A.R.I. D-070

Aquestia
Directing the Flow

Waterworks

Dynamic Combination Air Valve PATENTED

Description

A.R.I. D-070 is a unique multi-function Dynamic Combination Air Valve, operating without a float; utilizing a rolling diaphragm principle. Its unique structure allows the valve to discharge air from the water system gradually, in a controlled manner to prevent slam or local upsurge. The valve is normally closed when the line is not pressurized, thus prohibiting infiltration of foreign particles or insects into the system.

Installation

- Pump stations: after the pump and after the check valve
- Upstream and downstream of shut-off valves
- Downstream of deep-well pumps
- On long constant-sloped pipeline segments
- At peaks along the pipeline and at peaks relative to hydraulic gradient
- At end lines
- Upstream water meters
- On strainers and filters
- Systems prone to high velocity air discharge

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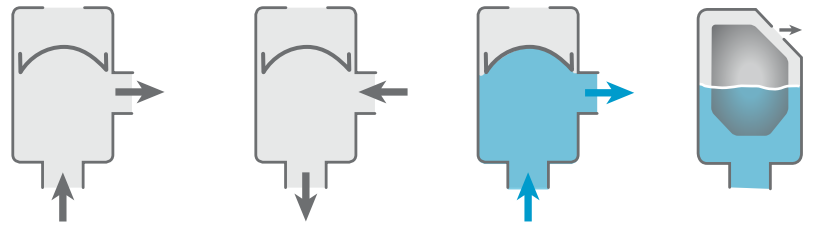
Operation



Air Discharge | Air Intake | Diaphragm Air Valve | Automatic Air Release

Features and Benefits

Multi-purpose design	Combination and surge reduction air valve in one body
System protection	Reduces local water hammer impact, saves energy and increases system efficiency
Smooth and controlled discharge of air	Prevents slam and reduces local surges
Small footprint, low silhouette	Easily installed in restricted spaces
Normally closed	Prevents intrusion of debris and contaminants
All internal operating parts made of specially selected materials	Non-corrosive and durable
Large automatic air release orifice	Lessens obstruction by debris
Upper drain elbow	Removes accumulated impure water from above the seal
Threaded outlet	Insect-proof, for vent pipe connection
Flow cross-sections	Equal to or greater than nominal port area
ATEX certified air valves	ATEX certified air valves are optional by customer request Certification is conditional upon the customer connecting the designated part on the product to a dedicated ground connection point
NSF/ANSI/CAN 61 certified & listed	For drinking water system component
NSF/ANSI 372 certified & listed	Conforms with lead content requirements for "lead-free" plumbing

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Technical Specifications

Size range	2"-4" Reinforced Nylon valves | 3"-8", 12" Metal valves
Sealing pressure range	D-070 P (Reinforced Nylon) 1.5-150 psi | 3-250 psi D-070 (Metal) 3-250 psi Testing pressure: 1.5 times maximum working pressure
Temperature	Maximum working temperature: 140° F Maximum intermittent temperature: 194° F
Metal valve coating	Fusion bonded epoxy coating in compliance with standard DIN 30677-2

Upon ordering, please specify: model, size, working pressure, thread/ flange standard and type of liquid

Valve Selection Options

Valve connection	Threaded BSP/NPT (Reinforced Nylon) or flanged ends to meet various requested standard
D-070 VB	Easily transformed into a vacuum breaker valve
D-070-V	One-way, out-only attachment. Enables air discharge only, preventing air intake
D-070 Q	A Dynamic Combination Air and Pressure Relief Valve, combining a two-stage pressure relief Component (2"-3")
Bug screen	Add-on prevents the intrusion of debris or insects into the air valve (2" – 8")
Ductile cover	Rated to 285 psi


Ductile cover

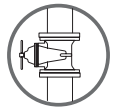

Bug Screen


D-070 VB


D-070 Q

The valve installed under the air valve must be fully open to prevent damage or malfunction and ensure performance within the specifications of the air valve.

For complete installation instructions, please refer to the IOM document.



