

# RV Series Sediment Strainers

## Product Data Sheet



## introduction

### < STANDARDS >



ASTM D1784  
ASTM D4101-86  
ASTM D2466  
ASTM D2467  
ASTM F439  
ASTM D2464  
ASTM F1498  
ASTM F437



ANSI B1.20.1  
ANSI B16.5

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 Corzan® 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.

#### Valve Availability

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

# RV Series Sediment Strainers

## 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.
- These compounds shall comply with standards that are equivalent to NSF Standard 61 for potable water.

#### 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 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.

1.4 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 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.



# RV Series Sediment Strainers

## Sample Specification (cont'd)



### 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, 30, 35, and 50 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® 140 or Corzan® by IPEX or approved equal.

# RV Series Sediment Strainers

## 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
		Viton®	053233		053941	
	CPVC	Viton®	053334		n/a	
3/4	PVC	EPDM	053262		053936	
		Viton®	053234		053942	
	CPVC	Viton®	053335		n/a	
1	PVC	EPDM	053263		053937	
		Viton®	053235		053943	
	CPVC	Viton®	053336		n/a	
1-1/4	PVC	EPDM	053264		053938	150 psi
		Viton®	053236		053944	
	CPVC	Viton®	053337		n/a	232 psi
1-1/2	PVC	EPDM	053265		053939	150 psi
		Viton®	053237		053945	
	CPVC	Viton®	053338		n/a	232 psi
2	PVC	EPDM	053266		053940	150 psi
		Viton®	053238		053946	
	CPVC	Viton®	053339		n/a	232 psi
3	PVC	EPDM	053211	053267	054020	60 psi
		Viton®	054012	053239	054028	
4	PVC	EPDM	053212	053268	054021	
		Viton®	054013	053240	054029	

Note: Standard screens are 35 mesh PVC for PVC strainers and 30 mesh PP for CPVC strainers

### Body Material:

- PVC       CPVC

### Size (inches):

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

### Seals:

- EPDM  
 Viton® (FPM)

### End Connections:

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

### IPEX Part Number:

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# RV Series Sediment Strainers

## Screen Selection

### mesh availability

ASTM Mesh Size	Hole Pitch (in)	Material		
		PVC	PP	304 SS
18	3/32	✓	-	-
30	5/64	✓	-	-
30	1/16	-	✓	-
35	1/32	✓	-	✓
50	3/64	✓	-	-

PVC 18 Mesh - 3/32"	
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 50 Mesh - 3/64"	
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

PVC 30 Mesh - 5/64"	
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 30 Mesh - 1/16"	
Strainer Size	Part Number
1/2	053332
3/4	053340
1	053341
1-1/4	053342
1-1/2	053343
2	053344

PVC 35 Mesh - 1/32"	
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 35 Mesh - 1/32"	
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

#### Strainer Size (inches):

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

#### Screen Material:

- PVC  
 304 SS  
 PP

#### Mesh Size:

- ASTM 18 – 3/32"  
 ASTM 30 – 5/64"  
 ASTM 30 – 1/16"  
 ASTM 35 – 1/32"  
 ASTM 50 – 3/64"

#### IPEX Part Number:

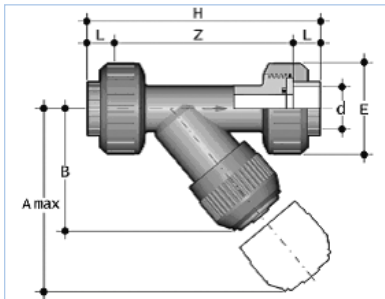
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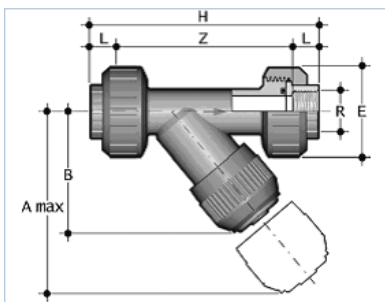
# RV Series Sediment Strainers

## Technical Data

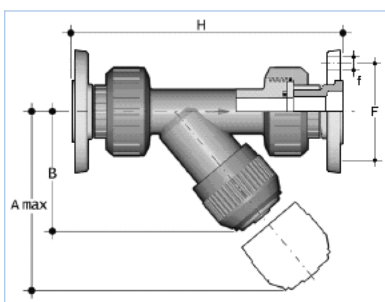
### dimensions



IPS Socket Connections - Dimension (inches)							
Size	d	L	Z	H	E	B	A <sub>MAX</sub>
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	A <sub>MAX</sub>
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

