

TECHNICAL DATA**CHOOSING THE RIGHT SCREEN IS THE
MOST CHALLENGING DECISION IN
STRAINER DESIGN**

An extremely important consideration in the selection of a strainer is the size of the perforation or mesh used in the making of the screen.

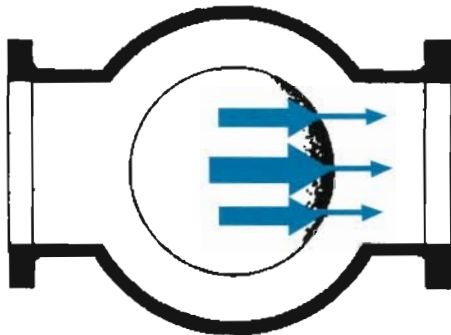
Most steam traps, pumps, nozzle and instrument specifications will provide maximum size of solids that can be passed. The following selection guide charts will help in the selection of the appropriate screen. Screen opening should be approximately 2/3 to 1/2 the size of maximum allowable solids size. When specifying a particular application it is important to resist over design, (over straining). If selected filtration is too fine, the pressure drop through the strainer will increase very rapidly, possibly resulting in damage to the screen. Strainer elements are available in various metals such as Stainless, Monel, Brass, and many other exotic materials.

Special Designs:

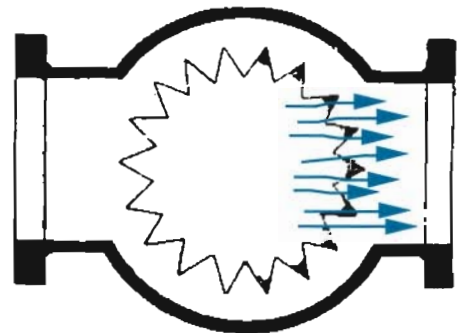
Magnetic Screen Assembly. Titan Strainer Screens can be fitted with magnetic assemblies. The magnets are spaced to create a continuous magnetic field within the screen interior. The magnetic assembly is ideal for retaining ferrous metal particles. The magnetic screen is a good solution for preventing premature pump ring and seal wear.

Special Drilled or Wadge Wire Screens. Titan-FCI designs and builds screens that will withstand full line pressure when clogged. These special screens have individually drilled holes in heavy gauge metal up to 3/8" thick or wadge wire screen.

Hi-Flo Convuluted. or corrugated designs offer increased open area, reducing pressure drop by 40%. The convuluted design is ideal for both high velocity applications and those requiring very fine straining.



Shows dirt on standard surface resulting in maximum restriction.



Shows dirt accumulation in downstream corner of convoluted screen.

Two types of screens for a wide range of process conditions

Titan-FCI offers a wide range of opening sizes with high open area ratios for low pressure drops. Screens are available in two primary types, perforated, and fine mesh (woven wire cloth).

Perforated type hole sizes range from .020" to 1/2" as standard.

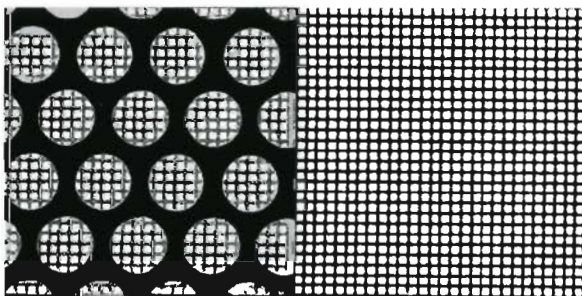
Material Thickness. Standard gauge of screen material ranges from 22 to 11 depending on hole size. Special thicknesses for drilled holes are available. Perforated metal should be no smaller than 1/2 the metal thickness. Perforated screens are easy to clean, less susceptible to clogging than fine mesh designs.

Mesh Screens. Woven wire mesh screens are available in both lined and unlined types, most fine mesh screens require a perforated screen to support a finer wire cloth. Where very fine straining is required, a 5/32" perforation is most commonly used as a an outer support for mesh lined screens. The mesh lined screen design is very important in higher pressures, higher velocity flow, and larger sizes. Unsupported mesh screens are available for lower pressures, service under 200PSI, in sizes smaller than 2".

