

METAL-SEATED BALL VALVE**PRATT[®]****Pratt Metal Seated Ball Valve****General**

The ball valve shall be metal to metal seated with flanged ends, drilled to the applicable ANSI B16.1 standard Class 125 or 250. Valve shall have a clear unobstructed waterway, which will result in no significant head loss, when the valve is in the full open position.

The valve shall be drop tight and meet or exceed the AWWA C507-(latest revision) inspection and testing standard. The valve shall be single seated for pump control and rated at 150, 250, or 300 psi.

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

Valve Body

The body shall be cast ductile iron ASTM A 536 grade 65-45-12 having an inlet and outlet flanged waterway equal to the required valve size. Flanges shall be flat-faced and machined parallel to each other to within .005 inch. Valve body shall have both a drain and vent hole drilled and tapped.

The body shall have bronze bearings installed in each half accurately located in the center of the housing to receive the trunnion bearings on the ball and place the ball in the central position. The bearing load shall not exceed 2000 lb./sq. inch at 250 psi differential pressure. The body seat shall be Monel electronically fused to the base metal, then accurately machined to form the seating seal, or other C507-(latest revision) approved materials. The body seat shall not protrude into the waterway.

Valve Ball

The ball shall be cast ductile iron ASTM A 536 grade 65-45-12. It shall have integrally cast trunnions which will be bronze-bushed. One trunnion holds the operating shaft which passes through a packing seal area and connects to the actuator. To prevent leakage around the shaft, V-Type packing is installed to form a seal. The ball seat shall be stainless steel 300 series. It shall be a pressure-assisted design and by using an offset on the body and ball, the seats will only be in contact at the actual point of closing. The seat is connected to the ball by means of a stainless steel mounting ring which is securely attached and pinned into position after the correct setting has been attained. Seats threaded directly on to the ductile iron ball shall not be acceptable.

Valve seat assembly shall be fully adjustable and replaceable in the field without removing the valve from the line. The ball seat shall be located at the top, when the valve is in the open position.

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Valve Actuators

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

A. Manual actuators shall be of the travelling 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 lbs. on a handwheel or 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 which shall be chromium-plated stainless steel. Rod seals shall be of the non-adjustable 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 Duracyl cylinder.

Valve Bearings

Bearings for ball and body trunnions shall be bronze of dissimilar hardness as per AWWA C507-(latest revision) standard to prevent galling or binding. Self-lubricating Teflon reinforced would also be acceptable.

Valve Shafts

Acceptable materials for valve shafts shall be ASTM A 564 Type 630, H1150 (17-4 PH) Stainless Steel, or other C507-(latest revision) approved materials.

Valve Testing

All ball valves shall be subjected to hydrostatic shop leakage and performance tests as specified in AWWA Standard C507-(latest revision). Maximum seat leakage allowances 1 fl. oz. per diameter inch per hour at design pressure differential as per AWWA C507-(latest revision).

Valve Painting

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



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