A.R.I. K-020

Aquestia
Directing the Flow

Wastewater

Air & Vacuum Valve

Description

The K-020 Series are full bore air & vacuum air valves installed on a wastewater transmission system to increase pipeline efficiency and reduce energy requirements by improving the hydraulic operation of the system. A continuous air gap in the valve body separates the wastewater from the sealing mechanism.

Installation

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

Operation

Air Discharge | Air Intake | One Way out | One Way In | Non Slam

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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
All internal parts - stainless steel 316, rubber materials	non-corrosive and durable
3" threaded outlet	compatible for vent pipe connection
Dynamic design	high capacity air discharge, no premature closure
Ball valve	releases pressure and drains valve prior to maintenance

Technical Specifications

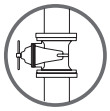
Size Range	3" - 4"
Sealing pressure range	K-020 0.2 - 16 bar (PN 16) K-022 0.2 - 25 bar (PN 25) Testing pressure: 1.5 times maximum working pressure
Temperature	Maximum working temperature: 60° C Maximum intermittent temperature: 90° C
Valve coating	Fusion bonded epoxy coating in compliance with standard DIN 30677-2
Upon ordering, please specify: model, size, working pressure, thread / flange standard and type of liquid	

Valve Selection Options

- Flanged ends to meet any requested standard
- Standard: welded / cast steel body, optional: stainless steel
- 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

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.



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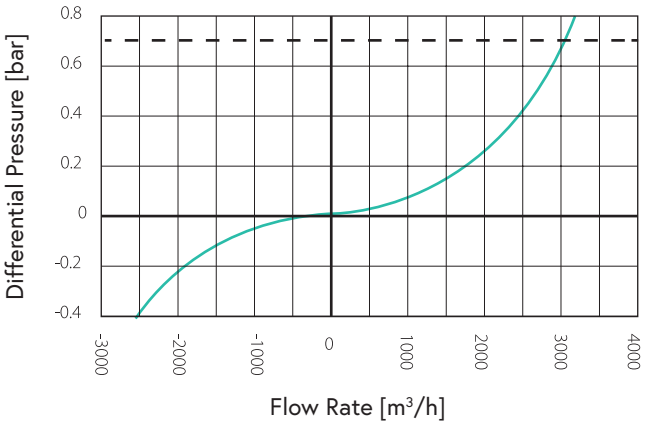
Non-Slam Add-on Component Data Table for Variable Orifices

Size	Number of orifices	Discharge orifice (mm)	Total NS area (mm^2)	NS orifice (mm)	Switching point (bar)	Flow at 0.4 bar (m^3/h)
3" (80mm) 4" (100mm)	1 orifice	75	50.3	8	Spring loaded normally closed	38.47
	2 orifices	75	100.5	11.3		72.51
	3 orifices	75	150.8	13.9		111.38

Flow Charts

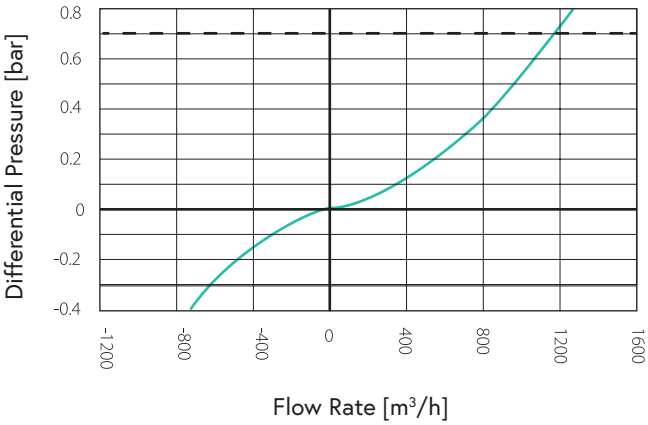
K-020 PN 16

Air & Vacuum Flow Rate



K-022 PN 25

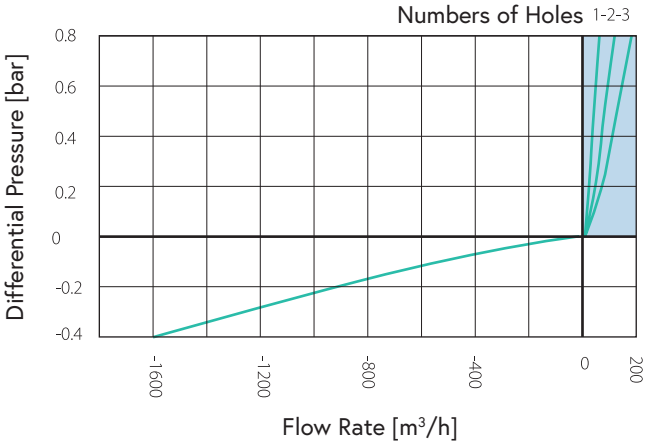
Air & Vacuum Flow Rate



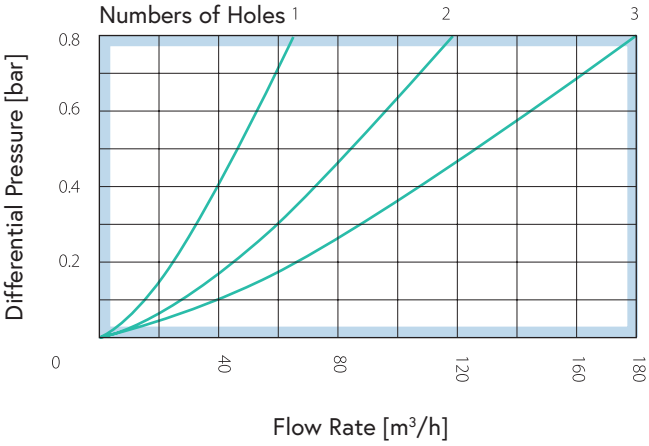
– – – – Max. recommended design air discharge