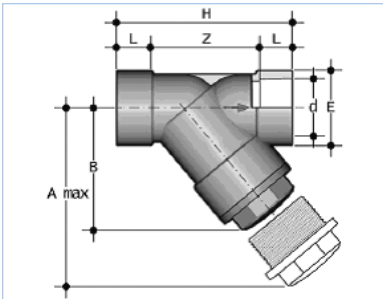


ANSI 150 Flanged (Vanstone) Connections - Dimension (inches)						
Size	# holes	f	F	H	B	A <sub>MAX</sub>
1/2	4	5/8	2-3/8	7.13	2.83	4.92
3/4	4	5/8	2-3/4	8.16	3.31	5.71
1	4	5/8	3-1/8	9.05	3.74	6.50
1-1/4	4	5/8	3-1/2	10.34	4.37	7.48
1-1/2	4	5/8	3-7/8	12.07	4.72	8.27
2	4	3/4	4-3/4	14.48	5.47	9.45

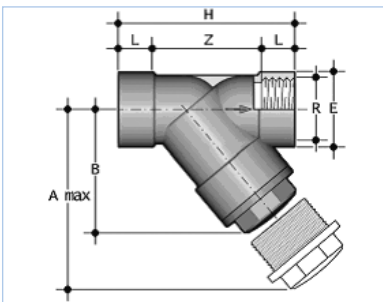
# RV Series Sediment Strainers

## Technical Data (cont'd)

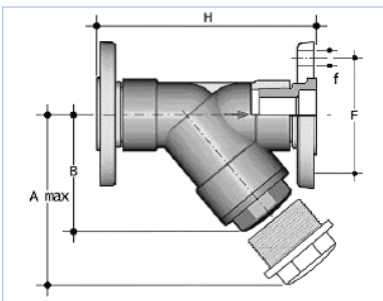
### dimensions cont'd



IPS Socket Connections - Dimension (inches)							
Size	R	L	Z	H	E	B	A <sub>MAX</sub>
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	A <sub>MAX</sub>
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



ANSI 150 Flanged (Vanstone) Connections - Dimension (inches)							
Size	# holes	f	F	H	B	A <sub>MAX</sub>	
3	4	3/4	6	12.81	7.56	12.80	
4	8	3/4	7-1/2	15.62	9.09	15.16	

### screen data

Valve Size	Filter Surface Area (in <sup>2</sup> )
1/2	152
3/4	232
1	342
1-1/4	445
1-1/2	652
2	1271
3	1594
4	2555

ASTM Mesh Size	Hole Pitch (in)	# Holes per in <sup>2</sup>	Equivalent Hole Diameter (µm)	Screen Material
18	3/32	226	900	PVC
30	5/64	387	600	PVC
30	1/16	645	600	PP
35	1/32	645	500	PVC
35	1/32	1548	500	304 SS
50	3/64	1226	300	PVC

