

# A.R.I. D-23



Wastewater

## Reduced Bore Combination Air Valve for Wastewater

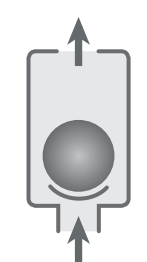
### Description

A.R.I. D-23 is a reduced bore, Combination Air Valve installed on a wastewater 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 wastewater from the sealing mechanism and helps to avoid deposits or blockage.

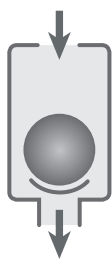
### Installation

- Wastewater & water treatment plants
- Wastewater and effluent water transmission lines

### Operation



Air Discharge



Air Intake



Automatic  
Air Release



One Way out



One Way In



Non Slam

## Features and Benefits


Conical body shape & unique design	maximum air gap/ minimum body length
Continuous air gap	separates the liquid from the sealing mechanism
Float assembly and sealing mechanism linkage	free movement, turbulence will not unseal the sealing mechanism
Funnel-shaped lower body	residue matter falls back into the system pipeline
All internal parts - stainless steel 316, polymer, rubber materials	non-corrosive and durable
Spray Guard®	flow enhancer, prevents spraying from valve outlet
Ball valve	releases pressure and drains valve prior to maintenance

## Technical Specifications

Size Range	3" - 8"
Sealing pressure range	3"      0.02 -10 bar (PN 10)      0.1-16 bar (PN 16) 4"      0.02 -10 bar (PN 10)      0.2-16 bar (PN 16)      0.2-25 bar (PN25) 6" - 8"      0.1-16 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

## Valve Selection Options

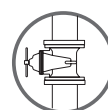
Valve connection	Threaded BSP/NPT or Flanged ends to meet various requested standard
Standard materials	Reinforced Nylon models - two-directional cover is standard Metal models - optional one directional or two-directional covers
Optional add-on components	One-way, Out-only attachment, allows for air discharge only, prevents air intake Vacuum Breaker, In-only attachment, allows for air intake only, prevents air discharge Non-Slam discharge-throttling attachment, allows for free air intake, throttles air discharge
Additional product configurations	SB Underground Air Valve System (3" & 4" sizes only)
 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	Number of orifice	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)
3" (80mm)	1 orifice	50	15.9	4.5	Spring loaded normally closed	23
	2 orifices	50	31.8	6.4		32
	3 orifices	50	47.7	7.8		40
4" (100 mm)	1 orifice	75	50.3	8	Spring loaded normally closed	65
6" (150 mm)	2 orifices	75	100.5	11.3		88
8" (200 mm)	3 orifices	75	150.8	13.9		106

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.





