

# A.R.I. D-070



## Dynamic Combination Air Valve **PATENTED**

### Description

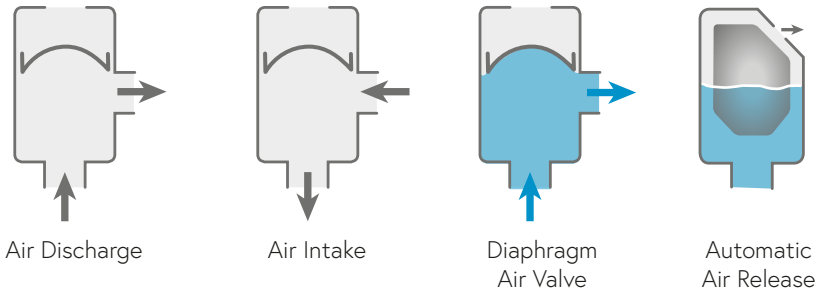
A.R.I. D-070 is a unique multi-function Dynamic Combination Air Valve, operating without a float; utilizing a rolling diaphragm principle. Its unique structure allows the valve to discharge air from the water system gradually, in a controlled manner to prevent slam or local upsurge. The valve is normally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

Applicable for: Desalination & Seawater, Mines, Marine - Ballast Water, Oil & Gas, Food Industry, Power Plant Cooling, CBM, Hydro / Thermal Power.




### 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.

## Operation



## 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

## Technical Specifications

Size Range	2"-4" Reinforced Nylon valves   3"-8", 12" Metal valves
Sealing pressure range	A.R.I. D-070 P (Reinforced Nylon) 0.2-10 bar (PN 10)   0.2-16 bar (PN 16) A.R.I. D-070 (Metal) 0.2-16 bar (PN 16) Testing pressure: 1.5 times maximum working pressure
Temperature	Maximum working temperature: 60° C. Maximum intermittent temperature: 90° C.
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

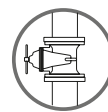


## Valve Selection Options

Valve connection	Threaded BSP/NPT (Reinforced Nylon) or Flanged ends to meet various requested standard
A.R.I. D-070 VB	Easily transformed into a vacuum breaker valve
A.R.I. D-070-V	One-way, out-only attachment. Enables air discharge only, preventing air intake
Flushing Tap	Flushes out the system from debris and contaminants; reducing maintenance downtime
Bug Screen	Add-on prevents the intrusion of debris or insects into the air valve (2" – 8")
A.R.I. D-070 Q	A Dynamic Combination Air and Pressure Relief Valve, combining a two-stage pressure relief Component (2"-3")

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.



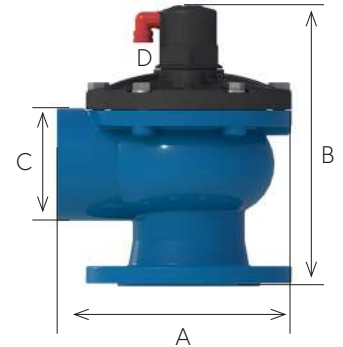
## Dimensions and Weight

Model	Dimensions (mm)		Connections		Weight (kg)	Orifice Area (mm <sup>2</sup> )	
	A	B	C	D		A / V	Auto.
<b>Nylon models</b>							
2" (50 mm) THR	144	216	2" BSP Male	3/8" BSP Female	1.1	1963	7.8
2" (50 mm) FL	167	222	2" BSP Male	3/8" BSP Female	1.5	1963	7.8
3" (80 mm) THR	144	217	2" BSP Male	3/8" BSP Female	1.1	1963	7.8
3" (80 mm) FL	200	222	2" BSP Male	3/8" BSP Female	1.8	1963	7.8
4" (100 mm) FL	228	222	2" BSP Male	3/8" BSP Female	2.2	1963	7.8
<b>Metal models</b>							
3" (80 mm) FL	233	293	3" Vic / BSP / NPSM	3/8" BSP Female	13.0	5153	7.8
4" (100 mm) FL	260	311.0	4" Vic.	3/8" BSP Female	18.0	7850	7.8
6" (150 mm) FL	378	392	6" Vic.	1½" BSP Female	39	17553	12
8" (200 mm) FL	411	445	8" Vic.	1½" BSP Female	63.0	31400	12
12" (300mm) FL	568.0	725.0	12" Vic.	2" BSP Female	158.0	70650	12x3