# RV Series Sediment Strainers

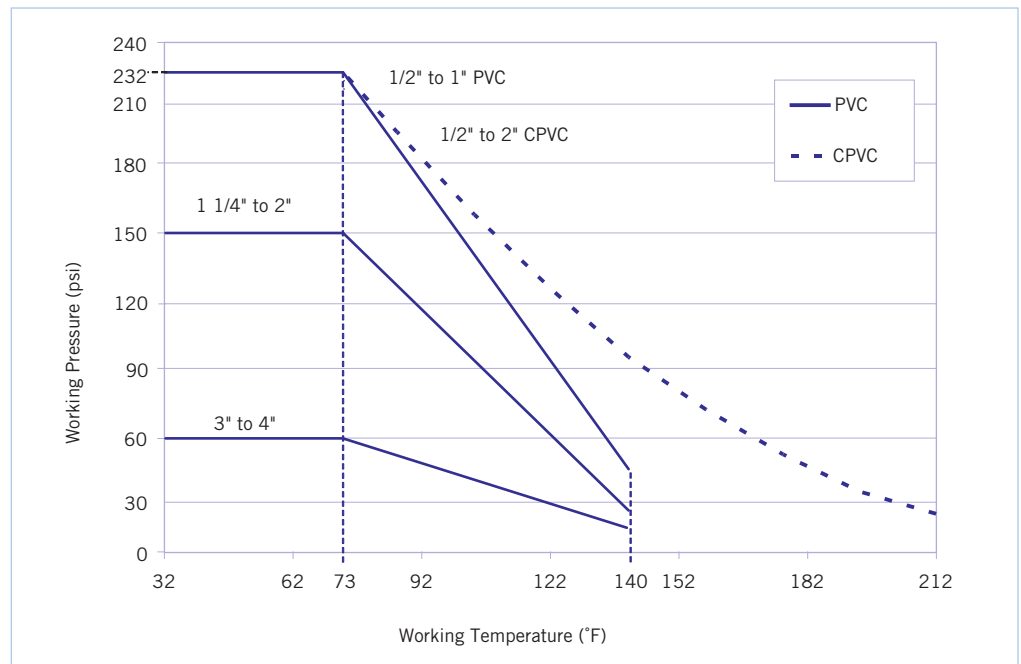
## Technical Data (cont'd)

### weights



Size (in)	Approximate Weight (lbs)					
	IPS Socket	PVC			CPVC	
		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	10.30	n/a	n/a	
4	10.16	9.71	16.16	n/a	n/a	

### pressure – temperature ratings



# RV Series Sediment Strainers

## Technical Data (cont'd)

### flow coefficients



The flow coefficient ( $C_v$ ) represents the flow rate in gallons per minute (GPM) at 68°F for which there is a 1 psi pressure drop across the valve in the fully open position. These values are determined from an industry standard testing procedure which uses water as the flowing media (specific gravity of 1.0). To determine specific flow rate and pressure loss scenarios, one can use the following formula:

$$f = sg \times \left( \frac{Q}{C_v} \right)^2$$

Where,

$f$  is the pressure drop (friction loss) in psi,

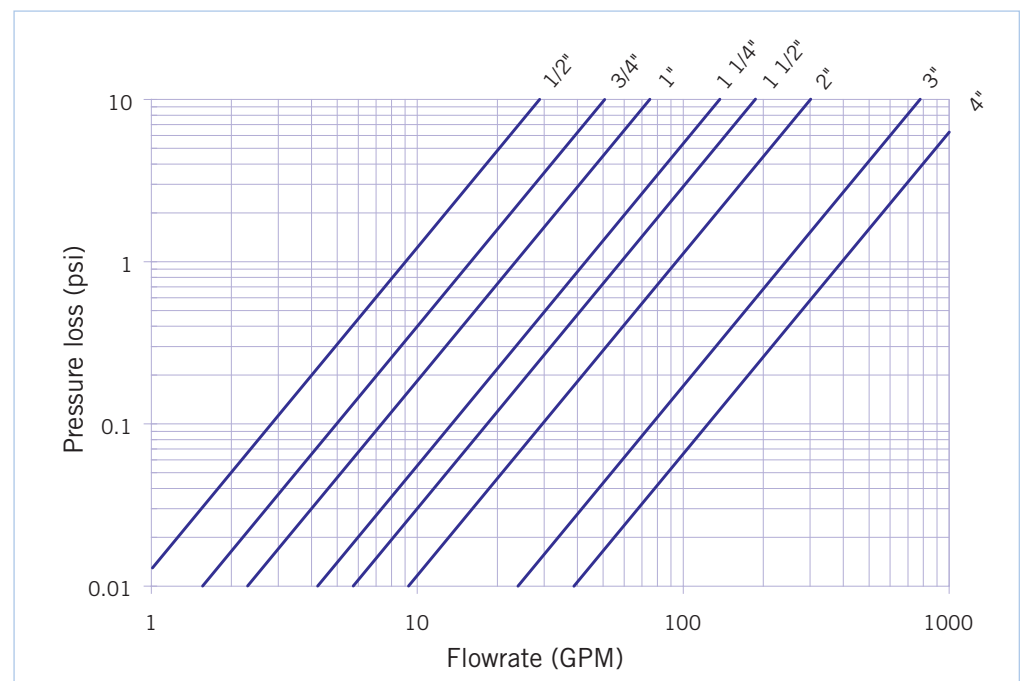
$sg$  is the specific gravity of the fluid,

$Q$  is the flow rate in GPM,

$C_v$  is the flow coefficient.

