

RV Series Sediment Strainers

Product Data Sheet



< STANDARDS >



ASTM D1784
ASTM F441
ASTM D2464
ASTM D2466
ASTM D2467
ASTM F437
ASTM F439
ASTM F1498

IPEX RV Sediment Strainers protect critical pipeline components by removing solids and suspended impurities. Clear PVC construction allows for inspection of the screen while in service, whereas the bottom-entry design permits maintenance on the valve while in-line. This Y-pattern strainer is also available in Xirtec® CPVC. RV RV Sediment Strainers are part of our complete systems of pipe, valves, and fittings, engineered and manufactured to our strict quality, performance, and dimensional standards.



ANSI B1.20.1
ANSI B16.5

VALVE AVAILABILITY

Body Material	PVC, CPVC
Size Range	1/2" - 4"
Pressure	232 psi (1/2" to 1"), 150 psi (1-1/4" to 2"), 60 psi (3" to 4")
Seals	EPDM or FPM
End Connections	Socket (IPS), Threaded (FNPT), Flanged (ANSI 150)

Sample Specification

1.0 Sediment Strainers – RV

1.1 Material

- The valve body, end connectors, and unions shall be made of PVC compound which shall meet or exceed the requirements of cell classification 12454 according to ASTM D1784.
- or The valve body, end connectors, and unions shall be made of Corzan® CPVC compound which shall meet or exceed the requirements of 23447 according to ASTM D1784.

1.2 Seals

- The o-ring seals shall be made of EPDM.
- or The o-ring seals shall be made of FPM.

1.3 Mesh Screen

- The mesh screen shall be made of PVC compound which shall meet or exceed the requirements of cell classification 12454 according to ASTM D1784.
- or The mesh screen shall be made of stabilized PP homopolymer compound, also containing a RAL 7032 pigment, which shall meet or exceed the requirements of Type I Polypropylene according to ASTM D4101-86.
- or The mesh screen shall be made of corrosion resistant 304 stainless steel.

2.0 Connections

2.1 Socket style

- The IPS socket PVC end connectors shall conform to the dimensional standards ASTM D2466 and ASTM D2467.
- or The IPS socket CPVC end connectors shall conform to the dimensional standard ASTM F439.

2.2 Threaded style

- The female NPT threaded PVC end connectors shall conform to the dimensional standards ASTM D2464, ASTM F1498, and ANSI B1.20.1
- or The female NPT threaded CPVC end connectors shall conform to the dimensional standards ASTM F437, ASTM F1498, and ANSI B1.20.1.

2.3 Flanged style

- The ANSI 150 flanged PVC end connectors shall conform to the dimensional standard ANSI B16.5.
- or The ANSI 150 flanged CPVC end connectors shall conform to the dimensional standard ANSI B16.5

3.0 Design Features

- Strainers shall be Y-pattern in style.
- Sizes 1/2" through 2" shall have true union ends.
- Sizes 3" and 4" shall have solid threaded or socket ends.
- It shall be possible to service the valve without removing it from the line.
- PVC strainers shall have a transparent body for evaluation of filter screen condition.
- The filter screens shall be available in ASTM 18, 20, 30, 35, 40, 45 and 70 mesh sizes.

3.1 Pressure Rating

- PVC valve sizes 1/2" through 1" shall be rated at 232 psi at 73°F.
- CPVC valve sizes 1/2" through 2" shall be rated at 232 psi at 73°F.
- PVC valve sizes 1-1/4" through 2" shall be rated at 150 psi at 73°F
- PVC valve sizes 3" through 4" shall be rated at 60 psi at 73°F.
- All sizes of flanged valves shall be rated at no greater than 150 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 have transparent bodies with end connections color-coded dark gray.
- or All CPVC valves shall be color-coded light gray.

- **4.0** All valves shall be Xirtec® PVC or Xirtec® CPVC by IPEX or approved equal.

