

A.R.I. D-020



Industry

Reduced Bore, Combination Air Valve for Non-clean Water

Description

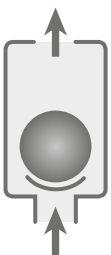
A.R.I. D-020 is a reduced bore, Combination Air Valve installed on non-clean water transmission systems. The Air Valve is designed to improve hydraulic operation by protecting the pipeline, increasing pipeline efficiency, and reducing energy requirements. The unique body shape of the valve, enables a 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.

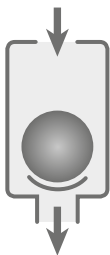
Installation

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

Operation



Air Discharge




Air Intake



Automatic
Air Release

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

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

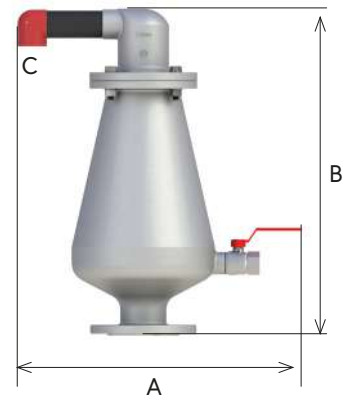
| Size | Dimensions (mm) | | Connections | Weight (kg) | | Orifice area (mm ²) | |
|---------------|-----------------|-----|-------------|-------------|-------|---------------------------------|-------|
| | max. A | B | | C | Steel | ST ST | A / V |
| 2" (50mm) THR | 550 | 644 | 1½" BSP F | 16.5 | 15.8 | 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

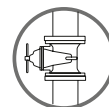
The cover assembly with the discharge elbow can be set in four directions. Dimension A in the picture and in the table shows the maximum product width. This width can be reduced by changing the direction.

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.

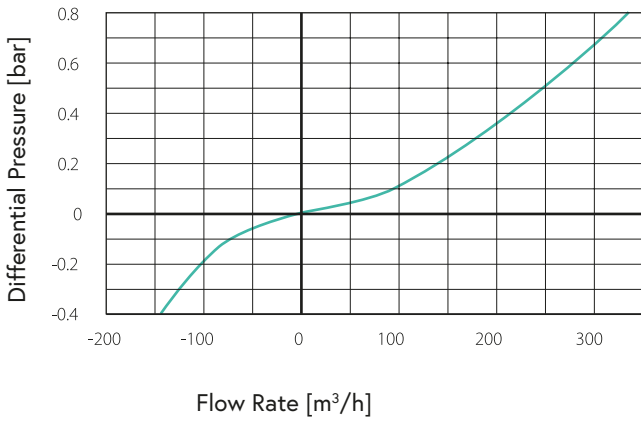
For complete installation instructions, please refer to the IOM document.



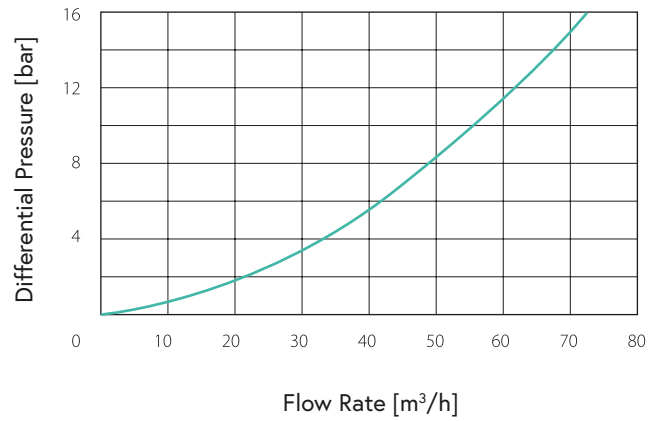
Flow Charts

A.R.I. D-020

Air & Vacuum Flow Rate

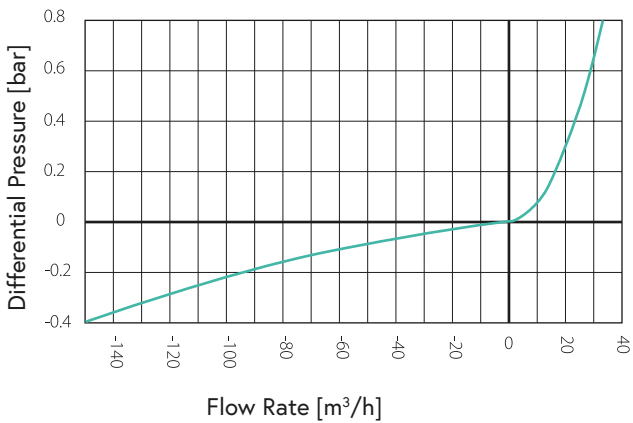


Automatic Air Release Flow Rate

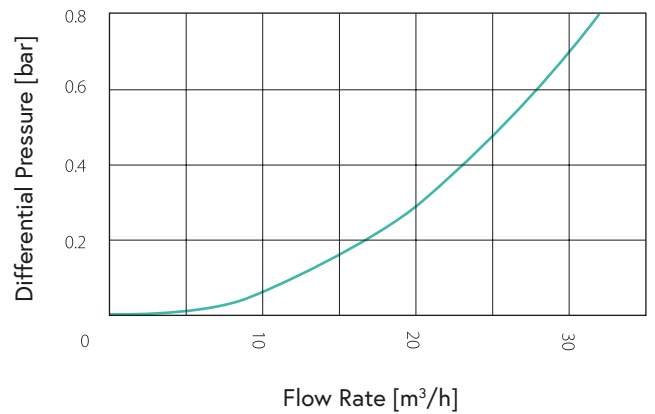


A.R.I. D-020 NS

Air & Vacuum Flow Rate



Air Discharge Flow Rate



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 |

