

How to Read a Flange Dimensions Chart: Key structural and geometric fields used to check connection compatibility:

NPS: Nominal Pipe Size designation, indicating matching pipe scale.

Flange Thickness (C): Specified rim thickness excluding the raised face.

Bolt Holes (Qty & Dia): Number and precise diameter of fixing bolt holes.

Outside Diameter (O): Total overall diameter of the flange edge-to-edge.

Bolt Circle Diameter (BCD): Diameter passing through bolt hole centers.

Raised Face (R) & Hub (X,Y): Contact face outer diameter, hub base diameter, and total height.

Class 150 Threaded Flange Dimensions & Weight Chart

Standard: ASME B16.5

Material: ASTM A105

Units: Inches / lbs

NPS	Outside Diam. (O)	Thick. of Flange (C)	Diam. Raised Face (R)	Diam. Hub Base (X)	Length Thru Hub (Y)	Min. Thread Len. (T)	Min. Counter Bore (Q)	No. Holes	Diam. Holes	Diam. Bolts	Bolt Circle (BCD)	Approx. Weight (lbs)
1/2	3.50	0.44	1.38	1.19	0.62	0.62	—	4	0.62	0.50	2.38	1
3/4	3.88	0.50	1.69	1.50	0.62	0.62	—	4	0.62	0.50	2.75	2
1	4.25	0.56	2.00	1.94	0.69	0.69	—	4	0.62	0.50	3.12	2
1 1/4	4.62	0.62	2.50	2.31	0.81	0.81	—	4	0.62	0.50	3.50	3
1 1/2	5.00	0.69	2.88	2.56	0.88	0.88	—	4	0.62	0.50	3.88	3
2	6.00	0.75	3.62	3.06	1.00	1.00	—	4	0.75	0.62	4.75	5
2 1/2	7.00	0.88	4.12	3.56	1.12	1.12	—	4	0.75	0.62	5.50	7
3	7.50	0.94	5.00	4.25	1.19	1.19	—	4	0.75	0.62	6.00	8
3 1/2	8.50	0.94	5.50	4.81	1.25	1.25	—	8	0.75	0.62	7.00	11
4	9.00	0.94	6.19	5.31	1.31	1.31	—	8	0.75	0.62	7.50	13
5	10.00	0.94	7.31	6.44	1.44	1.44	—	8	0.88	0.75	8.50	15
6	11.00	1.00	8.50	7.56	1.56	1.56	—	8	0.88	0.75	9.50	19
8	13.50	1.12	10.62	9.69	1.75	1.75	—	8	0.88	0.75	11.75	30
10	16.00	1.19	12.75	12.00	1.94	1.94	—	12	1.00	0.88	14.25	43
12	19.00	1.25	15.00	14.38	2.19	2.19	—	12	1.00	0.88	17.00	64
14	21.00	1.38	16.25	15.75	2.25	2.25	—	12	1.12	1.00	18.75	90
16	23.50	1.44	18.50	18.00	2.50	2.50	—	16	1.12	1.00	21.25	98
18	25.00	1.56	21.00	19.88	2.69	2.69	—	16	1.25	1.12	22.75	130
20	27.50	1.69	23.00	22.00	2.88	2.88	—	20	1.25	1.12	25.00	165
24	32.00	1.88	27.25	26.12	3.25	3.25	—	20	1.38	1.25	29.50	220

* Dimensions in inches. Weights are approximate and based on standard carbon steel forged flanges.

Class 300 Threaded Flange Dimensions & Weight Chart

Standard: ASME
B16.5Material: ASTM
A105Units: Inches /
lbs

NPS	Outside Diam. (O)	Thick. of Flange (C)	Diam. Raised Face (R)	Diam. Hub Base (X)	Length Thru Hub (Y)	Min. Thread Len. (T)	Min. Counter Bore (Q)	No. Holes	Diam. Holes	Diam. Bolts	Bolt Circle (BCD)	Approx. Weight (lbs)
1/2	3.75	0.56	1.38	1.50	0.88	0.62	0.93	4	0.62	0.50	2.62	3
3/4	4.62	0.62	1.69	1.88	1.00	0.62	1.14	4	0.75	0.62	3.25	3.5
1	4.88	0.69	2.00	2.12	1.06	0.69	1.41	4	0.75	0.62	3.50	4.5
1 1/4	5.25	0.75	2.50	2.50	1.12	0.81	1.75	4	0.75	0.62	3.88	6
1 1/2	6.12	0.81	2.88	2.75	1.19	0.88	1.99	4	0.88	0.75	4.50	8
2	6.50	0.88	3.62	3.31	1.31	1.12	2.50	8	0.75	0.62	5.00	10
2 1/2	7.50	1.00	4.12	3.94	1.50	1.25	3.00	8	0.88	0.75	5.88	14
3	8.25	1.12	5.00	4.62	1.69	1.25	3.63	8	0.88	0.75	6.62	18
3 1/2	9.00	1.19	5.50	5.25	1.75	1.44	4.13	8	0.88	0.75	7.25	23
4	10.00	1.25	6.19	5.75	1.88	1.44	4.63	8	0.88	0.75	7.88	28
5	11.00	1.38	7.31	7.00	2.00	1.69	5.69	8	0.88	0.75	9.25	36
6	12.50	1.44	8.50	8.12	2.06	1.81	6.75	12	0.88	0.75	10.62	48
8	15.00	1.62	10.62	10.25	2.44	2.00	8.75	12	1.00	0.88	13.00	72
10	17.50	1.88	12.75	12.62	2.56	2.12	10.88	16	1.12	1.00	15.25	110
12	20.50	2.00	15.00	14.75	2.88	2.38	12.94	16	1.25	1.12	17.75	160
14	23.00	2.12	16.25	16.75	3.00	2.50	14.19	20	1.25	1.12	20.25	220
16	25.50	2.25	18.50	19.00	3.25	2.62	16.19	20	1.38	1.25	22.50	280
18	28.00	2.38	21.00	21.00	3.50	2.75	18.19	24	1.38	1.25	24.75	350
20	30.50	2.50	23.00	23.12	3.75	2.88	20.19	24	1.38	1.25	27.00	430
24	36.00	2.75	27.25	27.62	4.12	3.25	24.19	24	1.62	1.50	32.00	620