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

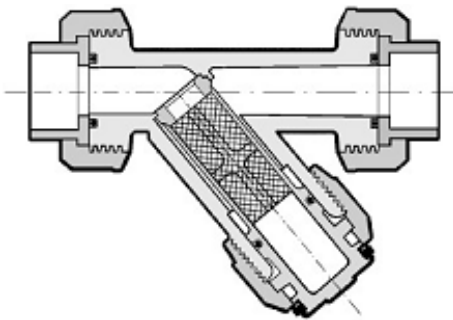
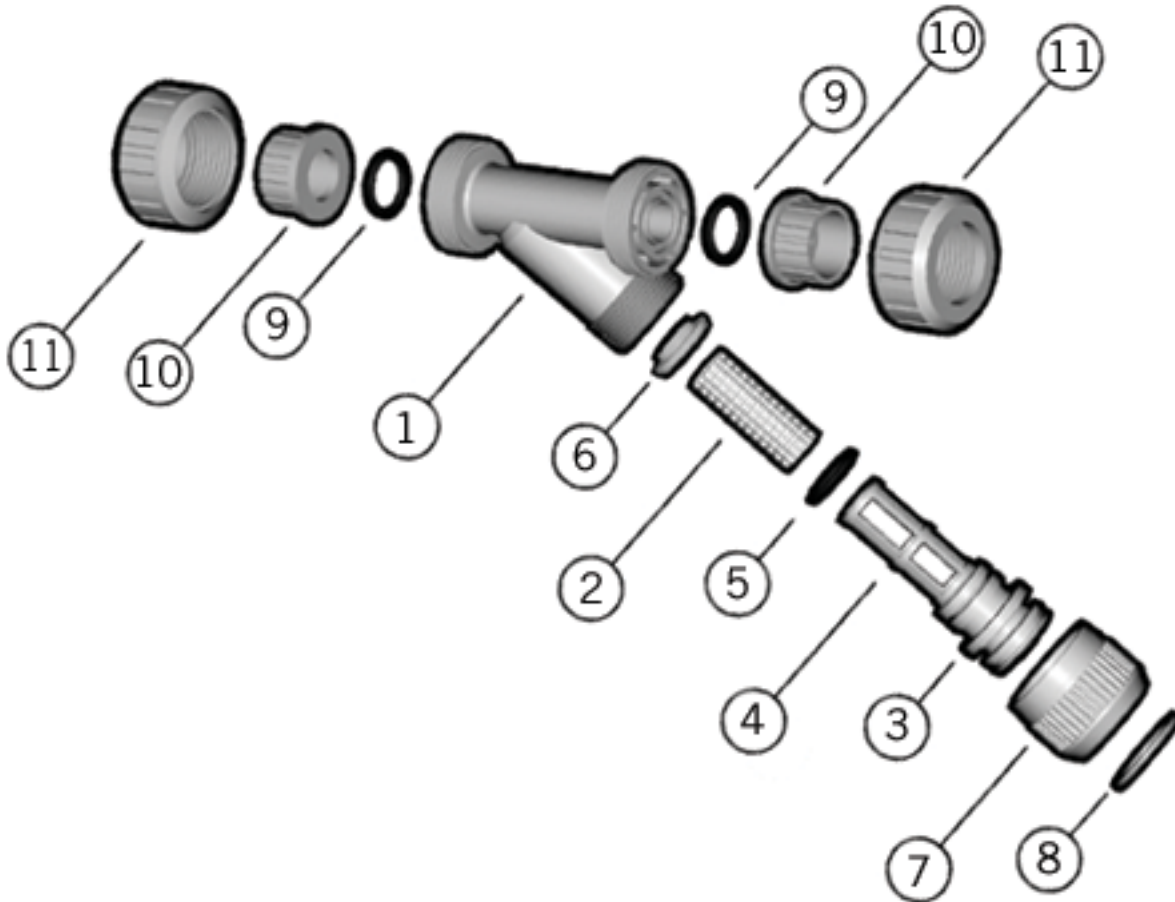
### pressure loss chart



# RV Series Sediment Strainers

## Components

sizes 1/2" through 2"