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Valve Selection

Size (inches)	Body Material	O-ring Material	IPEX Part Number			Pressure Rating
			IPS Socket	FNPT Threaded	ANSI Flanged	
* 1/2	PVC	EPDM	053261		053935	232 psi
		FPM	053233		053941	
	CPVC	FPM	053334		n/a	
* 3/4	PVC	EPDM	053262		053936	
		FPM	053234		053942	
	CPVC	FPM	053335		n/a	
1	PVC	EPDM	053263		053937	
		FPM	053235		053943	
	CPVC	FPM	053336		n/a	
1-1/4	PVC	EPDM	053264		053938	150 psi
		FPM	053236		053944	
	CPVC	FPM	053337		n/a	232 psi
1-1/2	PVC	EPDM	053265		053939	150 psi
		FPM	053237		053945	
	CPVC	FPM	053338		n/a	232 psi
2	PVC	EPDM	053266		053940	150 psi
		FPM	053238		053946	
	CPVC	FPM	053339		n/a	232 psi
3	PVC	EPDM	053211	053267	n/a	60 psi
		FPM	054012	053239	n/a	
	4	PVC	EPDM	053212	053268	
FPM			054013	053240	n/a	

Note: Standard screens are 40 mesh PVC for PVC strainers and 20 mesh PP for CPVC strainers

* 18 mesh PP

Body Material:

- PVC CPVC

Size (inches):

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

Seals:

- EPDM
 FPM

End Connections:

- Socket (IPS)
 Threaded (FNPT)
 Flanged (ANSI 150)

IPEX Part Number:

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Mesh Availability

ASTM Mesh Size	Hole Pitch (in)	Material		
		PVC	PP	304 SS
18	0.059	-	✓	-
20	0.059	-	✓	-
30	0.098	✓	-	-
35	0.079	✓	-	-
40	0.059	✓	-	-
45	0.028	-	-	✓
70	0.039	✓	-	-

Strainer Size (inches):

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

PVC 30 Mesh

Strainer Size	Part Number
1/2	053947
3/4	053948
1	053949
1-1/4	053950
1-1/2	053951
2	053952
3	053953
4	053954

PVC 70 Mesh

Strainer Size	Part Number
1/2	053971
3/4	053972
1	053973
1-1/4	053974
1-1/2	053975
2	053976
3	053977
4	053978

Screen Material:

- PVC
 304 SS
 PP

PVC 35 Mesh

Strainer Size	Part Number
1/2	053955
3/4	053956
1	053957
1-1/4	053958
1-1/2	053959
2	053960
3	053961
4	053962

PP 20 Mesh

Strainer Size	Part Number
* 1/2	053332
* 3/4	053340
1	053341
1-1/4	053342
1-1/2	053343
2	053344

Mesh Size:

- ASTM 18
 ASTM 20
 ASTM 30
 ASTM 35
 ASTM 40
 ASTM 45
 ASTM 70

IPEX Part Number:

* PP 18 Mesh

PVC 40 Mesh

Strainer Size	Part Number
1/2	053963
3/4	053964
1	053965
1-1/4	053966
1-1/2	053967
2	053968
3	053969
4	053970

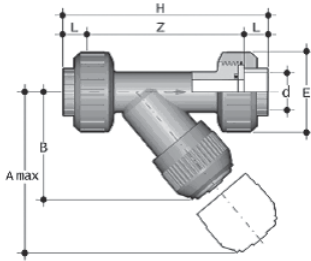
304 SS 45 Mesh

Strainer Size	Part Number
1/2	053979
3/4	053980
1	053981
1-1/4	053982
1-1/2	053983
2	053984
3	053985
4	053986

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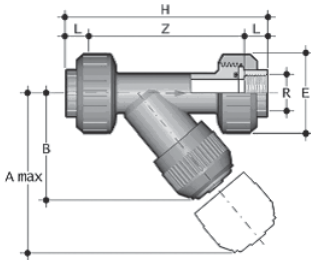
Product Data Sheet

Dimensions



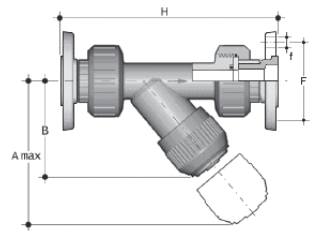
IPS Socket Connections – Dimension (inches)

Size	d	L	Z	H	E	B	AMAX
1/2	0.84	0.63	4.06	5.31	2.17	2.83	4.92
3/4	1.05	0.75	4.72	6.22	2.60	3.31	5.71
1	1.32	0.87	5.20	6.93	2.95	3.74	6.50
1-1/4	1.66	1.02	6.10	8.15	3.43	4.37	7.48
1-1/2	1.90	1.22	7.13	9.57	3.94	4.72	8.27
2	2.38	1.50	8.72	11.73	4.72	5.47	9.45



