



VA Air Release Valves

Respectfully Submitted To:

EBA Engineering Consultants Ltd.

Attention: Joe Blow
1234 45 Avenue NW
Calgary, Alberta

Syncrude Canada Ltd.

Attention: Jim Bob
1234 45 Avenue NW
Calgary, Alberta

Prepared by:

Rice Resource Technologies Inc.
9333 41 Avenue NW
Edmonton, Alberta T6E 6R5

Name Place Holder, Account Manager
Rice Earth Sciences
403.XXX.XXXX
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Fluid thinking. Solid results.



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Product Data Sheet



introduction

< STANDARDS >



ASTM D1784
 ASTM D2464
 ASTM F437
 ASTM F1498



ANSI B1.20.1

IPEX VA Air Release Valves are of a unique design, controlled by media and not pressure. Intended for use with tanks, slurries, and start-ups amongst other things, these 232 psi pressure rated valves will economically and efficiently eliminate air or gas pockets. This no-spill valve also relieves potentially dangerous vacuums that may build up in the piping system. VA Air Release Valves are part of our complete systems of pipe, valves, and fittings, engineered and manufactured to our strict quality, performance, and dimensional standards.

Valve Availability

Body Material:	PVC
Size Range:	3/4", 1-1/4", 2"
Pressure:	232 psi
Seals:	EPDM or Viton® (FPM)
End Connections:	Bottom - Threaded (FNPT) Top - Socket (IPS), Threaded (FNPT)

Sample Specification



1.0 Air Release Valves - VA

1.1 Material

- The valve body, piston, end connectors, and union shall be made of PVC compound which shall meet or exceed the requirements of cell classification 12454 according to ASTM D1784.

1.2 Seals

- The o-ring seals shall be made of EPDM which shall comply with standards that are equivalent to NSF Standard 61 for potable water.

or The o-ring seals shall be made of Viton® (FPM) which shall comply with standards that are equivalent to NSF Standard 61 for potable water.

- ### 1.3
- All other wetted and non-wetted parts of the valves shall comply with standards that are equivalent to NSF Standard 61 for potable water.

2.0 Connections

2.1 Threaded style

- The female NPT threaded PVC end connectors shall conform to the dimensional standards ASTM D2464, ASTM F1498, and ANSI B1.20.1.

3.0 Design Features

- The valve shall be of single union design.
- The valve sealing mechanism shall be a hollow piston.
- Opening and closing of the valve shall not be affected by pressure.
- The valve shall close when liquid is in contact with the piston.
- The valve shall open when air or gas is in contact with the piston.
- The valve shall also function as a vacuum breaker.
- The valve body and union nut shall have deep square style threads for increased strength.

3.1 Pressure Rating

- All valves shall be rated at 232 psi at 73°F.

3.2 Markings

- All valves shall be marked to indicate size, material designation, and manufacturers name or trade mark.

3.3 Color Coding

- All PVC valves shall be color-coded dark gray.

- ## 4.0
- All valves shall be Xirtec® 140 by IPEX or approved equal.

Valve Selection



Valve Size (inches)	Body Material	O-ring Material	IPEX Part Number FNPT Threaded	Pressure Rating @ 73°F
3/4	PVC	EPDM	053559	232 psi
		Viton®	153845*	
1-1/4	PVC	EPDM	053560	
		Viton®	153846*	
2	PVC	EPDM	053561	
		Viton®	153847*	

* Part numbers are for Viton® o-ring sets only.
The EPDM version must be ordered to obtain the valve.

Size (inches):

- 3/4
- 1-1/4
- 2

Seals:

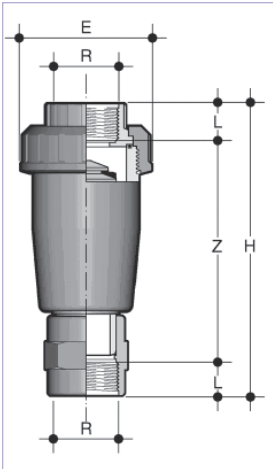
- EPDM
- Viton® (FPM)

IPEX Part Number:

Note: All valves come with both threaded and socket outlet end connectors.

