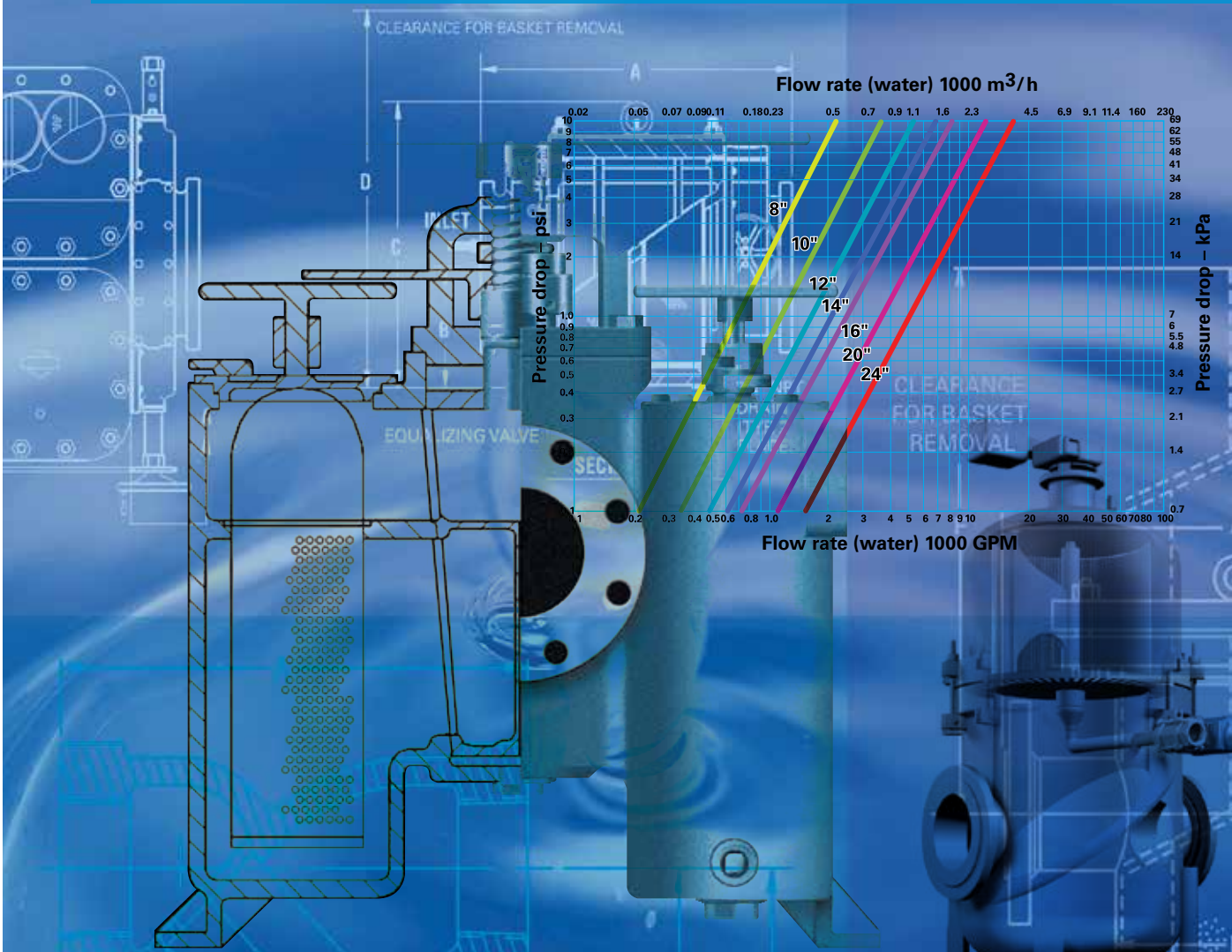
Powering Business Worldwide

T and Y-Type
Simplex
Duplex

Fabricated
Temporary
Multi-Basket



Manual and Fabricated pipeline strainer family

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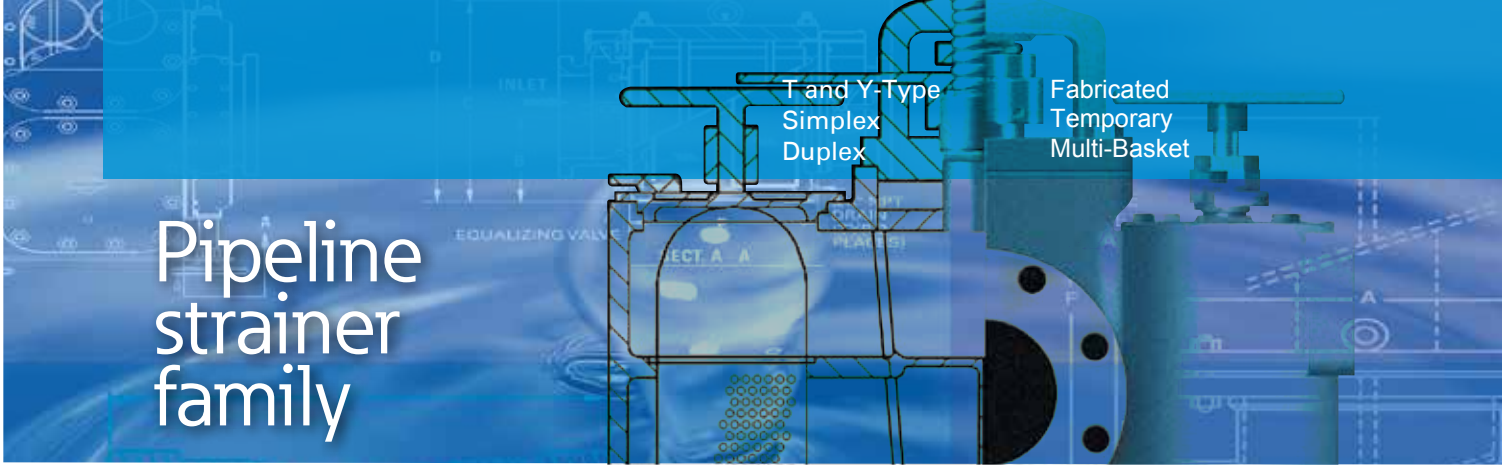
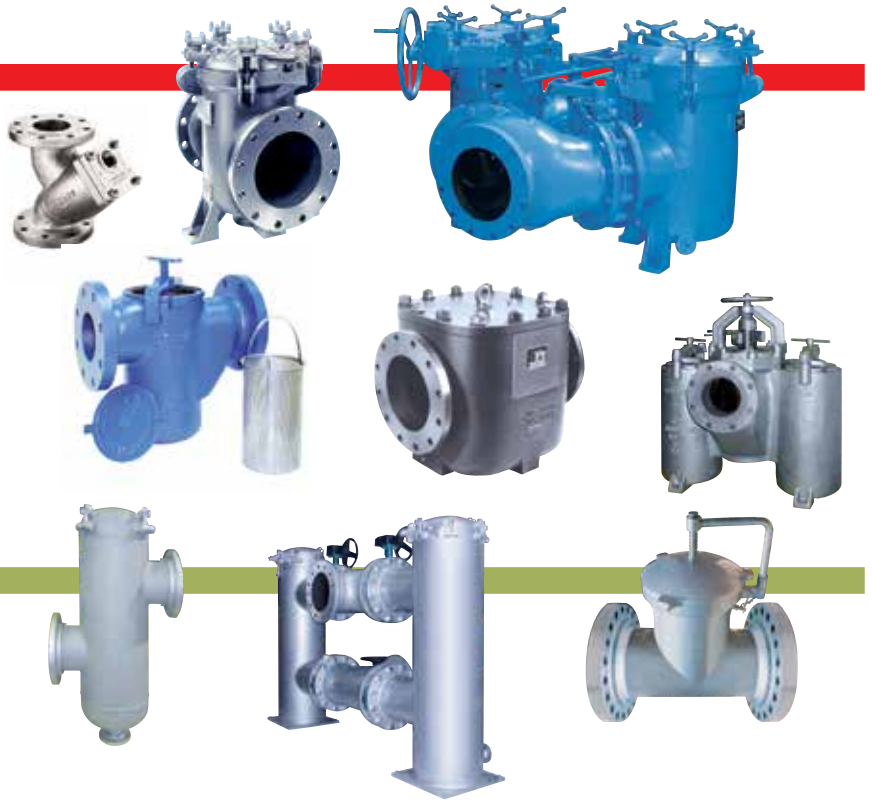


Pipeline strainer family

Contents



Eaton Strainer Applications

Chemicals

The presence of a pipeline strainer means a cleaner product, protection of equipment and simple separation of solids from liquids. By installing a pipeline strainer, noticeable improvements in chemical operations and guaranteed longer running life of equipment are possible.

Industrial and municipal water

Eaton strainers remove debris from lakes, streams and wells that can damage or clog equipment. They also remove leaves, insects, feathers, etc. From cooling tower water where the system is open to the atmosphere. For desalinization equipment, they take out unwanted matter from the water before it is treated for salt removal. Spent waste-water often passes through a basket strainer to take out material that should not go into a sewer or a waterway.

Pharmaceuticals and cosmetics

Ointments, lotions and similar products, which may contain clumps of undispersed or undissolved matter, are pumped through strainers. In the manufacture of lipstick, for instance, unwanted lumps can ruin the product.

Petroleum

Pipeline strainers clean unwanted material from petroleum products ranging from crude oil to gasoline. Fuel oil can contain gums, tars or other dirt that can plug the nozzles of an oil burner. Every industrial oil burner is equipped with a strainer to screen these out. Similarly, refineries use strainers in oil handling operations to keep debris away from pumps and meters.

Pulp and paper

Smooth paper finishes require coatings be free of pigment clumps. Strainers in the coating lines catch and retain the lumps. They also clean traces of pulp or paper from white water effluent before it is discharged.

Process equipment

By installing a pipeline strainer ahead of expensive process equipment, the strainers protect against damage from scale, dirt or by-products, preventing costly shutdowns. Heat exchangers, condensers and pumps use strainers on their intake sides. Pipeline strainers keep flow meters and spray nozzles from clogging.

Paint, ink and latex

Undissolved lumps of resin, skins or clumps of pigment can ruin costly coating products. They are hard to detect, yet easy to avoid when using eaton strainers.

Marine industry

Pipeline strainers are vital in handling seawater, which can contain a good deal of undesirable matter. Cooling lines, fire control lines, sanitary lines and general cleaning lines use strainers. Strainers also clean fuel, hydraulic and lubrication systems.

Tank cars and trucks

A basket strainer installed on a tank truck that dispenses liquids can catch unwanted solid material. Many chemical products undergo changes during storage or transport– which result in solid residues. The presence of solids in liquid fertilizers or pesticides, for example, can cause clogging of spray equipment.

Commercial buildings, hospitals and schools

Cooling towers and boilers use pipeline strainers to protect them from damage due to scaling.

Food industry

Strainers remove bits of pulp, skins or other unwanted matter from fruit juices. They remove lumps from chocolate syrup and wax from honey. The baking industry strains bone and gristle from molten lard with basket strainers and uses them to remove bits of dough, seeds, etc. From discharge water. Straining water allows it to be recycled and used for other purposes.

Power generation

The electric power industry uses strainers to clean water for cooling and to protect equipment. They also strain transformer oil to avoid clogging of the circulating lines.

More information

For specific, detailed application information, consult eaton.

Simplex, Duplex, Y-Type, Temporary, Baskets and Screens

Standard cast pipeline strainers

High performance systems for keeping debris out of your downstream equipment

Eaton standard cast pipeline strainers protect pumps, filters, nozzles, flow meters, valves, heat exchangers, condensers, oil burners, boilers and other process system components from damaging pipeline debris. Eaton maintains the largest and broadest inventory of strainers in the industry, and can provide off-the-shelf delivery of simplex, duplex and Y strainers in metals such as cast iron, carbon steel, bronze and stainless steel.

Y strainers function in a variety of liquid and gas steam straining applications to protect downstream process system components from damage or clogging by sand, gravel or other debris. Y strainers remove unwanted solids from liquid, gas or steam lines by means of a perforated or wire mesh element. Y strainers are cost-effective when removing a small amount of material– resulting in long intervals between screen cleanings. To clean the strainer screen, shut down the line and remove the strainer cap. For applications with heavier dirt loading, Y strainers fitted with a "blow off" connection permits cleaning of the screen without removing it from the strainer body.

Simplex basket strainers are used when liquids require regular or frequent cleaning, and when the line can be shut down for short periods to clean or change the basket. Basket strainers hold substantially more material than Y strainers and offer a lower pressure drop. Installed upright, in a horizontal line, the basket strainer lifts out from the top. This makes it easier to use with gummy or sticky fluids or with large pipeline sizes where the filled basket weight can be considerable.

Duplex basket strainers operate continuously so the pipeline flow never has to be shut down for strainer basket cleaning. When one basket is full, the flow shifts to the other one, making it easy to remove, clean and replace the first basket. Duplex or double basket strainers are valuable in locations in which it is impossible to shut off flow to stop the operation. Examples of these processes include cleaning fuel oil in large industrial oil burners, all types of marine applications, screening water in cooling towers and straining fluids in continuously running chemical operations.

Eaton standard cast pipeline strainers meet customers' expectations and the highest standards, including:

- ISO 9001-2008 quality management
- Properly sized components to meet any specified retention requirement and flow rate
- NSF approved coatings
- Ultra low discharge strainer technology that offers reduced purged volumes

For more than 50 years, Eaton has led the way with designs that meet the growing and rigorous demands of process and manufacturing industries, utilities and municipalities around the world.

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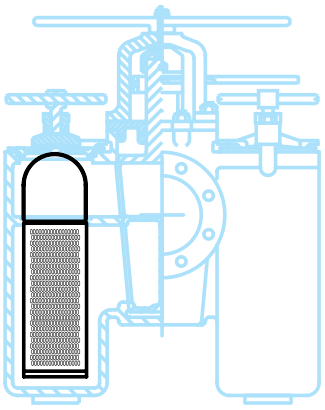
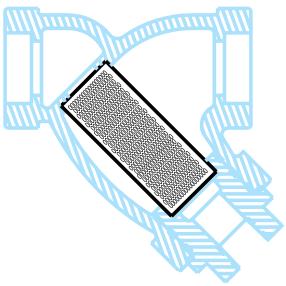
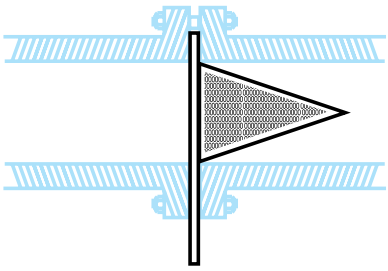


Partial cutaway of plug type duplex strainer showing basket in position



Cutaway of Y strainer shows strainer screen in position

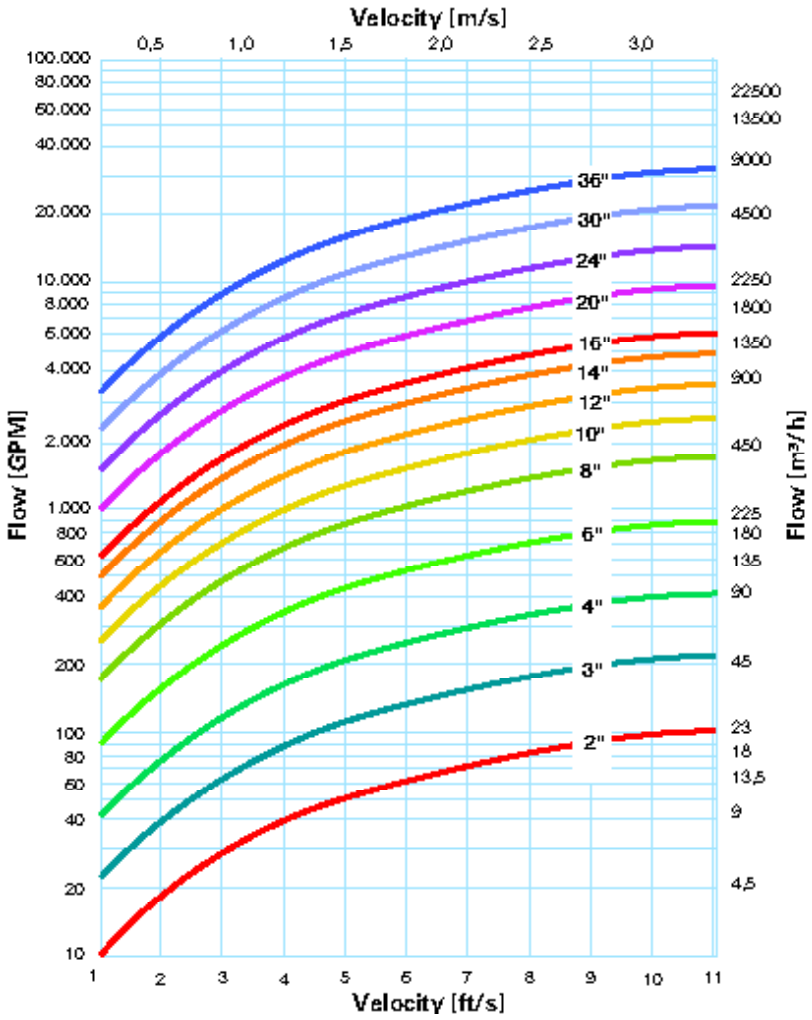


Cone type temporary strainer is shown bolted between two pipe flanges

Basic sizing guidelines

1. Select the correct screen and opening size, do not make smaller than necessary.
2. The quantity, type and nature of debris to be removed are considered.
3. The strainer meets the design pressure and temperature requirements of the pipeline.

Strainer sizing chart



Y Strainer

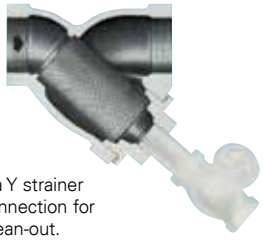
Model 85

Pipeline Strainer | Cast Construction | Permanent Media

- 1/4" to 10"
- Carbon steel and stainless steel
- Threaded, flanged or socket weld connections

Features

- Compact design
- Bolted or threaded covers
- Standard stainless steel screens
- Horizontal or vertical installation

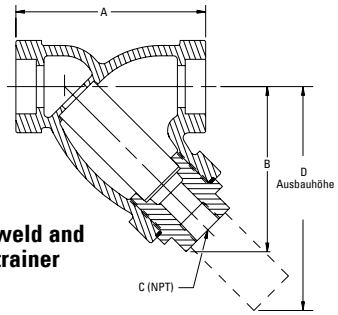


Cross-section of a Y strainer with "blow-off" connection for quick and easy clean-out.

Options

- Basket perforations from 1/32" to 1/2"
- Basket mesh from 20 to 400
- MONEL® screens

MONEL® is a registered trademark of Special Metals Corporation group of Companies.



Typical socket weld and threaded Y strainer

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Eaton Model 85 Y strainers are engineered to withstand aggressive industrial and commercial applications. Y strainers protect downstream process system components by mechanically removing unwanted solids from liquid, gas or steam lines by means of a perforated or wire mesh straining element.

To protect against any bypass, the Model 85 Y strainers are manufactured with a precision-machined screen seat on the body of the strainer and high-quality stainless steel screens fabricated to fit the strainer body perfectly. Model 85 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.

For cost-effective straining solutions, Y strainers work well in applications in which 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 fitted with a "blow-off" connection permit cleaning of the screen without removing it from the strainer body.

Eaton Model 85 Y strainers 1/4" to 10"
carbon or stainless steel-threaded, socket weld or flanged

Size	Material	End connection	Cover	Rating (WOG) non-shock*
1/4" to 2"	Carbon steel	Threaded or socket weld 600#	Threaded	1480 psi (102 bar)
1/4" to 2"	Stainless steel	Threaded or socket weld 600#	Threaded	1440 psi (99 bar)
1/2" to 10"	Carbon steel	Flanged 150#	Bolted	285 psi (20 bar)
1/2" to 10"	Carbon steel	Flanged 300#	Bolted	740 psi (51 bar)
1/2" to 10"	Stainless steel	Flanged 150#	Bolted	275 psi (19 bar)
1/2" to 10"	Stainless steel	Flanged 300#	Bolted	720 psi (50 bar)

* @ 100 °F (38 °C)

Socket weld, threaded carbon steel or stainless steel – 600# (in/mm)

Size	A	B	C (Nom.)	D	Wt (lb / kg)
1/4	3.00 / 76	3.00 / 76	3/8	4.00 / 102	2 / 0.9
3/8	3.00 / 76	3.00 / 76	3/8	4.00 / 102	2 / 0.9
1/2	3.00 / 76	3.00 / 76	3/8	4.00 / 102	2 / 0.9
3/4	3.75 / 95	3.50 / 89	3/8	4.75 / 121	4 / 1.8
1	4.63 / 118	4.00 / 102	1/2	5.75 / 146	6 / 2.7
1-1/4	5.00 / 127	4.63 / 118	3/4	6.50 / 165	8 / 3.6
1-1/2	5.63 / 143	5.25 / 133	3/4	7.50 / 191	10 / 4.5
2	7.00 / 178	5.75 / 146	1	8.75 / 222	15 / 6.8

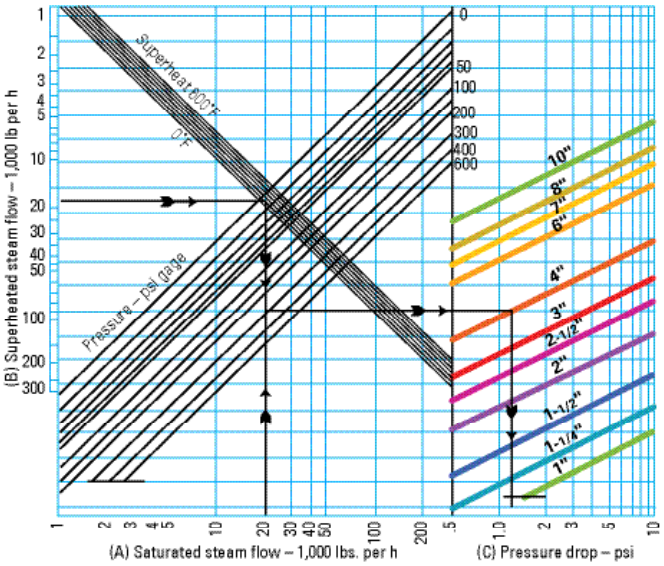
Consult Eaton for 12" and larger size dimensions. Dimensions and weights are for references only. Contact Eaton for certified drawings.

Model 85Y Strainer

Flanged carbon steel or stainless steel – 150# (in/mm)

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

Steam pressure drops



Calculating saturated steam pressure drop

Example: Pressure = 300 psig (20 bar)
Flow rate = 20,000 lb/h (55,000 kg/h)
Strainer size = 4 inches

1. Locate steam flow on Scale A.
2. Follow vertical line to required pressure.
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 (114 bar).

