



Filters & Strainers



ENGINEERING GUIDE

Contact Spears® for any Information not found.

Filters & Strainers Technical Irrigation Filters



Irrigation Filters

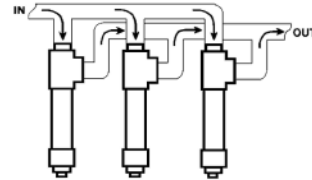
Specially designed for agricultural and irrigation applications. Suitable for any application where cool, filtered water is required. Standard units utilize an internal-to-external filter cartridge.



- 200 psi Working Pressure Non-Shock @ 73°F (23°C)
- Filter Body is made from NSF®-PW Approved PVC Material
- Optional Screen Meshes
- Compact Design, Easy to Clean
- Lightweight, Easy to Install

- Filter Screens are designed using a standard perforated Stainless Steel Screen
- Mesh Sizes include an inner Stainless Steel Cloth with Spring Support (external cloth on reverse flow filters)
- Pressure loss: 100 GPM – 3 psi 50 GPM – 1.25 psi
- May be bushed to required pipe size (Bushings sold separately)

- When more than 100 gpm is required, filters may be installed in parallel
- When installing filter, allow space for removing filter screen for cleaning
- Remove stainless steel filter screen before solvent welding filter to pipe manifold
- When filters are installed in the direct sun, it is suggested the filter body be coated with a water-base latex paint having a high reflectance
- Installation in a shaded area is preferred



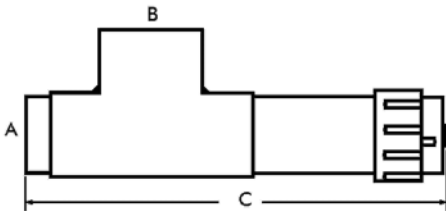
—CAUTION—

- WATER HAMMER MAY CAUSE SEVERE DAMAGE TO THE FILTER ASSEMBLY.
- BACK FLUSHING IS NOT RECOMMENDED.
- QUALITY GRADE THREAD SEALANT IS RECOMMENDED FOR ALL THREADED PVC CONNECTIONS.

Mesh Size	Hole Size (in.)	Part Number Extension
1/16" Holes	.0625	-16
1/32" Holes	.0312	-32
50 Mesh	.0117	-50
76 Mesh	.0095	-76
100 Mesh	.0059	-100
150 Mesh	.0041	-150
200 Mesh	.0029	-200

Additional Mesh Sizes available on request.

Filter Dimensions

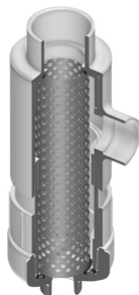


Series	A Inlet		B Outlet	C Overall Length	Screen Length
	Socket	Spigot			
FLR	2-1/2	3	4	28	24
MFLR	2-1/2	3	4	16	12

Irrigation Reverse Flow Filters



100 GPM



50 GPM

- Filter cartridge specially designed for external-to-internal filtration
- Traps sediment and debris on outside of filter (standard filters use internal-to-external flow)
- 100 GPM and 50 GPM styles available



Filters & Strainers Technical
Hose Filters, In-line Tee Style Filters and Reverse In-line Tee Style Filters

Hose Filters



7 GPM Steel 7 GPM Plastic/Nylon

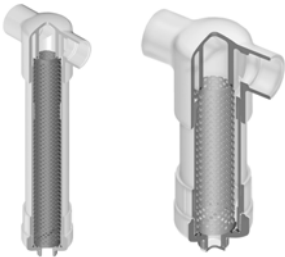
NOTE: It is recommended to connect the inlet of the Hose Filter to the system with a swivel adapter such as Spears® AP Series, to facilitate servicing of the filter element (refer to Hose Fittings).

Mesh Size	Hole Size (in.)	Part Number Extension
20 Mesh	.0331	-20
30 Mesh	.0232	-30
50 Mesh	.0117	-50
80 Mesh	.0070	-80
100 Mesh	.0059	-100
150 Mesh	.0041	-150
200 Mesh	.0029	-200

Additional Mesh Sizes available on request.
 Example: HF-50 = 50 Mesh

In-line Tee Style Filters and Reverse In-line Tee Style Filters

100 GPM and 50 GPM • PVC White • Buna O-ring Seal



100 GPM 50 GPM

- In-line Design Simplifies Installation.
- Allows Easy Parallel Filter Configuration for Increased Flow and Filtration.
- Removable Type 304 Stainless Steel Filter Cartridges in Assorted Perforations and Screen Mesh.
- Standard Flow Filter (Internal-to-External) Traps Sediment on Inside of Cartridge, Reverse Flow Filter (External-to-Internal) Traps Sediment on Outside of Cartridge.
- Convenient Bottom Drain with 1-1/4" NPT Stainless Steel Reinforced Plastic Thread and Plug. Optional Cap with 1/4" Outlet Available.
- 200 psi Working Pressure for Water @ 73°F (23°C).
- Manufactured from NSF® Certified PVC Material.

Mesh Size	Hole Size (in.)	Part Number Extension
1/16" Holes	.0625	-16
1/32" Holes	.0312	-32
50 Mesh	.0117	-50
76 Mesh	.0095	-76
100 Mesh	.0059	-100
150 Mesh	.0041	-150
200 Mesh	.0029	-200

Additional Mesh Sizes available on request.
 Example: TF-50 = 50 Mesh



Features - PVC, CPVC

In-line T-Style Cartridge Filters provide high capacity filtration of suspended solids, dirt and debris with reusable Type 304 stainless steel filter cartridges in a variety of mesh sizes. Constructed from PVC white, gray and CPVC, this special T-style configuration may be easily ganged in parallel for increased flow and filtration capacity. Standard flow (internal-to-external) filter traps sediment inside cartridge while optional reverse flow (external-to-internal) filter traps sediment on outside of cartridge, according to user preference. Available in full-size TF Series or half-size MTF Series units with IPS size 2-1/2" socket - 3" spigot combination inlet/outlet connection that can be easily adapted to other sizes with use of reducer bushings or couplings.

