

# A.R.I. D-43 PRO

**Aquestia**  
Directing the Flow



Waterworks

## Combination Air Valve **PATENTED**

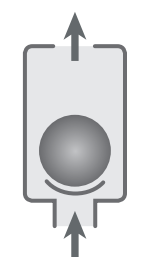
### Description

The D-43 PRO is a reduced bore combination air valve installed on a liquid transmission system to increase pipeline efficiency and reduce energy requirements by improving the hydraulic operation of the system.

### Installation

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

### Operation



Air Discharge



Air Intake



Automatic  
Air Release



One Way out



Non Slam

## Features and Benefits


Reliable operation	reduces water hammer impact, saves energy and increases system efficiency
Dynamic design	high capacity air discharge
One-piece lightweight body	lessens the chance of leaks and vandalism
Screened threaded outlet	insect-proof, for vent pipe connection
All internal operating parts - specially selected materials	non-corrosive and durable
Automatic air release orifice	high flow air release, lessens obstruction by debris
Minimum down-time for maintenance	2" -3" - all operating parts in one replaceable cartridge 4" - 8" - automatic air release component maintained within the air valve
Rolling seal	leak-free sealing over wide range of pressure differentials
Built-in drainage outlet	hygienic, drains surplus water above the sealing mechanism

## Technical Specifications

Size range	2" -8"
Sealing pressure range	2"      0.1-10 bar      (PN10) 3"-8"    0.1-16 bar      (PN16))
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

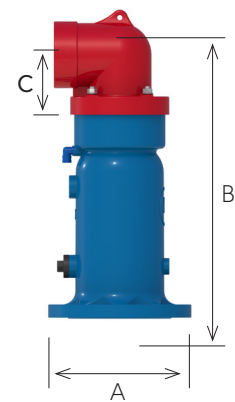
- Connections: threaded male or female BSPT/NPT male or female (2"), Flanged ends to meet various requested standard (3"-8")
- D-43 NS Non-Slam Addition - Adjustable non slam disc, can also be optionally retrofitted on existing D-43 air valves. Data Table for Variable Orifices see below.
- D-43-V - One-way, out-only attachment - allows air discharge only, prevents air intake
-  ATEX certified air valves - certification is conditional on the customer connecting the designated part on the product to a dedicated ground connection point.

## Non-Slam Add-on Component Data Table for Variable Orifices

Size	Discharge orifice (mm)	Total NS area (mm <sup>2</sup> )	NS orifice (mm)	Switching point (bar)	Flow at 0.4 bar (m <sup>3</sup> /h)
2" (50mm)	34	12.6	4	Spring loaded normally closed	24
3" (80mm)	50	78.5	10	0.001	65
4" (100mm)	80	184	15	0.004	180
6" (150mm)	100	397	22.5	0.005	235
8" (200mm)	150	884	34	0.03	725

## Dimensions and Weight

Size	Dimensions (mm)		Connections	Weight (kg)	Orifice Area (mm <sup>2</sup> )	
	max. A	B			C	A / V
2" (50mm) THR	85	245	1½" BSP F	0.5	908	11.7
3" (80mm) FL	165	336	2" BSP/NPT F	7.3	1963	13.8
4" (100mm) FL	200	467	3" BSP/NPT F	13.0	5027	13.8
6" (150mm) FL	220	537	4" BSP/NPT F	18.2	7854	13.8
8" (200mm) FL	362	757	6" Grooved	43.6	18250	14.9



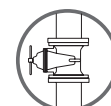
### NOTE

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 are approximate, due to the differences in flange standards, materials and variable accessories.

