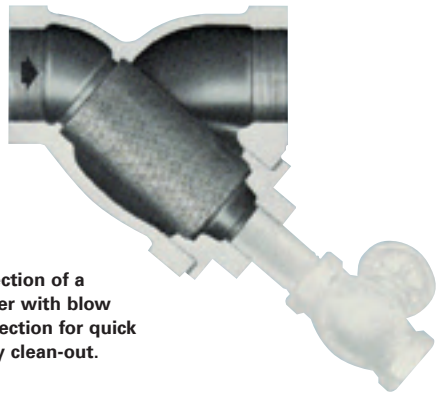
Model 85 Heavy-Duty Y Strainer

Introduction to Y Strainers

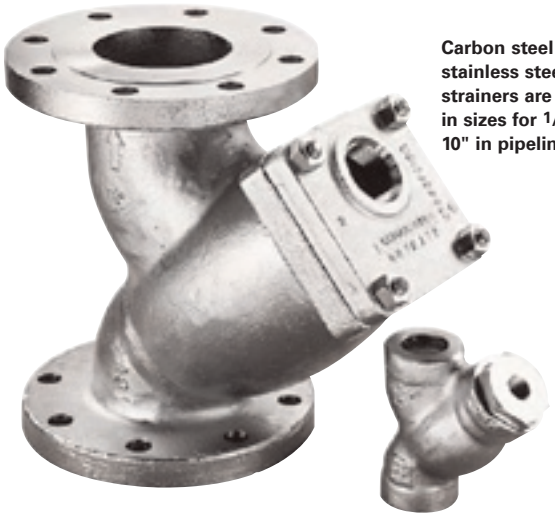
Y strainers are used in a wide variety of liquid and gas straining applications to protect downstream process system components in many industrial applications. Water handling applications—where it's important to protect equipment that could be damaged or clogged by unwanted sand, gravel or other debris—commonly use Y strainers.

Y strainers are devices for mechanically removing unwanted solids from liquid, gas or steam lines by means of a perforated or wire mesh straining element. They are used in pipelines to protect pumps, meters, control valves, steam traps, regulators and other process equipment.



Cross-section of a Y Strainer with blow off connection for quick and easy clean-out.

For cost effective straining solutions, Y strainers work well in a multitude of applications. When the amount of material to be removed from the flow is relatively small—resulting in long intervals between screen cleanings—the strainer screen is manually cleaned by shutting down the line and removing the strainer cap. For applications with heavier dirt loading, Y strainers can be fit with a "blow off" connection that permits the screen to be cleaned without removing it from the strainer body.



Carbon steel and stainless steel Y strainers are offered in sizes for 1/4" to 10" in pipelines

- 1/4" to 10"
- Carbon Steel and Stainless Steel
- Threaded, Flanged & Socket Weld Connections

FEATURES

- Heavy Duty Construction
- Compact Design
- Bolted or Threaded Covers
- Standard Stainless Steel Screens

OPTIONS

- Perforated Stainless Steel Screens - 1/32" to 1/2"
- 20, 40, 60, 80, 100, 150, 200, 325 and 400 Mesh Stainless Steel Screens
- Monel Screens

Eaton Model 85 Y Strainers are heavy duty filters—engineered to withstand even the most aggressive of industrial and commercial applications year after year. When you consider the critical operational parameters often associated with Y strainers used in steam and gas applications, it's important to consider the quality of the vessel since it's subjected to extremely high temperatures and high pressures.

A Y strainer is a pressure vessel. Its wall thickness can be analyzed and evaluated by different applicable standards. Every rugged Eaton Model 85 Y Strainer is designed to stand up the most demanding real world applications.

Eaton heavy duty Model 85 Y Strainers are furnished with high quality stainless steel screens that are carefully fabricated to fit the strainer body perfectly. This, coupled with the precision machined screen seat on the body of the strainer, protects against any bypass.

