

# VTE® - SERIES M4 SEVERE SERVICE BALL VALVES RECOMMENDED SPECIFICATION SHEET



## 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
  - 1/2" – 2-1/2": Limited Class
  - 3" & 4": Standard Class
- > All pressure containing components are fully traceable.

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### VAL TECHNOLOGY & ENGINEERING SDN. BHD.

No. 1, Lorong Teras Jaya 3, Taman Perindustrian Teras Jaya,  
13400 Butterworth, Penang, Malaysia.

Tel: +604-333 4119 (Hunting) Fax: +604-333 4120

Email: [sales@valtech.com.my](mailto:sales@valtech.com.my) URL: [www.valtech.com.my](http://www.valtech.com.my)