

# A.R.I. D-050 NS



## Reduced Bore, Non-slam, Combination Air Valve Series

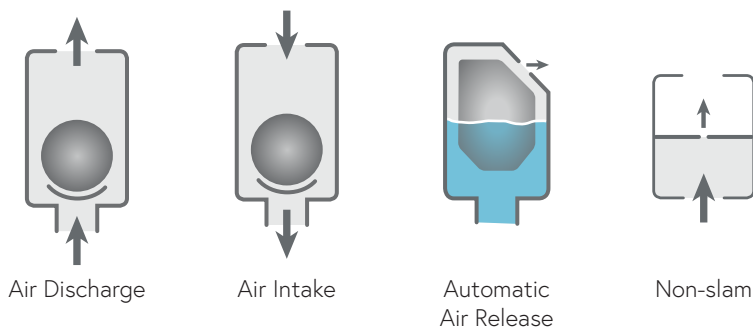
### Description

A.R.I. D-050 NS is a non-slam reduced bore, surge-dampening Combination Air Valve Series. Installed on liquid transmission systems, the Air Valve is designed to improve hydraulic operation by protecting the pipeline, increasing pipeline efficiency and reducing energy requirements. The Air Valve provides both high-capacity vacuum protection and efficient surge suppression.



### Installation

- Pump stations: downstream of the pump and the check valve
- Downstream and upstream 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
- Water pipelines with anticipated conditions of surge and water hammer
- Water pipelines where water column separation occurs
- Municipal and industrial water conveyance systems

### Operation



## Features and Benefits

Simple product design	Easy to install and maintain, reduces downtime
Aerodynamic design	High-capacity air discharge, no premature closure
	Reduces water hammer impact
	Saves energy and increases system efficiency
Unique orifice seat / seal design	Long-term maintenance-free operation
Screen protected outlet	Prevents intrusion of insects and debris
Construction materials	Non-corrosive and durable
Automatic air release valve rolling seal	Leak-free sealing over a wide range of pressure differentials
Automatic air release valve orifice	High flow air release, lessens obstruction by debris
Non-slam (NS) device	Efficient surge suppression
 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

## Technical Specifications

Size range	2" -12"
Working pressure range	A.R.I. D-050L NS      0.05 - 16 bar (PN16)
	A.R.I. D-050 NS      0.2 - 16 bar (PN16)
	A.R.I. D-050 C NS    0.2 - 16 bar (PN16)
	A.R.I. D-052 NS      0.2 - 25 bar (PN25)
	A.R.I. D-055 NS      0.2 - 40 bar (PN40)
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

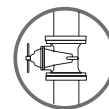
## Valve Selection Options

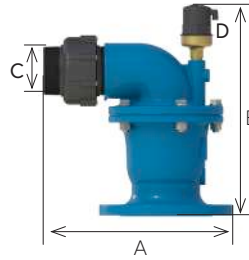
<b>Models</b>	A.R.I. D-050 NS   A.R.I. D-050 C NS   A.R.I. D-050 L NS   A.R.I. D-052 NS   A.R.I. D-055 NS
<b>Valve connection</b>	Threaded male BSPT/NPT (2") Flanged ends to meet various requested standard (2"-12")
<b>Standard materials</b>	cast ductile iron body
<b>Pressure Rating</b>	PN16 A.R.I. D-050 NS   A.R.I. D-050 C NS   A.R.I. D-050 L NS PN25 A.R.I. D-052 NS PN40 A.R.I. D-055 NS
<b>Additional Product Configurations</b>	SB Underground Air Valve System



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.





NOTE  
Dimension A in the picture and in the table shows the maximum product width. This width can be reduced by changing the cover direction. All product weights are approximate, due to the differences in flange standards, materials and variable accessories.