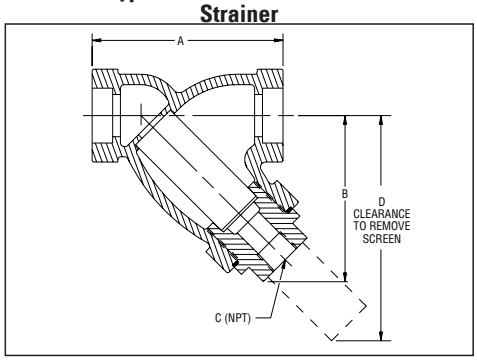
Eaton Model 85 Heavy Duty Y Strainers are available in carbon steel or stainless steel for pipeline sizes from 1/4" to 10", with threaded, flanged, or socket weld connections.

Eaton Model 85 Y Strainers 1/4 to 10" Carbon and Stainless Steel-Threaded, Socket Weld & Flanged

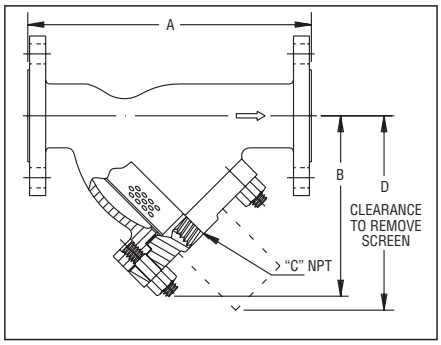
Size	Material	End Connection	Cover	Rating (WOG) non-shock	Model Number
¼" to 2"	Carbon Steel	Threaded or Socket Weld 600#	Threaded	1480 psi @ 100°F	85
¼" to 2"	Stainless Steel	Threaded or Socket Weld 600#	Threaded	1440 psi @ 100°F	85
½" to 10"	Carbon Steel	Flanged 150#	Bolted	285 psi @ 100°F	85
½" to 10"	Carbon Steel	Flanged 300#	Bolted	740 psi @ 100°F	85
½" to 10"	Stainless Steel	Flanged 150#	Bolted	275 psi @ 100°F	85
½" to 10"	Stainless Steel	Flanged 300#	Bolted	720 psi @ 100°F	85

Dimensional Drawings

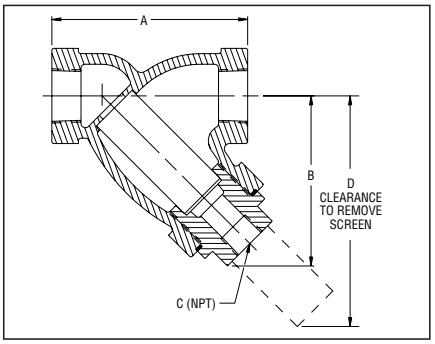
Typical Socket Weld End Y Strainer



Typical Flanged Y Strainer



Typical Threaded Y Strainer



Flanged Carbon Steel and Stainless Steel – 150 # (in/mm)

Size	A	B	C (Nom.)	D	Wt (lb / kg)
½	5.00 / 127	2.75 / 70	⅜ / 10	3.50 / 89	5 / 2.3
¾	5.63 / 143	3.00 / 76	⅜ / 10	4.00 / 102	7 / 3.2
1	6.38 / 162	3.64 / 92	½ / 15	5.00 / 127	9 / 4.1
1-¼	7.25 / 184	4.25 / 108	¾ / 20	5.75 / 146	14 / 6.3
1-½	8.88 / 226	5.75 / 146	¾ / 20	6.50 /165	18 / 8.2
2	7.88 / 200	6.00 / 152	1 / 25	8.25 / 210	16 / 7.3
2-½	9.75 / 248	6.50 / 165	1 / 25	9.25 / 235	25 / 11.4
3	10.00 / 254	7.25 / 184	1-¼ / 32	10.50 / 267	35 / 16
4	12.13 / 308	9.75 / 248	1-½ / 40	14.75 / 375	70 / 32
6	18.50 / 470	14.25 / 362	2 / 50	21.00 / 533	130 / 59
8	21.63 / 549	18.00 / 457	2 / 50	26.75 / 679	240 / 109
10	26.00 / 660	22.50 / 565	2 / 50	33.75 / 857	300 / 136

Flanged Carbon Steel and Stainless Steel – 300 # (in/mm)

