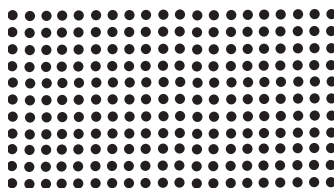
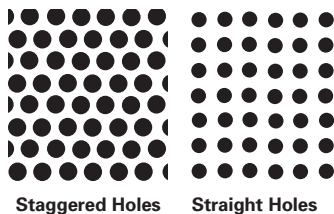


TECHNICAL INFORMATION

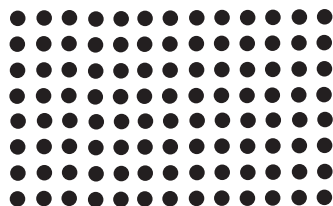
Standard Cast Pipeline Strainers

Basket and Screen Data

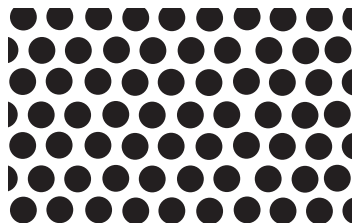
Pattern Examples



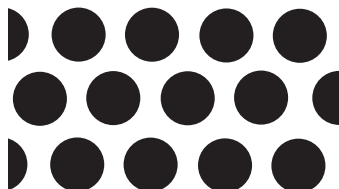
1/32" – Actual Size



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 perfect 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 tolerated.

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. The rule of thumb used by commercial perforated sheet manufacturers is that hole dimensions smaller than the plate thickness are impractical and costly to manufacture. Eaton baskets and screens have between 28% to 63% open area with gauge thickness from 18" (0.048") to 25" (0.021"), 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.



Powering Business Worldwide

Basket and Screen Data

Wire Mesh Specifications

All 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.

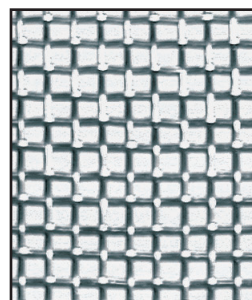
Perforated Basket Sheet Specifications

Perforation Size Inches	Sheet Thickness USS Gauge #	Hole Pattern	% Open Area
0.020	26	Straight	16.0
1/32	26	Straight	28.0
3/64	26	Straight	30.2
0.045	26	Staggered	36.0
1/16	26	Straight	31.0
1/8	26	Staggered	47.9
5/32	26	Staggered	63.0
1/4	26	Staggered	42.0
3/8	26	Staggered	52.0
1/2	26	Staggered	47.9

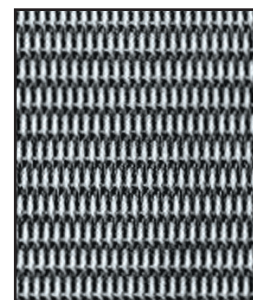
Mesh Basket Sheet Specifications

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	0.0015	0.0381	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)	0	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/hr
 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 flow rate, it will have a 1.7 psi 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."

12" Model 950B duplex strainer with Quick Open cover

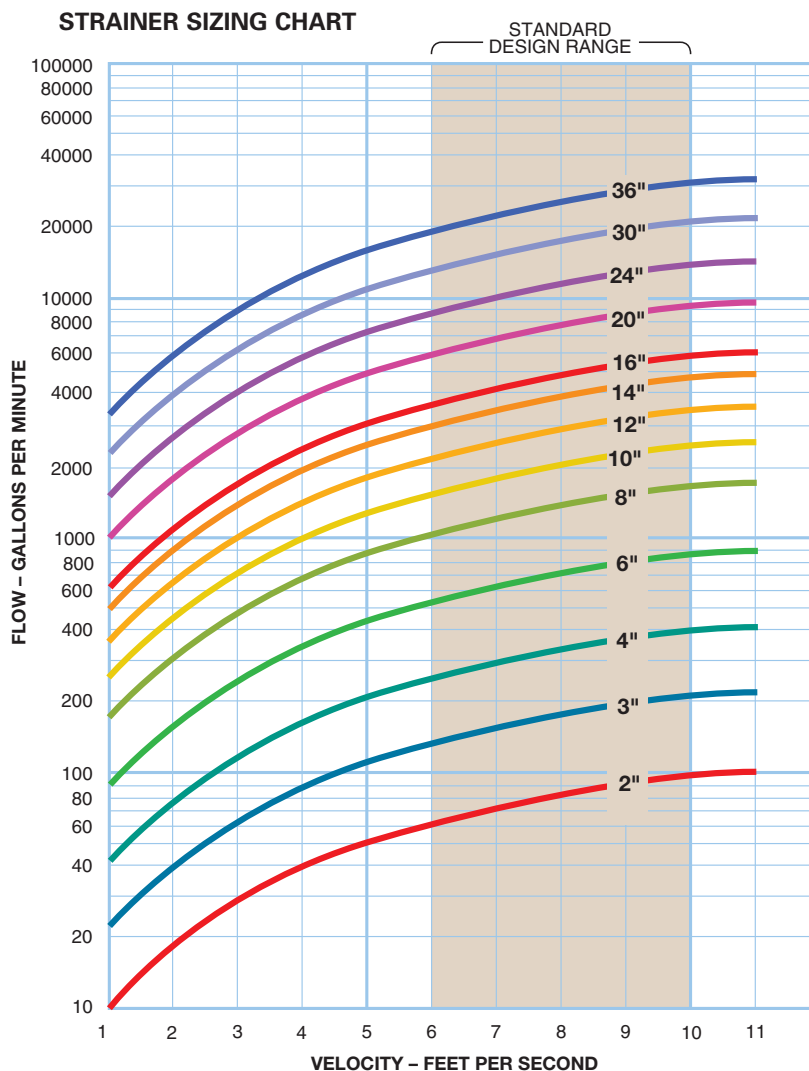


FABRICATION OPTIONS

- Simplex, duplex, and T-type fabrication
- Pipe sizes 2" to 60"
- ANSI Class flanges from 150# to 1500#
- 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
- ASME Code construction
- Perforated baskets from 1/32" to 1/2" hold 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. Ensure that the pipeline flow velocity falls within the standard design range of the strainer.
2. Select the correct screen and opening size, do not make smaller than necessary.
3. The quantity, type, and nature of debris to be removed are considered.
4. The strainer meets the design pressure and temperature requirements of the pipeline.



Simplex, Duplex, T-Type

Custom Fabricated Strainers

Modular systems make it easy to meet precise specifications

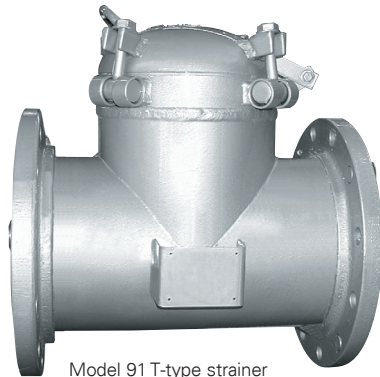
Nothing Too Big, Too Small, or Too Special

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.

Large manufacturing facilities with the most up-to-date equipment and skilled personnel allow Eaton to deliver what others can only promise. 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:

- 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

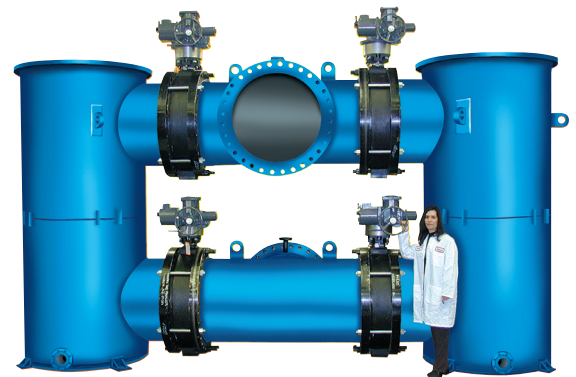


Model 91 T-type strainer with Quick Open Cover



24" simplex Model 90 low profile carbon steel fabricated strainer

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.



