



Eaton's filtration business is a global leader in manufacturing filtration products that include automatic self-cleaning and fabricated pipeline strainers, mechanically cleaned filters and strainers, bag, cartridge and depth sheet filtration systems, hydraulic and lubrication oil filtration and gas/liquid separators for industrial customers worldwide. Eaton has engineering and research and development centers in the USA, Belgium, Germany and China. Sales and service centers are located in 11 countries.

Eaton supplies high-quality systems, parts and services to markets that include automotive, food and beverage, ethanol and biofuels, oil and gas, pharmaceutical, power generation, pulp and paper, chemical, paints and coatings, electronics, iron and steel manufacturing, marine and municipal and industrial water. Eaton is well positioned in key markets and is expanding its global footprint with initiatives in the Americas, EMEA and Asia Pacific.

Eaton's filtration business has led the way with technology that meets the growing and rigorous demands of vital industrial sectors. Utilizing a variety of filtration technologies, Eaton has consistently implemented the best solutions available while continually striving to make a difference for customers and the environment.

Eaton filtration services

- State-of-the-art water testing lab facility
- Long-term or short-term equipment rental
- Field service—inspections, start-up, maintenance, repair and replacement
- Field trials
- Extensive network of manufacturer representatives and distributors worldwide
- Worldwide technical support in international markets
- Team of product specialists dedicated to providing application engineering

Eaton technologies

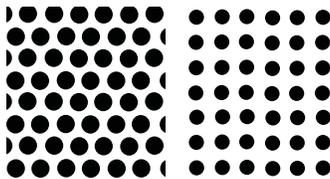
- Customized and modular solutions provide a full range of retention capabilities and construction materials in manual and automated designs
- ISO 9001-2008 quality management
- Standard ASME "U", "UM" Code and CRN Stamp
- "N" stamp available
- European standards - DIN/PED
- EPA compliant solutions
- Properly sized components to meet any specified flow rate and retention requirement
- NSF approved coatings
- Ultra low discharge strainer technology that offers reduced purge volumes

Eaton sustainability commitment

Eaton is unwavering in our commitment to being sustainable by design—in the way we operate, through the design of our products and through the energy and climate saving benefits our products deliver. Eaton issues a sustainability report as part of its annual report, available on www.eaton.com.

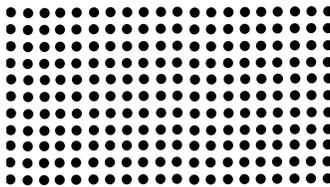
Basket and screen data

Pattern examples

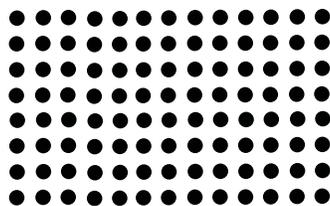


Staggered holes

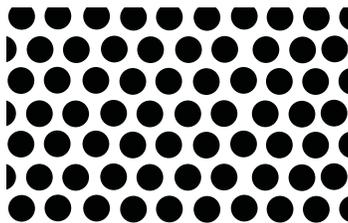
Straight holes



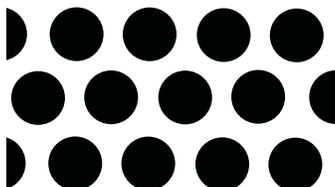
1/32" – Actual size



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.

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



Powering Business Worldwide

TECHNICAL INFORMATION

Standard Cast Pipeline Strainers

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.

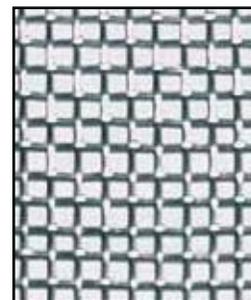
Perforated basket sheet specifications

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

TECHNICAL INFORMATION

Standard Cast Pipeline Strainers

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

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

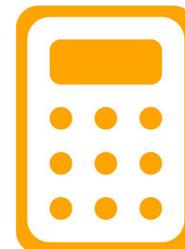
Δp = Pressure drop in psi

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."



