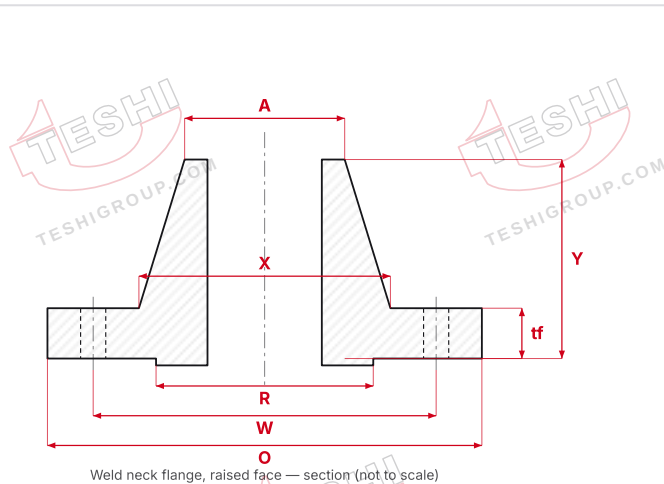


DIMENSIONAL STANDARD · ASME B16.5

ASME B16.5 Class 150 Flange Dimensions

Class 150 weld neck, slip-on, blind, socket weld, threaded and lap joint flange dimensions, NPS ½–24, in mm.

This chart gives the dimensions of **ASME B16.5 Class 150** pipe flanges in millimetres for NPS ½" to 24". It covers weld neck, slip-on, blind, socket weld, threaded and lap joint flanges, with drilling, stud bolt lengths and approximate weights.



Weld neck flange with raised face. Letters correspond to the column headings in the table.

- O** Outside diameter of flange
- tf** Minimum flange thickness (also the blind flange thickness), excluding the raised face
- R** Diameter of raised face
- X** Hub diameter at base
- A** Hub diameter at the welding end of a weld neck flange (pipe outside diameter)
- Y** Length through hub — given separately for weld neck, slip-on / threaded / socket weld and lap joint flanges
- W** Bolt circle diameter
- Holes** Number and diameter of bolt holes
- Bolt** Nominal bolt diameter in inches

Class 150 flange dimensions (mm)

NPS in	DN	O Outside dia	tf Min thickness	R Raised face dia	X Hub dia	A Hub at weld	Y Weld neck	Y Slip-on / Thr / SW	Y Lap joint	W Bolt circle	Holes No.	Hole dia mm	Bolt in
½"	15	90	9.6	34.9	30	21.3	46	14	16	60.3	4	15.9	½"
¾"	20	100	11.2	42.9	38	26.7	51	14	16	69.9	4	15.9	½"
1"	25	110	12.7	50.8	49	33.4	54	16	17	79.4	4	15.9	½"
1¼"	32	115	14.3	63.5	59	42.2	56	19	21	88.9	4	15.9	½"
1½"	40	125	15.9	73.0	65	48.3	60	21	22	98.4	4	15.9	½"
2"	50	150	17.5	92.1	78	60.3	62	24	25	120.7	4	19.1	¾"

NPS in	DN	O Outside dia	tf Min thickness	R Raised face dia	X Hub dia	A Hub at weld	Y Weld neck	Y Slip-on / Thr / SW	Y Lap joint	W Bolt circle	Holes No.	Hole dia mm	Bolt in
2½"	65	180	20.7	104.8	90	73.0	68	27	29	139.7	4	19.1	⅝"
3"	80	190	22.3	127.0	108	88.9	68	29	30	152.4	4	19.1	⅝"
3½"	90	215	22.3	139.7	122	101.6	70	30	32	177.8	8	19.1	⅝"
4"	100	230	22.3	157.2	135	114.3	75	32	33	190.5	8	19.1	⅝"
5"	125	255	22.3	185.7	164	141.3	87	35	36	215.9	8	22.2	¾"
6"	150	280	23.9	215.9	192	168.3	87	38	40	241.3	8	22.2	¾"
8"	200	345	27.0	269.9	246	219.1	100	43	44	298.5	8	22.2	¾"
10"	250	405	28.6	323.8	305	273.0	100	48	49	362.0	12	25.4	⅞"
12"	300	485	30.2	381.0	365	323.8	113	54	56	431.8	12	25.4	⅞"
14"	350	535	33.4	412.8	400	355.6	125	56	79	476.3	12	28.6	1"
16"	400	595	35.0	469.9	457	406.4	125	62	87	539.8	16	28.6	1"
18"	450	635	38.1	533.4	505	457.0	138	67	97	577.9	16	31.8	1⅝"
20"	500	700	41.3	584.2	559	508.0	143	71	103	635.0	20	31.8	1⅝"
24"	600	815	46.1	692.2	663	610.0	151	81	111	749.3	20	34.9	1¼"

Class 150 bolting and approximate weights

NPS in	Studs No.	Stud dia in	Stud length Raised face	Stud length Ring joint	Weld neck kg, approx.	Slip-on kg, approx.	Blind kg, approx.
½"	4	½"	55	—	—	0.5	0.5
¾"	4	½"	65	—	—	—	—
1"	4	½"	65	75	1.1	0.9	0.9
1¼"	4	½"	70	85	1.4	1.1	1.2
1½"	4	½"	70	85	1.8	1.4	1.6
2"	4	⅝"	85	95	2.6	2.3	2.6
2½"	4	⅝"	90	100	4.3	3.4	—
3"	4	⅝"	90	100	5.2	3.9	—
3½"	8	⅝"	90	100	5.5	5.0	5.9
4"	8	⅝"	90	100	7.3	5.8	7.4

NPS in	Studs No.	Stud dia in	Stud length Raised face	Stud length Ring joint	Weld neck kg, approx.	Slip-on kg, approx.	Blind kg, approx.
5"	8	3/4"	95	110	8.9	6.2	8.8
6"	8	3/4"	100	115	11.3	7.4	11.3
8"	8	3/4"	110	120	17.7	12.4	19.9
10"	12	7/8"	115	125	24.8	17.1	29.4
12"	12	7/8"	120	135	39.0	27.7	43.7
14"	12	1"	135	145	51.7	35.2	59.4
16"	16	1"	135	145	64.4	42.2	77.1
18"	16	1 1/8"	145	160	74.8	49.7	94.8
20"	20	1 1/8"	160	170	89.4	65.5	123
24"	20	1 1/4"	170	185	120	90.5	188

Notes

- Dimensions are in millimetres unless stated otherwise.
- Flange thickness t_f and length through hub Y do not include the 2 mm raised face.
- Blind flanges have the same outside diameter, thickness t_f and drilling as the other flange types of the same size and class.
- The bore of a weld neck or socket weld flange is machined to match the inside diameter of the pipe schedule stated in the order.
- Bolt holes are tabulated in inches in ASME B16.5; the millimetre values shown are direct conversions (bolt diameter plus $1/8$ ").
- Stud bolt lengths do not include the height of the points. Weights are approximate catalogue values and vary with bore and manufacturer.

Reference information compiled from the published standard for convenience. It does not replace the current edition of the governing standard, which takes precedence. Verify critical dimensions and properties before design, purchase or fabrication. Teshi Engineers & Sales Promoters (P) Ltd accepts no liability for errors or omissions.

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