Size	A	B	C (Nom.)	D	Wt (lb / kg)
½	5.25 / 133	2.75 / 70	⅜ / 10	3.50 / 89	6 / 2.7
¾	6.00 / 152	3.00 / 76	⅜/ 10	4.00 /102	9 / 4.1
1	6.88 / 175	3.63 / 92	½ / 15	5.00 / 127	13 / 6.0
1-¼	7.75 / 197	4.25 / 108	¾ / 20	5.75 / 146	18 / 8.2
1-½	9.38 / 238	5.75 / 146	¾/ 20	6.50 / 165	24 / 11
2	8.63 / 219	6.25 / 159	1 / 25	8.25 / 210	30 / 13.6
2-½	10.63 / 270	7.00 / 178	1 / 25	9.25 / 235	40 / 18.2
3	12.00 / 305	7.75 / 197	1-¼/ 32	10.50 / 267	55 / 25
4	14.50 / 368	10.50 / 267	1-½ / 40	14.75 / 375	105 / 48
6	20.00 / 508	14.75 / 375	2 / 50	21.00 / 533	200 / 91
8	23.38 / 594	18.75 / 476	2 / 50	27.00 / 686	360 / 164
10	27.38 / 695	22.75 / 578	2 / 50	34.50 / 876	430 / 195

Socket Weld and Threaded Carbon Steel and Stainless Steel – 600 # (in/mm)

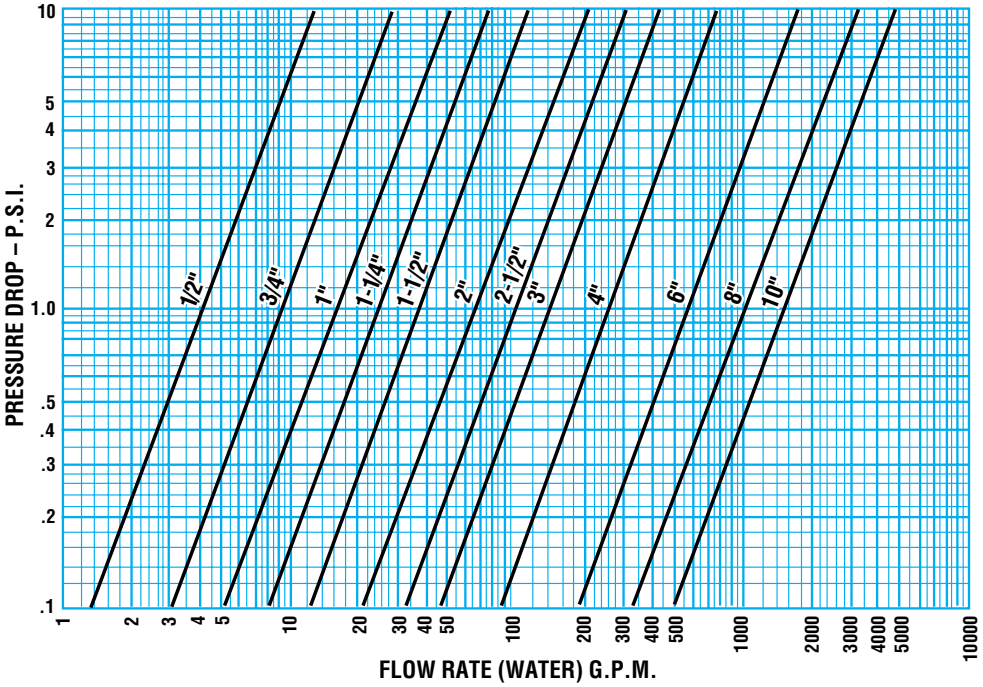
Size	A	B	C (Nom.)	D	Wt (lb / kg)
¼	3.00 / 76	3.00 / 76	⅜ / 10	4.00 / 102	2 / 0.9
⅜	3.00 / 76	3.00 / 76	⅜ / 10	4.00 / 102	2 / 0.9
½	3.00 / 76	3.00 / 76	⅜ / 10	4.00 / 102	2 / 0.9
¾	3.75 / 95	3.50 / 89	⅜ / 10	4.75 / 121	4 / 1.8
1	4.63 / 118	4.00 / 102	½ / 15	5.75 / 146	6 / 2.7
1-¼	5.00 / 127	4.63 / 118	¾ / 20	6.50 / 165	8 / 3.6
1-½	5.63 / 143	5.25 / 133	¾ / 20	7.50 / 191	10 / 4.5
2	7.00 / 178	5.75 / 146	1 / 25	8.75 / 222	15 / 6.8

Consult us for 12" and larger size dimensions. Dimensions and weights are for references only. Contact us for certified drawings.

