3.00	0.75
3	9.50	1.50	5.00	3.50	2.12	2.12	4.00	1.62	3.57	3.60		0.38	3.63	
4	11.50	1.75	6.25	4.50	2.75	2.75	4.50	1.88	4.57	4.60		0.44	4.63	
5	13.75	2.00	7.50	5.56	3.12	3.12	5.00	2.12	5.66	5.69		0.44	5.69	
6	15.00	2.19	9.25	6.63	3.38	3.38	5.50	2.25	6.72	6.75		0.50	6.75	
8	18.50	2.50	11.75	8.63	4.00	4.50	6.38	2.50	8.72	8.75		0.50	8.75	
10	21.50	2.75	14.50	10.75	4.25	5.00	7.25	2.81	10.88	10.92		0.50	10.88	
12	24.00	3.12	16.50	12.75	4.62	5.62	7.88	3.00	12.88	12.92		0.50	12.94	
14	25.25	3.38	17.75	14.00	5.12	6.12	8.38	3.25	14.14	14.18		0.50	14.19	
16	27.75	3.50	20.00	16.00	5.25	6.50	8.50	3.38	16.16	16.19		0.50	16.19	
18	31.00	4.00	22.25	18.00	6.00	7.50	9.00	3.50	18.18	18.20		0.50	18.19	
20	33.75	4.25	24.50	20.00	6.25	8.25	9.75	3.62	20.20	20.25		0.50	20.19	
24	41.00	5.50	29.50	24.00	8.00	10.50	11.50	4.00	24.25	24.25		0.50	24.19	
		WN / BLD			ASME B16.47 Series A									
30	48.50	5.88 / 7.18	35.00	30.00			12.25							
36	57.50	6.75 / 8.44	41.88	36.00			14.25							
42	61.50	8.12 / 9.12	46.31	42.00			14.62							
48	70.25	9.19 / 10.38	52.88	48.00			16.50							
		WN / BLD			ASME B16.47 Series B									
30	46.50	6.12 / 6.93	33.50	30.00			11.38							
36	53.00	6.81 / 7.94	40.00	36.00			12.81							
42														
48														

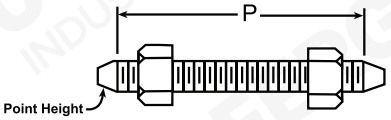
NOTES

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

CLASS 1500 STEEL PIPE FLANGES



Flange



Stud Bolt

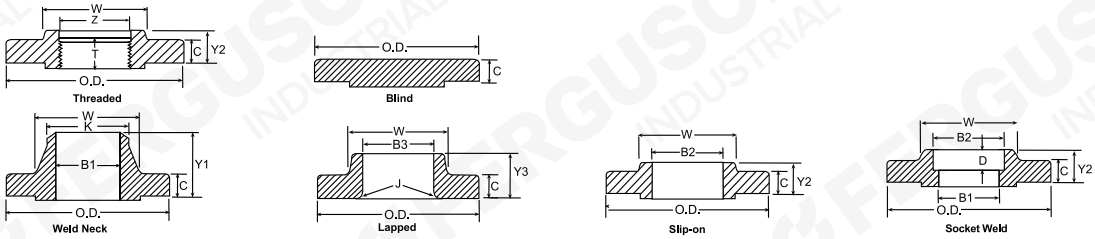
Bolting Pattern and Bolt Lengths								
Pipe Size	Outside Diameter	Drilling				Length of Bolts		
		Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt Holes	Diameter of Bolts	Raised Face 0.25 in.	Male & Female / Tongue & Groove	Ring Joint
	O.D.	M				P	P	P
ASME B16.5								
½	4.75	3.25	⅞	4	¾	4.25	4.00	4.25
¾	5.12	3.50	⅞	4	¾	4.50	4.25	4.50
1	5.88	4.00	1	4	⅞	5.00	4.75	5.00
1 ¼	6.25	4.38	1	4	⅞	5.00	4.75	5.00
1 ½	7.00	4.88	1 ⅛	4	1	5.50	5.25	5.50
2	8.50	6.50	1	8	⅞	5.75	5.50	5.75
2 ½	9.62	7.50	1 ⅛	8	1	6.25	6.00	6.25
3	10.50	8.00	1 ¼	8	1 ⅛	7.00	6.75	7.00
4	12.25	9.50	1 ⅜	8	1 ¼	7.75	7.50	7.75
5	14.75	11.50	1 ⅝	8	1 ½	9.75	9.50	9.75
6	15.50	12.50	1 ½	12	1 ⅜	10.25	10.00	10.50
8	19.00	15.50	1 ¾	12	1 ⅝	11.50	11.25	11.75
10	23.00	19.00	2	12	1 ⅞	13.25	13.00	13.50
12	26.50	22.50	2 ⅛	16	2	14.75	14.50	15.25
14	29.50	25.00	2 ⅜	16	2 ¼	16.00	15.75	16.75
16	32.50	27.75	2 ⅝	16	2 ½	17.50	17.25	18.50
18	36.00	30.50	2 ⅞	16	2 ¾	19.50	19.25	20.75
20	38.75	32.75	3 ⅛	16	3	21.25	21.00	22.25
24	46.00	39.00	3 ⅝	16	3 ½	24.25	24.00	25.50

NOTES

1. All dimensions are in inches.
2. All flanges conform to ASTM A105/ASME SA105.
3. All flanges 1/2”-24” conform to ASME B16.5
4. All flanges 30” and larger conform to ASME B16.47.
5. Blind flanges may be produced with or without hubs.
6. Calculated flange weights on **page 19.**

For Ring Type Joint Facing Dimension information see page 26.

