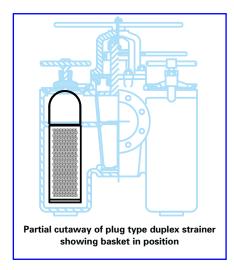
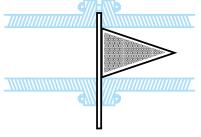
Standard Cast Pipeline Strainers





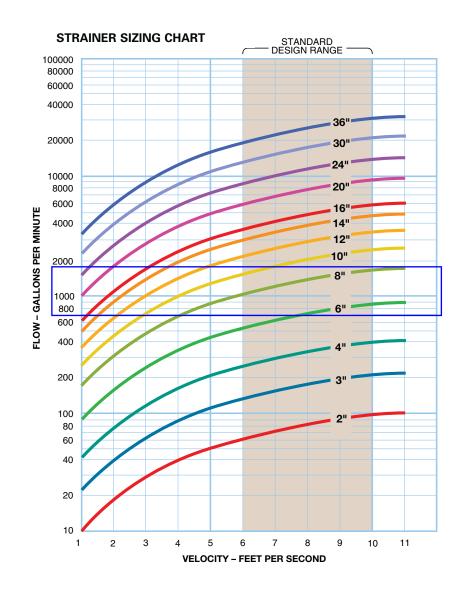
Cutaway of Y strainer shows strainer screen in position



Cone type temporary strainer is shown bolted between two pipe flanges

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.





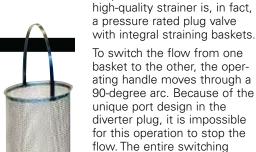


Features

- · 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



integral stops. Before operating the handle, a specially designed, manual lifting jack built into the strainer, lifts the diverter plug

operation takes fewer than

in exactly the right spot

happens automatically by

30 seconds, no tools required. Positioning the plug each time

Trouble-free design, easy

duplex strainer's design is

simple and economical. This

The Eaton Model 50 plug type

operation

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 voke 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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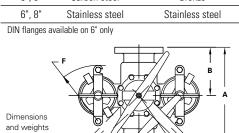
Model 50 Plug Type Duplex Basket Strainer

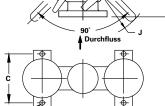
Selection chart

are for reference only. Contact

Eaton for certified drawings.

ı	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
_					





K Bohrungen (n der Regel 4)

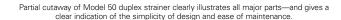
Rating

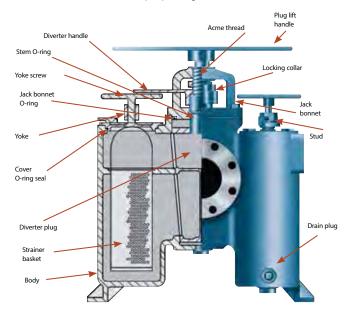
Size	Rating*
5"	200 psi (13.8 bar)
6"	200 psi (13.8 bar)
8"	150 psi (10.3 bar)
* @ 100 °F	(38 °C)

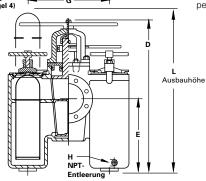
C_V factors*

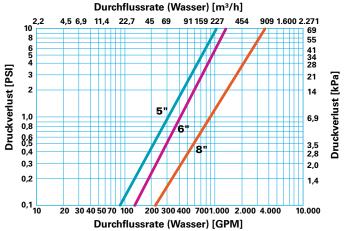
Size	Value
5"	300
6"	420
8"	900

* For water with clean, perforated basket









Dimensions (in/mm)

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

US EF-SSEA-12 6-2014

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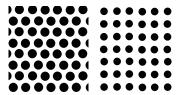


TECHNICAL INFORMATION

Standard Cast Pipeline Strainers

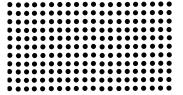
Basket and screen data

Pattern examples

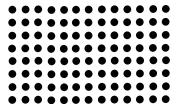


Staggered holes

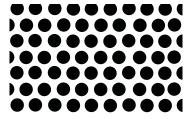
Straight holes



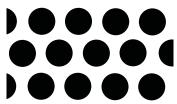
1/32" - Actual size



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.

