



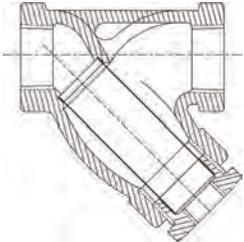
**Strainer Information**

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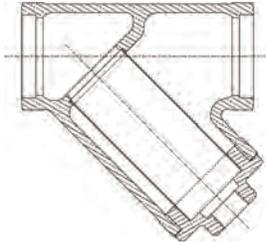


## Strainer Information

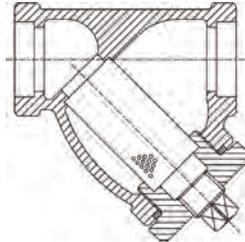
# STRAINER FEATURES



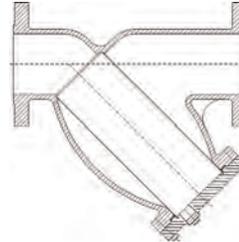
CAST THREADED  
Y-STRAINER



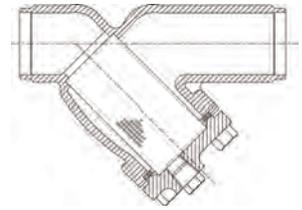
CAST SOLDER JOINT  
Y-STRAINER



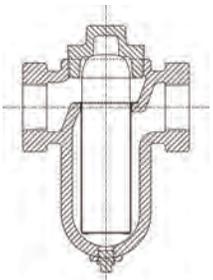
CAST SOCKET WELD  
Y-STRAINER



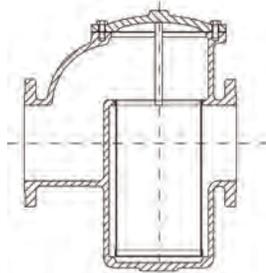
CAST FLANGED  
Y-STRAINER



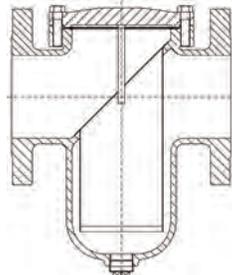
CAST BUTT WELD  
Y-STRAINER



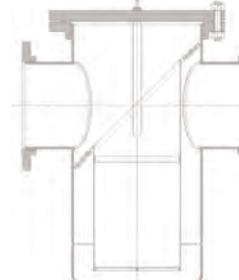
CAST THREADED  
BASKET STRAINER



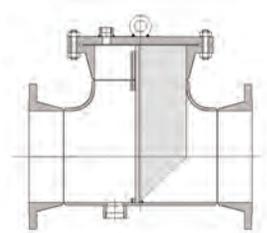
CAST FLANGED  
BASKET STRAINER



CAST FLANGED  
BASKET STRAINER



FABRICATED  
FLANGED  
BASKET STRAINER



FABRICATED  
FLANGED  
TEE STRAINER

### MATERIALS OF CONSTRUCTION

- Iron
- Ductile Iron
- Bronze
- Nickel Aluminum Bronze
- Carbon Steel
- Low Temperature Steel
- 316 Stainless Steel
- Alloy 20
- Hastelloy C276
- Chrome-Moly
- Monel
- Duplex Stainless Steel
- Titanium
- Other Materials Upon Request.

### END CONNECTIONS

- Threaded
- Seat / Solder Joint
- Socket Weld
- Flat Face
- Raised Face
- Ring Type Joint
- Butt Weld

### RATINGS

- ANSI 125 PSIG
- ANSI 150 PSIG
- ANSI 250 PSIG
- ANSI 300 PSIG
- ANSI 600 PSIG
- ANSI 900 PSIG
- ANSI 1500 PSIG
- ANSI 2500 PSIG

### FEATURES

- Low Pressure Drop
- Streamlined Design
- Large Strainer Screen
- Compact End to End Dimension
- Cast or Fabricated Construction

### OPTIONS

- Epoxy Coating.
- Galvanized Strainers.
- Cleaning and Sealing for Oxygen Service.
- Blow-off Size or Location Other than Standard.
- Special Flange Drilling on Strainers (i.e. British).
- Shock and Vibration Testing.
- X-Ray Analysis.

