

# TRUNNION MOUNTED METAL SEATED BALL VALVES

HIGH PERFORMANCE BALL VALVES FOR SEVERE SERVICES



## STANDARD FEATURES FOR SIDE ENTRY & BOTTOM ENTRY DESIGN

1. **TRUNNION MOUNTED** — The ball is trunnion mounted to reduce the operating torque. This trunnion mounted design limits the forces on the seat rings and guarantees a long lifetime in service. It also provides a double block and bleed feature.
2. **METAL SEATING** — The sealing surfaces are chromium carbide coated with our special hardening process. The seat shape has been calculated to minimize the peak effect on the edges. This increases the lifetime of the ball and seat surfaces.
3. **FLOATING SEATS** — Allow expansion in temperature and the purge of the body inner seat cavity. The independent seats provide bi-directional tightness in the valve.
4. **THRUST BUSHING** — This thrust ring reduces the friction caused by the pressure applied on the stem area. This feature also reduces the torque required to operate the valve.
5. **ANTI-BLOW OUT** — The valve stem is securely mounted in the valve, even in case of a packing failure the integral shoulder in the valve body and the shoulder machined on the stem prevents blow-out of the stem.
6. **BIDIRECTIONAL UPSTREAM SEALING** — The two independent, spring-loaded seats prevent line pressure from by-passing the ball. In low pressure situations the springs maintain seating thrust. As line pressure increases, the process pressure pushes the up-stream seat against the ball which increases the sealing force. The bottom vent connection allows purging of the inner seat cavity which makes this design double block and bleed.
7. **STANDARD FULL BORE DESIGN**
- 8, 9. **MULTI SPRING LOADING** — Springs provide flexible and reliable seat loads. Springs (8) are protected from erosion by the seat compression ring. The seats have a groove for easy seat retraction during maintenance (9).
10. **ANTI-STATIC DESIGN** — The spring maintains a permanent contact between the ball and the stem. It prevents any accumulation of electric charges on the ball, and therefore any unexpected electric discharge.
11. **STEM GUIDE BUSHING** — This bushing is used to take the lateral forces created by actuating the valve. It prevents any bending or flexing of the stem and guarantees a long lifetime for the packing.
12. **SEPARATE BALL AND STEM** — This feature assures proper centering of the ball between the two seats. It prevents differential pressure applied on the ball to be displaced to the seats.
13. Inherently fire safe due to the design and packing/gasket materials
14. Forged body and trim

### BALL AND SEAT COATINGS

For metal seated valves, ball and seat coatings are selected with careful consideration of the service conditions. Strahman uses modern technologies such as high velocity oxygen fuel (HVOF), plasma or super D-GUN (SDG) to apply the coatings to the ball and seats. To correctly select a coating, the following parameters need to be considered:

- ♦ Is the medium abrasive?
- ♦ Are there thermal shocks?
- ♦ Is the medium corrosive?
- ♦ What is the cycling frequency?
- ♦ What is the temperature?

**Note:** Inlet and outlet together with ball bore can be fully stellite on request.

### METAL SEATED VALVES

The following coatings can be used:

- ♦ Stellite
- ♦ Chromium Carbide
- ♦ Tungsten Carbide
- ♦ Heavy-duty Tungsten Carbide

### SOFT SEATED VALVES

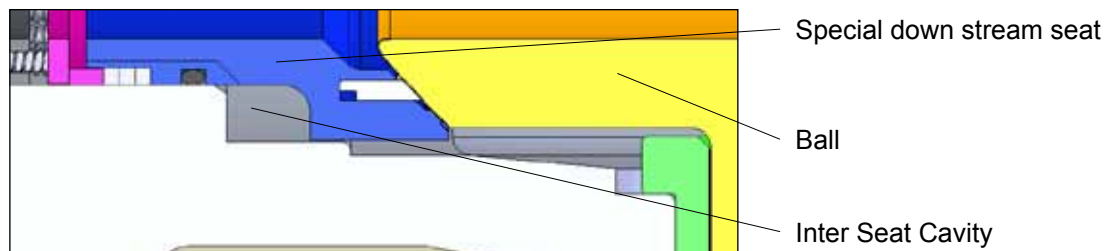
Seat inserts can be made from:

- ♦ Bronze
- ♦ PA
- ♦ PEEK
- ♦ GRAPHITE

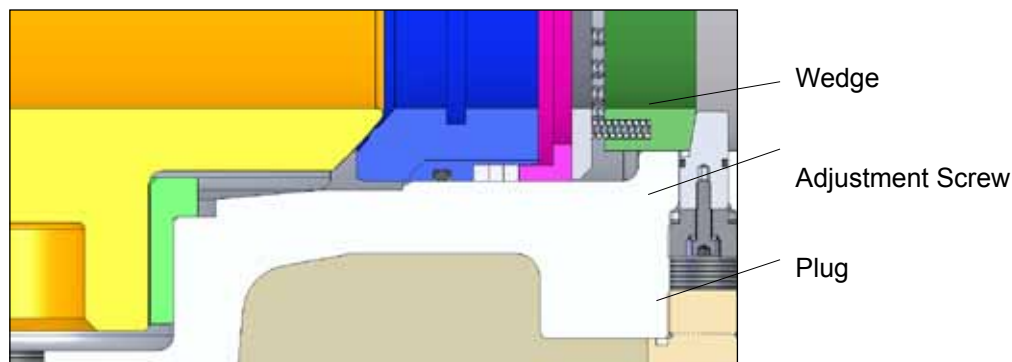


## AVAILABLE OPTIONS FOR SIDE ENTRY AND BOTTOM ENTRY DESIGN VALVES

1. **CASTINGS AND FABRICATED DESIGN**
2. **REDUCED BORE (available as an option)** — The flow area of the valves is typically reduced to 80% of its full bore value. The reduction in bore is made with venture shapes at both ends and a reduced ball and seats.
3. **EXOTIC BODY AND TRIM MATERIALS AVAILABLE**
4. **FULL WELDED JACKET AROUND THE BODY AND FLANGES AVAILABLE**
5. **SOFT SEAT DESIGN AVAILABLE** — The seal ring is usually made of graphite-filled PEEK and is encapsulated in the metal seat support. It is securely retained during opening and closing to prevent “pop out” effect.
6. **FIRE-SAFE EMISSION PACKING** — We use a typical graphite packing arrangement that is TA-LUFT and EPA Method 21 certified. Graphite rings have low ash content in order to meet the requirements of the fire safe design.
7. **VALVES HAVE DOUBLE SEAT ARRANGEMENT** — The primary seat is metal, while the secondary seat is a scraper ring, usually in PEEK material. This internal scraper ring prevents scratches on the metal main seated area.
8. **SPECIAL DOWN STREAM SEAT SEALING** — When pressure builds up in the inter-seat cavity of the valve, a specially designed downstream seat pushes the ball against the seat. This feature makes the valve bi-directional. It provides a secondary seal in case of a failure or wear of the upstream seat.



9. **WEDGE SEAT OPTION** — This option allows manual adjustment of the mechanical compression between the seats and ball while valve is in service. It allows sealing the valve in case of a seat failure or excessive wear. Three wedges are equally spread behind the seat surface and can be moved up and down independently from each other. The wedges are locked in place by a screw.





## TECHNICAL & GENERAL INFORMATION

### DESIGN CODE & CONSTRUCTION

- ◆ Design standard compliant with ASME B16.34, ASME B31.3, ASME B16.10, EN 558, EN 125/6-2
- ◆ International standards include ANSI, DIN, JIS, API
- ◆ Wide range of material selections including carbon steel / stainless steel / Titanium / Hastelloy / Duplex / Monel / Tantalum / Zirconium
- ◆ Fabricated, cast, forged and bar stock designs available
- ◆ Combinations of fabricated, sand castings, investment casings, and bar stock design available

### SURFACE FINISH

- ◆ For polymer applications, Strahman recommends a surface facing of 300 (Ra 0.4) for all parts that are in contact with the medium.

### QUALITY ASSURANCE & TESTING

- ◆ ISO 9001 compliant
- ◆ TUV / HPO / TA Luft
- ◆ PED / ATEX / CE marking
- ◆ Standard Strahman testing procedures