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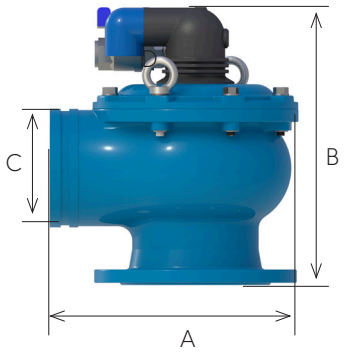

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Dimensions and Weight

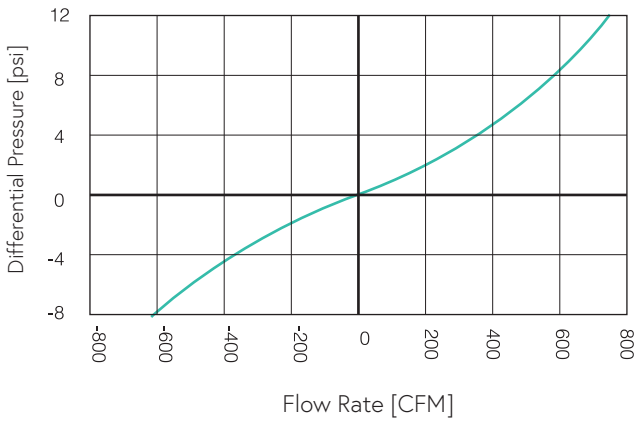
Model	Dimensions (inch)		Connections		Weight (lbs)		Orifice Area (sq²)	
	A	B	C	D	RN Cover	DI Cover	A / V	Auto.
Nylon models								
2" (50 mm) THR	5.7	8.5	2" BSP Male	3/8" BSP Female	3.2	-	3.04	0.012
2" (50 mm) FL	6.6	8.7	2" BSP Male	3/8" BSP Female	3.3	-	3.04	0.012
3" (80 mm) THR	5.7	8.5	2" BSP Male	3/8" BSP Female	2.4	-	3.04	0.012
3" (80 mm) FL	7.9	8.7	2" BSP Male	3/8" BSP Female	4	-	3.04	0.012
4" (100 mm) FL	9.0	8.7	2" BSP Male	3/8" BSP Female	4.9		3.04	0.012
Metal models								
3" (80 mm) FL	9.3	11.5	3" NPSM	3/8" NPT	34	40	7.99	0.012
4" (100 mm) FL	11.0	12.2	4" NPSM	3/8" NPT	50	56	12.17	0.012
6" (150 mm) FL	15	15	6" Vic.	1½" NPT	93	93	27.21	0.018
8" (200 mm) FL	16.0	18.2	8" Vic.	1½" NPT	137	137	48.67	0.018
12" (300mm) FL	22.3	28.5	12" Vic.	2" NPT	349	349	109.50	0.018x3

FL - Flanged THR - Threaded

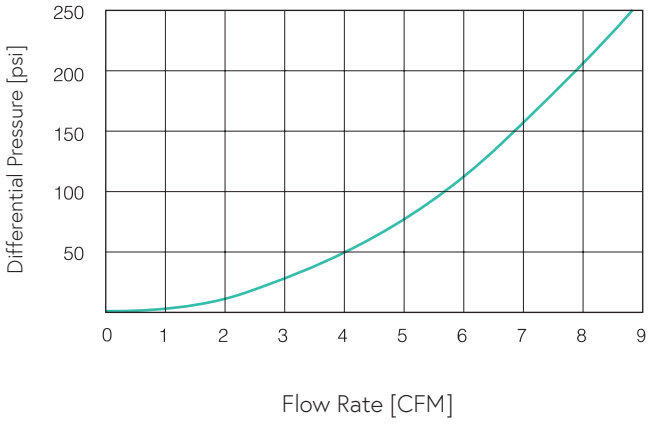
NOTE
All product weights and dimensions are approximate, due to the differences in flange standards, materials and variable accessories.