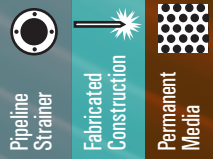
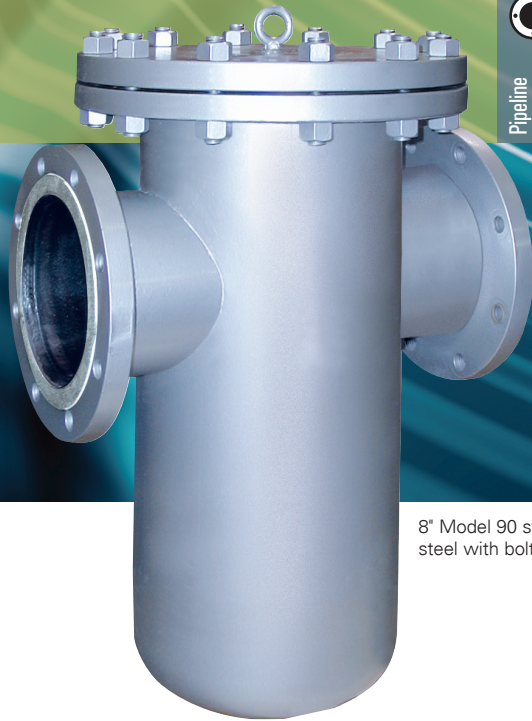
36" fabricated carbon steel model 950B duplex strainer



Powering Business Worldwide

Fabricated Simplex Strainer

Model 90



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, or 1500 flanges
- 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
- ASME Code construction
- Brazilian NR-13 available
- European standards - DIN/PED available
- Coatings and linings available upon request

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

Customize to Improve Performance and Meet Higher Pressure Requirements

Unique Strainer Basket

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, a labor saving feature 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 bolted slide hinge 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 316SS rated for service up to 450°F. 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 ASME section VIII and ANSI B31.1 codes are available.

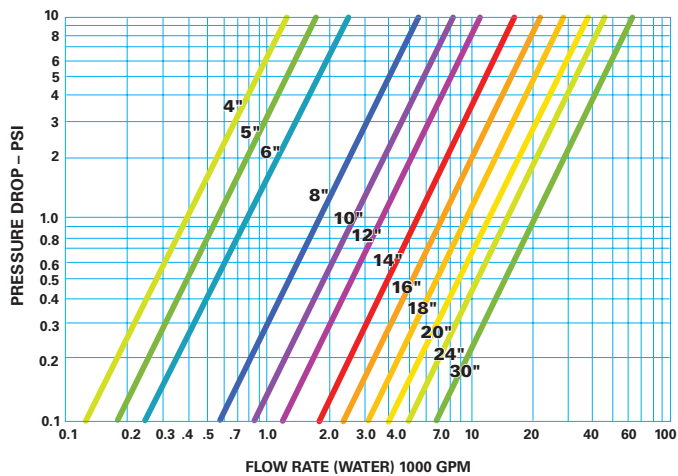


Powering Business Worldwide

Model 90 Fabricated Simplex Strainer

Model 90 with Quick Open Hinge Cover

Nom Size	Dimensions (in)							Weight (lbs)			
	Class 150 A	Class 300 A	B	Class 150/300 C	D	E	F	Class 150 Cover	Class 300 Unit	Class 300 Cover	Unit
2	14	14	12	8-5/8	6-5/8	1/2	26	6	71	6	90
3	15	15	12-1/2	8-5/8	6-5/8	1/2	26	6	73	6	105
4	16	16	14	9-1/2	8-5/8	1	21	9	122	9	158
5	16	17-1/2	15	11-1/4	10-3/4	1	22	9	128	9	176
6	20	21	17	11-1/4	10-3/4	1	24	12	168	12	236
8	22	23	21	13	12-3/4	1-1/2	28	15	226	15	278
10	32	33	25	15-3/4	16	1-1/2	33	30	360	30	483
12	35	36	28	17-3/4	18	1-1/2	39	37	535	37	734
14	37	38	33	19-3/4	20	2	45	46	804	46	1030
16	42	43	36	23-1/4	24	2	49	68	1188	68	1437
18	42	43	39	23-1/4	24	2	53	68	1255	68	1553
20	43	44-1/2	44	27-3/4	30	2	59	71	1322	71	1656
24	48	49-3/4	60	27-3/4	30	2	78	88	1860	88	2344



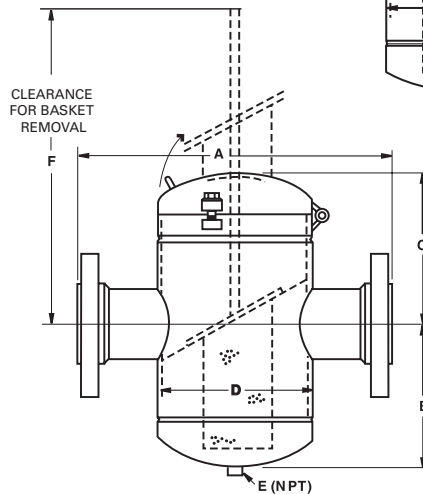
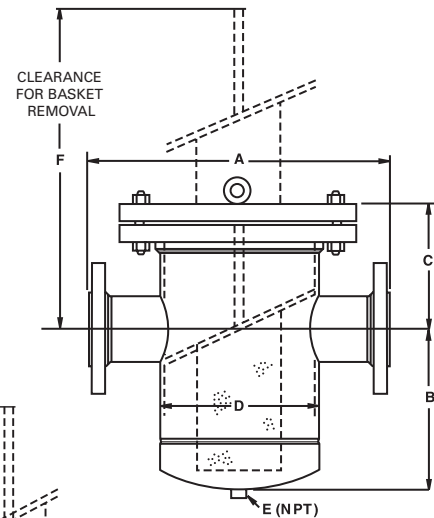
Model 90 strainer with offset nozzles, quick open cover, and flanged drain



Model 90 with Bolted Cover

Nom Size	Dimensions (in)							Weight (lbs)			
	Class 150 A	Class 300 A	B	Class 150 C	Class 300 C	D	E	F	Class 150 Cover	Class 300 Unit	Class 300 Cover Unit
2	14	14	12	7	9	6-5/8	1/2	23	28	110	50 160
3	15	15	12 1/2	8	9	6-5/8	1/2	24	28	120	50 175
4	16	16	14	8-1/4	9 1/2	8-5/8	1	21	45	147	81 219
5	16	17-1/2	15	9-1/2	11	10-3/4	1	22	45	153	81 237
6	20	21	17	9-1/2	11	10-3/4	1	24	70	203	127 328
8	22	23	21	11	12-1/2	12-3/4	1-1/2	28	110	281	184 407
10	32	33	25	13	14-1/2	16	1-1/2	33	170	450	307 710
12	35	36	28	14-1/2	16	18	1-1/2	39	209	644	390 1024
14	37	38	33	15-3/4	17-1/2	20	2	45	272	951	492 1397
16	42	43	36	18-1/4	20	24	2	49	411	1409	754 2011
18	42	43	39	18-1/4	20	24	2	53	411	1486	754 2127
20	43	44-1/2	44	21-3/4	24	30	2	59	411	1553	754 2231
24	48	49-3/4	60	21-3/4	24	30	2	78	681	2291	1403 3497