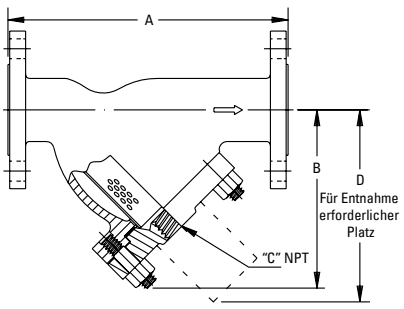
Calculating superheated steam pressure drop

Example: Pressure = 300 psig (20 bar)
Flow rate = 18,000 lb/h (40,000 kg/h)
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 and read pressure drop on Scale C.
6. Pressure drop equals 1.25 psi (114 bar).

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

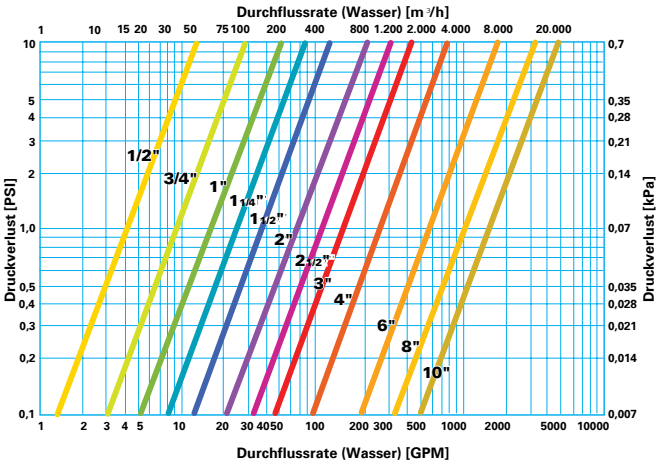
Typical flanged Y strainer



Flanged carbon steel or stainless steel – 300# (in/mm)

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

Flow rates



Simplex Basket Strainer

Model 72

Pipeline Strainer

Cast Construction

Permanent Media

- Sizes 3/8" to 8"
- Iron, bronze, carbon steel or stainless steel
- Threaded or flanged

Features

- Quick open cover—no tools needed
- Heavy wall construction
- Large capacity baskets
- Machined basket seat
- Threaded drain
- Mounting feet for stable installation for flanged units 2" and larger
- Perforated or mesh 316 stainless steel basket
- American Bureau of Shipping (ABS) Type Approved for ship designers, builders and owners

Options

- Basket perforations from 1/32" to 1/2"
- Basket mesh from 20 to 400
- MONEL® baskets
- Viton®, PTFE encapsulated or EPDM seals
- Vent valves
- Gauge/vent taps - 1/4" NPT
- Magnetic basket inserts
- Pressure differential gauge and switch
- Flange according to DIN EN

The Eaton Model 72 has been the industry standard simplex basket strainer for more than 75 years. It is perfect for industrial and commercial applications in which the line can be temporarily shut down for strainer basket cleaning or changeout.

A reason for its popularity is the unusually large basket capacity. The free straining area with a perforated basket is a minimum of six times the cross sectional pipe area. No tools are needed to open the cover. The quick opening, swinging yoke can be disassembled and the basket removed in seconds. On sizes 4" and larger, a special cover clamp is provided to distribute the seating pressure and to ensure positive seating of the cover.

Another feature is a threaded drain on every size strainer (fitted with a yoke quick-closer). Sizes 2" and larger are equipped with legs that bolt to the floor for rock solid installation.

Wall thicknesses are exceptionally heavy. The basket seats are precision machined to give a tight seal and prevent any material from bypassing the basket. The Eaton Model 72 simplex basket strainer is a top quality, heavy-duty unit designed to stand up to the most demanding of applications.

Model 72 simplex

Size	Material	End connection	Seals	Pressure rating*
3/8" to 3"	Iron and bronze	Threaded	Buna-N®	200 psi (13.8 bar)
1" To 3"	Carbon steel	Threaded	Buna-N	200 psi (13.8 bar)
1" To 3"	Stainless steel	Threaded	Viton	200 psi (13.8 bar)
1" To 8"	Iron	Flanged 125#	Buna-N	200 psi (13.8 bar)
1" To 8"	Bronze	Flanged 150#	Buna-N	200 psi (13.8 bar)
1" To 8"	Carbon steel	Flanged 150#	Buna-N	200 psi (13.8 bar)
1" To 8"	Stainless steel	Flanged 150#	Viton	200 psi (13.8 bar)

* @ 100 ° F (38 °C)

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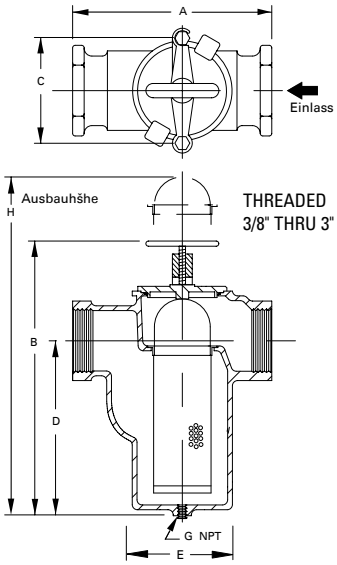
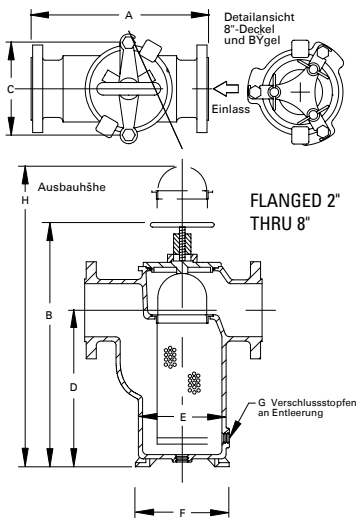
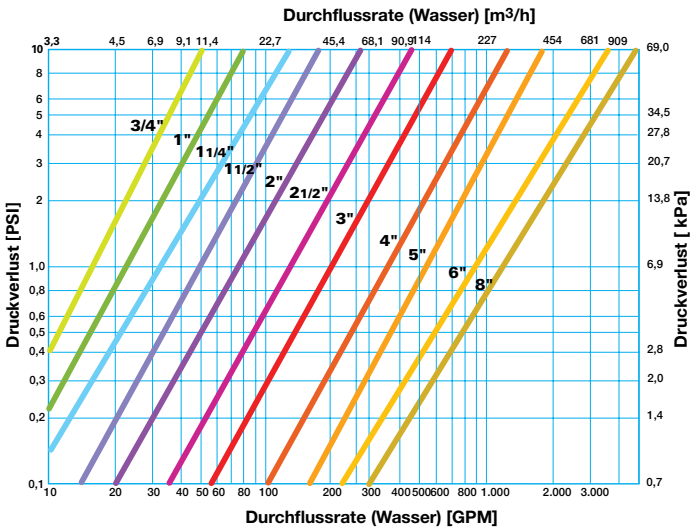
Model 72 Simplex Basket Strainer







Threaded Model 72 dimensions (in/mm)

Dimensions and weights are for reference only. Contact Eaton for certified drawings.

Size	A	B	C	D	E	F	G	H	Net Wt (lb / kg) Bronze	Carbon Steel	Iron	Stainless Steel
3/8	4.00 / 102	6.63 / 168	2.88 / 73	4.00 / 102	2.38 / 60	–	3/8	11 / 279	4 / 1.8	–	4 / 1.8	–
1/2	4.00 / 102	6.63 / 168	2.88 / 73	4.00 / 102	2.38 / 60	–	3/8	11 / 279	4 / 1.8	–	4 / 1.8	–
3/4	5.38 / 137	8.38 / 213	4.00 / 102	5.00 / 127	3.06 / 78	–	1/2	13 / 330	8 / 3.6	–	7 / 3.2	–
1	5.38 / 137	8.38 / 213	4.00 / 102	5.00 / 127	3.06 / 78	–	1/2	13 / 330	8 / 3.6	7 / 3.2	7 / 3.2	7 / 3.2
1-1/4	6.75 / 172	9.88 / 251	4.88 / 124	5.88 / 149	3.88 / 99	–	1/2	14 / 356	13 / 6	–	12 / 6	–
1-1/2	7.25 / 184	11.00 / 279	4.88 / 124	7.00 / 178	4.00 / 102	–	3/4	16 / 406	16 / 7	15 / 7	15 / 7	16 / 7.3
2	8.75 / 222	13.38 / 340	6.75 / 172	7.63 / 194	5.13 / 130	–	1-1/4	21 / 533	32 / 15	36 / 16	28 / 13	31 / 14
2-1/2	10.38 / 264	14.88 / 378	8.00 / 203	8.63 / 219	6.38 / 162	–	1-1/2	26 / 660	49 / 22	52 / 24	42 / 19	51 / 23
3	11.50 / 292	17.75 / 468	8.00 / 203	11.38 / 298	6.63 / 168	–	1-1/2	28 / 711	60 / 27	60 / 27	52 / 23	60 / 27

Mod. 72 C_V factors*

Size	Value	Size	Value
3/8"	15.0	2"	73
1/2"	15.0	2-1/2"	125
3/4"	15.0	3"	180
1"	22.5	4"	350
1-1/4"	31.5	6"	900
1-1/2"	46.0	8"	1400

* For water with clean, perforated basket

Flanged Model 72 dimensions (in/mm)

Dimensions and weights are for reference only. Contact Eaton for certified drawings.

Size	A	B	C	D	E	F	G	H	Net Wt (lb / kg) Bronze	Carbon Steel	Iron	Stainless Steel
1	7.63 / 194	8.38 / 213	4.00 / 102	5.00 / 127	–	–	1/2	13.00 / 330	16 / 7	9 / 4	9 / 4	9 / 4
1 1/2	10.25 / 260	11.00 / 279	4.88 / 124	7.00 / 178	–	–	3/4	16.00 / 406	30 / 14	17 / 7.7	17 / 7.7	17 / 7.7
2	10.50 / 268	13.75 / 349	6.75 / 172	7.63 / 194	5.13 / 130	6.25 / 159	3/8	20.00 / 508	49 / 22.3	36 / 16	36.5 / 17	36 / 16
2 1/2	11.63 / 295	15.63 / 397	8.00 / 203	8.88 / 226	6.38 / 162	7.63 / 194	3/8	23.00 / 584	64 / 29.1	63 / 27	54 / 25	63 / 29
3	13.13 / 334	18.00 / 457	8.00 / 203	10.63 / 270	6.50 / 165	8.00 / 203	3/8	27.00 / 686	85 / 38.6	–	76 / 35	–
3	13.13 / 334	18.75 / 476	7.94 / 202	12.00 / 305	6.50 / 165	8.00 / 203	1/2	27.00 / 686	–	86 / 39	–	86 / 39
4	16.75 / 425	19.88 / 505	10.75 / 273	10.75 / 273	9.63 / 245	11.38 / 289	1/2	30.00 / 762	140 / 63.6	–	125 / 55	–
4	17.25 / 438	19.88 / 505	10.69 / 272	10.69 / 272	9.25 / 235	11.38 / 289	1/2	30.00 / 762	–	130 / 59	–	130 / 59
5	18.13 / 461	25.13 / 638	10.75 / 273	15.25 / 387	10.00 / 254	11.38 / 289	1/2	41.00 / 1,041	182 / 82.7	–	170 / 775	–
6	19.63 / 499	28.50 / 724	10.69 / 272	18.38 / 467	10.00 / 254	11.38 / 289	1/2	46.00 / 1,168	270 / 122.7	235 / 107	200 / 91	235 / 107
8	27.00 / 686	40.50 / 1,029	–	27.00 / 686	13.75 / 349	17.50 / 445	1/2	60.00 / 1,524	600 / 272.7	550 / 250	500 / 227	550 / 250

US
EF-SSEA-5
6-2014

Straight Flow Basket Strainer

Pipeline Strainer | Cast Construction | Permanent Media

Model 73
Straight flow

- Iron or bronze
- Sizes 10" to 18"
- Flanged

Features

- Quick open cover
- Straight through flow design
- Low pressure loss
- Convoluted basket design
- Hand removable basket
- Threaded drain
- Buna-N® O-ring seal
- Perforated or mesh 316 stainless steel basket
- Low profile
- American Bureau of Shipping (ABS) Type Approved for ship designers, builders and owners

Options

- Basket perforations from 1/32" to 1/2"
- Basket mesh of 20, 40 or 60
- MONEL® baskets
- Vent valves
- Drain valves
- Gauge/vent taps - 1/4" NPT
- Pressure differential gauge and switches

MONEL® is a registered trademark of Special Metals Corporation group of Companies.

The Best simplex strainer for high flow applications in large pipelines

The Eaton Model 73 simplex basket strainer with its straight flow design greatly reduces pressure loss and results in a compact strainer that can fit in tight spaces.

Special basket strainer

Large size pipelines with high flow rates require a specific type of basket strainer. The convoluted (pleated) perforated or mesh screens in the basket increases the amount of straining area available while reducing the basket size and weight. This makes it easy to remove the basket from the strainer housing. No lifting tackle required. The quick opening cover provides fast and easy access to the basket for quick service. This can save considerable time and money in labor.

When selecting a pipeline strainer for a large size piping system with high flow rates, be sure to consider all the factors, not just initial pressure loss. The amount of straining area in the basket is critical to reducing the amount of time between cleanings or changeouts.

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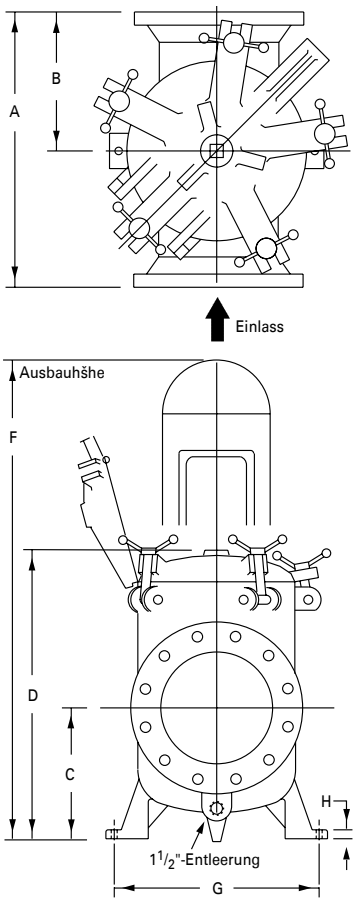
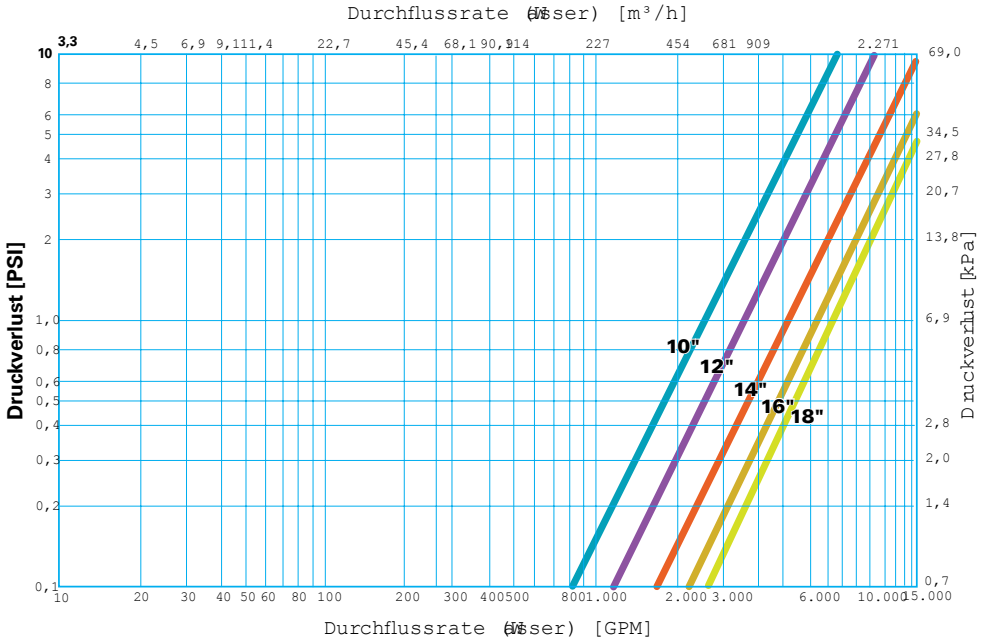
Model 73 Straight Flow Strainer





Selection chart

Size	Material	End connection	Seals	Pressure rating*
10" to 12"	Iron	Flanged 125#	Buna-N	200 psi (13.8 bar)
10" to 12"	Bronze	Flanged 150#	Buna-N	200 psi (13.8 bar)
14" to 18"	Iron	Flanged 125#	Buna-N	150 psi (10.3 bar)
14" to 18"	Bronze	Flanged 150#	Buna-N	150 psi (10.3 bar)

* @ 100 °F (38 °C)

C_V factors*

Size	Value
10"	2300
12"	3200
14"	5000
16"	6000
18"	7000

* For water with clean, perforated basket

Dimensions (in/mm) Model 73 straight flow

Pipe size	A	B	C	D	F	G	H	Net Wt (lb / kg) Iron	Bronze
10	23.00 / 584	11.00 / 279	12.19 / 310	29.00 / 737	47.00 / 1194	19.00 / 483	15/16 / 24	420 / 191	500 / 227
12	27.00 / 686	13.00 / 330	16.75 / 425	38.00 / 965	67.00 / 1702	23.00 / 584	1 / 25	550 / 250	825 / 374
14	31.00 / 787	15.50 / 394	18.75 / 476	45.00 / 1143	77.00 / 1956	27.00 / 686	1 / 25	850 / 386	1150 / 522
16	31.00 / 787	15.50 / 394	18.75 / 476	45.00 / 1143	77.00 / 1956	27.00 / 686	1 / 25	975 / 443	1400 / 635
18	31.00 / 787	15.50 / 394	18.75 / 476	45.00 / 1143	77.00 / 1956	27.00 / 686	1 / 25	1000 / 454	—

Dimensions and weights are for reference only. Contact Eaton for certified drawings.

Steam Jacketed Basket Strainer

Pipeline Strainer | Cast Construction | Permanent Media

Model 72SJ

- Carbon steel or stainless steel
- Sizes 1" to 8"
- Flanged

Features

- NPT steam connections
- Up to 100 psi (6.9 bar) steam pressure
- Quick open cover—no tools required
- Large capacity basket
- Threaded drain plug
- Machined basket seat
- Viton® seals
- Perforated or mesh 316 stainless steel basket

Options

- Basket perforations from 1/32" to 1/2"
- Basket mesh from 20 to 400
- MONEL® baskets
- Vent valves
- Drain valves
- Gauge/vent taps - 1/4" NPT
- Pressure differential gauge and switches

Viton® is a registered trademark of E. I. du Pont de Nemours and company. MONEL® is a registered trademark of Special Metals Corporation group of Companies.

The Model 72SJ is for applications in which materials must be kept hot to remain fluid. Examples are chocolate, asphalt, resins and polymers. By circulating steam or a heat transfer fluid through the strainer jacket, the strainer body temperature remains constant.

The basic strainer used in the Model 72SJ is Eaton's popular Model 72 simplex basket strainer that has proven itself an industry standard. All of the features of the Model 72 have been retained, including large basket capacity with a free straining area and a perforated basket approximately six times the cross sectional pipe area. No tools are needed to open the cover. The quick opening, swinging yoke can be disassembled and the basket removed in seconds. The standard cover seal is Viton and can be used in most applications up to a temperature of 400 °F (204 °C).

Equipped with either a carbon steel or stainless steel jacket welded to the cast body, the steam jacket will handle steam pressures up to 100 psi (6.9 bar).

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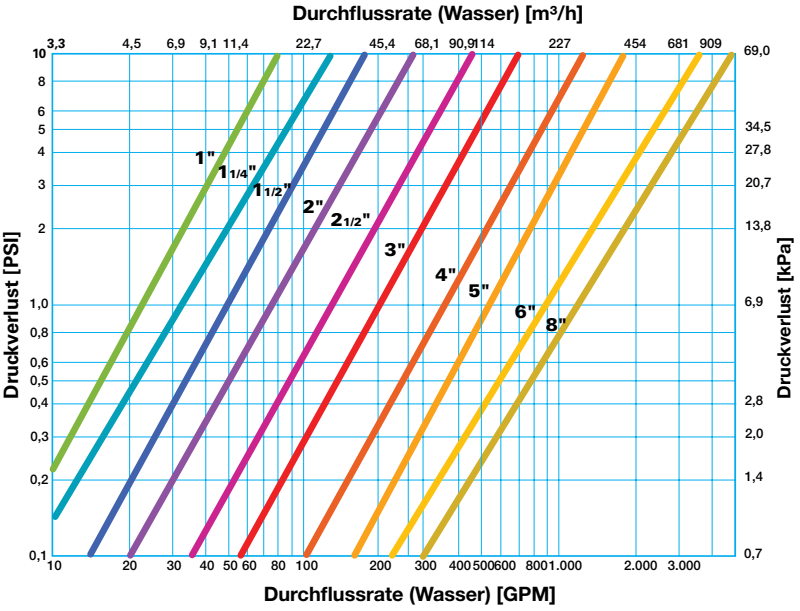
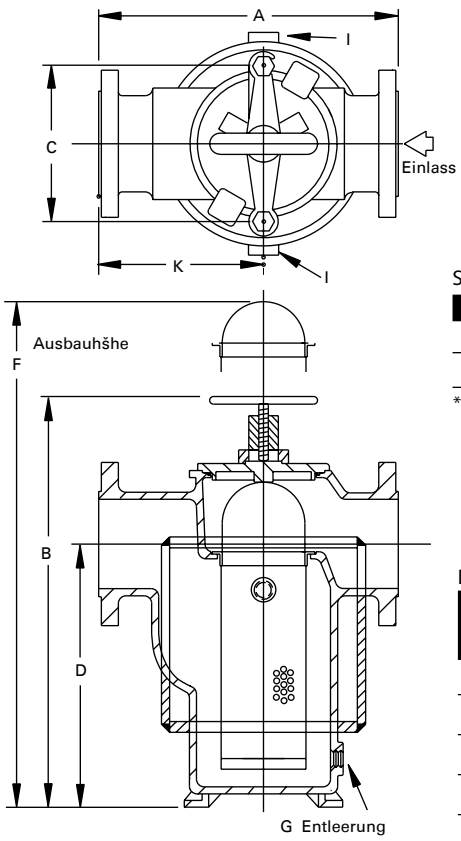
Model 72SJ Steam Jacketed Basket Strainer





Selection chart

Size	Material	End connections	Seals	Pressure rating
1" to 8"	Carbon steel	Flanged 150#	Viton	200 psi (13.8 bar)
1" to 8"	Stainless steel	Flanged 150#	Viton	200 psi (13.8 bar)

* @ 100 °F (38 °C)

C_V factors*

Size	Value	Size	Value
1"	22.5	3"	180
1-¼"	31.5	4"	350
1-½"	46.0	6"	900
2"	73.0	8"	1400
2-½"	125		

* For water with clean, perforated basket

Dimensions (in/mm) Model 72SJ straight flow

Size	A	B	C	D	F	G	I	K	Net Wt (lb / kg) Carbon steel	Net Wt (lb / kg) Stain-less steel
1	7.63 / 194	8.38 / 213	4.00 / 102	5.00 / 127	12 / 305	½	½	4.31 / 110	16 / 7	–
1-½	10.25 / 260	11.00 / 279	4.88 / 124	7.00 / 178	16 / 406	¾	½	5.75 / 146	25 / 12	–
2	10.50 / 268	13.75 / 349	6.75 / 172	7.63 / 194	20 / 508	⅜	½	5.75 / 146	48 / 22	45 / 20
2-½	11.63 / 295	15.63 / 397	8.00 / 203	8.75 / 222	23 / 584	⅜	½	6.38 / 162	81 / 37	75 / 34
3	13.13 / 334	18.75 / 476	8.00 / 203	12.00 / 305	27 / 686	½	½	7.25 / 184	112 / 51	105 / 48
4	17.25 / 438	19.88 / 505	10.75 / 273	10.75 / 273	29 / 737	½	¾	9.63 / 245	165 / 75	155 / 70
6	19.63 / 499	28.50 / 724	10.75 / 273	18.38 / 467	46 / 1168	½	¾	10.81 / 275	315 / 143	280 / 127
8	27.00 / 686	40.50 / 1029	–	27.00 / 686	60 / 1524	½	¾	15.75 / 400	653 / 297	653 / 297

Dimensions and weights are for reference only. Contact Eaton for certified drawings.

