A.R.I.

Water Supply

D-070-P PN 10

Dynamic Combination Air Valve PATENTED

Description

The D-070-P Dynamic Combination Air is a unique valve, operating without a float and utilizing the rolling diaphragm principle. This unique structure allows the dynamic air valve to discharge air from the water system in a controlled and gradual manner, thus preventing slam and local up-surges. When vacuum (down-surge) occurs, the valve reacts quickly to admit large volumes of air into the water system, thus impeding down-surges and, consequently, all pressure surges in the line. The air & vacuum component of the dynamic air valve is normally closed when the line is not operating, thus preventing the infiltration of debris and insects into the water system.

Applications

Recommended installations:
-Standard installation on water systems when the pipeline diameter is 8" or greater.
-Installation on water systems for all pipeline diameters when the slope of the pipeline is greater than 2%-3%.

Operation

When the system is charged and the pipeline begins to fill with water, air flows in the pipeline and enters into the dynamic air valve, raising the rolling diaphragm sealing assembly to the open position. Air is then discharged, mainly out through the lower chamber large orifice as well as small amounts of air released out through upper chamber operating valve orifice. When the ensuing water enters the dynamic air valve, it fills the lower chamber and some of it flows up through the orifice chamber and enters into the upper operating chamber, raising the float of the operating valve which rolls the sealing mechanism to its sealed position. Pressure develops inside the upper operating chamber, bringing about a controlled lowering and sealing of the rolling diaphragm sealing assembly, which, in turn, closes the lower chamber large orifice.
NOTE: It is recommended to attach a drainage pipe to the external threads on the large orifice outlet as some water will be expelled from the orifice during this closure stage. The size of the drainage pipe should be, at a minimum, the diameter of the outlet and the unattached end should remain open to the atmosphere.

At this stage, only the automatic air release component continues to work and releases air through its small orifice.
With a reduction in line pressure, during drainage or shut-off, the pressure in the valve is reduced and is less then the outside atmospheric pressure. The vacuum created will cause the rolling diaphragm sealing assembly to rise up into its open position, opening the lower chamber large orifice and allowing the intake of air from the atmosphere into the system.

Main Features

- Working pressure: 0.2 - 10 bar.
- Maximum working temperature: 60° C.
- Maximum intermittent temperature: 90° C.
- Valve body and interior components are made from composite materials and are corrosion-resistant.
- Prevents slam and reduces water surges in the air valve and the pipeline.
- Prevents the intrusion of debris and contaminants into the system.
- Valve is lightweight and small for easy installation; its operation simple and reliable.
- Built-in connection at the outlet for surplus water drainage.
- Smooth and gradual closing unaffected by water flow.
- Extremely quiet closing.
- Automatic air release component releases large quantities of air without becoming obstructed.

Valve Selection

Sizes: D-070-P 2" threaded or flanged
D-070-P M1 3" threaded or flanged
D-070-P M2 4" flanged only.
The valve body is also available in Ductile Iron ASTM A-536-60-4018, in sizes 3", 4", 6", 8", 12" in a wide range of flange standards.

Options:
- **D-070-P I**
One-way valve intakes air only, without allowing air discharge.
- **D-070-P T**
Valve with flushing tap for the purpose of both flushing the valve and the pipeline.
- **Bug Screen**
Attached to the valve outlet, prevents the penetration of debris or insects into the air valve.

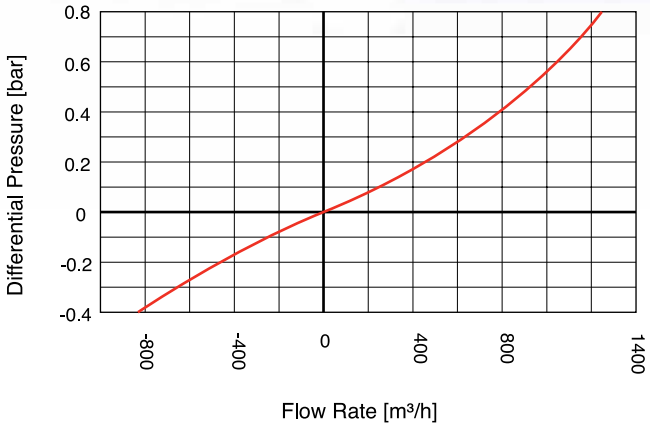
When ordering, we recommend that the composition of liquids and system requirements be defined in advance.