Model 90 with Bolted Cover

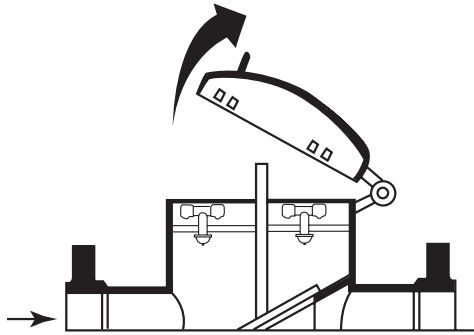


Model 90 with Quick Open Hinge Cover

TECHNICAL INFORMATION

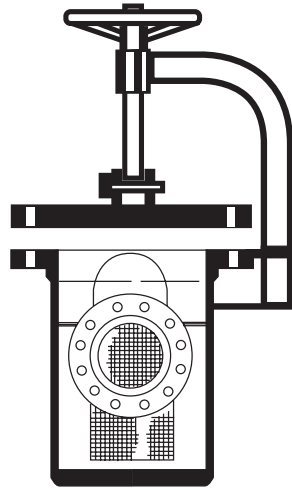
Fabricated Pipeline Strainers

Configuration Options



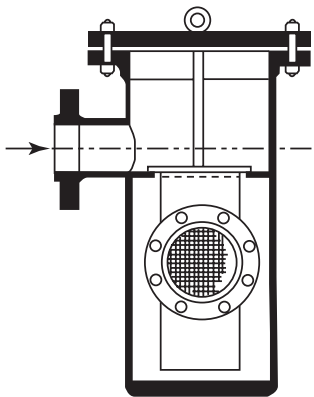
QUICK OPEN BOLTED SLIDE HINGE

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



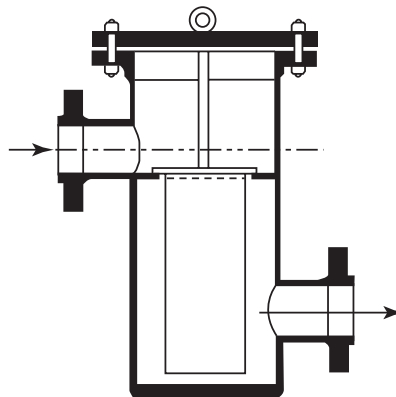
INTEGRAL COVER LIFT DAVIT

The cover lift davit 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 pounds, which may require additional personnel or equipment. To eliminate the risks associated with this process, Eaton developed the Integral Davit and Bolted Slide Hinge 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 316SS steam jacket, rated for service up to 450°F. 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.



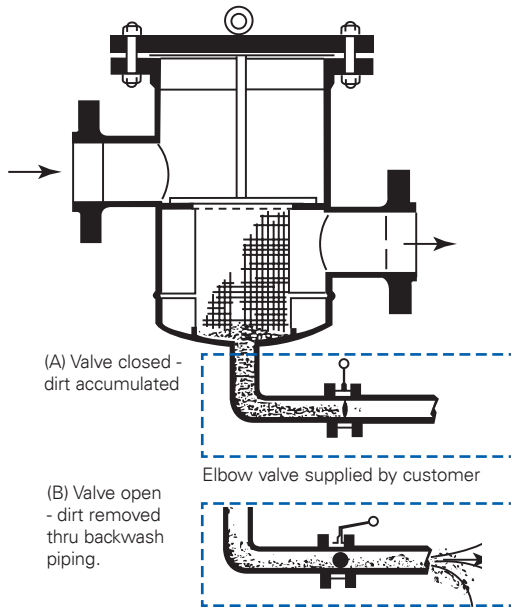
Powering Business Worldwide

TECHNICAL INFORMATION

Fabricated Pipeline Strainers

Backflush/Backwash Option

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



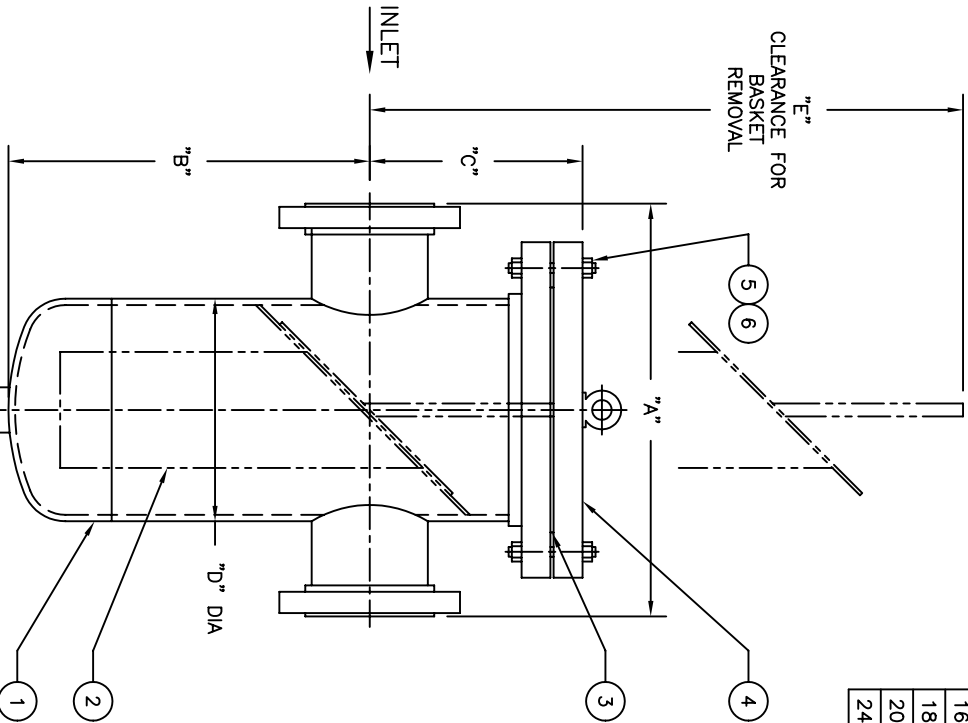
In many systems with heavy and well-defined solids, sediment accumulates. When the backflush valve is open, the differential between the operating pressure and the backflush system removes the sediment without shutting the system down. Figures A and B show the backflushing process.

Backwashing is a process similar to backflushing, 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	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	14.60
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

NO.	PART NAME	MATERIAL
1	BODY	CARBON STEEL
2	BASKET	
	PERF. DIA.	
	MESH	
3	GASKET	NON-ASBESTOS
4	COVER	CARBON STEEL
5	STUDS	SA 193 B7
6	NUTS	SA 194 2H



DIMENSIONS										APPROX. WEIGHT		PART NO.
PIPE SIZE (NOMINAL)	A IN. MM	B IN. MM	C IN. MM	D IN. MM	E IN. MM	F (NOM.) IN. MM	LBS.	KG				
2 (50mm)	14.00 / 356	12.00 / 305	7.00 / 178	6.63 / 168	23.00 / 584	1/2 (15)	110 / 49.9		ST090020BR3BA			
3 (80mm)	15.00 / 381	12.50 / 318	8.00 / 203	6.63 / 168	24.00 / 610	1/2 (15)	120 / 54.4		ST090030BR3BA			
4 (100mm)	16.00 / 406	14.00 / 356	8.25 / 210	8.63 / 219	28.00 / 711	1 (25)	205 / 93.0		ST090040BR3BA			
5 (125mm)	16.00 / 406	15.00 / 381	9.50 / 241	10.75 / 273	32.00 / 813	1 (25)	275 / 124.7		ST090050BR3BA			
6 (150mm)	20.00 / 508	17.00 / 432	9.50 / 241	10.75 / 273	34.00 / 864	1 (25)	290 / 131.5		ST090060BR3BA			
8 (200mm)	22.00 / 559	21.00 / 533	11.00 / 279	12.75 / 324	41.00 / 1041	1-1/2 (40)	410 / 186.0		ST090080BR3BA			
10 (250mm)	32.00 / 813	25.00 / 635	13.00 / 330	16.00 / 406	47.50 / 1207	1-1/2 (40)	700 / 317.5		ST090100BR3BA			
12 (300mm)	35.00 / 889	28.00 / 711	14.50 / 368	18.00 / 457	53.00 / 1346	1-1/2 (40)	890 / 403.7		ST090120BR3BA			
14 (350mm)	37.00 / 940	33.00 / 838	15.75 / 400	20.00 / 508	61.00 / 1549	2 (50)	1100 / 499.0		ST090140BR3BA			
16 (400mm)	42.00 / 1067	36.00 / 914	18.25 / 464	24.00 / 610	68.00 / 1727	2 (50)	1500 / 680.4		ST090160BR3BA			
18 (450mm)	42.00 / 1067	39.00 / 991	18.25 / 464	24.00 / 610	70.00 / 1778	2 (50)	1550 / 703.1		ST090180BR3BA			
20 (500mm)	43.00 / 1092	44.00 / 1118	23.25 / 591	30.00 / 762	82.00 / 2083	2 (50)	2250 / 1020		ST090200BR3BA			
24 (600mm)	48.00 / 1219	60.00 / 1524	23.25 / 591	30.00 / 762	96.00 / 2438	2 (50)	2570 / 1165		ST090240BR3BA			