FL - Flanged    THR - Threaded

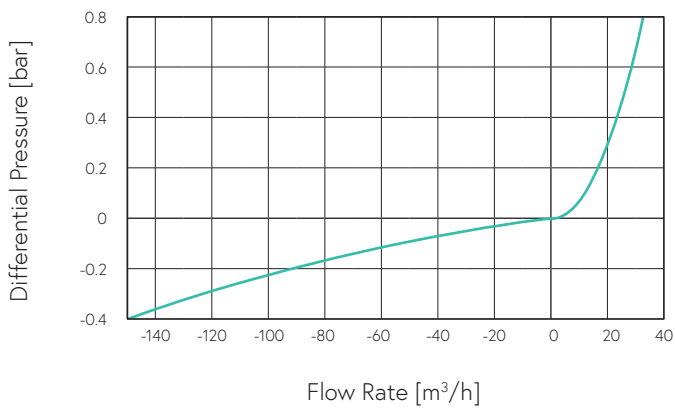
## Dimensions and Weight

Model	Size	Dimensions (mm)		Connections		Weight (kg)	Orifice Area (mm <sup>2</sup> )	
		max. A	B	C	D		A / V	Auto.
A.R.I. D-050 NS								
Horizontal Outlet	2" (50mm) THR	225	295	1.5" BSP Male	1/8" BSP Female	5.9	794	12
	2" (50mm) FL	225	305	1.5" BSP Male	1/8" BSP Female	8	794	12
	3" (80mm) FL	287	373	2" BSP Male	1/8" BSP Female	13.3	1960	12
	4" (100mm) FL	346	420	3" BSP Male	1/8" BSP Female	18.6	5030	12
	6" (150mm) FL	432	485	4" BSP Male	1/8" BSP Female	40	7850	12
Screen Cover	3" (80mm) FL	225	354	-	1/8" BSP Female	10.7	1960	12
	4" (100mm) FL	250	418	-	1/8" BSP Female	17	5030	12
	6" (150mm) FL	307	464	-	1/8" BSP Female	35	7850	12
	8" (200mm) FL	375	689	-	1/8" BSP Female	73.5	17662	12
	10" (250mm) FL	463	790	-	1/8" BSP Female	141.5	31400	12
12" (300mm) FL	586	987	-	1/8" BSP Female	150	49087	12	
A.R.I. D-050 C NS / D-052 NS <span style="float: right;">D-050-C NS   D-052 NS</span>								
Horizontal Outlet	2" (50mm) THR	225	301	1.5" BSP Male	1/8" BSP Female	7.9	794	12   9
	2" (50mm) FL	225	311	1.5" BSP Male	1/8" BSP Female	11	794	12   9
	3" (80mm) FL	287	379	2" BSP Male	1/8" BSP Female	15.3	1960	12   9
	4" (100mm) FL	346	426	3" BSP Male	1/8" BSP Female	20.6	5030	12   9
	6" (150mm) FL	432	485	4" BSP Male	1/8" BSP Female	42	7850	12   9
Screen Cover	3" (80mm) FL	219	360	-	1/8" BSP Female	10.7	1960	12   9
	4" (100mm) FL	243	426	-	1/8" BSP Female	17	5030	12   9
	6" (150mm) FL	302	473	-	1/8" BSP Female	35	7850	12   9
	8" (200mm) FL	375	702	-	1/8" BSP Female	73.5	17662	12   9
	10" (250mm) FL	463	798	-	1/8" BSP Female	141.5	31400	12   9
12" (300mm) FL	586	987	-	1/8" BSP Female	150	49087	12   9	
A.R.I. D-055 NS								
Horizontal Outlet	2" (50mm) THR	225	446	1.5" BSP Male	1/2" BSP Female	10.2	794	15
	2" (50mm) FL	225	456	1.5" BSP Male	1/2" BSP Female	13.3	794	15
	3" (80mm) FL	287	524	2" BSP Male	1/2" BSP Female	18.4	1960	15
	4" (100mm) FL	346	571	3" BSP Male	1/2" BSP Female	23.7	5030	15
	6" (150mm) FL	432	636	4" BSP Male	1/2" BSP Female	44.3	7850	15
Screen Cover	3" (80mm) FL	225	506	-	1/2" BSP Female	12.6	1960	15
	4" (100mm) FL	250	568	-	1/2" BSP Female	19.3	5030	15
	6" (150mm) FL	307	616	-	1/2" BSP Female	26.3	7850	15
	8" (200mm) FL	375	866	-	1/2" BSP Female	75.8	17662	15
	10" (250mm) FL	463	962	-	1/2" BSP Female	141.5	31400	15

