



Division of RF Valves, Inc.
Member DFC Group of Companies



HOW TO SPECIFY VENT-O-MAT® (WATER) VENT-O-MAT® SERIES RBX “ANTI-SHOCK” AIR RELEASE & VACUUM BREAK VALVE SPECIFICATIONS FOR USE BY SPECIFYING AUTHORITIES

FUNCTION

The required valves shall provide any of the functions, or combination of functions, described below as specified in the schedule of quantities.

Pipeline filling

Uninterrupted high volume air discharge through the large orifice.

Pipeline draining or Column Separation

Uninterrupted high volume air intake through the large orifice.

Pipeline full and operating

Discharge of disentrained pressurized air through the small orifice.

Rapid Filling / Column Separation

The valve must incorporate an integral surge alleviation mechanism which will automatically dampen surge pressures due to rapid air discharge or the subsequent rejoining of separated water columns.

CONSTRUCTION AND DESIGN

Air release and vacuum break valve shall be of a compact single chamber design with solid cylindrical high density polyethylene control floats housed in a tubular stainless steel or corrosion protected body with epoxy powder coated cast iron, or stainless steel ends secured by means of stainless steel tie rods. Valves up to 2” must have body, tie rods and flanges in full stainless steel.

The valve shall have an integral surge alleviation mechanism which shall operate automatically to limit transient pressure rise or shock induced by closure due to high velocity air discharge or the subsequent rejoining of separated water columns. The limitation of pressure rise must be achieved by deceleration of approaching water prior to valve closure. Relief mechanisms that act subsequent to valve closure cannot react in the low millisecond time span required and are therefore unacceptable.

Valve Performance must be verified through third party physical testing. CFD, FEA or other type of theoretical computer modelling, or theoretical based curves are not acceptable.

Large orifice sealing shall be effected by the flat face of the control float seating against a EPDM rubber 'O' Ring housed in a dovetail groove circumferentially surrounding the large orifice. Discharge of pressurized air shall be controlled by the seating and unseating of a small orifice on a EPDM rubber seal affixed to the control float.

The intake/discharge orifice area shall be equal to the nominal size of the valve i.e. a 150mm (6") valve shall have a 150mm (6") intake/discharge orifice.

The valve construction shall be proportioned with regard to material strength characteristics, so that the deformation, leaking or damage of any kind does not occur by submission to twice the designed working pressure.

The valve design shall incorporate an over pressure safety feature that will fail without an explosive effect, such as is normally the case when highly compressed air is released suddenly. This feature shall consist of easily replaceable components such as gaskets, seals or the like.

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