# Blind Flange — ASME B16.47 Series A Class 600

ANSI / ASME B16.47 Series A (MSS SP-44) Class 600 large diameter blind raised face (BLRF) flanges · NPS 26" to 60" · Carbon steel ASTM A105 / A266 / A694, stainless steel ASTM A182 F304 / F316

## ASME B16.47 SERIES A CLASS 600 BLIND FLANGE

A large diameter blind flange (BL / BLRF) is a solid forged disc with ASME B16.47 Series A drilling and facing and no bore, closing pipeline ends, pig launcher spares, vessel and tank nozzles and large valve connections. Because it carries full pressure on its unsupported centre, B16.47 makes most blinds thicker than the matching weld neck flange.

Series A (formerly MSS SP-44) is the heavier B16.47 pattern. TESCO Steel & Engineering manufactures these blinds in Mumbai, 26" to 60", RF, FF or RTJ, plain or with tapped vent / drain connections.

## KEY FEATURES

- **Full ASME B16.47 compliance** — Series A dimensions, tolerances, facing and marking to ASME B16.47-2020.
- **No welding** — bolts to any Series A / MSS SP-44 flange of the same class and size; removable.
- **Options** — tapped vent / drain (NPT / SW), RTJ facing, jack-screw holes, lifting lugs for heavy blinds.
- **Materials and certification** — A105, A266 Cl.2, A350 LF2, A694, A182 F304/F316; EN 10204 3.1 / 3.2.

## SPECIFICATION SUMMARY

| | |
|---|---|
| **Product** | Large diameter blind flange (BL / BLRF), disc forging |
| **Standard** | ASME B16.47 Series A (formerly MSS SP-44) |
| **Pressure class** | Class 600 (600 lb / #600) |
| **Size range** | NPS 26" – 60" (DN 650 – DN 1500) |
| **Facing** | Raised face (RF) 7 mm standard; FF or RTJ on request |
| **Face finish** | Serrated, 125 – 250 µin Ra (3.2 – 6.3 µm) |
| **Bore** | None (solid); tapped NPT / SW connection on request |
| **Back face** | Machined flat; chamfered edge; marking on periphery |
| **Materials** | ASTM A105 / A105N; A266 Cl.2; A350 LF2; A694 F42 – F65; A182 F304/L, F316/L; duplex |

## INSTALLATION — BLINDING A LINE

- Match series, class, size and facing to the mating flange — Series A and Series B drilling differ; use a new gasket of the same type.
- Large blinds weigh hundreds of kilograms — specify lifting lugs; tighten studs in a cross pattern in at least three steps; jack-screw holes ease break-out.
- For hydrotest or temporary isolation, confirm the blind's rating covers the test pressure; fit a tapped vent / drain where the line must be depressurised safely.

## APPLICATIONS

Pipeline ends and future tie-ins · pig launcher / receiver spares · large valve and pump nozzles · pressure-vessel, separator and tank manways · water transmission and desalination intakes · hydrotest and isolation blinds · refinery, gas-plant and offshore large-bore piping.

## BLIND FLANGE VS OTHER CLOSURES

| | |
|---|---|
| **Blind flange** | Bolted, removable, full class rating; reusable |
| **Spade / spacer** | Between flanges for positive isolation (B16.48 to NPS 24; larger to drawing) |
| **Pipe cap** | Welded, permanent closure (ASME B16.9) |

**TESCO Steel & Engineering** — large diameter blind flange manufacturer & exporter · 9-A, 52-A, Sindhi Lane, Mumbai – 400004, India · +91 22 6659 5662 · sales@tescosteel.com · www.tescosteel.com
Dimensions per ASME B16.47-2020 Series A Class 600 (NPS 26 – 60); weights approximate; P–T ratings per ASME B16.5 Table 2 — verify for material group and service.

