

## AIR RELEASE VALVE SPECIFICATION

### Scope

- 1.1 This specification is intended to cover the design, manufacture, and testing of 1/2 in. (13 mm) through 3 in. (76 mm) Air Release Valves suitable for clean or raw water service with pressures up to 740 psig (5100 kPa).
- 1.2 Air Release Valves shall be automatic float operated valves designed to release accumulated air from a piping system while the system is in operation and under pressure. The capacity and pressure rating of the valve is dependent on the diameter of the precision orifice in the cover. A large inlet connection is required for proper air and water exchange. [NOTE: See Air/Vacuum Valves for exhausting and admitting large volumes of air and Combination Air Valves for both air release and air/vacuum functions.]

### Connections

- 2.1 The valve body shall be threaded with NPT inlets and outlets. The body inlet connection shall be hexagonal for a wrench connection.
- 2.2 The valve shall have two additional NPT connections for the addition of gauges, testing, and draining.

### Design

- 3.1 The cover shall be bolted to the valve body and sealed with a flat gasket. Resilient seats shall be replaceable and provide drop tight shut off to the full valve pressure rating.
- 3.2 Floats shall be unconditionally guaranteed against failure including pressure surges. Mechanical linkage shall provide sufficient mechanical advantage so that the valve will open under full operating pressure. Simple Lever Designs shall consist of a single pivot arm and a resilient orifice button. Compound Lever Designs shall consist of two levers and an adjustable threaded resilient orifice button.

### Materials

- 4.1 The valve body and cover shall be constructed of ASTM A126 Class B cast iron for working pressures up to 300 psig. Higher pressure rated valves shall be constructed of ASTM A536 Grade 65-45-12 ductile iron.
- 4.2 The orifice, float and linkage mechanism shall be constructed of Type 316 stainless steel. Non-metallic floats or linkage mechanisms are not acceptable. The orifice button shall be Viton for simple lever valves and Buna-N for compound lever designs.

### Options

- 5.1 An optional vacuum check on the outlet shall be provided when specified to prevent air from re-entering the system during negative pressure conditions.
- 5.2 Optional body materials include ASTM A216 Grade WCB cast steel, ASTM A351 Grade CF8M stainless steel, and ASTM B584 Alloy C83600 cast bronze.
- 5.3 An optional screened hood on the outlet shall be provided when specified.
- 5.4 An optional fully-ported brass ball valve shall be provided when specified to isolate the air release valve from the piping system.

### Manufacture

- 6.1 The manufacturer shall demonstrate a minimum of five (5) years experience in the manufacture of air valves. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.
- 6.2 The exterior of the valve shall be coated with a universal alkyd primer.

### Cross Contamination and Security Protection

- 7.1 All Air (Release, Vacuum, etc) Valves installed in vaults or flood prone locations shall include an inflow preventer to prevent the introduction of contaminated water through the air valve outlet. The inflow preventer shall allow the admittance and exhausting of air while preventing contaminated water from entering during normal operating conditions. The inflow preventer shall be flow tested by an independent third party to certify performance. The third party shall be an approved testing lab of the American Society of Sanitary Engineers.

### Certification

- 8.1 Valves shall be manufactured and tested in accordance with American Water Works Association (AWWA) Standard C512.
- 8.2 Valves for use in fire protection systems (series 15A and 22) shall be listed by Underwriters Laboratories and approved by Factory Mutual.
- 8.3 Air Release Valves shall be Series 15A to 50 as manufactured by Val-Matic and Manufacturing Corporation, Elmhurst, IL, USA or approved equal.

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**VAL-MATIC**<sup>®</sup> VALVE AND MANUFACTURING CORP.

DRWG. NO.

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