CLASS 1500 STEEL PIPE FLANGES

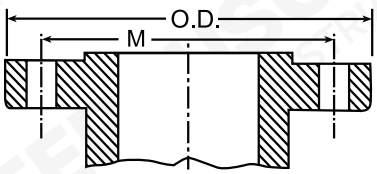


Pipe Size	Outside Diameter of Flange	Thickness of Flange (Min.)	Diameter of Hub*	Diameter of Weld Neck	Length Through Hub			Thread Length (Min.)	Bore			Lap Joint Radius	Min. Counter Bore Threaded Flange	Depth of Socket
					Threaded, Slip-on & Socket Weld	Lap Joint	Weld Neck		Slip-on & Socket Weld (Min.)	Lap Joint (Min.)	Weld Neck & Socket Weld			
	O.D.	C	W	K	Y2	Y3	Y1	T	B2	B3	B1	J	Z	D
ASME B16.5														
½	4.75	0.88	1.50	0.84	1.25	1.25	2.38	0.88	0.88	0.90	To be specified by the purchaser.	0.12	0.93	0.38
¾	5.12	1.00	1.75	1.05	1.38	1.38	2.75	1.00	1.09	1.11		0.12	1.14	0.44
1	5.88	1.12	2.06	1.32	1.62	1.62	2.88	1.12	1.36	1.38		0.12	1.41	0.50
1 ¼	6.25	1.12	2.50	1.66	1.62	1.62	2.88	1.19	1.70	1.72		0.19	1.75	0.56
1 ½	7.00	1.25	2.75	1.90	1.75	1.75	3.25	1.25	1.95	1.97		0.25	1.99	0.62
2	8.50	1.50	4.12	2.38	2.25	2.25	4.00	1.50	2.44	2.46		0.31	2.50	0.69
2 ½	9.62	1.62	4.88	2.88	2.50	2.50	4.12	1.88	2.94	2.97		0.31	3.00	0.75
3	10.50	1.88	5.25	3.50		2.88	4.62			3.60		0.38		
4	12.25	2.12	6.38	4.50		3.56	4.88			4.60		0.44		
5	14.75	2.88	7.75	5.56		4.12	6.12			5.69		0.44		
6	15.50	3.25	9.00	6.63		4.69	6.75			6.75		0.50		
8	19.00	3.62	11.50	8.63		5.62	8.38			8.75		0.50		
10	23.00	4.25	14.50	10.75		7.00	10.00			10.92		0.50		
12	26.50	4.88	17.75	12.75		8.62	11.12			12.92		0.50		
14	29.50	5.25	19.50	14.00		9.50	11.75			14.18		0.50		
16	32.50	5.75	21.75	16.00		10.25	12.25			16.19		0.50		
18	36.00	6.38	23.50	18.00		10.88	12.88			18.20		0.50		
20	38.75	7.00	25.25	20.00		11.50	14.00			20.25		0.50		
24	46.00	8.00	30.00	24.00		13.00	16.00			24.25		0.50		

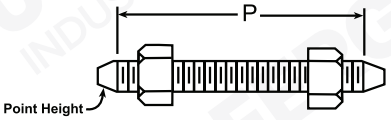
NOTES

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

CLASS 2500 STEEL PIPE FLANGES



Flange



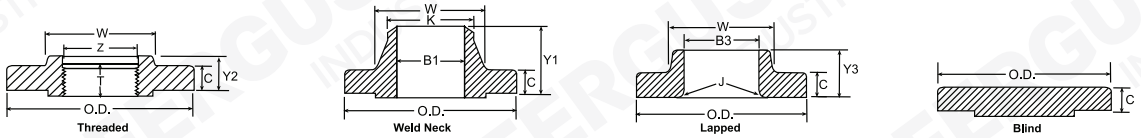
Stud Bolt

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	Raised Face 0.25 in.	Male & Female / Tongue & Groove	Ring Joint
	O.D.	M				P	P	P
ASME B16.5								
½	5.25	3.50	⅞	4	¾	4.75	4.50	4.75
¾	5.50	3.75	⅞	4	¾	5.00	4.75	5.00
1	6.25	4.25	1	4	⅞	5.50	5.25	5.50
1 ¼	7.25	5.12	1	4	1	6.00	5.75	6.00
1 ½	8.00	5.75	1 ⅛	4	1 ⅛	6.75	6.50	6.75
2	9.25	6.75	1 ¼	8	1	7.00	6.75	7.00
2 ½	10.50	7.75	1 ¼	8	1 ⅛	7.75	7.50	8.00
3	12.00	9.00	1 ⅜	8	1 ¼	8.75	8.50	9.00
4	14.00	10.75	1 ⅝	8	1 ½	10.00	9.75	10.25
5	16.50	12.75	1 ⅞	8	1 ¾	11.75	11.50	12.25
6	19.00	14.50	2 ⅛	8	2	13.50	13.25	14.00
8	21.75	17.25	2 ⅛	12	2	15.00	14.75	15.50
10	26.50	21.25	2 ⅝	12	2 ½	19.25	20.00	20.00
12	30.00	24.38	2 ⅞	12	2 ¾	21.25	21.00	22.00