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Tefzel-Lined Basket Strainer

Pipeline Strainer | Cast Construction | Permanent Media

Model 72L

- Carbon steel with Tefzel® liner
- Corrosion resistant
- Sizes 1" to 6"
- Flanged

Features

- Excellent corrosion resistance
- Abrasion resistant 1/8" Tefzel lining
- Tefzel-coated baskets
- Service temperatures to 300 °F (149 °C)
- Quick opening covers
- Large capacity baskets
- Flanged drain
- Low cost alternative to exotic alloy strainers

Options

- MONEL® baskets
- HASTELLOY® C baskets
- Consult Eaton for available perf and mesh sizes

A continuous lining of advanced fluoropolymer resin makes the Eaton Model 72L simplex strainer an excellent low cost alternative to exotic alloy strainers in a wide variety of corrosive or abrasive lined piping applications. These applications include wastewater treatment, paper mills, hazardous materials, flue gas systems, ultra pure water handling, chemical and petrochemical processing. The basic design of the Model 72L is Eaton's time tested Model 72 simplex basket strainer.

The body and cover of the Model 72L are lined, not just coated with Tefzel. This protects all wetted surfaces of the strainer, making it impervious to attack by chemicals that can cause rapid deterioration of other types of plastics and all but the most costly metal alloys.

The Tefzel fluoropolymer lining is inert to strong mineral acids, inorganic bases, halogens and metal salt solutions. Even carboxylic acids, anhydrides, aromatic and aliphatic hydrocarbons, alcohols, aldehydes, ketones, ethers, esters, chlorocarbons and classic polymer solvents have no effect on the Tefzel lining. Service temperatures can range up to 300 °F (149 °C) in many applications. The lining also displays excellent mechanical strength when handling abrasive slurries.

Fitted with fluoropolymer coated perforated baskets or mesh baskets made of MONEL or HASTELLOY C, these strainers can be used in almost any lined piping or similar corrosive/abrasive strainer application.

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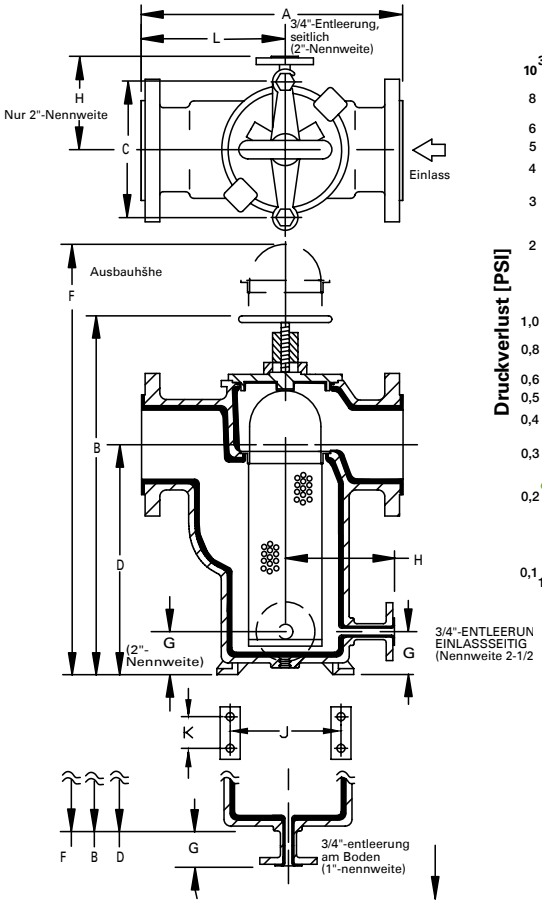
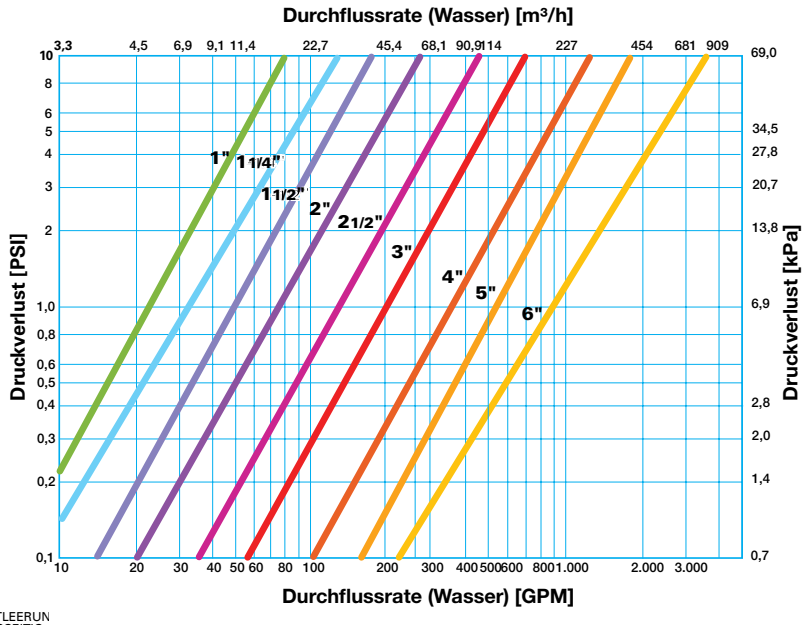
Model 72L Tefzel-Lined Basket Strainer





Dimensions and weights are for reference only. Contact Eaton for certified drawings.

Selection chart

Size	Material	End connections	Seals	Pressure rating
1" to 6"	Carbon steel with Tefzel liner	Flanged 150#	Viton®	200 psi @ 100 °F (13.8 bar @ 38 °C)

C_V factors*

Size	Value
1"	23
2"	72
2-½"	135
3"	170
4"	350
6"	880

* For water with clean, perforated basket

Basket & screen effective area – Tefzel-coated basket

Pipe size (in)	Perf. size (in)	Pipe area (in²)	Screen area (in²)	Free area (in²)	Free/pipe ratio
1"	1/32	0.86	19.5	5.2	6.1
2"	1/16	3.35	50.9	15.8	4.7
2-½"	1/16	4.78	80.2	24.9	5.2
3"	5/32	7.39	114.5	72.1	9.8
4"	5/32	12.73	168.3	106.0	8.3
6"	5/32	28.90	324.2	204.2	7.1

Dimensions (in/mm)

Pipe size	A	B	C	D	F	G	H	J	K	L	Dry wt (lb / kg)
1	7.88 / 200	9.00 / 229	4.00 / 102	5.00 / 127	12 / 305	2.75 / 70	–	–	–	4.50 / 114	15 / 7
2	10.75 / 273	13.75 / 349	6.75 / 172	7.63 / 194	20 / 508	1.88 / 48	5.63 / 143	5.50 / 140	2.50 / 64	5.88 / 149	48 / 22
2-½	11.88 / 302	15.75 / 400	8.00 / 203	8.88 / 226	23 / 584	2.19 / 56	6.25 / 159	6.50 / 165	2.88 / 73	6.50 / 165	70 / 32
3	13.75 / 349	18.75 / 476	8.00 / 203	12.00 / 305	27 / 686	2.31 / 59	6.38 / 162	7.00 / 118	3.13 / 80	7.38 / 187	95 / 43
4	17.50 / 445	20.00 / 508	10.75 / 273	10.69 / 272	30 / 762	2.38 / 60	7.75 / 197	10.00 / 254	3.88 / 99	9.75 / 248	139 / 63
6	19.88 / 505	28.25 / 718	10.75 / 273	18.31 / 465	46 / 1168	2.19 / 56	7.88 / 200	10.00 / 254	5.00 / 127	11.00 / 279	250 / 1134

US
EF-SSEA-8
6-2014

Economy Basket Strainer

Model 30R

Pipeline Strainer | Cast Construction | Permanent Media

- Sizes 1- 1/2" to 8"
- Iron
- Threaded or flanged

Features

- Hand removable cover
- Drain plug
- Machined basket seat
- Perforated or mesh 316 stainless steel basket

Options

- Basket perforations from 1/32" to 1/2"
- Basket mesh from 20 to 400
- MONEL® baskets
- Vent valves
- Drain valves
- Gauge/vent taps - 1/4" NPT
- Magnetic basket inserts
- Pressure differential gauges and switches

MONEL® is a registered trademark of Special Metals Corporation group of Companies.

The Eaton Model 30R is a high-quality, low cost simplex basket strainer—perfect for cost sensitive applications.

Whereas the cost of the Model 30R is low, its design incorporates many features found only on more expensive units, including machined basket seats to protect against bypass, ensuring all of the flow is strained. The cover of the Model 30R is a clamp type and is hand removable without the need for tools. This makes access to the basket quick and easy for cleanings or changeouts and every size strainer comes standard with a drain plug.

The Model 30R is the best choice simplex strainer for low or moderate pressure applications such as swimming pools, cooling towers and large air conditioning installations.

Selection chart

Size	Material	End connections	Seals	Pressure rating*
1-1/2" to 3"	Iron	Threaded	Buna-N®	200 psi (13.8 bar)
1-1/2" to 8"	Iron	Flanged 125#	Buna-N	200 psi (13.8 bar)

* @ 100 °F (38 °C)

C_V factors*

Size	Value	Size	Value
1-1/2"	58	4"	240
2"	90	6"	370
2-1/2"	140	8"	600
3"	200		

* For water with clean, perforated basket

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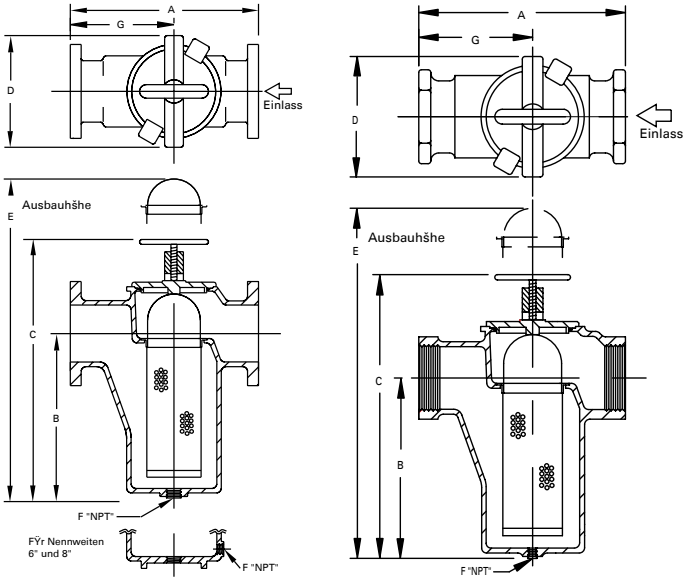
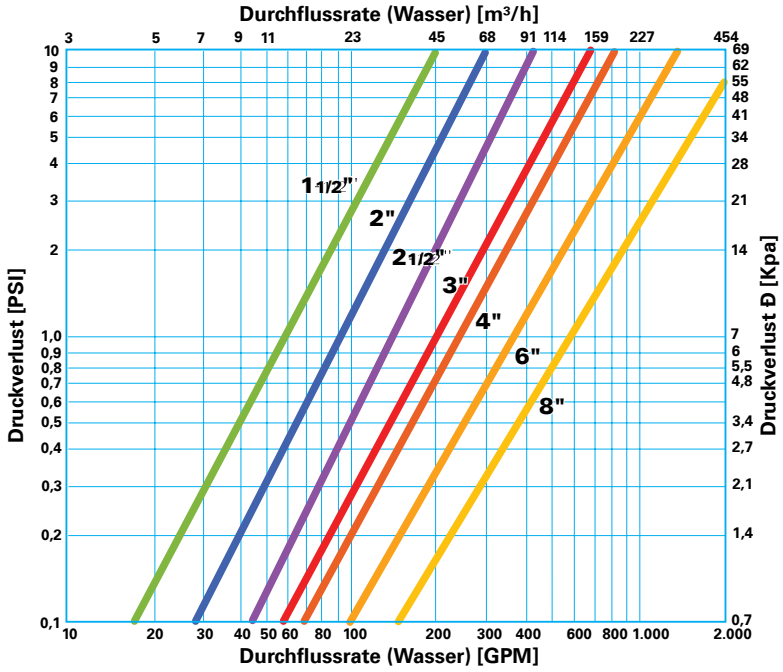
Model 30R Economy Basket Strainer



Dimensions and weights are for reference only. Contact Eaton for certified drawings.



Dimensions (in/mm) flanged

Pipe size	A	B	C	D	E	F	G	Dry wt (lb / kg)
1-½	7.75 / 197	6.50 / 165	10.63 / 270	6.00 / 152	14.88 / 378	¾	4.44 / 113	12 / 5.5
2	9.63 / 245	7.50 / 191	11.63 / 295	7.50 / 191	17.38 / 441	1-¼	5.63 / 143	27 / 12.3
2-½	11.00 / 279	9.13 / 232	15.25 / 387	8.00 / 203	22.38 / 568	1-¼	5.88 / 149	45 / 20.5
3	11.88 / 302	9.13 / 232	15.25 / 387	8.00 / 203	22.38 / 568	1-¼	6.50 / 165	59 / 26.6
4	13.75 / 349	9.63 / 245	16.63 / 422	9.25 / 235	30.00 / 762	1-½	8.44 / 214	71 / 32.2
6	17.50 / 445	12.38 / 315	26.13 / 664	14.75 / 375	35.00 / 889	2	10.31 / 262	150 / 68.1
8	23.63 / 600	17.75 / 451	32.63 / 829	14.75 / 375	48.00 / 1219	2	14.50 / 368	230 / 104.3

Dimensions (in/mm) threaded

Pipe size	A	B	C	D	E	F	G	Dry wt (lb / kg)
1-½	7.00 / 178	6.50 / 165	10.63 / 270	6.00 / 152	14.88 / 378	¾ / 20	3.88 / 99	7 / 3.2
2	8.50 / 216	7.50 / 191	11.63 / 295	7.50 / 191	17.38 / 441	1-¼ / 32	4.81 / 122	20 / 9.1
2-½	11.50 / 292	9.13 / 232	15.25 / 387	8.00 / 203	22.38 / 568	1-¼ / 32	6.00 / 152	34 / 15.5
3	11.50 / 292	9.13 / 232	15.25 / 387	8.00 / 203	22.63 / 575	1-¼ / 32	6.00 / 152	34 / 15.5

Multi-Basket Strainer

Pipeline Strainer | Cast Construction | Permanent Media

Model 510

- Sizes 8" to 36"
- Iron or carbon steel
- Flanged

Features

- Four baskets per strainer
- Bolted cover
- Straight through flow design
- Compact
- Threaded drain
- Perforated or mesh 316 stainless steel basket
- Low profile for easy basket removal

Options

- Basket perforations from 1/32" to 1/2"
- Basket mesh of 20, 40 or 60
- MONEL® baskets
- Drain valves
- Gauge taps - 1/4" NPT
- Basket flange gaskets
- Cover lift davit
- Stainless steel construction
- Magnetic basket inserts
- Pressure differential gauges and switches

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For large size piping systems with flow rates up to 40,000 GPM (9,000 m³/h)

The Eaton Model 510 simplex strainer is unlike other large size simplex strainers because of its multi-basket design. Four strainer baskets strain the process media and give the strainer an extremely high dirt-holding capacity—an important consideration in larger size strainers that, because of their size and design, take longer for basket cleaning or changeout. The longer the strainer stays in service between cleaning, the less expensive its total operating costs.

Reduced pressure loss

To reduce the pressure loss to an absolute minimum, the Model 510 has a straight through flow configuration, made possible by a unique basket design that incorporates a slanted top.

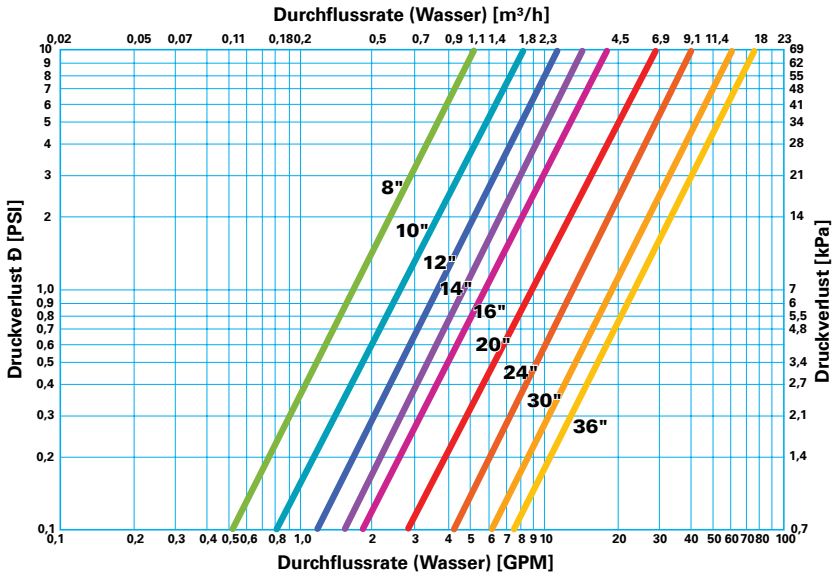
Multi-basket design

The use of four baskets, rather than one or two, helps to keep operating costs low because the size of each basket can be smaller. This means that cleaning is a one-person job, eliminating the need for additional operators or lifting tackle to pull the baskets out of the strainer housing.

To make this job even faster and easier, the Model 510 has an optional cover lifting davit. The operator can raise the strainer cover and swing it out of the way for access to the strainer baskets. The four-basket design of the Model 510 provides an additional benefit as well: the centerline to bottom and centerline to top dimensions of the strainer are very short—creating a low-profile design ideally suited for installation in cramped quarters.

For large size piping systems with high flow rates, the Model 510 offers significant advantages over ordinary large size strainers, advantages that will improve performance and reduce operating costs over the life of the strainer

Model 510 Multi-Basket Strainer



Selection chart

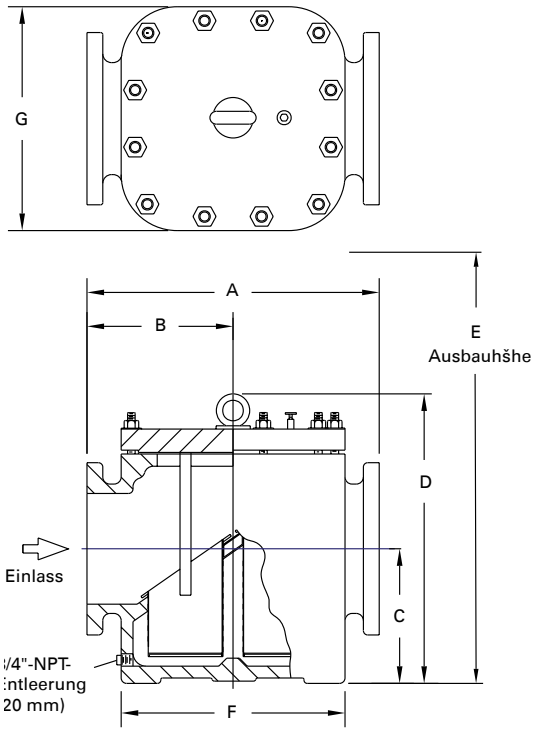
Size	Material	End connections	Gasket	Pressure rating*
8" to 24"	Iron	Flanged 125#	Non-asbestos	125 psi (8.6 bar)
30" to 36"	Iron	Flanged 125#	Non-asbestos	70 psi (4.8 bar)
8" to 24"	Carbon steel	Flanged 150#	Non-asbestos	150 psi (10.3 bar)
8" to 16"	Carbon steel	Flanged 300#	Non-asbestos	300 psi (20.7 bar)

* @ 100 °F (38 °C)

C_V factors*

Size	Value	Size	Value	Size	Value
8"	1600	14"	4800	24"	13000
10"	2500	16"	5800	30"	19000
12"	3500	20"	9000	36"	23000*

*For water with clean, perforated basket



Dimensions and weights are for reference only. Contact Eaton for certified drawings.

Dimensions (in/mm)

Pipe size	A	B	C	D	E	F	G	-----Dry wt (lb / kg) ------- Iron	Carbon steel
8	23.25 / 591	11.63 / 295	9.13 / 232	20.13 / 511	38 / 965	18.00 / 457	18.50 / 470	547 / 249	547 / 249
10	26.13 / 664	13.06 / 332	11.38 / 289	23.75 / 603	44 / 1118	20.25 / 514	21.00 / 533	730 / 332	730 / 332
12	29.00 / 737	14.50 / 368	14.63 / 372	28.38 / 721	52 / 1321	22.25 / 565	22.75 / 578	1080 / 491	1080 / 491
14	30.50 / 775	15.25 / 387	16.75 / 425	31.25 / 794	60 / 1524	24.63 / 626	25.13 / 638	1360 / 618	1360 / 618
16	33.50 / 851	16.75 / 425	19.13 / 486	35.50 / 902	66 / 1676	27.13 / 689	27.75 / 705	1750 / 795	1750 / 795
20	44.75 / 1137	22.00 / 559	28.50 / 724	46.25 / 1175	88 / 2235	32.75 / 832	34.75 / 883	3330 / 1514	3330 / 1514
24	44.38 / 1127	22.19 / 564	31.50 / 800	52.25 / 1327	98 / 2489	36.63 / 930	38.50 / 978	4550 / 2068	4550 / 2068
30	61.50 / 1562	30.75 / 781	41.63 / 1057	66.50 / 1689	125 / 3175	47.50 / 1207	47.50 / 1207	8880 / 4036	8880 / 4036
36	62.00 / 1575	31.00 / 787	41.63 / 1057	66.50 / 1689	125 / 3175	47.50 / 1207	47.50 / 1207	9700 / 4409	9700 / 4409

Ball Type Duplex Basket Strainer

Pipeline Strainer | Cast Construction | Permanent Media

Model 53BTX

- Sizes 3/4" to 4"
- Iron, bronze, carbon steel or stainless steel
- Threaded or flanged

Unique diverter cartridge assures leak-tight isolation of basket chamber during cleaning.