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Fabricated Pipeline Strainers

12" Model 950B duplex strainer with quick open cover



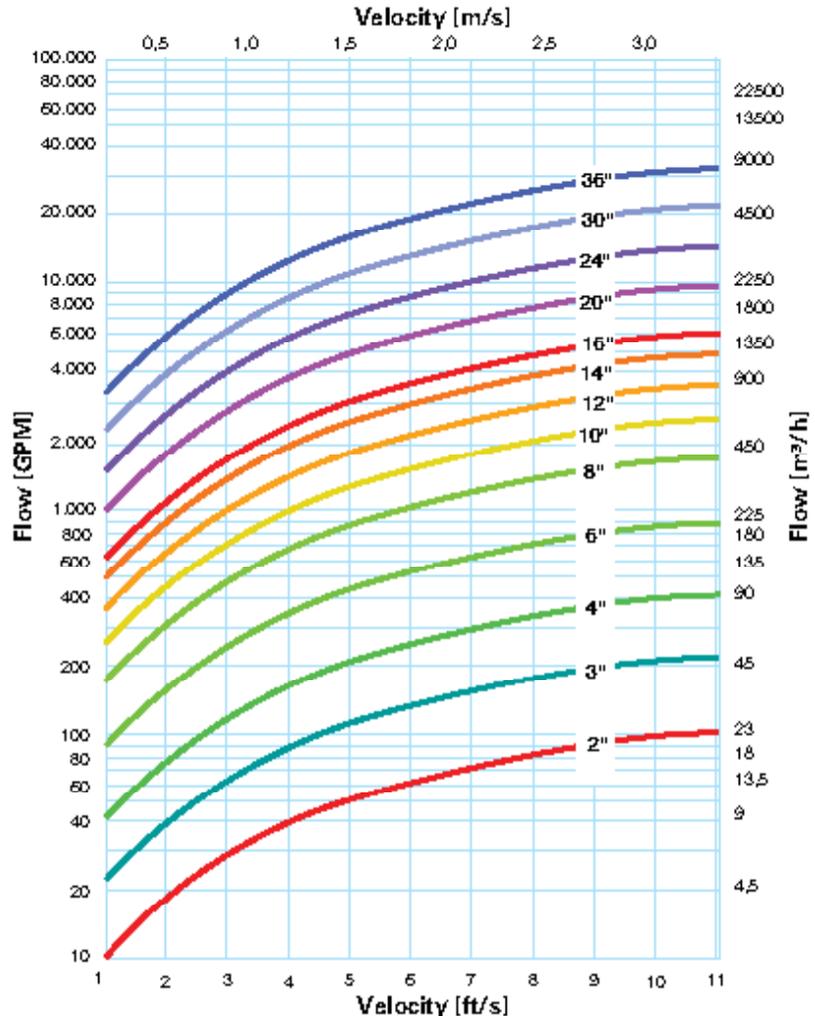
Fabrication options

- 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



Model 950B

2" - 12"

- 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



12" Model 950B duplex strainer with quick open cover

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 oper-

ating 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.

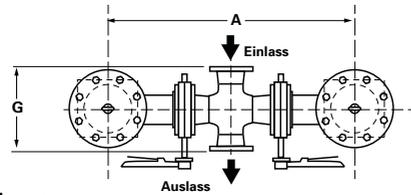
Design and fabrication to "AD 2000-Merkblätter", DIN EN 13445 or ASME Code and ANSI B31.1 are available.



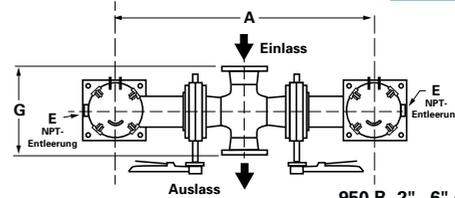
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Model 950B 2" - 12" Fabricated Offset Duplex Strainer

