

Submersible Ductile Iron Pump Check Valves

Flomatic® Valve Written Specification

Scope

- 1.1 This specification covers the design, manufacture, and testing of 3 in. (75 mm) through 10 in. (250 mm) Female Threaded In-Line Ductile Iron Submersible Pump Check Valves suitable for pressures up to 600 psig (4,137 kPa) water service.
- 1.2 The Submersible Pump Check Valve shall be flow efficient of the silent operating type that begins to close as the forward flow diminishes and fully closes at zero velocity preventing flow reversal and reduces resultant water hammer.
- 1.3 Compatible with VFD control submersible pumps with variable flow conditions.

Standards and Approvals

- 2.1 The valves shall be flow efficient and tested by certified hydraulic laboratory in sizes 3 in.-10 in.
- 2.2 Certified to be Lead-Free in accordance with NSF/ANSI 372 and NSF/ANSI/CAN 61.
- 2.4 Manufacturer shall have a quality management system that is certified to ISO 9001 and ISO 14001 by an accredited, certifying body.

Connections

- 3.1 Threaded Style valves shall be provided in sizes 3 in. (75 mm) through 10 in. (250 mm) Female NPT Threaded (ANSI B1.20.1-2013), or when specified, API 8 round Line Pipe threads (API 5B 2019, Table 3).

Design

- 4.1 The valve design shall incorporate a downstream center guided, spring loaded poppet and having a short linear stroke with a positive stop that generates a flow area equal to the nominal valve seat size.
- 4.2 The valve body material shall be Ductile Iron ASTM A536 (65-45-12) or stronger to support a submersible pump at a minimum setting of 1,000 feet.
- 4.3 All internal component parts shall be corrosion resistant and be field replaceable without the need of special tools. The spring shall be designed to withstand 100,000 cycles without failure and provide a minimum cracking pressure of 1 psi.
- 4.4 The valve poppet shall be convex to the flow direction providing for disc stabilization, maximum strength, and a minimum flow velocity to open the valve.
- 4.5 The valve poppet shall have a replaceable rubber seating surface to ensure drip tight seating at all pressures. The rubber seal shall be supported by a mechanical support surface when valve is closed under back pressure.
- 4.6 The valve shall be stable and noiseless at variable flow rates from 1 ft./sec. to 10 ft./sec.
- 4.7 Features an NSF/ANSI/CAN 61 approved molded NITRILE (Buna-N) seal or optional VITON or EPDM.
- 4.8 Pressure Max: 600 PSI (4,137 kPa).
- 4.9 Temp Max: 180°F (82°C).
- 4.10 The valve shall be American Iron and Steel Act compliant.

Coating

- 5.1 Ductile Iron Valve bodies shall be fusion epoxy coated with NSF/ANSI 61 approved powder.

Marking

- 6.1 The valve shall have a cast-in, engraved or metal tag showing direction of flow arrow and manufacturer name, size, model and year of manufacturer.
- 6.2 The valve shall have a date coded quality control (Q.C.) tag or water resistant label.

Approved Manufacturer

- 7.1 The valve shall be equal in all respect to the Ductile Iron Series 80DIVFD as manufactured by the Flomatic® Corporation, Glens Falls, NY.

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