### Dimensions and Weight

Size	Dimensions (mm)		Connections	Weight (kg)		Orifice Area (mm <sup>2</sup> )	
	maximum A	B		RN	ST ST	A / V	Auto.
D-23 3" (80 mm) THR	258	547	2" BSP / NPSM Female	8.1	13.2	1963	8.6
D-23 3" (80 mm) FL	258	554	2" BSP / NPSM Female	8.5	16.1	1963	8.6
D-23 NS 3" (80 mm) THR	330	547	2" BSP / NPSM Male	8.3	13.6	1963	8.6
D-23 NS 3" (80 mm) FL	330	554	2" BSP / NPSM Male	8.7	16.5	1963	8.6
One-directional cover				Cast Steel	ST ST		
D-23 4" (100 mm) FL	526	580	3" BSP / NPSM Female	21.6	24.6	5024	15.7
D-23 NS 4" (100 mm) FL	548	580	3" BSP / NPSM Male	24.7	25.5	5024	15.7
Two-directional cover				Cast Steel	ST ST		
D-23 4" (100 mm) FL	495	620	3" BSP / NPSM Female	24.2	25.0	5024	15.7
D-23 NS 4" (100 mm) FL	605	620	3" BSP / NPSM Male	24.7	25.4	5024	15.7
Two-directional cover (RN)				RN			
D-23 4" (100 mm) FL	371	626	3" BSP / NPSM Female	15.4	-	5024	15.7
D-23 NS 4" (100 mm) FL	477	626	3" BSP / NPSM Male	16.1	-	5024	15.7
One-directional cover				Cast Steel	ST ST		
D-23 6" (150 mm) FL	527	579	3" BSP/ NPSM Female	29	30.9	5024	15.7
D-23 NS 6" (150 mm) FL	548	579	3" BSP/ NPSM Female	29.8	30.7	5024	15.7
Two-directional cover				Cast Steel	ST ST		
D-23 6" (150 mm) FL	474	626	3" BSP/ NPSM Female	29	30.9	5024	15.7
D-23 NS 6" (150 mm) FL	587	626	3" BSP/ NPSM Female	29.8	30.7	5024	15.7
One-directional cover				Cast Steel	ST ST		
D-23 8" (200 mm) FL	527	579	3" BSP/ NPSM Female	30.6	31.5	5024	15.7
D-23 NS 8" (200 mm) FL	548	579	3" BSP/ NPSM Female	31.4	32.3	5024	15.7
Two-directional cover				Cast Steel	ST ST		
D-23 8" (200 mm) FL	474	626	3" BSP/ NPSM Female	30.6	31.5	5024	15.7
D-23 NS 8" (200 mm) FL	587	626	3" BSP/ NPSM Female	31.4	32.3	5024	15.7