## AVAILABLE END CONNECTIONS



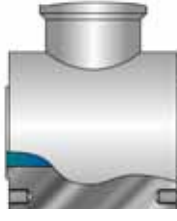
Flanges



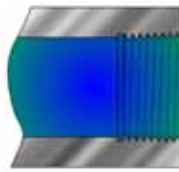
Butt Weld



Heated  
Flanges



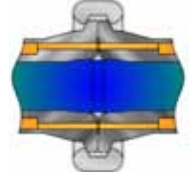
Studded  
Ends



Threaded  
connections  
NPT & BSP



Socket Weld



Grayloc

## AVAILABLE ACTUATION OPTIONS



Manual Lever



Gear Box



Electrical  
Actuator



Hydraulic Cylinder

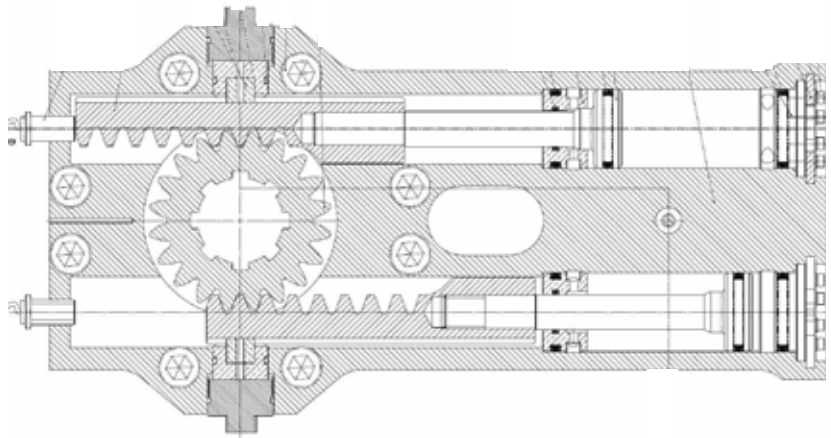


Quarter Turn  
Air Actuator



## FAST AND COMPACT HYDRAULIC DRIVE

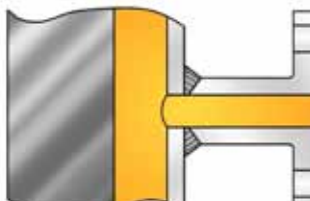
For applications where space is restricted, Strahman designed a special actuator to save space and enable installation of an actuated ball valve. Our special **“fast and compact hydraulic drive”** is a very compact oil actuated actuator. It is made from a one piece body for more rigidity. This actuator combines a compact design with very fast stroke times of less than 3 sec.



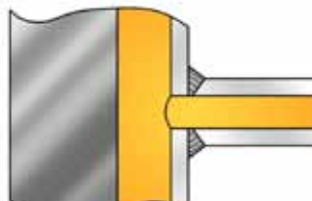
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## TWO PIECE DESIGN BALL VALVE WITH INTEGRAL WELDED JACKET

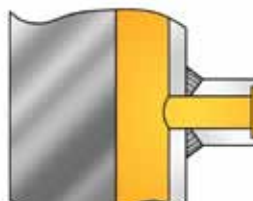
For applications where required (for example polymer applications) Strahman offers integral welded jackets for oil or steam. Available Jacket connections include:



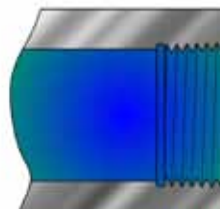
Flanged



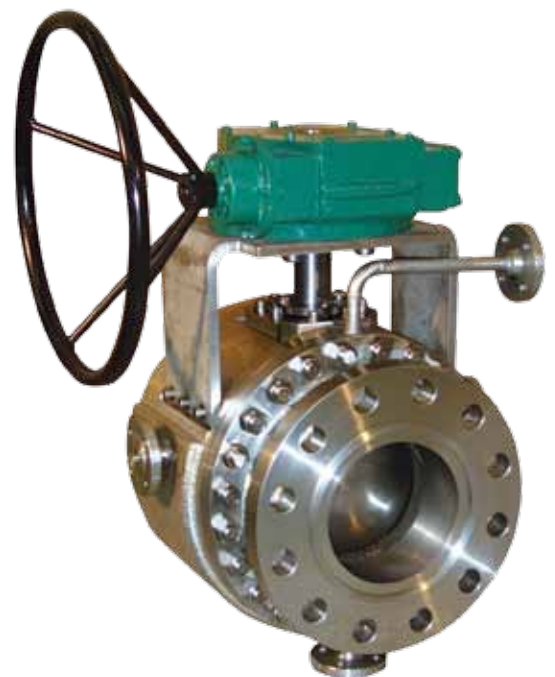
Butt Weld



Socketed Weld



Threaded



## The Strahman family of products include:

### SAMPLING AND DRAIN VALVES

Strahman has a full line of sampling and drain valves. Our sampling and drain valves use a unique design to prevent failure caused by sediment or clogging.

### POLYMER VALVES

Strahman Polymer Valves are designed to prevent clogging. They are ideal for use in liquid and gas service or with slurries, polymers, and high viscosity fluids that tend to solidify at room temperature.

### WASH DOWN EQUIPMENT

Strahman offers a full line of mixing units, hose stations, hoses, nozzles and wash down accessories. Our wash down line is designed for industrial use and is used in a wide variety of industries including food, beverage, pharmaceutical, chemical and other applications.

### LINE BLINDS

Strahman Line Blinds provide zero leakage down stream and total isolation on process pipelines, vessels, and maritime applications. No pipeline movement is required when blind position is changed.

### BALL VALVES

Strahman offers a full range of Trunnion Mounted, Metal Seated Ball Valves.

Please contact your local Strahman representative for further details  
or visit our website: [www.strahmanvalves.com](http://www.strahmanvalves.com)



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