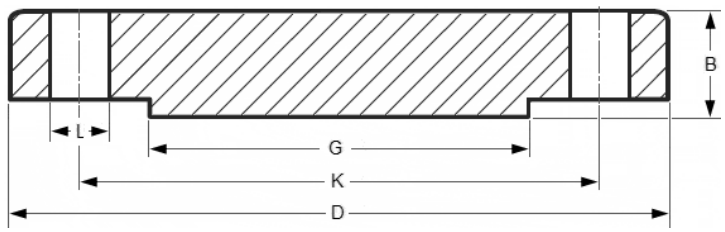
## ASME B16.47 SERIES A CLASS 600 BLIND FLANGE DIMENSIONS (MM)

ASME B16.47 SERIES A · CLASS **600** BLIND FLANGE · RAISED FACE · DIMENSIONS IN MM — 18 sizes

| NPS inch | D | B | G | K | Bolting | | | Weight |
|---|---|---|---|---|---|---|---|---|
| | OD | Thick. | RF Ø | Bolt circle | No. | L · Hole Ø | Stud | kg approx. |
| **26"** | 1015 | 125.5 | 749 | 914.4 | 28 | 50.8 | 1 7/8" | 798 |
| **28"** | 1075 | 131.8 | 800 | 965.2 | 28 | 54.0 | 2" | 935 |
| **30"** | 1130 | 139.7 | 857 | 1022.4 | 28 | 54.0 | 2" | 1099 |
| **32"** | 1195 | 147.7 | 914 | 1079.5 | 28 | 60.3 | 2 1/4" | 1295 |
| **34"** | 1245 | 154.0 | 965 | 1130.3 | 28 | 60.3 | 2 1/4" | 1468 |
| **36"** | 1315 | 162.0 | 1022 | 1193.8 | 28 | 66.7 | 2 1/2" | 1725 |
| **38"†** | 1270 | 155.0 | 1054 | 1162.0 | 28 | 60.3 | 2 1/4" | 1544 |
| **40"†** | 1320 | 162.0 | 1111 | 1212.8 | 32 | 60.3 | 2 1/4" | 1741 |
| **42"†** | 1405 | 171.5 | 1168 | 1282.7 | 28 | 66.7 | 2 1/2" | 2080 |
| **44"†** | 1455 | 177.8 | 1226 | 1333.5 | 32 | 66.7 | 2 1/2" | 2316 |
| **46"†** | 1510 | 185.8 | 1276 | 1390.6 | 32 | 66.7 | 2 1/2" | 2612 |
| **48"†** | 1595 | 195.3 | 1334 | 1460.5 | 32 | 73.0 | 2 3/4" | 3056 |
| **50"†** | 1670 | 203.2 | 1384 | 1524.0 | 28 | 79.4 | 3" | 3490 |
| **52"†** | 1720 | 209.6 | 1435 | 1574.8 | 32 | 79.4 | 3" | 3822 |
| **54"†** | 1780 | 217.5 | 1492 | 1632.0 | 32 | 79.4 | 3" | 4233 |
| **56"†** | 1855 | 225.5 | 1543 | 1695.4 | 32 | 85.7 | 3 1/4" | 4776 |
| **58"†** | 1905 | 231.8 | 1600 | 1746.2 | 32 | 85.7 | 3 1/4" | 5177 |
| **60"†** | 1995 | 242.9 | 1657 | 1822.4 | 28 | 92.1 | 3 1/2" | 5946 |

- All dimensions in millimetres per ASME B16.47-2020 Series A Class 600 (metric). Thickness B excludes the 7 mm raised face. † NPS 38 – 60: Series A Class 600 dimensions are identical to Series B (API 605 pattern) — note the step change between NPS 36 and 38.
- Blind flange thickness B is as tabulated for blinds in B16.47 and is greater than the weld neck thickness in most sizes. Studs per ASME B16.47; hole Ø L is 3.2 mm larger than the stud. Weights approximate, carbon steel, solid (untapped).

## BLIND FLANGE DIMENSIONAL DRAWING




**D** Flange outside diameter

**B** Flange thickness (excl. 7 mm RF)

**G** Raised face diameter

**K** Bolt circle diameter (PCD)

**L** Bolt hole diameter

**RF** Raised face, 7 mm high

**Selection:** the blind must match the mating flange in series (A or B), class, size and facing — Series A and B are not interchangeable at NPS 26 – 36. **Also known as:** ANSI B16.47 Series A 600 lb blind flange · MSS SP-44 Class 600 blind · large diameter 600# blank flange · 26" – 60" BLRF (≈ PN 100).

