

3-WAY AND 4-WAY TAPERED PLUG VALVE

Val-Matic® Specification

1 Scope

- 1.1** This specification covers the design, manufacture, and testing of 4 in. (100 mm) through 12 in. (300 mm) 3-Way 100% Ported Tapered Plug Valves and 4 in. (100 mm) through 12 in. (300 mm) 4-Way 100% Ported Tapered Plug Valves suitable for water or wastewater service with pressures up to 175 psig (1200 kPa) or 250 psig (1725 kPa) when specified.
- 1.2** Plug Valves shall be concentric, non-lubricated with resilient encapsulated plugs capable of 90, 180 and 360 degree worm gear actuator.

2 Standards, Approvals and Verification

- 2.1** The valves shall be certified to be Lead-Free in accordance with NSF/ANSI 372.
- 2.2** Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.

3 Connections

- 3.1** Flanged 3-Way and 4-Way valves shall have flange drilling and face-to-face dimensions in accordance with ANSI B16.1 Class 125 for standard Tee and Cross Fittings.

4 Design

- 4.1** Port areas shall be not less than 100% of pipe area.
- 4.2** The valve seat shall be a machined taper in the body concentric to the valve shaft.
- 4.3** Shaft seals shall consist of V-type packing in a fixed gland with an adjustable follower designed to prevent over compression of the packing and to meet design parameters of the packing manufacturer. Removable POP™ shims shall be provided under the follower flanges to provide for adjustment and prevent over tightening.
- 4.4** Permanently lubricated, shaft bearings shall be supplied in the upper and lower bearing journals. An externally adjustable 2-way thrust bearing shall be provided.
- 4.5** Both the packing and bearings in the upper and lower journals shall be protected by a Grit-Guard™ shaft seal located on the valve shaft to minimize the entrance of grit into the bearing journal and shaft seal areas.

5 Materials

- 5.1** The 3-Way and 4-Way valve bodies and covers shall be constructed of ASTM A536 Grade 65-45-12 ductile iron.
- 5.2** The plug shall be of one-piece construction and constructed of ASTM A536 Grade 65-45-12 ductile iron. The plug shall be fully encapsulated with precision molded resilient material with integral wear compensating O-ring type sealing surfaces. The encapsulated material shall be Buna-N per ASTM D2000-BG and ANSI/AWWA C517 requirements or as specified.
- 5.3** Radial bearings shall be constructed of self-lubricating type 316 stainless steel. The 2-way thrust bearing shall be bronze.

6 Actuation

- 6.1** Valves shall include a totally enclosed and sealed worm gear actuator with position indicator for either 90, 180, or 360 degree operation depending on the flow configuration. The worm segment gear shall be ASTM A536 Grade 65-45-12 ductile iron with a precision bore and key way for connection to the valve shaft. Bronze radial bearings shall be provided for the segment gear and worm shaft.
- 6.2** All gear actuators shall be designed to withstand, without damage, a rim pull of 200 lb. on the hand wheel.

7 Other

- 7.1** When specified, the valve seats shall be a welded overlay of 95% pure nickel applied directly to the body on a pre-machined seating surface and machined to a smooth finish.

8 Manufacture

- 8.1** The 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 interior and exterior of the valve shall be coated with an NSF/ANSI 61 approved fusion bonded epoxy.
- 8.3** Valves shall be marked with the Serial Number, Manufacturer, Size, Cold Working Pressure (CWP) on a corrosion resistant nameplate.
- 8.4** 3-Way Tapered Plug Valves shall be Series 5500 and 4-Way Tapered Plug Valves shall be series 5400 as manufactured by Val-Matic Valve and Mfg. Corporation, Elmhurst, IL. USA or approved equal.

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DATE 9-24-12

VAL-MATIC®

VALVE AND MANUFACTURING CORP.

DRWG. NO.

VM-5400/5500-S