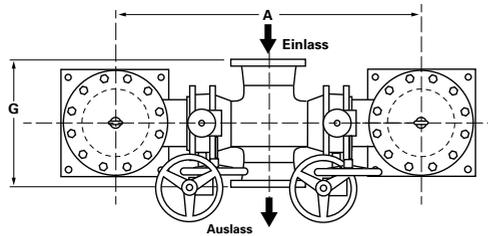
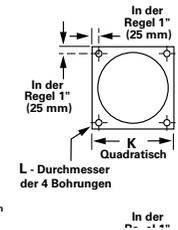
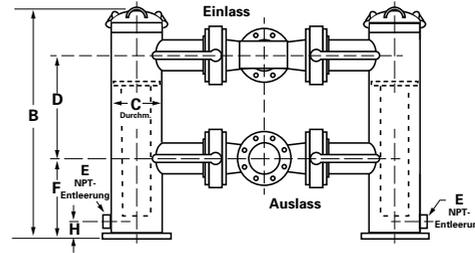
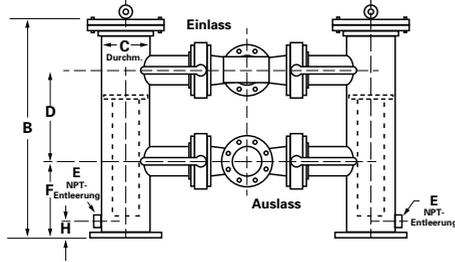
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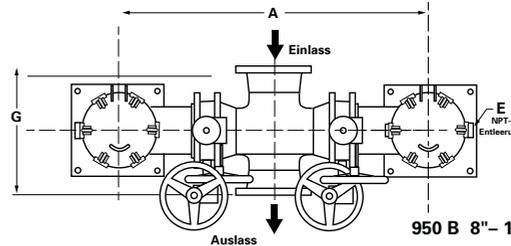
950 B 2"-6" bolted cover



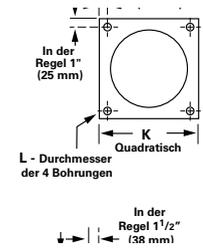
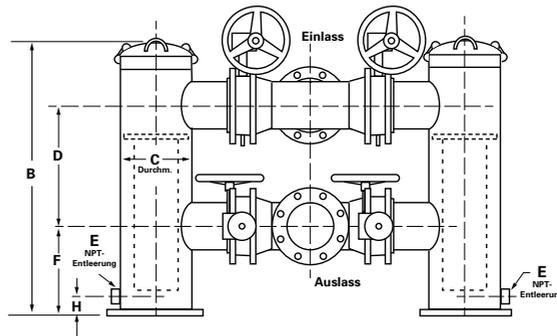
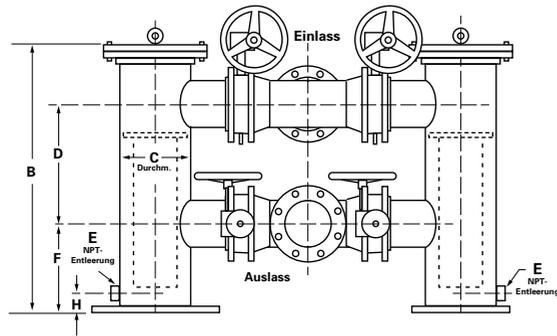
950 B 2"-6" quick open cover



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

Model 950B

14" - 24"

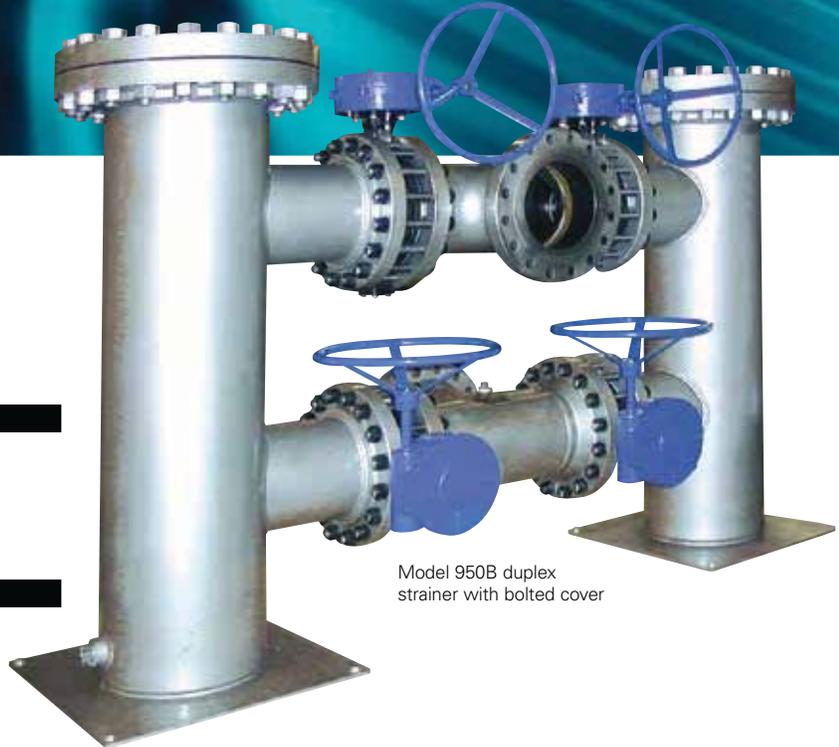
- Carbon steel or stainless steel
- Sizes 14" to 24"
- Flanged ANSI class 150 or 300