A double sealing system on the upper and lower stems guards against any possible leakage. If service becomes necessary, just remove four bolts and the cartridge slides right out the top of the strainer body.

Features

- Dynamic sealing design for long life
- Easy-to-operate lever handle—no gear box required
- Unique seat and seal design requires no adjustments
- Teflon® seats for longer service life
- Foot pads for rock solid installation
- Double-stem O-rings for positive sealing
- Easy to access body vent valve
- Drain plugs in each basket cover
- Piston seal strainer basket cover
- Easy access for diverter cartridge removal
- 316 stainless steel ball design
- American Bureau of Shipping (ABS) Type Approved for ship designers, builders and owners

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Continuous operation

The Eaton Model 53BTX duplex basket strainer can operate continuously, eliminating the need to shut down processes for cleaning of strainers. When the first basket is full, a unique flow diverter cartridge shifts flow to a second basket to permit removal and cleaning with no interruption to operations.

Draining this chamber is easy; the cover lifts and swings clear of the chamber opening with no special tools required.

The unique flow diverter cartridge prevents fluid bypass into the out-of-service chamber. It features a dynamic sealing system that ensures exceptionally long seat life and positive sealing. Manual internal or external ball support adjustments are not necessary.

Size and material

The compact, low-profile Model 53BTX fits into spaces ordinary strainers may not, yet it still uses full-size strainer baskets with a low-pressure drop performance. Eaton offers basket openings from 3/4" down to 45 microns. Type 316 stainless steel is standard and MONEL® or HASTELLOY® C materials are optional.

Easy basket servicing

One drain plug is on each side of the housing. Additionally, an easy to access vent valve is in the cover. Standard foot mounting pads ensure a rock solid installation no matter where the strainer operates.

Available options include:

- Differential pressure gauges, with or without switches
- Magnetic separators installed in the strainer basket for removing fine ferrous particulate matter from the process media

Model 53BTX Ball Type Duplex Basket Strainer

Selection table

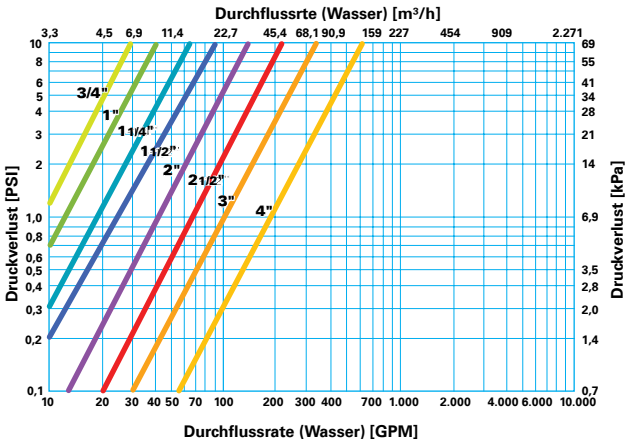
Size	Body & cartridge material	End connection	Seat/Seal	Diverter balls	Pressure rating @ 150 °F (65 °C)
3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"	Iron	Threaded	TFE/Buna-N®*	Stainless steel	200 psi (13.8 bar)
3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"	Bronze	Threaded	TFE/Buna-N*	Stainless steel	200 psi (13.8 bar)
3/4", 1", 1-1/4", 1-1/2", 2"	Carbon steel	Threaded	TFE/Buna-N*	Stainless steel	200 psi (13.8 bar)
3/4", 1", 1-1/4", 1-1/2", 2"	Stainless steel	Threaded	TFE/Viton®	Stainless steel	200 psi (13.8 bar)
1", 1-1/2", 2", 2-1/2", 3", 4"	Iron	Flanged 125#	TFE/Buna-N*	Stainless steel	200 psi (13.8 bar)
1", 1-1/2", 2", 2-1/2", 3", 4"	Bronze	Flanged 150#	TFE/Buna-N*	Stainless steel	200 psi (13.8 bar)
1", 1-1/2", 2", 2-1/2", 3", 4"	Carbon steel	Flanged 150#	TFE/Buna-N*	Stainless steel	200 psi (13.8 bar)
1", 1-1/2", 2", 2-1/2", 3", 4"	Stainless steel	Flanged 150#	TFE/ Viton	Stainless steel	200 psi (13.8 bar)

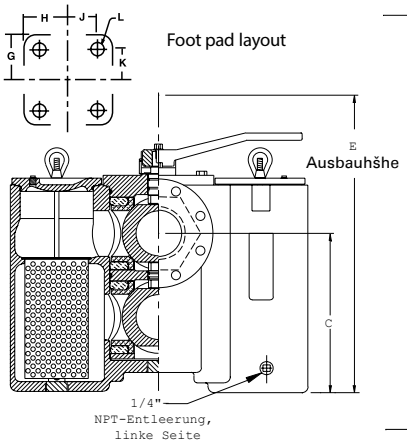
*Viton standard for SSTL, optional for iron, bronze and carbon steel.

Cv factors*

Size	Value	Size	Value
3/4"	13	2"	42
1"	13	2-1/2"	65
1-1/4"	18	3"	110
1-1/2"	25	4"	175

* For water with clean, perforated basket

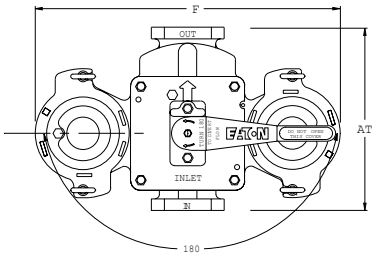




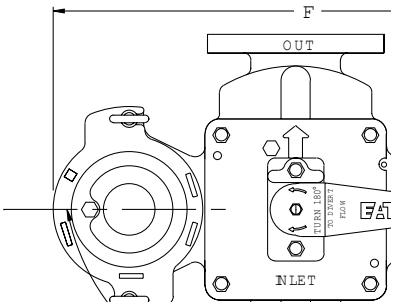
Foot pad layout

Front view flanged and threaded models

Top view threaded model



Top view flanged model



Dimensions (in/mm)

Pipe size	AF	AT	C	E	F	G	H	J	K	L	Weight – Iron flanged (lb / kg)	Weight – Iron threaded (lb / kg)	Weight – Bronze flanged (lb / kg)	Weight – Bronze threaded (lb / kg)	Weight – Carbon & SS flanged (lb / kg)	Weight – Carbon & SS threaded (lb / kg)
3/4	—	5.50 / 140	5.00 / 127	13.38 / 340	10.50 / 268	3.25 / 83	2.13 / 54	1.63/ 41	2.75/ 70	3/8	–	37 / 17	–	46 / 21	–	41 / 19
1	6.88 / 175	5.50 / 140	5.00 / 127	13.38 / 340	10.50 / 268	3.25 / 83	2.13 / 54	1.63/ 41	2.75/ 70	3/8	42 / 19	37 / 17	52 / 24	46 / 21	47 / 21	41 / 19
1-1/4	6.88 / 175	7.50 / 190	6.81 / 173	17.00 / 432	13.25 / 330	3.25 / 83	2.13 / 54	1.63/ 41	2.75/ 70	3/8	–	80 / 36	–	100 / 45	–	89 / 40
1-1/2	9.38 / 238	7.50 / 190	6.81 / 173	17.00 / 432	13.25 / 330	3.25 / 83	2.13 / 54	1.63/ 41	2.75/ 70	3/8	90 / 41	80 / 36	113 / 51	100 / 45	100 / 45	89 / 40
2	10.63 / 270	10.00 / 254	8.38 / 213	21.75 / 552	17.38 / 441	4.69 / 119	2.50/ 64	1.81/ 46	4.00/ 102	5/8	167 / 76	157 / 71	209 / 95	197 / 90	185 / 84	174 / 79
2-1/2	10.75 / 273	10.00 / 254	8.38 / 213	21.75 / 552	17.37 / 441	4.69 / 119	2.50/ 64	1.81/ 46	4.00/ 102	5/8	183 / 83	157 / 71	229 / 104	197 / 90	203 / 92	–
3	13.50 / 343	—	8.88 / 226	26.50 / 673	22.75 / 578	4.69 / 119	2.50/ 64	1.81/ 46	4.00/ 102	5/8	285 / 129	–	357 / 162	–	432 / 196	–
4	16.00 / 406	—	13.25 / 337	33.00 / 838	24.75 / 629	5.19 / 132	3.94/ 100	3.25/ 83	4.50/ 114	5/8	389 / 177	–	487 / 221	–	432 / 196	–

Dimensions and weights are for reference only. Contact Eaton for certified drawings.
Pressure equalizing valve and piping standard on 4" Model 53BTX duplex strainers.

Plug Type Duplex Basket Strainer

Pipeline Strainer

Cast Construction

Permanent Media

Model 50

- Sizes 5", 6", 8"
- Iron, bronze, carbon steel or stainless steel
- Flanged

Features

- Continuous flow, no shutdown for basket cleaning
- Rugged tapered plug design
- Lift jack prevents galling of the plug
- Quick open cover—no tools needed
- Large capacity baskets
- Threaded drain
- Machined basket seat
- Perforated or mesh 316 stainless steel basket

Options

- Ductile iron construction
- Basket perforations from 1/32" to 1/2"
- Basket mesh from 20 to 400
- MONEL® baskets
- Vent valves
- Drain valves
- Gauge/vent taps - 1/4" NPT
- Magnetic basket inserts
- Pressure differential gauge and switch connections
- Viton®, PTFE encapsulated or EPDM seals
- Cast iron and stainless steel diverter plug

Trouble-free design, easy operation

The Eaton Model 50 plug type duplex strainer's design is simple and economical. This high-quality strainer is, in fact, a pressure rated plug valve with integral straining baskets.

To switch the flow from one basket to the other, the operating handle moves through a 90-degree arc. Because of the unique port design in the diverter plug, it is impossible for this operation to stop the flow. The entire switching operation takes fewer than 30 seconds, no tools required. Positioning the plug each time in exactly the right spot happens automatically by integral stops.

Before operating the handle, a specially designed, manual lifting jack built into the strainer, lifts the diverter plug off its seat. After the switching operation, the jack easily reseats the plug, even under high pressures. Because a built-in stop limits the distance the diverter plug rises, it minimizes the possibility of material bypassing the plug while rotated to divert flow. It also prevents debris from building up under the plug and making it difficult to reseat.

Other features

- A quick, easy to open, swing-away yoke design cover goes back on just as fast as it came off
- Standard NPT drain taps simplify the draining of the basket chamber
- All sizes come with mounting legs for bolting the strainer to the floor for a rock solid installation

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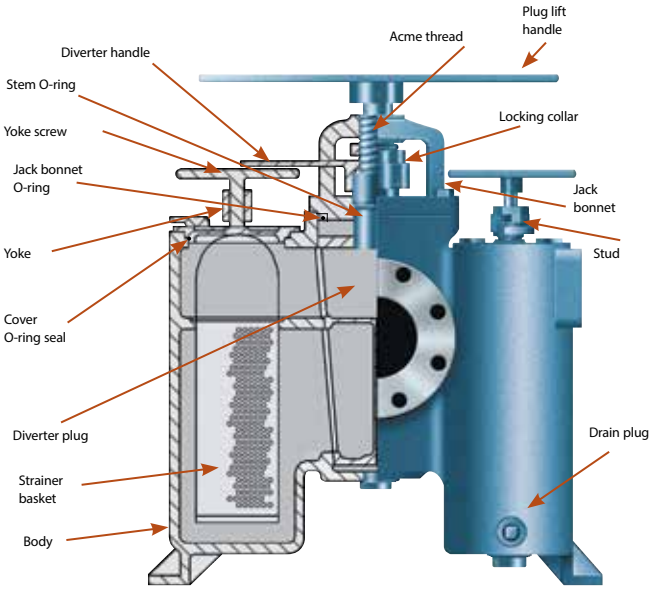
Model 50 Plug Type Duplex Basket Strainer

Selection chart

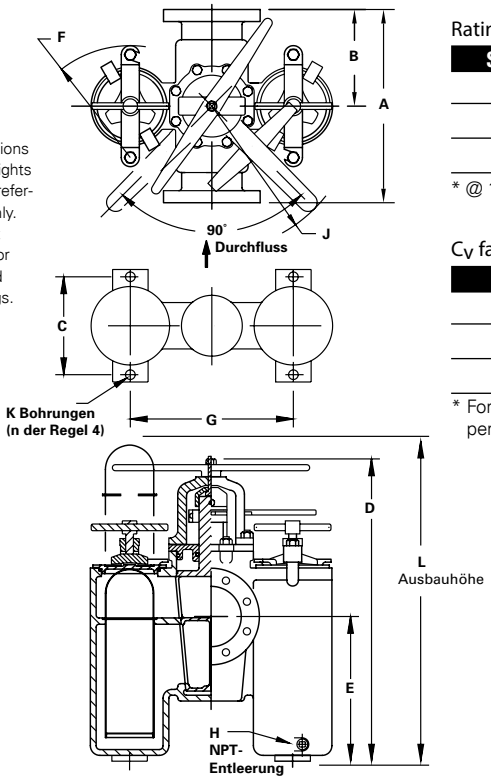
Size	Body material	Plug material	End connections	Seals
5", 6", 8"	Iron	Bronze	Flanged 125#	Buna-N®
5", 6", 8"	Bronze	Bronze	Flanged 150#	Buna-N
6", 8"	Carbon steel	Bronze	Flanged 150#	Buna-N
6", 8"	Stainless steel	Stainless steel	Flanged 150#	Viton

DIN flanges available on 6" only

Partial cutaway of Model 50 duplex strainer clearly illustrates all major parts—and gives a clear indication of the simplicity of design and ease of maintenance.



Dimensions and weights are for reference only. Contact Eaton for certified drawings.



Rating

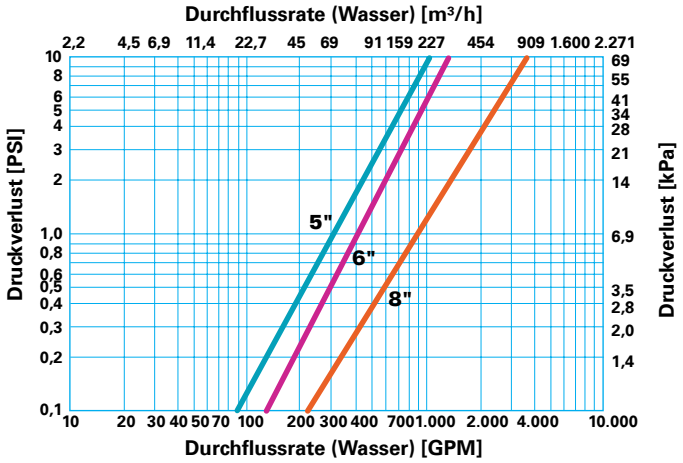
Size	Rating*
5"	200 psi (13.8 bar)
6"	200 psi (13.8 bar)
8"	150 psi (10.3 bar)

* @ 100 °F (38 °C)

C_V factors*

Size	Value
5"	300
6"	420
8"	900

* For water with clean, perforated basket



Dimensions (in/mm)

Pipe size	A	B	C	D	E	F	G	H	J	K	L	Weight (lb / kg) Cast iron	Bronze	Carbon steel	Stainless steel
5	18.38 467	9.00 229	9.75 248	33.25 845	14.75 375	10.25 260	17.19 437	3/8 –	19.75 502	0.56 14	41.00 1041	403 183	412 187	– –	– –
6	22.00 559	12.88 327	12.50 318	36.25 921	19.50 495	11.75 298	20.75 527	3/8 -	19.75 502	0.63 16	42.00 1067	500 227	583 264	580 263	615 279
8	25.00 635	14.00 356	17.00 432	50.63 1286	23.06 586	– –	30.75 781	1/2 –	28.00 711	0.94 24	56.00 56	1500 682	1800 818	1610 732	1670 759

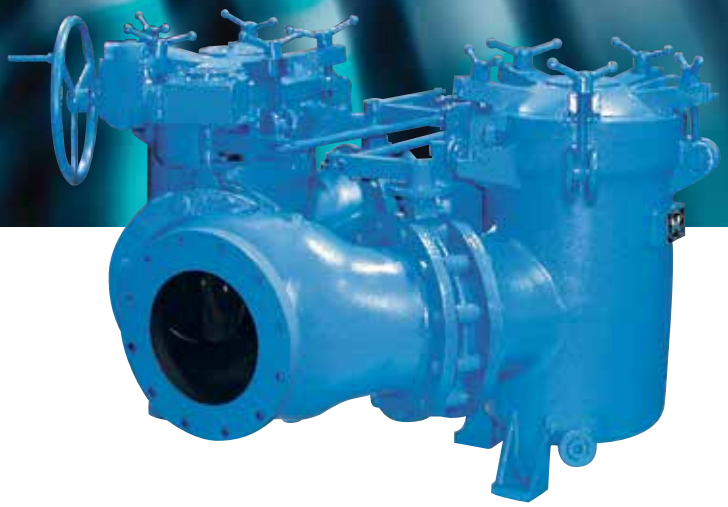
Large Duplex Basket Strainer

Pipeline Strainer

Cast Construction

Permanent Media

Model 52



- Sizes 10" to 18"
- Iron and bronze
- Flanged

Features

- Continuous flow, no shutdown for basket cleaning
- Compact butterfly valve design
- Quick opening covers
- Convoluted design baskets
- Threaded drain
- Perforated or mesh stainless steel baskets
- Vent
- Positive shutoff

Options

- Ductile iron construction
- Basket perforations from 1/32" to 1/2"
- Basket mesh of 20, 40 or 60
- MONEL® baskets
- Vent valves
- Drain valves
- Gauge taps 1/4" NPT
- Pressure differential gauge and switch connections
- Magnetic basket inserts

The butterfly valve advantage

The Eaton Model 52 duplex strainer's design large size with high flow rates benefit from a set of synchronized, high-quality, butterfly valves that minimize the effort to switch the flow from one basket chamber to the other.

The valve replaces the diverter plug used on smaller size strainers and gives a straight flow pattern with no sudden changes in flow direction. The result is a very low pressure loss. A 10" strainer of this type can handle 2,000 gpm (454 m³/h) of water with a pressure drop of only 2 psi (0.14 bar). This is the strainer to choose for high flow rate applications when a low-pressure loss is critical.

Unique basket design

The Model 52 incorporates a larger screening area by convoluting (pleating) the perforated sheet in the strainer basket, thus increasing the available screening area while reducing the total basket size.

The flow enters the basket from the side, not the top, resulting in a straight through flow pattern. This means a lower pressure drop and greater time between basket cleanings than would be possible with standard design baskets—-a substantial savings in time and operating costs.

Compact design

Lighter weight and a smaller profile make this strainer ideal for situations when space requirements are tight.

Easy to operate

- A single hand wheel operator can be on either side of the strainer if accessibility is a problem.
- An arrow on the top of the gear housing indicates which basket chamber is in service and which is ready for cleaning.
- Quick opening covers make strainer basket changing or cleaning quick and easy with no tools or lifting gear.

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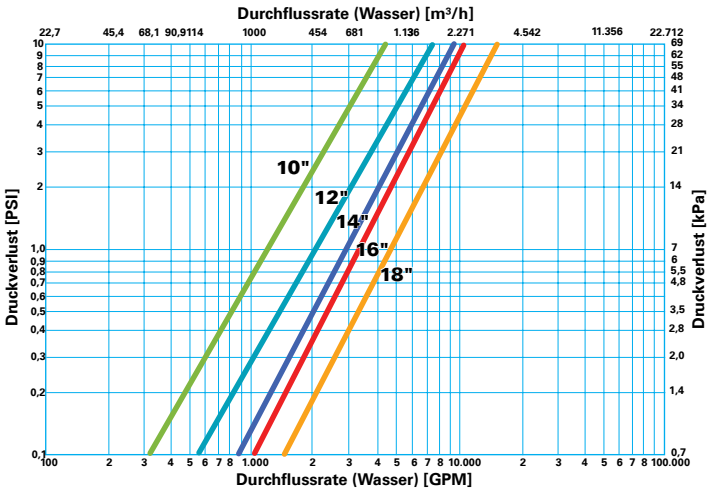
Model 52 Large Duplex Basket Strainer

Selection chart

Size	Material	End connection	Seals	Pressure rating*
10" to 12"	Iron	Flanged 125#	Buna-N®	200 psi (13.8 bar)
10" to 12"	Bronze	Flanged 150#	Buna-N	200 psi (13.8 bar)
14" to 18"	Iron	Flanged 125#	Buna-N	150 psi (10.3 bar)
14" to 18"	Bronze	Flanged 150#	Buna-N	150 psi (10.3 bar)

* @ 100 °F (38 °C)

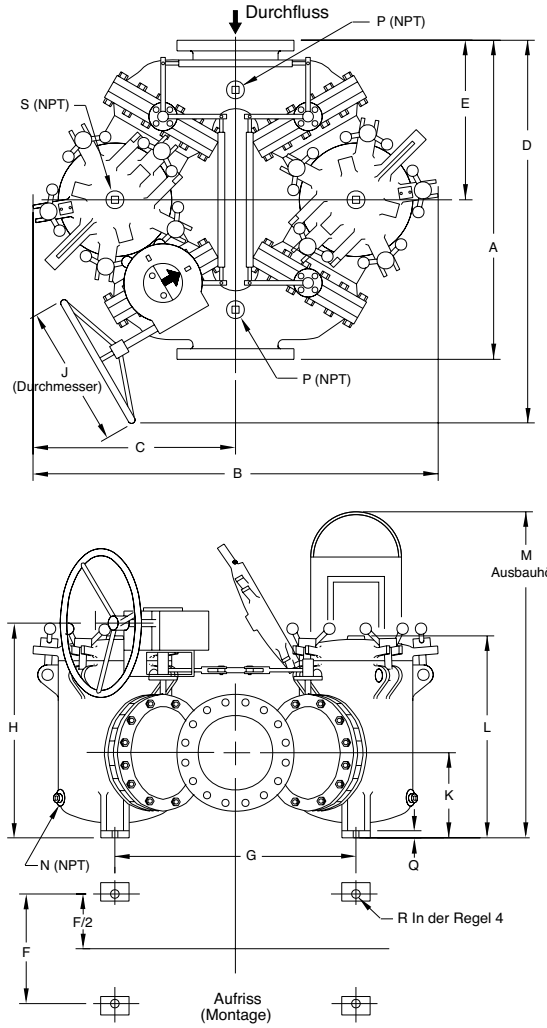


C_V factors*

Size	Value	Size	Value
10"	1300	16"	3400
12"	2000	18"	4900
14"	2900		

* For water with clean, perforated basket

Dimensions and weights are for reference only. Contact Eaton for certified drawings.