- Provides In-line Protection of Process Equipment
- PVC Construction
- EPDM O-ring Seals
- Heavy, Reinforced Type 304 Stainless Steel Filter Cartridges in Mesh Sizes 16, 32, 50, 76, 100, 150, or 200
- Standard (Internal-to-External) or Reverse Flow (External-to-Internal) Cartridge Design Option
- Bottom Cartridge Removal with Drain Plug for Cleaning, or Bleed-Off Valve Connection
- Installed Units in Parallel for Increased Filtration Capacity
- Pressure Rated to 200 psi @ 73°F
- Assemble with Silicone-Free, Water Soluble Lubricants

Sample Engineering Specification

All sediment filters shall be T-Style cartridge type constructed from PVC Type I, ASTM D 1784 Cell Classification 12454 or CPVC Type IV, or ASTM D 1784 Cell Classification 23447. All O-rings shall be EPDM or FKM. All filters shall have removable Type 304 stainless steel cartridge with [specify from chart] mesh perforation or reinforced screen. All filters shall be pressure rated to 200 psi for water at 73°F, as manufactured by Spears® Manufacturing Company.

Quick View T-Style Cartridge Filters Selection Chart

PVC Part Numbers ¹		
Cartridge Filter Mesh ²	TF Series (Full Size)	
	Standard	Reverse Flow ²
	EPDM	EPDM
16	TF2-16	TF2-16
32	TF2-32	TF2-32
50	TF2-50	TFR2-50
76	TF2-76	TFR2-76
100	TF2-100	TFR2-100
150	TF2-150	TFR2-150
200	TF2-200	TFR2-200
MTF Series (Half-Size)		
16	MTF2-16	MTF2-16
32	MTF2-32	MTF2-32
50	MTF2-50	MTFR2-50
76	MTF2-76	MTFR2-76
100	MTF2-100	MTFR2-100
150	MTF2-150	MTFR2-150
200	MTF2-200	MTFR2-200

- 1: For PVC white, remove the number "2" from part number (e.g., TF-16)
- 2: For CPVC, add the letter "C" to the part number (e.g., TF2-16C)
- 3: Mesh sizes 16 and 32 are perforation cartridges. Same cartridge is used for Standard or Reverse Flow filtration. Mesh sizes 50 - 200 are wire cloth screen with perforated stainless steel reinforcement.

Cartridge Filtration Area

TF Series filter surface area = 214.9 in.² and MTF Series filter surface area = 107.5 in.². Mesh sizes 16 and 32 are perforated stainless steel, 50 to 200 mesh filters are stainless steel wire cloth with perforated stainless backing and internal wire coil to prevent filter collapse or screen blow-out.

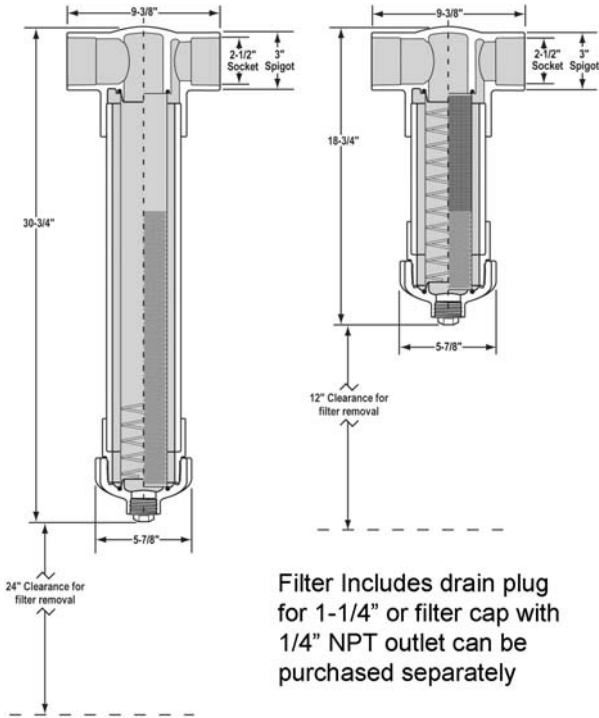
Replacement Filter Cartridges

Mesh Size	Full Size TF Filter Part No.		Half Size MTF Filter Part No.	
	Standard Flow	Reverse Flow	Standard Flow	Reverse Flow
16	FL-16-1	same as Std.	MFL-16-1	same as Std.
32	FL-32-1	same as Std.	MFL-32-1	same as Std.
50	FL-50-1	FLR-50-1	MFL-50-1	MFLR-50-1
76	FL-76-1	FLR-76-1	MFL-76-1	MFLR-76-1
100	FL-100-1	FLR-100-1	MFL-100-1	MFLR-100-1
150	FL-150-1	FLR-150-1	MFL-150-1	MFLR-150-1
200	FL-200-1	FLR-200-1	MFL-200-1	MFLR-200-1



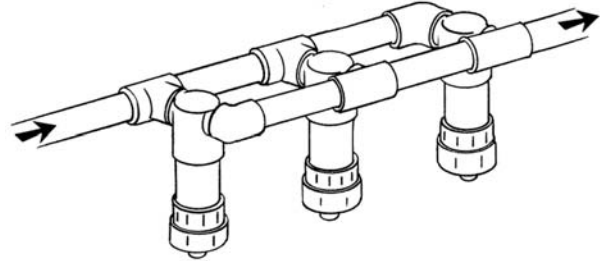
Filters & Strainers Technical In-line Tee Filters