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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.

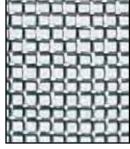
Perforated basket sheet specifications

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 dutch weave

US F-SSEA-16 6-201





TECHNICAL INFORMATION Standard Cast Pipeline Strainers

Basket effective area

Strainer	Pipe	Perforation	Nominal area of	Gross screen area	Free area	Ratio free area to
model	size (in)	size (in)	pipe (sq in)	(sq in)	(sq in)	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	C
Tensile strength: 70,000 lb/sq	Te

(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

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

Stainless steel - ASTM A-351 grade CF8M

Tensile strength:	70,000 lb/sq i
	(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 x 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



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

$$\Delta p = \left[\frac{0}{C_v}\right]^2 (133.6)$$

 $\Delta p = Pressure drop in kPa$

 $Q = Flow in m^3/h$

C_V = Flow coefficient

Standard units

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

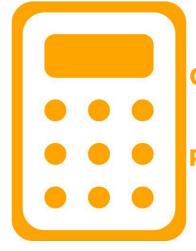
 Δp = Pressure drop in psi

Q = Flow in qpm

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."



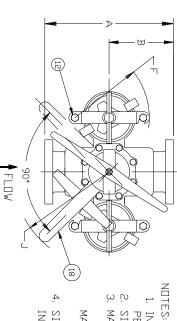
CLICK HERE FOR THE ONLINE DIFFERENTIAL PRESSURE DROP CALCULATOR









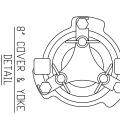


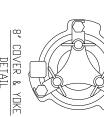
1. INLET/OUTLET FLANGE CONNECTIONS PER ANSI B16.1 .

SIZES 5" & 6" USES COVER CLAMP (ITEM 6)

3. MAX. WORKING PRESSURE: 5" & 6" SIZES MAX. WORKING PRESSURE: 8" SIZE 200 PSI @ 100°F < 13.8 BAR @ 37.8°C

SIZE 5" USE PACKING AND PACKING GLAND IN LIEU OF O-RING. 150 PSI @ 100°F < 10.3 BAR @ 37.8°C





	N.	TAKI NAME	MAIERIAL
	<u></u>	BODY	CAST IRON ASTM A126 CL.B
<u> </u>	№	BASKET	
		PERF. DIA.	
_		MESH	
	ω	O-RING (SIZE - 6")	BUNA-N
		GASKET (SIZE - 8")	NON-ASBESTOS
	4	O-RING	BUNA-N
	5	COVER	CAST IRON ASTM A126 CL.B
	6	COVER CLAMP	DUCTILE IRON
	7	ADKE	DUCTILE IRON
	8	YOKE SCREW AND PIN ASSY	CARBON STEEL
	9	O-RING	BUNA-N (SEE NOTE 4)
	10	BONNET	CAST IRON ASTM A126 CL.B
	11	DIVERTER PLUG	BRONZE ASTM B62
	12	YOKE STUD	STEEL
	13	JACK COLLAR	DUCTILE IRON
	14	JACK BONNET	DUCTILE IRON
	15	JACKSCREW	STEEL
	16	JACKSCREW NUT	CARBON STEEL
	17	LIFTING HANDLE	DUCTILE IRON
	18	TURNING HANDLE	DUCTILE IRON
	19	BONNET STUD	ALLOY STEEL
	20	BONNET STUD NUT	CARBON STEEL
	21	DRAIN PLUG	CARBON STEEL

NOTE 4 9 (1)

(15

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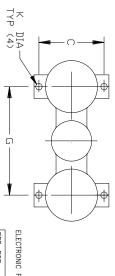
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CLEARANCE FOR BASKET REMOVAL