#	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 Viton®	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 Viton®	2
10*	end connector	PVC / CPVC	2
11*	union nut	PVC / CPVC	2

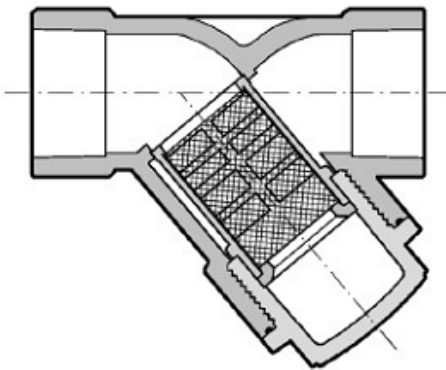
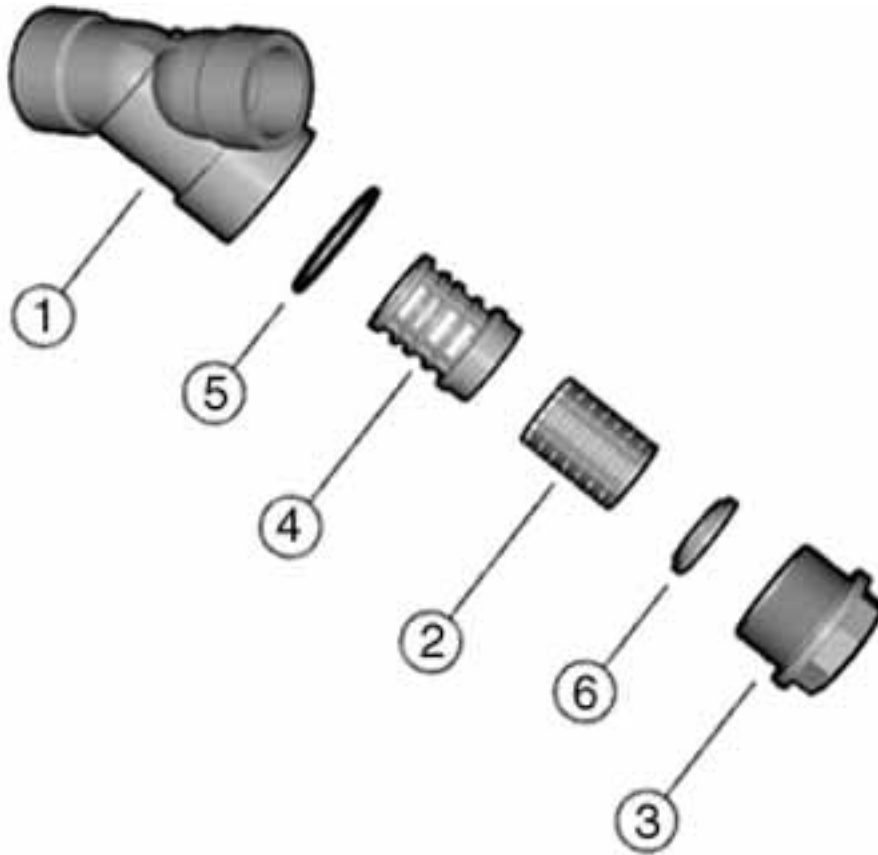
\* Spare parts available.



# RV Series Sediment Strainers

## Components (cont'd)

sizes 3"