Dimensions



Parallel Filter Installation

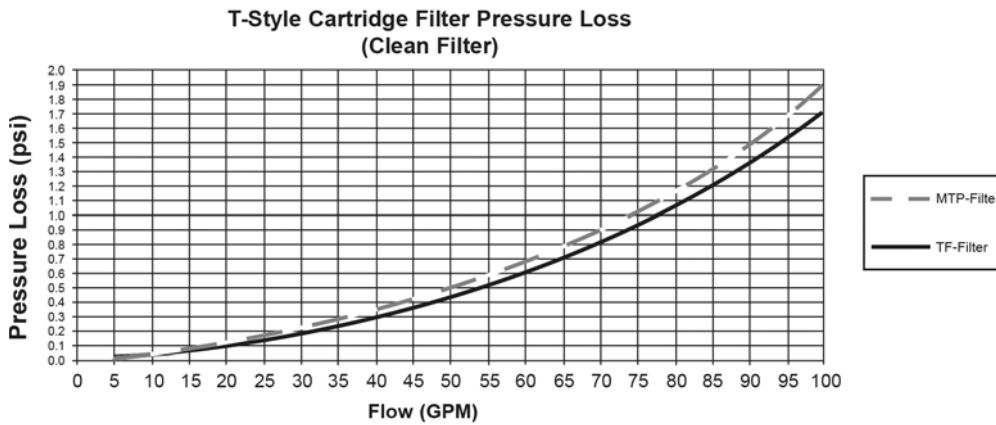
For increased flow or filtration capacity, multiple filters may be installed in parallel as illustrated.



General Installation Information

Avoid installation in direct sun exposure. If required, a white, reflective latex paint coating may be applied to reduce heat absorption. Remove cartridge before solvent cement assembly into system to avoid possible cement contact with screen. Install with proper flow direction as indicated on top of the filter. Be sure to allow clearance in excess of specified space required for removal of cartridge (see drawing notes). Filter drainage or blowdown should be made in normal system flow direction to prevent screen damage. Do not "back flush" unit. Care should be taken in cleaning cartridges to avoid damaging filter screen.

Pressure Loss



Temperature Pressure Rating

System Operating Temperature °F (°C)		100 (38)	110 (43)	120 (49)	130 (54)	140 (60)	150 (66)	160 (71)	170 (77)	180 (82)	190 (88)	200 (93)	210 (99)
Filter Pressure Rating psi (MPa)	PVC	200 (1.38)	135 (.93)	120 (.83)	75 (.52)	50 (.34)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)



Features - PVC Gray, PVC Clear & CPVC

Spears® Y-type sediment strainers are the perfect choice for in-line removal of suspended solids, sediment, dirt and debris. Convenient removable strainer basket allows quick cleaning with an assortment of screen mesh sizes to meet a variety of application needs. Spears® Y-Strainers are produced from PVC Gray, PVC Clear for fluid visibility and CPVC Gray for higher temperatures. Available with socket, Special Reinforced (SR) threads, flanged, or True Union socket and SR threaded end connectors in IPS sizes 1/2" - 4".

Sample Engineering Specification

All sediment strainers shall be Y-type constructed from PVC Type I, ASTM D 1784 Cell Classification 12454 or CPVC Type IV, ASTM D 1784 Cell Classification 23447. All O-rings shall be EPDM or FKM. All Y-strainers shall have replaceable PVC, CPVC or Type 316 stainless steel screens and O-ring sealed drain plugs with magnetic drain plug option. All threaded Y-Strainers shall have Special Reinforced (SR) threads. All Y-Strainers, sizes 1/2"- 2" shall be pressure rated to 150 psi, sizes 3"- 4" to 90 psi for water at 73°F, as manufactured by Spears® Manufacturing Company.

- Provides In-line Protection of Process Equipment
- PVC, CPVC or PVC Clear Construction
- EPDM or FKM O-ring Seal
- Removable Strainer Basket with O-ring Sealed Drain Plug Allows Quick-Flushing or Bleed-Off Valve Connection
- Multiple Strainer Screen Options in PVC, CPVC, and Type 316 Stainless Steel (see Mesh Code table)
- Optional Magnetic Drain Plug for Ferrous Metal Pickup
- Suitable for Horizontal or Vertical Installation
- Sizes 1/2"- 2" Pressure Rated to 150 psi @ 73°F Sizes 3"- 4" to 90 psi @ 73°F
- Assembled with Silicone-Free, Water Soluble Lubricants

Quick-View Y-Strainer Selection Chart

Valve Size	O-ring Material	PVC Material ^{1,2,3}						Pressure Rating
		Socket	SR Threaded	Flanged	Socket Union	Threaded Union	SR Threaded Union	
1/2	EPDM	YS22P_-005	YS21P_-005SR	YS23P_-005	YS2AP_-005	YS2BP_-005	YS2BP_-005SR	150 psi Non-Shock Water @73°F
	FKM	YS32P_-005	YS31P_-005SR	YS33P_-005	YS3AP_-005	YS3BP_-005	YS3BP_-005SR	
3/4	EPDM	YS22P_-007	YS21P_-007SR	YS23P_-007	YS2AP_-007	YS2BP_-007	YS2BP_-007SR	
	FKM	YS32P_-007	YS31P_-007SR	YS33P_-007	YS3AP_-007	YS3BP_-007	YS3BP_-007SR	
1	EPDM	YS22P_-010	YS21P_-010SR	YS23P_-010	YS2AP_-010	YS2BP_-010	YS2BP_-010SR	
	FKM	YS32P_-010	YS31P_-010SR	YS33P_-010	YS3AP_-010	YS3BP_-010	YS3BP_-010SR	
1-1/4	EPDM	YS22P_-012	YS21P_-012SR	YS23P_-012	YS2AP_-012	YS2BP_-012	YS2BP_-012SR	
	FKM	YS32P_-012	YS31P_-012SR	YS33P_-012	YS3AP_-012	YS3BP_-012	YS3BP_-012SR	
1-1/2	EPDM	YS22P_-015	YS21P_-015SR	YS23P_-015	YS2AP_-015	YS2BP_-015	YS2BP_-015SR	
	FKM	YS32P_-015	YS31P_-015SR	YS33P_-015	YS3AP_-015	YS3BP_-015	YS3BP_-015SR	
2	EPDM	YS22P_-020	YS21P_-020SR	YS23P_-020	YS2AP_-020	YS2BP_-020	YS2BP_-020SR	
	FKM	YS32P_-020	YS31P_-020SR	YS33P_-020	YS3AP_-020	YS3BP_-020	YS3BP_-020SR	
3	EPDM	YS22P_-030	YS21P_-030SR	YS23P_-030	YS2AP_-030	YS2BP_-030	YS2BP_-030SR	90 psi Non-Shock Water @73°F
	FKM	YS32P_-030	YS31P_-030SR	YS33P_-030	YS3AP_-030	YS3BP_-030	YS3BP_-030SR	
4	EPDM	YS22P_-040	YS21P_-040SR	YS23P_-040	YS2AP_-040	YS2BP_-040	YS2BP_-040SR	
	FKM	YS32P_-040	YS31P_-040SR	YS33P_-040	YS3AP_-040	YS3BP_-040	YS3BP_-040SR	

Enter Mesh Code in part number blank as specified in table. (Contact Spears® for additional strainer sizes).