FL - Flanged THR - Threaded

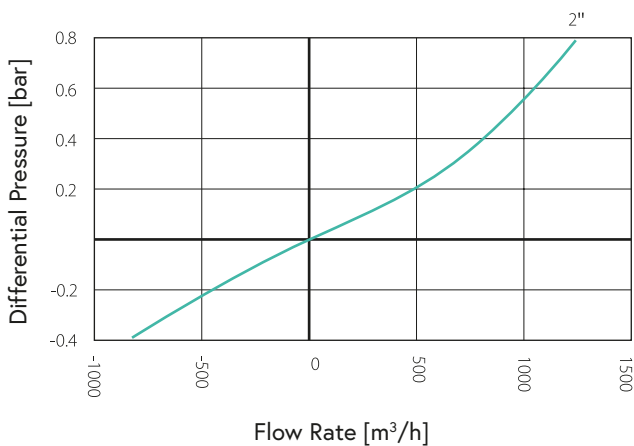
### NOTE

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

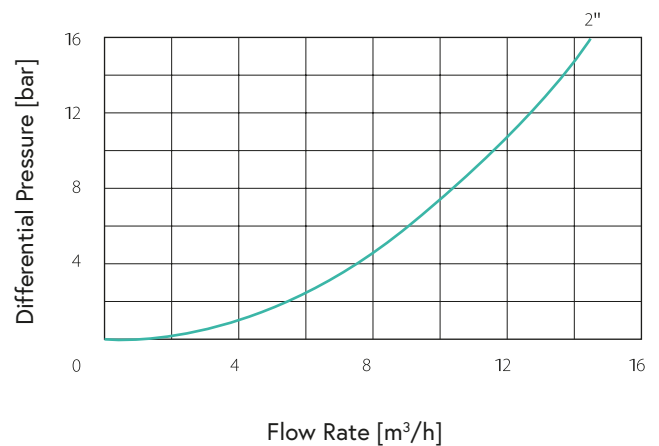


## Flow Charts for Nylon Models

Air & Vacuum Flow Rate

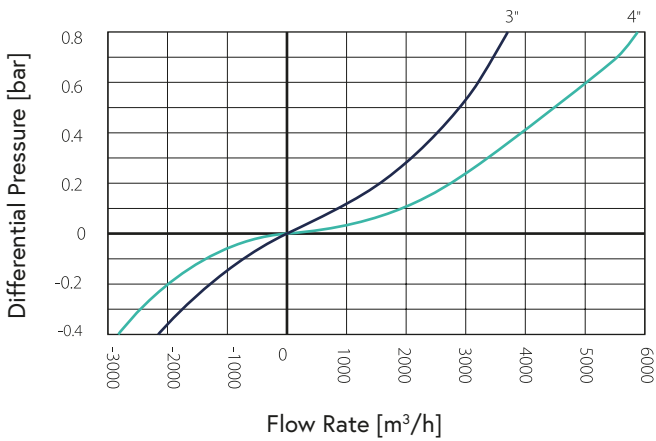


Automatic Air Release Flow Rate

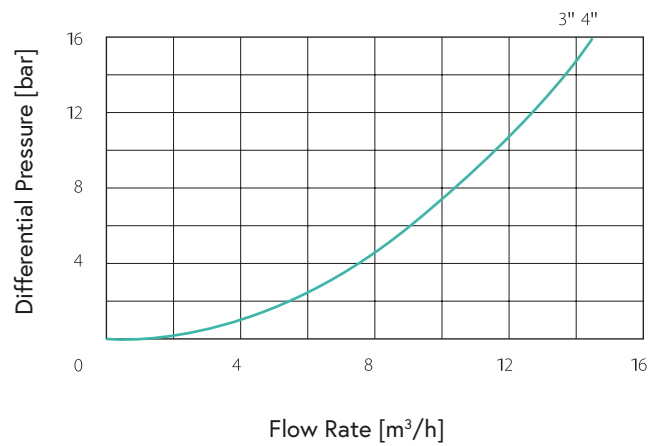


## Flow Charts for Metal Models

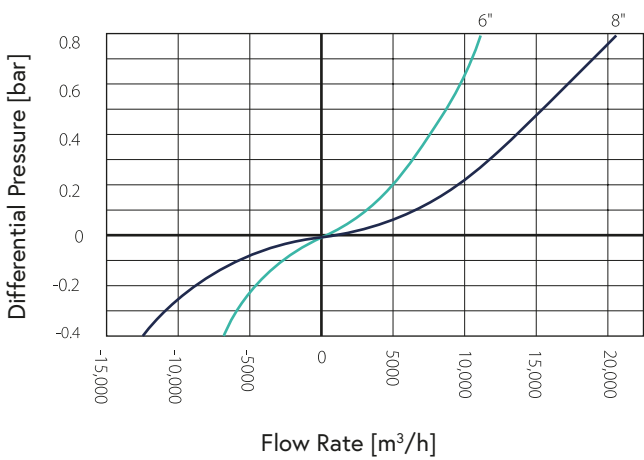
Air & Vacuum Flow Rate



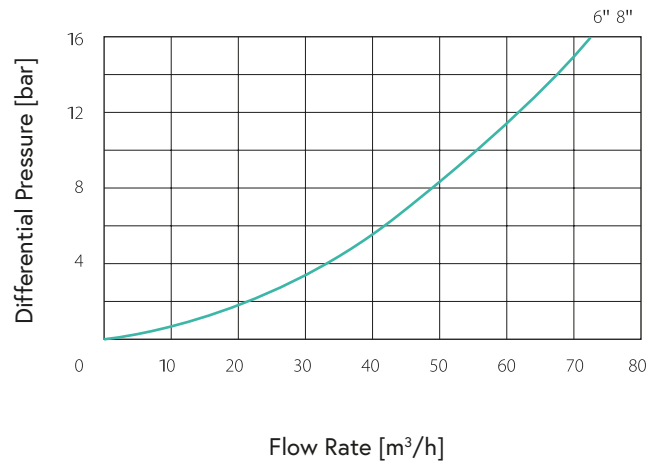
Automatic Air Release Flow Rate



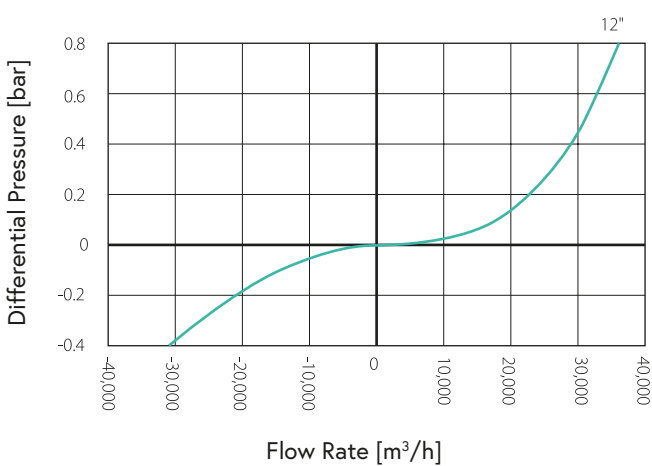
Air & Vacuum Flow Rate



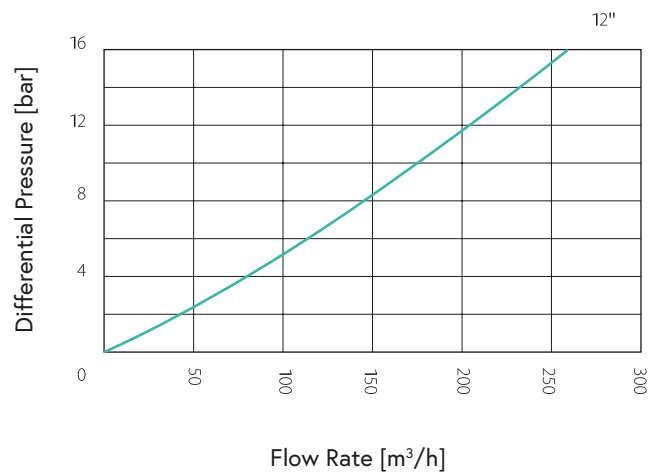
Automatic Air Release Flow Rate



Air & Vacuum Flow Rate



Automatic Air Release Flow Rate



## Parts List and Specification | Nylon Models

No.	Part	Material
1	Air Valve Body Assembly	
1a	Discharge Elbow	Polypropylene
1b	Body	Reinforced Nylon
2	Pilot Seal Assembly	
2a	Clamping Stem	Reinforced Nylon
2b	Pilot Float Assembly	Polypropylene + Stainless Steel 316
2c	Rolling Seal	EPDM
3	Adaptor Assembly	
3a	O-Ring	NBR
3b	Locking Ring	Reinforced Nylon
4	Seal Assembly	
4a	Adaptor	Reinforced Nylon