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

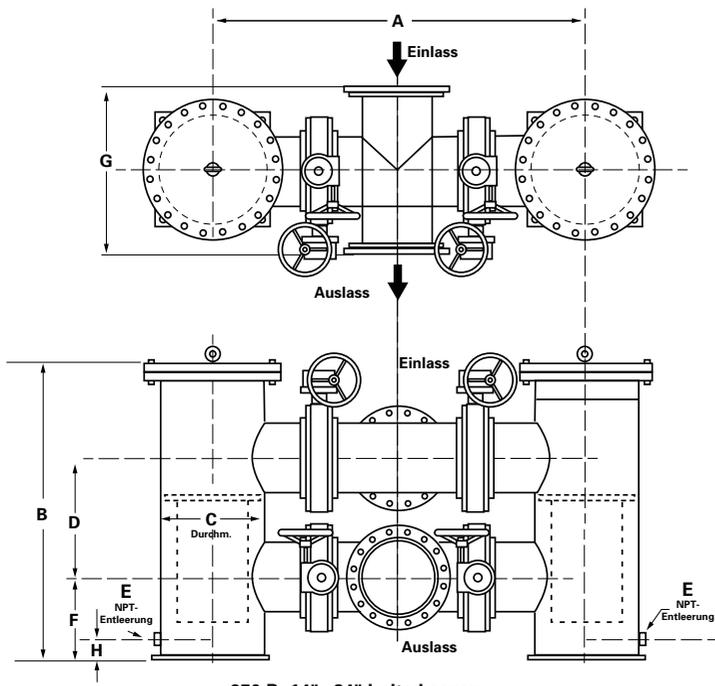
Available in carbon steel or stainless steel rated for service up to 450 °F (232 °C). This is ideal for the high temperatures required to process and transport heavy, viscous fluids without affecting the function or normal maintenance of the strainer. Steam jacketing maintains critical fluid temperature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

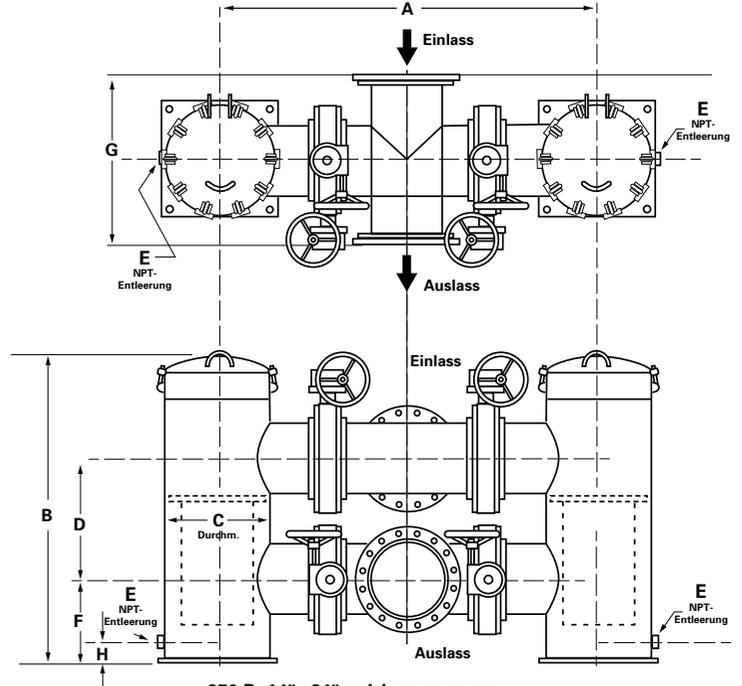


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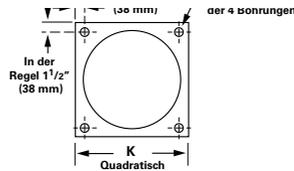
Model 950B 14" - 24" Fabricated Offset Duplex Strainer



950 B 14"-24" bolted cover



950 B 14"-24" quick open cover



Base plate detail 14"-24"

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Dimensions (in/mm)

Pipe size	A	Quick open		Bolted		D	E	F	G	H	K	Weight	
		B	C	B	C							L	
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

Read all the following information and instructions prior to installing and operating the equipment.
Failure to comply with these instructions could result in bodily injury or property damage.