Wire Size Diameters & Gauge Equivalents

0.120	●	██████████	11 Ga.
0.105	●	██████████	12 Ga.
0.092	●	██████████	13 Ga.
0.080	●	██████████	14 Ga.
0.072	●	██████████	15 Ga.
0.063	●	██████████	16 Ga.
0.054	●	██████████	17 Ga.
0.047	●	██████████	18 Ga.
0.041	●	██████████	19 Ga.
0.035	●	██████████	20 Ga.
0.032	●	██████████	21 Ga.

Perf. Supported Not Supported



Relative Sizes of Particles

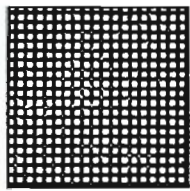
Sizes of Familiar Objects

SUBSTANCE	Micron	inch
Grain of Table salt	100	0.004
Human Hair	70	0.0027
Lower Limit of Visibility	40	0.00158
White Blood Cells	25	0.001
Talcum Powder	10	0.0004
Red Blood Cells	8	0.0003
Bacteria (Average)	2	0.00008

Screen Selector Guide

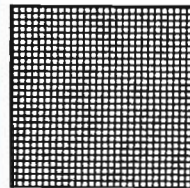
Service	Size in (DN)	Coarse Straining, in	Medium Straining, in	Fine Straining, in
Air or Gas	1/2-4 (15-100)	1/32 perf.	60 mesh	100 mesh
	5-up (125-up)	3/64 perf.	1/32 perf.	60 mesh
Gasoline	1/2-4 (15-100)	3/64 perf.	1/32 perf.	100 mesh
	5-up (125-up)	0.057 perf.	3/64 perf.	40 mesh
Oil - Low Viscosity	1/2-4 (15-100)	3/64 perf.	1/32 perf.	100 mesh
	5-up (125-up)	0.057 perf.	3/64 perf.	40 mesh
Oil - Medium Viscosity	1/2-4 (15-100)	0.057 perf.	3/64 perf.	40 mesh
	5-up (125-up)	1/8 perf.	0.057 perf.	1/8 perf.
Oil - High Viscosity	1/2-4 (15-100)	1/8 perf.	0.045 perf.	3/64 perf.
	5-up (125-up)	1/4 perf.	1/8 perf.	0.057 perf.
Steam	1/2-4 (15-100)	3/64 perf.	1/32 perf.	30 mesh
	5-up (125-up)	0.057 perf.	3/64 perf.	1/32 perf.
Water	1/2-4 (15-100)	3/64 perf.	20 mesh	30 mesh
	5-up (125-up)	0.057 perf.	3/64 perf.	1/32 perf.

Mesh Screen Selections



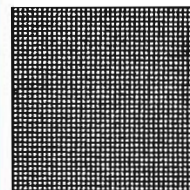
20 MESH

52% open area
1/32" openings
0.034 in./0.841 mm
864 microns
wire diameter 0.014



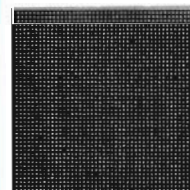
30 MESH

41% open area
1/50" openings
0.020 in./0.595 mm
508 microns
wire diameter 0.010



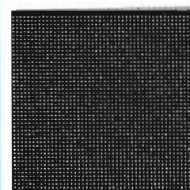
40 MESH

36% open area
1/64" openings
0.015 in./0.400 mm
381 microns
wire diameter 0.010



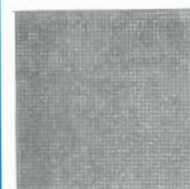
60 MESH

30% open area
0.009 openings
229 microns
wire diameter 0.010



80 MESH

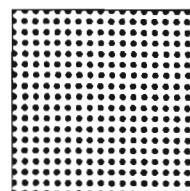
31% open area
0.007 openings
178 microns
wire diameter 0.005



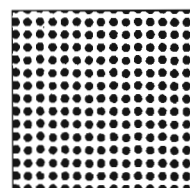
100 MESH

30% open area
0.005 inches
150 microns
wire diameter 0.0045

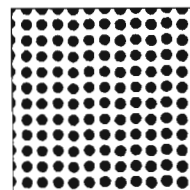
Perforated Screen Selections



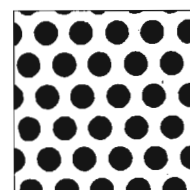
1/32" Dia.
(0.033 in / 0.79 mm)
28% open area
324 holes/sq.in.