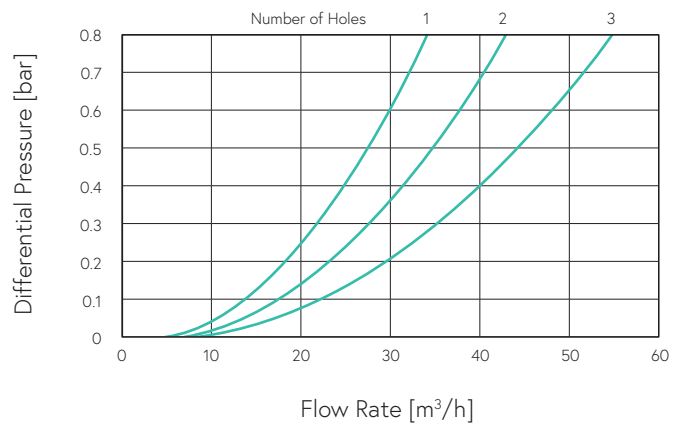
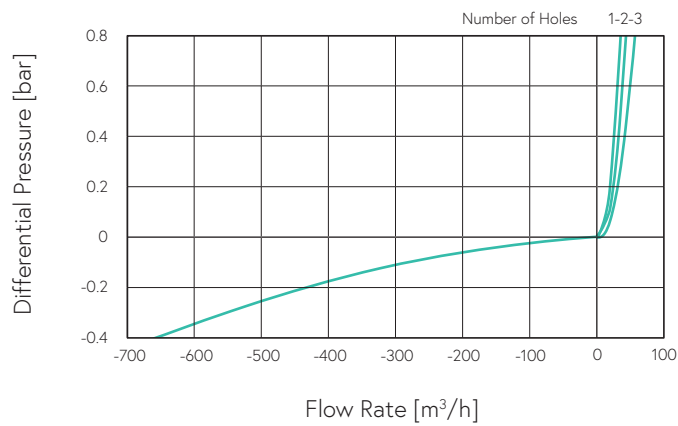
## Flow Charts

### Horizontal Outlet Models

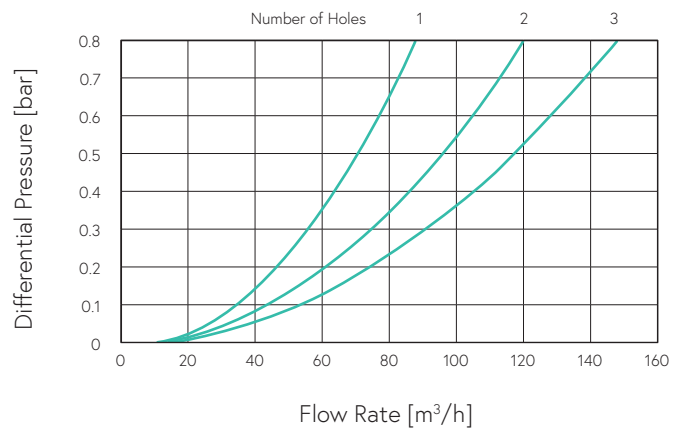
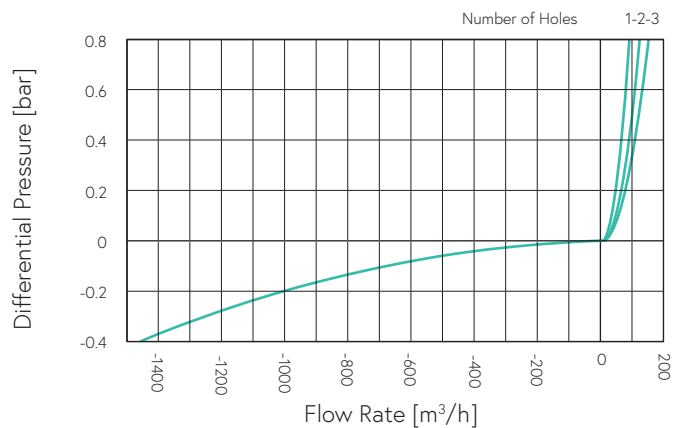
2" Adjustable NS Check Valve