NOTES

1. All dimensions are in inches.
2. All flanges conform to ASTM A105/ASME SA105.
3. All flanges 1/2”-24” conform to ASME B16.5
4. All flanges 30” and larger conform to ASME B16.47.
5. Blind flanges may be produced with or without hubs.
6. Calculated flange weights on **page 20.**

CLASS 2500 STEEL PIPE FLANGES

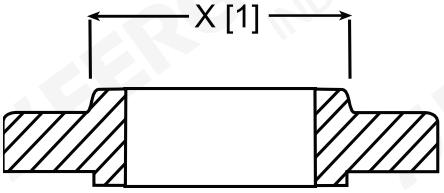


Pipe Size	Outside Diameter of Flange	Thickness of Flange (Min.)	Diameter of Hub*	Diameter of Weld Neck	Length Through Hub			Thread Length (Min.)	Bore		Lap Joint Radius	Min. Counter Bore Threaded Flange
					Threaded	Lap Joint	Weld Neck		Lap Joint (Min.)	Weld Neck		
	O.D.	C	W	K	Y2	Y3	Y1	T	B3	B1	J	Z
ASME B16.5												
½	5.25	1.19	1.69	0.84	1.56	1.56	2.88	1.12	0.90	To be specified by the purchaser.	0.12	0.93
¾	5.50	1.25	2.00	1.05	1.69	1.69	3.12	1.25	1.11		0.12	1.14
1	6.25	1.38	2.25	1.32	1.88	1.88	3.50	1.38	1.38		0.12	1.41
1 ¼	7.25	1.50	2.88	1.66	2.06	2.06	3.75	1.50	7 1.72		0.19	1.75
1 ½	8.00	1.75	3.12	1.90	2.38	2.38	4.38	1.75	1.97		0.25	1.99
2	9.25	2.00	3.75	2.38	2.75	2.75	5.00	2.00	2.46		0.31	2.50
2 ½	10.50	2.25	4.50	2.88	3.12	3.12	5.62	2.25	2.97		0.31	3.00
3	12.00	2.62	5.25	3.50		3.62	6.62		3.60		0.38	
4	14.00	3.00	6.50	4.50		4.25	7.50		4.60		0.44	
5	16.50	3.62	8.00	5.56		5.12	9.00		5.69		0.44	
6	19.00	4.25	9.25	6.63		6.00	10.75		6.75		0.50	
8	21.75	5.00	12.00	8.63		7.00	12.50		8.75		0.50	
10	26.50	6.50	14.75	10.75		9.00	16.50		10.92		0.50	
12	30.00	7.25	17.38	12.75		10.00	18.25		12.92		0.50	

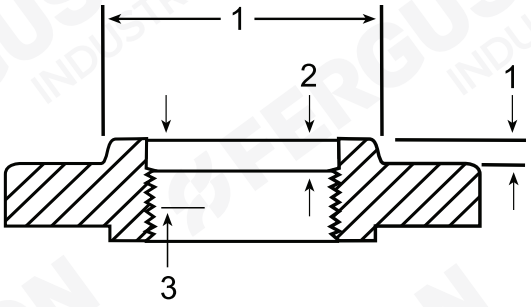
NOTES

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

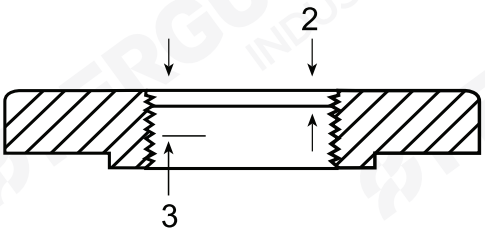
REDUCING SLIP-ON AND THREADED FLANGES — ALL CLASSES



Slip-on



Threaded



Blind

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

NOTES

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 1, 2 and 3 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.

CALCULATED FLANGE WEIGHTS

CLASS 150					
Pipe Size	Outside Diameter O.D.	Threaded & Slip-on	Weld Neck	Blind	Lap Joint
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	1675.00	—
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	—

NOTES

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

CALCULATED FLANGE WEIGHTS

CLASS 300					
Pipe Size	Outside Diameter O.D.	Threaded & Slip-on	Weld Neck	Blind	Lap Joint
ASME B16.5					
½	3.75	3.00	2.00	2.00	2.00
¾	4.62	3.00	3.00	3.00	3.00
1	4.88	3.00	4.00	4.00	3.00
1 ¼	5.25	4.50	5.00	6.00	4.50
1 ½	6.12	6.50	7.00	7.00	6.50
2	6.50	7.00	9.00	8.00	7.00
2 ½	7.50	10.00	12.00	12.00	10.00
3	8.25	14.00	18.00	16.00	14.00
3 ½	9.00	17.00	20.00	21.00	17.00
4	10.00	24.00	26.50	28.00	24.00
5	11.00	31.00	36.00	37.00	28.00
6	12.50	39.00	45.00	50.00	39.00
8	15.00	58.00	69.00	81.00	58.00
10	17.50	81.00	100.00	124.00	91.00
12	20.50	115.00	142.00	185.00	140.00
14	23.00	165.00	206.00	250.00	190.00
16	25.50	220.00	250.00	315.00	234.00
18	28.00	280.00	320.00	415.00	305.00
20	30.50	325.00	400.00	515.00	375.00
24	36.00	490.00	580.00	800.00	550.00
ASME B16.47 Series A					
30	43.00	—	870.00	1543.00	—
36	50.00	—	1275.00	2436.00	—
42	50.75	—	950.00	2688.00	—
48	57.75	—	1380.00	3896.00	—
ASME B16.47 Series B					
30	39.00	—	550.00	1249.00	—
36	46.12	—	840.00	1921.00	—
42	52.50	—	1135.00	2876.00	—
48	59.50	—	1575.00	4183.00	—