When ordering, please indicate the required model, dimensions, working pressure and thread/flange standard.

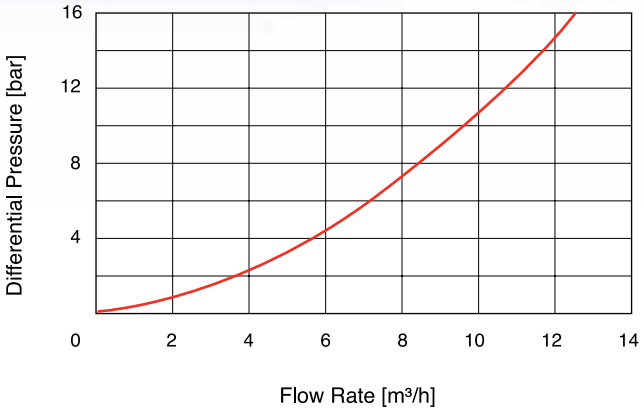
D-070-P

A.R.I.

AIR & VACUUM FLOW RATE



AUTOMATIC AIR RELEASE FLOW RATE

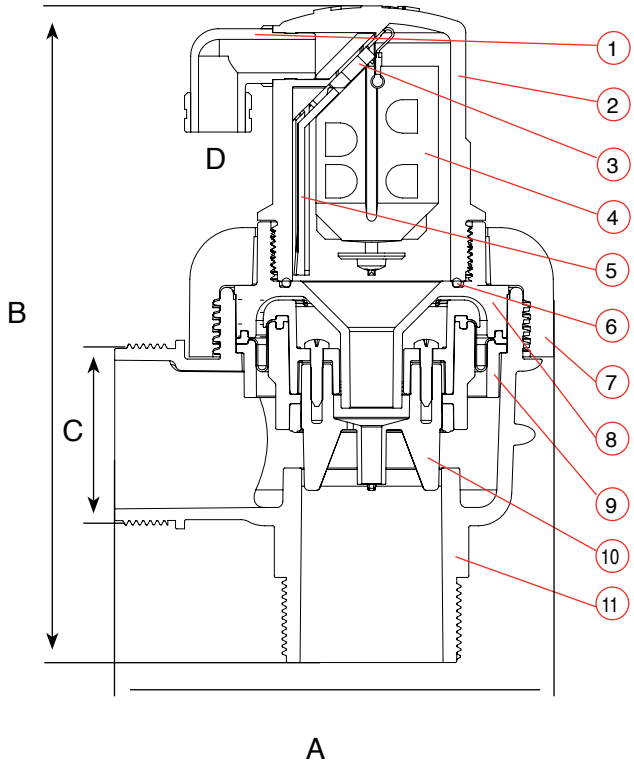


DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm A	B	Connections C	D	Weight Kg.	Orifice Area mm² Auto.	A &V
D-070-P 2" (50 mm) Threaded	144	216	2" BSP Male	3/8" BSP Female	1.040	7.8	1963
D-070-P 2" (50 mm) Flanged	165	224	2" BSP Male	3/8" BSP Female	1.440	7.8	1963
D-070-P M1 3" (80 mm) Threaded	144	217	2" BSP Male	3/8" BSP Female	1.075	7.8	1963
D-070-P M1 3" (80 mm) Flanged	200	228	2" BSP Male	3/8" BSP Female	1.665	7.8	1963
D-070-P M2 4" (100 mm)	228	217	2" BSP Male	3/8" BSP Female	1.860	7.8	1963

PARTS LIST AND SPECIFICATION

No.	Part	Material
1.	Discharge Outlet	Polypropylene
2.	Operating Valve Body	Reinforced Nylon
3.	Rolling Seal	E.P.D.M.
4.	Operating Assembly	Foamed Polypropylene + St.St. SAE 304
5.	Clamping Stem	Reinforced Nylon
6.	O-Ring	BUNA-N
7.	Locking Ring	Reinforced Nylon
8.	Base Adaptor	Reinforced Nylon
9.	Supporting Ring	Reinforced Nylon
10.	Rolling Diaphragm Sealing Assy.	Reinforced Nylon + E.D.P.M. + St.St. SAE 304 + Fabric
11.	Body	Reinforced Nylon



A.R.I. FLOW CONTROL ACCESSORIES Ltd. www.arivalves.com ari@ari.co.il Tel: 972-4-6761988