

5600F-5700F 100% PORT ECCENTRIC PLUG VALVE  
Val-Matic® Specification

**1 SCOPE**

- 1.1 This specification covers the design, manufacture, and testing of 3 in. (75 mm) through 54 in. (1350 mm) 100% Port Eccentric Plug Valves suitable for water or wastewater service with pressures up to 175 psig (1204 kPa).  
1.2 Plug Valves shall be quarter-turn, 100% port eccentric, with resilient encapsulated plug.

**2 STANDARDS AND APPROVALS**

- 2.1 Eccentric plug valves shall be designed, manufactured and tested in accordance with American Water Works Association Standard ANSI/AWWA C517.  
2.2 All Plug Valves shall be certified Lead-Free in accordance with NSF/ANSI 372.  
2.3 Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.

**3 CONNECTIONS**

- 3.1 Flanged valves shall have flanges with drilling to ANSIB16.1, Class 125.  
3.2 Mechanical Joint valves shall fully comply with ANSI/AWWA C111/A21.11.

**4 DESIGN**

- 4.1 Valves shall have port areas of not less than 100% of pipe area.  
4.2 3 in. (75 mm) and larger valves shall have a valve seat that is a welded overlay of 95% pure nickel applied directly to the body on a pre-machined, cast seating surface and machined to a smooth finish.  
4.3 3 in. (75 mm) and larger plug valves shall have shaft seals which consist of V-type packing in a fixed gland with an adjustable follower and removable shims under the follower flange to provide for adjustment and prevent over compression.  
4.4 Permanently lubricated, radial shaft bearings shall be supplied in the upper and lower bearing journals to eliminate the need for grease fittings. Thrust bearings shall be provided in the upper and lower journal areas, except for threaded type which only have upper thrust bearings.  
4.5 Both the packing and bearings in the upper and lower journals shall be protected by Buna-N shaft seals located on the valve shaft to minimize the entrance of grit into the bearing journal and shaft seal areas.

**5 MATERIALS**

- 5.1 Valve bodies and covers shall be constructed of ASTM A126 Class B for working pressures up to 175 psig (1200 kPa). The words "SEAT END" shall be cast on the exterior of the body seat end.  
5.2 3 in. (75 mm) and larger plugs shall be of one-piece construction and made of ASTM A536 Grade 65-45-12 ductile iron and fully encapsulated with resilient facing per ASTM D2000-BG and ANSI/AWWA C517 requirements.  
5.3 Plug valves shall have radial shaft bearings constructed of self-lubricating Type 316 stainless steel. The thrust bearings shall be PTFE. Cover bolts shall be corrosion resistant with zinc plating.

**6 ACTUATION**

- 6.1 Valves 3 in. (75 mm) to 8 in. (200 mm) shall be equipped with a 2 inch square nut for direct quarter turn operation with a hand lever. The packing gland shall include a friction collar and an open position memory stop. The friction collar shall include a nylon sleeve to provide friction without exerting pressure on the valve packing.  
6.2 When specified, valves 3 in. (75 mm) and larger shall include a totally enclosed and sealed worm gear actuator with position indicator (above ground service only) and externally adjustable open and closed stops. The worm segment gear shall be ASTM A536 Grade 65-45-12 ductile iron with a precision bore and keyway for connection to the valve shaft. Bronze radial bearings shall be provided for the segment gear and worm shaft. Alloy steel roller thrust bearings shall be provided for the hardened worm.  
6.3 All gear actuators shall be designed to withstand, without damage, a rim pull of 200 lb. on the hand wheel and an input torque or 300 ft-lbs. for nuts.  
6.4 Buried service actuators shall be packed with grease and sealed for temporary submergence to 20 feet of water. Exposed worm gear shafts shall be stainless steel.

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**7 OPTIONS**

- 7.1 The interior and exterior of the valve shall be coated with an NSF/ANSI 61 approved fusion bonded epoxy.
- 7.2 Available linings include rubber for abrasive or corrosive fluids and glass for a smooth, non-stick surface.

**8 MANUFACTURE**

- 8.1 Manufacturer shall demonstrate a minimum of ten (10) years' experience in the manufacture of plug valves. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings and operation and maintenance manuals.
- 8.2 The exterior of the valve for above ground service shall be coated with a universal alkyd primer. Valve exterior for buried service shall be coated with an epoxy coating.
- 8.3 Valve shall be marked with the Serial Number, Manufacturer, Size, Cold Working Pressure (CWP) and the Direct and Reverse Actuator Pressure Ratings on a corrosion resistant nameplate.
- 8.4 Plug Valves shall be Series # 5600F or 5700F as manufactured by Val-Matic Valve and Mfg. Corporation, Elmhurst, IL, USA or approved equal.

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