A.R.I. D-020

Aquestia
Directing the Flow

Mining

Reduced Bore, Combination Air Valve for Non-clean Water

Description

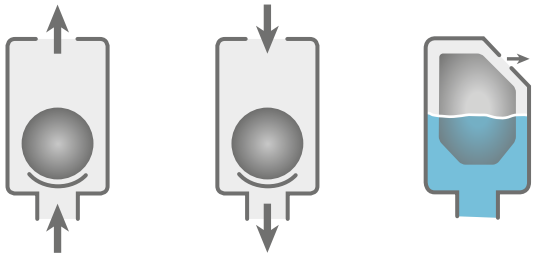
A.R.I. D-020 is a reduced bore, Combination Air Valve installed on non-clean water transmission systems. The Air Valve is designed to improve hydraulic operation by protecting the pipeline, increasing pipeline efficiency, and reducing energy requirements. The unique body shape of the valve, enables a continuous air gap that separates the non-clean water from the sealing mechanism and helps to avoid deposits or blockage.

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

Installation

- Industrial non clean water transmission lines and applications.
- Industrial wastewater & water treatment plants.

Operation



Air Discharge | Air Intake | Automatic Air Release

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Features and Benefits

Conical body / funnel-shaped lower body	Maximum air gap, minimum body length
	Residue matter falls back into the system pipeline
Continuous air gap	Separates the liquid from the sealing mechanism
Aerodynamic float assembly	High velocity air will not close the valve under rapid filling operation
	Reduces accumulation of fat or grease buildup
	Free movement will not unseal the sealing mechanism
Sealing assembly	Provides smooth, reliable opening/closing, and leak-free sealing over a wide range of pressures
Cushioned spring connection	Cushioned joint allows continuous air discharge under vibration conditions related to turbulence from pump start and shut-off, or from flow fluctuations.
Ball valve	Releases pressure and drains valve prior to maintenance
Cover assembly	Allows complete drop-in replacement, reducing maintenance downtime
Screened threaded outlet (optional)	Compatible for vent pipe connection, prevents insect intrusion
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.

Valve Selection Options

Valve connection	Flanged ends to meet various requested standards 2", 3" valve connections: flanged or threaded BSP/NPT
Standard materials	Welded/Cast Steel body, optional: Stainless Steel
Optional add-on components	One-way Out - allows for air discharge only, prevents air intake One-way In - allows air intake only, not allowing air discharge Non-slam - discharge-throttling attachment, allows full air intake, throttles air discharge
Additional product configurations	SB Underground Air Valve System ARISENSE Air Valve Monitoring System

Technical Specifications

Size range	2"-8"
Working pressure range	0.05-16 bar (PN 16) Testing pressure: 1.5 times maximum working pressure
Temperature	Maximum working temperature: 60° C Maximum intermittent temperature: 90° C
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

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Non-slam Add-on Component Data Table for Variable Orifices

Size	Discharge orifice (mm)	Total NS area (mm^2)	NS orifice (mm)	Switching point (bar)	Flow at 0.4 bar (m^3/h)
2"-8" all sizes	37.5	12.6	4	Spring-loaded normally closed	23

Dimensions and Weight

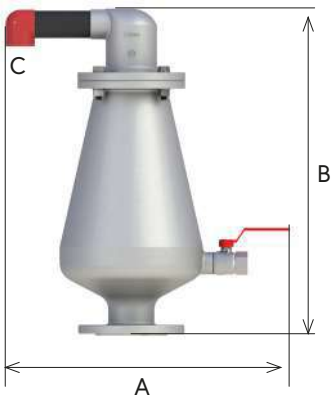
Size	Dimensions (mm)		Connections	Weight (kg)		Orifice area (mm^2)	
	max. A	B	C	Steel	ST ST	A / V	Auto.
2" (50mm) THR	550	644	1½" BSP F	16.5	15.8	804	12
2" (50mm) FL	550	605	1½" BSP F	17.5	17.0	804	12
3" (80mm) THR	550	649	1½" BSP F	16.9	16.4	804	12
3" (80mm) FL	550	605	1½" BSP F	18.5	18.5	804	12
4" (100mm) FL	550	605	1½" BSP F	19.5	19.5	804	12
6" (150mm) FL	550	610	1½" BSP F	21.0	21.0	804	12
8" (200mm) FL	550	610	1½" BSP F	24.0	22.0	804	12

FL - Flanged THR - Threaded

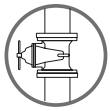
NOTE

The cover assembly with the discharge elbow can be set in four directions.
Dimension A in the picture and in the table shows the maximum product width.
This width can be reduced by changing the direction.