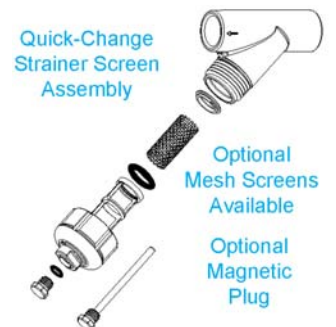
1. For CPVC body & strainer screen unit, replace the letter "P" before the dash separator with the letter "C" and add the letter "C" to the part number (e.g., YS22C8-020C)
2. For stainless steel strainer screens, replace the letter "P" (or "C") before the dash separator with the letter "S" (e.g., YS22S8-020)
3. For PVC Clear Y-Strainer, add the letters "CL" to the part number (e.g., YS22P8-005CL)

Note: End connections for PVC Clear threaded and flanged Y-strainers are PVC Gray components.

Mesh Codes for PVC, CPVC & SS

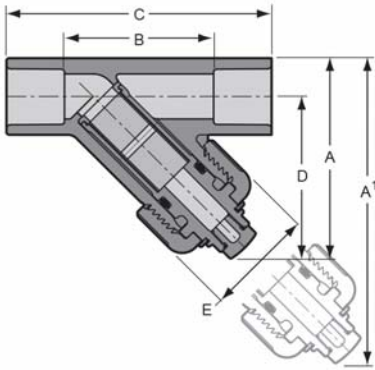
Mesh	Sieve Opening Size (in.)	Mesh Code
8 Mesh	0.094	8
12 mesh	0.062	12
20 Mesh	0.033	20
30 Mesh	0.024	30

Additional Stainless Steel screens available to 320 mesh, custom ordered.



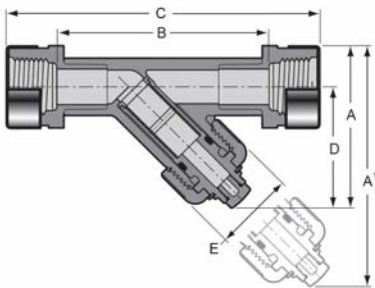


Filters & Strainers Technical Y Strainers



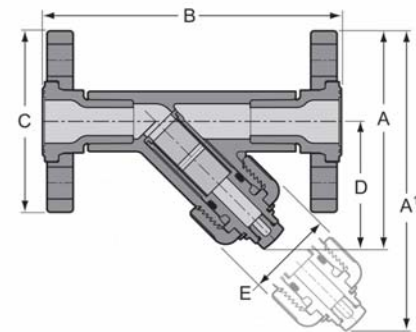
Socket Y-Strainer Dimensions & Weights

Nominal Size	Dimension Reference (inches, ± 1/16)						Approx. Wt. (Lbs.)	
	A ¹	A	B	C	D	E	Socket	
							PVC	CPVC
1/2	5	3-1/16	1-9/16	3-3/8	2-9/16	1-5/8	.31	.33
3/4	5-3/4	3-11/16	2	4	3	2	.50	.53
1	6-7/8	4-7/16	2-1/2	4-3/4	3-5/8	2-1/4	.85	.90
1-1/4	8-5/32	5-5/16	3-1/16	5-9/16	4-1/4	2-13/16	1.21	1.28
1-1/2	9-1/8	6	3-9/16	6-5/16	4-7/8	3-3/16	1.66	1.76
2	11-3/4	7-5/8	4-1/2	7-1/2	6-3/16	3-1/2	2.96	3.10
3	15	9-11/16	6-9/16	10-5/16	7-5/8	5-1/8	5.34	5.64
4	19-11/16	12-1/2	8-5/8	13-1/8	9-7/8	6-9/16	9.97	10.45



SR Threaded Y-Strainer Dimensions & Weights

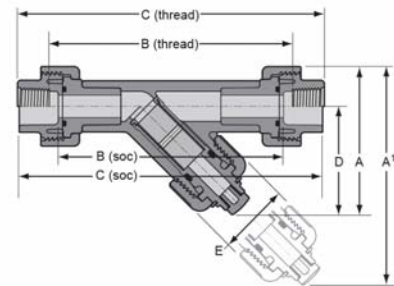
Nominal Size	Dimension Reference (inches, ± 1/16)						Approx. Wt. (Lbs.)	
	A ¹	A	B	C	D	E	SR Threaded	
							PVC	CPVC
1/2	6-1/2	4-11/16	3-5/8	5-1/16	4	2-3/8	.31	.33
3/4	7-5/8	5-7/16	4-3/8	5-13/16	4-9/16	2-3/8	.50	.53
1	8-5/8	6-1/8	5-3/16	7	5-1/8	2-3/8	.85	.90
1-1/4	11-1/8	7-3/4	6	7-15/16	6-1/2	3-1/2	1.21	1.28
1-1/2	12-1/4	8-7/8	6-15/16	8-13/16	7-1/2	3-1/2	1.66	1.76
2	14-1/16	10-3/16	8-1/8	10-1/8	8-1/2	3-1/2	2.96	3.10
3	20	14-13/16	11	14-1/4	12-7/16	6-5/8	5.34	5.64
4	25-13/16	18-1/2	14	14-3/4	15-5/8	7-15/16	9.97	10.45