NOTES :

- UNITS ARE DESIGNED IN ACCORDANCE WITH ASME SECT. VIII, DIV. I OF BOILER PRESSURE VESSEL CODE & IN COMPLIANCE TO CURRENT PUBLISHED ADDENDA .
- CODE STAMPED VESSEL AVAILABLE.
- ALL DIMENSIONS ARE IN INCHES / MM.
- INLET / OUTLET FLANGES PER ANSI B16.5.
- ALL BOLT HOLES STRADDLE NATURAL CENTERLINES.
- DESIGN PRESSURE : 150 PSIG @ 150° F (10.3 BAR @ 65.6°C)

MDMT : -20°F @ 150 PSIG
(MDMT : -28.9°C @ 10.3 BAR)

CERTIFIED FOR:

P.O. NO.:

REG. NO.:

QUOTE NO.:

TAG NO.:

ELECTRONIC FILE NAME: SD090BC1.DWG
REF. ECR D507 DATE 11/1/05

UNAUTHORIZED USE, MANUFACTURE OR REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED. DRAWING, DESIGN AND OTHER DISCLOSURES PROPERTY OF EATON FILTRATION, LLC

DRAWN		DATE		CERT.		DATE		REV	
NAME	MODEL 90 BASKET STRAINER	DATE	1/5/98	CERT.	LF	DATE	1/5/98	REV	C
SIZE	FM	DATE	1/5/98	CERT.	LF	DATE	1/5/98	REV	C
NO		DATE	1/5/98	CERT.	LF	DATE	1/5/98	REV	C
SD090BC1									

EATON

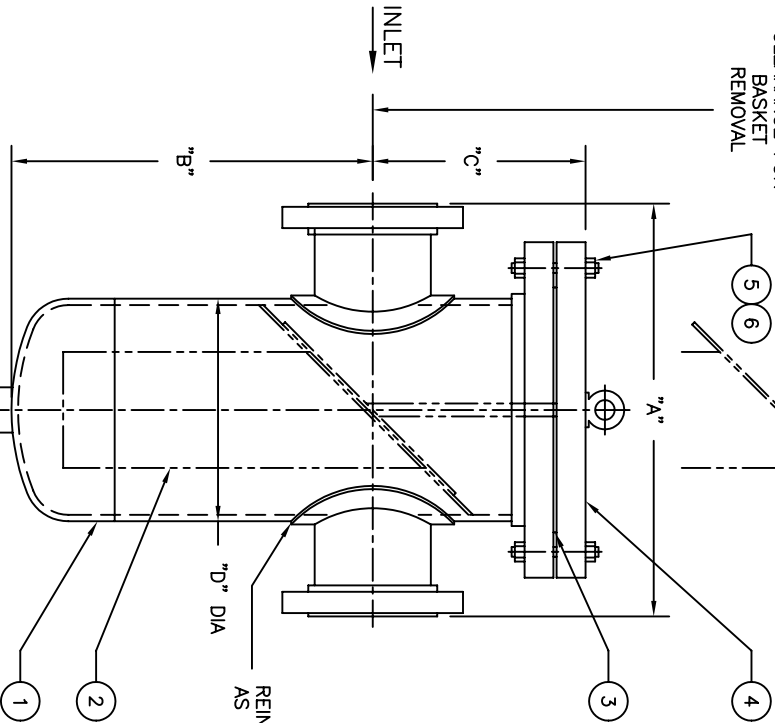
EATON FILTRATION, LLC
900 FAIRMOUNT AVENUE, ELIZABETH, NEW JERSEY 07207

150# RF FLANGE / BOLTED COVER
SIZES 2" THRU 24" CARBON STEEL

NO.	PART NAME	MATERIAL
1	BODY	CARBON STEEL
2	BASKET	
	PERF. DIA.	
	MESH	
3	GASKET	NON-ASBESTOS
4	COVER	CARBON STEEL
5	STUDS	SA 193 B7
6	NUTS	SA 194 2H

DIMENSIONS										APPROX. WEIGHT	PART NO.
PIPE SIZE (NOMINAL)	A IN. MM	B IN. MM	C IN. MM	D IN. MM	E IN. MM	F (NOM.) IN. MM	LBS. KG				
2 (50mm)	14.00 / 356	12.00 / 305	9.00 / 229	6.63 / 168	26.00 / 660	1/2 (15)	160 / 72.6				ST090020DR3BA
3 (80mm)	15.00 / 381	12.50 / 318	9.00 / 229	6.63 / 168	26.00 / 660	1/2 (15)	175 / 79.4				ST090030DR3BA
4 (100mm)	16.00 / 406	14.00 / 356	9.50 / 241	8.63 / 219	28.00 / 711	1 (25)	290 / 131.5				ST090040DR3BA
5 (125mm)	17.50 / 445	15.00 / 381	11.00 / 279	10.75 / 273	33.50 / 851	1 (25)	400 / 181.4				ST090050DR3BA
6 (150mm)	21.00 / 533	17.00 / 432	11.00 / 279	10.75 / 273	35.50 / 902	1 (25)	425 / 192.8				ST090060DR3BA
8 (200mm)	23.00 / 584	21.00 / 533	12.50 / 318	12.75 / 324	42.50 / 1080	1-1/2 (40)	605 / 274.4				ST090080DR3BA
10 (250mm)	33.00 / 838	25.00 / 635	14.50 / 368	16.00 / 406	49.00 / 1245	1-1/2 (40)	1025 / 464.9				ST090100DR3BA
12 (300mm)	36.00 / 914	28.00 / 711	16.00 / 406	18.00 / 457	54.50 / 1384	1-1/2 (40)	1540 / 698				ST090120DR3BA
14 (350mm)	38.00 / 965	33.00 / 838	17.50 / 445	20.00 / 508	62.75 / 1594	2 (50)	1700 / 770				ST090140DR3BA
16 (400mm)	43.00 / 1092	36.00 / 914	20.00 / 508	24.00 / 610	69.75 / 1772	2 (50)	2500 / 1133				ST090160DR3BA
18 (450mm)	43.00 / 1092	39.00 / 991	20.00 / 508	24.00 / 610	71.75 / 1822	2 (50)	2750 / 1245				ST090180DR3BA
20 (500mm)	44.50 / 1130	44.00 / 1118	26.00 / 660	30.00 / 762	84.50 / 2146	2 (50)	3600 / 1631				ST090200DR3BA
24 (600mm)	49.75 / 1264	60.00 / 1524	26.00 / 660	30.00 / 762	98.50 / 2502	2 (50)	4150 / 1880				ST090240DR3BA

"E" CLEARANCE FOR BASKET REMOVAL



NOTES :
1. UNITS ARE DESIGNED IN ACCORDANCE WITH ASME SECT. VIII, DIV. I OF BOILER PRESSURE VESSEL CODE & IN COMPLIANCE TO CURRENT PUBLISHED ADDENDA .

