

A.R.I. D-600



Waterworks

Full-bore, Combination Air Valve Series

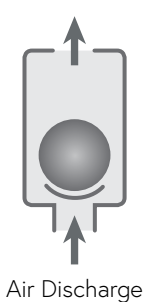
Description

A.R.I. D-600 is a full-bore, single-body, Combination Air Valve Series. Installed on liquid transmission systems, it's designed to improve hydraulic operation by protecting the pipeline, increasing pipeline efficiency and reducing energy requirements. The Air Valve provides high-capacity air intake and release.

Installation

- Pump stations: after both the pump and check valve
- Downstream (after) and upstream (before) shut-off valves
- After deep-well pumps
- On long constant-sloped pipeline segments
- At peaks along the pipeline and peaks relative to hydraulic gradient
- At end lines
- Before water meters
- On strainers and filters

Operation



Air Discharge







Air Intake



Automatic
Air Release

Features and Benefits

Full bore design	Flow cross-sections equal to or greater than nominal port area to ensure maximum air discharge / intake capacity
Aerodynamic	Reduces turbulence
Durable, robust design	Engineered for long service life, zero leakage under pressure, plus high resistance to fatigue and mechanical wear
Compact	Short, light-weight body allows easy handling and retrofitting without sacrificing flow capacity
Screened outlet	Prevents small debris from entering, without restricting valve performance
Float & sealing assembly	Maintenance friendly
Hygienic design	Special drainage pipe solution prevents stagnant water build-up above the orifice seat
Corrosion-resistant construction	Body and internal components made of non-corrosive materials for long-term durability in harsh environments
Pressure release	Standard pressure release port for safe operation
 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	For drinking water system component
 NSF/ANSI 372	Conforms with lead content requirements for "lead-free" plumbing
 WRAS	Approved for use in drinking water systems

Technical Specifications

Size range	3" 4"
Working pressure range	1.5-250 PSI 3-360 PSI Testing pressure: 1.5 times maximum working pressure
Temperature	Maximum working temperature: F 140° Maximum intermittent temperature: F 194°
Coating	Fusion bonded epoxy coating in compliance with standard DIN 30677-2

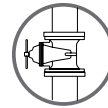
Upon ordering, please specify: model, size, working pressure, thread / flange standard and type of liquid

Valve Selection Options

Valve connection	Flanged ends to meet various requested standards
Standard materials	Cast Ductile Iron body
Optional add-on components	<ul style="list-style-type: none"> - One-way, Out-only attachment, allows for air discharge only, prevents air intake (Horizontal models). - Adjustable Non-slam disc, can be optionally retrofitted on existing NS Horizontal, Screen & Vertical outlet models - Flood Guard device, protects potable water systems from external contamination caused by floodwater overflow
Additional product configurations	SB Underground Air Valve System
Models	3 outlet models: Horizontal, Vertical & Screen

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.



One-way



Flood Guard



Horizontal Cover



Horizontal Outlet
NS Horizontal Outlet

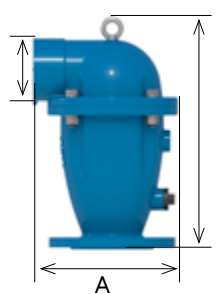
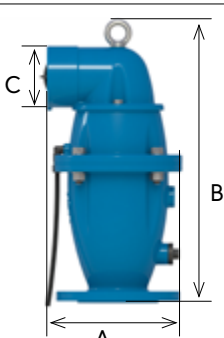
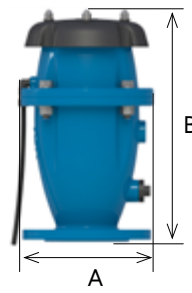