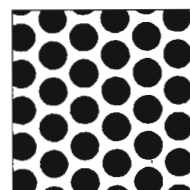
3/64" Dia.
(0.047 in / 1.19 mm)
36% open area
325 holes/sq.in



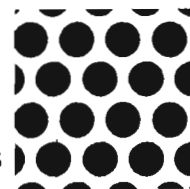
1/16" Dia.
(0.63 in / 1.59 mm)
37% open area
132 holes/sq.in



1/8" Dia.
(0.125 in / 3.18 mm)
40% open area
32 holes/sq.in



5/32" Dia.*
(0.156 in / 3.97 mm)
62% open area
33 holes/sq.in



1/4" Dia.
(0.25 in / 6.35 mm)
40% open area
8 holes/sq.in

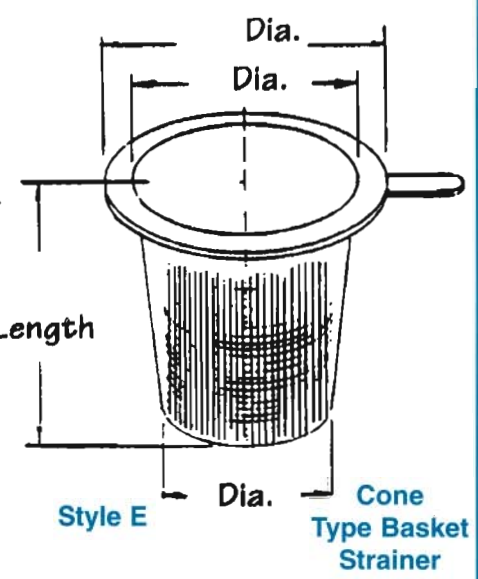
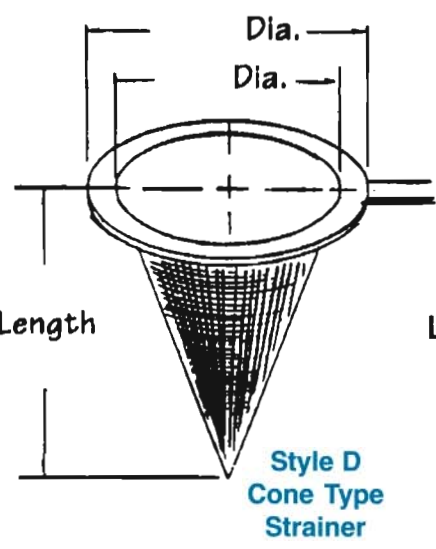
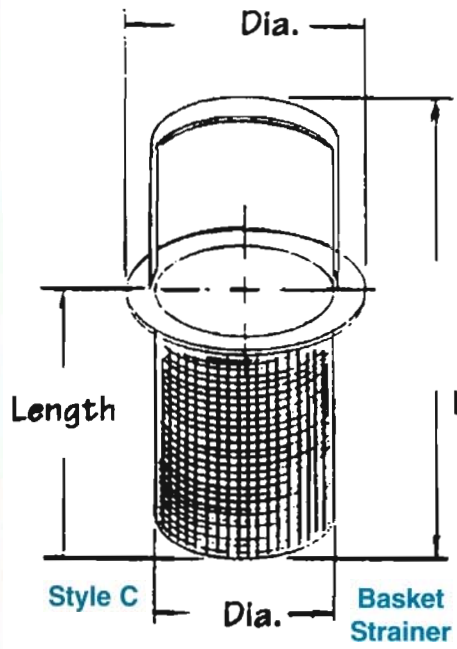
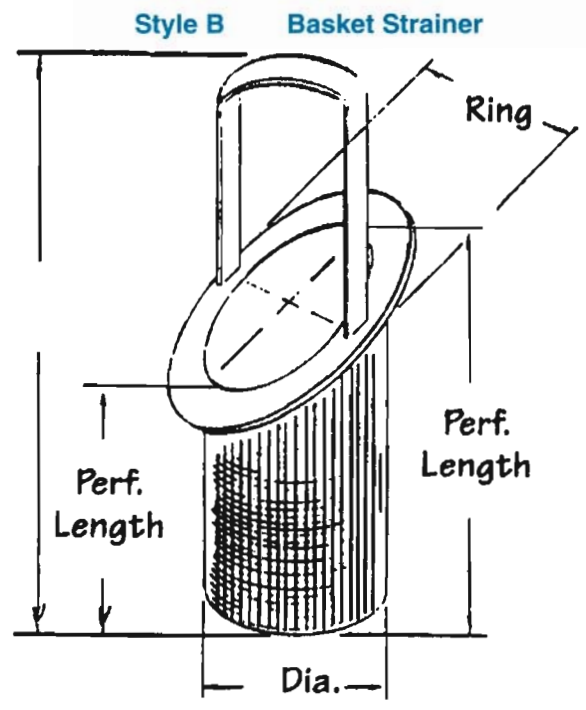
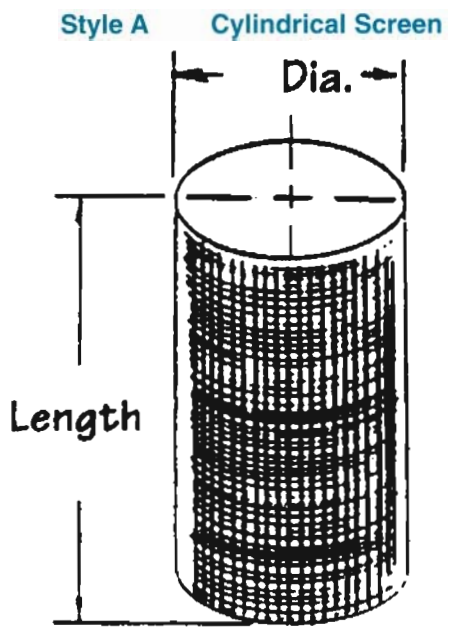
MESH

