

Flange dimensions are determined by pipe size and pressure class required for the application. Most of these dimensions have been standardized and published as ASME, MSS, API or other standardization organization specifications.

[ASME/ANSI B16.5](#) provides dimensions and tolerances for flanges in pipe sizes from 1/2" through 24" and in pressure classes from 150 lb through 2500 lb.

Nominal Pipe Size NPS (inches)	150 psi			
	Diameter of Flange (inches)	No. of Bolts	Diameter of Bolts (inches)	Bolt Circle (inches)
1/4	3-3/8	4	1/2	2-1/4
1/2	3-1/2	4	1/2	2-3/8
3/4	3-7/8	4	1/2	2-3/4
1	4-1/4	4	1/2	3-1/8
1-1/4	4-5/8	4	1/2	3-1/2
1-1/2	5	4	1/2	3-7/8
2	6	4	5/8	4-3/4
2-1/2	7	4	5/8	5-1/2
3	7-1/2	4	5/8	6
3-1/2	8-1/2	8	5/8	7
4	9	8	5/8	7-1/2
5	10	8	3/4	8-1/2
6	11	8	3/4	9-1/2
8	13-1/2	8	3/4	11-3/4

10	16	12	7/8	14-1/4
12	19	12	7/8	17
14	21	12	1	18-3/4
16	23-1/2	16	1	21-1/4
18	25	16	1-1/8	22-3/4
20	27-1/2	20	1-1/8	25
24	32	20	1-1/4	29-1/2

Nominal Pipe Size NPS (inches)	300 psi			
	Diameter of Flange (inches)	No. of Bolts	Diameter of Bolts (inches)	Bolt Circle (inches)
1/4	3-3/8	4	1/2	2-1/4
1/2	3-3/4	4	1/2	2-5/8
3/4	4-5/8	4	5/8	3-1/4
1	4-7/8	4	5/8	3-1/2
1-1/4	5-1/4	4	5/8	3-7/8
1-1/2	6-1/8	4	3/4	4-1/2
2	6-1/2	8	5/8	5
2-1/2	7-1/2	8	3/4	5-7/8
3	8-1/4	8	3/4	6-5/8

3-1/2	9	8	3/4	7-1/4
4	10	8	3/4	7-7/8
5	11	8	3/4	9-1/4
6	12-1/2	12	3/4	10-5/8
8	15	12	7/8	13
10	17-1/2	16	1	15-1/4
12	20-1/2	16	1-1/8	17-3/4
14	23	20	1-1/8	20-1/4
16	25-1/2	20	1-1/4	22-1/2
18	28	24	1-1/4	24-3/4
20	30-1/2	24	1-1/4	27
24	36	24	1-1/2	32

Nominal Pipe Size NPS (inches)	400 psi			
	Diameter of Flange (inches)	No. of Bolts	Diameter of Bolts (inches)	Bolt Circle (inches)
1/4	3-3/8	4	1/2	2-1/4
1/2	3-3/4	4	1/2	2-5/8
3/4	4-5/8	4	5/8	3-1/4
1	4-7/8	4	5/8	3-1/2

1-1/4	5-1/4	4	5/8	3-7/8
1-1/2	6-1/8	4	3/4	4-1/2
2	6-1/2	8	5/8	5
2-1/2	7-1/2	8	3/4	5-7/8
3	8-1/4	8	3/4	6-5/8
3-1/2	9	8	7/8	7-1/4
4	10	8	7/8	7-7/8
5	11	8	7/8	9-1/4
6	12-1/2	12	7/8	10-5/8
8	15	12	1	13
10	17-1/2	16	1-1/8	15-1/4
12	20-1/2	16	1-1/4	17-3/4
14	23	20	1-1/4	20-1/4
16	25-1/2	20	1-3/8	22-1/2
18	28	24	1-3/8	24-3/4
20	30-1/2	24	1-1/2	27
24	36	24	1-3/4	32