3" Adjustable NS Check Valve



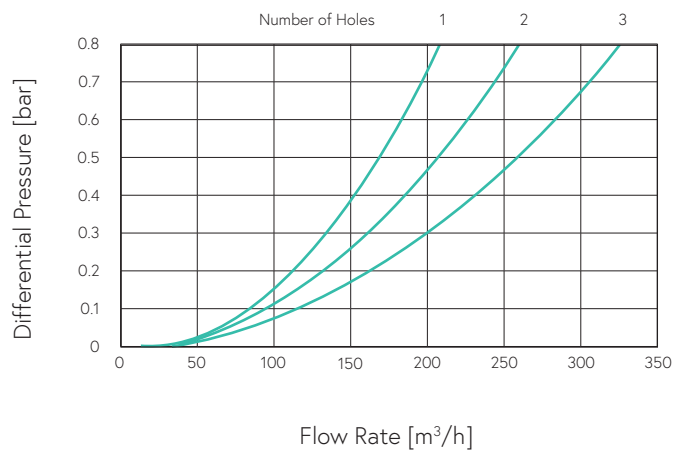
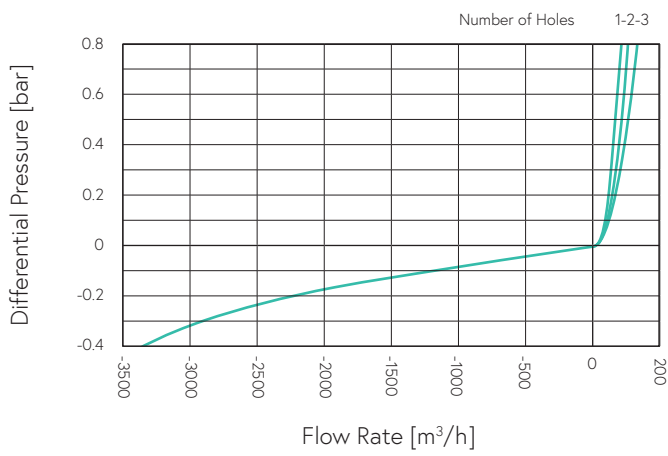
4" Adjustable NS Check Valve