Mesh Openings/In.	Opening		Percent Open Area
	Inches	Micron	
2	.437	11100	76.4
2	.407	10360	66.6
3	.270	6860	65.6
4	.208	5160	65.9
4	.187	4750	56.0
5	.159	4040	63.2
6	.132	3350	62.7
7	.108	2740	57.2
8	.097	2460	60.2
10	.075	1910	56.3
11	.073	1850	64.5
12	.060	1520	51.8
14	.051	1300	51.0
16	.044	1130	50.7
18	.038	980	48.3
20	.034	872	46.2
30	.020	513	37.1
40	.015	384	36.0
50	.011	282	30.3
60	.009	231	33.9
80	.0075	180	36.0
24 x 115	.0056		
100	.0055	141	30.3
120	.0046	118	30.1
30 x 160	.0046	118	
150	.0041	105	37.4
40 x 200	.0033	85	
170	.0035	79	35.1
30 x 260	.0029	75	
200	.0029	74	33.6
250	.0024	62	36.0
50 x 250	.0024	62	
28 x 480	.0023	59	
300	.0018	46	29.7
325	.0017	44	30.0
400	.0015	39	36.0
80 x 700	.0012	40	
125 x 600		30	
165 x 800		28	
165 x 1400		17	
200 x 1400		10	
250 x 1400		83	
25 x 2300		53	
75 x 2400		4	
400 x 2800		3	

***5/32" Dia. is most commonly used as an outer support for mesh-lined screens and baskets. Provides mas. open area of 62%.**

In addition to the many standard perforation and mesh sizes shown here, Titan can also supply a wide range of specials such as 250 mesh.

TITAN-FCI offers manufactured replacement screens and baskets for all makes of Y and Basket Type Strainers



TITAN-FCI manufactures strainer baskets, screens, cones and tee strainer in stainless steel, Monel, titanium and other exotic metals. Titan-FCI can customize baskets to fit your special needs.

Please send us your prints, samples or simply give us your requirements/specs in attached chart and let us design the strainer for you. In many cases, replacement elements can be ordered with model number and brand name, such as Mueller, Keckley, Hayward, Yarway, Sarco, and many others.

When ordering, specify the following information:

1. Pipe Size
2. Style
3. Perforation or Mesh Size
4. Material
5. Design Type - cone, basket, etc.
6. Direction of Flow - Straight or reverse
7. Percentage of Open Area or Length
8. Pressure Ratio