



# Y-STRAINERS



## 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 Viton®. 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 Viton® O-ring Seals
- 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
- Assemble with Silicone-Free, Water Soluble Lubricants

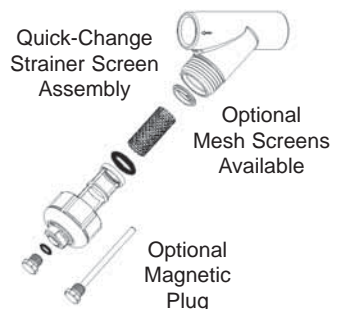
## Quick-View Y-Strainer Selection Chart

| Valve Size | O-ring Material | PVC Material <sup>1,2,3</sup> |               |             |              |                   | Pressure Rating                        |
|------------|-----------------|-------------------------------|---------------|-------------|--------------|-------------------|--|
|            |                 | Socket                        | SR Threaded   | Flanged     | Socket Union | SR Threaded Union |  |
| 1/2        | EPDM            | YS22P__-005                   | YS21P__-005SR | YS23P__-005 | YS2AP__-005  | YS2BP__-005       | 150 psi<br>Non-Shock<br>Water<br>@73°F |
|            | Viton®          | YS32P__-005                   | YS31P__-005SR | YS33P__-005 | YS3AP__-005  | YS3BP__-005       |  |
| 3/4        | EPDM            | YS22P__-007                   | YS21P__-007SR | YS23P__-007 | YS2AP__-007  | YS2BP__-007       |  |
|            | Viton®          | YS32P__-007                   | YS31P__-007SR | YS33P__-007 | YS3AP__-007  | YS3BP__-007       |  |
| 1          | EPDM            | YS22P__-010                   | YS21P__-010SR | YS23P__-010 | YS2AP__-010  | YS2BP__-010       |  |
|            | Viton®          | YS32P__-010                   | YS31P__-010SR | YS33P__-010 | YS3AP__-010  | YS3BP__-010       |  |
| 1-1/4      | EPDM            | YS22P__-012                   | YS21P__-012SR | YS23P__-012 | YS2AP__-012  | YS2BP__-012       |  |
|            | Viton®          | YS32P__-012                   | YS31P__-012SR | YS33P__-012 | YS3AP__-012  | YS3BP__-012       |  |
| 1-1/2      | EPDM            | YS22P__-015                   | YS21P__-015SR | YS23P__-015 | YS2AP__-015  | YS2BP__-015       |  |
|            | Viton®          | YS32P__-015                   | YS31P__-015SR | YS33P__-015 | YS3AP__-015  | YS3BP__-015       |  |
| 2          | EPDM            | YS22P__-020                   | YS21P__-020SR | YS23P__-020 | YS2AP__-020  | YS2BP__-020       |  |
|            | Viton®          | YS32P__-020                   | YS31P__-020SR | YS33P__-020 | YS3AP__-020  | YS3BP__-020       |  |
| 3          | EPDM            | YS22P__-030                   | YS21P__-030SR | YS23P__-030 | YS2AP__-030  | YS2BP__-030       | 90 psi<br>Non-Shock<br>Water<br>@73°F  |
|            | Viton®          | YS32P__-030                   | YS31P__-030SR | YS33P__-030 | YS3AP__-030  | YS3BP__-030       |  |
| 4          | EPDM            | YS22P__-040                   | YS21P__-040SR | YS23P__-040 | YS2AP__-040  | YS2BP__-040       |  |
|            | Viton®          | YS32P__-040                   | YS31P__-040SR | YS33P__-040 | YS3AP__-040  | YS3BP__-040       |  |

## 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        |

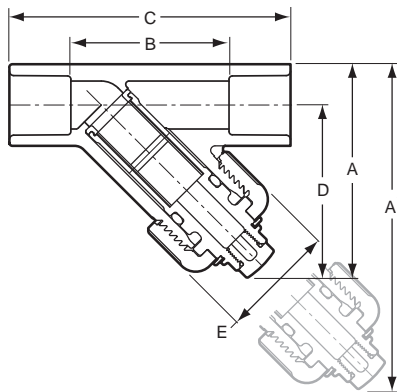
Additional Stainless Steel screens available to 320 mesh, custom ordered.