THR - Threaded  
FL - Flanged

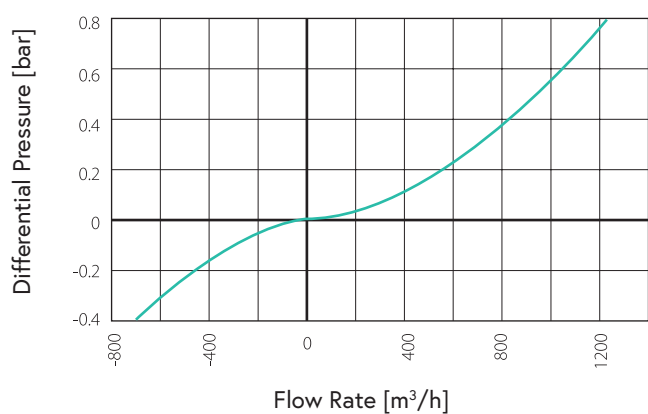
#### NOTE

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

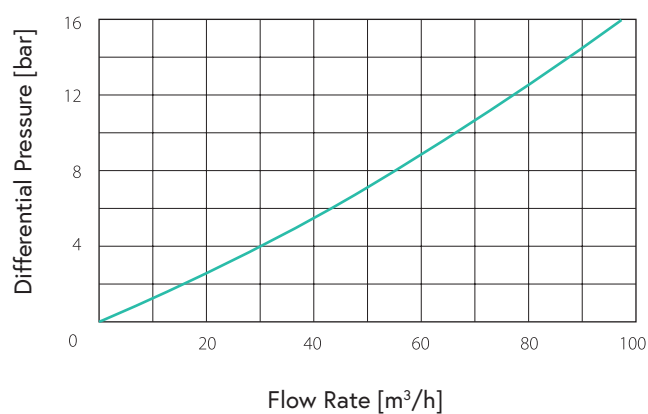
## Flow Charts

### D-23 3"

Air & Vacuum Flow Rate

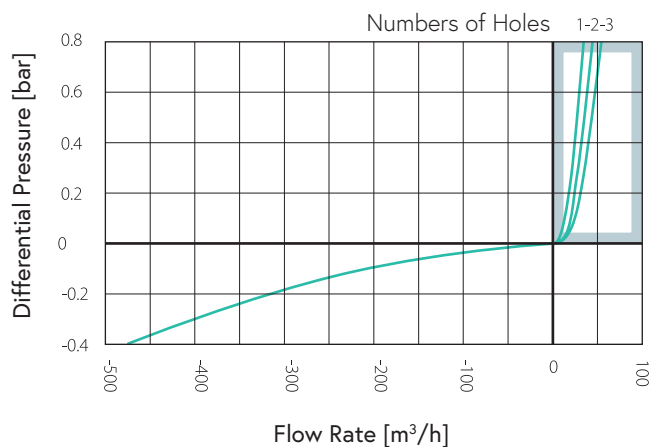


Automatic Air Release Flow Rate

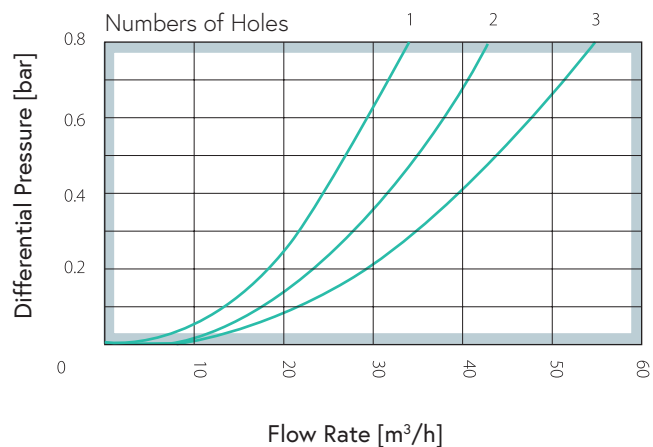


### D-23 NS 3"

Adjustable NS Check Valve



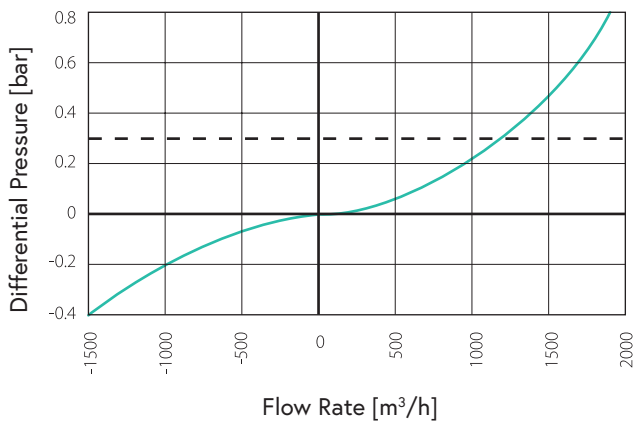
Adjustable NS Check Valve



## Flow Charts

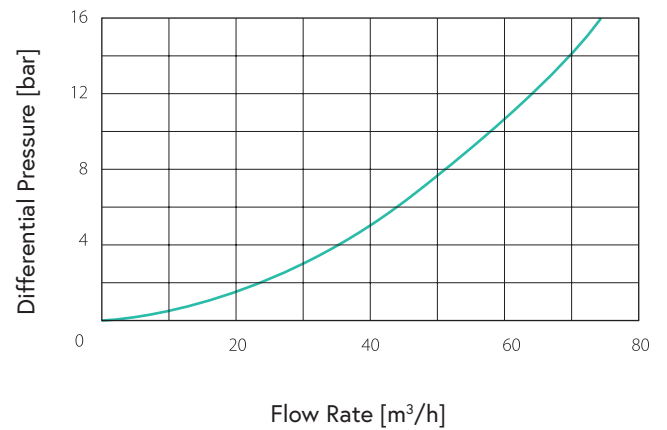
### D-23 4"-8"