Flanged Y-Strainer Dimensions & Weights

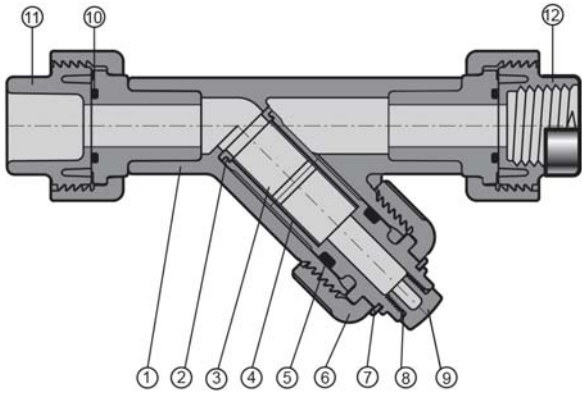
Nominal Size	Dimension Reference (inches, ± 1/16)						Approx. Wt. (Lbs.)	
	A ¹	A	B	C	D	E	Flanged	
							PVC	CPVC
1/2	5-13/16	4-3/16	5-11/16	3-1/2	2-1/2	1-5/8	.82	.85
3/4	7-1/8	5	6-7/16	3-7/8	3-1/8	2	1.23	1.28
1	8-3/16	5-3/4	7-1/4	4-1/4	3-5/8	2-1/4	1.70	1.81
1-1/4	9-7/16	6-9/16	8-1/8	4-5/8	4-9/32	2-13/16	2.40	2.52
1-1/2	10-7/16	7-3/8	9-3/16	5	4-7/8	3-7/16	3.07	3.25
2	13-1/4	9-1/8	10-1/2	6	6-3/16	3-1/2	5.20	5.42
3	16-21/32	11-3/8	12-1/8	7-1/2	7-5/8	5-1/8	9.44	10.07
4	21-19/32	14-1/8	14-9/16	9-1/16	9-5/8	6-9/16	14.87	16.15

Note: 4" flanged Y-strainer uses split flange ring



True Union Y-Strainer Dimensions & Weights

Nominal Size	Dimension Reference (inches, ± 1/16)						Approx. Wt. (Lbs.)			
	A ¹	A	B		C		D	E	Union	
			Socket	SR Thread	Socket	SR Thread			PVC	CPVC
1/2	5	3-7/16	5-1/8	5-1/2	6-7/8	7	2-1/2	1-5/8	.49	.53
3/4	6-3/16	4-1/8	5-7/8	6-7/16	7-7/8	7-7/8	3	2	.80	.85
1	7-5/16	4-7/8	6-1/2	7-3/8	8-3/4	9	3-5/8	2-1/4	1.13	1.20
1-1/4	8-5/8	5-13/16	7-7/16	6-3/16	9-15/16	10-1/8	4-1/4	2-13/16	1.84	1.90
1-1/2	9-3/4	6-5/8	8-3/16	9	10-15/16	10-15/16	4-7/8	3-3/16	2.44	2.52
2	12-7/16	8-15/16	9-7/16	10-13/16	12-7/16	12-13/16	6-3/16	3-1/2	4.33	4.45
3	16-1/6	10-3/4	12-3/16	13-15/16	16	16-3/4	7-5/8	5-1/8	10.35	10.55
4	20-15/16	13-3/4	15-5/16	17-1/2	19-13/16	20-1/2	9-7/8	6-9/16	18.51	18.80



Replacement Parts

NO.	COMPONENT	QTY.	MATERIAL
1	Body ¹ (SOC/SR/FLANGE/UNION)	1	PVC/PVC CLEAR/CPVC
2	Screen Support Ring	1	PVC/CPVC
3	Screen	1	PVC/CPVC/SS 316
4	Screen Support Housing	1	PVC/CPVC
5	Housing O-ring	1	EPDM/FKM
6	Bonnet Nut	1	PVC/CPVC
7	Retaining Clip	1	PP
8	Plug O-ring	1	EPDM/FKM
9	Plug	1	PVC/CPVC
10	Union O-ring	2	EPDM/FKM
11	Union Socket End	2	PVC/CPVC
12	Union SR Threaded End	2	PVC/CPVC

- 1 - Body Includes: Body (1), Spigot Adapters (2), SS Collars (2)
- Flange Body Includes: Body (1), Spigot Hubs (2), Flange Rings (2)
- Union Body Includes: Body (1), Spigot Ends (2), Nuts (2)

Temperature Pressure Rating

System Operating Temperature °F (°C)		100 (38)	110 (43)	120 (49)	130 (54)	140 (60)	150 (66)	160 (71)	170 (77)	180 (82)	190 (88)	200 (93)	210 (99)	
Strainer Pressure Rating psi (MPa)	1/2" - 2"	PVC	150 (1.03)	135 (.93)	110 (.76)	75 (.52)	50 (.34)	-0-	-0-	-0-	-0-	-0-	-0-	
		CPVC	150 (1.03)	140 (.97)	130 (.90)	120 (.83)	110 (.76)	100 (.70)	90 (.62)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0-
	3" - 4"	PVC	90 (.70)	85 (.62)	75 (.52)	60 (.41)	40 (.30)	-0-	-0-	-0-	-0-	-0-	-0-	-0-
		CPVC	90 (.70)	85 (.62)	80 (.55)	75 (.52)	70 (.48)	60 (.41)	50 (.34)	45 (.31)	40 (.30)	35 (.24)	30 (.21)	-0-

Drain Plug Tap Size

Y-Strainer Size	Tap Size (NPT)
1/2	1/4 - 18
3/4	1/4 - 18
1	3/8 - 18
1-1/4	1/2 - 14
1-1/2	1 - 11 - 1/2
2	1 - 11 - 1/2
3	1 - 11 - 1/2
4	1 - 11 - 1/2

Tap Size = nominal Inch Size - Threads Per Inch (TPI) (i.e. 1/4" - 18 TPI; 1" - 11 1/2 TPI)

Y-Strainer C_v

Nominal Size	Plastic Strainer Mesh			
	8	12	20	30
1/2	5.5	5.4	5.3	5.2
3/4	8.2	7.8	7.5	7.2
1	14.3	13.9	13.6	13.3
1-1/4	33.6	32.9	29.4	25.4
1-1/2	43.8	41.6	33.0	32.1
2	50.6	50.0	49.6	48.8
3	75.2	74.6	74.0	73.4
4	169.5	169.0	168.8	168.0

Gallons per minute at 1 psi pressure drop.
 Plastic Strainers are perforated PVC or CPVC screens.
 Standard is mesh.



