

D-070 250 PSI

Dynamic Combination Air Valve **PATENTED**



Description

The D-070 Dynamic Combination Air Valve 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

- Pumping stations, deep wells and distribution lines.
- Systems that are prone to slam and local and system surges.
- Sites that require a combination of means to reduce water hammer or surges.
- Sites that require an air valve with a low profile due to lack of space.

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 through the lower chamber large orifice as well as small amounts of air released through the 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 connection 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 function 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 lower than 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

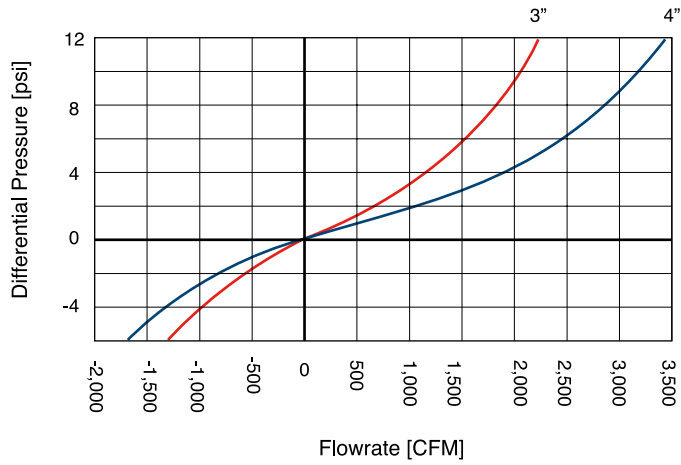
- Working pressure range: 3 - 250 psi.
- Testing pressure: 360 psi.
- Maximum working temperature: 140° F.
- Maximum intermittent temperature: 194° F.
- Internal components are corrosion-resistant.
- Prevents slam and reduces water surges in the air valve and the pipeline.
- Prevents the intrusion of 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

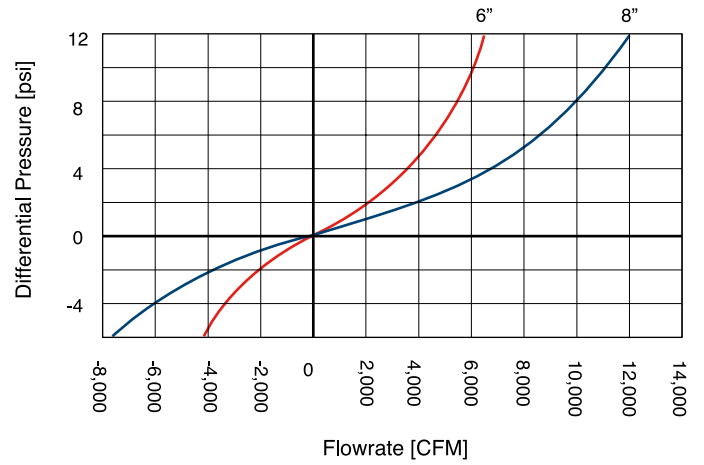
- Sizes: 3", 4", 6", and 8".
- Valves are manufactured with flanged ends to meet ASA 150 standard or any requested standard.
- **Valve coating:** FBE coating according to the international standard DIN 30677-2.
- Other coatings are available upon request.
- Optional D-070 P – Sizes: 2", 3" (threaded or flanged) made of composite materials with a working pressure: 3 - 150 psi..
- Optional one-way D-070-I valve - intakes air only, without allowing air discharge.
- For best fit, it is recommended that the composition of liquids and system requirements be defined in advance.

When ordering, please indicate the model, dimensions, working pressure, threading/flange standard and special coatings.

