

A.R.I. D-96



Waterworks

Underground High Capacity Combination Air Valve

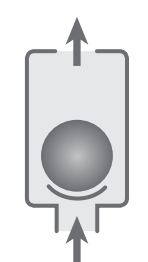
Description

A.R.I. D-96 Underground Combination Air Valve System integrates the D-46 2" valve model, featuring high-capacity air release and intake, encased within a specially designed, compact sub-surface housing for underground usage. Valve maintenance is performed above ground, reducing the hazards of confined space operation.

Installation

- Water distribution lines
- Areas susceptible to freezing
- Rural areas - provides protection against damage and vandalism
- Urban areas - integrated with existing sub-surface municipal infrastructures
- Public and private areas – keeps aboveground surfaces aesthetically unobstructed

Operation



Air Discharge



Air Intake



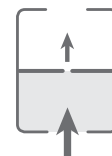
Automatic
Air Release



One-way Out



One-way In



Non-slam

Features and Benefits

D-46 2" Air Valve	High air capacity
	Durable reinforced composite materials
	Easy tool-free maintenance
	Non-corrosive materials
Compact Manhole	Eliminates large manhole excavation costs
	No need for large human-accessible manholes
	Compact, lightweight Valve, allows for easy installation/operation without heavy machinery or special tools
	Minimum manpower required for maintenance – procedures can be performed by a single maintenance person
Above-ground Maintenance	Reduced maintenance down-time and associated costs
	Removes safety hazards of operation in confined spaces
	No confined-space entry
	Tool-free Maintenance
Insulation Solutions (optional)	Simple tool-free maintenance
	Easy removal of valve from the pipeline
	Winterproof design - various vault sizes: 615mm-2440mm (2ft-8 ft) allows valve installation below permafrost levels
	Vertical Standpipe Connection (optional)
Submerged Installation	Improves hygiene by preventing cross-contamination in a submerged vault
Drainage Check Valve	Vandal-proof - provides protection against intentional damage or tampering
	Drains water from the vault/canister/box and prevents ground water from entering

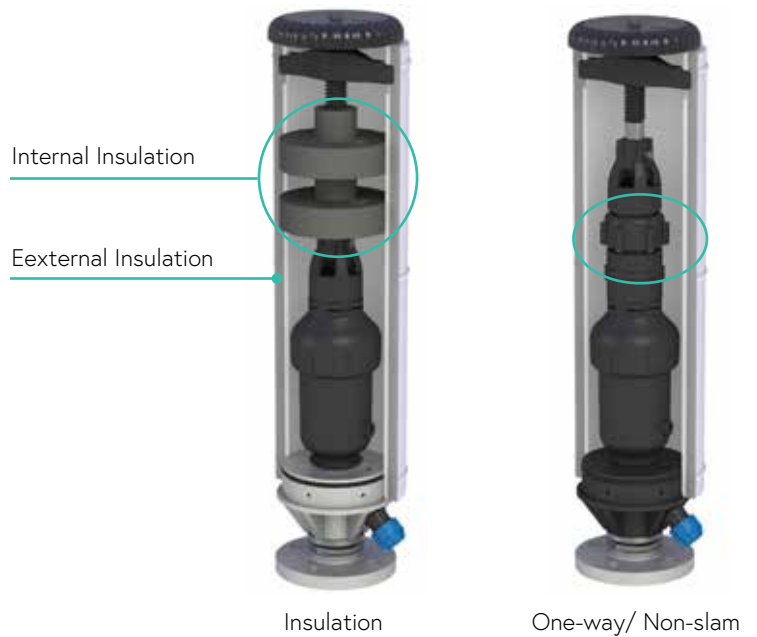
Technical Specifications

Size range	2" – 4"
Sealing pressure range	1.5 - 250 psi
Testing pressure	1.5 times maximum working pressure
Temperature	Maximum working temperature: 140° F. Maximum intermittent temperature: 194° F.

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

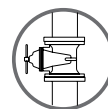
Valve Selection Options

Valve connection	Threaded male BSPT/NPT (2") Flanged ends to meet various requested standard (2", 3", 4")
Optional add-on components	One-way Out attachment, allows for air discharge only, prevents air intake One-way In attachment, allows air intake only, not allowing air discharge Non-slam, discharge-throttling attachment, allows full air intake, throttles air discharge
Insulation	internal / external insulation for extreme conditions



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 (ft.)	L (Inch)	2" (50mm) THR		2" (50mm) FL		3" (80mm) FL		4" (100mm) FL	
		W (Inch)	Weight (lb)	W (Inch)	Weight (lb)	W (Inch)	Weight (lb)	W (Inch)	Weight (lb)
2	24	7.95	14.30	7.95	13.50	7.95	15.00	8.98	15.80
2.5	30		15.20		16.00		16.80		17.80
3	36		18.80		19.60		20.00		21.40
4	48		21.00		22.00		22.50		23.50
5	60		23.50		24.50		25.00		26.40
6	72		26.50		27.30		28.00		29.00
7	84		29.30		30.00		31.00		32.00
8	96		32.00		33.00		33.70		34.80

Orifice Area (mm²) | A / V 3.26 sq.in | Auto. 0.023 sq.in

NOTE

Dimension W in the picture and in the table shows the maximum product width. All product weights are approximate, due to the differences in flange standards, materials and variable accessories.



