

Flange Dimensions

Class 125 Bronze Flange Dimensions Meets 125 lb. A.S.M.E. Standard						
Nominal Size	Dim. A Flange O.D.	Dim. B Bolt Circle	Dim. C Thickness of Flange	Dia. Bolt Hole	Dia. Bolt	No. Bolt Holes
1/2	3.50	2.38	0.19	0.63	0.50	4
3/4	3.88	2.75	0.19	0.63	0.50	4
1	4.25	3.13	0.25	0.63	0.50	4
1 1/4	4.63	3.50	0.25	0.63	0.50	4
1 1/2	5.00	3.88	0.31	0.63	0.50	4
2	6.00	4.75	0.38	0.75	0.63	4
2 1/2	7.00	5.50	0.38	0.75	0.63	4
3	7.50	6.00	0.44	0.75	0.63	4
3 1/2	8.50	7.00	0.44	0.75	0.63	8
4	9.00	7.50	0.44	0.75	0.63	8
5	10.00	8.50	0.44	0.88	0.75	8
6	11.00	9.50	0.50	0.88	0.75	8
8	13.50	11.75	0.63	0.88	0.75	8
10	16.00	14.25	0.63	1.00	0.88	12
12	19.00	17.00	0.69	1.00	0.88	12
Class 150 Bronze Flange Dimensions Meets ANSI STD B16.24 and Federal Spec. WW-F-406						
Nominal Size	Dim. A Flange	Dim. B Bolt	Dim. C Thickness	Dia. Bolt	Dia. Bolt	No. Bolt

Class 300 Bronze Flange Dimensions Meets ANSI STD B16.24						
Nominal Size	Dim. A Flange Diam.	Dim. B Min. Flange Thickness	Dim. C Bolt Circle	Dim. Bolt Hole Diam.	Bolt. Diam.	No. of ¹ Bolts
1/2	3.75	0.50	2.63	0.63	0.50	4
3/4	4.63	0.53	3.25	0.75	0.63	4
1	4.88	0.59	3.50	0.75	0.63	4
1 1/4	5.25	0.63	3.88	0.75	0.63	4
1 1/2	6.13	0.69	4.50	0.88	0.75	4
2	6.50	0.75	5.00	0.75	0.63	8
2 1/2	7.50	0.81	5.88	0.88	0.75	8
3	8.25	0.91	6.63	0.88	0.75	8
3 1/2	9.00	0.97	7.25	0.88	0.75	8
4	10.00	1.06	7.88	0.88	0.75	8
5	11.00	1.13	9.25	0.88	0.75	8
6	12.50	1.19	10.63	0.88	0.75	12
8	15.00	1.38	13.00	1.00	0.88	12

¹ When flanges are integral with fittings or valves, holes for bolts are drilled to straddle the center line.

	O.D.	Circle	of Flange	Hole		Holes
1/2	3.50	2.38	0.31	0.63	0.50	4
3/4	3.88	2.75	0.34	0.63	0.50	4
1	4.25	3.13	0.38	0.63	0.50	4
1 1/4	4.63	3.50	0.40	0.63	0.50	4
1 1/2	5.00	3.88	0.44	0.63	0.50	4
2	6.00	4.75	0.50	0.75	0.63	4
2 1/2	7.00	5.50	0.56	0.75	0.63	4
3	7.50	6.00	0.63	0.75	0.63	4
3 1/2	8.50	7.00	0.69	0.75	0.63	8
4	9.00	7.50	0.69	0.75	0.63	8
5	10.00	8.50	0.75	0.88	0.75	8
6	11.00	9.50	0.81	0.88	0.75	8
8	13.50	11.75	0.94	0.88	0.75	8

Corresponding sizes of class 150 (ANSI B16.24) flange diameters and drilling templates are the same as those of the American Class 125 Cast Iron Flange Standard (ANSI B16.1) and of the American Class 150 Steel Flange Standard (ANSI B16.5). Class 300 (ANSI B16.24) flange diameters and drilling templates are the same as those of the American Class 250 Cast Iron Flange Standard (ANSI B16.1) and of the American Class 300 Steel Flange Standard (ANSI B16.5).

Full face gaskets extending to the flange face edge as given in American Standard Non-Metal Gaskets for Pipe Flanges ANSI B16.21 are required. Metal gaskets should not be used.