Air & Vacuum Flow Rate



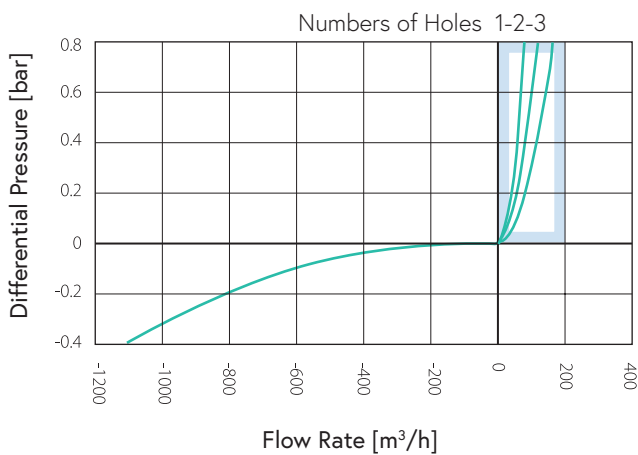
--- Max. recommended design air discharge

Automatic Air Release Flow Rate

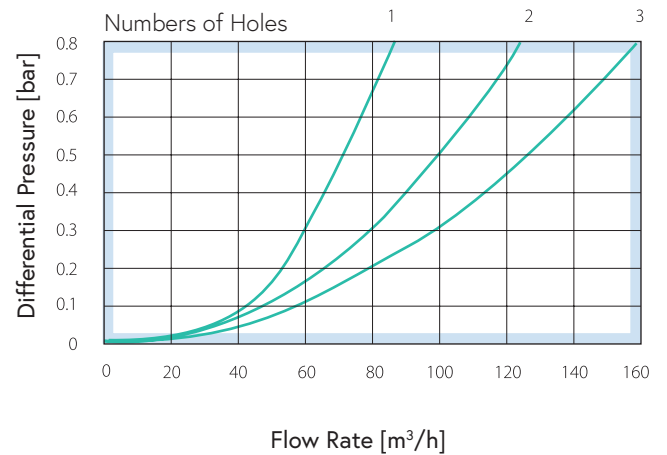


### D-23 NS 4"-8"

Air & Vacuum Flow Rate



Air Discharge Flow Rate



## Parts List and Specification

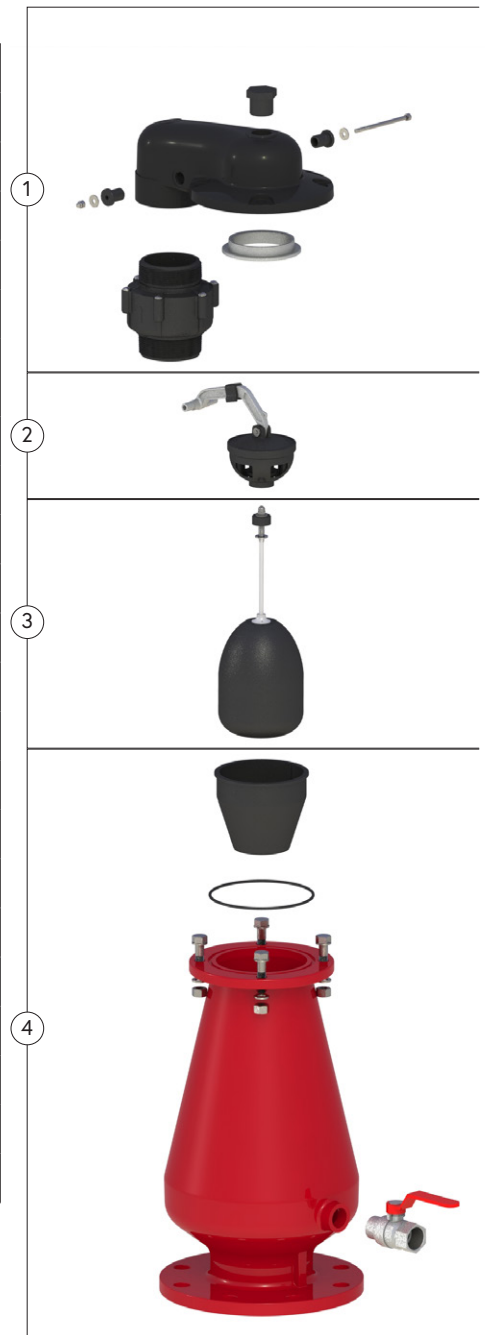
Part	Material
<b>1. Cover Assembly</b>	
1a. Orifice Plug	Polypropylene
1b. Cover	Stainless Steel 316
1c. Bolt Assembly	Stainless Steel 316 + Reinforced Nylon
1d. Non-Slam Component (Optional)	Reinforced Nylon / Polypropylene + Stainless Steel
<b>2. Seal Assembly</b>	
2a. Disc Arm	Cast Stainless Steel
2b. Air&Vacuum Disc	Cast Stainless Steel / Reinforced Nylon
2c. Air&Vacuum Seal	EPDM
2d. Air Release Seal & Seat	EPDM & Reinforced Nylon
2e. Seal Cover	Reinforced Nylon
<b>3. Body Assembly</b>	
3a. O-Ring	BUNA-N
3b. Spray Guard®	Polypropylene
3c. Body	Reinforced Nylon / Stainless Steel 316
<b>4. Float Assembly</b>	
4a. Domed Nut	Stainless Steel 316
4b. Stopper	Polypropylene
4c. Spring	Stainless Steel 316
4d. Float & Rod	Polypropylene + Stainless Steel 316
<b>5. Base Assembly</b>	
5a. O-Ring	BUNA-N
5b. Clamp Assembly	Cast Stainless Steel + Stainless Steel 316
5c. Base	Reinforced Nylon / Stainless Steel 316
5d. Tap	Brass / Stainless Steel