Filters & Strainers Technical Basket Strainers

Sample Engineering Specification



All thermoplastic Basket Strainers shall be fabricated from PVC Type I, ASTM D 1784 Cell Classification 12454 or CPVC Type IV, ASTM D 1784 Cell Classification 23447 material. All O-rings shall be EPDM or FKM. Strainer baskets shall be perforated PVC, CPVC, or type 316 stainless steel, or type 316 stainless steel wire mesh. Standard strainer perforations shall be 1/8" or 3/32" with a minimum open area ratio of 6:1, or specified perforation/mesh opening. Basket Strainer sizes 1/2" through 1" bonnets are a threaded cap with O-ring seal, it should be noted sizes 1-1/4" & larger shall have quick release clamp retained bonnet. Sizes 1-1/4" & larger Basket Strainers shall have pressure release valve and safety pressure gauge. Unit shall be equipped with O-ring sealed drain

plug at lower end. Basket Strainer sizes 1/2" - 8" shall be pressure rated at 150 psi, sizes 10" - 12" to 50 psi for water at 73°F, as manufactured by Spears® Manufacturing Company.

Features - PVC, CPVC

Spears® fabricated Basket Strainers are constructed of heavy bodied PVC or CPVC. Available in IPS sizes 1/2" through 12" with choice of socket, spigot or flanged ends and EPDM, FKM or PTFE encapsulated O-ring seals. A convenient quick release clamp cap is equipped with safety pressure gauge and pressure release ball valve for safer system operation and strainer cleaning. Additional drain plug allows complete drain and flush of unit. Designed to remove unwanted solids from plastic or metal piping systems, Spears® Basket Strainers are ideal for protecting valves, filters, pumps, nozzles or other liquid control devices in corrosive or non-corrosive fluid systems.

- Chemical & Corrosion Resistant PVC or CPVC Construction
 - Convenient Quick-Release Clamp for easy Bonnet Removal
 - Includes Pressure Release Valve and 0-160 psi Safety Pressure Gauge on sizes 1-1/4" & larger. (O-ring sealed plugs provided if valve/gauge not used)
 - O-ring Sealed Drain Plug
 - EPDM or FKM O-ring Seals
 - Perforated PVC & CPVC Strainer Baskets in a variety of sizes. Stainless Steel available in perforation and multiple mesh sizes
 - High Volume 6:1 Open Area Ratio
 - Sizes 1/2" - 8" Pressure Rated to 150 psi @ 73°F
Sizes 10" - 12" pressure Rated to 50 psi @ 73°F
1. Commercial bronze bourdon-tube type pressure gauge w/brass NPT inlet. Check for any chemical compatibility issues. Contact Spears® for PVC, CPVC or PP Gauge Guard isolation devices available.

Special Options

- PTFE Encapsulated O-ring Seals
- Bonnet Sight Glass

Quick-View Basket Strainer Selection Chart

Valve Size	O-ring Material	PVC Part Numbers ^{1,2,3}			Pressure Rating	
		Socket	Spigot	Flanged		
1/2	EPDM	BS22P_-005	BS27P_-005	BS23P_-005	150 psi Non-Shock Water @ 73°F	
	FKM	BS32P_-005	BS37P_-005	BS33P_-005		
3/4	EPDM	BS22P_-007	BS27P_-007	BS23P_-007		
	FKM	BS32P_-007	BS37P_-007	BS33P_-007		
1	EPDM	BS22P_-010	BS27P_-010	BS23P_-010		
	FKM	BS32P_-010	BS37P_-010	BS33P_-010		
1-1/4	EPDM	BS22P_-012	BS27P_-012	BS23P_-012		
	FKM	BS32P_-012	BS37P_-012	BS33P_-012		
1-1/2	EPDM	BS22P_-015	BS27P_-015	BS23P_-015		
	FKM	BS32P_-015	BS37P_-015	BS33P_-015		
2	EPDM	BS22P_-020	BS27P_-020	BS23P_-020		
	FKM	BS32P_-020	BS37P_-020	BS33P_-020		
2-1/2	EPDM	BS22P_-025	BS27P_-025	BS23P_-025		
	FKM	BS32P_-025	BS37P_-025	BS33P_-025		
3	EPDM	BS22P_-030	BS27P_-030	BS23P_-030		
	FKM	BS32P_-030	BS37P_-030	BS33P_-030		
4	EPDM	BS22P_-040	BS27P_-040	BS23P_-040		
	FKM	BS32P_-040	BS37P_-040	BS33P_-040		
6	EPDM	BS22P_-060	BS27P_-060	BS23P_-060		
	FKM	BS32P_-060	BS37P_-060	BS33P_-060		
8	EPDM	BS22P_-080	BS27P_-080	BS23P_-080		
	FKM	BS32P_-080	BS37P_-080	BS33P_-080		
10	EPDM	BS22P_-100	BS27P_-100	BS23P_-100		50 psi Non-Shock Water @ 73°F
	FKM	BS32P_-100	BS37P_-100	BS33P_-100		
12	EPDM	BS22P_-120	BS27P_-120	BS23P_-120		
	FKM	BS32P_-120	BS37P_-120	BS33P_-120		

Enter Mesh Code in part number blank as specified in table.

(Contact Spears® for additional strainer sizes).

