VALVE DETAILS

- Series M4 Severe Service Ball Valves
- Flanged | Butt Weld | Socket Weld | Hub
- NPS ½ to 4 | DN 15 to 100
- ASME Class 1700, 3100, 4500 (Std & Lmt)
- Bore Sizes: 0.63″, 1.03″, 1.56″

BODY

- Body shall be a one-piece design for rigidity and to eliminate leak paths.
- Body to contain external groove to dissipate conductive heat during post weld heat treatment process.
- Body to be forged heavy walled construction and CNC machined for accuracy and maximum flow rates.
- Shall be designed per ASME B16.34
- Full and reduced port designs available in compliance with ASME TDP-1
- Flange hole drillings per international flange standard as specified.
- Butt weld end connections per international flange standard as specified. ASME B16.25
- Socket weld end connections per international flange standard as specified. ASME B16.11
- Valve end-to-end dimensions shall be per manufacturers standard or custom upon request.
- NPS ½″ to 2-1/2″ shall be Limited Class and offered in socket or butt weld end connection as standard.
- NPS 3″ and 4″ shall be Standard Class and offered in butt weld end connection as standard
- Standard design shall be rated up to 1100°F. Higher temperatures available upon request.

BALL

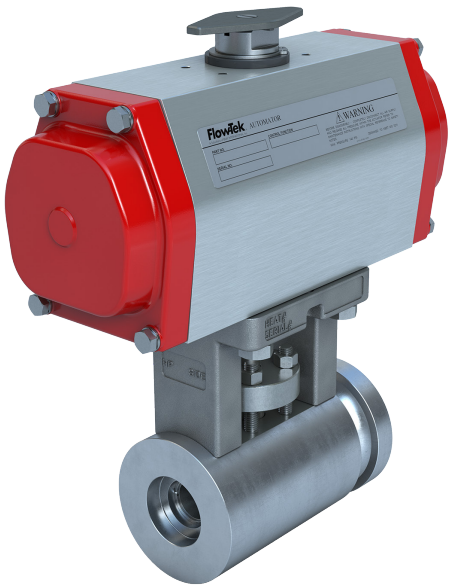
- Shall be precision ground and 360° mate lapped with the seats to achieve zero leakage, metal-to-metal seal.
- Ball shall utilize the same material and coating composition as the seat to maintain the metal-to-metal tight shut off seal during thermal cycling.
- Proprietary coating technology applied to the ball and seat sealing surfaces for advanced wear protection.
- Advanced wear coatings shall be selected based on compatibility with the flowing media and design conditions.
- Advanced wear coatings are applied in accordance with written performance specifications.
- Shall be installed into the body through the high-pressure side bore and retained by seat and retaining ring.

STEM

- The stem shall be a one-piece, high-strength, blowout proof design.
- Stem to contain an upper bearing ring to ensure proper stem alignment and extend valves lifespan by limiting stem side loading.
- Shoulder of stem to interface with upper bearing ring, providing a blowout proof stem.

PACKING & BEARINGS

- Shall be centrally live loaded with Belleville Springs that are contained within the gland flange.
- Self-adjusting, live load stem packing provided for low-maintenance leak prevention.
- Drive train shall utilize a robust, circular gland flange for even load distribution to the stem packing.
- Stem seal kit to include graphitic packing rings and metallic anti-extrusion rings.



SEAT

- Shall be manufactured to achieve zero leakage, tight metal-to-metal shutoff with the ball
- Shall be installed into the body through the high-pressure side bore and retained by transition sleeve and retainer ring.
- Shall be precision ground and 360° mate lapped with the ball to achieve zero leakage, metal-to-metal seal.
- Seat shall utilize the same material and coating composition as the ball to maintain the metal-to-metal tight shut off seal during thermal cycling.
- Proprietary coating technology applied to the seat and ball sealing surfaces for advanced wear protection.
- Advanced wear coatings shall be selected based on compatibility with the flowing media and design conditions.
- Advanced wear coatings are applied in accordance with written performance specifications.
- Downstream seat is press-fit to eliminate leak path.
- Seat shall be designed to provide wide seal band to reduce dynamic cycling stress on ball, extending valve life and tight shutoff.
- Strong Belleville seat spring is to provide continuous load between the upstream seat and ball throughout thermal cycling.

APPROVALS AND CERTIFICATIONS

- PED Annex III, Module H
- TSG
- CRN
- GOST
- UA TR
- ISO 9001

VALVE ACTUATOR MOUNTING PAD

- ISO 5211 mounting flange
- Shall be constructed of cast steel with increased thickness for rigidity.
- One-piece bracket is permanently attached to the body.
- Bracket must be properly aligned, and precision CNC machined after installation for stem alignment.
- Supports direct mounting of actuation.

TESTING

- Meets and exceeds API 598 – Zero leakage for 3 minute duration
- MSS SP-61
- Custom testing available upon request
- Standard 4-year performance warranty

PRESSURE RATINGS

- Uni-Directional, On/Off Service
- ASME Class 1700
- ASME Class 3100
- ASME Class 4500
  - ½″ – 2-1/2″: Limited Class
  - 3″ & 4″: Standard Class
- All pressure containing components are fully traceable.