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



The isolation 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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Flow Charts

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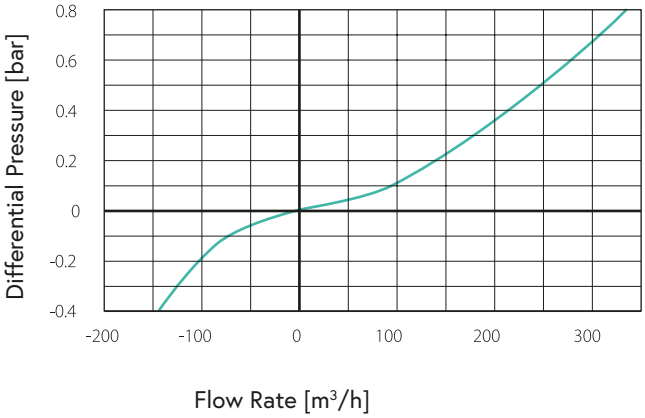
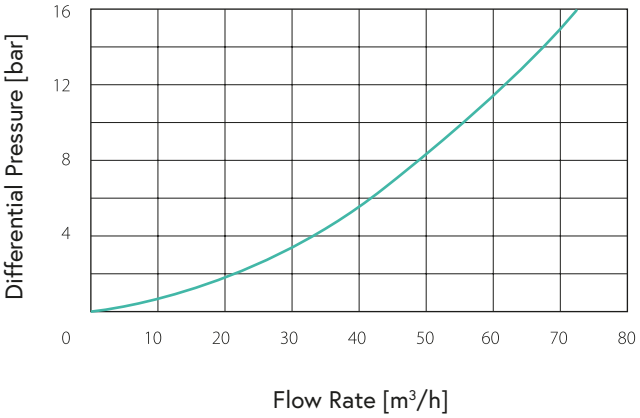
Air & Vacuum Flow Rate

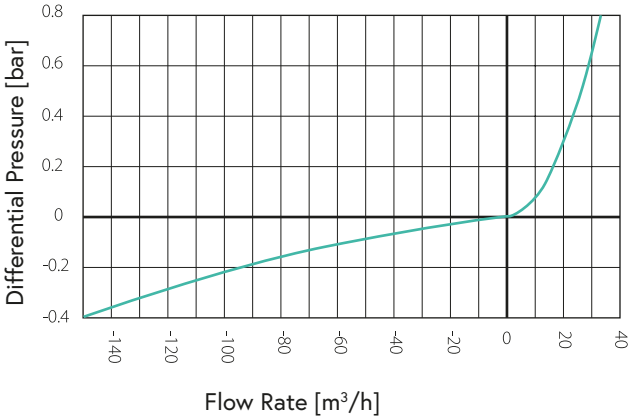


Automatic Air Release Flow Rate

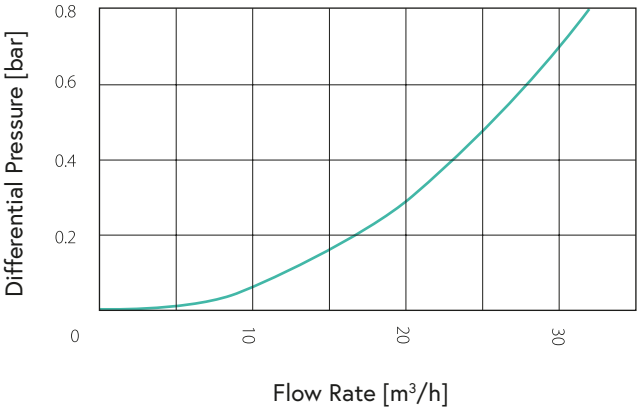


A.R.I. D-020 NS

Air & Vacuum Flow Rate



Air Discharge Flow Rate



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Parts List and Specifications

No.	Part	Material
1	Air Valve Body Assembly	
1a	Body	Reinforced Nylon
1b	Shell	Stainless Steel 316 / Super Duplex
1c	Extension	Polypropylene
1d	Discharge Elbow	Polypropylene
1e	Non-slam Component (optional)	Reinforced Nylon / Polypropylene + Acetal + Stainless Steel
2	2. Cover Assembly	
2a	O-ring	NBR / EPDM / Viton
2b	Cover	Reinforced Nylon / Stainless Steel 316 / Super Duplex
3	Seal Assembly	
3a	Rolling Seal Assembly	Nylon + EPDM / Viton + Stainless Steel
3b	Float Connector	Foamed Polypropylene
3c	Clamping Stem	Reinforced Nylon
4	Float Assembly	
4a	Domed Nut	Stainless Steel 316
4b	Stopper	Polypropylene
4c	Spring	Stainless Steel 316 / Hastelloy
4d	Float & Rod	Polypropylene + Stainless Steel 316 Polypropylene + Titanium
5	Body Assembly	
5a	O-ring	NBR / EPDM / Viton
5b	Body	Stainless Steel 316 / Super Duplex
5c	Ball Valve	Stainless Steel 316 / Super Duplex

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