Dimensions (in/mm)

Pipe size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	Wt (lb / kg) Iron	Wt (lb / kg) Bronze
10	45	51	26	52	22-1/2	19	32	30-1/4	18	12-3/16	29	49	1-1/2	1/2	1	1	1/4	1600	2003
	1143	1295	660	1321	572	483	813	768	457	310	737	1245	–		32	32	–	727	910
12	62	64	32	66	31	23	41	36-5/8	16	16-3/4	38	66	1-1/2	1/2	1	1	1/4	2650	3318
	1574	1626	813	1676	787	584	1041	924	406	425	965	1676	–		32	32	–	1205	1508
14	72	76	38	79	35-1/2	27	48	44-3/4	24	18-3/4	44-1/2	77	1-1/2	1/2	1	1	1/4	4300	5384
	1829	1930	965	2007	902	686	1219	1137	610	476	1130	196	–		32	32	–	1955	2447
16	72	76	38	79	35-1/2	27	48	44-3/4	24	18-3/4	44-1/2	77	1-1/2	1/2	1	1	1/4	4400	5509
	1829	1930	965	2007	902	686	1219	1137	610	476	1130	196	–		32	32	–	2000	2504
18	72	76	38	79	35-1/2	27	48	44-3/4	24	18-3/4	44-1/2	77	1-1/2	1/2	1	1	1/4	4600	–
	1829	1930	965	2007	902	686	1219	1137	610	476	1130	196	–		32	32	–	2087	–

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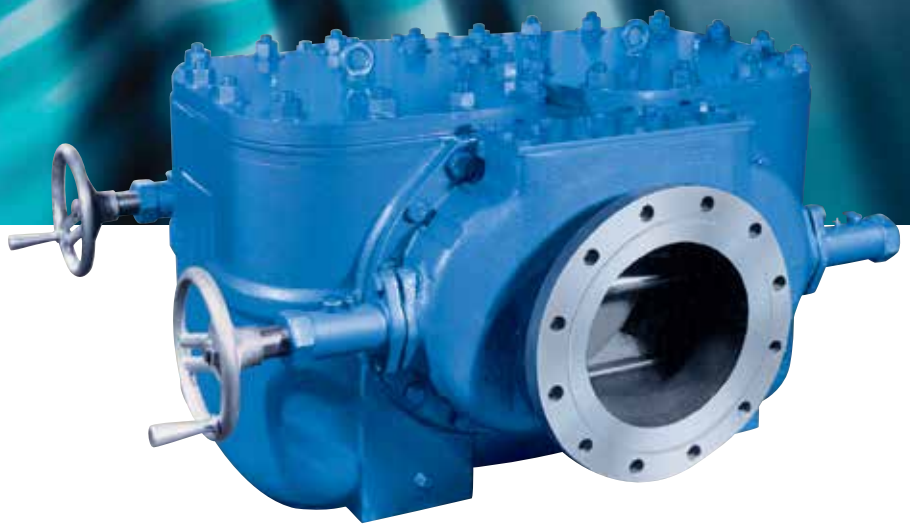
Multi-Basket Duplex Strainer

Pipeline Strainer

Cast Construction

Permanent Media

Model 570



- 8" to 24"
- Iron or carbon steel
- Flanged

Features

- Continuous flow, no shutdown for basket cleaning
- Sliding gate design
- Eight baskets per strainer (four per side)
- Bolted cover
- Compact
- Threaded drain
- Perforated or mesh stainless steel baskets standard
- Synchronized chain drive
- Pressure equalization assembly

Options

- Stainless steel construction
- Basket perforations from 1/32" to 1/2"
- Basket mesh of 20, 40 or 60
- MONEL® baskets
- Drain valves
- Cover lift davit
- Pressure differential gauge and switch connections
- Basket flange gaskets
- Magnetic basket inserts
- Left hand drive

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Continuous operation while straining up to 30,000 GPM (6,840 m³/h)

The Eaton Model 570 duplex basket strainer, specifically designed to remove potential damage causing particles from large volumes of water and other process media, strains up to 30,000 gpm (6,840 m³/h) efficiently and cost effectively. The strainer operates continuously and the pipeline flow never has to shut down for strainer basket cleaning.

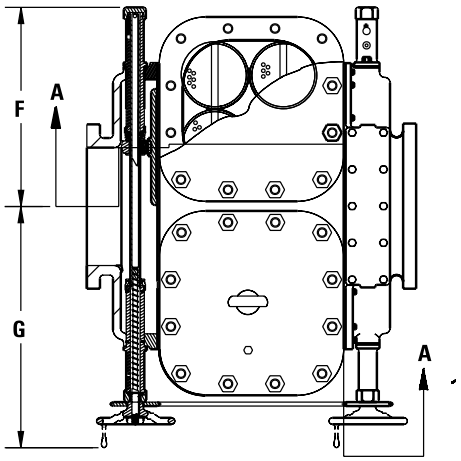
A sliding gate mechanism operated by hand wheels, switches the flow from one basket chamber to the other. The free-floating valve disc mechanism moves easily and does not bind. The fully enclosed, valve-operating stem protects it from the fluid flow.

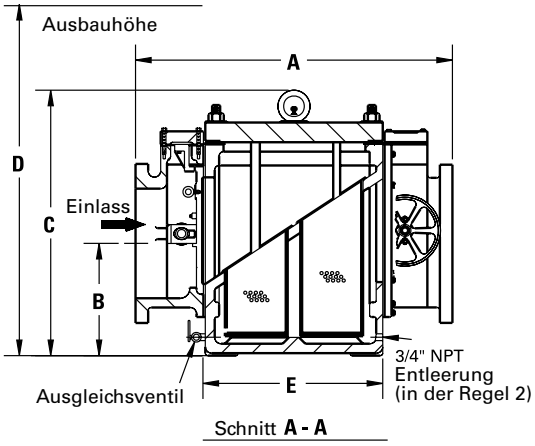
Multi-basket strainer

The Model 570 contains four baskets in each of the two straining chambers for a total of eight per duplex strainer. It is a very compact unit for its size with a low profile–ideal for tight installations in which space is a problem. Because of the multi-basket design, the individual baskets are smaller and lighter than would be possible with just one basket. One person can easily and rapidly remove and clean the baskets without lifting tackle.

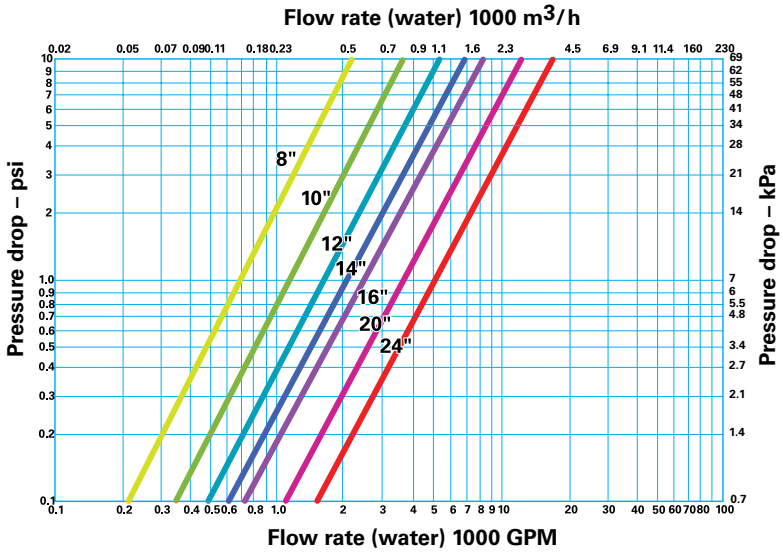
The baskets feature an angled top to permit direct fluid entry that contributes to the strainer's low-pressure drop. Because of the large open area ratio in the baskets, they have an unusually high dirt holding capacity, which results in a longer cycle between basket cleaning. Over time, the savings in labor and downtime for basket cleaning will be considerable.

Model 570 Multi-Basket Duplex Strainer





Dimensions and weights are for reference only. Contact Eaton for certified drawings.



Selection chart

Size	Material	End connection	Gaskets	Pressure rating*
8" to 24"	Iron	Flanged 125#	Non-asbestos	125 psi (8.6 bar)
8" to 24"	Carbon steel	Flanged 150#	Non-asbestos	175 psi (12.0 bar)
8" to 16"	Carbon steel	Flanged 300#	Non-asbestos	300 psi (20.7 bar)

DIN flanges available. * @ 100 °F (38 °C)

C_V factors*

Size	Value	Size	Value
8"	700	16"	2500
10"	1250	20"	3600
12"	1600	24"	5200
14"	2000		

* For water with clean, perforated basket

Dimensions (in/mm)

Pipe size	A	B	C	D	E	F	G	Weight–iron (lb / kg)	Weight–carbon steel (lb / kg)
8	38.50 / 978	8.25 / 210	20.50 / 521	38.00 / 965	18.25 / 464	18.00 / 457	28.50 / 724	1410 / 641	1565 / 711
10	40.50 / 1029	10/38 / 264	23.75 / 603	44.00 / 1118	20.50 / 521	20.25 / 514	30.50 / 775	1880 / 855	2087 / 949
12	43.50 / 1105	13.50 / 343	29.25 / 743	52.00 / 1321	23.00 / 584	23.38 / 594	32.50 / 826	2604 / 1184	2890 / 1314
14	46.25 / 1175	15.75 / 400	31.63 / 803	60.00 / 1524	24.88 / 632	25.56 / 649	35.00 / 889	3006 / 1366	3337 / 1517
16	49.63 / 1261	17.81 / 458	35.00 / 889	66.00 / 1676	28.13 / 715	27.75 / 705	37.50 / 953	4350 / 1977	4826 / 2197
20	64.00 / 1626	26.63 / 676	45.75 / 1162	88.00 / 2235	33.75 / 857	34.00 / 864	43.75 / 1111	10,000 / 4545	11,100 / 5045
24	67.75 / 1721	29.50 / 749	53.00 / 1346	98.00 / 2489	36.63 / 930	40.38 / 1026	49.50 / 1257	11,440 / 5200	12,698 / 5772

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Options
and temporary strainers

Typical pressure differential gauge with switch.

Heavy-duty strainer baskets

For very demanding applications, heavy-duty construction baskets are extremely rugged and stand up to the most abusive conditions. Heavy-duty strainer baskets have a metal banding spot welded at top and middle to provide extra support for difficult applications.

Magnetic inserts

In some applications, particularly where fluids are involved in machining processes, microscopic iron or steel particles may be present. These could pass through even the finest mesh screen. Magnetic inserts in the strainer basket catch these particles before they can pass through the mesh lining. Guaranteed to retain their magnetism indefinitely, the powerful Alnico magnets, completely encased and sealed in a 1/8" thick, type 316 stainless steel shell, prevent contamination or corrosion. Each magnet's capacity is 1300 gauss.

Taps

Optimal NPT cover vent taps and inlet/outlet nozzle taps are available for most strainers.

Differential pressure gauge

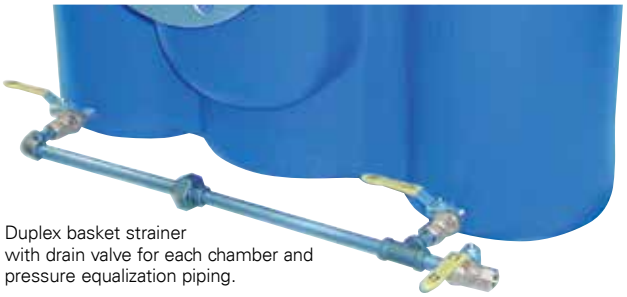
This gauge shows the pressure differential across the strainer and helps determine when to change out the strainer basket. It has a 0 - 30 psid (0 - 2.07 bar) pressure range and features a 3-1/2" gauge face. Rated at 3,000 psi (207 bar), it comes with a 1/4" NPT connection in either brass or stainless steel.

Differential pressure gauge with switch

This standard Eaton differential pressure gauge, shown above, includes a double pole, double throw, relay contact to permit actuation of a remote electrical signaling device—such as a light on a control panel—when it reaches a predetermined differential pressure. Contact rating is 10 A/115 V/60 Hz.

Cover vent valves

Available in brass or stainless steel, needle type valves, rated for 200 psi at 100 °F (13.8 bar at 38 °C), mount on the cover of the strainer with a 1/4" NPT tap.



Duplex basket strainer with drain valve for each chamber and pressure equalization piping.

Drain valves

These ball type valves, used to drain the strainer housing, are available in brass or stainless steel, rated at 600 psi at 100 °F (41.4 bar at 38 °C) with either 1/4" or 1/2" NPT connections.

Elastomer seals

If the standard seals on a pipeline strainer are not suitable for a specific application, Eaton offers a variety of special seals that include EPDM, Viton®, Buna-N® and TFE encapsulated.

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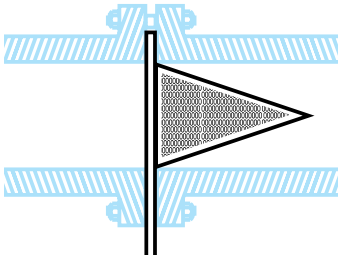
Temporary Strainers

- 2" to 24"
- Flanged
- Stainless steel or MONEL®



Cone type temporary strainer is shown bolted between two pipe flanges

Features

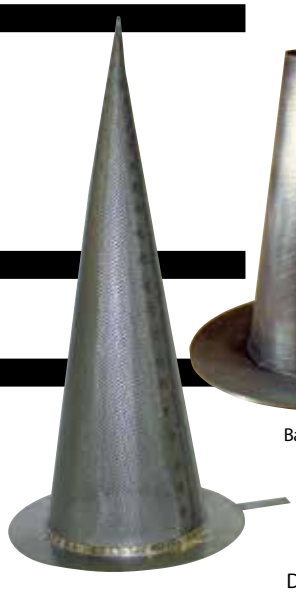
- ANSI classes 150, 300 and 600
- Perforations from 1/32" to 1/2" diameter
- Mesh liners of 20, 40, 60, 80 and 100 (best with basket type strainers)
- Stainless steel or MONEL® construction

Options

- Alloy construction, RTJ-style connections

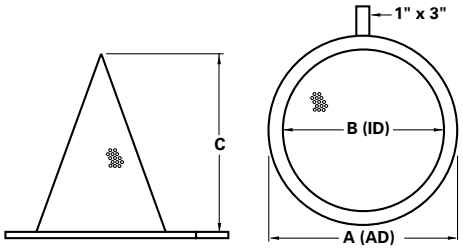
Designed for use in

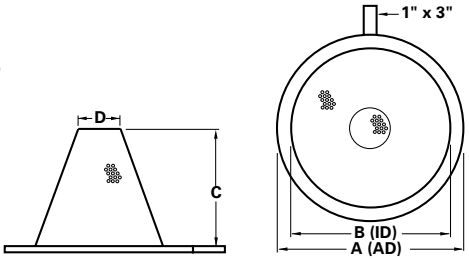
- New pipeline start-up service
- Line flushing after any modification work



Cone type

Basket type





Dimensions (in) Model 92 cone type

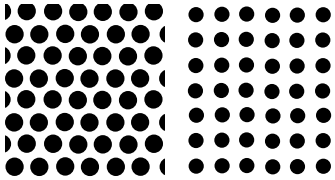
Pipe size	A class 150	A class 300	A class 600	B	C
2	3.88 / 99	3.88 / 99	4.13 / 105	1.75 / 44	6.0 / 152
2 1/2	4.63 / 118	4.63 / 118	4.88 / 124	2.25 / 57	7.0 / 178
3	5.13 / 130	5.13 / 130	5.63 / 143	2.75 / 70	9.0 / 229
4	6.63 / 168	6.63 / 168	6.88 / 175	3.50 / 89	12.0 / 305
5	7.50 / 191	7.50 / 191	9.25 / 235	4.63 / 118	14.0 / 356
6	8.50 / 216	8.50 / 216	10.25 / 260	5.50 / 140	17.0 / 432
8	10.75 / 273	10.75 / 273	12.38 / 314	7.13 / 181	23.0 / 584
10	12.13 / 308	13.13 / 334	15.5 0/ 394	9.00 / 229	27.0 / 686
12	15.88 / 403	15.88 / 403	17.38 / 441	10.88 / 276	32.0 / 813
14	17.50 / 445	17.50 / 445	19.13 / 486	12.63 / 321	33.0 / 838
16	20.00 / 508	20.00 / 508	22.00 / 559	14.50 / 368	39.0 / 991
18	21.38 / 543	21.38 / 543	23.88 / 607	16.38 / 416	44.0 / 1,118
20	23.63 / 600	23.63 / 600	26.63 / 676	18.38 / 467	49.0 / 1,245
24	28.00 / 711	28.00 / 711	30.88 / 784	20.38 / 518	58.0 / 1,473

Dimensions (in) Model 92 basket type

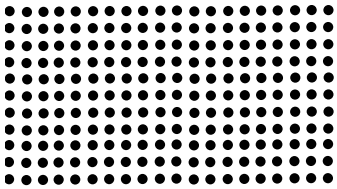
Pipe size	A class 150	A class 300	A class 600	B	C	D
2	3.88 / 99	3.88 / 99	4.13 / 105	1.75 / 44	3.5 / 89	1.0 / 25
2 1/2	4.63 / 118	4.63 / 118	4.88 / 124	2.25 / 57	4.0 / 102	1.0 / 25
3	5.13 / 130	5.13 / 130	5.63 / 143	2.75 / 70	4.5 / 114	1.0 / 25
4	6.63 / 168	6.63 / 168	6.88 / 175	3.50 / 89	6.0 / 152	2.0 / 51
5	7.50 / 191	7.50 / 191	9.25 / 235	4.63 / 118	7.5 / 191	2.0 / 51
6	8.50 / 216	8.50 / 216	10.25 / 260	5.50 / 140	9.0 / 229	2.0 / 51
8	10.75 / 273	10.75 / 273	12.38 / 314	7.13 / 181	12.0 / 305	2.0 / 51
10	13.13 / 334	13.13 / 334	15.50 / 394	9.00 / 229	14.0 / 356	3.0 / 76
12	15.88 / 403	15.88 / 403	17.38 / 441	10.88 / 276	16.5 / 419	3.0 / 76
14	17.50 / 445	17.50 / 445	19.13 / 486	12.63 / 321	17.0 / 432	4.0 / 102
16	20.00 / 508	20.00 / 508	22.00 / 559	14.50 / 368	19.0 / 483	4.0 / 102
18	21.38 / 543	21.38 / 543	23.88 / 607	16.38 / 416	21.0 / 533	6.0 / 152
20	23.63 / 600	23.63 / 600	26.63 / 676	18.38 / 467	24.0 / 610	6.0 / 152
24	28.00 / 711	28.00 / 711	30.88 / 784	22.38 / 568	28.0 / 711	10.0 / 254

Basket and screen data

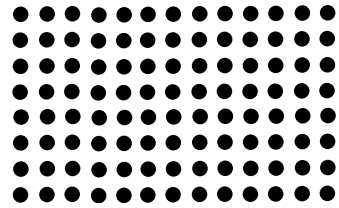
Pattern examples



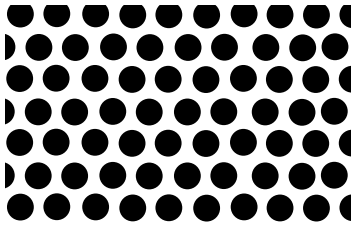
Staggered holes Straight holes



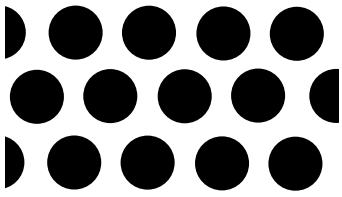
1/32" – Actual size



1/16" – Actual size



1/8" – Actual size



1/4" – Actual size

Basket and screen design

Designed to be both effective and durable, the basket or screen is the heart of an Eaton strainer. Eaton supplies baskets for simplex and duplex strainers and screens for Y strainers, in standard and heavy-duty designs. Standard design baskets meet the needs of most applications. Eaton recommends the heavy-duty design in cases when straining an extremely high viscosity material or experiencing a high solids load.

Eaton baskets and screens are available in two standard materials: 316 stainless steel or MONEL®. These materials cover nearly all corrosion resistance levels needed in strainer services. A wide range of perforations and mesh provides removal of solids from 1/2" down to as low as 40 microns. For special, unique applications, Eaton custom fabricates baskets from just about any material to exact specifications.

Basket construction

Each style basket includes a perforated sheet induction welded to a rigid top ring and solid bottom cap. Special attention to the welds along the perforated sheet seam, prevent the possible bypass of solids and maintain the basket's strength. A handle, welded to the I.D. of the top ring, facilitates easy removal. Heavy-duty baskets have reinforcing strips induction welded along the perforation's seam and circumferentially on the outside of the mid-section of the basket. The perforated sheet is inside the top ring and bottom cap.

Screen construction

Y strainer screens, rolled to form a cylinder, are induction welded along the seam. A neat weld, applied along the perforated sheet seam, prevents the possible bypass of solids and provides a seam of acceptable strength. Eaton machines Y strainer screen seats to specific dimensions and, accordingly, both the O.D. and length of these screens are closely toleranced.

Perforated sheet – specification

Eaton baskets utilize perforated sheets because of their greater inherent strength and resistance to stress cracking. The percentage of open area of a screen generally dictates the internal pressure drop experienced across it. The objective is to select a perforation with the best balance of open area, hole arrangement and sheet thickness.

Open area

Perforated sheets can have an open area from 15% to 75%. In general, the larger the open area of perforated sheet, the thinner the sheet thickness must be. Holes punched closer together increase the perforated open area; the solid portion between holes distorts and becomes weak. Another factor in controlling the sheet thickness is the hole diameter. The smaller the hole diameter, the thinner the sheet. Eaton baskets and screens have between 28% to 63% open area with gauge thickness from 18 (0.048 mm) to 25 (0.021 mm), depending upon the size of the perforations and the size and model of the strainer.

