

ASME B16.47 Series B Class 600 Flange Dimensions (NPS 26 to NPS 60)

Mounting dimensions for ASME B16.47 Series B Class 600 large-diameter weld-neck flanges: flange outside diameter, bolt-circle diameter, number of bolts, bolt-hole size and stud size.

ASME B16.47 covers steel pipe flanges from NPS 26 to NPS 60, the range above the NPS 24 ceiling of ASME B16.5. It defines two non-interchangeable series: Series A (the larger, more robust flange, formerly MSS SP-44) and Series B (a more compact flange that carries more, smaller bolts on a smaller bolt circle, formerly API 605). The two series share neither the outside diameter nor the bolt pattern at a given NPS and rating, so the series must be confirmed before a flange is ordered or matched. Class 600 is the higher-pressure companion to Class 300 in Series B: a larger bolt circle, larger studs and a thicker flange for the same NPS. The values below are the Series B Class 600 dimensions for the weld-neck flange, cross-checked across two independent reference tables.

NPS	Flange OD (mm)	Bolt circle (mm)	No. of bolts	Bolt hole (mm)	Stud size
NPS 26	890	806.4	28	44.5	1 5/8 in
NPS 28	950	863.6	28	47.6	1 3/4 in
NPS 30	1020	927.1	28	50.8	1 7/8 in
NPS 32	1085	984.2	28	54.0	2 in
NPS 34	1160	1054.1	24	60.3	2 1/4 in
NPS 36	1215	1104.9	28	60.3	2 1/4 in
NPS 38	1270	1162.0	28	60.3	2 1/4 in
NPS 40	1320	1212.8	32	60.3	2 1/4 in
NPS 42	1405	1282.7	28	66.7	2 1/2 in
NPS 44	1455	1333.5	32	66.7	2 1/2 in
NPS 46	1510	1390.6	32	66.7	2 1/2 in
NPS 48	1595	1460.5	32	73.0	2 3/4 in
NPS 50	1670	1524.0	28	79.4	3 in
NPS 52	1720	1574.8	32	79.4	3 in
NPS 54	1780	1632.0	32	79.4	3 in
NPS 56	1855	1695.4	32	85.7	3 1/4 in
NPS 58	1905	1746.2	32	85.7	3 1/4 in
NPS 60	1995	1822.4	28	92.1	3 1/2 in

Bolt holes are drilled on the bolt circle, so the 44.5 mm (1 3/4 in) hole takes a 1 5/8 in stud. The bolt count in Series B Class 600 does not always increase with NPS; for example the count dips to 24 at NPS 34 and then increases again. The two tables agree on the bolt count for all other NPS values.

Reading the dimensions

- Flange OD — the overall diameter of the flange, which is larger than the outside diameter than Series A at the same NPS.
- Bolt circle — the diameter of the circle that passes through the center of the bolts. This is the figure to lay out or check when ordering a flange.
- Number of bolts — equally spaced bolts and studs across the range, and the count increases with NPS.
- Bolt hole — the drilled hole diameter, which increases with NPS.
- Stud size — the diameter of the stud, which increases with NPS. Use the full set; do not part-populate.

Flange thickness and hub dimensions are not included in this table, and the published columns differ between ASME B16.47 Series B Class 600 tables.

Selecting and matching

Two flanges bolt together only when they match in all dimensions before ordering. A B16.47 Series B flange must match a Series A flange in outside diameter, bolt circle and bolt size. A Series B flange must match a Series A flange in weight and bolt-up effort and suits a Series A flange where a Series A flange is already in use. A Series B flange must match a Series A flange in bolt circle and the facing; the bore, height and thickness of a weld-neck flange; blind flanges to B16.47 Series B flange bolt count and stud size.

Reference compiled by cBallast from ASME B16.47 Series A and B reference tables (mm and inch), which agree in all dimensions in every row. Dimensions are nominal and the specific flange maker's current data should be used by owners.