

Product Specification for TriO – Triple Offset Valve

Valve Type: Series 4 - Wafer / Lugged / Double Flanged – Short & Long / Butt weld ends

Body:

- One-piece Wafer, Lug, Double flanged Short, Double flanged Long or Butt weld ends design.
- End Flange drilling confirm to International flange standard as specified.
- Top bracket flange is drilled as per ISO 5211 to accommodate direct mounting of a wide range of actuators.
- The body seat is integral and hard faced.
- The seat geometry ensures that the disc seal contacts the body seat only at the final shut-off position without rubbing or galling, providing a torque generated resilient seal with sufficient wedging to ensure a uniform seal contact.



Disc:

- The disc has been Engineered to maximize flow and minimize resistance to provide a high flow coefficient (Cv).
- The disc is positioned offset from the center for easy operation.

Stem:

- One-piece and blow out proof design.
- The weakest point outside the pressure boundary.
- The high strength, one-piece stem provides maximum strength for high torque applications.
- The Disc-Stem connection by wedge keys, positioned tangentially on the stem which places them in compression rather shear thus eliminating the potential for failure. The wedge keys are precision fit and provide positive mechanical attachment of disc to stem.

Seal:

- Elliptical laminated seal ring is located on the disc. The seal is precision machined for bi-directional and bubble tight sealing.
- Sealring is field replaceable.
- Alternate layers of metal and graphite generate a circumferential compressive force on the precisely machined hard face seat on the body. Metal laminations in seal ring provide a rigid support for the soft graphite layers. The combination makes the seal / seat suitable for bubble tight sealing at high and low temperatures alike.

Stem packing:

- Gland flange assembly is live loaded with Belleville springs.
- The Rocker shaped gland bridge compensates for uneven adjustment of gland bolts.
- Adjustable stem packing with multiple graphite rings seal on high surface finish of the stem and ensures tight sealing, suitable for fugitive emission control

Bearings:

- The bearings are provided on both sides of the stem to support the disc.
- The bearings are nitrided to reduce the wear.
- Bearing protectors in graphite is provisioned in the bearings to avoid ingress of the foreign material.

Operators:

- Self-locking and worm gear as standard.
- Electric, Pneumatic and Hydraulic actuators can be supplied.

Material of Construction:

- **Body:** WCB / WCC / LCC / CF8 / CF8M / Gr 4A / Gr 5A / Gr 6A
- **Disc:** WCB / WCC / LCC / CF8 / CF8M / Gr 4A / Gr 5A / Gr 6A
- **Seat:** Stellite 21 / Stellite 6
- **Seal:** UNS S31803 + Graphite / UNS S20910 (XM-19) + Graphite / Solid Metal
- **Stem:** 410 Cond.3 / 17-4-PH (H1150D) / UNS S31803 / UNS S32750 / UNS S32760 / XM-19 / Monel K500 / Inconel 718
- **Seat Retainer:** ASTM A516 Gr.70 / ASTM A240 SS 304 / ASTM A240 SS 316 / UNS S31803 / UNS S32750 / UNS S32760
- **Stem Packing:** Graphite – Die Molded + Braided.
- **Gland Flange:** ASTM A516 Gr.70 / ASTM A240 SS 304 / ASTM A240 SS 316 / UNS S31803 / UNS S32750 / UNS S32760

Size Range:

CL 150 - NPS 3 – NPS 102 (DN 80 – DN 2600)
CL 300 - NPS 3 – NPS 60 (DN 80 – DN 1500)
CL 600 - NPS 3 – NPS 48 (DN 80 – DN 1200)
CL 900 - NPS 6 – NPS 30 (DN 150 – DN 750)

Design: API 609, EN 593, ASME B16.34, AWWA C504, AWWA C516, BS 6364 & MSS SP 134

Testing: API 598, BS EN 12266-1 & ISO 5208

Approvals & Certifications:

- API 609
- API 607
- CE/PED Certification
- SIL
- CRN
- ABS
- WRAS
- NSF 61
- IBR

Special Applications:

- Oxygen
- Steam – Jacketed valves
- Buried service.
- Low temperature & Cryogenic service
- High temperature – 700°C (1300 °F)
- Vertical Sem Extension – 7.2 m (23.6 feet)
- Stem Extension + Gear Box pinion shaft extension