Hole arrangement

Holes can be punched either in a straight line or in a staggered pattern. Eaton baskets and screens have a staggered pattern that increases the open area, provides extra strength and creates less pressure drop.

Perforations

Eaton baskets and screens are available in 1/32", 3/64", 1/16", 1/8", 5/32", 1/4", 3/8" and 1/2" perforations and in mesh sizes 20, 40, 60, 80, 100, 200, 325 and 400. However, for general service there is one perforation for each size and type of strainer. Unless specified, this standard perforation is the size furnished with the strainer.

Basket and screen data

Wire mesh specifications

Eaton strainers are available with woven wire mesh screens. Wire mesh provides smaller openings for very fine straining applications down to 40 microns. Eaton baskets and screens use monofilament mesh possessing equal wire size and wire count in both directions to produce square openings. Other types of mesh such as Dutch (or Hollander) are also available. Dutch weave has a greater quantity of wires in one direction and fewer wires of a larger diameter in the other direction. This creates a rectangular opening. As with perforated sheet, the best wire mesh selection is a balance of open area, wire diameter and type of weave.

Openings

Standard wire mesh liners for Eaton baskets and screens are available from 20 to 400 mesh. For any size mesh, there are different open area selections based on the diameter of the wires used. Twenty mesh means 20 wires per inch in both a vertical and horizontal direction. Therefore, as the wire size increases, the hole size decreases. Eaton baskets offer wire mesh with openings from 0.034" to 0.0015" (20 mesh to 400 mesh).

Open area

The open area of wire mesh is a function of both the weave and the wire diameter. Eaton uses a plain square weave in most cases because its straight-through flow path creates the least pressure drop. The mesh is reinforced with a perforated metal backing possessing greater than a 60% open area. This combination affords the greatest degree of strength, yet offers a lower pressure drop than other types of wire mesh. In certain instances, such as Y strainer in steam applications, the increased pressure drop resulting from the use of a Dutch weave is not as critical as the retention of small particles. Therefore, in applications that involve steam, Eaton suggests the use of weave such as the 30 x 160 size that can withstand a much higher differential pressure without bursting. Eaton can supply baskets and screens with open areas from 14% to 46%

Plain square weave

Woven in an over and under pattern of wire having the same diameter, this weave produces a square opening with excellent flow characteristics.

Plain dutch weave

Woven in an over and under pattern in one direction in which the horizontal wires are larger in diameter than the vertical wires, which are driven close and crimped at each pass. This weave produces greater strength, but lower flow rates, than a square weave. Most often used in steam applications.

Mesh liners available

The number of openings per linear inch determines the size of mesh liners. The standard sizes Eaton can furnish are 20, 40, 60, 80, 100, 200, 325 and 400.

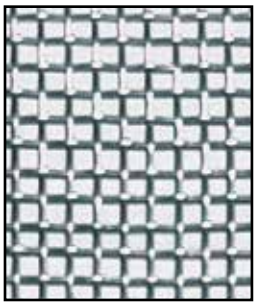
Perforated basket sheet specifications

Perforation size inches	Sheet thickness uss gauge #	Hole pattern	% Open area
0.020	26 (0.018 mm)	Straight	16.0
1/32	26 (0.018 mm)	Straight	28.0
3/64	26 (0.018 mm)	Straight	30.2
0.045	26 (0.018 mm)	Straight	37.0
1/16	26 (0.018 mm)	Straight	31.0
1/8	26 (0.018 mm)	Staggered	40.0
5/32	26 (0.018 mm)	Staggered	63.0
1/4	26 (0.018 mm)	Staggered	42.0
3/8	26 (0.018 mm)	Staggered	52.0
1/2	26 (0.018 mm)	Staggered	47.9

Mesh basket sheet specifications

Mesh size	Wire diameter inches	Mesh opening inches	Mesh opening microns	% Open area
20	0.016	0.0340	864	46.2
40	0.010	0.0150	381	36.0
60	0.0075	0.0092	234	30.5
80	0.0060	0.0065	165	27.0
100	0.0045	0.0055	140	30.3
200	0.0021	0.0029	74	33.6
325	0.0014	0.0017	43	30.0
400	0.0010	0.0015	38	36.0

Wire mesh weaves



Plain square weave

Plain dutch weave

Basket effective area

Strainer model	Pipe size (in)	Perforation size (in)	Nominal area of pipe (sq in)	Gross screen area (sq in)	Free area (sq in)	Ratio free area to pipe area
85	1/4	.045	.10	5.0	1.8	18.0
85	3/8	.045	.19	5.0	1.8	9.5
85	1/2	.045	.30	5.0	1.8	6.0
85	3/4	.045	.53	7.1	2.6	4.9
85	1	.045	.86	10.4	3.7	4.3
85	1-1/4	.045	1.49	15.1	5.5	3.7
85	1-1/2	.045	2.03	21.7	7.8	3.8
85	2	.045	3.35	30.4	10.9	3.3
85	2-1/2	.045	4.78	43.2	15.5	3.2
85	3	.045	7.39	70.7	25.5	3.4
85	4	.045	12.73	106.8	38.4	3.0
85	6	.045	28.70	241.7	87.0	3.0
85	8	.045	50.02	414.6	149.2	3.0
85	10	.045	71.80	652.2	234.8	3.3
30R	1-1/2	5/32	2.03	35.4	22.3	11.0
30R	2	5/32	3.35	50.9	32.1	9.6
30R	2-1/2	5/32	4.78	84.7	53.4	11.2
30R	3	5/32	7.39	84.7	53.4	7.2
30R	4	5/32	12.73	114.5	72.1	5.6
30R	5	5/32	20.0	158.1	99.6	5.0
30R	6	5/32	28.9	180.9	113.9	4.0
30R	8	5/32	50.03	275.6	171.8	3.4
50	5	3/16	20.0	216.1	106.0	5.4
50	6	3/16	28.9	265.4	132.7	4.6
50	8	3/16	50.02	506.7	253.4	5.1
52	10	3/16	78.8	800	400	5.1
52	12	3/16	113,1	1200	600	5.3
52	14	3/16	137.9	2000	1000	7.3
52	16	3/16	182.6	2000	1000	5.5
52	18	3/16	182.6	2000	1000	5.5
53BTX	3/4	1/32	0.53	19.8	5.5	10.4
53BTX	1	1/32	0.86	19.8	5.5	6.4
53BTX	1-1/4	1/8	1.49	45.0	22.0	14.4
53BTX	1-1/2	1/8	2.03	45.0	22.0	10.6
53BTX	2	1/8	3.35	65.0	31.0	9.3
53BTX	2 -1/2	1/8	4.78	65.0	31.0	6.5
53BTX	3	3/16	7.39	110.3	55.1	7.4
53BTX	4	3/16	12.73	152.0	76.0	5.9

Strainer model	Pipe size (in)	Perforation size (in)	Nominal area of pipe (sq in)	Gross screen area (sq in)	Free area (sq in)	Ratio free area to pipe area
72	3/8	1/32	0.19	12.7	3.4	18.0
72	1/2	1/32	0.30	12.7	3.4	11.3
72	3/4	1/32	0.53	19.5	5.2	9.9
72	1	1/32	0.86	19.5	5.2	6.1
72	1-1/4	1/8	1.49	30.1	14.4	9.7
72	1-1/2	1/8	2.03	49.7	19.0	9.4
72	2	1/8	3.35	50.9	24.4	7.3
72	2-1/2	1/8	4.78	80.2	38.4	8.0
72	3	3/16	7.39	114.5	57.2	7.8
72	4	3/16	12.73	168.3	84.1	6.6
72	5	3/16	20.0	265.4	132.7	6.6
72	6	3/16	28.9	324.2	162.1	5.6
72	8	3/16	50.02	555.3	277.7	5.6
73	10	3/16	78.8	800	400	5.1
73	12	3/16	113.1	1200	600	5.3
73	14	3/16	137.9	2000	1000	7.3
73	16	3/16	182.6	2000	1000	5.5
73	18	3/16	182.6	2000	1000	5.5

Alloy data

Metal alloys used in Eaton strainers

Carbon steel – ASTM A-216 grade WCB

Tensile strength: . . . . . 70,000 lb/sq (480 N/mm²)
Yield: . . . . 36,000 lb/sq in (245 N/mm²)
Elongation: 22%
Chemical composition:
C (Carbon) 0.30%
Si (Silicon) 0.60%
P (Phosphorus) 0.04%
S (Sulfur) 0.045%
Mn (Manganese) 1.00%
Residual Elements . . . . 1.00% max

Aluminum bronze – ASTM B-148 grade C95400

Tensile strength: . . . . . 75,000 lb/sq in (517 N/mm²)
Yield:. . . . 30,000 lb/sq in (206 N/mm²)
Elongation: 12%
Chemical composition:
Cu (Copper) 85%
Fe (Iron) 4%
Al (Aluminum) 11%

Stainless steel – ASTM A-351 grade CF8M

Tensile strength: . . . . . 70,000 lb/sq in (480 N/mm²)
Yield:. . . . 30,000 lb/sq in (206 N/mm²)
Elongation: 30%
Chemical composition:
C (Carbon) . . . . . 0.08% max
Si (Silicon) 1.5%
P (Phosphorus) 0.040%
Cr (Chromium) . . . . . 18.0 - 21.0%
Ni (Nickel) . . . . . 9.0 - 12.0%
Mn (Manganese) 1.50%
S (Sulfur) 0.04%
Mo (Molybdenum) . . . . 2.0 - 3.0%

Cast iron – ASTM A-126 class B

Tensile strength: 31,000 lb/sq in (214 N/mm²)
Compressive strength: 109,000 lb/sq in (750 N/mm²)
Tensile modulus: . . . . 15×10^6 lb/sq in
Chemical composition:
C (Carbon) . . . . . 3.20 - 3.40 %
Si (Silicon) . . . . . 2.10 - 2.30%
P (Phosphorus) . . . . . 0.15 - 0.30%
S (Sulfur) . . . . . 0.08 - 0.12%
Mn (Manganese) . . . 0.50 - 0.80%

Ductile iron – ASTM A-395 grade 60-40-18

Tensile strength: . . . . . 60,000 lb/sq in (413 N/mm²)
Yield:. . . . . 40,000 lb/sq in (275 N/mm²)
Elongation: 18%
Chemical composition:
C (Carbon) . . . . . 3.20 - 4.0%
Si (Silicon) . . . . . 1.80 - 2.80%
P (Phosphorus) . . . . . 0.08% max.
S (Sulfur) . . . . . 0.03% max.
Mn (Manganese) . . . 0.03% max.

Pressure drop calculations

Pressure drops for Eaton strainers are shown on each product page. The curves are based on the flow of water through clean, perforated baskets or screens. For mesh-lined baskets or screens and/or for fluids other than water, use the correction factors listed on this page. To accurately calculate the pressure loss for filters and strainers in a pipeline, proceed as follows:

1. First calculate pressure loss using C_V factor formula at right.
2. Take the pressure loss figure obtained in (1) and recalculate it using the appropriate correction factor from the following table.

Correction factors for mesh-lined baskets

First – Multiply the pressure drop for water shown in charts by the specific gravity of the liquid.

Second – Multiply the corrected pressure drop figure by the following correction factors for more viscous liquids. (Water has a viscosity of 30 SSU.)

Viscosity (SSU)	Unlined perforated basket	40 Mesh lined basket	60 Mesh lined basket	80 Mesh lined basket	100 Mesh lined basket	200 Mesh lined basket	325 Mesh lined basket
30 (water)	1	1.2	1.4	1.6	1.7	2.0	2.5
500	1.6	1.9	2.1	2.4	2.6	3.1	3.6
1000	1.7	2.2	2.4	2.6	2.8	3.3	3.8
2000	1.9	2.4	2.7	2.9	3.2	3.8	4.0
3000	2.0	2.6	2.9	3.2	3.5	4.1	4.3
5000	2.2	3.0	3.5	4.0	4.5	5.3	6.3
10000	2.5	3.5	4.2	5.0	6.0	7.1	8.5

Strainer basket opening equivalents

Mesh	Inches	Millimeters	Microns	Perf	Inches	Millimeters	Microns
400	0.0015	0.0381	38	1/32	0.033	0.838	838
300	0.0018	0.0457	45	3/64	0.045	1.143	1143
250	0.0024	0.0609	60	1/16	0.070	1.778	1776
200	0.0027	0.0686	68	3/32	0.094	2.387	2387
150	0.0041	0.1041	104	1/8	0.125	3.175	3175
100	0.0065	0.1651	165	5/32	0.150	3.810	3810
80	0.007	0.1778	177	3/16	0.1875	4.762	4762
60	0.009	0.2286	228	1/4	0.250	6.350	6350
40	0.015	0.8636	380	3/8	0.375	9.525	9525
20	0.034	0.8636	862	1/2	0.500	12.700	12700

Pressure loss calculation using C_V factor

Metric units

$$\Delta p = \left[\frac{Q}{C_V}\right]^2 (133.6)$$

Δp = Pressure drop in kPa
Q = Flow in m³/h
C_V = Flow coefficient

Standard units

$$\Delta p = \left[\frac{Q}{C_V}\right]^2$$

Δp = Pressure drop in psi
Q = Flow in gpm
C_V = Flow coefficient

The pressure loss across a strainer can be calculated using the system's flow rate and the C_V factor for that strainer.

For example, a 1" Model 72 simplex strainer with a perforated basket has a C_V factor of 22.5. In water service with a 30 gpm (6.8 m³/h) flow rate, it will have a 1.7 psi (117 mbar) pressure drop $(30 \div 22.5)^2 = 1.7$. For mesh-lined baskets and/or fluids with a viscosity greater than water, multiply the pressure drop by the correction factors in the chart "Correction factors for mesh-lined baskets."

Simplex, Duplex, T-Type

Custom fabricated strainers

Modular systems make it easy to meet precise specifications

24" simplex Model 90 low profile carbon steel fabricated strainer

Nothing too big, too small or too special

Eaton custom fabricated pipeline strainers are unique designs that fit the exact requirements of any application. Whether it is a special alloy, unique piping connection, or cover opening system, or even an extraordinary size, Eaton's talented engineers will design and develop strainers to any specification.

With extensive manufacturing capabilities and investment in equipment, all but the most specialized fabrication work is performed in-house—reducing costs and expediting delivery of finished strainers. All equipment is manufactured to customer specifications with full consideration to meet required delivery dates.

Eaton prides itself on innovation and continually invests in new products and technology.

Known for quality workmanship, Eaton fabricated pipeline strainers meet customers' expectations and the highest standards, including:

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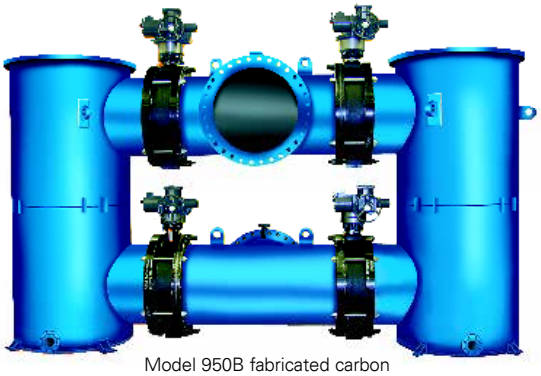
- ISO 9001-2008 quality management
- Standard ASME "U" and "UM" Code Stamp
- "N" stamp available
- Brazilian NR-13 available
- European standards - DIN/PED available
- Properly sized components to meet any specified flow rate and retention requirement
- NSF approved coatings
- Ultra low discharge strainer technology that offers reduced purged volumes

Model 91 T-type strainer with Quick Open Cover

Eaton's continued success can be attributed to the amount of skill and pride that goes into the production of each customers' fabricated pipeline strainer.



Model 950B fabricated carbon steel duplex strainer

EATON

Powering Business Worldwide

12" Model 950B duplex strainer with quick open cover

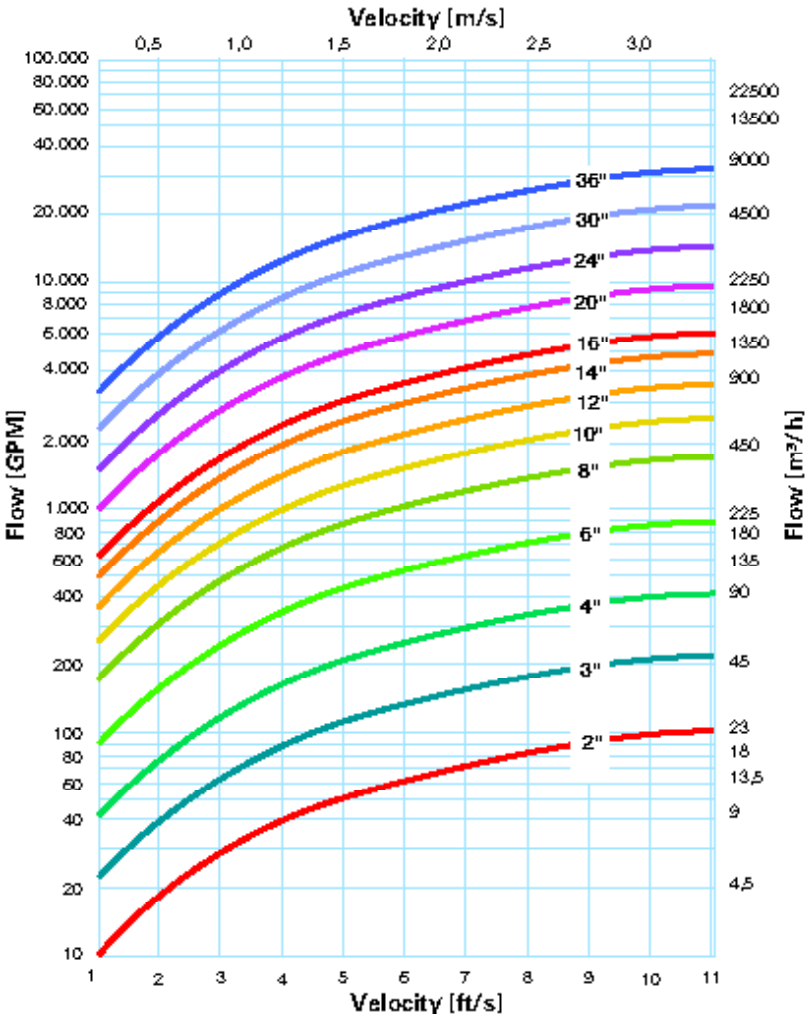
Fabrication options

- Simplex, duplex and T-type fabrication
- Pipe sizes 2" to 60"
- ANSI class flanges from 150# to 1500# or DIN EN
- Bolted, quick opening hinged cover or davit assembly
- Carbon steel, stainless steel or special alloy construction for body and baskets
- RTJ-style connections
- Vent valves
- Drain valves
- Gauge taps
- Pressure differential gauge and switches
- Backflushing system for manual or automated cleaning
- Steam jacket for highly viscous fluids
- Custom nozzle positioning including rotated or offset placement
- High pressure/temperature capabilities
- Construction according to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code
- Perforated baskets from 1/32" to 1" hole diameter
- Mesh basket liners from 20 to 400 (862 to 38 microns)
- Viton®, Buna-N® or other O-ring seal material
- Coatings and linings available upon request

Basic sizing guidelines

1. Select the correct screen and opening size, do not make smaller than necessary.
2. The quantity, type and nature of debris to be removed are considered.
3. The strainer meets the design pressure and temperature requirements of the pipeline.

Strainer sizing chart



Fabricated Simplex Strainer

Model 90

Pipeline Strainer | Fabricated Construction | Permanent Media

8" Model 90 strainer, carbon steel with bolted cover

- Carbon steel or stainless steel*
- Sizes 1" to 48"
- Flanged ANSI class 150 or 300

Features

- Straight through flow design
- Low pressure loss
- Slant top basket design
- Basket perforations from 1/32" to 1"
- 20 to 400 mesh linings for fine straining applications

Options

- ANSI Class 600, 900, 1500 or DIN EN flanges
- European standards - DIN/PED available
- Hinged cover or davit assembly for easier maintenance
- Alloy construction for body and baskets
- RTJ-style connections
- Vent valves
- Drain valves
- Gauge taps
- Backflushing system for manual or automated cleaning
- Pressure differential gauge and switches
- Steam jacket for highly viscous fluids
- Rotated or offset nozzle placement
- High pressure capabilities
- Construction according to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code
- Brazilian NR-13 available
- Coatings and linings available upon request

* Stainless steel strainers include painted carbon steel, external, non-wetted fasteners as standard

EATON
Powering Business Worldwide

Customize to improve performance and meet higher pressure requirements

A slant top design improves the flow through the strainer and results in significantly lower pressure drops. This design also results in a more compact basket that weighs less than an ordinary basket. This makes it possible for one person to remove it from the strainer housing, when it comes time to clean or changeout the basket.

Common modifications

- Rotated inlet and outlet nozzles to eliminate an elbow in the downstream piping
- Lowering or raising either the inlet or the outlet nozzle, this eliminates serious alignment and support problems.

Cover type openings

For applications with infrequent basket changing, Eaton offers a simple, cost-effective, bolted cover type. It's available with a davit assembly cover for larger strainers with heavy covers, this makes it possible for a one-person operation.

For applications with more frequent changing, Eaton offers a hinged, quick opening cover secured by swing bolts. This is adaptable for higher pressure applications. For medium size strainers, 8" to 16," a davit assembly bolted cover is available. This permits one operator to engage the hinge and open the cover.

Backflush/backwash option

In systems with heavy, well-defined solids and sediment, this option backflushes the system without shutting the system down. A piping connection with an on/off backflush valve is fabricated at the strainer bottom and has a connection to the bottom of the strainer basket. When solids accumulate in the bottom of the basket, the backflush valve opens and the differential between the operating pressure and the backflush system removes the solids. The second step, backwashing, reverses the flow and removes residual dirt.

Optional steam jacketing

Available in carbon steel or stainless steel rated for service up to 450 °F (232 °C). This is ideal for the high temperatures required to process and transport heavy, viscous fluids without affecting the function or normal maintenance of the strainer. Steam jacketing maintains critical fluid temperature throughout the strainer.

Design and fabrication "AD 2000-Merkblätter", DIN EN 13445 or ASME Code and ANSI B31.1 are available.