### SIZES

- Cast - 1/4" (8mm) to 24" (600mm).
- Fabricated - Custom Sizes to Meet any Requirement.



## STRAINER SELECTION CHART

Style	Type	End Connection	Size (Inches)	STEAM		WATER, OIL, or GAS	
				Working Pressure Non Shock Maximum			
				Pressure (PSI)	Temperature (°F)	Pressure (PSI)	Temperature (°F)
<b>CAST IRON</b>							
B	Y	Threaded	¼ to 4	250	406	400	150
B7							
A/GA	Y	125 lb. Flanged	2 to 12	125	450	200	150
			14 to 24	100	353	150	150
	Y	250 lb. Flanged	2 to 12	250	450	500	150
			14 to 16*	200	406	300	150
D/DV	Basket	Threaded	½ to 2	250	406	400	150
	Basket	125 lb. Flanged	2 to 12	125	450	200	150
	Basket	250 lb. Flanged	2 to 12	250	450	500	150
KT-7	Basket	Threaded	¾ to 3			200	150
GFV	Basket	125 lb. Flanged	2 to 12	125	450	200	150
			14 to 16*	100	353	150	150
	Basket	250 lb. Flanged	2 to 6	250	450	500	150
HLC	Basket	125 lb. Flanged	2 to 4			60	150
			5 to 8			40	150
			10 to 12			100	150
			14 to 16			6	150
<b>CAST DUCTILE IRON</b>							
BDI	Y	Threaded	½ to 2	450	650	640	100
KF-7	Basket	150 lb. Flanged	1½ to 12"			200	100
<b>CAST BRONZE</b>							
F-150	Y	Threaded	¼ to 3	125	400	200	150
E-150	Y	Solder Joint	¼ to 3	125	400	200	150
F-300	Y	Threaded	¼ to 3	235	400	400	150
E-300	Y	Solder Joint	¼ to 3	235	400	400	150
BA	Y	150 lb. Flanged	2 to 6*	150	406	225	150
		300 lb. Flanged	2 to 6*	300	406	500	150
BGFV	Basket	150 lb. Flanged	1½ to 12"	150	406	225	150
<b>CAST NICKEL ALUMINUM BRONZE</b>							
BA-7	Y	150 lb. Flanged	½ to 12	150	225	195	100
		300 lb. Flanged	½ to 12	360	500	515	100
BKF-7	Basket	150 lb. Flanged	1½ to 12*			200	100
BGFV	Basket	150 lb. Flanged	1½ to 12"	150	225	195	100
<b>CAST CARBON STEEL</b>							
SB-7	Y	600 lb. Threaded & Socket Weld	¼ to 3	600	838	1480	100
SB-7BC	Y	600 lb. Threaded & Socket Weld	¼ to 3	600	838	1480	100
SB	Y	1500 lb. Threaded & Socket Weld	½ to 3	1500	838	3705	100
SA-7	Y	150 lb. Flanged & Butt Weld	½ to 14*	150	565	285	100
		300 lb. Flanged & Butt Weld	½ to 14*	300	838	740	100
SA	Y	600 lb. Flanged & Butt Weld	½ to 12	600	838	1480	100
SD	Basket	300 lb. Threaded	¾ to 3	300	838	740	100
SD-K	Basket	150 lb. Threaded	¾ to 3			200	150
SGFV/SGFV-K†	Basket	150 lb. Flanged	2 to 14*	150	565	285	100
SGFV	Basket	300 lb. Flanged	2 to 14*	300	838	740	100
<b>CAST 316 STAINLESS STEEL</b>							
SSB-7	Y	600 lb. Threaded & Socket Weld	¼ to 3	600	1125	1140	100
SSB-7BC	Y	600 lb. Threaded & Socket Weld	¼ to 3	600	1125	1140	100
SSB	Y	1500 lb. Threaded & Socket Weld	½ to 3	1500	1125	3600	100
SSA-7	Y	150 lb. Flanged & Butt Weld	½ to 14*	150	565	275	100
		300 lb. Flanged & Butt Weld	½ to 14*	300	1125	720	100
SSA	Y	600 lb. Flanged & Butt Weld	½ to 12	600	1125	1440	100
SSD	Basket	300 lb. Threaded	¾ to 3	300	1125	720	100
SSD-K	Basket	150 lb. Threaded	¾ to 3			200	350
SSGFV/SSGFV-K†	Basket	150 lb. Flanged	2 to 14*	150	565	275	100
SSGFV	Basket	300 lb. Flanged	2 to 14*	300	1125	720	100