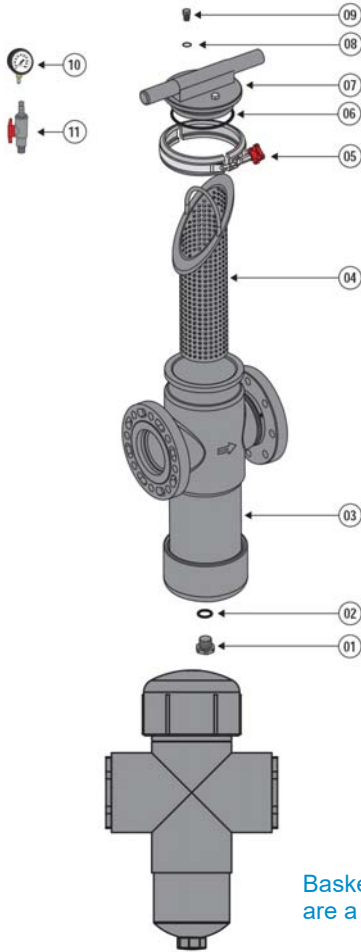
1. For CPVC body & strainer screen unit, replace the letter "P" before the dash separator with the letter "C" and add the letter "C" to the part number (e.g., BS22C8-020C)
2. For stainless steel strainer screens, replace the letter "P" (or "C") before the dash separator with the letter "S" (e.g., BS22S8-020; BS22S8-020C)
3. For Basket Strainers with PTFE O-rings replace the number 2 with the number 5 (e.g. BS53P-010)

Perforation Mesh Codes

Perforation Size (in.)	Mesh Code
1/16	12
3/32	8
1/8	6
3/16	4
1/4	3
3/8	2

Example: BS22P6-020
Additional perforation mesh sizes available upon request.

Filters & Strainers Technical Basket Strainers

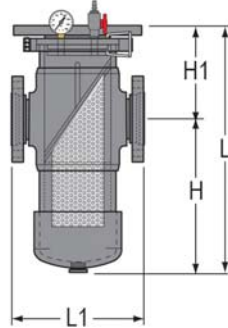


Replacement Parts

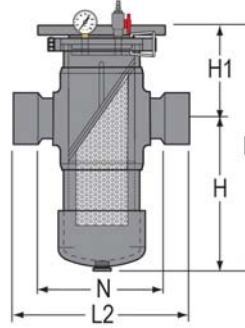
No.	Component	Quantity	Material
1	Drain Plug	1	PVC/CPVC
2	Drain Plug O-ring	1	EPDM/FKM/PTFE
3	Body	1	PVC/CPVC
4	Strainer Basket	1	PVC/CPVC /316 Stainless Steel
5	Bonnet Clamp	1	SS 316
6	Bonnet O-ring	1	EPDM/FKM/PTFE
7	Bonnet	1	PVC/CPVC
8	Plug O-ring	2	EPDM/FKM/PTFE
9	Gauge Port Plug	2	PVC/CPVC
10	Pressure Gauge	1	0-160 psi (1-1/4" & up)
11	Pressure Relief Valve	1	PVC/CPVC (1-1/4" & up)

Notes: 1) Port plugs for use when pressure gauge and relief valve are not installed.
2) Valve O-rings correspond to Strainer Basket Specification.

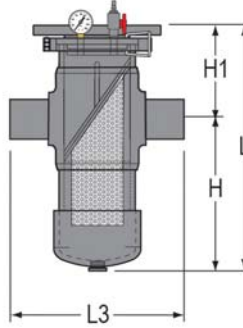
Flanged Style



Socket Style



Spigot Style



Basket Strainer sizes 1/2" through 1" bonnets are a threaded cap with O-ring seal.

Dimensions, Weights & Cv Values

Size	H	H ¹	L	L ¹	L ²	L ³	N	Approx. Wt. (Lbs.)		C _v
								Socket/ Spigot	Flanged	
1/2	5-5/8	4-1/2	10-1/8	9-1/4	6-3/4	9-9/16	5-1/4	2.97	3.35	4.5
3/4	5-5/8	4-1/2	10-1/8	9-1/4	6-7/16	9-7/16	4-7/16	2.99	3.44	10
1	5-5/8	4-1/2	10-1/8	10-3/8	6-13/16	10-1/16	4-1/2	3.02	3.50	15
1-1/4	10-3/4	8	18-3/4	8-3/16	11-5/16	10-5/16	8-5/16	3.20	3.60	30
1-1/2	10-3/4	8	18-3/4	8-3/4	11-1/8	11	8-1/8	3.50	3.75	46
2	10-3/4	8	18-3/4	8-3/4	12-1/8	11	8-5/8	11.00	11.40	72
2-1/2	10-3/4	8	18-3/4	8-3/4	12-3/8	12-7/8	8-3/8	12.30	12.60	110
3	14-1/4	9-1/8	23-3/8	11-5/8	16-1/8	15	11-5/8	25.00	25.40	172
4	17-3/4	9-1/8	26-7/8	12	18	17-1/2	13-1/2	25.70	26.80	270
6	18-7/8	11-9/16	30-7/16	17-1/8	24-3/8	23-5/16	17-7/8	58.40	60.80	630
8	24-1/2	12-9/16	37-1/16	20-1/2	30-1/2	27-1/2	22	93.60	96.00	750
10	27-1/8	16-5/8	43-3/4	26	34-9/16	34-1/2	24-1/16	200.20	210.30	893
12	34-5/16	17-1/8	51-1/2	28-1/8	39-3/16	36-1/4	26-11/16	229.30	239.80	1063

C_v = Gallons per minute at 1 psi pressure drop.