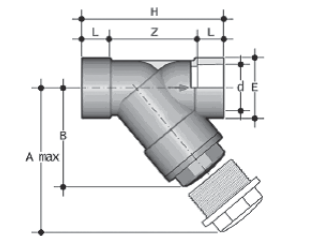
Female NPT Threaded Connections – Dimension (inches)

Size	R	L	Z	H	E	B	AMAX
1/2	1/2-NPT	0.59	4.45	5.63	2.17	2.83	4.92
3/4	3/4-NPT	0.64	5.02	6.30	2.60	3.31	5.71
1	1-NPT	0.75	5.70	7.20	2.95	3.74	6.50
1-1/4	1-1/4-NPT	0.84	6.74	8.43	3.43	4.37	7.48
1-1/2	1-1/2-NPT	0.84	7.57	9.25	3.94	4.72	8.27
2	2-NPT	1.01	9.20	11.22	4.72	5.47	9.45



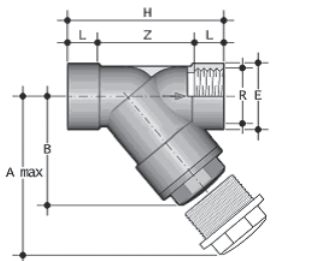
ANSI 150 Flanged (Vanstone) Connections – Dimension (inches)

Size	# holes	f	F	H	B	AMAX
1/2	4	5/8	2-3/8	7.13	2.83	4.92
3/4	4	5/8	2-3/4	8.16	3.31	5.71
1	4	5/8	3-1/8	9.05	3.74	6.50
1-1/4	4	5/8	3-1/2	10.34	4.37	7.48
1-1/2	4	5/8	3-7/8	12.07	4.72	8.27
2	4	3/4	4-3/4	14.48	5.47	9.45



IPS Socket Connections – Dimension (inches)

Size	R	L	Z	H	E	B	AMAX
3	3.50	2.01	6.30	10.31	4.57	7.56	12.80
4	4.50	2.40	7.99	12.80	5.43	9.09	15.16



Female NPT Threaded Connections – Dimension (inches)

Size	R	L	Z	H	E	B	AMAX
3	3-NPT	1.31	7.69	10.31	4.57	7.56	12.80
4	4-NPT	1.55	9.70	12.80	5.43	9.09	15.16

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Screen Data

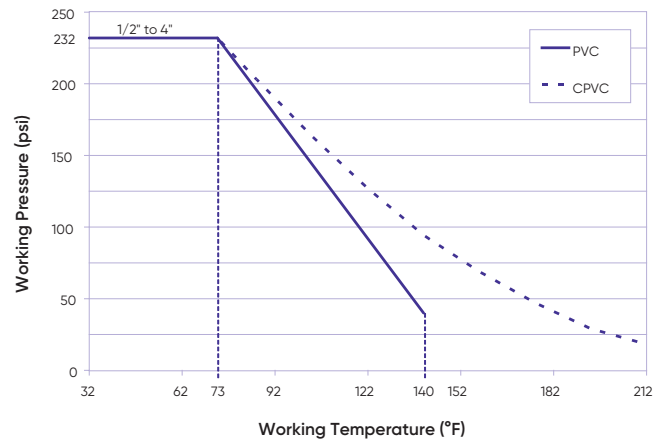
Valve Size	Total Strainer Area (in ²)	ASTM Mesh Size	Hole Pitch (in)	Hole Diameter Microns (µm)	Screen Material
1/2	2.48	18	0.059	1,016	PP
3/4	3.64	20	0.059	889	PP
1	5.58	30	0.098	580	PVC
1-1/4	8.22	35	0.079	550	PVC
1-1/2	10.70	40	0.059	420	PVC
2	15.66	45	0.028	370	304 SS
3	38.29	70	0.039	200	PVC
4	61.38				

Weights

Approximate Weight (lbs)

Size (in)	PVC			CPVC	
	IPS Socket	FNPT Threaded	ANSI Flanged	IPS Socket	FNPT Threaded
1/2	0.47	0.46	0.87	0.51	0.51
3/4	0.79	0.78	1.37	0.86	0.86
1	1.16	1.15	1.94	1.27	1.27
1-1/4	1.62	1.64	2.62	1.77	1.79
1-1/2	2.41	2.44	3.61	2.64	2.67
2	4.06	4.13	5.94	4.45	4.52
3	6.56	6.54	n/a	n/a	n/a
4	10.16	9.71	n/a	n/a	n/a