4b	Rolling Diaphragm Sealing Assembly	Reinforced Nylon + EPDM + Stainless Steel 316
5	Body Assembly	
5a	Support Ring	Reinforced Nylon
5b	Body	Reinforced Nylon
5c	O-Ring	NBR
5d	Flange	Reinforced Nylon



## Parts List and Specification | Metal Model 3" 4"

No.	Part	Material
1	Pilot Body Assembly	
1a	Discharge Elbow	Polypropylene
1b	Pilot body	Reinforced Nylon
2	Pilot Sealing Assembly	
2a	Clamping Stem	Reinforced Nylon
2b	Pilot Float Assembly	Foamed Polypropylene + Stainless Steel 304 + Acetal
2c	Rolling Seal	EPDM
3	Cover Assembly	
3a	O-ring	BUNA-N
3b	Cover	Reinforced Nylon
4	Rolling Diaphragm Sealing Assembly	Reinforced Nylon + EPDM + Stainless Steel 304 + Natural Rubber + Fabric
5	Body Assembly	
5a	Bolt, Nut & Washer	Steel Zinc Cobalt Coated
5b	Body	Ductile Iron



## Parts List and Specification | Metal Model 6"-8"

No.	Part	Material
1	Pilot Body Assembly	
1a	Pilot body	Reinforced Nylon
1b	Discharge Outlet Extension	Polypropylene
1c	Discharge Elbow	Polypropylene
2	Pilot Sealing Assembly	
2a	Rolling Seal Assembly	EPDM + Reinforced Nylon + Stainless Steel 316
2b	Pilot Float Assembly	Foamed Polypropylene + Stainless Steel 304 + Acetal