## Flow Charts

### Horizontal Outlet Models

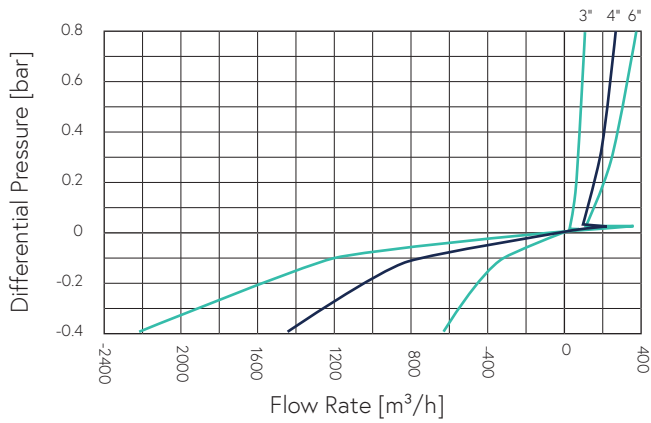
6" Adjustable NS Check Valve



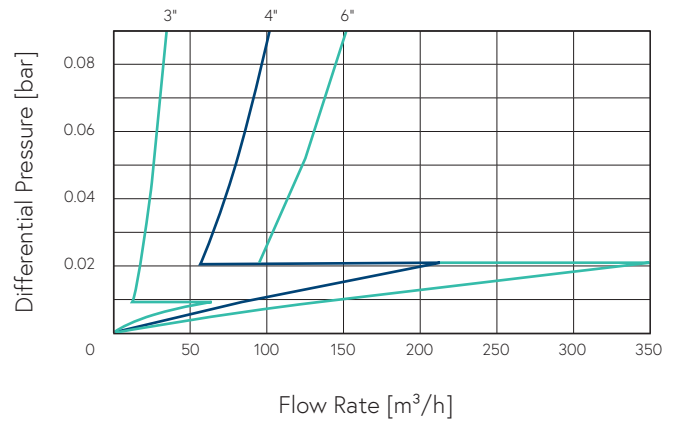
## Flow Charts

### Screen Cover Models

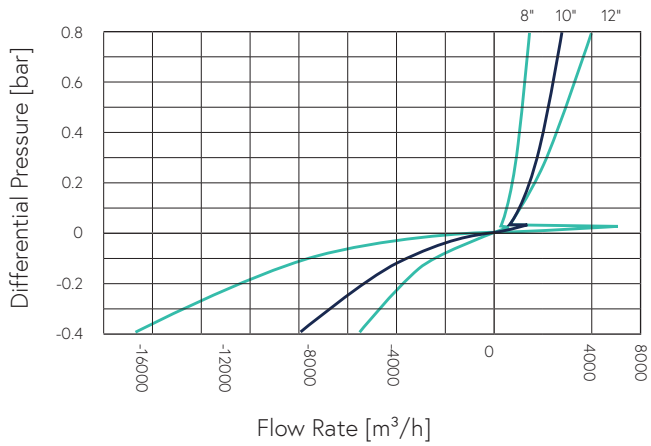
Air & Vacuum Flow Rate



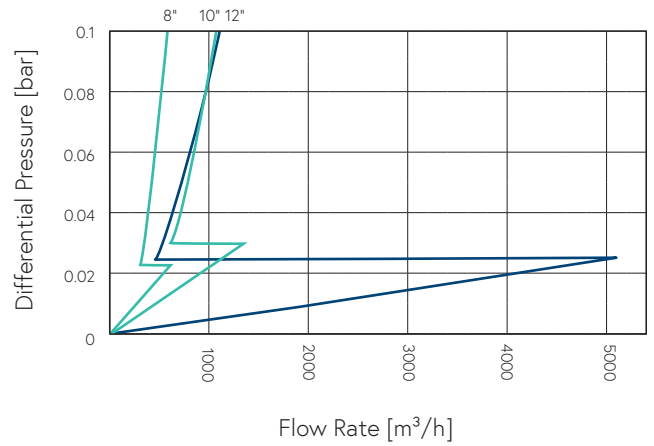
Air Discharge Switching Region



Air & Vacuum Flow Rate

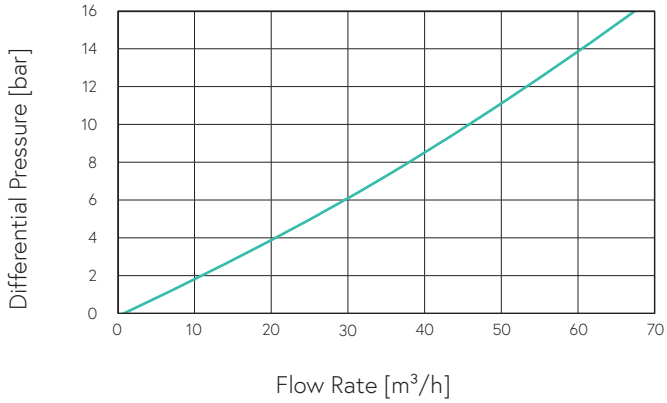


Air Discharge Switching Region

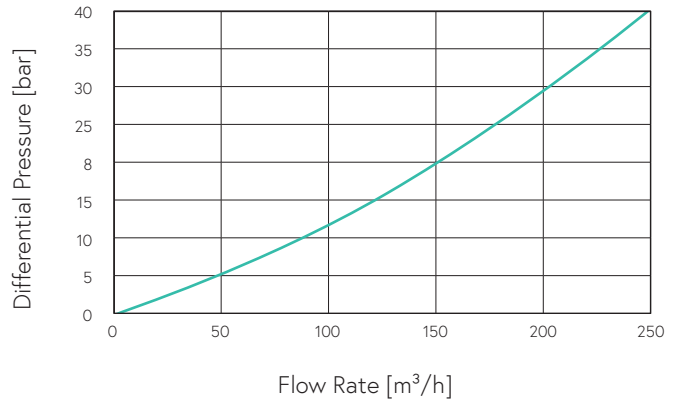


## Flow Charts

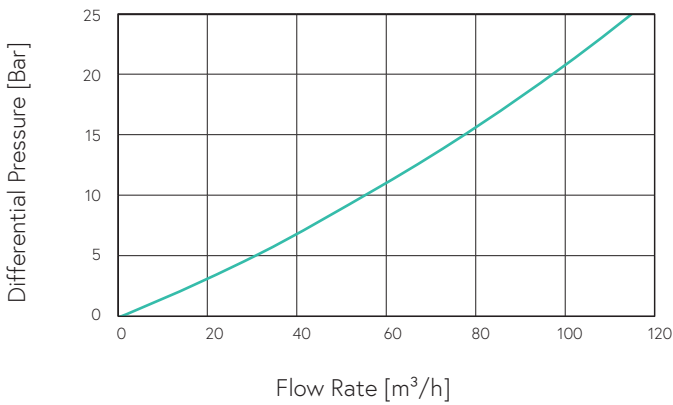
PN16 Automatic Air Release Flow Rate



PN40 Automatic Air Release Flow Rate



PN25 Automatic Air Release Flow Rate





## Parts List and Specification | 2"-6" Horizontal Outlet Models

No.	Part	Material
1	Automatic Assembly options:	
	A.R.I. S-050	Brass, Reinforced Nylon, Polypropylene, EPDM
	A.R.I. S-050 L	Brass, Reinforced Nylon, Polypropylene, EPDM
	A.R.I. S-050 C	Ductile Iron, Brass, Reinforced Nylon, Polypropylene, EPDM
	A.R.I. S-052	Ductile Iron, Brass, Reinforced Nylon, Polypropylene, EPDM
	A.R.I. S-015	Ductile Iron, Reinforced Nylon, Polypropylene, Stainless Steel 316, EPDM
2	Cover Assembly	
2a.	Cover	Ductile Iron