NOTES

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

CALCULATED FLANGE WEIGHTS

CLASS 600					
Pipe Size	Outside Diameter O.D.	Threaded & Slip-on	Weld Neck	Blind	Lap Joint
ASME B16.5					
½	3.75	2.00	3.00	3.00	2.00
¾	4.62	3.00	4.00	4.00	3.00
1	4.88	4.00	4.00	4.00	4.00
1 ¼	5.25	5.00	6.00	6.00	5.00
1 ½	6.12	7.00	8.00	7.00	7.00
2	6.50	9.00	12.00	10.00	9.00
2 ½	7.50	13.00	18.00	15.00	12.00
3	8.25	16.00	23.00	20.00	15.00
3 ½	9.00	21.00	26.00	29.00	20.00
4	10.75	37.00	42.00	41.00	36.00
5	13.00	63.00	68.00	68.00	63.00
6	14.00	80.00	81.00	86.00	78.00
8	16.50	115.00	120.00	140.00	112.00
10	20.00	177.00	190.00	231.00	195.00
12	22.00	215.00	226.00	295.00	240.00
14	23.75	259.00	347.00	378.00	290.00
16	27.00	366.00	481.00	527.00	400.00
18	29.25	476.00	555.00	665.00	469.00
20	32.00	612.00	690.00	855.00	604.00
24	37.00	876.00	977.00	1250.00	866.00
ASME B16.47 Series A					
30	44.50	—	1210.00	2423.00	—
36	51.75	—	1705.00	3802.00	—
42	55.25	—	2030.00	4585.00	—
48	62.75	—	2855.00	6737.00	—
ASME B16.47 Series B					
30	40.25	—	810.00	1802.00	—
36	47.75	—	1340.00	3013.00	—

NOTES

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

CALCULATED FLANGE WEIGHTS

CLASS 900					
Pipe Size	Outside Diameter O.D.	Threaded & Slip-on	Weld Neck	Blind	Lap Joint
ASME B16.5					
½	4.75	6.00	7.00	4.00	6.00
¾	5.12	6.00	7.00	6.00	6.00
1	5.88	7.50	8.50	9.00	7.50
1 ¼	6.25	10.00	10.00	10.00	10.00
1 ½	7.00	14.00	14.00	14.00	14.00
2	8.50	22.00	24.00	25.00	21.00
2 ½	9.62	31.00	31.00	32.00	25.00
3	9.50	36.00	36.00	35.00	29.00
4	11.50	53.00	53.00	54.00	51.00
5	13.75	83.00	86.00	87.00	81.00
6	15.00	110.00	110.00	115.00	105.00
8	18.50	172.00	187.00	200.00	190.00
10	21.50	245.00	268.00	290.00	277.00
12	24.00	326.00	372.00	415.00	371.00
14	25.25	400.00	562.00	520.00	415.00
16	27.75	459.00	685.00	619.00	488.00
18	31.00	647.00	924.00	880.00	670.00
20	33.75	792.00	1164.00	1107.00	868.00
24	41.00	1480.00	2107.00	2099.00	1659.00
ASME B16.47 Series A					
30	48.50	—	2120.00	3758.00	—
36	57.50	—	3395.00	6209.00	—
42	61.50	—	3960.00	7675.00	—
48	70.25	—	4980.00	11398.00	—
ASME B16.47 Series B					
30	46.50	—	1820.00	3334.00	—
36	53.00	—	2520.00	4963.00	—

NOTES

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

CALCULATED FLANGE WEIGHTS

CLASS 1500					
Pipe Size	Outside Diameter O.D.	Threaded & Slip-on	Weld Neck	Blind	Lap Joint
ASME B16.5					
½	4.75	6.00	7.00	4.00	6.00
¾	5.12	6.00	7.00	6.00	6.00
1	5.88	8.00	9.00	9.00	8.00
1 ¼	6.25	10.00	10.00	10.00	10.00
1 ½	7.00	14.00	14.00	14.00	14.00
2	8.50	25.00	25.00	25.00	25.00
2 ½	9.62	36.00	36.00	35.00	35.00
3	10.50	48.00	48.00	48.00	47.00
4	12.25	73.00	73.00	73.00	75.00
5	14.75	132.00	132.00	140.00	140.00
6	15.50	165.00	165.00	160.00	170.00
8	19.00	260.00	275.00	302.00	286.00
10	23.00	436.00	455.00	510.00	485.00
12	26.50	667.00	690.00	775.00	749.00
14	29.50	940.00	940.00	975.00	890.00
16	32.50	1250.00	1250.00	1300.00	1250.00
18	36.00	1625.00	1625.00	1750.00	1475.00
20	38.75	2050.00	2050.00	2225.00	1775.00
24	46.00	2825.00	3325.00	3625.00	2825.00