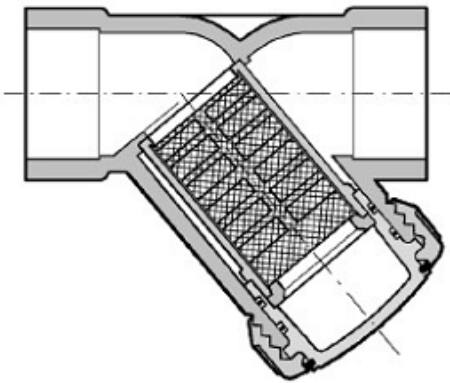
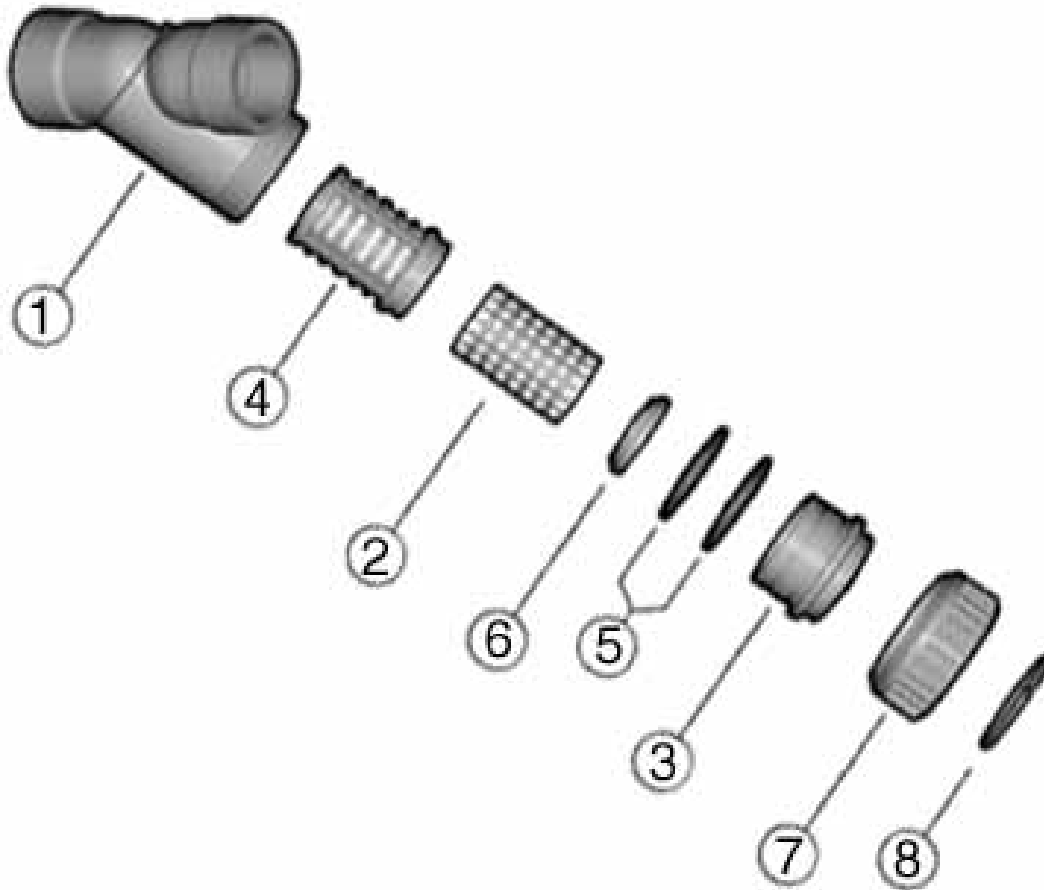
#	Component	Material	Qty
1	body	PVC / CPVC	1
2*	screen mesh	PVC / 304 SS	1
3*	bonnet	PVC	1
4*	screen support	PVC	1
5*	o-ring seal	EPDM or Viton®	1
6*	retaining ring	PVC	1

\* Spare parts available.

# RV Series Sediment Strainers

## Components (cont'd)

sizes 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 Viton®	1
6*	retaining ring	PVC	1
7*	lock nut	PVC	1
8*	split ring	PVC	1

\* Spare parts available.

# RV Series Sediment Strainers

## 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

2. 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”*.
3. 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.**



# RV Series Sediment Strainers

## 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. 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.

# RV Series Sediment Strainers

## 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.

# RV Series Sediment Strainers

*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:

- PVC, CPVC, PP, FR-PVDF, ABS, PEX and PE pipe and fittings ( $\frac{1}{4}$ " to 48")
- 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

**WARRANTY:** All IPEX products are guaranteed against defects resulting from faulty workmanship or materials. If any such product is found to be defective by reason of faulty workmanship or materials, upon written notice and return of the product, the defective product will be replaced by IPEX free of charge, including shipping charges for the replacement product. Claims for labour costs and other expenses required to replace such defective product or to repair any damage resulting from the use thereof will not be allowed by IPEX. Our liability is limited to the price paid for the defective product. IPEX will not be bound by any warranty, other than the above set forth, unless such warranty is in writing.

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IPEX maintains a policy of ongoing product improvement. This may result in modification of features and/or specifications without notice.