## One-directional cover Models

### Parts List and Specification

Part	Material
<b>1. Cover Assembly</b>	Materials
1a. Orifice Plug	Polypropylene
1b. Cover	Ductile Iron / Stainless Steel 316
1c. Bolt Assembly	Stainless Steel 316 + Reinforced Nylon
1d. Orifice Seat	Stainless Steel 316
1e. Non-Slam Component (Optional)	Reinforced Nylon / Polypropylene + Stainless Steel
<b>2. Seal Assembly</b>	
2a. Disc Arm	Cast Stainless Steel
2b. Air&Vacuum Disc	Cast Stainless Steel / Reinforced Nylon
2c. Air&Vacuum Seal	EPDM
2d. Air Release Seal & Seat	EPDM & Reinforced Nylon
2e. Seal Cover	Reinforced Nylon
<b>3. Float Assembly</b>	
3a. Domed Nut	Stainless Steel 316
3b. Stopper	Polypropylene
3c. Spring	Stainless Steel 316
3d. Float & Rod	Polypropylene + Stainless Steel 316
<b>4. Body Assembly</b>	
4a. Spray Guard®	Polypropylene
4b. O-Ring	BUNA-N
4c. Body	Cast Steel / Stainless Steel 316
4d. Ball Valve	Brass, Chrome Coated / Stainless Steel 316





## Two-directional cover Models Parts List and Specification

Part	Material
1. Cover Assembly	Materials
1a. Orifice Plug	Polypropylene
1b. Cover	Stainless Steel 316
1c. Bolt Assembly	Stainless Steel 316 + Reinforced Nylon
1d. Non-Slam Component (Optional)	Reinforced Nylon / Polypropylene + Stainless Steel
2. Seal Assembly	
2a. Disc Arm	Cast Stainless Steel
2b. Air&Vacuum Disc	Cast Stainless Steel / Reinforced Nylon
2c. Air&Vacuum Seal	EPDM
2d. Air Release Seal & Seat	EPDM & Reinforced Nylon
2e. Seal Cover	Reinforced Nylon
3. Float Assembly	
3a. Domed Nut	Stainless Steel 316
3b. Stopper	Polypropylene
3c. Spring	Stainless Steel 316
3d. Float & Rod	Polypropylene + Stainless Steel 316
4. Body Assembly	
4a. Spray Guard®	Polypropylene
4b. O-Ring	BUNA-N
4c. Body	Cast Steel / Stainless Steel 316
4d. Ball Valve	Brass, Chrome Coated / Stainless Steel 316