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INTRODUCTION

A duplex strainer is a device installed in a pipeline to remove dirt and other unwanted debris from fluids. Straining is accomplished by directing the fluid through sized openings in a basket. Duplex strainers are installed where fluid flow cannot be interrupted while the basket is removed for cleaning. Duplex strainers are designed to withstand the rated pressure of the piping system.

For additional information on Duplex Basket Strainers, visit our website at filtration.eaton.com.

Standard Model 900 and 950B strainers up to and including 14" pipe sizes ship fully assembled. Secure the strainer before moving and move as a single unit. Model 900 and 950B strainers sizes 26" and larger are shipped disassembled. See Sales Drawing for assembly arrangement

RECEIVING, HANDLING, AND INSPECTION

1. After unpacking, inspect strainer for damage incurred during transit. Report any damage to the carrier immediately. If the strainer is not to be installed immediately, store indoors in a clean, dry environment and replace protective wrap, flange protectors, etc. which may have been removed during receiving, handling and inspection.
 2. Remove preservative with solvent-dampened cloth. Exercise care when using solvent and follow solvent manufacturer's instructions.
 3. Check to be sure the rated pressure and temperature on the strainer nameplate is not less than the maximum pressure and temperature of the installation. The rated pressure shown on the nameplate is the maximum pressure, including shock, at which the strainer may be operated.
 4. Open the strainer covers (removing the cover nuts, Bolted Cover; loosening bolt nuts, Quick Opening Cover—see manufacturer's instructions.) Lift or swing the cover away until it is free of basket well.
 5. Verify each basket handle has sufficient height that it is compressed when the cover is bolted closed. Remove basket and flange/nozzle protectors and check the inside of the body for any foreign or loose material that could be carried down stream when fluid is introduced into the strainer. Remove this material and replace basket.
 6. Close and bolt covers (cover nuts & studs, Bolted Cover; bolt nuts, Quick Opening Cover.) Ensure that the sealing surfaces are clean. The gasket or O-ring is to be seated properly before tightening the cover hardware.
2. Standard Model 900 strainers up to and including 14" pipe size ship fully assembled. Ensure the strainer is secured before moving and move as a single unit. Strainers 16" and larger are shipped disassembled. See Sales Drawing for assembly arrangement. Position strainer components in place and secure with strainer hardware. Use standard piping practice for assembly.
 3. Position the strainer in the pipeline so that the fluid enters the connection marked "IN" or "INLET." Be sure sufficient clearance is provided for easy opening of the covers and removal of strainer baskets. Refer to the Sales Drawing for removal clearances. Support the strainer firmly in place.



CAUTION: Strainers are not designed to be anchor supports in the pipeline. Be sure to properly support process piping on both sides of the strainer. Use care to prevent piping forces and movements from acting on the strainer connections. Damage may occur to strainer if improperly connected.

4. Connect the strainer line flanges to the piping. Be sure to use the same type flange faces. Do not bolt a raised face flange to a flat face flange. Be sure flange gaskets are in place and fasteners are tight. On strainers with other line connections, use standard piping practice when installing.
5. Pressure gauges near the strainer inlet and outlet are required to determine differential pressure across the strainer and cleaning frequency. Pressure gauges are essential for the safe operation of the strainer.

START UP



CAUTION: Before installation, review the application and chemical compatibility of the process fluid to all the materials of construction and components of the strainer.

1. Remove protective wraps, caps, plugs etc. before installing the strainer into operation after storage. Be sure to inspect cover gasket or O-ring for possible damage and replace as required.



CAUTION: To protect the operator when draining and venting, the fluid must be piped to a safe area. This is a requirement for all fluids and for water with a temperature above 120°F. The operator should wear appropriate protective equipment (goggles, gloves, vest, clothing etc.) consistent with the process fluid for strainer operation and servicing.