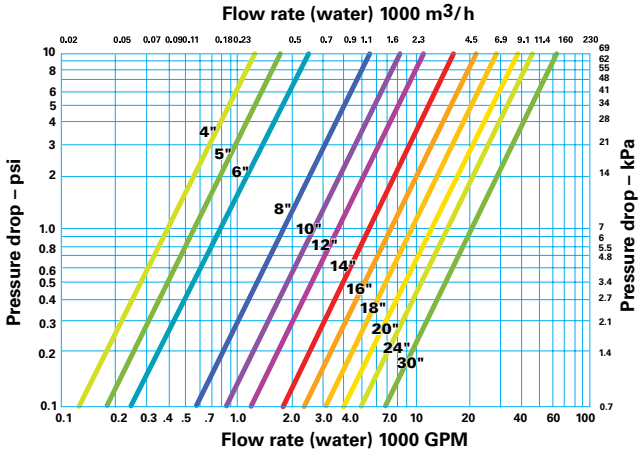
Model 90 Fabricated Simplex Strainer

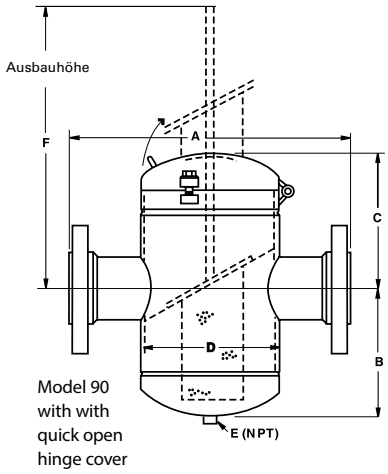
Model 90 with quick open hinge cover

Nom size	Dimensions (in / mm) Class 150 A	Class 300 A	B	Class 150/300 C	D	E	F	Weight (lb / kg) Class 150 Cover	Class 150 Unit	Class 300 Cover	Class 300 Unit
2	14 / 356	14 / 356	12 / 305	8 5/8 / 219	6 5/8 / 168	1/2	26 / 660	6 / 2.7	71 / 32	6 / 2.7	90 / 41
3	15 / 381	15 / 381	12 1/2 / 318	8 5/8 / 219	6 5/8 / 168	1/2	26 / 660	6 / 2.7	73 / 33	6 / 2.7	105 / 48
4	16 / 406	16 / 406	14 / 356	9 1/2 / 241	8 5/8 / 219	1	21 / 533	9 / 4.1	122 / 55	9 / 4.1	158 / 72
5	16 / 406	17 1/2 / 445	15 / 381	11 1/4 / 286	10 3/4 / 273	1	22 / 559	9 / 4.1	128 / 58	9 / 4.1	176 / 80
6	20 / 508	21 / 533	17 / 432	11 1/4 / 286	10 3/4 / 273	1	24 / 610	12 / 5.4	168 / 76	12 / 5.4	236 / 107
8	22 / 559	23 / 584	21 / 533	13 / 330	12 3/4 / 324	1 1/2	28 / 711	15 / 6.8	226 / 103	15 / 6.8	278 / 126
10	32 / 813	33 / 838	25 / 635	15 3/4 / 400	16 / 406	1 1/2	33 / 838	30 / 14	360 / 163	30 / 14	483 / 219
12	35 / 889	36 / 914	28 / 711	17 3/4 / 451	18 / 457	1 1/2	39 / 991	37 / 17	535 / 243	37 / 17	734 / 333
14	37 / 940	38 / 965	33 / 838	19 3/4 / 502	20 / 508	2	45 / 1143	46 / 21	804 / 365	46 / 21	1030 / 467
16	42 / 1067	43 / 1092	36 / 914	23 1/4 / 591	24 / 610	2	49 / 1245	68 / 31	1188 / 539	68 / 31	1437 / 652
18	42 / 1067	43 / 1092	39 / 991	23 1/4 / 591	24 / 610	2	53 / 1346	68 / 31	1255 / 569	68 / 31	1553 / 704
20	43 / 1092	44 1/2 / 1130	44 / 1118	27 3/4 / 705	30 / 762	2	59 / 1499	71 / 32	1322 / 600	71 / 32	1656 / 751
24	48 / 1219	49 3/4 / 1264	60 / 1524	27 3/4 / 705	30 / 762	2	78 / 1981	88 / 40	1860 / 844	88 / 40	2344 / 1063

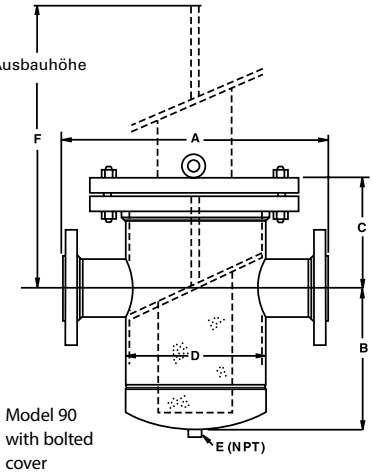
Model 90 with bolted cover

Nom. size	Dimensions (in/ mm) Class 150 A	Class 300 A	B	Class 150 C	Class 300 C	D	E	F	Weight (lb / kg) Class 150 Cover	Class 150 Unit	Class 300 Cover	Class 300 Unit
2	14 / 356	14 / 356	12 / 305	7 / 178	9 / 229	6 5/8 / 168	1/2	23 / 584	28 / 13	110 / 50	50 / 23	160 / 73
3	15 / 381	15 / 381	12 1/2 / 318	8 / 203	9 / 229	6 5/8 / 168	1/2	24 / 610	28 / 13	120 / 54	50 / 23	175 / 79
4	16 / 406	16 / 406	14 / 356	8 1/4 / 210	9 1/2 / 241	8 5/8 / 219	1	21 / 533	45 / 20	147 / 67	81 / 37	219 / 99
5	16 / 406	17 1/2 / 445	15 / 381	9 1/2 / 241	11 / 279	10 3/4 / 273	1	22 / 559	45 / 20	153 / 69	81 / 37	237 / 108
6	20 / 508	21 / 533	17 / 432	9 1/2 / 241	11 / 279	10 3/4 / 273	1	24 / 610	70 / 32	203 / 92	127 / 58	328 / 149
8	22 / 559	23 / 584	21 / 533	11 / 279	12 1/2 / 318	12 3/4 / 324	1 1/2	28 / 711	110 / 50	281 / 127	184 / 83	407 / 185
10	32 / 813	33 / 838	25 / 635	13 / 330	14 1/2 / 368	16 / 406	1 1/2	33 / 838	170 / 77	450 / 204	307 / 139	710 / 322
12	35 / 889	36 / 914	28 / 711	14 1/2 / 368	16 / 406	18 / 457	1 1/2	39 / 991	209 / 95	644 / 292	390 / 177	1024 / 464
14	37 / 940	38 / 965	33 / 838	15 3/4 / 400	17 1/2 / 445	20 / 508	2	45 / 1143	272 / 123	951 / 431	492 / 223	1397 / 634
16	42 / 1067	43 / 1092	36 / 914	18 1/4 / 464	20 / 508	24 / 610	2	49 / 1245	411 / 186	1409 / 639	754 / 342	2011 / 912
18	42 / 1067	43 / 1092	39 / 991	18 1/4 / 464	20 / 508	24 / 610	2	53 / 1346	411 / 186	1486 / 674	754 / 342	2127 / 965
20	43 / 1092	44 1/2 / 1130	44 / 1118	21 3/4 / 552	24 / 610	30 / 762	2	59 / 1499	411 / 186	1553 / 704	754 / 342	2231 / 1012
24	48 / 1219	49 3/4 / 1264	60 / 1524	21 3/4 / 552	24 / 610	30 / 762	2	78 / 1981	681 / 309	2291 / 1039	1403 / 636	3497 / 1586





Model 90 with with quick open hinge cover



Model 90 with bolted cover

US
EF-SSEA-19
6-2014

Fabricated Offset Duplex Strainer

Pipeline Strainer | Fabricated Construction | Permanent Media

Model 950B
2" - 12"

12" Model 950B duplex strainer with quick open cover

- Carbon steel or stainless steel
- Sizes 2" to 12"
- Flanged ANSI class 150 or 300

Features

- Offset inlet/outlet design
- Basket perforations from 1/32" to 1"
- 20 to 400 mesh linings for fine straining applications

Options

- Quick open cover or davit assembly bolted cover
- Alloy construction for body and baskets
- Construction according to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code
- Steam jacket for highly viscous fluids
- Coatings and linings available upon request

Duplex housing for continuous operation

The Eaton Model 950B fabricated duplex strainers operate continuously and feature two strainer basket housings connected by four individually operated valves. When the basket in the first housing becomes full, switching the flow to the second is easy using the butterfly valve assembly. Remove, clean or replace the first basket for use again; the pipeline never shuts down.

Cover type openings

For applications with infrequent basket changing, Eaton offers a simple, cost-effective, bolted cover type. It's available with a davit assembly cover for larger strainers with heavy covers, this makes it possible for a one-person operation.

For applications with more frequent changing, Eaton offers a hinged, quick opening cover secured by swing bolts. This is adaptable for higher pressure applications. For medium size strainers, 8" to 12," a davit assembly bolted cover is available. This permits one operator to engage the hinge and open the cover.

Strainer screens

Strainer screens are stainless steel or other specified materials.

Backflush/backwash option

In systems with heavy, well-defined solids and sediment, this option backflushes the system without shutting the system down. A piping connection with an on/off backflush valve is fabricated at the strainer bottom and has a connection to the bottom of the strainer basket. When solids accumulate in the bottom of the basket, the backflush valve opens and the differential between the operating pressure and the backflush system removes the solids. The second step, backwashing, reverses the flow and removes residual dirt.

Optional steam jacketing

Available in carbon steel or stainless steel rated for service up to 450 °F (232 °C). This is ideal for the high temperatures required to process and transport heavy, viscous fluids without affecting the function or normal maintenance of the strainer. Steam jacketing maintains critical fluid temperature throughout the strainer.

Design and fabrication to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code and ANSI B31.1 are available.

EATON
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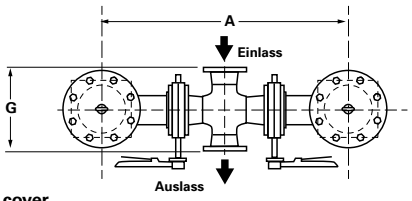
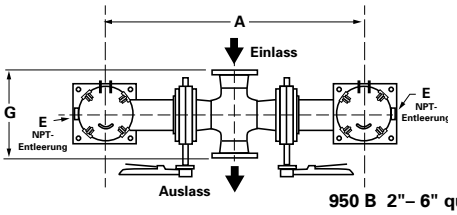
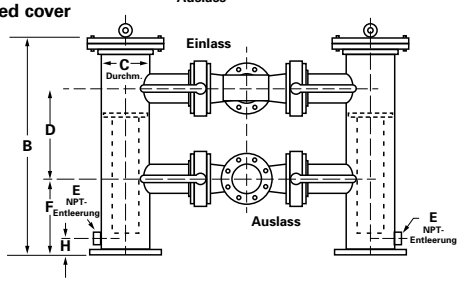
Model 950B 2" - 12" Fabricated Offset Duplex Strainer

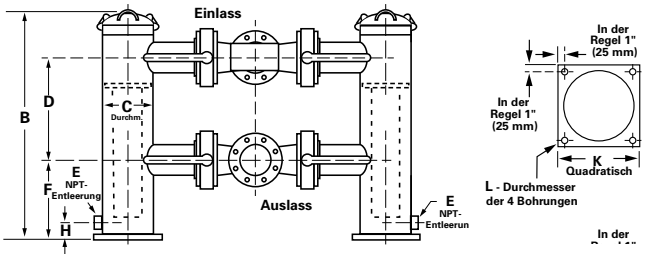


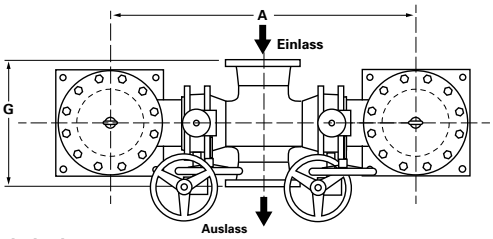
950 B 2"– 6" bolted cover



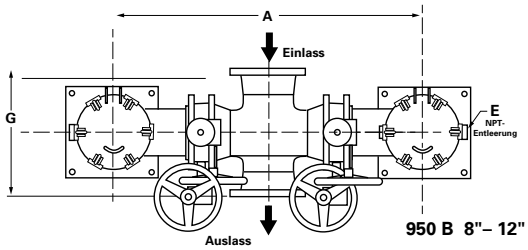
950 B 2"– 6" quick open cover



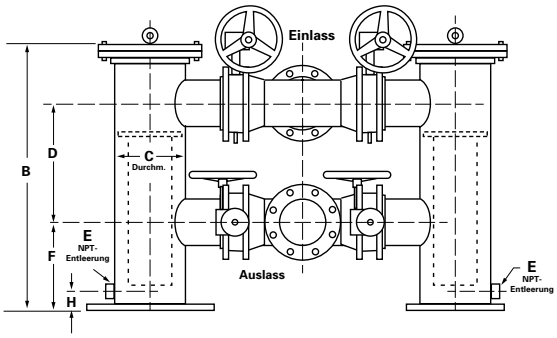


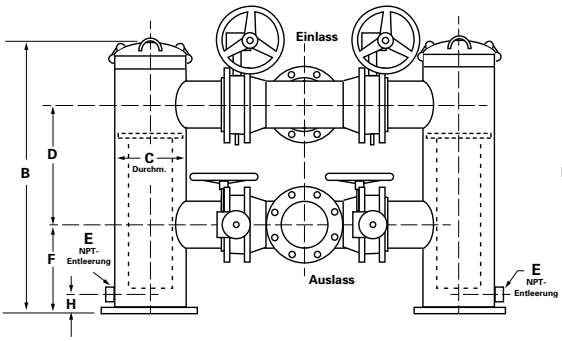


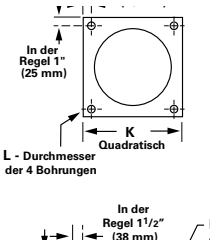
950 B 8"– 12" bolted cover



950 B 8"– 12" quick open cover







Dimensions (in/mm)

Pipe size	A	Quick open B	Bolted B	C	D	E	F	G	H	K	L	Weight quick open (lb / kg)	Weight bolted (lb / kg)
2	35.25 / 895	36.63 / 930	34.25 / 884	6.63 / 168	16.00 / 406	1	12.00 / 305	10.25 / 203	3.00 / 76	8.00 / 203	0.75 / 19	320 / 145	345 / 156
3	39.50 / 1003	38.63 / 981	38.00 / 965	6.63 / 168	16.00 / 406	1	14.00 / 356	12.50 / 318	3.00 / 76	8.00 / 203	0.75 / 19	410 / 186	430 / 195
4	43.75 / 1111	41.50 / 1054	41.00 / 1041	8.63 / 219	18.00 / 457	1	14.00 / 356	14.50 / 368	3.00 / 76	10.00 / 254	0.75 / 19	650 / 294	700 / 317
6	53.00 / 1346	43.25 / 1099	42.00 / 1087	10.75 / 273	18.00 / 457	1	14.00 / 356	18.50 / 470	3.00 / 76	12.00 / 305	0.75 / 19	1300 / 589	1100 / 499
8	56.25 / 1429	48.00 / 1219	46.00 / 1168	12.75 / 324	25.00 / 635	1-1/2	10.00 / 254	22.25 / 565	3.25 / 83	17.00 / 432	0.75 / 19	1685 / 763	1800 / 815
10	64.75 / 1645	51.75 / 1314	52.00 / 1321	16.00 / 406	26.00 / 660	1-1/2	10.00 / 254	25.25 / 641	3.50 / 89	19.00 / 483	0.75 / 19	2120 / 960	2300 / 1042
12	72.50 / 1842	57.75 / 1467	54.00 / 1372	18.00 / 457	28.00 / 711	1-1/2	12.00 / 305	29.25 / 743	4.00 / 102	21.00 / 533	1.00 / 25	3270 / 1481	3500 / 1586

Fabricated Offset Duplex Strainer

Pipeline Strainer | Fabricated Construction | Permanent Media

Model 950B
14" - 24"

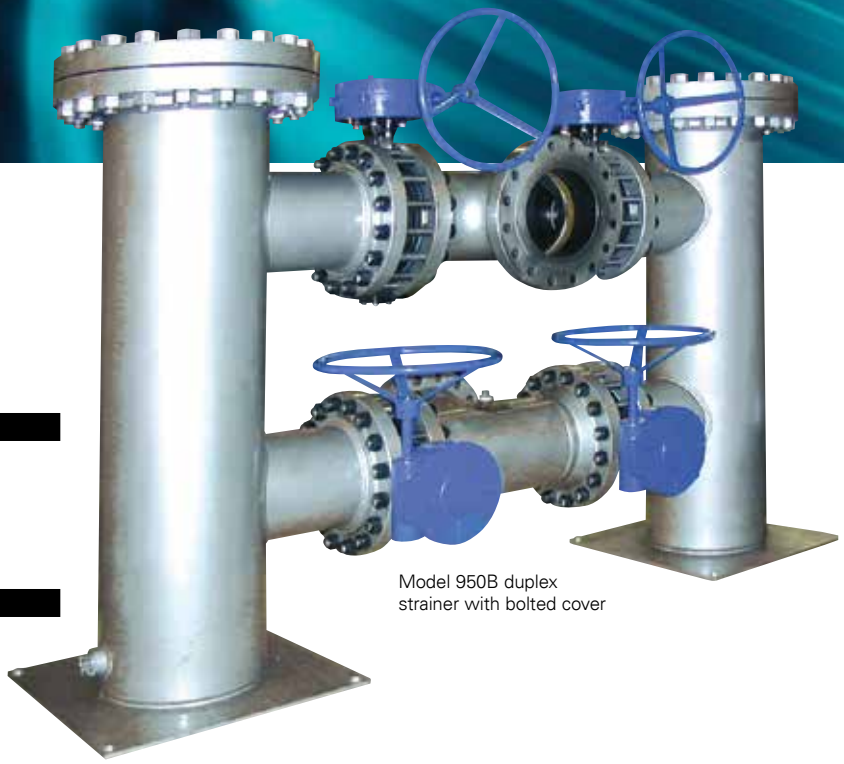
- Carbon steel or stainless steel
- Sizes 14" to 24"
- Flanged ANSI class 150 or 300

Features

- Offset inlet/outlet design
- Basket perforations from 1/32" to 1"
- 20 to 400 mesh linings for fine straining applications

Options

- Quick open cover or davit assembly bolted cover
- Alloy construction for body and baskets
- Construction according to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code
- Steam jacket for highly viscous fluids
- Coatings and linings available upon request



Model 950B duplex strainer with bolted cover

Duplex housing for continuous operation

The Eaton Model 950B fabricated duplex strainers operate continuously and feature two strainer basket housings connected by valves. When the basket in the first housing becomes full, switching the flow to the second is easy using the butterfly valve assembly. Remove, clean or replace the first basket for use again; the pipeline never shuts down.

Cover type openings

For applications with infrequent basket changing, Eaton offers a simple, cost-effective, bolted cover type. It's available with a davit assembly cover for larger strainers with heavy covers, this makes it possible for a one-person operation.

For applications with more frequent changing, Eaton offers a hinged, quick opening cover secured by swing bolts. This is adaptable for higher pressure applications. For medium size strainers, 14" to 16," a davit assembly bolted cover is available. This permits one operator to engage the hinge and open the cover.

Strainer screens

Strainer screens are stainless steel or other specified materials.

Backflush/backwash option

In systems with heavy, well-defined solids and sediment, this option backflushes the system without shutting it the system down. A piping connection with an on/off backflush valve is fabricated at the strainer bottom and has a connection to the bottom of the strainer basket. When solids accumulate in the bottom of the basket, the backflush valve opens and the differential between the operating pressure and the backflush system removes the solids. The second step, backwashing, reverses the flow and removes residual dirt.

Optional steam jacketing

Available in carbon steel or stainless steel rated for service up to 450 °F (232 °C). This is ideal for the high temperatures required to process and transport heavy, viscous fluids without affecting the function or normal maintenance of the strainer. Steam jacketing maintains critical fluid temperature throughout the strainer.

Eaton customizes the strainers to meet special application requirements. Design and fabrication to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code and ANSI B31.1 are available.

EATON
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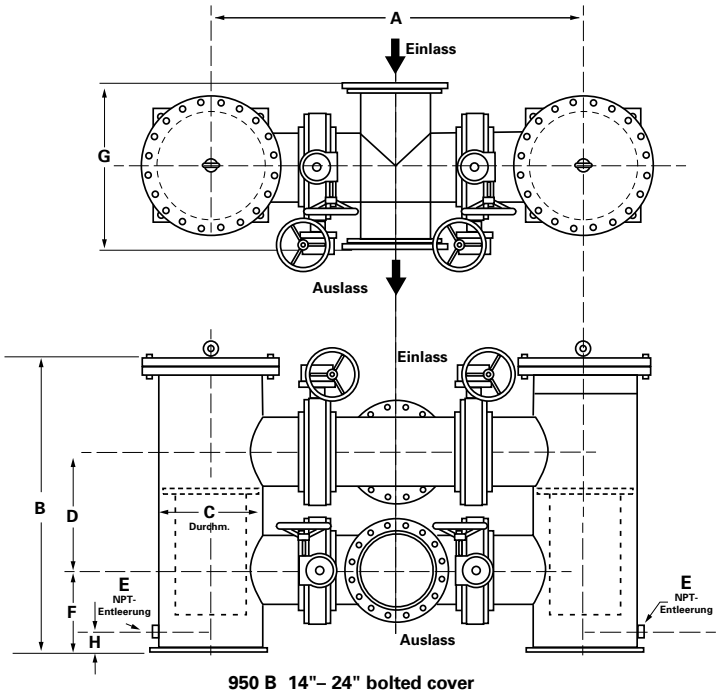
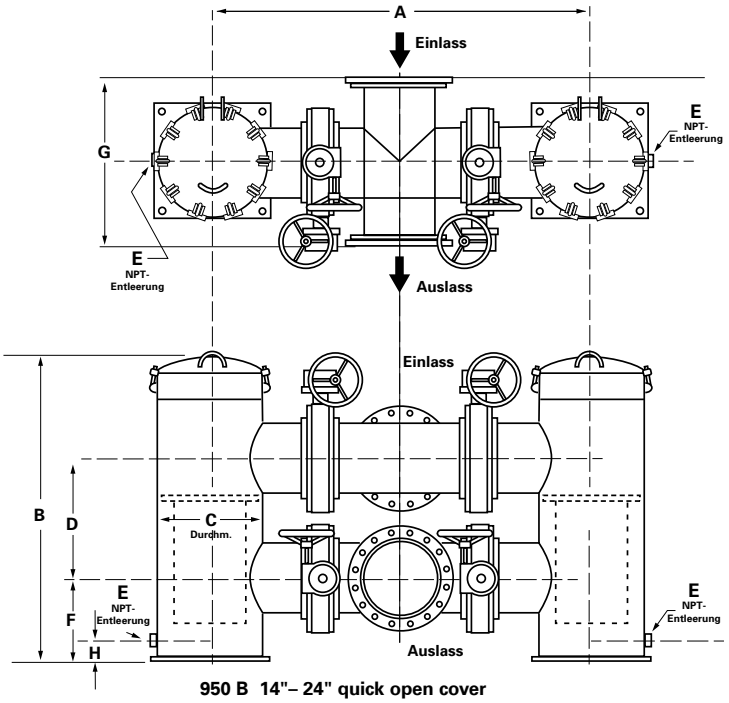
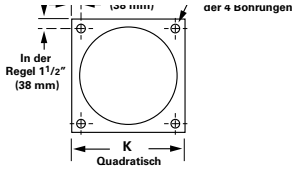
Model 950B 14" - 24" Fabricated Offset Duplex Strainer



950 B 14"– 24" bolted cover



950 B 14"– 24" quick open cover



Base plate detail 14"– 24"

Dimensions (in/mm)

Pipe size	A	Quick open B	Bolted B	C	D	E	F	G	H	K	L	Weight quick open (lb / kg)	Weight bolted (lb / kg)
14	84.00 / 2134	63.00 / 1600	63.00 / 1600	20.00 / 508	27.00 / 685	1-1/2	16.00 / 406	32.00 / 813	4.00 / 102	23.00 / 584	1.00 / 25	3700 / 1678	4000 / 1814
16	86.00 / 2184	68.00 / 1727	68.00 / 1727	24.00 / 610	27.00 / 685	1-1/2	18.00 / 457	34.00 / 864	4.00 / 102	26.00 / 660	1.13 / 29	4240 / 1923	4680 / 2123
18	90.00 / 2286	73.00 / 1854	69.00 / 1753	24.00 / 610	30.00 / 762	2	19.00 / 483	38.00 / 965	4.75 / 121	26.00 / 660	1.13 / 29	5760 / 2613	6200 / 2813
20	106.00 / 2692	90.00 / 2286	90.00 / 2286	30.00 / 762	36.00 / 914	2	22.00 / 559	40.00 / 1016	4.75 / 121	38.00 / 965	1.13 / 29	8450 / 3833	8900 / 4037
24	121.00 / 3073	100.00 / 2540	100.00 / 2540	30.00 / 762	48.00 / 1219	2	24.00 / 610	48.00 / 1168	4.75 / 121	38.00 / 965	1.13 / 29	9300 / 4354	10050 / 4559

US
EF-SSEA-21
6-2014

Fabricated T-Type Strainer

Model 91

Pipeline Strainer | Fabricated Construction | Permanent Media

Quick opening spin off cover with davit assembly

- Carbon steel or stainless steel*
- Sizes 2" to 48"
- Flanged or butt weld

Features

- ANSI class 150, 300, 600 or DIN EN flanges
- Vertical or horizontal orientation
- Low pressure drop
- Convoluted screen for more surface area with perforations from 1/16" to 1/2"
- 20 to 60 mesh linings for fine straining applications

Options

- Quick open hinged or davit cover assembly bolted cover
- Alloy construction for body and baskets
- Construction according to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code
- Steam jacket for highly viscous fluids
- Straight through or right angle configuration
- Flanged class 600 or butt weld piping connections

* Stainless steel strainers include carbon steel, external, non-wetted fasteners as standard.