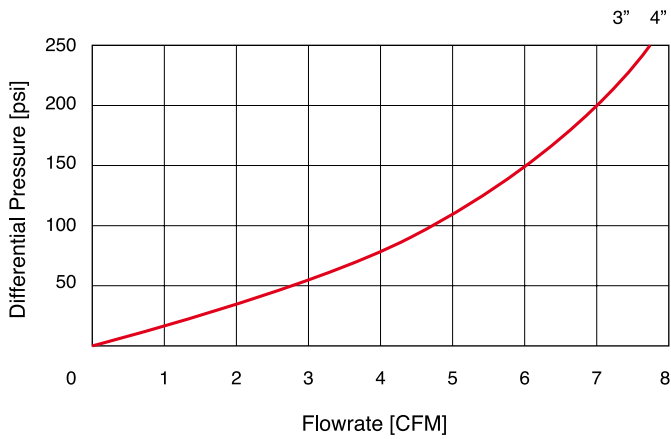
AIR & VACUUM FLOWRATE



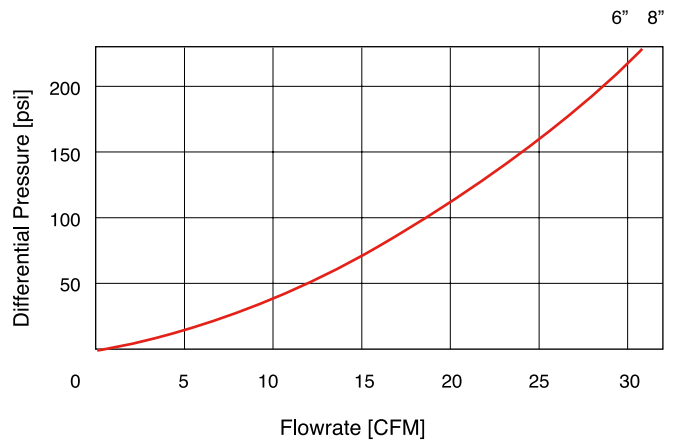
AIR & VACUUM FLOWRATE



AIR RELEASE FLOWRATE



AIR RELEASE FLOWRATE

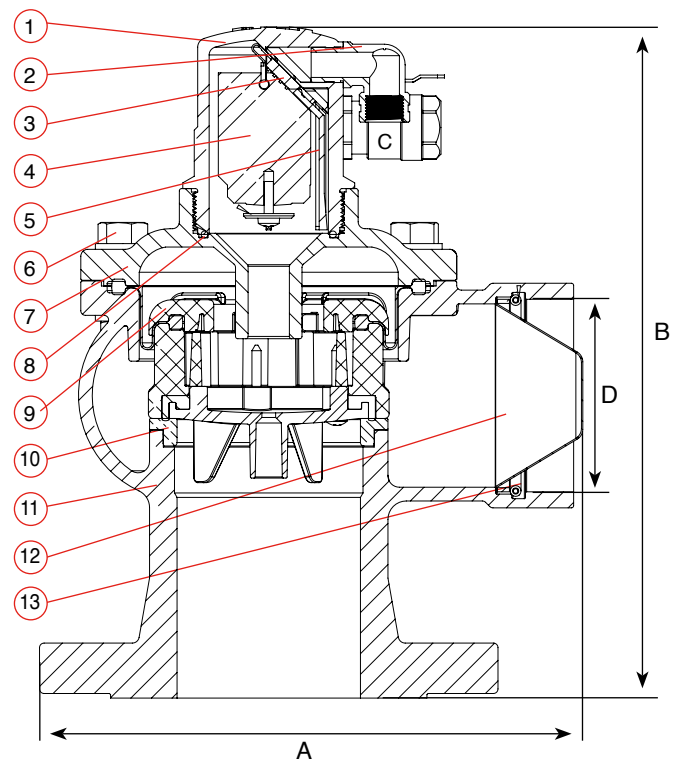
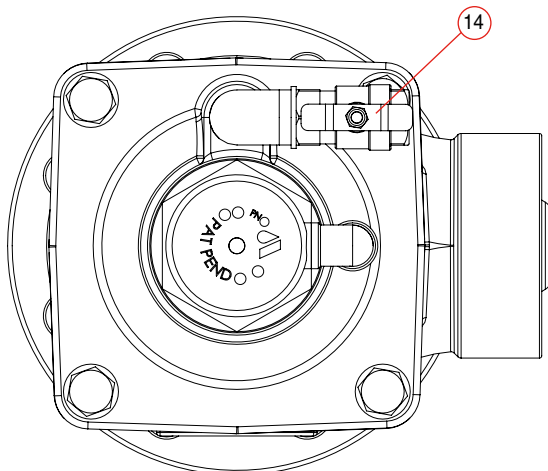


DIMENSIONS AND WEIGHTS

Size	Dimensions Inch		Connections		Weight Lbs.	Orifice Area Sq.in	
	A	B	C	D		A / V	Air Release
3"	9.3	11.5	3/8" NPT	3" NPT	33	7.987	0.012

PARTS LIST AND SPECIFICATION FOR 3"