†Temperatures limited to o-rings and gasket materials, reference Technical Data Sheets.

\*Larger Sizes consult Factory

Also available: Duplex Basket Strainers; Fabricated "Y", Basket, and Tee Type Strainers; Temporary Cone, Basket and Plate Strainers.

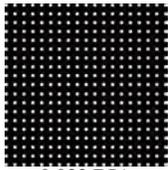


## Strainer Information

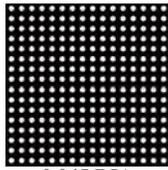
### SCREEN OPTIONS

The screen or basket is the heart of the Keckley strainer. The media flows into the open end of the screen or basket and is strained as it passes through the screen towards the outlet. All particles larger than the screen opening are trapped inside. Screens are provided in perforated metal or wire mesh, depending on strainer size and/or material being strained. Only the best materials of the proper gauge to suit the service are used. All seams are spot welded for maximum strength. Double or reinforced screens are spot welded on the end peripheries as well as the seams. Reinforced screens consist of a perforated sheet lined with wire mesh. Keckley engineers have designed the screens to provide maximum total screen area.

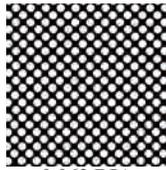
#### Perforated Sheet Metal Sizes



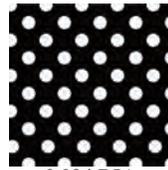
**0.033 DIA**  
1/32" Approximately  
331 Holes Per Sq. In.  
29% Open Area



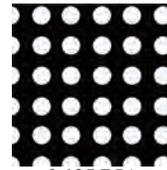
**0.045 DIA**  
3/64" Approximately  
225 Holes Per Sq. In.  
33% Open Area



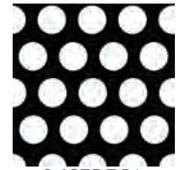
**0.062 DIA**  
1/16" Approximately  
98 Holes Per Sq. In.  
30% Open Area



**0.094 DIA**  
3/32" Approximately  
51 Holes Per Sq. In.  
36% Open Area



**0.125 DIA**  
1/8" Approximately  
29 Holes Per Sq. In.  
43% Open Area

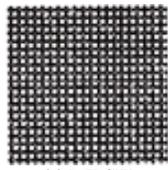


**0.1875 DIA**  
3/16" Approximately  
18 Holes Per Sq. In.  
51% Open Area

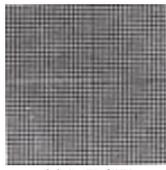
#### Mesh Sizes



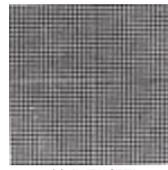
**0.25 DIA**  
1/4" Approximately  
12 Holes Per Sq. In.  
58% Open Area



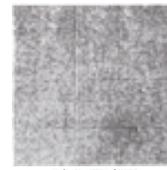
**20 MESH**  
Wire Dia. 0.015  
Opening 0.034  
49% Open Area



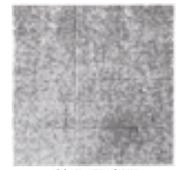
**30 MESH**  
Wire Dia. 0.011  
Opening 0.021  
45% Open Area



**40 MESH**  
Wire Dia. 0.009  
Opening 0.016  
41% Open Area



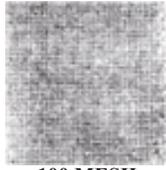
**50 MESH**  
Wire Dia. 0.0085  
Opening 0.011  
33% Open Area