2. CODE STAMPED VESSEL AVAILABLE.
3. ALL DIMENSIONS ARE IN INCHES / MM.
4. INLET / OUTLET FLANGES PER ANSI B16.5.
5. ALL BOLT HOLES STRADDLE NATURAL CENTERLINES.
6. DESIGN PRESSURE : 375 PSIG @ 150° F (25.9 BAR @ 65.6°C)

MDMT : -20°F @ 375 PSIG
(MDMT : -28.9°C @ 25.9 BAR)

CERTIFIED FOR:

P.O. NO.:

REG. NO.:

QUOTE NO.:

TAG NO.:

EATON

EATON FILTRATION, LLC
900 FAIRMOUNT AVENUE, ELIZABETH, NEW JERSEY 07207

MODEL 90 BASKET STRAINER
300# RF FLANGE / BOLTED COVER
SIZES 2" THRU 24" CARBON STEEL

ELECTRONIC FILE NAME: SD090BC3.DWG
REF. ECR D507 DATE 11/1/05

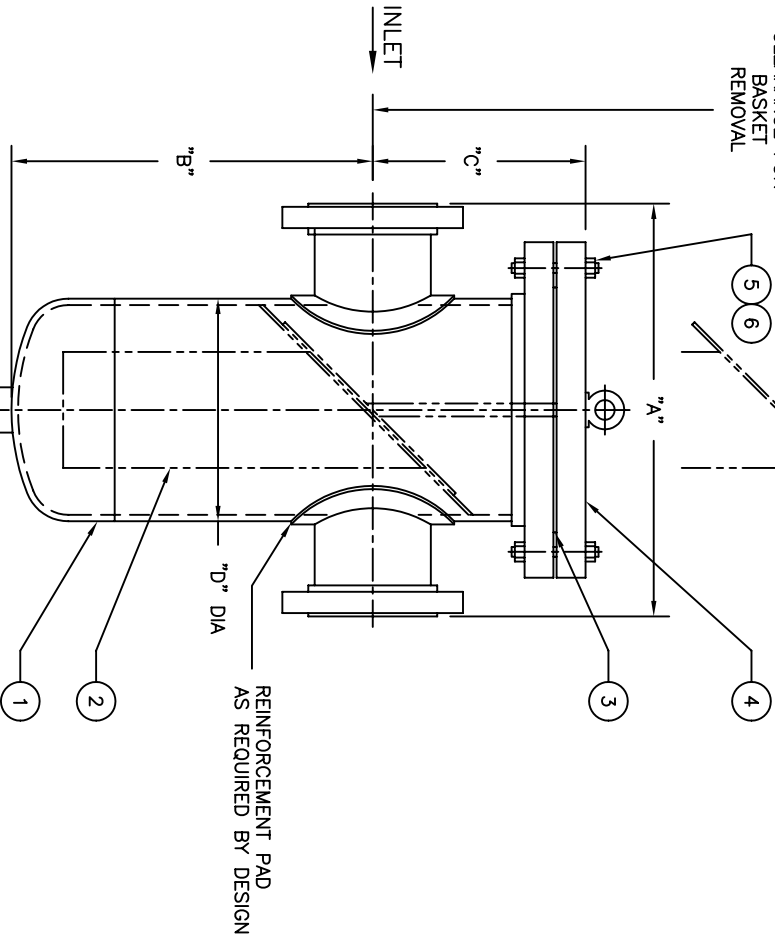
UNAUTHORIZED USE, MANUFACTURE OR REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED. DRAWING, DESIGN AND OTHER DISCLOSURES PROPERTY OF EATON FILTRATION, LLC

NAME	DATE	CERT.	LF	DATE	REV
SD090BC3	1/5/98			1/5/98	D

NO.	PART NAME	MATERIAL
1	BODY	STAINLESS STEEL
2	BASKET	
	PERF. DIA.	
	MESH	
3	GASKET	NON-ASBESTOS
4	COVER	STAINLESS STEEL
5	STUDS	SA 193 B7
6	NUTS	SA 194 2H

DIMENSIONS										APPROX. WEIGHT		PART NO.
PIPE SIZE (NOMINAL)	A IN. MM	B IN. MM	C IN. MM	D IN. MM	E IN. MM	F (NOM.) IN. MM	LBS.	KG				
2 (50mm)	14.00 / 356	12.00 / 305	9.00 / 229	6.63 / 168	26.00 / 660	1/2 (15)	160	/ 72.6	ST090020DR2BA			
3 (80mm)	15.00 / 381	12.50 / 318	9.00 / 229	6.63 / 168	26.00 / 660	1/2 (15)	175	/ 79.4	ST090030DR2BA			
4 (100mm)	16.00 / 406	14.00 / 356	9.50 / 241	8.63 / 219	28.00 / 711	1 (25)	290	/ 131.5	ST090040DR2BA			
5 (125mm)	17.50 / 445	15.00 / 381	11.00 / 279	10.75 / 273	33.50 / 851	1 (25)	400	/ 181.4	ST090050DR2BA			
6 (150mm)	21.00 / 533	17.00 / 432	11.00 / 279	10.75 / 273	35.50 / 902	1 (25)	425	/ 192.8	ST090060DR2BA			
8 (200mm)	23.00 / 584	21.00 / 533	12.50 / 318	12.75 / 324	42.50 / 1080	1-1/2 (40)	605	/ 274.4	ST090080DR2BA			
10 (250mm)	33.00 / 838	25.00 / 635	14.50 / 368	16.00 / 406	49.00 / 1245	1-1/2 (40)	1025	/ 464.9	ST090100DR2BA			
12 (300mm)	36.00 / 914	28.00 / 711	16.00 / 406	18.00 / 457	54.50 / 1384	1-1/2 (40)	1330	/ 603.3	ST090120DR2BA			
14 (350mm)	38.00 / 965	33.00 / 838	17.50 / 445	20.00 / 508	62.75 / 1594	2 (50)	1670	/ 757.5	ST090140DR2BA			
16 (400mm)	43.00 / 1092	36.00 / 914	20.00 / 508	24.00 / 610	69.75 / 1772	2 (50)	2335	/ 1059.1	ST090160DR2BA			
18 (450mm)	43.00 / 1092	39.00 / 991	20.00 / 508	24.00 / 610	71.75 / 1822	2 (50)	2460	/ 1115.8	ST090180DR2BA			
20 (500mm)	44.50 / 1130	44.00 / 1118	24.00 / 610	30.00 / 762	84.50 / 2146	2 (50)	3390	/ 1537.7	ST090200DR2BA			
24 (600mm)	49.75 / 1264	60.00 / 1524	24.00 / 610	30.00 / 762	98.50 / 2502	2 (50)	3925	/ 1780.4	ST090240DR2BA			

"E"
CLEARANCE FOR
BASKET
REMOVAL



NOTES :
1. UNITS ARE DESIGNED IN ACCORDANCE WITH ASME SECT. VIII, DIV. I OF BOILER PRESSURE VESSEL. CODE & IN COMPLIANCE TO CURRENT PUBLISHED ADDENDA .