ELECTRONIC FILE NAME: REF. ECR D507 DATE SD051091.DWG 11/1/05

> REG. NO.: P.O. NO.: QUOTE NO.: TAG ND.: CERTIFIED FOR:

NPT DRAIN

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

> Size

NO DWG

FC

EATON FILTRATION, LLC

70 WOOD AVENUE SOUTH, ISELIN, NEW JERSEY 08830

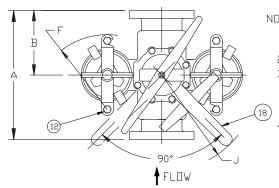
NAME MODEL 50 DUPLEX STRAINER
125# FLAT FACE FLANGE
SIZES 5" THRU 8" CAST IRON

DATE 2/13/92 CERT. ₹ DATE 3/24/92 REV

SD051091

REV 8/00

PIPE SIZE						DIMEN	SIONS						
(NOMINAL)	IN. MM.	B IN. MM.	C IN. MM.	D IN. MM.	E IN. MM.	F IN. MM.	G IN. MM.	H (N□M.) IN. MM.	J IN. MM.	K IN. MM.	L IN. MM.	WEIGHT LBS. KGS.	PART NO.
5" (125mm)	18.00 / 457	9.00 / 229	9.75 / 248	33.25 / 845	14.75 / 375	10.25 / 260	17.19 / 437	3/8 / 10	19.75 / 502	0.53 / 13	41.00 / 1041	412 / 187	ST0500500F11C
6" (150mm)	21.50 / 546	10.75 / 273	11.25 / 286	34.25 / 870	15.13 / 384	11.75 / 298	21.25 / 540	3/8 / 10	19.75 / 502	0.63 / 16	42.00 / 1067	583 / 264	ST0500600F11C
8" (200mm)	25.00 / 635	14.00 / 356	17.00 / 432	50.63 /1286	23.06 / 586	/	30.75 / 781	1/2 / 15	28.00 / 711	0.94 / 24	56.00 / 1422	1725 / 782	ST0500800F11C

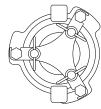


(13)(15)

NOTES:

- 1. INLET/DUTLET FLANGE CONNECTIONS PER ANSI B16.24
- 2. SIZES 5" & 6" USES COVER CLAMP (ITEM 6).
- 3. MAX. WORKING PRESSURE: 5" & 6" SIZES. 200 PSI @ 100°F (13.8 BAR @ 37.8°C) MAX. WORKING PRESSURE: 8" SIZE.
- 150 PSI @ 100°F (10.3 BAR @ 37.8°C)
- 4. SIZE 5" USE PACKING AND PACKING GLAND IN LIEU OF O-RING.

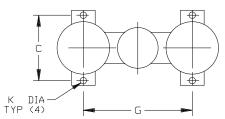
CLEARANCE FOR BASKET REMOVAL



8" COVER & YOKE DETAIL

CERTIFIED FOR: P. . . N .: REG. NO.: QUOTE NO.: TAG ND.:

N□.	PART NAME	MATERIAL
1	BODY	BRONZE B148 ALLOY 954
2	BASKET	
	PERF. DIA.	
	MESH	
3	□-RING (SIZE - 6")	BUNA-N
	GASKET (SIZE - 8")	NON-ASBESTOS
4	□-RING	BUNA-N
5	COVER	BRONZE B148 ALLOY 954
6	COVER CLAMP	DUCTILE IRON
7	YOKE	DUCTILE IRON
8	YOKE SCREW AND PIN ASSY	CARBON STEEL
9	□-RING	BUNA-N (SEE NOTE 4)
10	BONNET	BRONZE B148 ALLOY 954
11	DIVERTER PLUG	BRONZE B148 ALLOY 954
12	YOKE STUD	STEEL
13	JACK COLLAR	DUCTILE IRON
14	JACK BONNET	DUCTILE IRON
15	JACKSCREW	STEEL
16	JACKSCREW NUT	CARBON STEEL
17	LIFTING HANDLE	DUCTILE IRON
18	TURNING HANDLE	DUCTILE IRON
19	BONNET STUD	ALLOY STEEL
20	BONNET STUD NUT	CARBON STEEL
21	DRAIN PLUG	BRASS