START UP (CONTINUED)

1. Open all vents, if provided, and slowly allow fluid to enter the strainer. First, slowly open the downstream valve nearest to strainer outlet. Then slowly open the upstream valve nearest to the strainer inlet.
2. Open all strainer valves.
3. Close all vents when air is expelled.
4. Close the two (2) valves that isolate the off-line strainer housing.

**BASKET REMOVAL, CLEANING,
AND REPLACEMENT**

CAUTION: To prevent damage to the basket, DO NOT permit the differential pressure across the strainer to exceed 20 psi.

1. A differential pressure increase of 5 psi over the clean (initial) differential pressure across the strainer indicates that the basket of the on-line strainer housing is debris-laden and requires removal and cleaning.



CAUTION: To protect the operator when draining and venting, the fluid must be piped to a safe area. This is a requirement for all fluids and for water with a temperature above 120°F. The operator should wear appropriate protective equipment (goggles, gloves, vest, clothing etc.) consistent with the process fluid for strainer operation and servicing.

2. Slowly open the two (2) valves that isolate the off-line strainer housing and slowly close the two (2) valves that isolate the on-line strainer housing with the debris-laden basket. This step ensures continuous operation of the process.
3. For the strainer housing with the debris-laden basket, slowly open the drain and vent as provided. This relieves the pressure and drains fluid in the basket well.
4. When pressure is relieved and fluid drained, open the cover of the strainer housing that contains the debris-laden basket. Lift or swing this cover away until it is free of basket well.

**BASKET REMOVAL, CLEANING,
AND REPLACEMENT (CONTINUED)**

5. Remove the debris-laden basket. Invert the basket and wash out the debris. Direct a stream of air, water, or steam from the exterior of the basket to the interior.



NOTE: Do not permit the basket debris to dry, as it would be difficult to remove and clean the basket.

6. Inspect the basket at each cleaning for damage (holes, tear etc.). Replace as needed with genuine Eaton baskets.
7. Place the cleaned or new basket into the basket well. Take extra care to ensure that the basket ring rests squarely on the retaining ring in the basket well.
8. Be sure basket handle is sufficiently high to be compressed by the cover.
9. Inspect cover gasket or O-ring and sealing surfaces. Clean sealing surfaces and replace gasket or O-ring as necessary with genuine Eaton parts.
10. Reseat the cover. Close and bolt covers (cover nuts and studs, Bolted Cover; bolt nuts, Quick Opening Cover). Ensure that the sealing surfaces are clean. The gasket or O-ring is to be seated properly before tightening the cover hardware.
11. Close the drain and vent that were opened.
12. Refill this newly cleaned strainer basket housing by partially opening the two (2) valves that isolate this strainer basket housing very slowly.
13. Slowly fill the strainer basket housing with working fluid. Ensure that all air is expelled from the strainer basket housing. Opening of venting may be required.
14. When air is expelled, close any venting that was opened.
15. Close the two (2) valves that were partially opened to refill the strainer basket housing. This strainer basket housing is now off-line and is isolated from the on-line strainer housing.

SHUT DOWN PROCEDURE (TAKING THE STRAINER OUT OF SERVICE)

1. Slowly close the pipeline valves upstream and downstream from the strainer. Make sure these valves are tightly closed. Open all valves between the two strainer housings.



CAUTION: To protect the operator when draining and venting, the fluid must be piped to a safe area. This is a requirement for all fluids and for water with a temperature above 120°F. The operator should wear appropriate protective equipment (goggles, gloves, vest, clothing etc.) consistent with the process fluid for strainer operation and servicing.

2. To relieve fluid pressure, first open the drains at the bottom of each strainer housing and then open any vents, if provided.
3. Proceed to clean and inspect the strainer. Inspect the strainer to insure there is no standing fluid.

RECOMMENDED SPARE PARTS

- 1- Eaton Replacement Basket
- 1- Eaton Replacement Gasket

When ordering spare parts, be sure to specify all nameplate data as well as description and quantity of parts.

Always use genuine Eaton replacement parts for guaranteed fit and performance.

Visit our web site, filtration.eaton.com for information about the different types of Eaton Duplex Basket Strainers.

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