2c	Clamping Stem	Reinforced Nylon
3	Cover Assembly	
3a	O-ring	BUNA-N
3b	Cover	Ductile Iron
4	Rolling Diaphragm Sealing Assembly	Reinforced Nylon + EPDM + Stainless Steel 304 + Natural Rubber + Fabric
5	Body Assembly	
5a	Bolt, Nut & Washer	Steel Zinc Cobalt Coated
5b	Body	Ductile Iron





## Parts List and Specification | 12" PN 16

No.	Part	Material
1	Pilot Assembly	
1a	Plug	Stainless Steel 316
1b	Pilot Cover + Orifice Seat and Seal Assembly	Ductile Iron, Bronze, EPDM
1c	Float	Polycarbonate
1d	O-ring	BUNA-N
1e	Bolt, Nut & Washer	Stainless Steel 316
1f	Body	Ductile Iron
1g	Internal Check Valve	Acetal
2	Air Release Valve Assembly (X3)	
2a	Air Release Valve Elbow+ Tube	Polypropylene, Polyethylene
2b	Air Release Valve Body	Reinforced Nylon
2c	Rolling Seal	EPDM
2d	Clamping Stem	Reinforced Nylon
2e	Float	Foamed Polypropylene
2f	O-ring	BUNA-N
2g	Base	Brass
3	Cover Assembly	
3a	O-ring	BUNA-N
3b	Cover	Ductile Iron
4	Rolling Diaphragm Sealing Assembly	Reinforced Nylon + EPDM + Stainless Steel 304 + Polypropylene + Fabric
5	Body Assembly	
5a	Bolt, Nut & Washer	Stainless Steel 304,316
5b	Body	Ductile Iron

