

GLOBE, WAFER and THREADED STYLE SILENT CHECK VALVE
Val-Matic® Specification

Scope

1.1 This specification covers the design, manufacture, and testing of 1/2 in. (15 mm) through 2 in. (50 mm) Bronze Threaded Silent Check Valves and 2 in. (50 mm) through 42 in. (1050 mm) Wafer and Globe Silent Check Valves suitable for pressures up to 500 psig (3450 kPa) water service.

1.2 The Check Valve shall be of the silent operating type that begins to close as the forward flow diminishes and fully closes at zero velocity preventing flow reversal and resultant water hammer.

Standards and Approvals

2.1 The valves for use in fire protection systems shall be Factory Mutual approved in sizes 2 1/2 in.-12 in.

2.2 Stainless steel valves shall meet the requirements of ASME B16.34 and MSS SP-126.

2.3 The valves used in potable water service shall be certified to NSF/ANSI 61, Drinking Water System Components – Health Effects, and certified to be Lead-Free in accordance with NSF/ANSI 372.

2.4 Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.

Connections

3.1 Threaded Style valves shall be provided in sizes 1/2 in (15mm) through 2 in (50mm) and have a two-piece body with female threaded NPT ends.

3.2 Globe style valves shall be provided in sizes 2 1/2 in (75 mm) through 42 in. (1050 mm) and have flat faced flanges in accordance with ASME B16.1 for Class 125 or Class 250 iron flanges or in sizes 65mm to 600mm in accordance with ISO 7005 PN10 or PN16. Sizes 10 in (250 mm) and smaller flanged valves shall be capable of mating directly to a wafer butterfly valve without disc interference.

3.3 Wafer style valves shall be provided in sizes 2 in (50 mm) through 10 in. (250 mm) for installation between ASME B16.1 Class 125 or Class 250 iron flanges or sizes 50mm to 100 mm in accordance with ISO 7005 PN10 or PN16. Stainless steel wafer style valves shall include raised faces for installation between ASME B16.5 Class 150 flanges.

Design

4.1 The valve design shall incorporate a center guided, spring loaded disc and having a short linear stroke that generates a flow area equal to the nominal valve size.

4.2 The operation of the valve shall not be affected by the position of installation. The valve shall be capable of operating in the horizontal or vertical positions with the flow up or down. Heavy duty springs for vertical flow down installations shall be provided when specified on 14 in. and larger valves.

4.3 All component parts shall be field replaceable without the need of special tools. Wafer and Globe styles shall be provided with a replaceable guide bushing held in position by the spring. The spring shall be designed to withstand 100,000 cycles without failure and provide a cracking pressure of 0.5 psi.

4.4 The wafer and globe disc shall be concave to the flow direction providing for disc stabilization, maximum strength, and a minimum flow velocity to open the valve.

4.5 The valve disc and seat shall have a seating surface finish of 16 micro-inch or better to ensure positive seating at all pressures. The leakage rate shall not exceed the allowable rate for metal seated valves allowed by AWWA Standard C508 or 1 oz (30 ml) per hour per inch (mm) of valve diameter.

4.6 Wafer-style valve seats shall be fully retained with full size threads, and sealed with an o-ring. Globe style valve seats shall be contained with a machined counterbore and restrained by the mating flange and gasket.

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SILENT CHECK VALVE SPECIFICATION

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DRWG. NO.

VM-1400A/1800-S
Sheet 1 of 2

GLOBE, WAFER and THREADED STYLE SILENT CHECK VALVE
Val-Matic® Specification

Materials

5.1 The threaded valve body and disc shall be ASTM B584 copper alloy C87600 lead-free bronze. The seat shall be TFE. The spring shall be Type 316 stainless steel.

5.2 Globe and wafer valve bodies shall be constructed of ASTM A126 Class B cast iron for Class 125 and Class 250 valves and ASTM A351 Grade CF8M for Class 150 stainless steel valves. Optional body material includes ASTM A536 Grade 65-45-12 ductile iron.

5.3 Globe and wafer seat and disc shall be ASTM B584 Alloy C83600 cast bronze or ASTM B148 Alloy C95200 aluminum bronze. Optional trim material includes ASTM B584 copper alloy C87600 lead-free bronze or ASTM A351 Grade CF8M stainless steel.

5.4 Globe and wafer compression spring shall be ASTM A313 Type 316 stainless steel with ground ends.

Options

6.1 A resilient seal shall be provided on the seat when specified to provide zero leakage at both high and low pressures without overloading or damaging the seal. The seal design shall provide both a metal-to-metal and a metal-to-resilient seal.

6.2 Valve interiors and exteriors shall be coated with an NSF/ANSI 61 certified fusion bonded epoxy in accordance with AWWA C550 when specified.

MANUFACTURE

7.1 The valves shall be hydrostatically tested at 1.5 times their rated cold working pressure and seat tested at the valve CWP. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.

7.2 The exterior of the valve shall be coated with a universal alkyd primer.

7.3 Silent Check Valves shall be Series #1400THR.1 (Threaded Style), Series #1400A (Wafer Style), or 1800 (Globe Style) as manufactured by Val-Matic® Valve & Mfg. Corporation, Elmhurst, IL USA or approved equal.

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Sheet 2 of 2