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

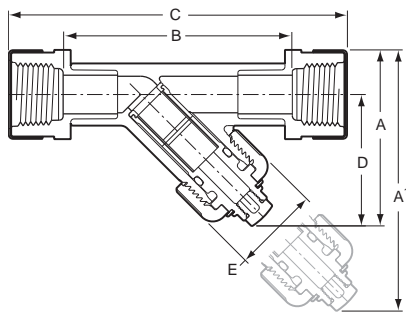
- 1: For CPVC body & strainer screen unit, replace the letter "P" before the dash separator with the letter "C" and add the letter "C" to the part number (e.g., YS22C8-020C)
  - 2: For stainless steel strainer screens, replace the letter "P" (or "C") before the dash separator with the letter "S" (e.g., YS22S8-020; YS22S8-020C)
  - 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.

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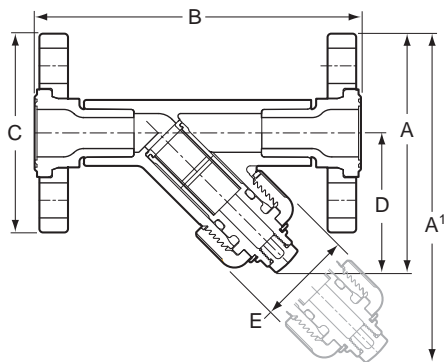
## Socket Y-Strainer Dimensions & Weights

| Nominal Size | Dimension Reference (inches, ± 1/16) |         |        |         |        |         | Approx. Wt. (Lbs.) |       |
|--------------|--------------------------------------|---------|--------|---------|--------|---------|--------------------|-------|
|              | A <sup>1</sup>                       | 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

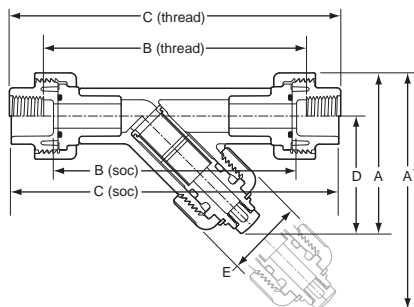
| Nominal Size | Dimension Reference (inches, ± 1/16) |          |         |         |         |         | Approx. Wt. (Lbs.) |       |
|--------------|--------------------------------------|----------|---------|---------|---------|---------|--------------------|-------|
|              | A <sup>1</sup>                       | 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 <sup>1</sup>                       | 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  | 3-3/16  | 3.07               | 3.25  |
| 2            | 13-1/4                               | 9-1/8   | 10-3/8  | 6      | 6-3/16 | 3-1/2   | 5.20               | 5.42  |
| 3            | 16-21/32                             | 11-3/8  | 12-1/32 | 7-1/2  | 7-5/8  | 5-1/8   | 9.44               | 10.07 |
| 4            | 21-19/32                             | 14-5/16 | 14-9/16 | 9-1/16 | 9-7/8  | 6-9/16  | 14.87              | 16.15 |

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

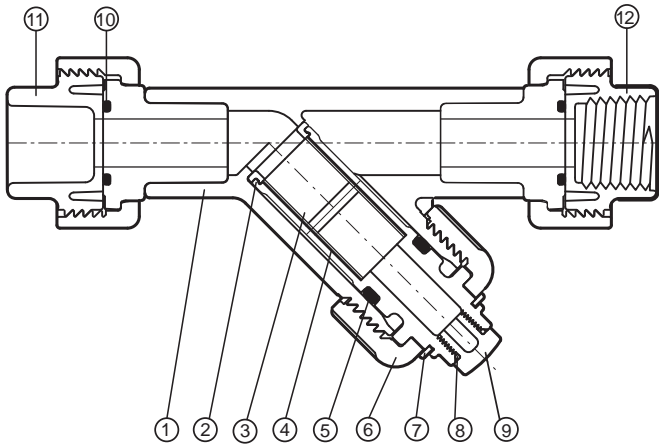


## True Union Y-Strainer Dimensions & Weights

| Nominal Size | Dimension Reference (inches, ± 1/16) |         |         |           |          |           |        |         | Approx. Wt. (Lbs.) |       |
|--------------|--------------------------------------|---------|---------|-----------|----------|-----------|--------|---------|--------------------|-------|
|              | A <sup>1</sup>                       | 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 |



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## Replacement Parts

| NO. | COMPONENT                               | QTY. | MATERIAL           |
|-----|---|------|--------------------|
| 1   | Body <sup>1</sup> (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/VITON®        |
| 6   | Bonnet Nut                              | 1    | PVC/CPVC           |
| 7   | Retaining Clip                          | 1    | PP                 |
| 8   | Plug O-ring                             | 1    | EPDM/VITON®        |
| 9   | Plug                                    | 1    | PVC/CPVC           |
| 10  | Union O-ring                            | 2    | EPDM/VITON®        |
| 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-      | -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   |

## Y-Strainer Cv

| 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.