Temperature Pressure Rating

System Operating Temperature °F (°C)		100 (38)	110 (43)	120 (49)	130 (54)	140 (60)	150 (66)	160 (71)	170 (77)	180 (82)	190 (88)	200 (93)	210 (99)	
Valve Pressure Rating psi (MPa)	1/2" - 8"	PVC	150 (1.03)	135 (.93)	110 (.76)	75 (.52)	50 (.34)	-0-	-0-	-0-	-0-	-0-	-0-	
		CPVC	150 (1.03)	140 (.97)	130 (.90)	120 (.83)	110 (.76)	100 (.70)	90 (.62)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0-
	10" - 12"	PVC	50 (.34)	45 (.31)	40 (.30)	35 (.24)	30 (.21)	-0-	-0-	-0-	-0-	-0-	-0-	-0-
		CPVC	50 (.34)	47 (.32)	45 (.31)	42 (.83)	40 (.30)	37 (.26)	35 (.24)	30 (.21)	25 (.17)	20 (.14)	15 (.10)	-0-



Filters & Strainers Technical Suction Strainers



Features - PVC

The Suction Strainer is a special Basket Strainer design that reduces pressure drop, a critical element in suction line applications. While same-size (inlet/outlet) units are available, the enlarged inlet performs best in suction-line applications.

- Chemical & Corrosion Resistant PVC Construction
- Quick release clamp retained Bonnet with Top Sight Glass, Standard
- Stainless Steel Strainer Basket with 3/16" Perforation, Standard
- Bottom-Drained Internal Strainer Basket for Direct Flushing
- 360° Adjustable Side Mounted Flush-Discharge Valve Assembly
- EPDM Seals Standard
- Pressure rated to 50 psi @ 73°F

Contact Spears® for additional Basket Mesh/Perforation, Elastomer seal options, or other custom requirements desired.

Sample Engineering Specification

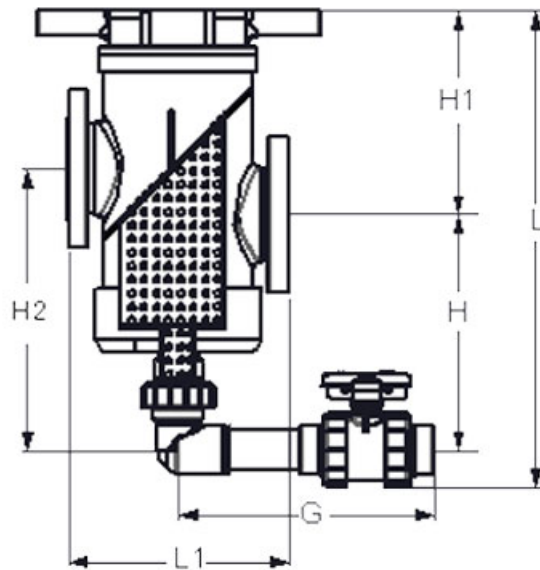
All thermoplastic Suction Strainers shall be fabricated from PVC Type I Cell Classification 12454 material. All O-rings shall be EPDM. Strainer basket shall be type 316 stainless steel. Standard strainer perforations shall be 3/16" with a minimum open area ratio of 6:1. Basket shall have bottom-drained direct discharge with 360° adjustable side discharge assembly, including Ball Valve at terminal end. Unit shall have quick release clamp retained bonnet with top sight glass. Suction strainer shall be pressure rated at 50 psi for water at 73°F, as manufactured by Spears® Manufacturing Company.

Suction Strainer Stainless Steel Baskets 3/16" Perforation

Size	Part Number
4	SSS4-040
6	SSS4-060
8	SSS4-080
10	SSS4-100
12	SSS4-120

Quick-View Suction Strainer Selection Chart

Valve Size	O-ring Material	Part Numbers	Pressure Rating
		Flanged	
4	EPDM	SS23BS4SG-040	50 psi Non-Shock Water @73°F
4 x 2	EPDM	SS23BS4SG-420	
4 x 2-1/2	EPDM	SS23BS4SG-421	
4 x 3	EPDM	SS23BS4SG-422	
6	EPDM	SS23BS4SG-060	
6 x 4	EPDM	SS23BS4SG-532	
8	EPDM	SS23BS4SG-080	
8 x 4	EPDM	SS23BS4SG-582	
8 x 6	EPDM	SS23BS4SG-585	
10	EPDM	SS23BS4SG-100	
10 x 6	EPDM	SS23BS4SG-626	
10 x 8	EPDM	SS23BS4SG-628	
12	EPDM	SS23BS4SG-120	
12 x 8	EPDM	SS23BS4SG-668	
12 x 10	EPDM	SS23BS4SG-670	



Dimensions

Size	G	H	H1	H2	L	L1
4	14-13/16	15-7/8	11-13/16	18-9/16	29-15/16	12-7/8
4 x 2	14-13/16	15-7/8	11-13/16	18-9/16	29-15/16	12-5/8
4 x 2-1/2	14-13/16	15-7/8	11-13/16	18-9/16	29-15/16	12-9/16
4 x 3	14-13/16	15-7/8	11-13/16	18-9/16	29-15/16	12-7/8
6	14-13/16	19-1/16	13-9/16	22-1/8	32-1/16	16-5/16
6 x 4	14-13/16	19-1/16	13-9/16	22-1/8	34-13/16	16-1/16
8	17-15/16	23-13/16	18-1/8	29-7/16	44-1/8	18
8 x 4	17-15/16	23-13/16	18-1/8	29-7/16	44-1/8	17-7/8
8 x 6	17-15/16	23-13/16	18-1/8	29-7/16	44-1/8	18
10	17-15/16	30-1/8	18-1/4	34	50-9/16	26
10 x 6	17-15/16	30-1/8	18-1/4	34	50-9/16	23-15/16
10 x 8	17-15/16	30-1/8	18-1/4	34	50-9/16	23-15/16
12	17-15/16	34-15/16	19-13/16	38-15/16	56-15/16	28
12 x 8	17-15/16	34-15/16	19-13/16	38-15/16	56-15/16	26-13/16
12 x 10	17-15/16	34-15/16	19-13/16	38-15/16	56-15/16	27-1/4

Temperature Pressure Rating

System Operating Temperature °F (°C)			100 (38)	110 (43)	120 (49)	130 (54)	140 (60)	150 (66)	160 (71)	170 (77)	180 (82)	190 (88)	200 (93)	210 (99)
Valve Pressure Rating psi (MPa)	4" - 12"	PVC	50 (.34)	45 (.31)	40 (.30)	35 (.24)	30 (.21)	-0-	-0-	-0-	-0-	-0-	-0-	-0-