Flange Dimensions (2)

Class 125 Cast Iron Flanges - ANSI Standard B16.1 Made with 150-lb. Steel Flanges ANSI Standard B16.5							
Dimension in Inches							
Size	Diameter of Flange	Thickness of Flange	Diameter of Bolt Circle	Bolt Hole Diameter	Number of Bolts	Diameter of Bolts	*Length of Bolts

2	6.00	0.63	4.75	0.75	4	0.63	2.25
2 ¹ / ₂	7.00	0.69	5.50	0.75	4	0.63	2.50
3	7.50	0.75	6.00	0.75	4	0.63	2.50
3 ¹ / ₂	8.50	0.81	7.00	0.75	8	0.63	2.75
4	9.00	0.94	7.50	0.75	8	0.63	3.00
5	10.00	0.94	8.50	0.88	8	0.75	3.00
6	11.00	1.00	9.50	0.88	8	0.75	3.25
8	13.50	1.13	11.75	0.88	8	0.75	3.50
10	16.00	1.19	14.25	1.00	12	0.88	3.75
12	19.00	1.25	17.00	1.00	12	0.88	3.75
14	21.00	1.38	18.75	1.13	12	1.00	4.25
16	23.50	1.44	21.25	1.13	16	1.00	4.50
18	25.00	1.56	22.75	1.25	16	1.13	4.75
20	27.50	1.69	25.00	1.25	20	1.13	5.00
24	32.00	1.88	29.50	1.38	20	1.25	5.50

*When bolting to steel flanges, longer bolts or stud may be required.

**Class 250 Cast Iron Flanges - ANSI Standard B16.1
Made with 300 lb. Steel Flanges ANSI Standard B16.5**

Dimension in Inches

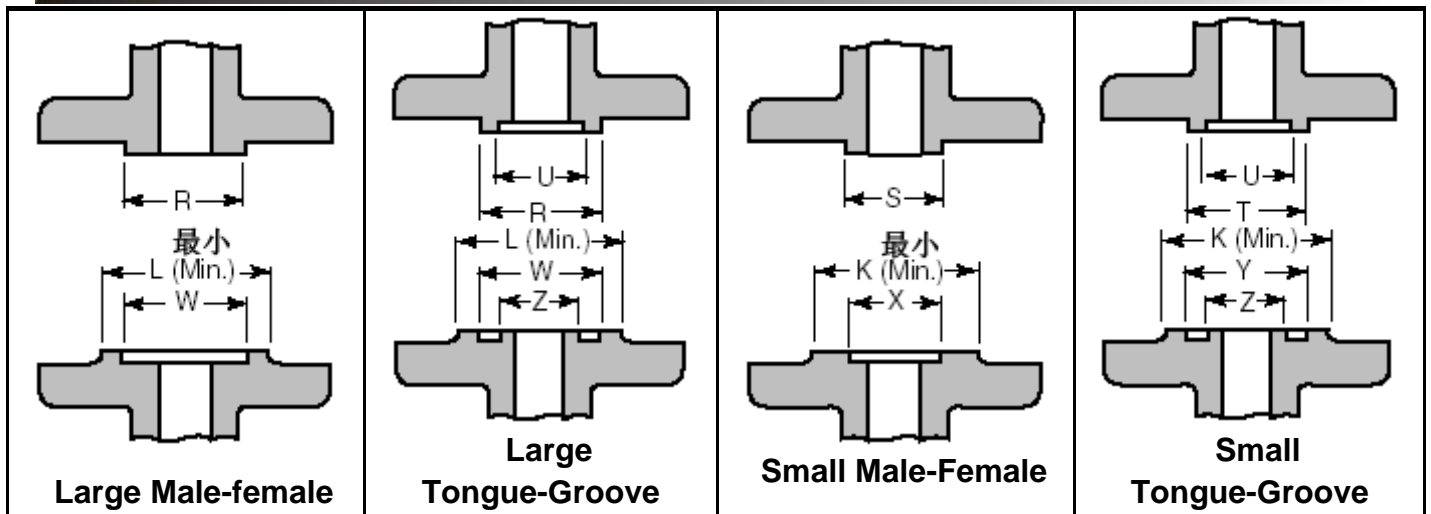
Size	Diameter of Flange	Thickness of Flange	Diameter of Bolt Circle	Bolt Hole Diameter	Number of Bolts	Diameter of Bolts	*Length of Bolts
2	6.50	.88	5.00	.75	8	.63	2.75
2 ¹ / ₂	7.50	1.00	5.88	.88	8	.75	3.25
3	8.25	1.13	6.63	.88	8	.75	3.50
3 ¹ / ₂	9.00	1.19	7.25	.88	8	.75	3.50
4	10.00	1.25	7.88	.88	8	.75	3.75
5	11.00	1.38	9.25	.88	8	.75	4.00
6	12.50	1.44	10.63	.88	12	.75	4.00
8	15.00	1.63	13.00	1.00	12	.88	4.50

10	17.50	1.88	15.25	1.13	16	1.00	5.25
12	20.50	2.00	17.75	1.25	16	1.13	5.50
14	23.00	2.13	20.25	1.25	20	1.13	6.00
16	25.50	2.25	22.50	1.38	20	1.25	6.25
18	28.00	2.38	24.75	1.38	24	1.25	6.50
20	30.50	2.50	27.00	1.38	24	1.25	6.75
24	36.00	2.75	32.00	1.38	24	1.50	7.50

*When bolting to steel flanges, longer bolts or stud may be required.