Flow Charts for Nylon Models

Air & Vacuum Flow Rate



Automatic Air Release Flow Rate



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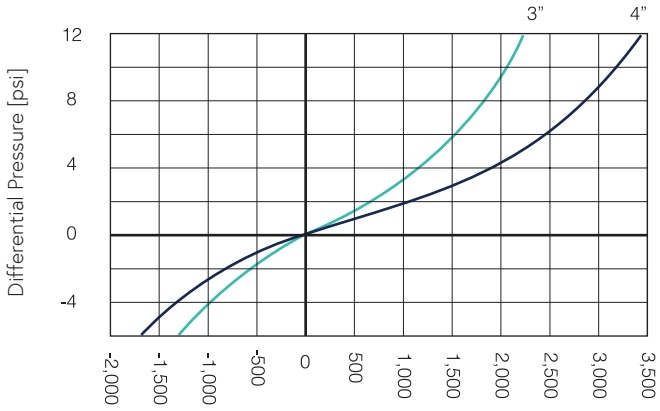
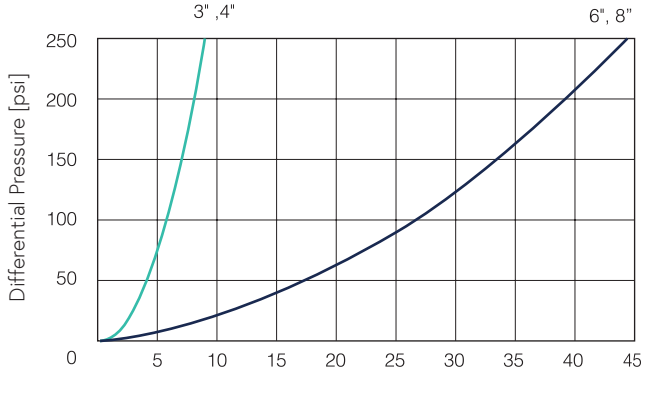
Flow Charts for Metal Models

