

TECHNICAL DATA SHEET · FLANGES

Lap Joint Flange

Sizes NPS ½–24, Class 150–2500, used with stub ends, in A105, F304, F316.

OEM MANUFACTURER

Lap joint flanges are loose backing flanges used with a stub end. The flange is free to rotate for easy bolt-hole alignment and never touches the fluid, so a carbon steel flange can back a stainless or alloy stub end.

Specification

Product	Lap Joint Flange
Supply	OEM manufacturer — forged and machined by Teshi Group, Howrah, India
Design standard	ASME B16.5
Size range	NPS ½" to 24" (DN 15–600)
Pressure classes	Class 150, 300, 600, 900, 1500, 2500
Facing	Flat; sealing face is on the stub end
Manufacturing method	Forged; machined from forgings
Other standards on request	EN 1092-1, BS 4504, IS 6392, AWWA C207, or to drawing

Materials

Carbon steel	ASTM A105, ASTM A350 LF2 Cl.1
Stainless steel	ASTM A182 F304, ASTM A182 F304L, ASTM A182 F316, ASTM A182 F316L, ASTM A182 F321
Alloy steel	ASTM A182 F11 Cl.2, ASTM A182 F22 Cl.3, ASTM A182 F91
Duplex / special	ASTM A182 F51, UNS N08904 (904L)

Manufacturing

- Raw material: forging-quality billets or bars from approved mills, verified by chemical analysis and PMI on alloy and stainless grades.
- Forming: closed-die or open-die forging, followed by rough machining.
- Heat treatment: normalising, normalising and tempering, quench and temper, or solution annealing as the material specification requires, with recorded furnace charts.
- Machining: CNC turning and drilling to ASME B16.5 / B16.47 dimensions and tolerances.
- Facing finish: serrated spiral or concentric finish of 3.2–6.3 µm Ra (125–250 µin) on raised and flat faces; 1.6 µm Ra (63 µin) maximum on ring-joint groove side walls.

Inspection and testing

- Chemical analysis and mechanical tests (tensile, hardness; Charpy impact for low-temperature grades) per heat and heat-treatment lot.
- 100% visual and dimensional inspection against ASME B16.5 / B16.47.
- Ultrasonic, magnetic-particle or dye-penetrant examination when specified.
- Positive material identification (PMI) on stainless and alloy steel.
- Intergranular corrosion test to ASTM A262 Practice E for stainless grades when specified.
- Third-party inspection at our works as required by the order.

Marking, documentation and packing

Marking	Hard-stamped on the rim to ASME B16.5 / MSS SP-25: manufacturer's mark, size, class, facing, bore / schedule, material grade, heat number and standard.
Documentation	Mill test certificate to EN 10204 3.1 (3.2 with third-party inspection on request), dimensional inspection report, heat-treatment record where applicable, and NDT reports as specified. IBR Form III-C on request.
Packing	Rust-preventive coating on machined surfaces, plastic end / face protectors, and seaworthy wooden cases or pallets marked with PO line, size, heat number and quantity.

Typical applications

- Stainless and alloy piping where a carbon steel backing flange saves cost
- Lines that are dismantled often for cleaning or inspection
- Where bolt-hole alignment is difficult

Ordering information

- Type, nominal size (NPS) and pressure class
- Facing: raised face (RF), flat face (FF) or ring type joint (RTJ)
- Bore or pipe schedule (weld neck, socket weld and lap joint)
- Material specification and grade
- Standard: ASME B16.5 or ASME B16.47 Series A / B
- Supplementary requirements: NDT, impact test temperature, NACE MR0175, IBR, third-party inspection
- Quantity and delivery point

Dimension charts

ASME B16.5 Class 150 flange dimensions; ASME B16.5 Class 300 flange dimensions; ASME B16.5 Class 600 flange dimensions; ASME B16.5 Class 900 flange dimensions; ASME B16.5 Class 1500 flange dimensions; ASME B16.5 Class 2500 flange dimensions; ASME B16.5 pressure-temperature ratings; Stud bolt chart for ASME B16.5 flanges; ASME B16.9 stub end dimensions — www.teshigroup.com/dimensional-standards/

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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