## BLIND FLANGE MATERIALS

| | |
|---|---|
| **Carbon steel** | ASTM A105 / A105N; A266 Cl.2 / Cl.4 for large disc forgings |
| **High-yield / low-temp.** | ASTM A694 F42 – F65 (pipeline); A350 LF2 Cl.1 / Cl.2 |
| **Stainless steel** | ASTM A182 F304 / F304L, F316 / F316L, F321, F347 |
| **Alloy steel** | ASTM A182 F5, F9, F11, F12, F22, F91 |
| **Duplex / super duplex** | ASTM A182 F51 (UNS S31803 / S32205), F53 (S32750), F55 (S32760) |
| **Nickel & copper alloys** | Monel 400, Inconel 600 / 625, Hastelloy C276, Cu-Ni 90/10 — on request |
| **Equivalent EN / DIN grades** | P250GH (1.0460), 1.4301, 1.4401, 1.4404, 1.4571 on request |

## PRESSURE–TEMPERATURE RATINGS

PRESSURE–TEMPERATURE RATING **Class 600** BAR, ASME B16.47 / B16.5 TABLE 2

| Temperature °C | Group 1.1 A105 / A350 LF2 | Group 2.1 A182 F304 | Group 2.2 A182 F316 |
|---|---|---|---|
| **–29 to 38** | 102.1 | 99.3 | 99.3 |
| **100** | 93.2 | 84.4 | 86.3 |
| **150** | 90.2 | 77.0 | 79.0 |
| **200** | 87.6 | 71.3 | 73.3 |
| **250** | 83.9 | 66.8 | 68.9 |
| **300** | 79.6 | 63.2 | 65.2 |
| **350** | 75.1 | 60.7 | 62.6 |
| **400** | 69.4 | 58.9 | 60.9 |
| **450** | 57.5 | 57.5 | 58.8 |

Working pressure in bar (gauge); ASME B16.47 adopts the ASME B16.5 Table 2 ratings (Table 2-1.1, 2-2.1 / 2-2.2). A694 grades rated per Group 1.1 unless otherwise agreed. Confirm for material group, bolting and gasket.

## QUALITY & DOCUMENTATION

- Forged from certified bars / billets; normalised, quenched-and-tempered or solution-annealed per material specification.
- Manufactured under an ISO 9001:2015 quality management system; marking per ASME B16.47 and MSS SP-25 including "B16.47 SER. A".
- EN 10204 3.1 material test certificates with chemical analysis, mechanical properties and heat-number traceability; 3.2 with third-party endorsement on request.
- Dimensional inspection to ASME B16.47 tolerances; face finish per MSS SP-6; UT of disc forgings per ASTM A388 on request.
- NDT (MPI / DPT), PMI for stainless and alloy grades, IBR, NACE MR0175 / ISO 15156 and PED compliance on request.

## FREQUENTLY ASKED QUESTIONS

### Is a B16.47 blind the same thickness as the weld neck flange?

Not always — B16.47 tabulates blind flange thickness separately, and in most Series A sizes the blind is thicker because it carries full pressure on its unsupported centre. Use the B column of this sheet, not the weld neck table.

### Can a blind flange be drilled and tapped?

Yes — tapped blinds with an NPT or socket-weld connection (vent, drain, gauge, injection) are common; specify size and type. The tapping reduces the rating only if it exceeds ASME B31.3 / B16.47 reinforcement limits.

### Can a blind flange be used with a raised face against cast iron?

Use a flat face with a full-face gasket against B16.1 Class 125 cast iron (30" – 60" share the Series A Class 150 drilling) — FF blinds are available on request.

### Which gasket and bolts are used?

Spiral wound (ASME B16.20) or non-metallic (ASME B16.21) gaskets with A193 B7 / A194 2H studs and nuts; B8M Cl.2 for stainless flanges.

## ORDERING INFORMATION

Specify: quantity · size (NPS) · ASME B16.47 Series A Class 600 blind · facing (RF / FF / RTJ) · tapping if required (size, NPT / SW) · material grade · certification (3.1 / 3.2, NACE, IBR, PED) · surface protection (anti-rust oil, paint, galvanising).