Nominal Pipe Size NPS	600 psi			
	Diameter of	No.	Diameter of	Bolt

(inches)	Flange (inches)	of Bolts	Bolts (inches)	Circle (inches)
1/4	3-3/8	4	1/2	2-1/4
1/2	3-3/4	4	1/2	2-5/8
3/4	4-5/8	4	5/8	3-1/4
1	4-7/8	4	5/8	3-1/2
1-1/4	5-1/4	4	5/8	3-7/8
1-1/2	6-1/8	4	3/4	4-1/2
2	6-1/2	8	5/8	5
2-1/2	7-1/2	8	3/4	5-7/8
3	8-1/4	8	3/4	6-5/8
3-1/2	9	8	7/8	7-1/4
4	10-3/4	8	7/8	8-1/2
5	13	8	1	10-1/2
6	14	12	1	11-1/2
8	16-1/2	12	1-1/8	13-3/4
10	20	16	1-1/4	17
12	22	20	1-1/4	19-1/4
14	23-3/4	20	1-3/8	20-3/4
16	27	20	1-1/2	23-3/4

18	29-1/4	20	1-5/8	25-3/4
20	32	24	1-5/8	28-1/2
24	37	24	1-7/8	33

Nominal Pipe Size NPS (inches)	900 psi			
	Diameter of Flange (inches)	No. of Bolts	Diameter of Bolts (inches)	Bolt Circle (inches)
1/2	4-3/4	4	3/4	3-1/4
3/4	5-1/8	4	3/4	3-1/2
1	5-7/8	4	7/8	4
1-1/4	6-1/4	4	7/8	4-3/8
1-1/2	7	4	1	4-7/8
2	8-1/2	8	7/8	6-1/2
2-1/2	9-5/8	8	1	7-1/2
3	9-1/2	8	7/8	7-1/2
4	11-1/2	8	1-1/8	9-1/4
5	13-3/4	8	1-1/4	11
6	15	12	1-1/8	12-1/2
8	18-1/2	12	1-3/8	15-1/2
10	21-1/2	16	1-3/8	18-1/2

12	24	20	1-3/8	21
14	25-1/4	20	1-1/2	22
16	27-3/4	20	1-5/8	24-1/2
18	31	20	1-7/8	27
20	33-3/4	20	2	29-1/2
24	41	20	2-1/2	35-1/2

Nominal Pipe Size NPS (inches)	1500 psi			
	Diameter of Flange (inches)	No. of Bolts	Diameter of Bolts (inches)	Bolt Circle (inches)
1/2	4-3/4	4	3/4	3-1/4
3/4	5-1/8	4	3/4	3-1/2
1	5-7/8	4	7/8	4
1-1/4	6-1/4	4	7/8	4-3/8
1-1/2	7	4	1	4-7/8
2	8-1/2	8	7/8	6-1/2
2-1/2	9-5/8	8	1	7-1/2
3	10-1/2	8	1-1/8	8
4	12-1/4	8	1-1/4	9-1/2
5	14-3/4	8	1-1/2	11-1/2

6	15-1/2	12	1-3/8	12-1/2
8	19	12	1-5/8	15-1/2
10	23	12	1-7/8	19
12	26-1/2	16	2	22-1/2
14	29-1/2	16	2-1/4	25
16	32-1/2	16	2-1/2	27-3/4
18	36	16	2-3/4	30-1/2
20	38-3/4	16	3	32-3/4
24	46	16	3-1/2	39

Nominal Pipe Size NPS (inches)	2500 psi			
	Diameter of Flange (inches)	No. of Bolts	Diameter of Bolts (inches)	Bolt Circle (inches)
1/2	5-1/4	4	3/4	3-1/2
3/4	5-1/2	4	3/4	3-3/4
1	6-1/4	4	7/8	4-1/4
1-1/4	7-1/4	4	1	5-1/8
1-1/2	8	4	1-1/8	5-3/4
2	9-1/4	8	1	6-3/4
2-1/2	10-1/2	8	1-1/8	7-3/4

3	12	8	1-1/4	9
4	14	8	1-1/2	10-3/4
5	16-1/2	8	1-3/4	12-3/4
6	19	8	2	14-1/2
8	21-3/4	12	2	17-1/4
10	26-1/2	12	2-1/2	21-1/4
12	30	12	2-3/4	24-3/8