ELECTRONIC FILE NAME:

NPT DRAIN

SD051092.DWG REF. ECR 0067315 DATE 2/23/12

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FATON

EATON FILTRATION, LLC

44 APPLE ST. TINTON FALLS, NEW JERSEY 07724 U.S.A.

MODEL 50 DUPLEX STRAINER 150# FLAT FACE FLANGE SIZES 5" THRU 8" BRONZE BRONZE

CERT. DATE 1/6/94 1/6/94 FΜ SIZE DWG Н

NO SD051092 А

REV 8/00

NOTE 4 9 11

(8)

PIPE SIZE DIMENSIONS		·		Ť	·	
A = A + A + A + A + A + A + A + A + A +	(NOM.) MM.		K MM.	IN. MM.	WEIGHT LBS. KGS.	PART NO.
	/10	20.75 /527 0.63	3 /16	12.50 /318	615 /279	ST0500600R22C
8" (200mm) 25.00 / 635 14.00 / 356 / 28.00 /711 22.44 /570 50.00 /1270 56.00 /1422 1/2	/15	30.75 /781 0.88	3 /22	17.00 /432	1670 /757	ST0500800R22C
NOTES: 1. INLET/OUTLET FLANGE CONNECTIONS PER ASME B16.5.	21	DRAIN PLU	 G		STAINLESS	STEEL
2. SIZE 6" USE COVER CLAMP (ITEM 6). 3. MAX. WORKING PRESSURE: 6" SIZE.	20	BONNET STUD	NUT		CARBON S	STEEL
200 PSI @ 100°F (13.8 BAR @ 37.8°C)	19	BONNET STU			ALLOY S	TEEL
MAX. WORKING PRESSURE: 8" SIZE.	18	TURNING HAN	DLE		DUCTILE	IRON
150 PSI @ 100°F (10.3 BAR @ 37.8°C)	17	LIFTING HAND	DLE		DUCTILE	IRON
	16	JACKSCREW N	1UT		CARBON S	STEEL
90.	15	JACKSCREV	V		STEEL	
↑ FLOW □ D	14	JACK BONNE	ET		DUCTILE	IRON
	13	JACK COLLA	4R		DUCTILE	IRON
	12	YOKE STUE)		STEEL	-
	11	DIVERTER PL	UG	SS	STL ASTM A35	1 GR. CF8M
	10	BONNET		SS	STL ASTM A35	1 GR. CF8M
	9	O-RING			VITON	1
	8	YOKE SCREW AND	PIN ASS	Y	CARBON S	STEEL
S 8"COVER & YOKE DETAIL	7	YOKE			DUCTILE	IRON
G 8 COVER & YORE DETAIL CLEARANCE FOR	6	COVER CLAN	/P		DUCTILE	IRON
BASKET	5	COVER		SS	STL ASTM A35	1 GR. CF8M
(A) REMOVAL	4	0-RING			VITON	1
3 E	3	O-RING (SIZE - GASKET (SIZE -			VITON NON—ASBE	I ESTOS
2 DRAIN DRAIN	2	BASKET PERF. DIA. MESH				
	1	BODY		SS	STL ASTM A35	
	ITEM	PART NUMBE			MATERIA	AL.
	DRAWN E	ВУ	PA	RT LIST F		ICS CROUP

		C	USTOMER INFO			
	K DIA	<u>-</u>			NAME	
	TYP (4) - I J	-			P.O. NO.	
	UPDATED TITLE BLOCK	S. PATIL	0112361	7/22/2015	TAG NO.	
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REVISIONS