NOTES

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

CALCULATED FLANGE WEIGHTS

CLASS 2500					
Pipe Size	Outside Diameter O.D.	Threaded & Slip-on	Weld Neck	Blind	Lap Joint
ASME B16.5					
½	5.25	7.00	8.00	7.00	7.00
¾	5.50	9.00	9.00	10.00	8.00
1	6.25	12.00	13.00	12.00	12.00
1 ¼	7.25	18.00	20.00	18.00	17.00
1 ½	8.00	25.00	28.00	25.00	24.00
2	9.25	38.00	42.00	39.00	37.00
2 ½	10.50	55.00	52.00	56.00	53.00
3	12.00	83.00	94.00	86.00	80.00
4	14.00	127.00	146.00	133.00	122.00
5	16.50	210.00	244.00	223.00	204.00
6	19.00	323.00	378.00	345.00	314.00
8	21.75	485.00	576.00	533.00	471.00
10	26.50	925.00	1068.00	1025.00	897.00
12	30.00	1300.00	1608.00	1464.00	1262.00

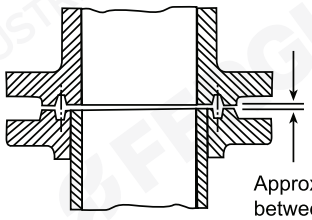
NOTES

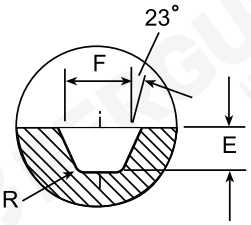
1. All dimensions are in inches.
2. All weights are in pounds and approximated or estimated.

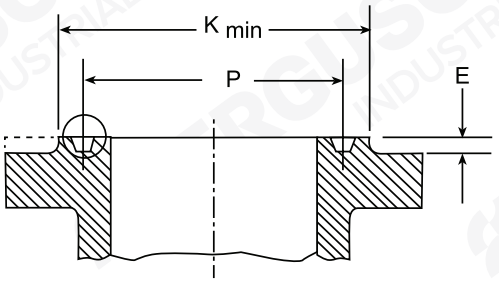
TECHNICAL DATA

RING TYPE JOINT FACING DIMENSIONS

CLASS 150







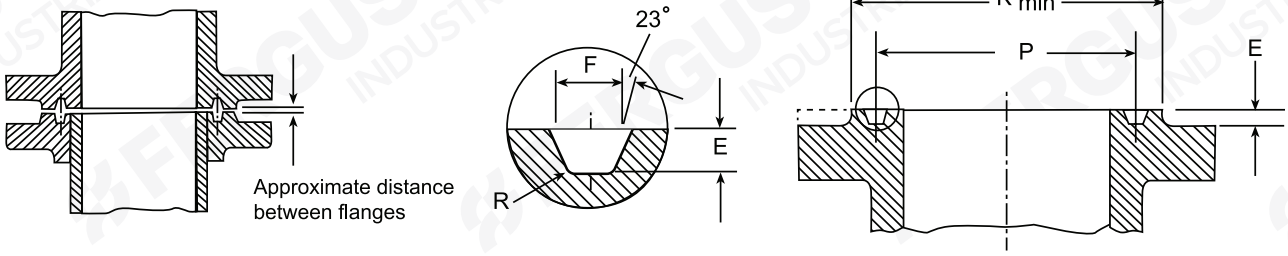
CLASS 150							
Nominal		Groove Number	Groove Dimensions				
Pipe Size	Outside Diameter		Pitch Diameter	Depth	Width	Radius at Bottom	Diameter of Gasket
	O.D.		P	E	F	R	K
1	4.25	R15	1.875	0.250	0.344	0.03	2.50
1 ¼	4.62	R17	2.250	0.250	0.344	0.03	2.88
1 ½	5.00	R19	2.562	0.250	0.344	0.03	3.25
2	6.00	R22	3.250	0.250	0.344	0.03	4.00
2 ½	7.00	R25	4.000	0.250	0.344	0.03	4.75
3	7.50	R29	4.500	0.250	0.344	0.03	5.25
3 ½	8.50	R33	5.188	0.250	0.344	0.03	6.06
4	9.00	R36	5.875	0.250	0.344	0.03	6.75
5	10.00	R40	6.750	0.250	0.344	0.03	7.62
6	11.00	R43	7.625	0.250	0.344	0.03	8.62
8	13.50	R48	9.750	0.250	0.344	0.03	10.75
10	16.00	R52	12.000	0.250	0.344	0.03	13.00
12	19.00	R56	15.000	0.250	0.344	0.03	16.00
14	21.00	R59	15.625	0.250	0.344	0.03	16.75
16	23.50	R64	17.875	0.250	0.344	0.03	19.00
18	25.00	R68	20.375	0.250	0.344	0.03	21.50
20	27.50	R72	22.000	0.250	0.344	0.03	23.50
24	32.00	R76	26.500	0.250	0.344	0.03	28.00

NOTES

1. All dimensions are in inches.
2. H eight of raised portion is equal to the depth of grove dimension E, but is not subjected to the tolerances for E. Former full-face contour may be used.
3. Tolerances:
   E (depth) + 0.016, - 0.0
   F (width) ± 0.008
   P (pitch diameter) ± 0.005
   R (radius at bottom)
   R < 0.06 + 0.03, - 0.0;
   R > 0.06 ± 0.03
   23° (angle) = ½°