No.	Part	Material
1.	Operating Valve Body	Reinforced Nylon
2.	Discharge Outlet	Polypropylene
3.	Rolling Seal	E.P.D.M Rubber
4.	Operating Assembly	Foamed Polypropylene + St.St. SAE 316
5.	Clamping Stem	Reinforced Nylon
6.	Bolt, Nut & Washer	Stainless Steel SAE 316
7.	Cover	Ductile Iron ASTM A536 60-40-18
8.	O-ring	BUNA- N
9.	Rolling Diaphragm Sealing Assy.	Reinforced Nylon + E.D.P.M. Rubber + SAE 304 St.St. + Natural Rubber + Fabric
10.	Orifice Seat	Bronze ASTM B-62 B271 WCB
11.	Body	Ductile Iron ASTM A536 60-40-18
12.	Bug Screen	Stainless Steel SAE 316
13.	Spring Lock Ring	Stainless Steel SAE 316
14.	Ball Valve	Stainless Steel SAE 316

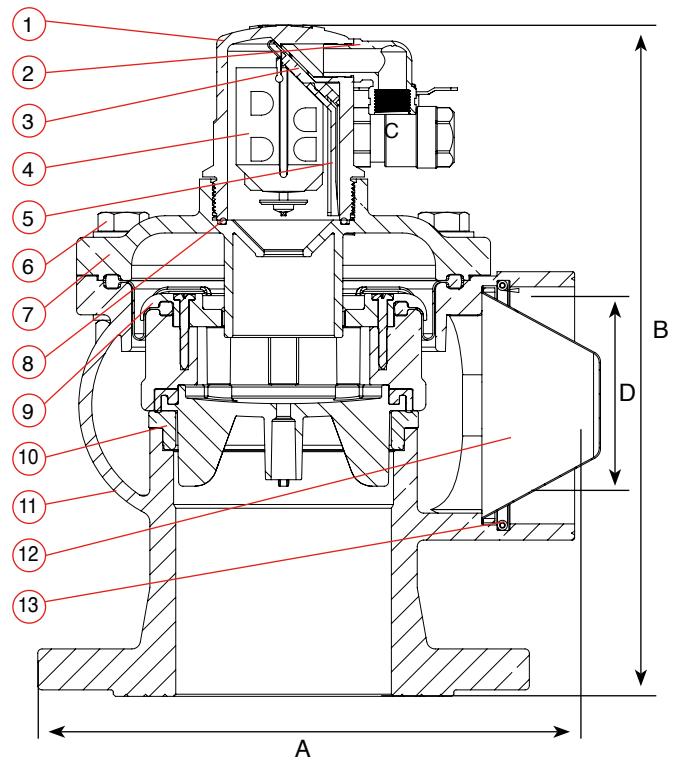
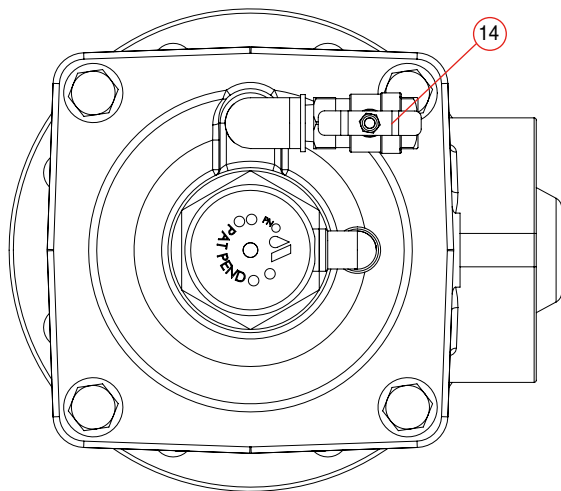


DIMENSIONS AND WEIGHTS

Size	Dimensions Inch		Connections		Weight Lbs.	Orifice Area Sq.in	
	A	B	C	D		A / V	Air Release
4"	10.3	12.2	3/8" NPT	4" NPT	44	12.167	0.012

PARTS LIST AND SPECIFICATION FOR 4"

No.	Part	Material
1.	Operating Valve Body	Reinforced Nylon
2.	Discharge Outlet	Polypropylene
3.	Rolling Seal	E.P.D.M Rubber
4.	Operating Assembly	Foamed Polypropylene + St.St. SAE 316
5.	Clamping Stem	Reinforced Nylon
6.	Bolt, Nut & Washer	Stainless Steel SAE 316
7.	Cover	Ductile Iron ASTM A536 60-40-18
8.	O-ring	BUNA- N
9.	Rolling Diaphragm Sealing Assy.	Reinforced Nylon + E.D.P.M. Rubber + SAE 304 St.St. + Natural Rubber + Fabric
10.	Orifice Seat	Bronze ASTM B-62 B271 WCB
11.	Body	Ductile Iron ASTM A536 60-40-18
12.	Bug Screen	Stainless Steel SAE 316
13.	Spring Lock Ring	Stainless Steel SAE 316
14.	Ball Valve	Stainless Steel SAE 316

