Dorot Air Release Valves

Models DAV-MH-x-KA, DAV-MH-x-K, DAV-MH-x-KA/SA, DAV-MS-x-KA, DAV-MS-x-KA/SA

Design features and test procedure

The Applications features, design, development and manufacture of Dorot Air / Vacuum Valves (DAV) were outlined according to AWWA C512 standard.
Based on its fundamentals, other applicable standards were in use for the valves components.

The herein standards and specs are followed for the DAV development and manufacture:

1. All components according to ANSI, AWWA, ASME, ASTM, ISO standards
2. Cover bolting – ASTM A307
3. Rubber – ASTM D1149, ASTM D395, ASTM D471.
4. Allowable Stress AWWA C512 4.3.1
5. Inlet and outlet ports AWWA C512 4.3.3.2
6. Flanges - ISO 7005-2, ANSI 16.42, ABNT and any other national standards upon request.
7. Floats collapse pressure, AWWA C512:
   4” (100mm) and smaller = 1000PSI 69bar); Larger sizes = 754PSI (51 bar)
   (Irrelevant for this product - DAVs floats can not collapse, due solid bulk structure.)
8. Minimum working pressure 4.5 PSI (0.3bar)
9. Drain/Test ports (Standard plugged, opened on request)– 1/4" NPT
10. Interchangeability AWWA C512 4.4.1.1
11. Castings AWWA C512 4.4.1.2
12. Internal protective coating – AWWA C550
13. Shell test – 150% of max. working pressure
14. Leakage Test, AWWA C512 – from minimal pressure of 4.5 PSI (0.3bar) to 150% of pressure rating.
15. Main orifice size: MH line- equal to nominal flange size. MS line- smaller than flange dimensions by one stage (example: 4” (100mm) orifice in 6” (150mm) valve).

All valves are tested as follows (considering AWWA C512 as minimal requirement):

1 *Shell Test:*

Application of internal hydrostatic pressure, 150% of the maximal rated pressure. Visual examination is performed for leakages/dripping, distortion or other anomaly. DAV valves, up to 8"(200mm) are hydrostatically pressurized and examined for 1 minute. Greater diameters are tested for 3 minutes.

2 *Seat Leakage Test*:

2.1 Minimal test pressure – 4.5 PSI (0.3bar). Maximal test pressure – 150% of the maximal pressure rating.
The valve outlet is exposed to atmospheric pressure, performing a drop-tight (zero leakage) sealing for minimal period of 30 seconds.
2.2 Dynamic test – the valve is opened and drop-tight closed, at 4.5 PSI (0.3bar) pressure, inspecting its sealing and mechanical reliability at the varying low pressure conditions.

3. *Air release under pressure (Automatic operation of Combination valve):*

All DAV valves are tested for their performance in automatic purging of small quantities of air, while the pipeline is pressurized.
Air is injected to the valve inlet, while in closed, pressurized position. Air release and re-sealing are inspected.