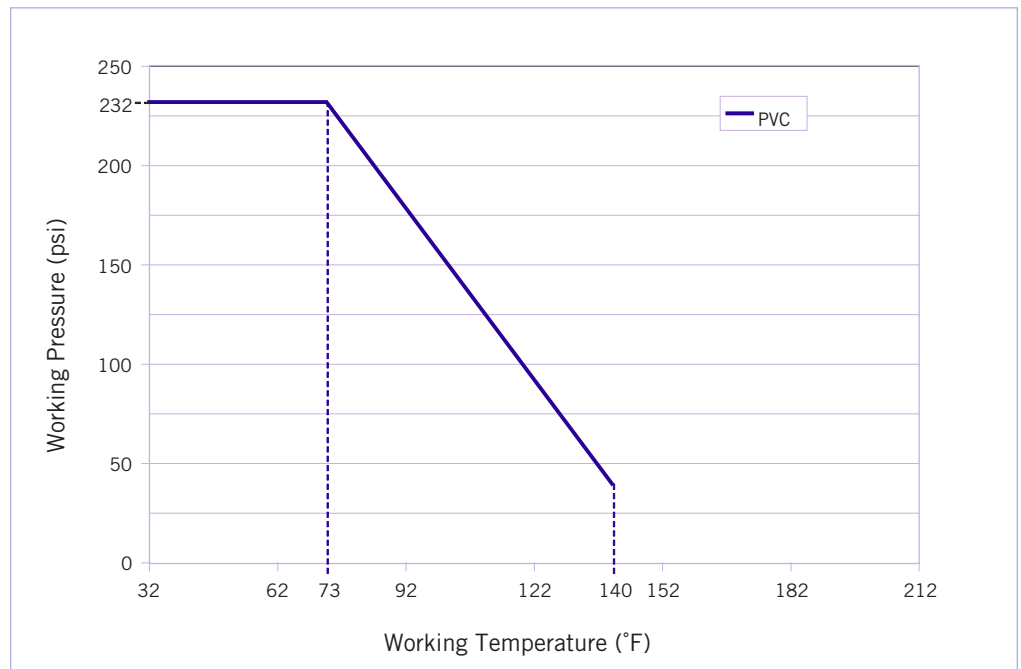
Technical Data

dimensions and weights



Size	Dimension (inches)					
	R	E	L	Z	H	W (lbs)
3/4	3/4 NPT	2.60	0.64	4.58	5.87	0.45
1-1/4	1-1/4 NPT	3.43	0.84	6.19	7.87	1.05
2	2 NPT	4.72	1.01	7.74	9.76	2.49

pressure – temperature ratings

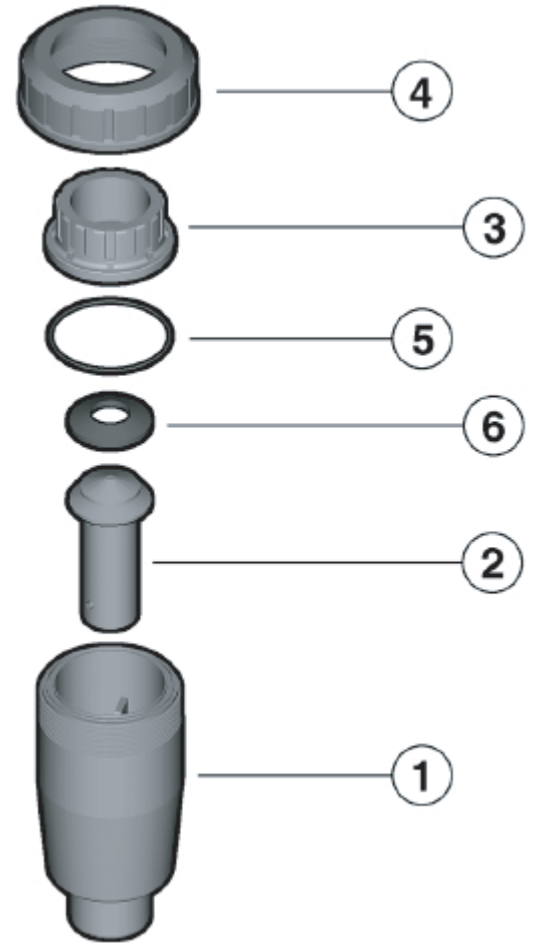
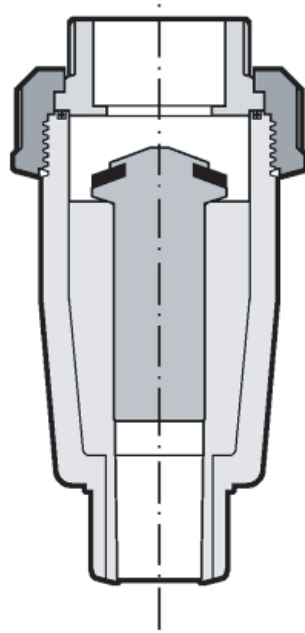


air flow chart

Size (inches)	Maximum Air Flow / Air Velocity Relationship											
	20 psig		40 psig		60 psig		80 psig		100 psig		120 psig	
	F	V	F	V	F	V	F	V	F	V	F	V
3/4	19	39	36	47	54	52	72	54	91	57	110	58
1-1/4	67	54	127	65	188	70	250	74	313	76	376	78
2	177	69	331	82	491	89	652	93	814	96	980	99

