VTE® - SERIES M1 SEVERE SERVICE BALL VALVES
RECOMMENDED SPECIFICATION SHEET

VAL-TECH

VALVE DETAILS

- Series M1 Severe Service Ball Valves
- Flanged | RTJ | Butt Weld | Socket Weld | Hub
- ½" to 36" | DN 15 to 900
- ASME Class 150 to 4500 | PN 10 to 720

BODY

- Body shall be offered in a two-piece or three-piece split body assembly.
- Two-piece assemblies are common for NPS 8" ASME Class 300 and smaller. Three-piece assemblies are common for NPS 8" ASME Class 600 and larger.
- The body shall be constructed of ASME Section II, Part D materials
- Design pressure-temperature limits are established by ASME B16.34
- Valve wall thickness shall exceed ASME B16.34 minimum wall thickness requirements.
- Flange hole drillings per international flange standard as specified. ASME B16.5 | EN 1092-1
- 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 in accordance with ASME B16.10 long pattern as standard. Custom lengths available upon request.
- Valves rated up to ASME 1500 shall utilize a spiral wound, graphite filled body joint gasket.
- Valves rated ASME 2500 and higher shall use proprietary pressure-energizing metal body joint seal ring.
- Standard design shall be rated up to 1100°F. Higher temperatures available upon request.
- The bolted body connection shall be designed to meet and exceed ASME Sec. VIII, Div. 1, Appendix 2 criteria.
- Valve bore size shall be based on ASME B16.34

BALL

- Ball shall be precision ground and 360 degree mate lapped with the seats to form a zero leakage, metal-to-metal seal. 100% of all ball and seat pairs produced must be 360 degree mate lapped.
- 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.
- The ball sealing surface shall receive the same coating as the seat sealing surface as a standard practice.
- The ball and seat set shall be checked for seal-ability prior to assembly.
- Multiple advanced wear resistant thermal spray coatings are available and are applied in accordance with written performance specifications.
- Advance wear coatings shall be selected based on compatibility with the flowing media and design conditions.

STEM

- The stem shall be a one-piece, blowout proof design.
- The stem maximum allowable torque shall be equal to at least 2 times the break-away torque.
- Outer stem bushing shall be utilized to eliminate side loading caused by valve cycling and/or valve orientation.
- The stem shall be designed with two closed keyways, 180° apart to eliminate disengagement from the valve stem.
- The outer bearing area, stem bore, packing bore, and inner stem bearing location shall be machined after mounting flange is attached to the valve body. This allows the stem drivetrain to operate within one concentrically machined centerline.

SEAT

- Seat designed with wide sealing surface to lower the dynamic contact stress on ball.
- Provides ANSI Class VI tight shutoff
- Seat shall be precision ground and 360 degree mate lapped with the ball to form a zero leakage, metal-to-metal seal. 100% of all seat and ball pairs produced must be 360 degree mate lapped.
- 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.
- The seat sealing surface shall receive the same coating as the ball sealing surface as a standard practice.
- The seat and ball set shall be checked for seal-ability prior to assembly.
- Multiple advanced wear resistant thermal spray coatings are available and are applied in accordance with written performance specifications.
- Advance wear coatings shall be selected based on compatibility with the flowing media and design conditions.
- Application specific seat sealing systems are available for uni-directional, bi-directional, and double block and bleed sealing.
- Low-pressure and high-pressure seat designs are available for varying solid concentrations.
- A large spring ring energizes the seat at low pressure, creating a tight seal while also compensating for thermal expansion.

PACKING AND BEARINGS

- The stem shall be supported by two coated inner stem bearing rings that act as thrust bearings for rotational movement.
- The bearings shall be flat-lapped for low friction operation.
- Zero emission, live loaded packing rings are utilized. Spring washers compensate for packing consolidations at elevated temperatures and pressures.

APPROVALS AND CERTIFICATIONS:

- API 607
- API 641
- ISO 15848-1/2
- API 608
- PED
- ISO 9001

VALVE ACTUATOR MOUNTING PAD (IF APPLICABLE)

- ISO 5211
- Large, robust mounting flange is built into the valve body to support heavy operators.

TESTING

- MSS SP-61
- API 598
- ANSI/FCI 70-2
- Custom testing available

PRESSURE RATINGS

- ASME Class 150 to 4500
- PN 10 to 720

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