

# RUBBER-SEATED BALL VALVE

## Pratt Rubber Seated Ball Valve

### General

All ball valves shall be of the tight-closing, shaft-mounted type that fully complies with AWWA Standard C507. Design pressure ratings shall be (150 psi) (300 psi) and provide tight shutoff against flow in (one direction) (both directions). Design of valve shall be such that with the valve in the open position, the full and unobstructed circular inlet and outlet port diameter shall be as specified in Table 1 of AWWA Standard C507. With the valve in the closed position, the rubber-seated valve shall be bubble tight at rated pressure.

All valves shall be as manufactured by the Henry Pratt Company and consist of a body, ball and operating unit (actuator).

### Valve Body

The valve body shall have integral support legs or pads and shall consist of two body end pieces and a center body piece through-bolted and O-ring sealed against leakage. Minimum body thickness shall be as specified in Table 2 of AWWA Standard C507. Flanges shall be flat-faced and flange drilling shall be in accordance with ANSI B16.1 (Class 125) (Class 250).

### Valve Ball & Shafts

The valve ball shall be constructed of ductile iron ASTM A536 65-45-12 or cast iron ASTM A48, Class 40, and shall be taper pinned to an upper and lower fitted shaft of Type 304 or 17-4 Type 630 stainless steel. Valves employing chromium-plated iron or steel shafts or trunnions shall not be accepted.

### Valve Bearings & Seals

The center section shall be fitted with sleeve-type bearings contained in the body hubs. Bearings shall be corrosion resistant and self-lubricating. Material shall be Teflon-lined with fiberglass backing. Bearing surfaces shall be isolated from flow by O-ring type seals. The ball assembly shall be supported by a two-way thrust bearing assembly consisting of a stainless steel stud and thrust collar in a grease-packed cavity.

### Valve Seats – Rubber

All seats shall be of a synthetic rubber compound. Seats shall be retained in the valve body by mechanical means without retaining rings, segments, screws or hardware of any kind in the flow stream. Seats shall seal a full 360° without interruption and have a plurality of grooves mating with a spherical stainless steel seating surface on the ball. Valve seats shall be field adjustable around the full 360° circumference and replaceable without dismantling the operator, ball or shaft. Where line size permits, seats shall also be capable of being adjusted without removing the valve from the line. Manufacturer shall certify that the rubber seat is field adjustable and replaceable.

In single seated valves, there shall be one set of ball and body seats. In double-seated valves, there shall be two sets of ball and body seats. Single-seated valves shall provide drop-tight closure in one direction. Double-seated shall provide drop-tight closure in two directions.

### Valve Actuators

Valve actuators shall conform to the operating requirements of AWWA Standard C507 and shall be designed to hold the valve in any intermediate position between full open and fully closed without creeping or fluttering.

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- A. Manual actuators shall be of the traveling nut, self-locking type and shall be equipped with mechanical stop-limiting devices to prevent over-travel of the ball in the open or closed positions. Actuators shall be fully enclosed and designed to produce specified torque with a maximum pull of 80 lb. on handwheel or chainwheel and a maximum input of 150 ft.-lbs. on operating nuts. Actuator components shall withstand an input torque of 450 ft.-lbs. at extreme actuator positions without damage.
- B. Cylinder actuators shall move the valve to any position from full open to fully closed when a maximum of \_\_\_\_\_psi or a minimum of \_\_\_\_\_psi is applied to the cylinder. All wetted parts of the cylinder shall be corrosion resistant and cylinder rods shall be chromium-plated stainless steel. Cylinders furnished with enclosed operating mechanisms shall have all wetted parts constructed of non-metallic materials except the cylinder rod that shall be chromium plated stainless steel. Rod seals shall be of the nonadjustable wear-compensating type. A rod wiper for removing deposits inside the cylinder shall be provided in addition to the external dirt wiper. Cylinder actuators of this type shall be Pratt MDT with Dura-Cyl cylinder.

### Valve Testing

All ball valves shall be subjected to hydrostatic, shop leakage and performance tests as specified in Section 5.2 of AWWA Standard C507.

### Valve Painting

All internal iron surfaces, except finished or bearing surfaces, shall be shop painted, and AWWA C550 compliant. All exterior iron surfaces of each valve, except finished or bearing surfaces, shall be provided with the manufacturer's standard coating unless otherwise specified by contract.

### Proof of Design

The manufacturer furnishing valves under the specification shall be prepared to show that the valves proposed meet the proof of design requirements of AWWA Standard C507, Section 5.3.



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