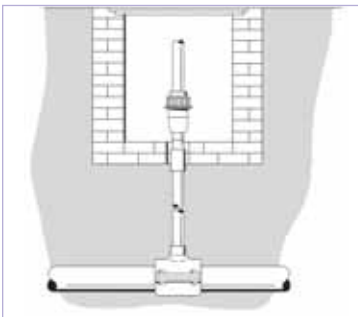
F = Air Flow (scfm), V = Air Velocity (ft/s)

Components



#	Component	Material	Qty
1	body	PVC	1
2	piston	PVC	1
3	end connector	PVC	1
4	union nut	PVC	1
5	body o-ring	EPDM or Viton®	1
6	piston o-ring	EPDM or Viton®	1

Installation Procedures



1. Remove the union nut (part #4 on previous page) and slide it onto the outlet stack pipe. **The valve must always be installed in a vertical orientation with the union nut joint at the top.**
2. Please refer to the appropriate connection style sub-section:
 - a. For socket style, solvent cement the end connector (3) onto the outlet stack pipe end. For correct joining procedure, please refer to the section entitled, *“Joining Methods – Solvent Cementing”* in the IPEX Industrial Technical Manual Series, *“Volume I: Vinyl Process Piping Systems”*. **Be sure to allow sufficient cure time before continuing with the valve installation.**
 - b. For threaded style, thread the end connector (3) onto the outlet stack pipe end. For correct joining procedure, please refer to the section entitled, *“Joining Methods – Threading”* in the IPEX Industrial Technical Manual Series, *“Volume I: Vinyl Process Piping Systems”*.
3. Remove the piston (2) then thread the valve body (1) onto the inlet pipe and sufficiently tighten with a wrench.
4. Ensure that the piston o-ring (6) is properly fitted in its groove, then replace the piston inside the valve body.
5. Ensure that the body o-ring (5) is properly fitted in its groove, then install the outlet stack pipe and tighten the union nut. Hand tightening is typically sufficient to maintain a seal for the maximum working pressure. **Over-tightening may damage the threads on the valve body and/or the union nut, and may even cause the union nut to crack.**

Note: When used for corrosive chemical applications, a minimum 18 inch outlet stack must be installed.

Valve Maintenance

disassembly



1. If removing the valve from an operating system, isolate the valve from the rest of the system. **Be sure to depressurize and drain the isolated branch and valve before continuing.**
2. Loosen the union nut (4) and remove the outlet stack pipe. If retaining the body o-ring (5), take care that it is not lost when removing the valve from the line.
3. Remove the piston (2) from the valve body (1).
4. Loosen and remove the valve body from the inlet pipe.
5. Remove the piston o-ring (6) from the piston.
6. The valve components can now be checked for problems and/or replaced.

assembly



- Note:** Before assembling the valve components, it is advisable to lubricate the o-rings with a water soluble lubricant. **Be sure to consult the "IPEX Chemical Resistance Guide" and/or other trusted resources to determine specific lubricant-rubber compatibilities.**
1. Properly fit the piston o-ring (6) in the groove on the piston (2).
 2. Insert the piston into the valve body (1).
 3. Properly fit the body o-ring (5) in the groove on the valve body.
 4. Position the end connector (3) on the valve body.
 5. Position the union nut (4) on the valve body and tighten.

Testing and Operating



The purpose of system testing is to assess the quality of all joints and fittings to ensure that they will withstand the design working pressure, plus a safety margin, without loss of pressure or fluid. Typically, the system will be tested and assessed in sub-sections as this allows for improved isolation and remediation of potential problems. With this in mind, the testing of a specific installed valve is achieved while carrying out a test of the overall system.

An onsite pressure test procedure is outlined in the IPEX Industrial Technical Manual Series, *“Volume I: Vinyl Process Piping Systems”* under the section entitled, *“Testing”*. The use of this procedure should be sufficient to assess the quality of a valve installation. **In any test or operating condition, it is important to never exceed the pressure rating of the lowest rated appurtenance in the system.**

Important points:

- Never test thermoplastic piping systems with compressed air or other gases including air-over-water boosters.
- When testing, do not exceed the rated maximum operating pressure of the valve.
- Avoid the rapid closure of valves to eliminate the possibility of water hammer which may cause damage to the pipeline or the valve.

Please contact IPEX customer service and technical support with regard to any concern not addressed in this data sheet or the technical manual.

About IPEX

IPEX is a leading supplier of thermoplastic piping systems. We provide our customers with one of the world's largest and most comprehensive product lines. All IPEX products are backed by over 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, the IPEX name is synonymous with quality and performance.

Our products and systems have been designed for a broad range of customers and markets. Contact us for information on:

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- Industrial process piping systems
- Double containment systems
- Acid waste systems
- High purity systems
- Industrial, plumbing and electrical cements
- Municipal pressure and gravity piping systems
- Plumbing and mechanical pipe systems
- Electrical systems
- Telecommunications systems
- Irrigation systems
- PE Electrofusion systems for gas and water
- Radiant heating systems

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