* Dimensions in inches. Weights are approximate and based on standard carbon steel forged flanges.

Class 600 Threaded Flange Dimensions & Weight Chart

Standard: ASME
B16.5Material: ASTM
A105Units: Inches /
lbs

NPS	Outside Diam. (O)	Thick. of Flange (C)	Diam. Raised Face (R)	Diam. Hub Base (X)	Length Thru Hub (Y)	Min. Thread Len. (T)	Min. Counter Bore (Q)	No. Holes	Diam. Holes	Diam. Bolts	Bolt Circle (BCD)	Approx. Weight (lbs)
1/2	3.75	0.56	1.38	1.50	0.88	0.62	0.93	4	0.62	0.50	2.62	3.5
3/4	4.62	0.62	1.69	1.88	1.00	0.62	1.14	4	0.75	0.62	3.25	4.5
1	4.88	0.69	2.00	2.12	1.06	0.69	1.41	4	0.75	0.62	3.50	6
1 1/4	5.25	0.81	2.50	2.50	1.12	0.81	1.75	4	0.75	0.62	3.88	8
1 1/2	6.12	0.88	2.88	2.75	1.25	0.88	1.99	4	0.88	0.75	4.50	11
2	6.50	1.00	3.62	3.31	1.44	1.12	2.50	8	0.75	0.62	5.00	12
2 1/2	7.50	1.12	4.12	3.94	1.62	1.25	3.00	8	0.88	0.75	5.88	18
3	8.25	1.25	5.00	4.62	1.81	1.38	3.63	8	0.88	0.75	6.62	23
3 1/2	9.00	1.38	5.50	5.25	1.94	1.50	4.13	8	0.88	0.75	7.25	31
4	10.75	1.50	6.19	6.00	2.12	1.62	4.63	8	1.00	0.88	8.50	42
5	13.00	1.75	7.31	7.50	2.38	1.88	5.69	8	1.12	1.00	10.50	68
6	14.00	1.88	8.50	8.62	2.62	2.00	6.75	12	1.12	1.00	11.50	82
8	16.50	2.19	10.62	10.62	3.00	2.25	8.75	12	1.25	1.12	13.75	130
10	20.00	2.50	12.75	12.75	3.38	2.50	10.88	16	1.38	1.25	17.00	210
12	22.00	2.62	15.00	15.00	3.62	2.75	12.94	20	1.38	1.25	19.25	270
14	23.75	2.75	16.25	16.50	3.69	2.88	14.19	20	1.50	1.38	20.75	330
16	27.00	3.00	18.50	18.75	4.19	3.00	16.19	20	1.62	1.50	23.75	460
18	29.25	3.25	21.00	21.00	4.62	3.12	18.19	20	1.75	1.62	25.75	580
20	32.00	3.50	23.00	23.25	5.00	3.25	20.19	24	1.75	1.62	28.50	740
24	37.00	4.00	27.25	27.25	5.50	3.62	24.19	24	2.00	1.88	33.00	1080

* Dimensions in inches. Weights are approximate and based on standard carbon steel forged flanges.