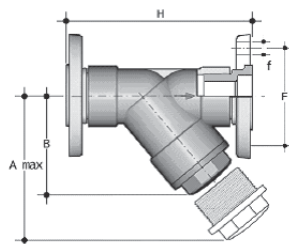
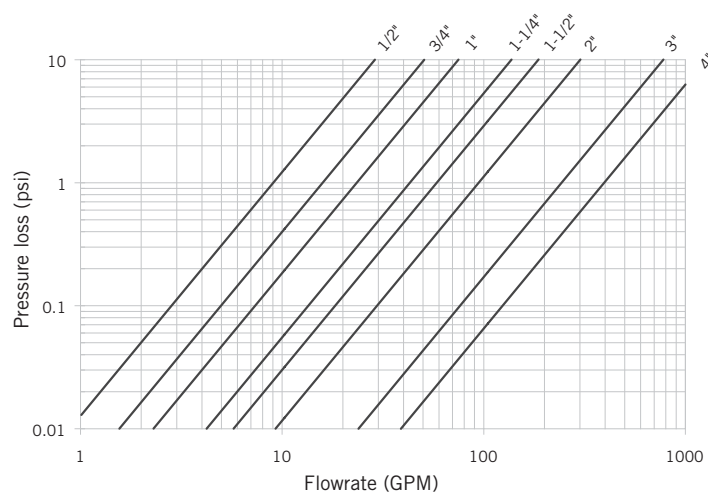
Pressure – Temperature Ratings