Screen Outlet
NS Screen Outlet



Vertical Outlet
NS Vertical Outlet

Dimensions and Weight

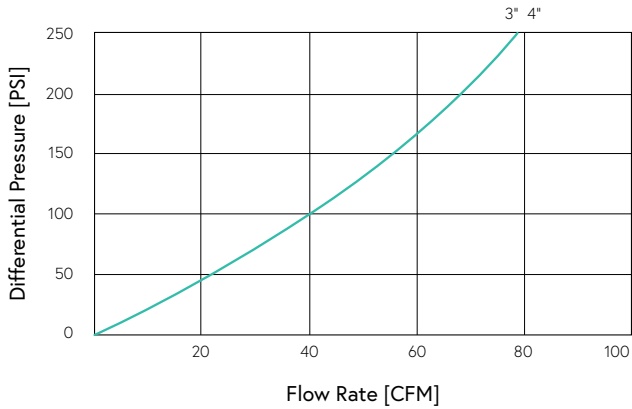
Model	Size	Dimensions (inch)		Connections	Weight (lbs)	Orifice area (sq. inch)		
		max. A	B			C	A / V	
Horizontal Cover Model								
A.R.I. D-600	3" (80mm) FL	9.1	14.5	3" BSP/NPSM F	40	7.79	0.0217	
	4" (100mm) FL	10.86	16.5	4" BSP/NPSM F	56	12.17	0.0217	
NS Horizontal Outlet Models								
A.R.I. D-600 A.R.I. D-600 NS	3" (80mm) FL	8.9	18.5	3" BSP/NPSM F	40	7.79	0.0217	
	4" (100mm) FL	10.43	20.2	4" BSP/NPSM F	61.5	12.17	0.0217	
Screen Outlet Models								
A.R.I. D-600 A.R.I. D-600 NS	3" (80mm) FL	8.3	14.3	N/A	38	7.79	0.0217	
	4" (100mm) FL	10	16.6	N/A	54	12.17	0.0217	
Vertical Outlet Models								
A.R.I. D-600 A.R.I. D-600 NS	3" (80mm) FL	8.3	14.1	3" BSP/NPSM F	40	7.79	0.0217	
	4" (100mm) FL	10	15.9	4" BSP/NPSM F	57	12.17	0.0217	