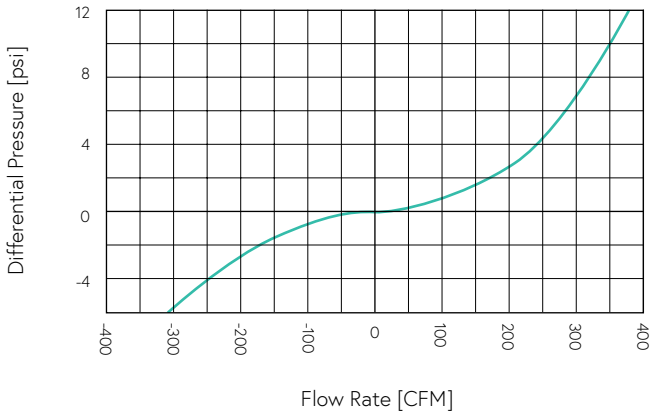
Non-slam Add-on Component Data Table for Variable Orifices

Size	Number of orifices	Discharge orifice (Inch)	Total NS area (Sq.In)	NS orifice (Inch)	Switching point (Psi)	Flow at 5.8 psi (CFM)
2" (50mm)	1 orifice	2	0.024	0.177	Spring Loaded NC	14.1
	2 orifices	2	0.047	0.244		18.6
	3 orifices	2	0.074	0.307		23.5

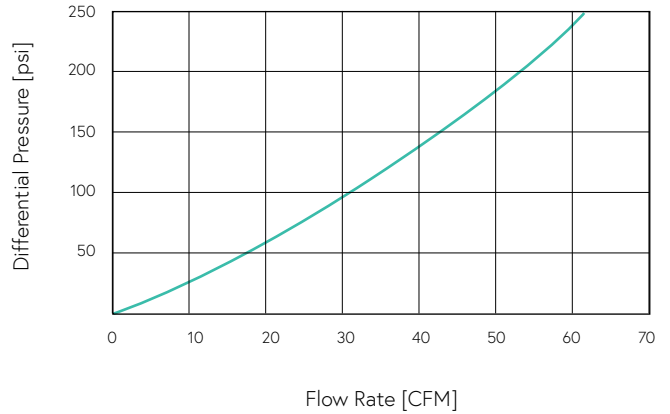
Flow Charts

D-96

Air & Vacuum Flow Rate

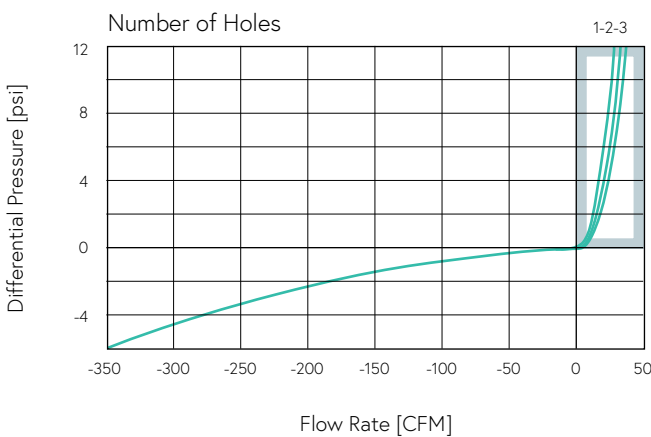


Automatic Air Release Flow Rate

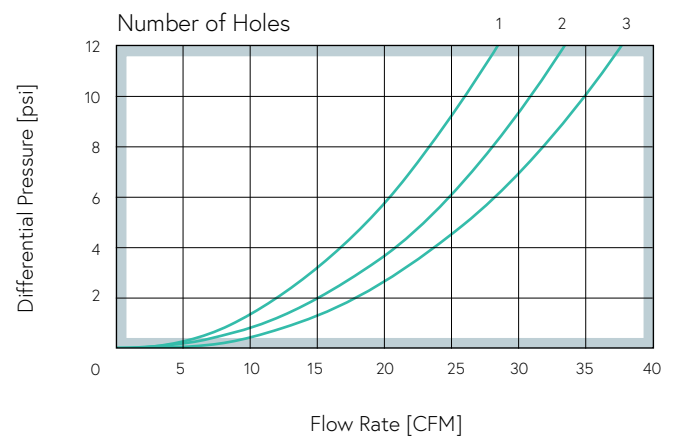


D-96 NS

Air & Vacuum Flow Rate



Air Flow Rate



Parts List and Specifications

	Part	Material
1	Valve Box Assembly	
1a	Cover	Polypropylene
1b	Air Valve Box	PVC
1c	Box External Insulation	Thermal Insolation
1d	Insulation Cover	Aluminum Coated Foamed PE
1e	Base	Reinforced Nylon / Stainless Steel
1f	Drainage Connector	Polypropylene + Acetal
1g	Check Valve	Acetal + NBR + Stainless Steel
1h	Adaptor	Stainless Steel 316
2	Bridge & Rod Assembly	
2a	Bridge Assembly	Reinforced Nylon
2b	Tightening Rod	Stainless Steel 304
3	D-46 2" Air Valve Assembly	
3a	Adaptor	Reinforced Nylon
3b	One-Way or NS Check Valve (Optional)	Polypropylene
3c	Socket (Optional)	Polypropylene
3d	Cover	Reinforced Nylon
3e	Air & Vacuum Seal	EPDM
3f	Air & Vacuum Cover	Reinforced Nylon
3g	Rolling Seal	EPDM
3h	Float	Polypropylene
3i	O-Ring	NBR
3j	Body	Reinforced Nylon
3k	Pusher	Reinforced Nylon
3l	O-Ring	NBR
4	Flange Assembly (Optional)	
4a	O-Ring	NBR
4b	Flange	Stainless Steel

