

# FLOMATIC AZURE<sup>®</sup>

## Model 45 Flanged Butterfly Valves (AWWA C504)

### Recommended Specifications for (3"-24") butterfly valves

#### 1 Scope

**1.1** This specification covers the design, manufacture, and testing of AWWA C504 Class 150B (3"-24") butterfly valves.

#### 2 Standards, Approvals and Verification

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

**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 end connections shall fully conform to ANSI B16.1 for Class 150 iron flanges, or AWWA C207 Class shall be flat faced.

#### 4 Design

**4.1 Valve Shaft:** The valve shafts shall be keyed one piece ASTM A276 type 316 stainless steel through-shaft design providing minimal deflection. Slotted shaft top indicates position.

**4.2 Valve Disk:** The valve Disc shall be concentric design to improve flow characteristics and decrease head-loss. Disk shall be secured to valve shaft with two (2), taper pins providing a positive leak-proof connection between the shaft and disc. The smaller valve sizes 3" and 4" secured with one (1) pin.

**4.3 Valve Seat:** Standard NBR (Buna N other materials available) seat bonded and vulcanized to the body of the valve in compliance with AWWA standard C504. Resilient seat fully encapsulates the inside body, providing further corrosion protection and longer life.

**4.4 Bearing Sleeve:** The sleeve bearings shall Nylatron Shaft Bearing, self-lubricating, corrosion-resistant material. Bearings are designed for horizontal and vertical shaft loading.

**4.5 Thrust Bearing:** The thrust bearing shall be of the self-lubrication, corrosion-resistant sleeve type. Bearings shall be designed for horizontal and/or vertical shaft loading.

**4.6 Shaft Seal:** The shaft packing shall be V-Type design with an O-ring. All packing will be self-adjusting and wear compensating. Valve packing arrangement shall be designed so that actuator removal will not result in packing seal failure.

The shaft seals shall be replaceable without removal of the valve from the line or the shaft from the valve.

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## 5 Materials

**5.1 Body:** Class 150B valve bodies shall be constructed of ductile iron ASTM A536, grade 65-45-12. Cast iron bodies are not acceptable. Flanged valves shall have ANSI B16.1 flanges with class 125# drilling.

**5.2 Disc:** Valve disc sizes 6" thru 24" shall be ASTM A536 Grade 65-45-12 ductile iron with permanent 316 stainless edges. Disc sizes 3" and 4" shall ASTM A351, 316 Stainless Steel.

**5.3 Shafts:** Shafts shall be ASTM A276 Type 316, Stainless Steel.

**5.4 Seat:** Resilient seat shall be simultaneously bonded and vulcanized to the body of the valve. The entire interior waterway of the valve body shall be rubber-lined to prevent corrosion. Valve designs with the rubber seat on the disc are not acceptable.

**5.5 Hardware:** All seats 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 gear box 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 grease and fully enclosed in an iron housing sealed against the entry of water.

**6.3** Optional Cylinder actuators shall be provided as specified 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.

**6.4** Optional Motor actuators shall be provided as specified in accordance with AWWA C542 for Power Actuators and factory tested on the production valve. A hand-wheel with a de-clutch lever shall be provided so that the hand-wheel does not rotate during electrical operation. 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 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 electro less nickel plated or stainless steel.

**7.3** Stem extensions shall be provided as specified.

## 8 Manufacture

**8.1** Valves shall be lined and coated with a fusion bonded epoxy conforming to NSF/ANSI 61 and AWWA C550 approved for potable water.

**8.2** Butterfly Valves shall be Model 45 as manufactured by Flomatic Corporation, Glens Falls, NY USA or approved equal.

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