FL - Flanged

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

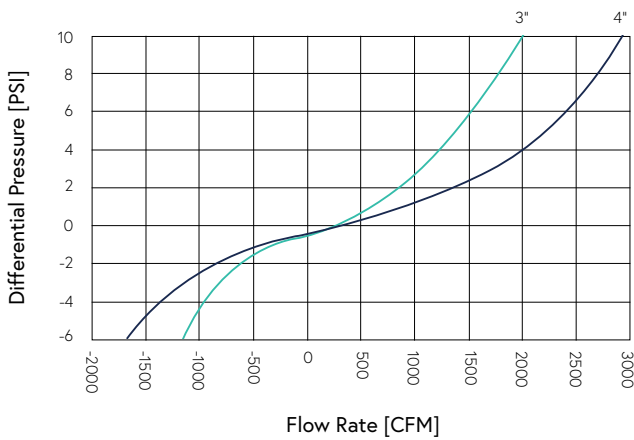
Flow Charts

Automatic Air Release Flow Rate



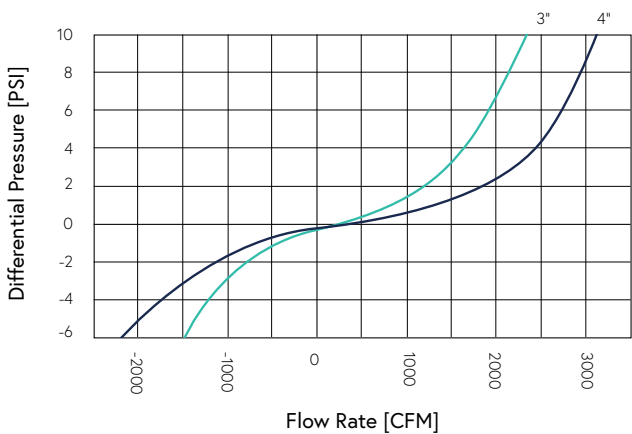
Horizontal Cover Model

Air & Vacuum Flow Rate



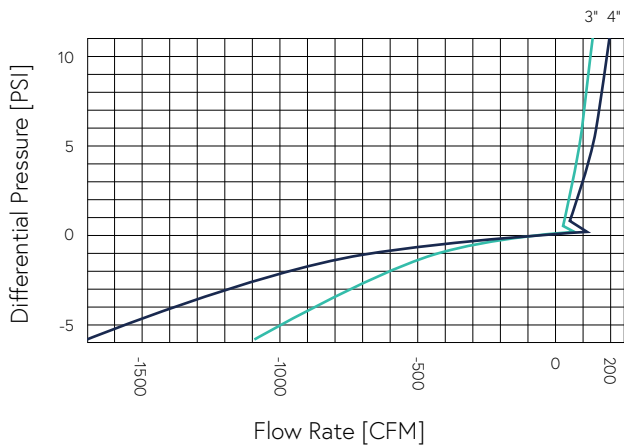
Screen / Vertical / Horizontal Outlet Models

Air & Vacuum Flow Rate

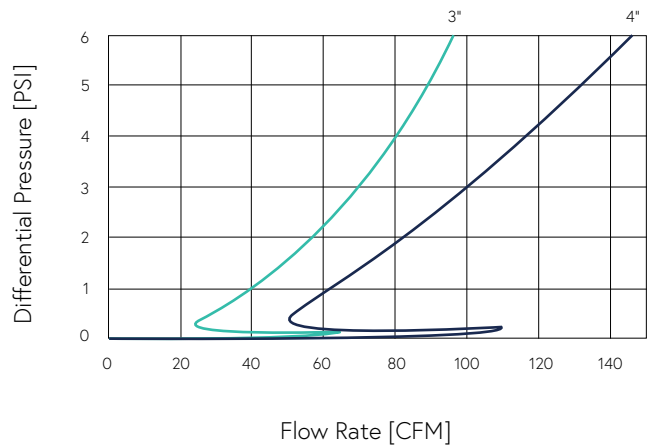


Flow Charts

Air & Vacuum Flow Rate

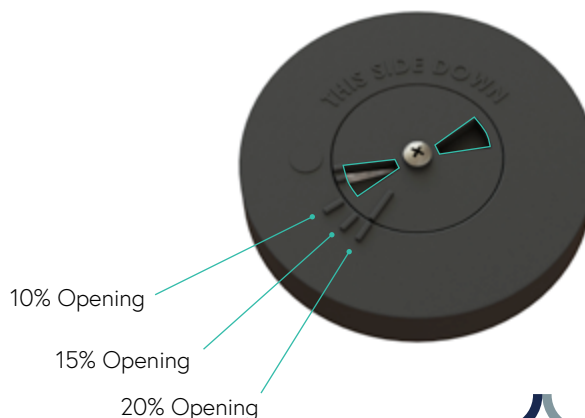


Air Discharge Switching Region



Non-slam Disc Data Table for Variable Orifices

Size	Discharge orifice (inch)	Total NS area (sq. inch)	Total NS area (sq. in)	NS orifice (inch)	Switching point (psi)	Flow at 5.8 psi (CFM)	Flow at 14.5 psi (CFM)	Adjustable shutter Opening %
3" (80mm)	3"	3"	0.315	0.624	0.145	106	165	0.2
3" (80mm)	3"	3"	0.1695	0.468	0.145	38	112	0.15
3" (80mm)	3"	3"	0.075	0.312	0.145	38	59	0.1
4" (100mm)	4"	4"	0.471	0.78	0.145	141	224	0.2
4" (100mm)	4"	4"	0.2655	0.585	0.145	100	159	0.15
4" (100mm)	4"	4"	0.1185	0.39	0.145	49	118	0.1



Parts List and Specifications | Horizontal Cover Model

No.	Part	Material
1	Cover Assembly	
1a	Cover	Ductile Iron
1b	Lifting Ring (optional)	Steel / Stainless Steel
1c	Protection Screen	Reinforced Polypropylene
1d	Orifice Seal	EPDM
2	Float Assembly	
2a	Lock Nut	Reinforced Polypropylene
2b	Float Cover	Reinforced Polypropylene / Nylon
2c	O-rings	NBR
2d	Air Release Orifice	Reinforced Polypropylene
2e	Rolling Seal	EPDM
2f	Float	Foamed Polypropylene
2g	Float Base	Polypropylene
2h	Bolts	Stainless Steel
3	Body Assembly	
3a	Body	Ductile Iron
3b	Pressure Release Plug	Reinforced Nylon
3c	Pressure Release Bushing	Reinforced Nylon
3d	Bolts, Nuts & Washers	Steel / Stainless Steel