Special Flange Facings

<p>On special application, Pacific valves can be supplied with special end flange facings other than the raised face or ring joint. The most popular special flange facings are shown below and include large male-female, large tongue-groove, small male-female and small tongue-groove.</p> <p style="text-align: center;">STANDARDS</p> <p>Special flange facings supplied on Pacific valves conform to ANSI B16.5 and B16.20. Bolt templates and flange thickness "Q" for ring joint end flanges are identical to the corresponding size and class raised face flanges shown on preceding page.</p>	<p style="text-align: center;">FINISH (large male female)</p> <p>Standard finish of gasket surface is serrated, either spiral or concentric, with 125-200RA finish.</p> <p style="text-align: center;">FINISH (small male female and tongue groove)</p> <p>Standard finish of gasket surface is 125-200 micro-inch maximum roughness.</p> <p style="text-align: center;">FACE-TO-FACE</p> <p>Face-to-face dimensions of Pacific valves with special flange facing will be in accordance with B16.10 and will be furnished upon application.</p>
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Nom Pipe Size	Outside Diameter			Inside Diameter of Large and Small Tongue U	Minimum Outside Diameter of Raised Portion		Outside diameter			Inside Diameter of Large and Small Groove Z
	Large Male and Large Tongue R	Small Male S	Small Tongue T		Small Female and Groove K	Large Female and Groove L	Large Female and Groove W	Small Female X	Small Groove Y	
1/2	1.38	0.72	1.38	1.00	1.75	1.81	1.44	0.78	1.44	0.94
3/4	1.69	0.94	1.69	1.31	2.06	2.12	1.75	1.00	1.75	1.25
1	2.00	1.19	1.88	1.50	2.25	2.44	2.06	1.25	1.94	1.44
1 1/4	2.50	1.50	2.25	1.88	2.62	2.94	2.56	1.56	2.31	1.81
1 1/2	2.88	1.75	2.50	2.12	2.88	3.31	2.94	1.81	2.56	2.06
2	3.62	2.25	3.25	2.88	3.62	4.06	3.69	2.31	3.31	2.81
2 1/2	4.12	2.69	3.75	3.38	4.12	4.56	4.19	2.75	3.81	3.31
3	5.00	3.31	4.62	4.25	5.00	5.44	5.06	3.38	4.69	4.19
3 1/2	5.50	3.81	5.12	4.75	5.50	5.94	5.56	3.88	5.19	4.69
4	6.19	4.31	5.69	5.19	6.19	6.62	6.25	4.38	5.75	5.12
5	7.31	5.38	6.81	6.31	7.31	7.75	7.38	5.44	6.88	6.25
6	8.50	6.38	8.00	7.50	8.50	8.94	8.56	6.44	8.06	7.44
8	10.62	8.38	10.00	9.38	10.62	11.06	10.69	8.44	10.06	9.31
10	12.75	10.50	12.00	11.25	12.75	13.19	12.81	10.56	12.06	11.19
12	15.00	12.50	14.25	13.50	15.00	15.44	15.06	12.56	14.31	13.44
14	16.25	13.75	15.50	14.75	16.25	16.69	16.31	13.81	15.56	14.69
16	18.50	15.75	17.62	16.75	18.50	18.94	18.56	15.81	17.69	16.69
18	21.00	17.75	20.12	19.25	21.00	21.44	21.06	17.81	20.19	19.19

20	23.00	19.75	22.00	21.00	23.00	23.44	23.06	19.81	22.06	20.94
24	27.25	23.75	26.25	25.25	27.25	27.69	27.31	23.81	26.31	25.19

- All dimensions are given in inches.
- Height of large and small male and tongue is 0.25 in. on all sizes and classes.
- Depth of groove or female is 0.19 in. on all sizes and classes.
- Raised portion or full face may be furnished unless otherwise specified on order.
- For small male and female joints care should be taken in the use of these dimensions to insure that the inside diameter of fitting or pipe is small enough to permit sufficient bearing surface to prevent the crushing of the gasket. This applies particularly on lines where the joint is made on the end of the pipe.
- Inside diameter of fitting should match inside diameter of pipe as specified by purchaser.
- Large male and female faces and large tongue and groove are not applicable to Class 150 because of potential dimensional conflicts.