

Materials Specification – 11

for

COMBINATION AIR-RELEASE AND VACUUM VALVES 1 THROUGH 4-INCH

1. GENERAL

Combination air-release and vacuum valves shall be designed and manufactured in accordance with AWWA C512 with the following additional requirements or exceptions.

2. VALVE DESCRIPTION

Combination air-release and vacuum valves shall be of the single body, double orifice type. The large orifice shall allow air to enter during the drainage of the pipeline and escape during pipeline filling. The small orifice shall release small pockets of air after the pipeline is filled and under pressure. Components shall be suitable for exposure to chloraminated water.

3. INSTALLATION

Combination air-release and vacuum valves shall be installed in a vertical position in an underground concrete manhole or concrete vault as applicable.

4. VALVE CONSTRUCTION

- A. **Iron Body:** The valve body and cover shall be CI in accordance with ASTM A 48, Class 35, or ASTM A 126, Grade B, or DI in accordance with ASTM A 536, Grade 65-45-12. Each valve shall be supplied with stainless steel trim; this includes the float, float arm, guide bushings, plug, and connecting hardware.
- B. **Stainless Steel Body:** The valve body shall be AISI Type 304 stainless steel. The ends shall be epoxy coated steel or Type 304 stainless steel secured with Type 304 stainless steel rods. The floats shall be solid cylindrical high density polyethylene. The baffle plate, nozzle seat retaining plate, small orifice nozzle, and connecting hardware shall be stainless steel.
- C. Valve seats shall be natural or synthetic rubber, Buna-N or EPDM.
- D. One and 2-inch valves shall be furnished with NPT inlets. Three and 4-inch valves shall be furnished with flanged inlets that conform in dimension and drilling to ANSI B16.1, Class 125. Each flange face shall be machined to a flat surface with a serrated finish in accordance with AWWA C207.

Valves shall be provided with 1/2-inch NPT pipe plugs in the top cover and in the bottom of the body.

5. WORKING PRESSURE

The working pressure shall be 150 psi.

6. SIZE OF ORIFICES

Valves shall be furnished with orifice sizes as tabulated:

Valve Size (Inches)	Inlet (Inches)	Outlet (Inches)	Small Orifice (Inches)	
			Standard Body	Cylindrical Body
1	1	1	5/64	0.047
2	2	2	3/32	0.047
3	3	3	3/32	0.059
4	4	4	3/32	0.059

7. TESTING

Each assembled valve shall be tested in accordance with AWWA C512.

8. COATINGS

Ferrous surfaces of the valve or flange faces, except machined or bearings surface and corrosion resistant components, shall be prepared for coating in accordance with SSPC SP10. These surfaces shall then be coated with a two-part thermosetting polyamide epoxy in two or more uniform coats or with fusion-bonded epoxy to a minimum DFT of 10 mils. Epoxy coating shall be in accordance with AWWA C550. Flange faces shall be shop coated with a rust preventive compound.

9. CERTIFICATION

The manufacturer shall furnish a sworn statement that the inspection and all specified tests have been completed and that results comply with the requirements of these Standards. A copy of the Certification, including compliance with NSF/ANSI 61, shall be provided to Denver Water.

10. ACCEPTABLE MANUFACTURERS AND MODELS

CITY AND COUNTY OF DENVER AND TOTAL SERVICE CONTRACT AREAS	
Iron Body	
Manufacturer	Model
ARI	Series D-040-C
Stainless Steel Body	
Manufacturer	Model
Vent-O-Mat	Series RBX
DISTRIBUTOR CONTRACT AREAS	
Iron Body	
Manufacturers	Models
ARI	Series D-040-C, D-060-C HF NS
GA Industries	Figure 945
Val-Matic	Series 200
Stainless Steel Body	
Manufacturer	Model
Vent-O-Mat	Series RBX

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