

**Wafer/Lug/Double Flanged/Gate  
3" - 48" (80 mm - 1200 mm)****Valve Type:**

- Bray Tri Lok or approved equal.

**General:**

- **The valve shall be:**
  - 90° clockwise to close
  - Non-rubbing
  - Non-jamming
  - Metal-to-metal seated
  - Bi-directional
  - Zero leakage
  - Inherently fire-safe - Tested to API 607 6th Edition
- The valve shall be designed in accordance with ANSI B16.34, B31.1 and B31.3 standards.
- The body, disc and stem shall be designed within the allowable stress levels defined by ASME Section VIII and III for the material used.
- The valve end connections shall be per ANSI B16.5, ANSI B16.47 or the international standard specified
- The valve shall be torque seated and designed in such a manner that the disc can never be rotated through the seat even with the actuator removed.
- The valve shall be of all metal construction, inherently fire-safe and fire tested by an independent agency.

**Body and Seat:**

- Body shall be one piece cast or forged wafer, lug or double flanged design. Welded bodies are not permitted.
- Face-to-face dimensions shall conform to API 609, ISO 5752 and EN 558-2 standards.
- The valve seat shall be REPLACEABLE and bolted to the valve body. Seats welded to the valve body are not permitted.
- The valve seat shall be an inclined conical shape specifically designed for non-rubbing, non-jamming and zero leakage bi-directional shut-off.

**Disc and Seal Ring:**

- The disc shall be of the same material as specified for the valve body and shall be connected to the stem by means of a internal splined connection. Pins, keys and other connection designs are not acceptable.
- The disc shall be designed and constructed with one hub and shall not expose the stem to the flow thereby improving flow characteristics and performance.
- The seal ring shall consist of stainless steel lamination and shall be machined on the outside diameter to an inclined conical shape that matches the seat in the body.
- The overall geometry of the seal ring shall be formed into an elliptical shape that will provide resilient seating while maintaining uniform contact pressure around the entire sealing surface.
- The seal ring shall be designed to flex and compress elastically on the seating surface to insure uniform pressure on the entire outside diameter of the seal ring.
- The seal ring shall be held securely, but not rigidly, in place by a retaining flange bolted to the disc to allow for easy replacement.
- The seal ring shall be positioned on the disc with the assistance of a locating pin and a die formed gasket shall be provided between the seal ring and the disc to prevent any possible leakage around the seal ring.

**Stem:**

- Shall be a one-piece design. Two piece stems are not acceptable.
- The stem material shall be stainless steel.
- The stem shall be connected to the disc by means of a internal splined connection. Pins, keys and other connection designs are not acceptable.
- Shall contain a position indicator dimple which will provide a positive disc position.
- A Blow-out Proof Prevention Ring shall be located above the packing box, outside the pressure boundary and integral to the valve. Retention systems which are integral to the actuator or actuator mounting bracket are not permitted.

**Packing and Bearings:**

- A two-piece adjustable packing gland shall be supplied and designed in such a manner to prevent galling of the stuffing box in the event of unequal loading of the packing gland studs.
- The packing shall consist of five rings high density, high purity, dye formed graphite.
- The bearings shall be of sufficient length and designed in a manner to minimize the load and wear.
- The bearings shall include a separate and replaceable seal of graphite to eliminate media and solids ingress.

**Pressure Rating:**

- The pressure rating of the valve shall be in accordance with ASME B 16.34 per the flange connections of the valve.

**Testing:**

- The valve body shall be hydrostatically tested per API 598 to 150% of the maximum design pressure.
- No leakage shall be detected through the valve body.
- Each valve shall be tested for seat leakage in both directions with both liquid and air in accordance with API 598 for resilient seated valves. Valve leakage shall be zero.

**Actuators:**

- All valves shall include a self-locking manual gear operator as standard. Pneumatic, electric or hydraulic actuators shall be supplied if specified.