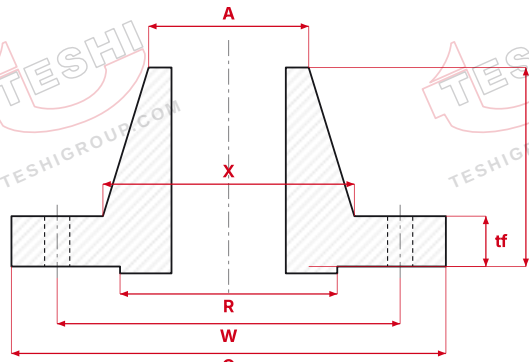


DIMENSIONAL STANDARD · ASME B16.5

ASME B16.5 Class 900 Flange Dimensions

Class 900 flange dimensions and bolting, NPS ½–24, in mm.

This chart gives the dimensions of **ASME B16.5 Class 900** 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, raised face — section (not to scale)

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 900 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	120	22.3	34.9	38	21.3	60	32	32	82.6	4	22.2	¾"
¾"	20	130	25.4	42.9	44	26.7	70	35	35	88.9	4	22.2	¾"
1"	25	150	28.6	50.8	52	33.4	73	41	41	101.6	4	25.4	⅞"
1¼"	32	160	28.6	63.5	64	42.2	73	41	41	111.1	4	25.4	⅞"
1½"	40	180	31.8	73.0	70	48.3	83	44	44	123.8	4	28.6	1"
2"	50	215	38.1	92.1	105	60.3	102	57	57	165.1	8	25.4	⅞"
2½"	65	245	41.3	104.8	124	73.0	105	64	64	190.5	8	28.6	1"

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
3"	80	240	38.1	127.0	127	88.9	102	54	54	190.5	8	25.4	7/8"
4"	100	290	44.5	157.2	159	114.3	114	70	70	235.0	8	31.8	1 1/8"
5"	125	350	50.8	185.7	190	141.3	127	79	79	279.4	8	34.9	1 1/4"
6"	150	380	55.6	215.9	235	168.3	140	86	86	317.5	12	31.8	1 1/8"
8"	200	470	63.5	269.9	298	219.1	162	102	114	393.7	12	38.1	1 3/8"
10"	250	545	69.9	323.8	368	273.0	184	108	127	469.9	16	38.1	1 3/8"
12"	300	610	79.4	381.0	419	323.8	200	117	143	533.4	20	38.1	1 3/8"
14"	350	640	85.8	412.8	451	355.6	213	130	156	558.8	20	41.3	1 1/2"
16"	400	705	88.9	469.9	508	406.4	216	133	165	616.0	20	44.5	1 5/8"
18"	450	785	101.6	533.4	565	457.0	229	152	190	685.8	20	50.8	1 7/8"
20"	500	855	108.0	584.2	622	508.0	248	159	210	749.3	20	54.0	2"
24"	600	1040	139.7	692.2	749	610.0	292	203	267	901.7	20	66.7	2 1/2"

Class 900 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.
1/2"	4	3/4"	110	110	—	1.8	1.8
3/4"	4	3/4"	115	115	—	2.3	2.7
1"	4	7/8"	125	125	4.1	3.4	3.7
1 1/4"	4	7/8"	125	125	4.5	4.3	4.1
1 1/2"	4	1"	140	140	6.4	5.5	5.9
2"	8	7/8"	145	145	11.3	10.0	10.1
2 1/2"	8	1"	160	160	16.3	16.3	15.9
3"	8	7/8"	145	145	13.6	—	13.2
4"	8	1 1/8"	170	170	24.0	24.0	24.0
5"	8	1 1/4"	190	190	39.0	38.0	39.0
6"	12	1 1/8"	190	195	50.0	50.0	52.0
8"	12	1 3/8"	220	220	84.0	78.0	90.0

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.
10"	16	1 $\frac{3}{8}$ "	235	235	121	111	132
12"	20	1 $\frac{3}{8}$ "	255	255	—	148	188
14"	20	1 $\frac{1}{2}$ "	275	280	—	181	235
16"	20	1 $\frac{5}{8}$ "	285	290	—	200	276
18"	20	1 $\frac{7}{8}$ "	325	335	—	282	391
20"	20	2"	350	360	—	344	493
24"	20	2 $\frac{1}{2}$ "	440	455	—	651	932

Notes

- Dimensions are in millimetres unless stated otherwise.
- Flange thickness t_f and length through hub Y do not include the 7 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.
- In ASME B16.5, Class 900 flanges NPS $\frac{1}{2}$ " to $2\frac{1}{2}$ " use Class 1500 dimensions.
- 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 $\frac{1}{8}$ ").
- 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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