Model 91 with hinged cover

EATON

Powering Business Worldwide

Customize to improve performance and meet higher pressure requirements

The Eaton Model 91 fabricated T strainer, typically used for pump protection or other low solids applications has several advantages over other strainer designs. Its compact design is perfect for applications with restricted space, either vertical or horizontal installations are possible, and when cleaning the strainer, draining the vessel is not necessary. It also can be adapted for straight through or right angle flow, making it ideal for retrofit situations.

Strainer design

The convoluted design of the strainer screen doubles the screen area and completely changes the dirt accumulation pattern on the screen, more effectively using the screen's straining area and increasing the time between cleanings. The combination of a convoluted strainer screen and unrestricted flow path results in a very low pressure drop, ideal for applications such as condensate and boiler feed pump suction.

Strainer screens

Strainer screens are stainless steel or other specified materials.

Cover type openings

For applications with infrequent basket changing, Eaton offers a simple, cost-effective, bolted cover type. It's available with a davit assembly cover for larger strainers with heavy covers, this makes it possible for a one-person operation.

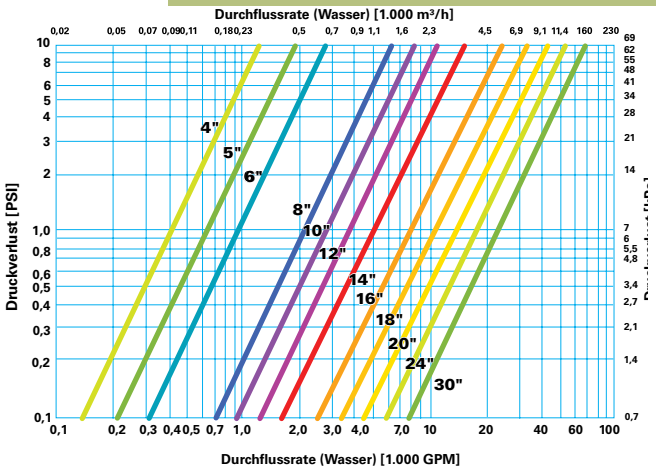
For applications with more frequent changing, Eaton offers a hinged, quick opening cover secured by swing bolts. This is adaptable for higher pressure applications. For medium size strainers, 14" to 16," a davit assembly bolted cover is available. This permits one operator to open the cover.

Optional steam jacketing

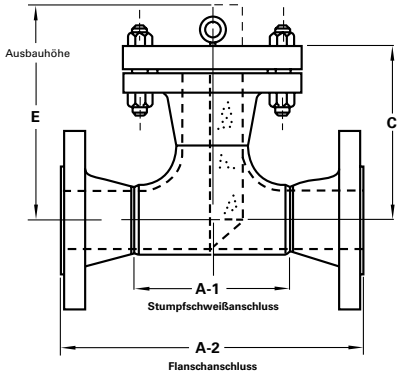
Available in carbon steel or stainless steel rated for service up to 450 °F (232 °C). This is ideal for the high temperatures required to process and transport heavy, viscous fluids without affecting the function or normal maintenance of the strainer. Steam jacketing maintains critical fluid temperature throughout the strainer.

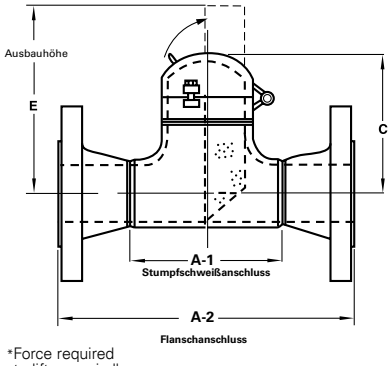
Eaton customizes the strainers to meet special application requirements. Design and fabrication to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code and ANSI B31.1 are available.

Model 91 Fabricated T-Type Strainer



Dimensions are for reference only. For installation purposes, contact Eaton for certified drawings.





*Force required to lift cover in lb.

Model 91 with bolted cover

Nom size	Dimensions (in / mm) Butt weld connections Class 150 A-1	Class 150 C	Class 300 A-1	Class 300 C	Flanged connections Class 150 A-2	Class 150 C	Class 300 A-2	Class 300 C	E	Weight (lb/kg) Class 150 Cover	Class 150 Unit	Class 300 Cover	Class 300 Unit
2	5 / 127	5-1/4 / 133	5 / 127	6-1/8 / 156	10 / 254	5-3/4 / 146	10-1/2 / 267	6-1/8 / 156	13 / 330	4 / 1.8	25 / 11.3	8 / 3.6	38 / 17.2
3	6-3/4 / 171	7-1/8 / 181	6-3/4 / 171	7-5/8 / 194	12-1/4 / 311	7-1/8 / 181	13 / 330	7-5/8 / 194	14 / 356	9 / 4.1	50 / 22.7	16 / 7.3	69 / 31.3
4	8-1/4 / 210	8-1/8 / 206	8-1/4 / 210	8-3/4 / 222	14-1/4 / 362	8-1/8 / 206	15 / 381	8-3/4 / 222	16 / 406	17 / 7.7	75 / 34.0	27 / 12.2	115 / 52.2
5	9-3/4 / 248	9-3/8 / 238	9-3/4 / 248	10-1/8 / 257	16-3/4 / 425	9-3/8 / 238	17-1/2 / 445	10-1/8 / 257	19 / 483	20 / 9.1	80 / 36.3	35 / 15.9	151 / 68.5
6	11-1/4 / 286	10-1/8 / 257	11-1/4 / 286	11 / 279	18-1/4 / 464	10-1/8 / 257	19 / 483	11 / 279	22 / 559	26 / 11.8	110 / 49.9	50 / 22.7	206 / 93.4
8	14 / 356	12-1/8 / 308	14 / 356	13 / 330	22 / 559	12-1/8 / 308	22-3/4 / 578	13 / 330	25 / 635	45 / 20.4	185 / 83.9	81 / 36.7	336 / 152.4
10	17 / 432	13-3/4 / 349	17 / 432	15 / 381	25 / 635	13-3/4 / 349	26-1/4 / 667	15 / 381	29 / 737	70 / 31.8	324 / 147.0	127 / 57.6	491 / 222.7
12	20 / 508	15-3/4 / 400	20 / 508	17-1/8 / 435	29 / 737	15-3/4 / 400	30-1/4 / 768	17-1/8 / 435	31 / 787	110 / 49.9	410 / 186.0	184 / 83.5	730 / 331.1
14	22 / 559	17-3/8 / 441	22 / 559	18-3/4 / 476	32 / 813	17-3/8 / 441	33-1/4 / 845	18-3/4 / 476	38 / 965	131 / 59.4	615 / 279.0	236 / 107.0	966 / 438.2
16	24 / 610	18-1/2 / 470	24 / 610	20 / 508	34 / 864	18-1/2 / 470	35-1/2 / 902	20 / 508	41 / 1041	170 / 77.1	776 / 352.0	307 / 139.3	1,264 / 573.4
18	27 / 686	20-5/8 / 524	27 / 686	22-1/8 / 562	38 / 965	20-5/8 / 524	39-1/2 / 1003	22-1/8 / 562	46 / 1168	209 / 94.8	920 / 417.3	390 / 176.9	1,587 / 719.9
20	30 / 762	22-3/8 / 568	30 / 762	23-7/8 / 606	41-3/8 / 1051	22-3/8 / 568	42-3/4 / 1086	23-7/8 / 606	51 / 1295	272 / 123.4	1,180 / 535.2	492 / 223.2	1,980 / 898.1
24	34 / 864	24-7/8 / 632	34 / 864	26-3/8 / 670	46 / 1168	24-7/8 / 632	47-1/4 / 1200	26-3/8 / 670	56 / 1422	411 / 186.4	2,190 / 993.4	594 / 269.4	2,722 / 1,234.7

Model 91 with quick open hinge cover

Nom size	Dimensions (in / mm) Butt weld connections Class 150 A-1	Class 150 C	Class 300 A-1	Class 300 C	Flanged connections Class 150 A-2	Class 150 C	Class 300 A-2	Class 300 C	E	Weight (lb/kg) Class 150 Cover	Class 150 Unit	Class 300 Cover	Class 300 Unit
6	11-1/4 / 286	9-1/4 / 235	11-1/4 / 286	9-1/4 / 235	18-1/4 / 464	9-1/4 / 235	19 / 483	9-1/4 / 235	22 / 559	5 / 2.3	108 / 49.0	5 / 2.3	142 / 64.4
8	14 / 356	11-1/8 / 283	14 / 356	11-1/8 / 283	22 / 559	11-1/8 / 283	22-3/4 / 578	11-1/8 / 283	25 / 635	9 / 4.1	156 / 70.8	9 / 4.1	208 / 94.3
10	17 / 432	13-1/2 / 343	17 / 432	13-1/2 / 343	25 / 635	13-1/2 / 343	26-1/4 / 667	13-1/2 / 343	29 / 737	12 / 5.4	231 / 104.8	12 / 5.4	330 / 149.7
12	20 / 508	15-5/8 / 397	20 / 508	15-5/8 / 397	29 / 737	15-5/8 / 397	30-1/4 / 768	15-5/8 / 397	31 / 787	15 / 6.8	342 / 55.1	15 / 6.8	458 / 207.7
14	22 / 559	17-1/8 / 435	22 / 559	17-1/8 / 435	32 / 813	17-1/8 / 435	33-1/4 / 845	17-1/8 / 435	38 / 965	20 / 9.1	435 / 197.3	20 / 9.1	610 / 276.7
16	24 / 610	18-5/8 / 473	24 / 610	18-5/8 / 473	34 / 864	18-5/8 / 473	35-1/2 / 902	18-5/8 / 473	41 / 1041	26 / 11.8	540 / 244.9	26 / 11.8	781 / 354.3
18	27 / 686	21-1/8 / 537	27 / 686	21-1/8 / 537	38 / 965	21-1/8 / 537	39-1/2 / 1003	21-1/8 / 537	46 / 1168	32 / 14.5	660 / 299.4	32 / 14.5	990 / 449.1
20	30 / 762	23-5/8 / 600	30 / 762	23-5/8 / 600	41-3/8 / 1051	23-5/8 / 600	42-3/4 / 1086	23-5/8 / 600	51 / 1295	40 / 18.1	806 / 365.6	40 / 18.1	1,222 / 554.3
24	34 / 864	27-1/8 / 689	34 / 864	27-1/8 / 689	46 / 1168	27-1/8 / 689	47-1/4 / 1200	27-1/8 / 689	56 / 1422	58 / 26.3	1085 / 492.2	58 / 26.3	1,755 / 796.1

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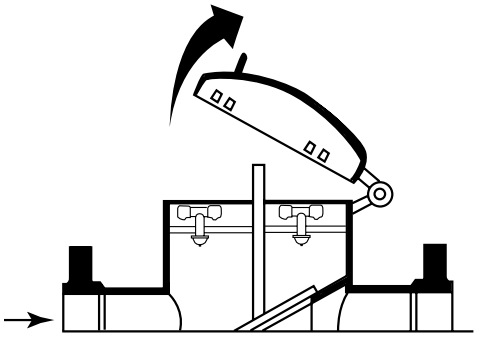
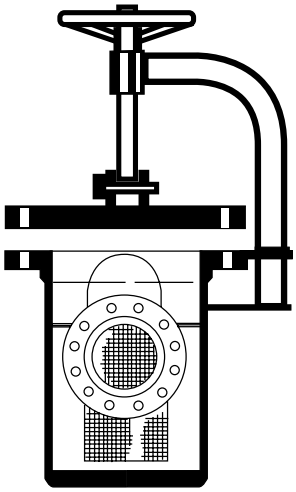
Configuration options



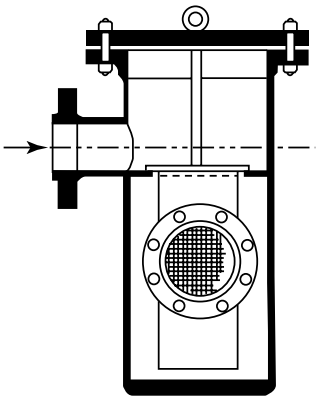
Quick open hinged cover

The hinged cover in medium size ranges (8"-16") permits a single operator to open and close the cover.



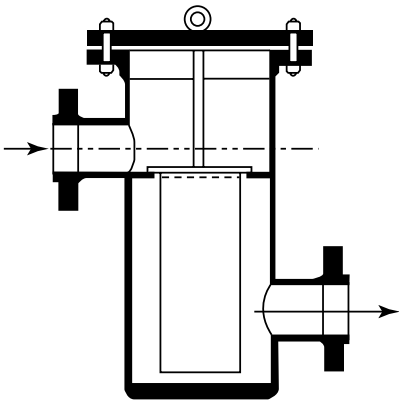
Integral davit assembly cover

The davit assembly cover can reduce any cover lift process to a one-man operation.



Rotated nozzles

Right angle design can eliminate the requirement for an elbow in the downstream piping.



Offset nozzles

By lowering or raising either nozzle, serious alignment and support problems can be avoided.

Cover openings

The process of removing and replacing strainer access covers can result in costly maintenance or safety issues. In sizes larger than eight inches, the cover can easily exceed 150 lb (68 kg), which may require additional personnel or equipment. To eliminate the risks associated with this process, Eaton developed the integral davit assembly and hinged cover designs.

Nozzle placement

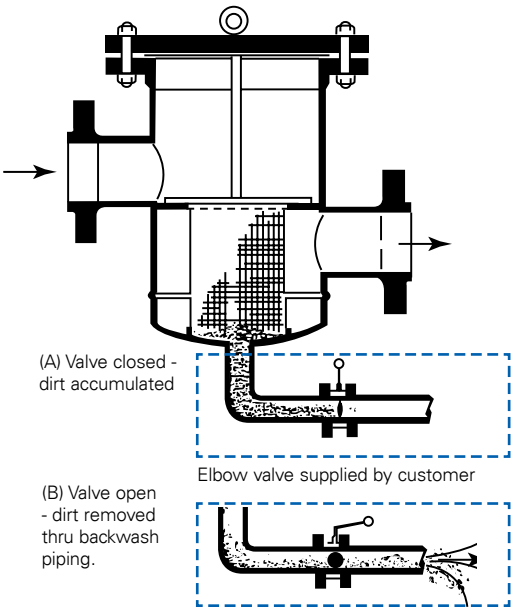
Fabricated strainers are available with many nozzle design options to adapt to existing or planned piping schemes.

Steam jacket option

Custom fabricated simplex basket and T strainers in all sizes are available with an optional carbon steel or stainless steel steam jacket, rated for service up to 450 °F (232 °C). The steam jacket keeps the strainer at the high temperatures required to transport heavy, viscous fluids without affecting the function or normal maintenance of the strainer.

Backflush/backwash option

Available in custom fabricated Model 90 simplex strainer and Model 950B duplex strainer.



In many systems with heavy and well-defined solids, sediment accumulates. When the backflush valve is open, the differential between the operating pressure and the backflush system removes the sediment without shutting the system down. Figures A and B show the backflushing process.

Backwashing is a process similar to back-flushing, but with a reverse flow into an empty strainer. Fluid flowing back through the element removes residual sediment left in the filter from backflushing.

Basket effective area

Strainer model	Pipe size (in)	Perforation size	Nominal area of pipe (sq in)	Gross screen area (sq in)	Free area (sq in)	Ratio free area to pipe area
90	2	5/32	3.35	78	49	14.60
90	3	5/32	7.39	94	59	8.00
90	4	5/32	12.73	151	95	7.46
90	5	5/32	20.00	204	128	6.40
90	6	5/32	28.90	283	178	6.16
90	8	5/32	50.02	478	301	6.02
90	10	5/32	78.85	691	435	5.52
90	12	5/32	111.93	942	593	5.30
90	14	5/32	135.28	1320	832	6.15
90	16	5/32	176.71	1659	1045	5.91
90	18	5/32	223.68	1979	1247	5.57
90	20	5/32	277.95	2513	1583	5.70
90	24	5/32	402.00	4071	2565	6.38
950B	2	5/32	3.35	78	49	1460
950B	3	5/32	7.39	94	59	8.00
950B	4	5/32	12.73	151	95	7.46
950B	5	5/32	20.00	204	128	6.40
950B	6	5/32	28.90	283	178	6.16
950B	8	5/32	50.02	478	301	6.02
950B	10	5/32	78.85	691	435	5.52
950B	12	5/32	111.93	942	593	5.30
950B	14	5/32	135.28	1320	832	6.15
950B	16	5/32	176.71	1659	1045	5.91
950B	18	5/32	223.68	1979	1247	5.57
950B	20	5/32	277.95	2513	1583	5.70
950B	24	5/32	402.00	4071	2565	6.38
91	2	5/32	3.35	23	14.26	4.26
91	3	5/32	7.39	41	25.42	3.44
91	4	5/32	12.73	58	35.96	2.82
91	5	5/32	20.00	82	50.84	2.54
91	6	5/32	28.90	105	65.10	2.25
91	8	5/32	50.02	167	103.54	2.07
91	10	5/32	78.85	234	145.08	1.84
91	12	5/32	111.93	322	199.64	1.78
91	14	5/32	135.28	419	259.78	1.92
91	16	5/32	176.71	511	316.82	1.72
91	18	5/32	223.68	639	398.18	1.77
91	20	5/32	277.95	781	484.22	1.74
91	24	5/32	402.00	1057	655.34	1.63

• Filtration • Strainers • Gas/Liquid Separation

Eaton Complete family of filtration solutions

Bag and cartridge filtration systems

Ideal for the removal of large amounts of very fine material from the process media.

- Single or multi-bag housings in stainless steel, carbon steel or corrosion-resistant plastic
- Choose from a huge selection of filter bags in a variety of materials and retention ratings
- High performance, cost-effective liquid process filter cartridges for common and difficult industrial applications

Mechanically cleaned filters

A sustainable solution for the automatic removal of debris from liquids with no bags to buy, change or landfill.

- Tubular backwashing
- Disc cleaning
- Pneumatic, motorized or magnetically coupled actuation

Standard cast pipeline strainers

Protecting pumps, filters, nozzles, flow-meters, valves, heat exchangers, condensers, oil burners, boilers and other process system components from damaging pipeline debris is what Eaton pipeline strainers do best.

- Heavy-duty Y strainer
- Simplex basket strainers
- Duplex basket strainers

Hydraulic and lubrication oil filtration systems

- 4,000 different filter elements, including corresponding filter housings
- Condition monitoring
- Hydraulic filter accessories

Depth filtration

High-quality filtration systems and media for the food and beverage, chemical, pharmaceutical and biotechnology industries.

- Depth filter sheets and stacked disc cartridges
- Filter cartridges
- Filtration systems
- Measuring and testing devices

Mechanically cleaned strainers and fabricated pipeline strainers

High-flow capabilities in hundreds of configurations and sizes.

- Sizes up to 60 inches
- Continuous operation
- Motorized or magnetically coupled actuation
- Custom designs and exotic materials of construction are available

Gas/liquid separators

Remove over 99% of moisture and particulate matter 10 microns and larger from air, gas and steam lines.

An exclusive vortex containment plate (VCP) prevents re-entrainment and eliminates the need for complex baffles or deflectors. Offered in a variety of different models for application flexibility.

EATON

Powering Business Worldwide

Speciality & custom systems

In addition to our standard solutions, Eaton offers many industry specific filtration, strainer and separation products with a proven record of accomplishment. Eaton engineers can customize and design modular solutions that provide a full range of retention capabilities and construction materials in manual and automated designs.

Media options

Eaton offers thousands of options for both disposable media systems and equipment that utilizes permanent filtration and strainer elements.

- Permanent media elements for self-cleaning filters and strainers
- Filter bags to fit a wide range of filter housings—with filtration efficiencies up to 99.98%
- Filter cartridges with a variety of retention ratings, sizes, end caps, material and gaskets
- Depth filter sheets for course, clarifying and fine filtration as well as microbe reduction and removal.

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