2. CODE STAMPED VESSEL AVAILABLE.
3. ALL DIMENSIONS ARE IN INCHES / MM.
4. INLET / OUTLET FLANGES PER ANSI B16.5.
5. ALL BOLT HOLES STRADDLE NATURAL CENTERLINES.
6. DESIGN PRESSURE : 375 PSIG @ 150° F (25.9 BAR @ 65.6°C)

MDMT : -20°F @ 375 PSIG
(MDMT : -28.9°C @ 25.9 BAR)

CERTIFIED FOR:

P.O. NO.:

REG. NO.:

QUOTE NO.:

TAG NO.:

EATON

EATON FILTRATION, LLC
900 FAIRMOUNT AVENUE, ELIZABETH, NEW JERSEY 07207

MODEL 90 BASKET STRAINER
300# RF FLANGE / BOLTED COVER
SIZES 2" THRU 24" STAINLESS STEEL

ELECTRONIC FILE NAME: SD090BC4.DWG
REF. ECR D507 DATE 11/1/05

UNAUTHORIZED USE, MANUFACTURE OR REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED. DRAWING, DESIGN AND OTHER DISCLOSURES PROPERTY OF EATON FILTRATION, LLC

NAME	DATE	CERT.	LH	DATE	REV
SD090BC4	6/8/01			6/8/01	C

NO.	PART NAME	MATERIAL
1	BODY	CARBON STEEL
2	BASKET	
	PERF. DIA.	
	MESH	
3	O-RING	BUNA-N
4	COVER	CARBON STEEL
5	BOLTS	A 325
6	NUTS	A 193 B7

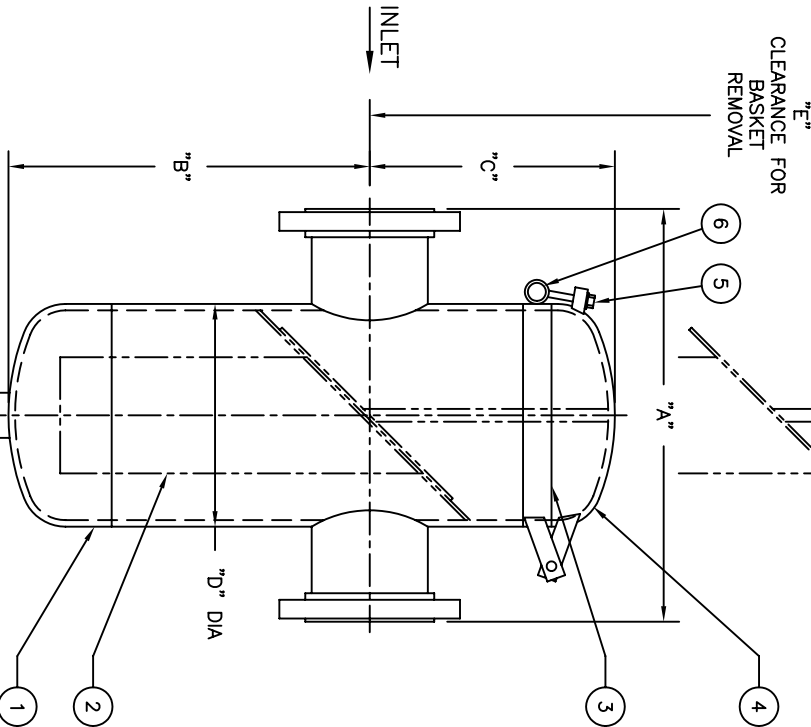
DIMENSIONS										APPROX. WEIGHT		PART NO.
PIPE SIZE (NOMINAL)	A IN. MM	B IN. MM	C IN. MM	D IN. MM	E IN. MM	F (NOM.) IN. MM	LBS.	KG				
2 (50mm)	14.00 / 356	12.00 / 305	8.63 / 219	6.63 / 168	26.00 / 660	1/2 (15)	71	32.2	ST090020BR3TA			
3 (80mm)	15.00 / 381	12.50 / 318	8.63 / 219	6.63 / 168	26.00 / 660	1/2 (15)	90	40.8	ST090030BR3TA			
4 (100mm)	16.00 / 406	14.00 / 356	9.50 / 241	8.63 / 219	29.00 / 737	1 (25)	155	70.3	ST090040BR3TA			
5 (125mm)	16.00 / 406	15.00 / 381	11.25 / 286	10.75 / 273	33.00 / 838	1 (25)	205	93.0	ST090050BR3TA			
6 (150mm)	20.00 / 508	17.00 / 432	11.25 / 286	10.75 / 273	35.00 / 889	1 (25)	220	99.8	ST090060BR3TA			
8 (200mm)	22.00 / 559	21.00 / 533	13.00 / 330	12.75 / 324	42.00 / 1067	1-1/2 (40)	305	138.4	ST090080BR3TA			
10 (250mm)	32.00 / 813	25.00 / 635	15.75 / 400	16.00 / 406	50.00 / 1270	1-1/2 (40)	500	226.8	ST090100BR3TA			
12 (300mm)	35.00 / 889	28.00 / 711	17.75 / 451	18.00 / 457	56.00 / 1422	1-1/2 (40)	665	301.6	ST090120BR3TA			
14 (350mm)	37.00 / 940	33.00 / 838	19.75 / 502	20.00 / 508	65.00 / 1651	2 (50)	810	367.4	ST090140BR3TA			
16 (400mm)	42.00 / 1067	36.00 / 914	23.25 / 591	24.00 / 610	74.00 / 1880	2 (50)	1060	480.8	ST090160BR3TA			
18 (450mm)	42.00 / 1067	39.00 / 991	23.25 / 591	24.00 / 610	76.00 / 1930	2 (50)	1110	503.5	ST090180BR3TA			
20 (500mm)	43.00 / 1092	44.00 / 1118	27.75 / 705	30.00 / 762	88.00 / 2235	2 (50)	1610	730.3	ST090200BR3TA			
24 (600mm)	48.00 / 1219	60.00 / 1524	27.75 / 705	30.00 / 762	102.00 / 2591	2 (50)	1900	861.8	ST090240BR3TA			

NOTES :
1. UNITS ARE DESIGNED IN ACCORDANCE WITH ASME SECT. VIII, DIV. I OF BOILER PRESSURE VESSEL. CODE & IN COMPLIANCE TO CURRENT PUBLISHED ADDENDA .

2. CODE STAMPED VESSEL AVAILABLE.
3. ALL DIMENSIONS ARE IN INCHES / MM.
4. INLET / OUTLET FLANGES PER ANSI B16.5.
5. ALL BOLT HOLES STRADDLE NATURAL CENTERLINES.
6. DESIGN PRESSURE : 150 PSIG @ 150° F
(10.3 BAR @ 65.6°C)
MDMT : -20°F @ 150 PSIG
(MDMT : -28.9°C @ 10.3 BAR)

CERTIFIED FOR:

P.O. NO.:
REG. NO.:
QUOTE NO.:
TAG NO.:



ELECTRONIC FILE NAME: SD090QC1.DWG
REF. ECR D507 DATE 11/1/05

UNAUTHORIZED USE, MANUFACTURE OR REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED. DRAWING, DESIGN AND OTHER DISCLOSURES PROPERTY OF EATON FILTRATION, LLC

DRAWN		DATE		DATE	
FM	1/5/98	LF	1/5/98		
SD090QC1					
B					

NO.	PART NAME	MATERIAL
1	BODY	CARBON STEEL
2	BASKET	
	PERF. DIA.	
	MESH	
3	O-RING	BUNA-N
4	COVER	CARBON STEEL
5	BOLTS	A 325
6	NUTS	A 193 B7