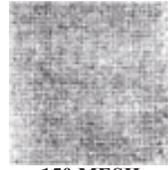
**60 MESH**  
Wire Dia. 0.0065  
Opening 0.010  
38% Open Area



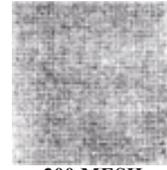
**80 MESH**  
Wire Dia. 0.0055  
Opening 0.0070  
31% Open Area



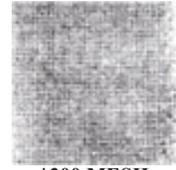
**100 MESH**  
Wire Dia. 0.0045  
Opening 0.0055  
30% Open Area



**150 MESH**  
Wire Dia. 0.0026  
Opening 0.0041  
37% Open Area



**200 MESH**  
Wire Dia. 0.0021  
Opening 0.0029  
34% Open Area



**\*300 MESH**  
Wire Dia. 0.0012  
Opening 0.002  
41% Open Area

\*300 Mesh available in Duplex Strainers only.

Stainless steel screens are standard in all strainers except for Style F-300, E-300 and flanged bronze strainers; these strainers are supplied with brass screens. Other screen materials are available upon request (i.e. 316 SS, Monel, Hastelloy C276, Alloy 20, Duplex Stainless Steel, Titanium). In stainless steel, the smallest perforation obtainable is generally twice the thickness of the metal itself. Therefore, perforations from 0.033" through 0.250", dependent on metal thickness, are readily available. When extra fine straining is required of the larger strainers, reinforced screens consisting of a perforated sheet lined with wire mesh are recommended. This allows removal of fine particles with added durability.



**Strainer Information**

**MAGNETS**

Magnets can be provided as an option which, when placed inside the strainer screen, will remove very fine iron or steel particles present in fluid.

Magnets provide protection for equipment against abrasive damage.

Strainer Size	Magnets required
2½" – 4" .....	1 magnets
5" – 6" .....	2 magnets
8" – 10" .....	3 magnets
12" – 14" .....	4 magnets
16" – 18" .....	5 magnets

\*Sizes 2" and smaller strainers can be furnished with magnetic plugs.

**REINFORCING BANDS**

Reinforcing bands can be used to add additional strength and durability to the screens or baskets when straining conditions have higher than normal pressure drops.

**DETERMINING NET FREE AREA RATIOS**

To calculate the ratio, use the following formula:

**Formula:**

1. Choose the size perforation or mesh needed to remove particles from the media passing through the strainer.
2. Multiply the *TOTAL SCREEN AREA* by the *PERCENT OF OPEN AREA of the screen*. The result equals the *OPEN AREA of the screen*.
3. Divide the result (*OPEN AREA of the screen*) by the *INSIDE AREA of the pipe* to give the *ratio of net free area of the screen to the pipe*.

**Example:** (2" Style B screwed "Y" strainer with a 20 mesh 304 stainless steel screen)

$$\begin{array}{r}
 36.23 \text{ (total screen area in}^2\text{)} \\
 \times .49 \text{ (20 mesh = 49\% open area)} \\
 \hline
 17.753 \text{ (total open area of screen)}
 \end{array}$$

$$17.753'' / 3.356'' \text{ (inside area of 2'' pipe)} = 5.29:1$$

(RATIO OF NET FREE AREA OF THE SCREEN TO PIPE AREA)

INSIDE AREA OF THE PIPE (in <sup>2</sup> )							
Size	(in <sup>2</sup> )	Size	(in <sup>2</sup> )	Size	(in <sup>2</sup> )	Size	(in <sup>2</sup> )
1/4"	0.104	1-1/4"	1.496	4"	12.732	12"	111.946
3/8"	0.191	1-1/2"	2.036	5"	20.008	14"	135.294
1/2"	0.304	2"	3.356	6"	28.894	16"	176.738
3/4"	0.534	2-1/2"	4.788	8"	48.914	18"	223.71
1"	0.864	3"	7.394	10"	78.865	20"	278.04