RING TYPE JOINT FACING DIMENSIONS

CLASS 300



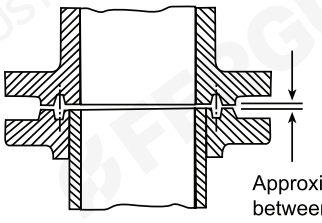
CLASS 300							
Nominal		Groove Number	Groove Dimensions				
Pipe Size	Outside Diameter		Pitch Diameter	Depth	Width	Radius at Bottom	Diameter of Gasket
	O.D.		P	E	F	R	K
½	3.75	R11	1.344	0.219	0.281	0.03	2.00
¾	4.62	R13	1.688	0.250	0.344	0.03	2.50
1	4.88	R16	2.000	0.250	0.344	0.03	2.75
1 ¼	5.25	R18	2.375	0.250	0.344	0.03	3.12
1 ½	6.12	R20	2.688	0.250	0.344	0.03	3.56
2	6.50	R23	3.250	0.312	0.469	0.03	4.25
2 ½	7.50	R26	4.000	0.312	0.469	0.03	5.00
3	8.25	R31	4.875	0.312	0.469	0.03	5.75
3 ½	9.00	R34	5.188	0.312	0.469	0.03	6.25
4	10.00	R37	5.875	0.312	0.469	0.03	6.88
5	11.00	R41	7.125	0.312	0.469	0.03	8.25
6	12.50	R45	8.312	0.312	0.469	0.03	9.50
8 1	5.00	R49	10.625	0.312	0.469	0.03	11.88
10	17.50	R53	12.750	0.312	0.469	0.03	14.00
12	20.50	R57	15.000	0.312	0.469	0.03	16.25
14	23.00	R61	16.500	0.312	0.469	0.03	18.00
16	25.50	R65	18.500	0.312	0.469	0.03	20.00
18	28.00	R69	21.000	0.312	0.469	0.03	22.62
20	30.50	R73	23.000	0.375	0.531	0.06	25.00
24	36.00	R77	27.250	0.438	0.656	0.06	29.50

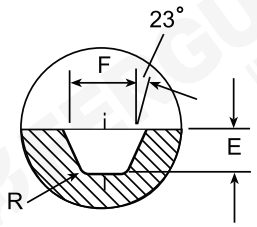
NOTES

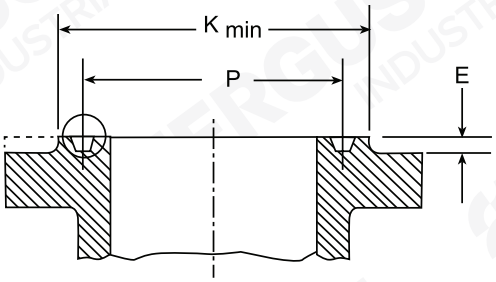
1. All dimensions are in inches.
2. H eight of raised portion is equal to the depth of grove dimension E, but is not subjected to the tolerances for E. Former full-face contour may be used.
3. Tolerances:
   E (depth) + 0.016, - 0.0
   F (width) ± 0.008
   P (pitch diameter) ± 0.005
   R (radius at bottom)
   R < 0.06 + 0.03, - 0.0;
   R > 0.06 ± 0.03
   23° (angle) = ½°
4. For ring joints with lapped flanges in Class 300 and 600, ring and groove number R30 are used instead of R31.

RING TYPE JOINT FACING DIMENSIONS

CLASS 600







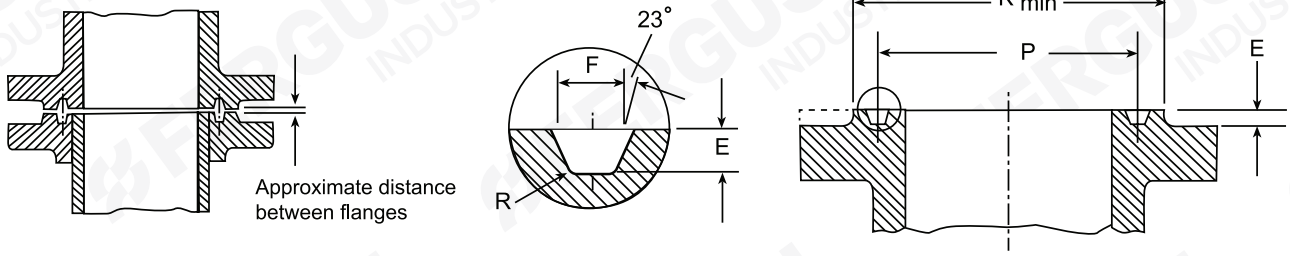
CLASS 600							
Nominal		Groove Number	Groove Dimensions				
Pipe Size	Outside Diameter		Pitch Diameter	Depth	Width	Radius at Bottom	Diameter of Gasket
	O.D.		P	E	F	R	K
½	3.75	R11	1.344	0.219	0.281	0.03	2.00
¾	4.62	R13	1.688	0.250	0.344	0.03	2.50
1	4.88	R16	2.000	0.250	0.344	0.03	2.75
1 ¼	5.25	R18	2.375	0.250	0.344	0.03	3.12
1 ½	6.12	R20	2.688	0.250	0.344	0.03	3.56
2	6.50	R23	3.250	0.312	0.469	0.03	4.25
2 ½	7.50	R26	4.000	0.312	0.469	0.03	5.00
3	8.25	R31	4.875	0.312	0.469	0.03	5.75
3 ½	9.00	R34	5.188	0.312	0.469	0.03	6.25
4	10.75	R37	5.875	0.312	0.469	0.03	6.88
5	13.00	R41	7.125	0.312	0.469	0.03	8.25
6	14.00	R45	8.312	0.312	0.469	0.03	9.50
8	16.50	R49	10.625	0.312	0.469	0.03	11.88
10	20.00	R53	12.750	0.312	0.469	0.03	14.00
12	22.00	R57	15.000	0.312	0.469	0.03	16.25
14	23.75	R61	16.500	0.312	0.469	0.03	18.00
16	27.00	R65	18.500	0.312	0.469	0.03	20.00
18	29.25	R69	21.000	0.312	0.469	0.03	22.62
20	32.00	R73	23.000	0.375	0.531	0.06	25.00
24	37.00	R77	27.250	0.438	0.656	0.06	29.50