2b.	Orifice Seat	Stainless Steel 316
2c.	Orifice Seal	EPDM
3	Float	Polycarbonate / Stainless Steel 316
4	Body Assembly	
4a.	O-ring	EPDM
4b.	Bolts, Nuts & Washers	Steel/Stainless Steel 316
4c.	Body	Ductile Iron
5	Non-slam Assy. 2"-6"	Polypropylene / Reinforced Nylon



## Parts List and Specification | 3"-12" Screen Cover Models

No.	Part	Material
1	Automatic Assembly options:	
	A.R.I. S-050	Brass, Reinforced Nylon, Polypropylene, EPDM
	A.R.I. S-050 L	Brass, Reinforced Nylon, Polypropylene, EPDM
	A.R.I. S-050 C	Ductile Iron, Brass, Reinforced Nylon, Polypropylene, EPDM
	A.R.I. S-052	Ductile Iron, Brass, Reinforced Nylon, Polypropylene, EPDM
	A.R.I. S-015	Ductile Iron, Reinforced Nylon, Polypropylene, Stainless Steel 316, EPDM
2	Cover Assembly	
2a.	Screen Cover	Polypropylene/Ductile Iron
2b.	Screen	Stainless Steel 316
2c.	Bolts, Nuts & Washers	Stainless Steel 316
2d.	Locking Ring	Stainless Steel 316
2e.	Non-slam Disc Assy.	Stainless Steel 316
2.f	Cover	Ductile Iron
2.g	Orifice Seat	Stainless Steel 316
2.h	Orifice Seal	EPDM
3	Float	
3.a	Float	Polycarbonate/Stainless Steel SAE316
4	Body Assembly	
4a.	O-ring	EPDM
4b.	Bolts, Nuts & Washers	Steel/Stainless Steel 316
4c.	Body	Ductile Iron

