

**WASTEWATER AIR/VACUUM VALVE
Val-Matic Specification**

1 Scope

1.1 This specification is intended to cover the design, manufacture, and testing of 1 in. (25 mm) through 8 in. (200 mm) Wastewater Air/Vacuum Valves suitable for pressures up to 150 psig (1000 kPa).

1.2 Wastewater Air/Vacuum valves shall be fully automatic float operated valves designed to exhaust large quantities of air during the filling of a piping system and close upon liquid entry. The valve shall re-open during draining or if a negative pressure occurs. [NOTE: See Wastewater Air Release Valves for releasing air during system operation and Wastewater Combination Air Valves for both air release and air/vacuum functions.]

2 Standards, Approvals and Verification

2.1 Valves shall be manufactured and tested in accordance with American Water Works Association (AWWA) Standard C512.

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

3 Connections

3.1 Valve sizes 3 in. (75 mm) and smaller shall have full size NPT inlets and outlets equal to the nominal valve size with a 2 in. (50 mm) inlet on 1 in. (25 mm) valves. The body inlet connection shall be hexagonal for a wrench connection. The valve body shall have 2" NPT cleanout and 1" NPT drain connections on the side of the casting.

3.2 Valve sizes 4 in. (100 mm) and larger shall have bolted flange inlets with NPT outlets. Flanges shall be in accordance with ANSI B16.1 for Class 125 iron flanges.

3.3 The valve shall have three additional NPT connections for the addition of backwash accessories.

4 Design

4.1 The extended valve body shall provide a through flow area equal to the nominal valve size. A bolted cover with alloy screws and flat gasket shall be provided to allow for maintenance and repair.

4.2 Tandem floats shall be unconditionally guaranteed against failure including pressure surges. The float assembly shall have a hexagonal guide shaft supported in the body by circular bushings to prevent binding from debris. The upper float shall be protected against direct water impact by an internal baffle.

4.3 The resilient seat shall provide drop tight shut off to the full valve pressure rating. The seat shall be a minimum of .5 in. (12 mm) thick on 2 in. (50 mm) and larger valves and secured in such a manner as to prevent distortion.

4.4 On valve sizes 4 in. (100 mm) and larger, the cover shall be fitted to the valve body by means of a machined register to maintain concentricity between the top and bottom guide bushings at all times. The tandem float shall be double guided with a guide shaft extending through the float. A resilient bumper shall be provided to cushion the float during sudden opening conditions.

5 Materials

5.1 The valve body, cover, and baffle shall be constructed of ASTM A126 Class B cast iron.

5.2 The float, guide shafts, and bushings shall be constructed of Type 316 stainless steel. Non-metallic guides and bushings are not acceptable. Resilient seats shall be Buna-N.

6 Options

6.1 A flanged or screwed outlet connection shall be provided when specified for vault piping.

6.2 An optional Regulated Exhaust Device shall be provided when specified to reduce pressure surges due to column separation or rapid changes in velocity and pressure in the pipeline.

6.2.1 The Regulated Exhaust Device shall be mounted on the outlet of the Wastewater Air/Vacuum Valve, allow free air flow in and out of the valve, close upon rapid air exhaust, and control the air exhaust rate to reduce pressure surges.

6.2.2 The device shall have a threaded or flanged globe-style body with a center guided disc and seat assembly. The disc shall have threaded holes to provide adjustment of the air exhaust rate through the valve. The holes shall provide for a flow area of 5% of the nominal valve size.

6.2.3 The material of the body shall be consistent with the Air Valve. The seat and disc shall be ASTM A351 Grade CF8M stainless steel.

6.3 Backwash accessories shall be furnished when specified and shall consist of an inlet shut-off valve, a blow-off valve, a clean water inlet valve, rubber supply hose, and quick disconnect couplings. Accessory valves shall be quarter-turn, full ported bronze ball valves.

6.4 Optional body materials include ASTM A536 Grade 65-45-12 ductile iron, ASTM A351 Grade CF8M stainless steel, and ASTM B584 Alloy C83600 cast bronze.

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

6.6 Low Durometer seat shall be furnished for low pressure applications

7 Manufacture

7.1 The manufacturer shall demonstrate a minimum of five (5) years experience in the manufacture of wastewater air valves. 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 Wastewater Air/Vacuum Valves shall be Series 300 as manufactured by Val-Matic Valve and Manufacturing Corporation, Elmhurst, IL, USA or approved equal.

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