Flow Coefficients

Size	C _v
1/2	2.80
3/4	4.90
1	7.21
1-1/4	13.2
1-1/2	17.9
2	28.7
3	73.5
4	119

Pressure Loss Chart

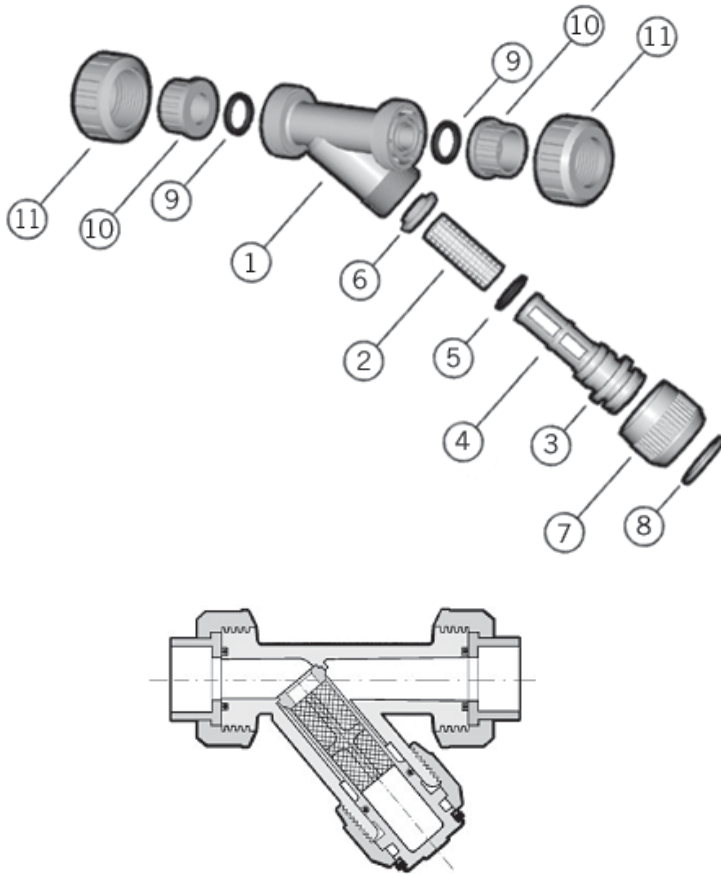


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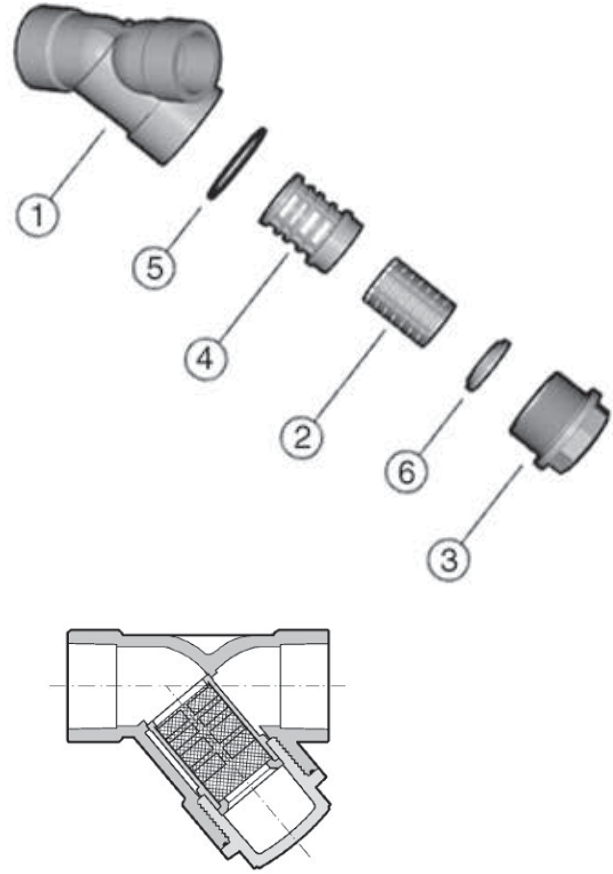
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Components

Sizes 1/2" – 2"



Sizes 3"



#	Component	Material	Qty
1	body	PVC / CPVC	1
* 2	screen mesh	PVC / PP / 304 SS	1
* 3	bonnet	PVC / CPVC	1
* 4	screen support	PVC / CPVC	1
* 5	o-ring seal	EPDM or FPM	1
* 6	retaining ring	PVC / CPVC	1
* 7	lock nut	PVC / CPVC	1
* 8	split ring	PVC / CPVC	1
* 9	socket o-ring	EPDM or FPM	2
* 10	end connector	PVC / CPVC	2
* 11	union nut	PVC / CPVC	2

* Spare parts available.

#	Component	Material	Qty
1	body	PVC / CPVC	1
* 2	screen mesh	PVC / 304 SS	1
* 3	bonnet	PVC	1
* 4	screen support	PVC	1
* 5	o-ring seal	EPDM or FPM	1
* 6	retaining ring	PVC	1

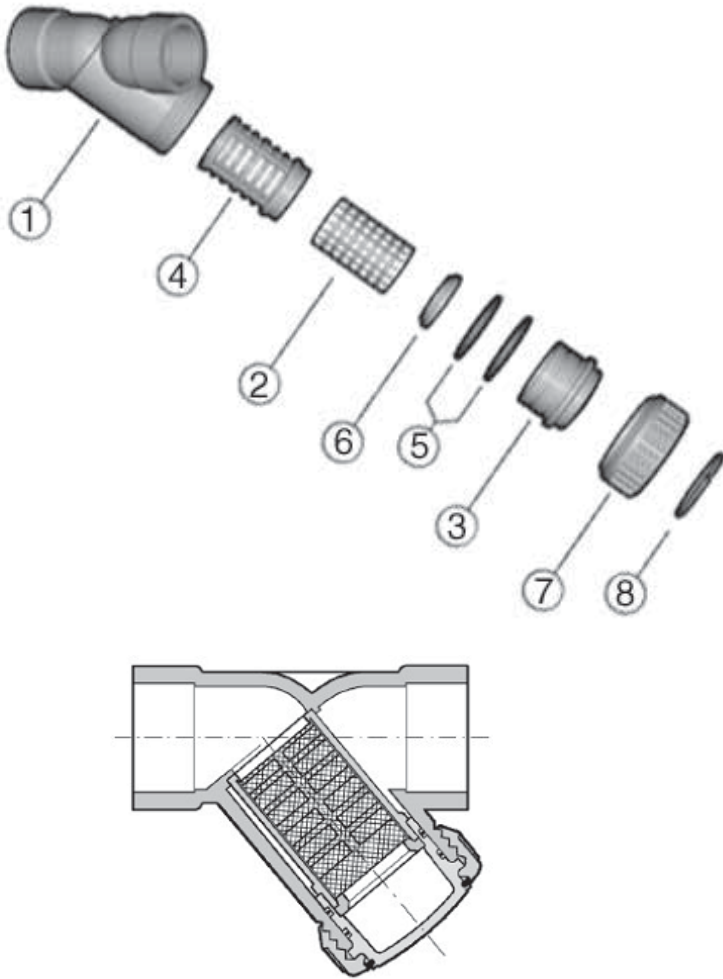
* Spare parts available.