Parts List and Specifications | Horizontal Outlet NS Model

No.	Part	Material
1	Discharge Outlet Assembly	
1a	Horizontal outlet	Ductile Iron
1b	Lifting Ring	Steel / Stainless Steel
1c	Protection Screen	Reinforced Polypropylene
1d	Nut	Steel / Stainless Steel
2	NS Assembly	
2a	NS Disc	Reinforced Polypropylene / Nylon + Stainless Steel
2b	Cover	Ductile Iron
2c	Bolts	Steel / Stainless Steel
3	Air & Vacuum Seal	EPDM
4	Float Assembly	
4a	Lock Nut	Reinforced Polypropylene
4b	Float Cover	Reinforced Polypropylene
4c	O-rings	NBR
4d	Air Release Orifice	Reinforced Polypropylene
4e	Rolling Seal	EPDM
4f	Float	Foamed Polypropylene
4g	Float Base	Polypropylene
4h	Bolts	Stainless Steel
5	Body Assembly	
5a	Body	Ductile Iron
5b	Pressure Release Plug	Reinforced Nylon
5c	Pressure Release Bushing	Reinforced Nylon
5d	Bolts, Nuts & Washers	Steel / Stainless Steel
6	Drainage Assembly	
6a	Drainage Elbow	Polypropylene
6b	Drainage Pipe	Polyethylene



Parts List and Specifications | Screen Outlet Models

No.	Part	Material
1	Screen Outlet Assembly	
1a	Screen Outlet	Polypropylene
1b	Bolt	Steel / Stainless Steel
2	NS Assembly (optional)	
2a	NS Support disc	Polyethylene
2b	NS Disc	Polypropylene
3	Cover Assembly	
3a	Cover	Ductile Iron
3b	Air & Vacuum	EPDM
3c	Bolts	Steel / Stainless Steel
4	Float Assembly	
4a	Lock Nut	Reinforced Polypropylene
4b	Float Cover	Reinforced Polypropylene / Nylon
4c	O-rings	NBR
4d	Air Release Orifice	Reinforced Polypropylene
4e	Rolling Seal	EPDM
4f	Float	Foamed Polypropylene
4g	Float Base	Polypropylene
4h	Bolts	Stainless Steel
5	Body Assembly	
5a	Body	Ductile Iron
5b	Pressure Release Plug	Reinforced Nylon
5c	Pressure Release Bushing	Reinforced Nylon
5d	Bolts, Nuts & Washers	Steel / Stainless Steel
6	Drainage Assembly	
6a	Drainage Elbow	Polypropylene
6b	Drainage Pipe	Polyethylene



Parts List and Specification | Vertical Outlet Models

No.	Part	Material
1	Vertical Outlet	
1a	Cover	Ductile iron
1b	Nut	Steel / Stainless Steel
1c	Lifting Ring	Steel / Stainless Steel
2	NS Assembly (optional)	
2a	NS Support disc	Polyethylene
2b	NS Disc Assembly	Polypropylene / Nylon + Stainless Steel
3	Cover Assembly	
3a	Cover	Ductile Iron
3b	Orifice Seat	EPDM
3c	Bolts	Steel / Stainless Steel
4	Float Assembly	
4a	Lock Nut	Reinforced Polypropylene
4b	Float Cover	Reinforced Polypropylene / Nylon
4c	O-rings	NBR
4d	Air Release Orifice	Reinforced Polypropylene
4e	Rolling Seal	EPDM
4f	Float	Foamed Polypropylene
4g	Float Base	Polypropylene
4h	Bolts	Stainless Steel
5	Body Assembly	
5a	Body	Ductile Iron
5b	Pressure Release Plug	Reinforced Nylon
5c	pressure Release Bushing	Reinforced Nylon
5d	Bolts, Nuts & Washers	Steel / Stainless Steel
6	Drainage Assembly	
6a	Drainage Elbow	Polypropylene
6b	Drainage Pipe	Polypropylene