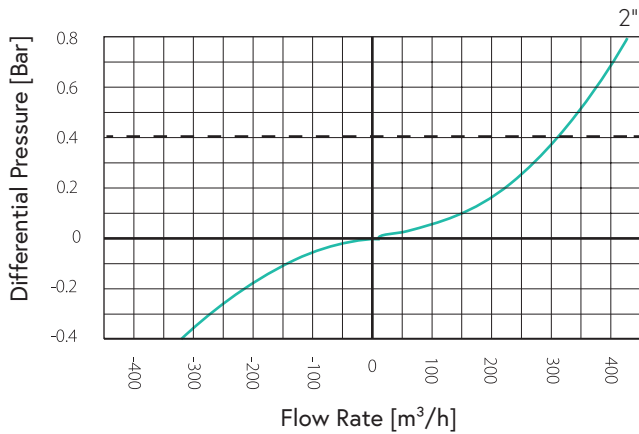
The valve installed under the air valve must be fully open to prevent damage or malfunction and ensure performance within the specifications of the air valve.

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

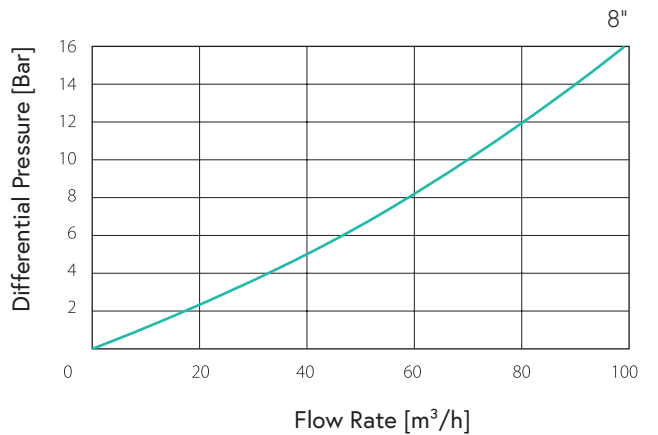
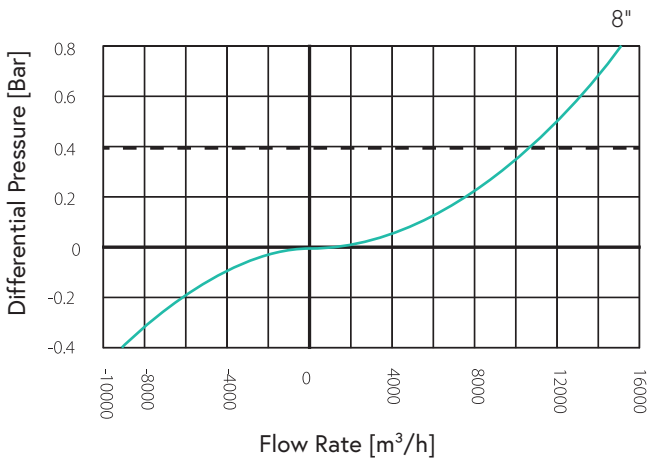
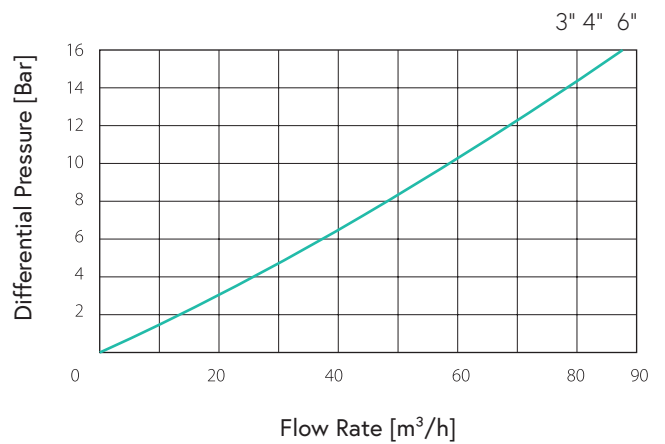
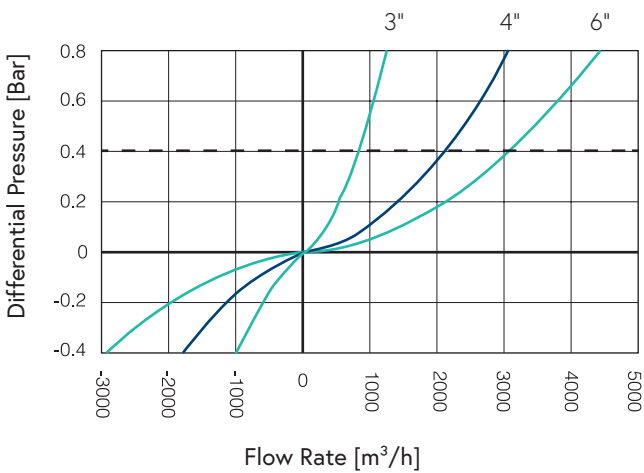
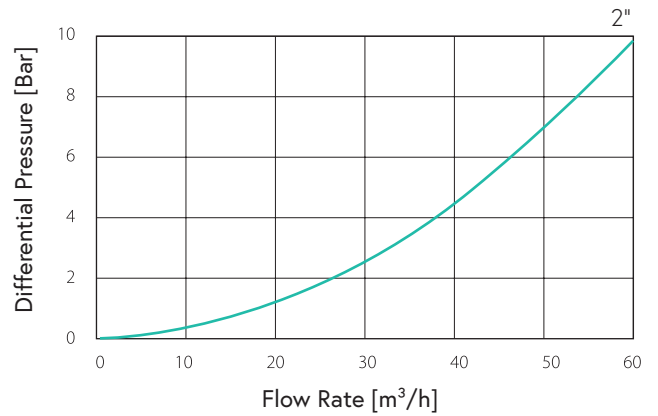