K-020 PN 16 / K-022 PN 25

Adjustable NS Check Valve



Adjustable NS Check Valve



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Dimensions and Weight

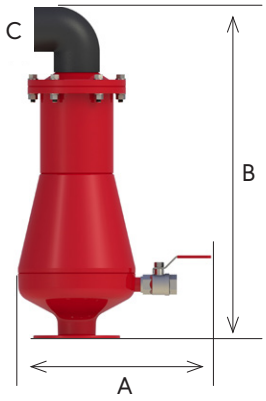
Size	Dimensions (mm)		Connections	Weight (kg)		Orifice Area (mm^2)
	Maximum A	B	C	Steel	ST ST	
3" (80mm) FL	465	783	3" BSP F	26	5026	5026
4" (100mm) FL	465	783	3" BSP F	27	5026	5026

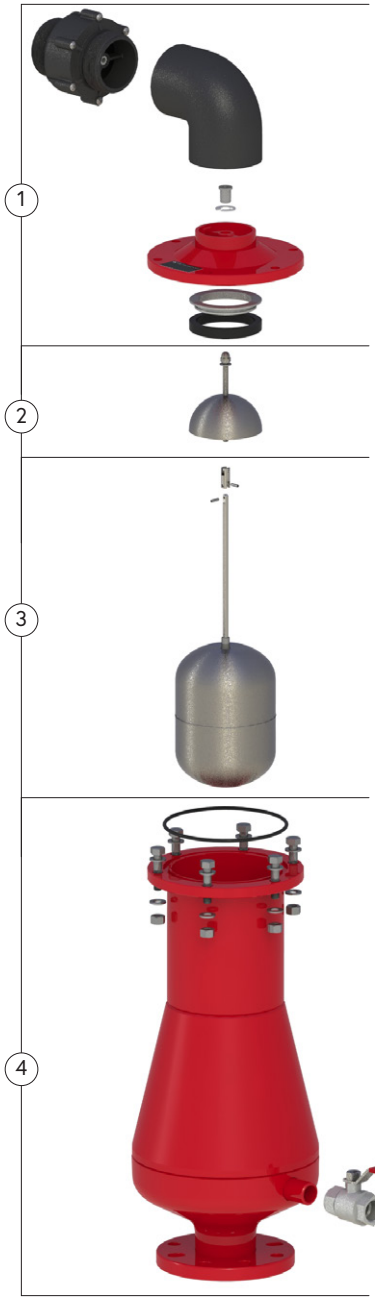
FL - Flanged

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.





Parts List and Specification

Part	Material
1. Cover Assembly	
1a. Non-Slam Component (Optional)	Reinforced Nylon / Polypropylene + Stainless Steel
1b. Discharge Elbow	PVC / Stainless Steel
1c. Cover	Ductile Iron / Stainless Steel 316
1d. Bushing	Teflon
1e. Orifice Seat	Bronze / Stainless Steel 316
1f. Orifice Seal	E.P.D.M.
2. Sealing Dome Assembly	
2a. Domed Nut	Stainless Steel 316
2b. Sealing Dome & Rod	Stainless Steel 316
3. Float Assembly	
3a. Connection Joint Assembly	Stainless Steel 316
3b. Float & Rod	Stainless Steel 316
4. Body Assembly	
4a. O-Ring	BUNA-N
4b. Body	Steel Din St.37 / Stainless Steel 316
4c. Ball Valve	Brass, Chrome Coated / Stainless Steel 316

A.R.I. K-022

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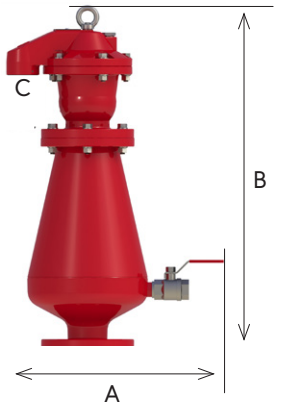
Dimensions and Weight

Nominal	Dimensions (mm)		Connections		Weight (kg)	Orifice Area (mm^2)
Size	A	B	internal	external		
3" (80mm) FL	470	730	63.5	74.6	42.0	1809
4" (100mm) FL	470	783	63.5	74.6	43.8	1809



FL - Flanged

NOTE

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

Parts List and Specification

Part	Material
1. Cover Assembly	
1a. Lifting Ring	Stainless Steel 304
1b. Plug	Brass / Stainless Steel 316
1c. Cover	Ductile Iron / Stainless Steel 316
1d. Orifice Seat	Bronze / Stainless Steel 316
1e. Orifice Seal	EPDM
1f. Spring Holder	Stainless Steel 316
1g. Non-Slam Component (Optional)	Reinforced Nylon / Polypropylene + Stainless Steel
2. Seal Assembly	
2a. Spring	Stainless Steel 316
2b. Float Seal Assembly	Stainless Steel 316
3. Air & Vacuum Assembly	
3a. O-Ring	BUNA-N
3b. Air & Vacuum Body	Ductile Iron / Stainless Steel SAE 316
4. Float Assembly	
4a. Float & Rod	Stainless Steel 316
5. Body Assembly	
5a. O-Ring	BUNA-N
5b. Body	Cast Steel / Stainless Steel 316
5c. Ball Valve	Stainless Steel 316

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