NOTES

1. All dimensions are in inches.
2. H eight of raised portion is equal to the depth of grove dimension E, but is not subjected to the tolerances for E. Former full-face contour may be used.
3. Tolerances:
   E (depth) + 0.016, - 0.0
   F (width) ± 0.008
   P (pitch diameter) ± 0.005
   R (radius at bottom)
   R < 0.06 + 0.03, - 0.0;
   R > 0.06 ± 0.03
   23° (angle) = ½°
4. For ring joints with lapped flanges in Class 300 and 600, ring and groove number R30 are used instead of R31.

RING TYPE JOINT FACING DIMENSIONS

CLASS 900



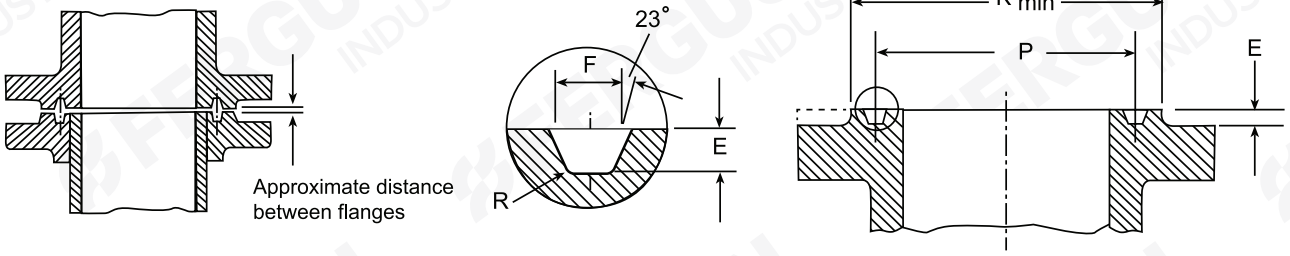
CLASS 900							
Nominal		Groove Number	Groove Dimensions				
Pipe Size	Outside Diameter		Pitch Diameter	Depth	Width	Radius at Bottom	Diameter of Gasket
	O.D.		P	E	F	R	K
½	4.75	R12	1.562	0.250	0.344	0.03	2.38
¾	5.12	R14	1.750	0.250	0.344	0.03	2.62
1	5.88	R16	2.000	0.250	0.344	0.03	2.81
1 ¼	6.25	R18	2.375	0.250	0.344	0.03	3.19
1 ½	7.00	R20	2.688	0.250	0.344	0.03	3.62
2	8.50	R24	3.750	0.312	0.469	0.03	4.88
2 ½	9.62	R27	4.250	0.312	0.469	0.03	5.38
3	9.50	R31	4.875	0.312	0.469	0.03	6.12
4	11.50	R37	5.875	0.312	0.469	0.03	7.12
5	13.75	R41	7.125	0.312	0.469	0.03	8.50
6	15.00	R45	8.312	0.312	0.469	0.03	9.50
8	18.50	R49	10.625	0.312	0.469	0.03	12.12
10	21.50	R53	12.750	0.312	0.469	0.03	14.25
12	24.00	R57	15.000	0.312	0.469	0.03	16.50
14	25.25	R62	16.500	0.438	0.656	0.06	18.38
16	27.75	R66	18.500	0.438	0.656	0.06	20.62
18	31.00	R70	21.000	0.500	0.781	0.06	23.38
20	33.75	R74	23.000	0.500	0.781	0.06	25.50
24	41.00	R78	27.250	0.625	1.062	0.09	30.38

NOTES

1. All dimensions are in inches.
2. H eight of raised portion is equal to the depth of grove dimension E, but is not subjected to the tolerances for E. Former full-face contour may be used.
3. Tolerances:
   E (depth) + 0.016, - 0.0
   F (width) ± 0.008
   P (pitch diameter) ± 0.005
   R (radius at bottom)
   R < 0.06 + 0.03, - 0.0;
   R > 0.06 ± 0.03
   23° (angle) = ½°
4. Use Class 1500 in sizes NPS ½ to NPS 2 ½ for Class 900.