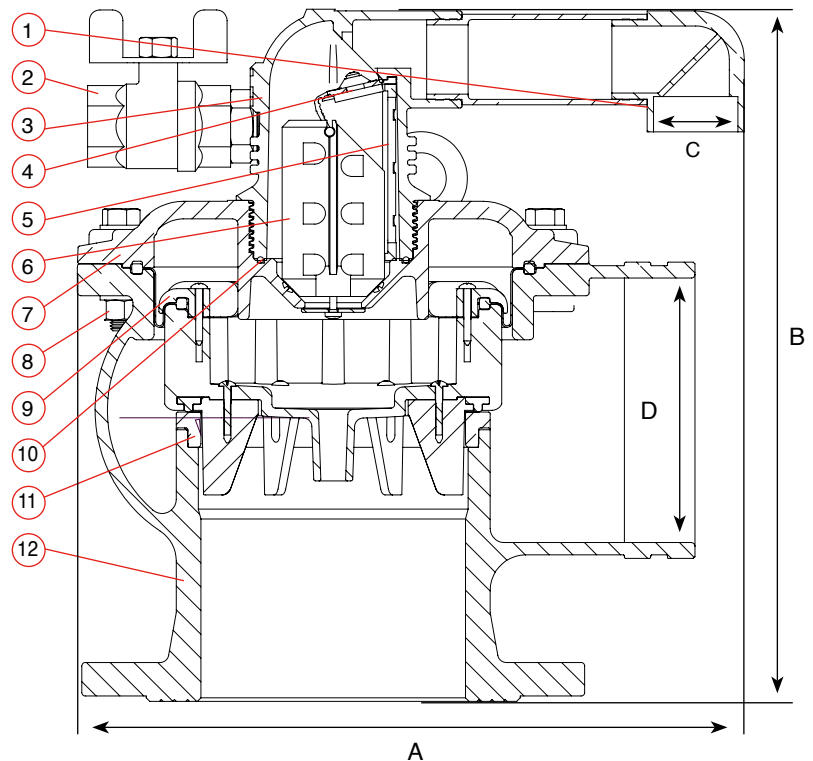


DIMENSIONS AND WEIGHTS

Size	Dimensions Inch		Connections		Weight Lbs.	Orifice Area Sq.in	
	A	B	C	D		A / V	Air Release
6"	14.5	15.4	1½" NPT	6" NPT	90	27.207	0.0186

PARTS LIST AND SPECIFICATION FOR 6"

No.	Part	Material
1.	Discharge Outlet	Polypropylene
2.	Ball Valve	Stainless Steel SAE 316
3.	Operating Valve Body	Reinforced Nylon
4.	Sealing Assembly	E.P.D.M Rubber + Reinforced Nylon + St.St. SAE 316
5.	Clamping Stem	Reinforced Nylon
6.	Operating Assembly	Foamed Polypropylene + St.St. SAE 316
7.	Cover	Ductile Iron ASTM A536 60-40-18
8.	Bolt, Nut & Washer	Stainless Steel SAE 316
9.	Rolling Diaphragm Sealing Assy.	Reinforced Nylon + E.D.P.M. Rubber + SAE 304 St.St. + Natural Rubber + Fabric
10.	O-ring	BUNA- N
11.	Orifice Seat	Bronze ASTM B-62 B271 WCB
12.	Body	Ductile Iron ASTM A536 60-40-18



DIMENSIONS AND WEIGHTS

Size	Dimensions Inch		Connections		Weight Lbs.	Orifice Area Sq.in	
	A	B	C	D		A / V	Air Release
8"	18.1	18.2	1½" NPT	8" NPT	150	48.670	0.0186

PARTS LIST AND SPECIFICATION FOR 8"

No.	Part	Material
1.	Discharge Outlet	Polypropylene
2.	Operating Valve Body	Reinforced Nylon
3.	Ball Valve	Stainless Steel SAE 316
4.	Sealing Assembly	E.P.D.M Rubber + Reinforced Nylon + St.St. SAE 316
5.	Clamping Stem	Reinforced Nylon
6.	Operating Assembly	Foamed Polypropylene + St.St. SAE 316
7.	Cover	Ductile Iron ASTM A536 60-40-18
8.	Bolt, Nut & Washer	Stainless Steel SAE 316
9.	Rolling Diaphragm Sealing Assy.	Reinforced Nylon + E.D.P.M. Rubber + SAE 304 St.St. + Natural Rubber + Fabric
10.	O-ring	BUNA- N
11.	Orifice Seat	Bronze ASTM B-62 B271 WCB
12.	Body	Ductile Iron ASTM A536 60-40-18