Screen Opening Equivalents				
Fractional Inches	Decimal Inches	Millimeters	Microns	Mesh
--	0.001	--	25	--
--	0.0015	--	37	400
--	0.002	--	50	300
--	0.003	--	75	<b>200</b>
--	0.004	1/10	100	<b>150</b>
--	0.005	1/8	125	115
--	0.006	--	149	<b>100</b>
--	0.007	--	177	<b>80</b>
--	0.010	1/4	250	<b>60</b>
--	0.011	--	280	<b>50</b>
--	0.016	--	406	<b>40</b>
--	0.020	1/2	500	--
--	0.021	--	533	<b>30</b>
--	0.030	3/4	750	--
<b>1/32</b>	0.033	--	838	--
--	0.034	--	840	<b>20</b>
--	0.039	1	1000	16
<b>3/64</b>	0.045	--	1143	--
--	0.046	--	1190	14
--	0.055	--	1410	12
--	0.059	1-1/2	1500	--
<b>1/16</b>	0.062	--	1575	--
--	0.065	--	1680	10
--	0.079	2	2000	9
--	0.093	--	2380	8
<b>3/32</b>	0.094	--	2388	--
--	0.110	--	2790	7
--	0.118	3	3000	--
<b>1/8</b>	0.125	--	3175	--
--	0.131	--	3330	6
--	0.156	4	4000	5
--	0.185	--	4700	4
<b>3/16</b>	0.1875	--	4763	--
--	0.197	5	5000	--
--	0.236	6	6000	--
<b>1/4</b>	0.250	--	6350	--
--	0.263	--	6700	3

Sizes in **bold red** are available from stock at Keckley Company. Consult Factory for the availability of other sizes including those not listed.



## KECKLEY PIPELINE STRAINERS INSTALLATION AND MAINTENANCE

### GENERAL

A Y-strainer can be installed in either a horizontal or vertical position (Downward flow) with the screen element pointing downward. This allows the strainer screen to collect material in the strainer at the lowest point of the screen.

Basket strainers are designed for installation in horizontal lines. They are commonly used for liquid service applications.

### INSTALLATION

Carefully check all machined surfaces to make sure they are free of defects, and the inside of the strainer is free of foreign objects. All strainers should be installed with the arrow on the strainer body pointing in the direction of flow. For installation of threaded strainers an appropriate sealant should be used on the threads. For the installation of flanged strainers the flanged bolting should be tightened gradually going back and forth in a clockwise rotation until all bolts are tight. The system can now be pressurized gradually while checking for any leakage around all connections. If leakage occurs, depressurize the system and start the installation procedure over.

### MAINTENANCE

#### **WARNING**

Before the removal or loosening of any bushing, cap, plug or cover on a strainer, extreme caution should be exercised to ensure there is zero pounds pressure in the system. Only after the system has been depressurized, should the strainer be drained for service.

***SERVICE ON A PRESSURIZED STRAINER CAN CAUSE  
SERIOUS INJURY AND/OR PROPERTY DAMAGE.***

A Y-strainer screen can be cleaned by removing the plug in the bushing, cap or bolted cover allowing the strainer to drain the loose material inside the screen. If a blow-off valve is connected to the strainer it can be opened to achieve the same result as the above. The Y-strainer screen can also be cleaned by removing the bushing, cap or cover to access the screen element.

Basket strainers with a closed bottom basket can be cleaned by removing the cap or cover and pulling out the basket screen for service. If the strainer screen is bottomless (Style DV, BDV, SDV) the blow-off plug can be removed allowing it to be drained and cleaned like a Y-strainer.

Care should be taken in cleaning screens. After removing a screen, it should be soaked in a cleaning solution or cleaned by using a brush. Do not allow trapped material in the screen to harden, as it will be difficult to remove. A regular cleaning schedule is recommended to avoid screens from becoming clogged.

A pressure gauge installed before and after a strainer will indicate a pressure loss due to clogging. This can help in establishing a maintenance schedule for cleaning the strainer screen. Extra screens can be useful in keeping the system operating during the cleaning process.