RING TYPE JOINT FACING DIMENSIONS

CLASS 1500



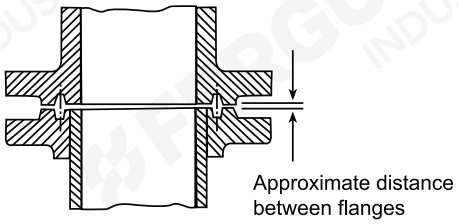
CLASS 1500							
Nominal		Groove Number	Groove Dimensions				
Pipe Size	Outside Diameter		Pitch Diameter	Depth	Width	Radius at Bottom	Diameter of Gasket
	O.D.		P	E	F	R	K
½	4.75	R12	1.562	0.250	0.344	0.03	2.38
¾	5.12	R14	1.750	0.250	0.344	0.03	2.62
1	5.88	R16	2.000	0.250	0.344	0.03	2.81
1 ¼	6.25	R18	2.375	0.250	0.344	0.03	3.19
1 ½	7.00	R20	2.688	0.250	0.344	0.03	3.62
2	8.50	R24	3.750	0.312	0.469	0.03	4.88
2 ½	9.62	R27	4.250	0.312	0.469	0.03	5.38
3	10.50	R35	5.375	0.312	0.469	0.03	6.62
4	12.25	R39	6.375	0.312	0.469	0.03	7.62
5	14.75	R44	7.625	0.312	0.469	0.03	9.00
6	15.50	R46	8.312	0.375	0.531	0.06	9.75
8	19.00	R50	10.625	0.438	0.656	0.06	12.50
10	23.00	R54	12.750	0.438	0.656	0.06	14.62
12	26.50	R58	15.000	0.562	0.906	0.06	17.25
14	29.50	R63	16.500	0.625	1.062	0.09	19.25
16	32.50	R67	18.500	0.688	1.188	0.09	21.50
18	36.00	R71	21.000	0.688	1.188	0.09	24.12
20	38.75	R75	23.000	0.688	1.312	0.09	26.50
24	46.00	R79	27.250	0.812	1.438	0.09	31.25

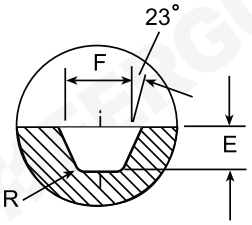
NOTES

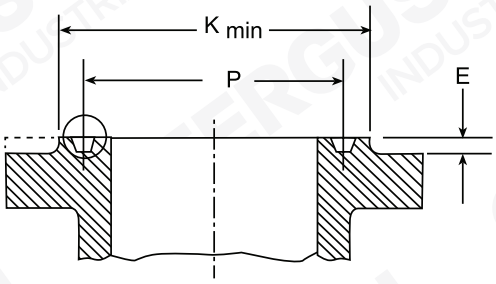
1. All dimensions are in inches.
2. H eight of raised portion is equal to the depth of grove dimension E, but is not subjected to the tolerances for E. Former full-face contour may be used.
3. Tolerances:
   E (depth) + 0.016, - 0.0
   F (width) ± 0.008
   P (pitch diameter) ± 0.005
   R (radius at bottom)
   R < 0.06 + 0.03, - 0.0;
   R > 0.06 ± 0.03
   23° (angle) = ½°

RING TYPE JOINT FACING DIMENSIONS

CLASS 2500







CLASS 2500							
Nominal		Groove Number	Groove Dimensions				
Pipe Size	Outside Diameter		Pitch Diameter	Depth	Width	Radius at Bottom	Diameter of Gasket
	O.D.		P	E	F	R	K
½	5.25	R13	1.688	0.250	0.344	0.03	2.56
¾	5.50	R16	2.000	0.250	0.344	0.03	2.88
1	6.25	R18	2.375	0.250	0.344	0.03	3.25
1 ¼	7.25	R21	2.844	0.312	0.469	0.03	4.00
1 ½	8.00	R23	3.250	0.312	0.469	0.03	4.50
2	9.25	R26	4.000	0.312	0.469	0.03	5.25
2 ½	10.50	R28	4.375	0.375	0.531	0.06	5.88
3	12.00	R32	5.000	0.375	0.531	0.06	6.62
4	14.00	R38	6.188	0.438	0.656	0.06	8.00
5	16.50	R42	7.500	0.500	0.781	0.06	9.50
6	19.00	R47	9.000	0.500	0.781	0.06	11.00
8	21.75	R51	11.000	0.562	0.906	0.06	13.38
10	26.50	R55	13.500	0.688	1.188	0.09	16.75
12	30.00	R60	16.000	0.688	1.312	0.09	19.50
14	25.25	R62	16.500	0.438	0.656	0.06	18.38
16	27.75	R66	18.500	0.438	0.656	0.06	20.62
18	31.00	R70	21.000	0.500	0.781	0.06	23.38
20	33.75	R74	23.000	0.500	0.781	0.06	25.50
24	41.00	R78	27.250	0.625	1.062	0.09	30.38

NOTES

1. All dimensions are in inches.
2. H eight of raised portion is equal to the depth of grove dimension E, but is not subjected to the tolerances for E. Former full-face contour may be used.
3. Tolerances:
   E (depth) + 0.016, - 0.0
   F (width) ± 0.008
   P (pitch diameter) ± 0.005
   R (radius at bottom)
   R < 0.06 + 0.03, - 0.0;
   R > 0.06 ± 0.03
   23° (angle) = ½°