PIPE SIZE (NOMINAL)	DIMENSIONS						APPROX. WEIGHT LBS. KG	PART NO.
	A IN. MM	B IN. MM	C IN. MM	D IN. MM	E IN. MM	F (NOM.) IN. MM		
2 (50mm)	14.00 / 356	12.00 / 305	8.63 / 219	6.63 / 168	26.00 / 660	1/2 (15)	90 / 40.8	ST090020DR3TA
3 (80mm)	15.00 / 381	12.50 / 318	8.63 / 219	6.63 / 168	26.00 / 660	1/2 (15)	105 / 47.6	ST090030DR3TA
4 (100mm)	16.00 / 406	14.00 / 356	9.50 / 241	8.63 / 219	29.00 / 737	1 (25)	180 / 81.6	ST090040DR3TA
5 (125mm)	17.50 / 445	15.00 / 381	11.25 / 286	10.75 / 273	33.00 / 838	1 (25)	240 / 108.9	ST090050DR3TA
6 (150mm)	21.00 / 533	17.00 / 432	11.25 / 286	10.75 / 273	35.00 / 889	1 (25)	265 / 120.2	ST090060DR3TA
8 (200mm)	23.00 / 584	21.00 / 533	13.00 / 330	12.75 / 324	42.00 / 1067	1-1/2 (40)	365 / 165.6	ST090080DR3TA
10 (250mm)	33.00 / 838	25.00 / 635	15.75 / 400	16.00 / 406	50.00 / 1270	1-1/2 (40)	590 / 267.6	ST090100DR3TA
12 (300mm)	36.00 / 914	28.00 / 711	17.75 / 451	18.00 / 457	56.00 / 1422	1-1/2 (40)	810 / 367.4	ST090120DR3TA
14 (350mm)	38.00 / 965	33.00 / 838	19.75 / 502	20.00 / 508	65.00 / 1651	2 (50)	1035 / 469.5	ST090140DR3TA
16 (400mm)	43.00 / 1092	36.00 / 914	23.25 / 591	24.00 / 610	74.00 / 1880	2 (50)	1330 / 603.3	ST090160DR3TA
18 (450mm)	43.00 / 1092	39.00 / 991	23.25 / 591	24.00 / 610	76.00 / 1930	2 (50)	1455 / 660.0	ST090180DR3TA
20 (500mm)	44.50 / 1130	44.00 / 1118	29.00 / 737	30.00 / 762	88.00 / 2235	2 (50)	1820 / 825.5	ST090200DR3TA
24 (600mm)	49.75 / 1264	60.00 / 1524	30.00 / 762	30.00 / 762	102.00 / 2591	2 (50)	2355 / 1068.2	ST090240DR3TA

NOTES :

1. UNITS ARE DESIGNED IN ACCORDANCE WITH ASME SECT. VIII, DIV. I OF BOILER PRESSURE VESSEL. CODE & IN COMPLIANCE TO CURRENT PUBLISHED ADDENDA .

2. CODE STAMPED VESSEL AVAILABLE.

3. ALL DIMENSIONS ARE IN INCHES / MM.

4. INLET / OUTLET FLANGES PER ANSI B16.5.

5. ALL BOLT HOLES STRADDLE NATURAL CENTERLINES.

6A. DESIGN PRESSURE : 300 PSIG @ 150° F
(20.7 BAR @ 65.6°C)
(2" TO 18" SIZE)

MDMT : -20°F @ 300 PSIG
(MDMT : -28.9°C @ 20.7 BAR)

6B. DESIGN PRESSURE : 240 PSIG @ 150° F
(20" AND 24" SIZE) (16.5 BAR @ 65.6°C)
(GOV. BY QOC)

MDMT : -20°F @ 240 PSIG
(MDMT : -28.9°C @ 16.5 BAR)

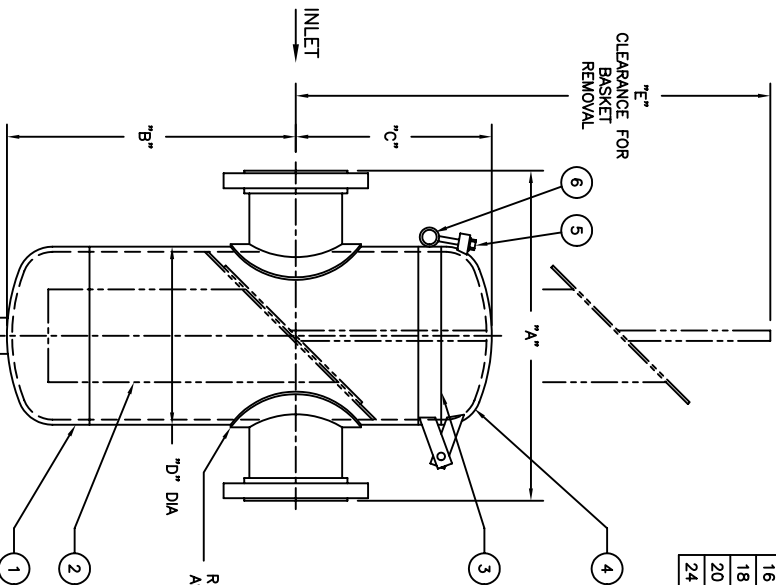
CERTIFIED FOR:

P.O. NO.:

REG. NO.:

QUOTE NO.:

TAG NO.:



EATON FILTRATION, LLC
900 FARMHOUT AVENUE, ELIZABETH, NEW JERSEY 07207

NAME: MODEL 90 BASKET STRAINER
300# RF FLANGE / QUICK OPENING COVER
SIZES 2" THRU 24" CARBON STEEL

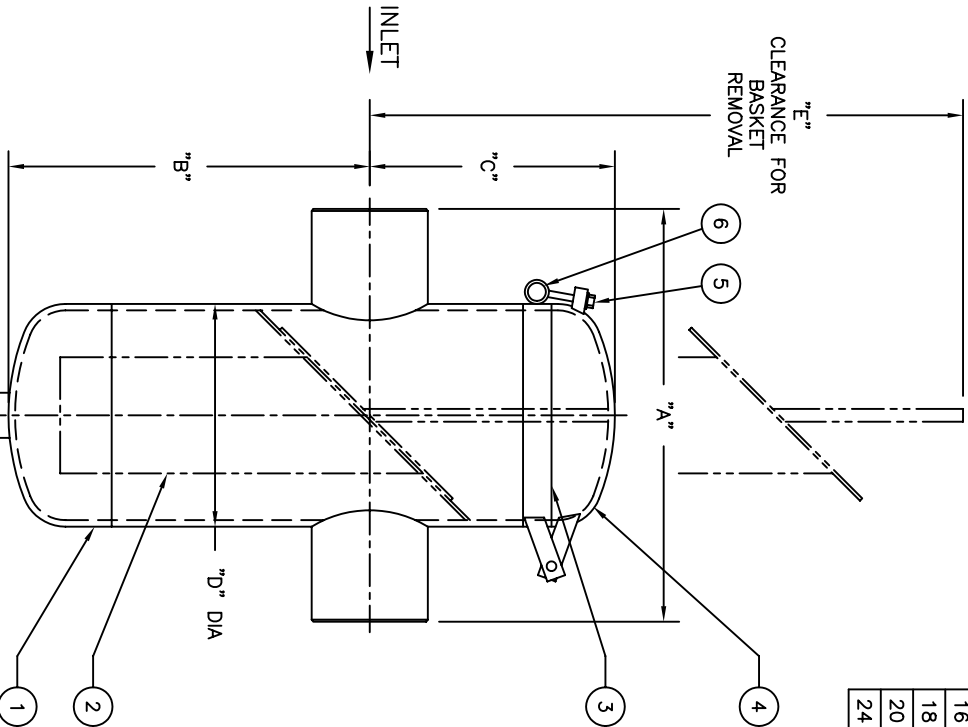
DRAWN	SIZE	DATE	CERT.	LF	DATE	REV
FMJ	DWG	1/5/98			1/5/98	C
A	NO	SD0900QC3				

ELECTRONIC FILE NAME: SD0900QC3.DWG
REF. ECR D507 DATE 11/1/05

UNAUTHORIZED USE, MANUFACTURE OR REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED. DRAWING, DESIGN AND OTHER DISCLOSURES PROPERTY OF EATON FILTRATION, LLC

NO.	PART NAME	MATERIAL
1	BODY	CARBON STEEL
2	BASKET	
	PERF. DIA.	
	MESH	
3	O-RING	BUNA-N
4	COVER	CARBON STEEL
5	BOLTS	A 325
6	NUTS	A 193 B7