## Flow Charts

Air & Vacuum Flow Rate



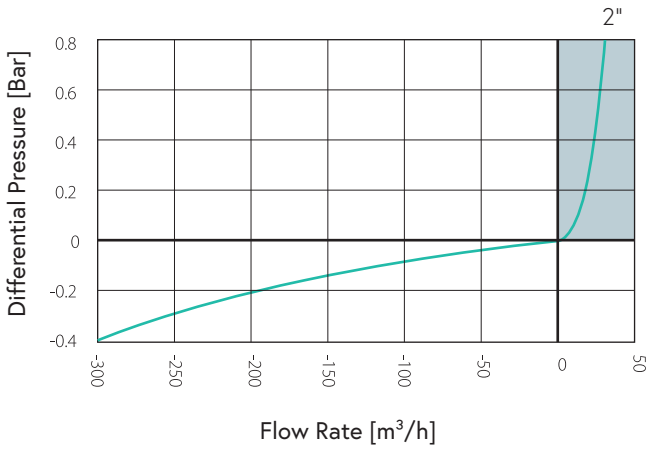
Automatic Air Release Flow Rate



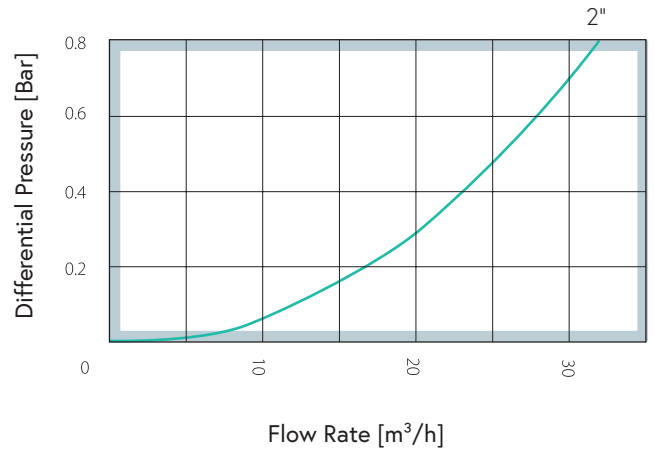
Max. recommended design air discharge    - - - - -