Class 900 Threaded Flange Dimensions & Weight Chart

Standard: ASME
B16.5Material: ASTM
A105Units: Inches /
lbs

NPS	Outside Diam. (O)	Thick. of Flange (C)	Diam. Raised Face (R)	Diam. Hub Base (X)	Length Thru Hub (Y)	Min. Thread Len. (T)	Min. Counter Bore (Q)	No. Holes	Diam. Holes	Diam. Bolts	Bolt Circle (BCD)	Approx. Weight (lbs)
1/2	4.75	0.88	1.38	1.50	1.25	0.88	0.93	4	0.88	0.75	3.25	4
3/4	5.12	1.00	1.69	1.75	1.38	1.00	1.14	4	0.88	0.75	3.50	5
1	5.88	1.12	2.00	2.06	1.62	1.12	1.41	4	1.00	0.88	4.00	8
1 1/4	6.25	1.12	2.50	2.50	1.62	1.19	1.75	4	1.00	0.88	4.38	9
1 1/2	7.00	1.25	2.88	2.75	1.75	1.25	1.99	4	1.12	1.00	4.88	12
2	8.50	1.50	3.62	4.12	2.25	1.50	2.50	8	1.00	0.88	6.50	25
2 1/2	9.62	1.62	4.12	4.88	2.50	1.88	3.00	8	1.12	1.00	7.50	36
3	9.50	1.50	5.00	5.00	2.12	1.62	3.63	8	1.00	0.88	7.50	26
4	11.50	1.75	6.19	6.25	2.75	1.88	4.63	8	1.25	1.12	9.25	53
5	13.75	2.00	7.31	7.50	3.12	2.12	5.69	8	1.38	1.25	11.00	83
6	15.00	2.19	8.50	9.25	3.38	2.25	6.75	12	1.25	1.12	12.50	110
8	18.50	2.50	10.62	11.75	4.00	2.50	8.75	12	1.50	1.38	15.50	170
10	21.50	2.75	12.75	14.50	4.25	2.81	10.88	16	1.50	1.38	18.50	245
12	24.00	3.12	15.00	16.50	4.62	3.00	12.94	20	1.50	1.38	21.00	325
14	25.25	3.38	16.25	17.75	5.12	3.25	14.19	20	1.62	1.50	22.00	400
16	27.75	3.50	18.50	20.00	5.25	3.38	16.19	20	1.75	1.63	24.25	425
18	31.00	4.00	21.00	22.25	6.00	3.50	18.19	20	2.00	1.88	27.00	600
20	33.75	4.25	23.00	24.50	6.25	3.62	20.19	20	2.12	2.00	29.50	730
24	41.00	5.50	27.25	29.50	8.00	4.00	24.19	20	2.62	2.50	35.50	1400

* Dimensions in inches. Weights are approximate and based on standard carbon steel forged flanges.

Class 1500 Threaded Flange Dimensions & Weight Chart

Standard: ASME
B16.5Material: ASTM
A105Units: Inches /
lbs

NPS	Outside Diam. (O)	Thick. of Flange (C)	Diam. Raised Face (R)	Diam. Hub Base (X)	Length Thru Hub (Y)	Min. Thread Len. (T)	Min. Counter Bore (Q)	No. Holes	Diam. Holes	Diam. Bolts	Bolt Circle (BCD)	Approx. Weight (lbs)
1/2	4.75	0.88	1.38	1.50	1.25	0.88	0.93	4	0.88	0.75	3.25	4
3/4	5.12	1.00	1.69	1.75	1.38	1.00	1.14	4	0.88	0.75	3.50	5
1	5.88	1.12	2.00	2.06	1.62	1.12	1.41	4	1.00	0.88	4.00	8
1 1/4	6.25	1.12	2.50	2.50	1.62	1.19	1.75	4	1.00	0.88	4.38	9
1 1/2	7.00	1.25	2.88	2.75	1.75	1.25	1.99	4	1.12	1.00	4.88	12
2	8.50	1.50	3.62	4.12	2.25	1.50	2.50	8	1.00	0.88	6.50	25
2 1/2	9.62	1.62	4.12	4.88	2.50	1.88	3.00	8	1.12	1.00	7.50	36
3	10.50	1.88	5.00	5.25	2.62	2.19	3.63	8	1.25	1.12	8.00	52
4	12.25	2.12	6.19	6.38	3.06	2.50	4.63	8	1.38	1.25	9.50	81
5	14.75	2.88	7.31	7.75	4.19	3.25	5.69	8	1.62	1.50	11.50	155
6	15.50	3.12	8.50	8.75	4.62	3.50	6.75	8	1.75	1.62	12.50	185
8	19.00	3.62	10.62	11.12	5.38	4.19	8.75	12	1.75	1.62	15.50	315
10	23.00	4.25	12.75	13.75	6.38	4.75	10.88	12	2.12	2.00	19.00	550
12	26.50	4.88	15.00	16.25	7.25	5.38	12.94	16	2.38	2.25	22.50	790
14	29.50	5.25	16.25	17.75	7.75	5.75	14.19	16	2.62	2.50	25.00	1020
16	32.50	5.75	18.50	20.25	8.50	6.25	16.19	16	2.88	2.75	27.50	1340
18	36.00	6.38	21.00	22.75	9.50	7.00	18.19	16	3.12	3.00	30.50	1840
20	38.75	7.00	23.00	25.00	10.50	7.75	20.19	16	3.38	3.25	32.75	2280
24	46.00	8.00	27.25	29.50	12.00	8.88	24.19	16	4.00	3.75	39.00	3600

* Dimensions in inches. Weights are approximate and based on standard carbon steel forged flanges.