

BUTTERFLY VALVE Val-Matic® Specification

1 Scope

1.1 This specification covers the design, manufacture, and testing of AWWA Class 150B (3"-144") and AWWA Class 250B (3"-96") butterfly valves.

2 Standards, Approvals and Verification

2.1 The valves shall be designed, manufactured and tested in accordance with American Water Works Association Standards ANSI/AWWA C504 and C516.

2.2 The valves shall be certified to NFS/ANSI 61 Drinking Water System Components - Health Effects and certified to be 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 end connections shall fully conform with ANSI B16.1 for Class 125, Class 250 iron flanges, or AWWA C207 Class D. Both 125 and 250 flanges shall be flat faced.

3.2 Mechanical Joint end connections shall fully conform with ANSI/AWWA C111/A21.11.

3.3 Wafer end connections shall be designed for installation between ANSI B16.1 Class 125 iron flanges or between ISO 7005-2 PN10 or PN16 flanges.

4 Design

4.1 The valve shafts shall be of the through-type for sizes 3"-24". 30" and larger shall be of the stub type design. Shafts shall be locked to the disc by O-ring sealed taper pins retained with stainless steel nuts. Through-type shafts shall be supplied on 30" and larger valves when specified.

4.2 The valve Discs shall be of the solid type without external ribs or vanes to obstruct flow.

4.3 Resilient seats shall be located on the valve disc and shall provide a 360° continuous, uninterrupted seating surface. Seats shall be mechanically retained with a stainless steel retaining ring and stainless steel Nylok® cap screws which shall pass through both the resilient seat and the retaining ring. The retaining ring shall be continuous or investment cast with overlapping sections, serrated grooves, and shoulders providing a Tri-Loc® system. The resilient seat's mating surface shall be to a 360° continuous, uninterrupted stainless steel body seat ring. Resilient seats shall be field adjustable and replaceable and shall not require epoxy, syringes, needles or pressure vessels to replace or adjust.

4.4 The sleeve bearings shall be provided in the valve hubs and shall be self-lubricating nyatron or teflon lined, fiberglass backed.

4.5 The thrust bearings shall be provided and shall be adjustable on valves 30" and larger.

4.6 The shaft seals shall be of the V-type and shall be replaceable without removal of the valve from the line or the shaft from the valve.

5 Materials

5.1 Body: Class 150B valve bodies shall be ASTM A126, Class B gray iron or ASTM A536 Grade 65-45-12 ductile iron. Class 250B valve bodies shall be ASTM A536 Grade 65-45-12 ductile iron.

5.2 Disc: Valve disc shall be ASTM A536 Grade 65-45-12 ductile iron.

5.3 Shafts: Shafts shall be ASTM A276 Type 304, or ASTM A564, Type 630 Stainless Steel.

5.4 Seat: Resilient seat shall be Buna-N and mate to a Type 316 Stainless Steel body seat ring.

5.5 Hardware: All seat retaining hardware shall be Type 316 stainless steel.

6 Actuation

6.1 Manual, electric or cylinder actuation shall be provided as specified.

6.2 Manual actuators shall be of the traveling nut design with characterized closure per AWWA C504 and equipped with externally adjustable closed position stops capable of withstanding 450 ft-lbs. Actuators shall be lubricated with EP-2 grease and fully enclosed in an iron housing sealed against the entry of water. Buried service actuators shall be packed with grease and sealed for temporary submergence to 20 feet of water. Exposed input shafts shall be electroless nickel plated or stainless steel.



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6.3 Cylinder actuators shall be traveling nut design with characterized closure sized to position the valve with an air, water or oil supply pressure of 80-150 psi and built in accordance with AWWA C541. The rotating mechanism will consist of a lever and traveling nut directly connected to the cylinder rod. The cylinder rod, heads and barrel shall be constructed of stainless steel or non-metallic material for water service. Rod and piston seals shall be of the self-adjustable, wear-compensating type. The piston shall be one-piece with a wear strip.

6.4 Motor actuators shall be furnished in accordance with AWWA C542 for Power Actuators and factory tested on the production valve. The motor unit shall be mounted to a self-locking traveling nut actuator with characterized closure and externally adjustable closed stop. The motor actuator assembly shall be designed for open/close service with a minimum operating time of 60 sec. The motor unit shall be furnished with a position indicator, independently adjustable, 15-amp limit switches, and adjustable torque sensors to protect the valve indicator. A handwheel with a declutch lever shall be provided so that the handwheel does not rotate during electrical operation. Motors shall be sized with a 1.5 safety factor and a power supply of 230/460V, three phase, 60 Hz AC. Electrical operation shall include Local-Off-Remote selector switch, Local Open/Close push buttons and position indication lamps.

7 Options

7.1 Optional body material is ASTM A536, Grade 65-45-12 ductile iron.

7.2 Optional shaft material is ASTM A276, Type 316 stainless steel.

7.3 Optional manual actuator for submerged service shall be packed with grease and sealed for continuous submergence to 30 feet of water. All fasteners shall be stainless steel and all exposed input shafts shall be electroless nickel plated or stainless steel.

7.4 Optional resilient seat material is EPDM.

8 Manufacture

8.1 The valve exteriors for above ground service shall be coated with a universal, alkyd primer. Valve exteriors for buried service shall be coated with an epoxy coating. Valve interiors shall be coated with an NSF/ANSI 61 epoxy coating approved for potable water. Fusion bonded epoxy shall be supplied on the exterior and interior when specified.

8.2 Butterfly Valves shall be Val-Matic® Series #2000 as manufactured by Val-Matic® Valve & Mfg. Corporation, Elmhurst, IL. USA or approved equal.



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