DIMENSIONS										APPROX. WEIGHT		PART NO.
PIPE SIZE (NOMINAL)	A IN. MM	B IN. MM	C IN. MM	D IN. MM	E IN. MM	F (NOM.) IN. MM	LBS.	KG				
2 (50mm)	14.00 / 356	12.00 / 305	8.63 / 219	6.63 / 168	26.00 / 660	1/2 (15)	61	27.7	ST090020BB3TA			
3 (80mm)	15.00 / 381	12.50 / 318	8.63 / 219	6.63 / 168	26.00 / 660	1/2 (15)	72	32.7	ST090030BB3TA			
4 (100mm)	16.00 / 406	14.00 / 356	9.50 / 241	8.63 / 219	29.00 / 737	1 (25)	129	58.5	ST090040BB3TA			
5 (125mm)	16.00 / 406	15.00 / 381	11.25 / 286	10.75 / 273	33.00 / 838	1 (25)	177	80.3	ST090050BB3TA			
6 (150mm)	20.00 / 508	17.00 / 432	11.25 / 286	10.75 / 273	35.00 / 889	1 (25)	184	83.5	ST090060BB3TA			
8 (200mm)	22.00 / 559	21.00 / 533	13.00 / 330	12.75 / 324	42.00 / 1067	1-1/2 (40)	251	113.9	ST090080BB3TA			
10 (250mm)	32.00 / 813	25.00 / 635	15.75 / 400	16.00 / 406	50.00 / 1270	1-1/2 (40)	426	193.2	ST090100BB3TA			
12 (300mm)	35.00 / 889	28.00 / 711	17.75 / 451	18.00 / 457	56.00 / 1422	1-1/2 (40)	547	248.1	ST090120BB3TA			
14 (350mm)	37.00 / 940	33.00 / 838	19.75 / 502	20.00 / 508	65.00 / 1651	2 (50)	650	294.8	ST090140BB3TA			
16 (400mm)	42.00 / 1067	36.00 / 914	23.25 / 591	24.00 / 610	74.00 / 1880	2 (50)	858	389.2	ST090160BB3TA			
18 (450mm)	42.00 / 1067	39.00 / 991	23.25 / 591	24.00 / 610	76.00 / 1930	2 (50)	886	401.9	ST090180BB3TA			
20 (500mm)	43.00 / 1092	44.00 / 1118	27.75 / 705	30.00 / 762	88.00 / 2235	2 (50)	1382	626.9	ST090200BB3TA			
24 (600mm)	48.00 / 1219	60.00 / 1524	27.75 / 705	30.00 / 762	102.00 / 2591	2 (50)	1506	683.1	ST090240BB3TA			



NOTES :

1. UNITS ARE DESIGNED IN ACCORDANCE WITH ASME SECT. VIII, DIV. I OF BOILER PRESSURE VESSEL. CODE & IN COMPLIANCE TO CURRENT PUBLISHED ADDENDA .

2. CODE STAMPED VESSEL AVAILABLE.

3. ALL DIMENSIONS ARE IN INCHES / MM.

4. INLET / OUTLET BUTTWELD CONNECTION , SCH. STD. WGT.

5. ALL BOLT HOLES STRADDLE NATURAL CENTERLINES.

6. DESIGN PRESSURE : 150 PSIG @ 150° F
(10.3 BAR @ 65.6°C)
MDMT : -20°F @ 150 PSIG
(MDMT : -28.9°C @ 10.3 BAR)

7. NON-DESTRUCTIVE EXAMINATION: LIQUID PENETRANT TEST

CERTIFIED FOR:

P.O. NO.:

REG. NO.:

QUOTE NO.:

TAG NO.:

ELECTRONIC FILE NAME: SD090QC4.DWG
REF. ECR D507 DATE 11/1/05

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DRAWN		DATE		CERT.		DATE		REV	
NAME	MODEL 90 BASKET STRAINER	DATE	3/10/02	CERT.	LH	DATE	3/10/02	REV	B
SIZE	DWG	NO							
A									
SD090QC4									

EATON

EATON FILTRATION, LLC
900 FAIRMOUNT AVENUE, ELIZABETH, NEW JERSEY 07207

150# BUTTWELD / QUICK OPENING COVER
SIZES 2" THRU 24" CARBON STEEL

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

The Eaton Model 90 Fabricated Simplex Basket Strainers are devices installed in a pipeline to remove dirt and other unwanted debris from fluids. They are designed for the rated pressure and temperature stamped on the nameplate.

Straining is accomplished by directing the fluid through sized openings in the basket. Once sediment and debris is collected in the basket, fluid flow is interrupted while the basket is removed for cleaning.

For additional information regarding Model 90 Fabricated Simplex Basket Strainers, visit our web site at filtration.eaton.com.



**Model 90 with
bolted cover
and inline
connections.**



**Model 90 with
quick-open cover,
off-set connections
and bottom drain
connection**

RECEIVING, HANDLING, AND INSPECTION

1. Unpack the strainer and inspect for damage occurring during transit. Report damage to the carrier. If the strainer is not installed immediately, see “Storage” instructions.
2. Remove any preservatives with solvent-dampened cloths. Exercise care when using solvent and follow solvent manufacturer’s instructions.
3. Verify that the rating of the strainer is greater than or equal to the maximum pressure and temperature of the installation.
4. Open the strainer cover by removing the cover nuts on the bolted cover model or loosening the bolt nuts on the quick opening cover model. Lift or swing the cover away until it is free of the basket well and remove the basket.
5. Remove all flange/nozzle protectors. Check the inside of the body for any foreign or loose material that could be carried downstream when fluid is introduced into the strainer. Remove this material and replace the basket.
6. Close cover by reversing the cover opening procedure above. Insure that the sealing surfaces are clean and that the gasket or O-ring is seated properly before tightening the cover hardware.

STORAGE

Replace protective wrap, flange protectors etc. that may have been removed during receiving, handling and inspection. Store the strainer in a clean, dry environment.

INSTALLATION



CAUTION: Before installation, review the application and chemical compatibility of the process fluid to the materials of construction of the strainer. Verify that the correct size and flange rating for the application is marked on the strainer.

INSTALLATION (CONTINUED)

1. Remove protective wraps, etc. before installing the strainer. Be sure to inspect cover gasket or O-ring for possible damage and replace as required. Position the strainer in the pipeline so that the fluid enters the connection marked “IN” or “INLET.”



CAUTION: To lift the strainer, put slings under the inlet and outlet connections and to the lifting lugs, if provided. Secure slings above the strainer.

2. Be sure sufficient clearance is provided for easy opening of the cover and removal of the basket. Refer to the Sales Drawing for removal clearances. Support the strainer firmly in the pipeline.
3. Connect the strainer to the pipeline. On flanged strainers, be sure to use the same type of 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.
4. On strainers with other line connections, use standard piping practice when installing the strainer.
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.



CAUTION: Eaton Strainers are not designed to be anchor supports in the piping line. 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 the strainer if improperly connected.



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

START UP

Open cover vent, 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. Close cover vent when air is expelled.

SHUT DOWN PERIODS

1. Slowly close the pipeline valves upstream and downstream from the strainer. Make sure these valves are tightly closed.
2. Relieve fluid pressure in the strainer by first opening the drain, then vent if provided. The strainer must be drained and internal pressure relieved prior to cleaning. Proceed to clean and inspect the basket. Inspect the strainer to insure that there is no standing fluid.

BASKET REMOVAL, CLEANING, AND REPLACEMENT



CAUTION: To prevent basket damage, **DO NOT** permit 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.

RECOMMENDED SPARE PARTS

- 1 - Eaton Replacement Basket
- 1 - Eaton Replacement Gasket or O-ring

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.

WARRANTY

All products manufactured by Seller are warranted against defects in material and workmanship under normal use and service for which such products were designed for a period of eighteen (18) months after shipment from our factory or twelve (12) months after start-up, whichever comes first. OUR SOLE OBLIGATION UNDER THIS WARRANTY IS TO REPAIR OR REPLACE, AT OUR OPTION, ANY PRODUCT OR ANY PART OR PARTS THEREOF FOUND TO BE DEFECTIVE. SELLER MAKES NO OTHER REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WE SHALL NOT BE LIABLE FOR CARTAGE, LABOR, CONSEQUENTIAL DAMAGES OR CONTINGENT LIABILITIES. OUR MAXIMUM LIABILITY SHALL NOT IN ANY EVENT EXCEED THE CONTRACT PRICE FOR THE PRODUCT.