See page 30 for Pressure Drop Data

Model 85 Y Strainer Pressure Drop Curves

Water Pressure Drops



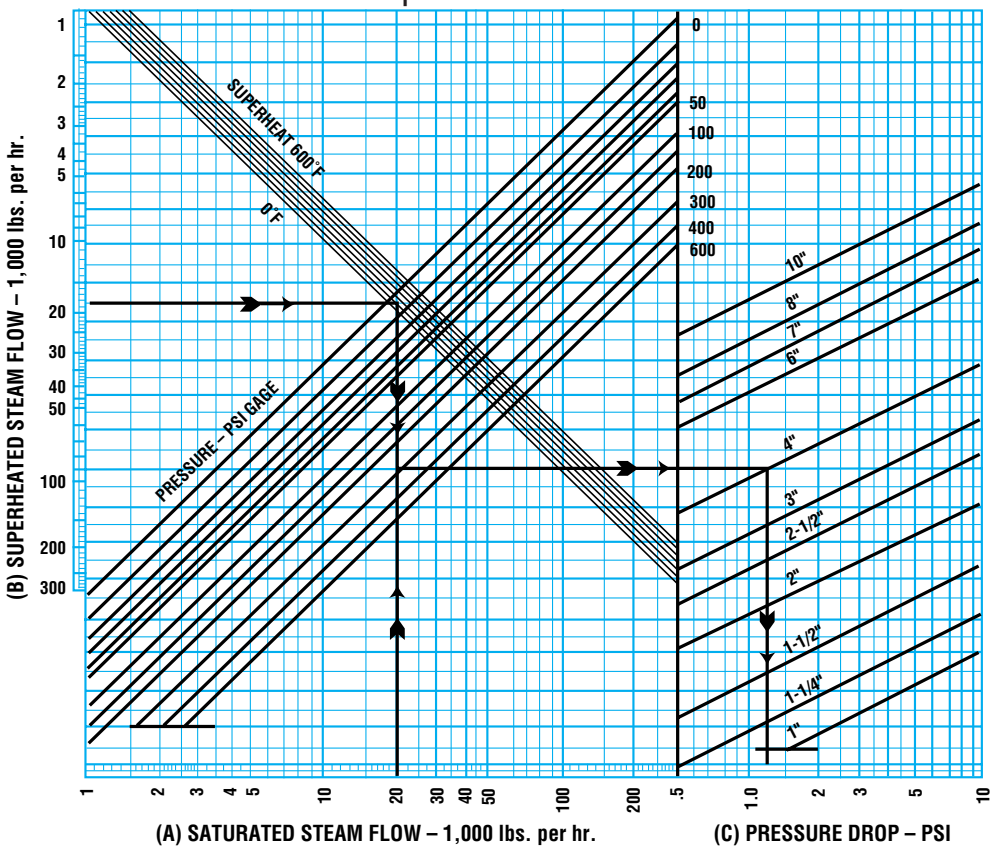
Calculating Saturated Steam Pressure Drop

Example:

Pressure = 300 psig
Flow Rate = 20,000 lb/hr
Strainer Size = 4 inches

1. Locate steam flow on Scale A.
2. Follow vertical line to required pressure rating.
3. Follow horizontal line to strainer size.
4. Follow vertical line downward and read pressure drop on Scale C.
5. Pressure drop equals 1.25 psi.

Steam Pressure Drops



Calculating Superheated Steam Pressure Drop

Example:

Pressure = 300 psig
Flow Rate = 18,000 lb/hr
Strainer Size = 4 inches

1. Locate steam flow on Scale B.
2. Follow horizontal line to superheat.
3. Follow vertical line to pressure.
4. Follow horizontal line to strainer size.
5. Follow vertical line downward and read pressure drop on Scale C.
6. Pressure drop equals 1.25 psi.

Note: Use the superheat temperature value above the saturated steam temperature to obtain the point on this graph.

Consult Eaton for 12" and larger sizes.