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Components

Size 4"



#	Component	Material	Qty
1	body	PVC / CPVC	1
* 2	screen mesh	PVC / 304 SS	1
* 3	bonnet	PVC	1
* 4	screen support	PVC	1
* 5	o-ring seal	EPDM or FPM	1
* 6	retaining ring	PVC	1
* 7	lock nut	PVC	1
* 8	split ring	PVC	1

* Spare parts available.

Installation Procedures

True Union Style

1. For socket and threaded style connections, remove the union nuts (part #11 on previous pages) and slide them onto the pipe. For flanged connections, remove the union nut / flange assemblies from the valve.
2. Please refer to the appropriate connection style sub-section:
 - a. For socket style, solvent cement the end connectors (10) onto the pipe ends. 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 connectors (10) onto the pipe ends. 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".
 - c. For flanged style, join the union nut / flange assemblies to the pipe flanges. For correct joining procedure, please refer to the section entitled, "Joining Methods – Flanging" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems".
3. Ensure that the valve is in the correct orientation (the bonnet should be suspended in a downward direction), and that the socket o-rings (9) are properly fitted in their grooves. Carefully place the valve in the system between the two end connections.
4. Tighten both union nuts and the lock nut (7). 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 nut, and may even cause the nut to crack.**

Non True Union Style

1. Please refer to the appropriate connection style sub-section:
 - a. For socket style, ensure that the valve is in the correct orientation (the bonnet should be suspended in a downward direction) then solvent cement the end connections of the valve body (1) to the pipe ends. 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". Ensure that no excess solvent runs into the body as this would cause severe damage to internal components and render the strainer inoperative. Be sure to allow sufficient cure time before continuing with the valve installation.
 - b. For threaded style, ensure that the valve is in the correct orientation (the bonnet should be suspended in a downward direction) then thread the pipe ends into the valve body (1). 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".
 - c. For flanged style, ensure that the valve is in the correct orientation (the bonnet should be suspended in a downward direction) then join to the pipe flanges. For correct joining procedure, please refer to the section entitled, "Joining Methods – Flanging" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems".
2. Ensure that the bonnet (3, size 3") or lock nut (7, size 4") is sufficiently tightened. 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 nut, and may even cause the nut to crack.**



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. For true union style, loosen both union nuts (11) and drop the valve out of the line. If retaining the socket o-rings (9), take care that they are not lost when removing the valve from the line.
3. For sizes 1/2" through 2" and 4":
 - a. Loosen the lock nut (7) – bonnet (3) assembly and remove from the valve body (1).
 - b. Remove the split ring (8) to separate the lock nut from the bonnet.
 - c. Remove the retaining ring (6) and slide the screen mesh (2) out of the screen support (4).
 - d. Remove the o-ring seal(s) (5) from the bonnet.
4. For size 3":
 - a. Loosen the bonnet (3) and remove from the valve body (1).
 - b. Remove the retaining ring (6) and slide the screen mesh (2) out of the screen support (4).
 - c. Remove the o-ring seal(s) (5) from the groove on the valve body.
5. 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. For sizes 1/2" through 2" and 4":
 - a. Properly fit the o-ring seal(s) (5) onto the bonnet (3).
 - b. Insert the screen mesh (2) into the screen support (4) and fasten with the retaining ring (6).
 - c. Place the lock nut (7) over the bonnet then fit the split ring (8) in the groove to lock in position.
 - d. Insert the screen and lock nut – bonnet assembly into the valve body (1) and tighten.
2. For size 3":
 - a. Properly fit the o-ring seal (5) onto the bonnet (1).
 - b. Insert the screen mesh (2) into the screen support (4) and fasten with the retaining ring (6).
 - c. Insert the screen assembly into the valve body.
 - d. Tighten the bonnet (3) into the valve body.
3. For true union style, ensure that the socket o-rings (9) are properly fitted in their grooves, place the end connectors (10) into the union nuts (11), then tighten onto the valve body.



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.
- **To eliminate any possible damage to the filter screen, the design of the system should ensure that reverse flow conditions cannot occur.**
- **Transparent PVC strainers:**
 - Allow light into the process flow facilitating the growth of micro-organisms.
 - Are not protected against UV radiation, reducing its lifetime in open air use.
 - Must be protected against vibrating stresses in proximity to pumping stations.
- Always check the cleanliness of the filtering screen.

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

About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- Telecommunications and utility piping systems
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems
- PVC, CPVC, PP, PVDF, PE, ABS, and PEX pipe and fittings

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