## Flow Charts

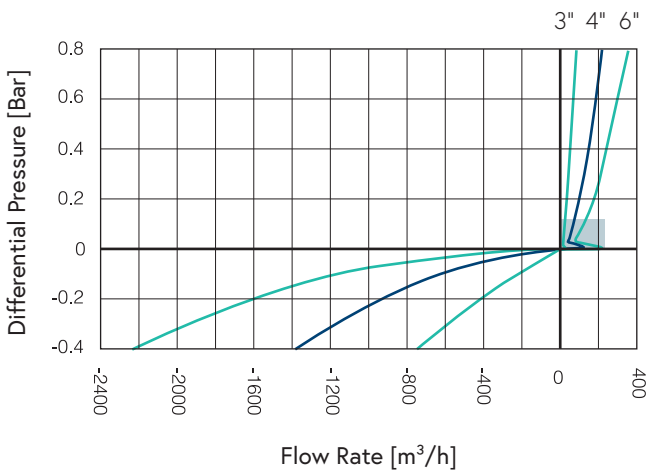
Air & Vacuum Flow Rate



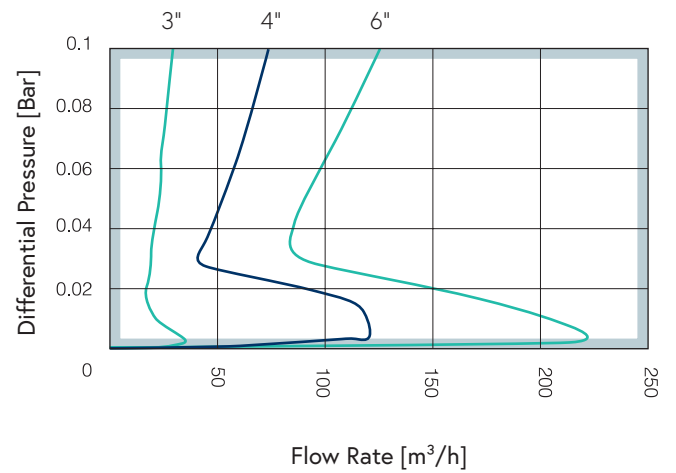
Air Discharge Flow Rate



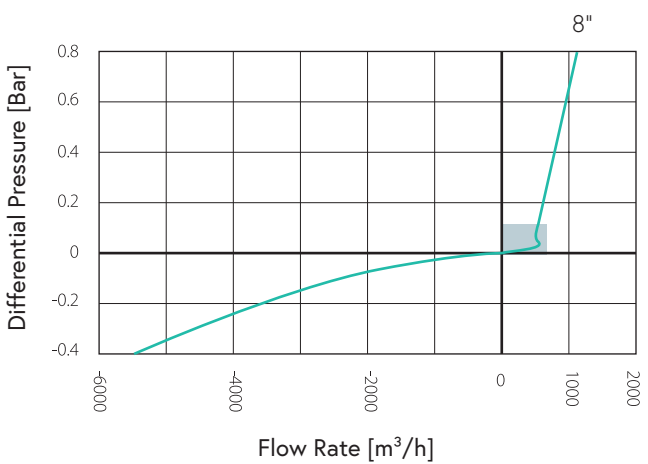
Air & Vacuum Flow Rate



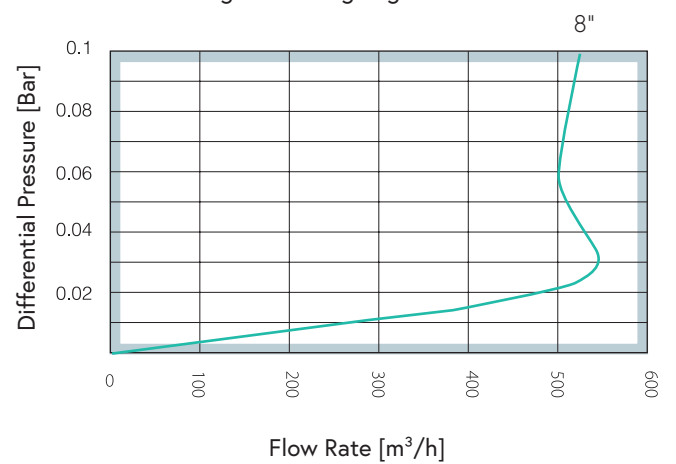
Air Discharge Switching Region



Air & Vacuum Flow Rate



Air Discharge Switching Region



## Parts List and Specification

No.	Part	Material
1	Discharge Elbow Assembly	
1a.	Discharge Elbow	Polypropylene
1b.	O-rings	Buna-N
1c.	Non-Slam Component (Optional)	Reinforced Nylon / Polypropylene + Acetal + Stainless Steel
2	Body	Reinforced Polypropylene
3	Air Release / Air & Vacuum Assembly	
3a.	Air & Vacuum Seal	EPDM
3b.	Air Release Cover	Acetal
3c.	Rolling Seal	EPDM
3d.	Float	Polypropylene
3e.	Float Lock	Polypropylene



## Parts List and Specification

No.	Part	Material
1	Discharge Elbow Assembly	
1a.	Discharge Elbow	Polypropylene
1b.	Seal	Buna-N
2	Body Assembly	
2a.	Optional - Non Slam Disc	Reinforced Nylon
2b.	Body	Ductile Iron
2c.	Drain Outlet	Polypropylene
2d.	Pressure Release Plug	Reinforced Nylon
3	Air Release / Air & Vacuum Assembly	
3a.	Air & Vacuum Seal	EPDM
3b.	Air Release Cover	Acetal
3c.	Rolling Seal	EPDM
3d.	Float	Polypropylene
4	Seat Assembly	
4a.	Float Seat	Acetal
4b.	Snap Ring	Reinforced Nylon