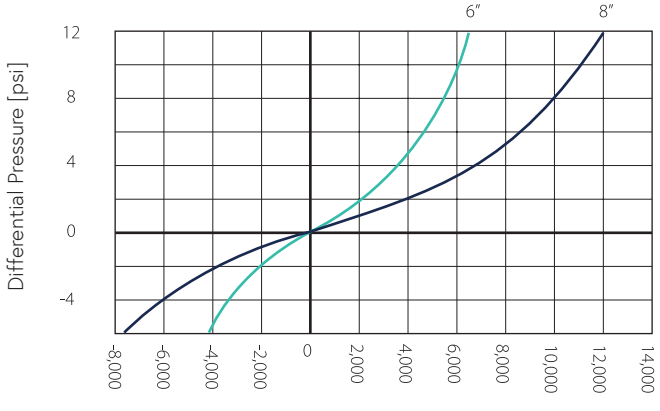
Air & Vacuum Flow Rate



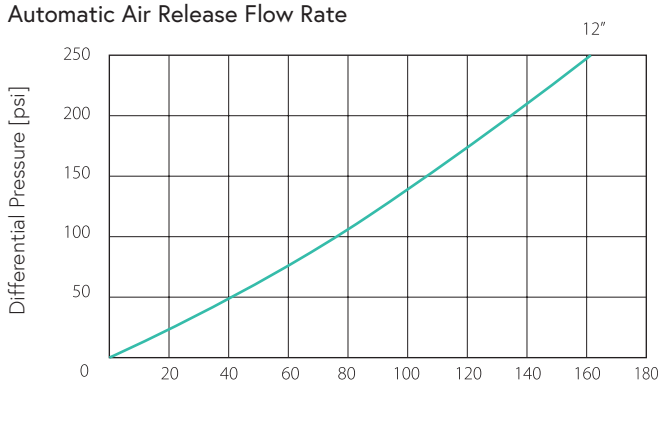
Automatic Air Release Flow Rate



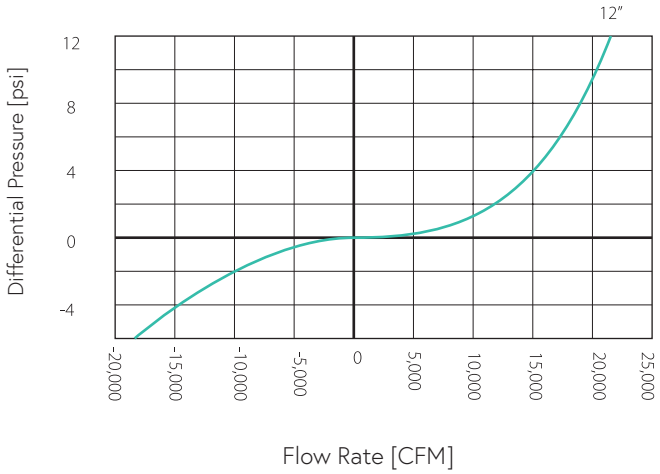
Air & Vacuum Flow Rate



Automatic Air Release Flow Rate



Air & Vacuum Flow Rate



A.R.I. D-070-P

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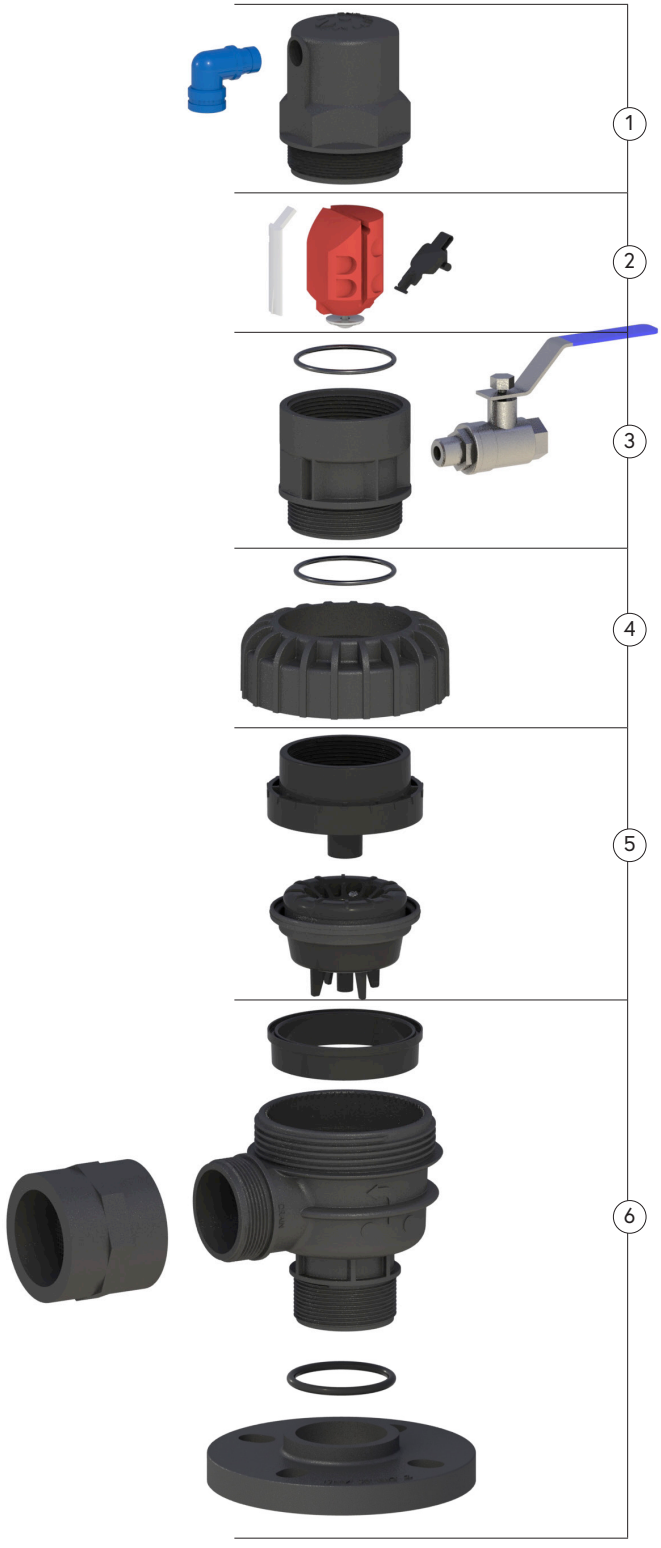
Parts List and Specifications | Nylon Models 2" 4"