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No.	Part	Material
1	Discharge Elbow Assembly	
1a.	Discharge Elbow	Polypropylene
1b.	Seal	Buna-N
2	Body Assembly	
2a.	Optional - Non Slam Disc	Reinforced Nylon
2b.	Body	Ductile Iron
2c.	Drain Outlet	Polypropylene
2d.	Pressure Release Plug	Reinforced Nylon
3	Air Release Assembly	
3a.	Cover	Acetal
3b.	O-ring	EPDM
3c.	Rolling Seal	EPDM
3d.	Air Release Float	Polypropylene
4	Air & Vacuum Assembly	
4a.	Air & Vacuum Seal	EPDM
4b.	Air & Vacuum Float	Polypropylene
5	Seat Assembly	
5a.	Float Seat	Acetal
5b.	Snap Ring	Reinforced Nylon





## Parts List and Specification

No.	Part	Material
1	Discharge Elbow Assembly	
1a.	Flange (optional)	Polypropylene / Steel
1b.	Locking Ring (optional)	Acetal
1c.	O-ring (optional)	EPDM
1d.	Discharge Elbow	Polypropylene
1e.	Lifting Ring	Stainless Steel 316
1f.	Seal	Buna-N
2	Body Assembly	
2a.	Optional - Non Slam Disc	Reinforced Nylon
2b.	Body	Ductile Iron
2c.	Drain Outlet	Polypropylene
2d.	Pressure Release Plug	Reinforced Nylon
3	Air Release Assembly	
3a.	Cover	Reinforced Nylon
3b.	O-ring	EPDM
3c.	Rolling Seal	NBR
3d.	Air Release Float	Foamed Polypropylene
4	Air & Vacuum Assembly	
4a.	Air & Vacuum Seal	EPDM
4b.	Air & Vacuum Float	Reinforced Polypropylene
5	Seat Assembly	
5a.	Float Seat	Acetal
5b.	Snap Ring	Acetal