No.	Part	Material
1	Pilot Body Assembly	
1a	Discharge Elbow	Polypropylene
1b	Body	Reinforced Nylon
2	Pilot Sealing Assembly	
2a	Clamping Stem	Polypropylene
2b	Pilot Float Assembly	Foamed Polypropylene + Stainless Steel 316 + Acetal
2c	Rolling Seal	EPDM
3	Flushing Assembly	
3a	O-ring	NBR
3b	Adaptor	Reinforced Nylon
3c	Ball Valve	Stainless Steel 316
4	Adaptor Assembly	
4a	O-ring	NBR
4b	Locking Ring	Reinforced Nylon
5	Seal Assembly	
5a	Adaptor	Reinforced Nylon
5b	Rolling Diaphram Sealing Assembly	Reinforced Nylon + EPDM + Stainless Steel 316 + Natural Rubber
6	Body Assembly	
6a	Support Ring	Reinforced Nylon
6b	Body	Reinforced Nylon
6c	Bug Screen	Reinforced Nylon
6d	O-ring	NBR
6e	Flange	Reinforced Nylon



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Parts List and Specifications | Metal Cover Models 3" 4"

No.	Part	Material
1	Pilot Body Assembly	
1a	Discharge Elbow	Polypropylene
1b	Body	Reinforced Nylon
2	Pilot Sealing Assembly	
2a	Clamping Stem	Polypropylene
2b	Pilot Float Assembly	Foamed Polypropylene + Stainless Steel 316 + Acetal
2c	Rolling Seal	EPDM
3	Cover Assembly	Materials
3a	Cover	Ductile Iron
3b	O-ring	NBR
3c	Nipple	Stainless Steel 316
3d	Elbow	Stainless Steel 316
3e	Ball Valve	Stainless Steel 316
4	Rolling Diaphragm Sealing Assembly	Reinforced Nylon + EPDM + Stainless Steel 316 + Natural rubber + Fabric
5	Body Assembly	
5a	Body	Ductile Iron
5b	Bolts, Nuts & Washers	Stainless Steel 316
5c	Plug	Stainless Steel 316
5d	Bug Screen	Stainless Steel 316
5e	Spring Lock Ring	Stainless Steel 316

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Parts List and Specifications | Nylon Models 3" 4"

No.	Part	Material
1	Pilot Body Assembly	
1a	Discharge Elbow	Polypropylene
1b	Body	Reinforced Nylon
2	Pilot Sealing Assembly	
2a	Clamping Stem	Polypropylene
2b	Pilot Float Assembly	Foamed Polypropylene + Stainless Steel 316 + Acetal
2c	Rolling Seal	EPDM
3	Cover Assembly	Materials
3a	Cover	Reinforced Nylon + Stainless Steel 316
3b	O-ring	NBR
3c	Nipple	Stainless Steel 316
3d	Elbow	Stainless Steel 316
3e	Ball Valve	Stainless Steel 316
4	Rolling Diaphragm Sealing Assembly	Reinforced Nylon + EPDM + Stainless Steel 316 + Natural Rubber + Fabric
5	Body Assembly	
5a	Body	Ductile Iron
5b	Bolts, Nuts & Washers	Stainless Steel 316
5c	Plug	Stainless Steel 316
5d	Bug Screen	Stainless Steel 316
5e	Spring Lock Ring	Stainless Steel 316

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Parts List and Specifications | Metal Models 6"-8"

No.	Part	Material
1	Pilot Body Assembly	
1a	Discharge Elbow	Polypropylene
1b	Body	Reinforced Nylon
2	Pilot Sealing Assembly	
2a	Clamping Stem	Polypropylene
2b	Pilot Float Assembly	Foamed Polypropylene + Stainless Steel 316 + Acetal
2c	Rolling Seal	EPDM
3	Cover Assembly	Materials
3a	Cover	Ductile Iron
3b	O-ring	NBR
3c	Nipple	Stainless Steel 316
3d	Elbow	Stainless Steel 316
3e	Ball Valve	Stainless Steel 316
4	Rolling Diaphragm Sealing Assembly	Reinforced Nylon + EPDM + Stainless Steel 316 + Natural Rubber + Fabric
5	Body Assembly	
5a	Body	Ductile Iron
5b	Bolts, Nuts & Washers	Stainless Steel 316
5c	Plug	Stainless Steel 316
5d	Bug Screen	Stainless Steel 316
5e	Spring Lock Ring	Stainless Steel 316

Aquestia USA

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