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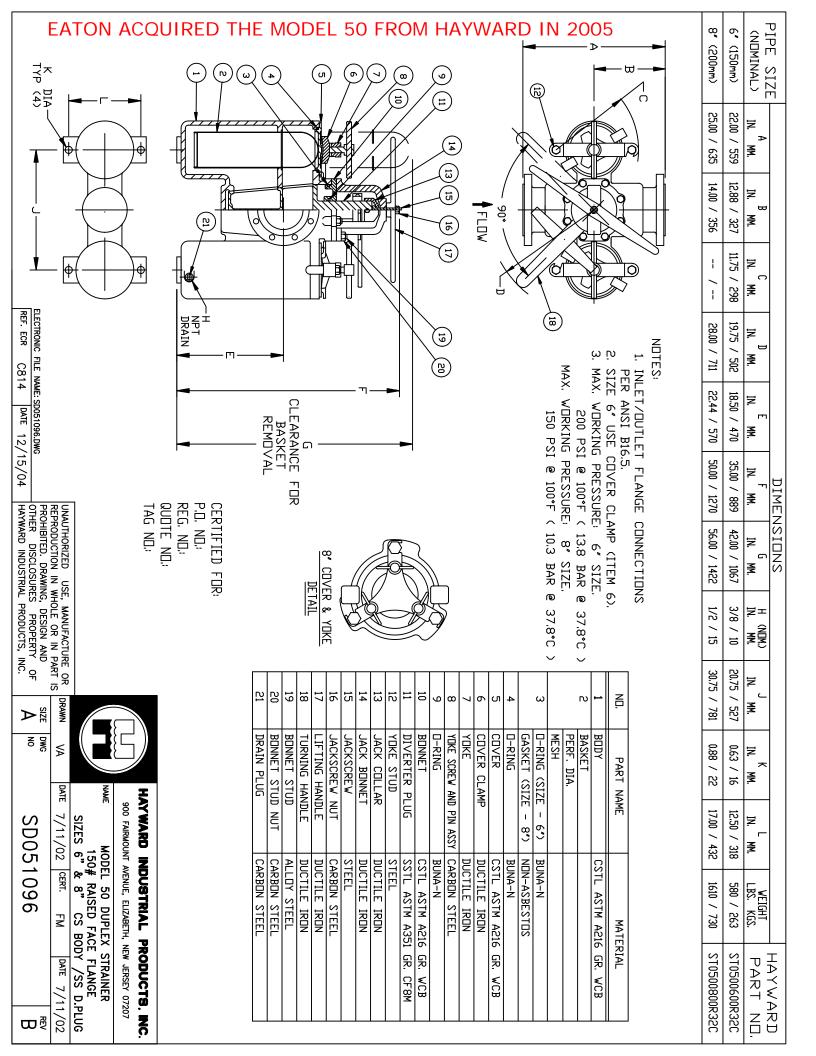
HYDRAULICS GROUP FILTRATION DIVISION
GALESBURG, MICHIGAN, USA • TINTON FALLS, NEW JERSEY, USA

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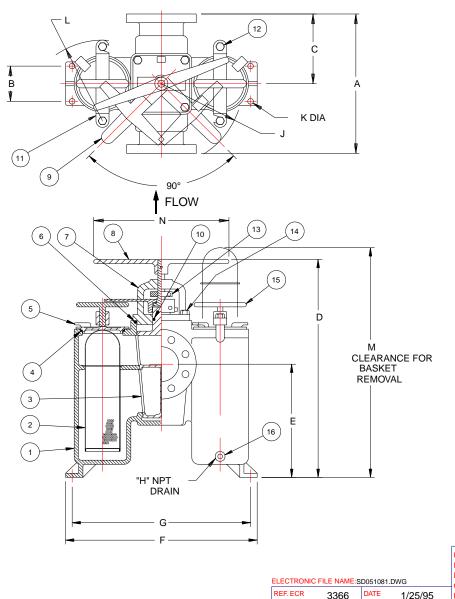
SHEET 1 OF 1

MODEL 50 DUPLEX STRAINER 150# RAISED FACE FLANGE SIZES 6" & 8" STAINLESS STEEL



1-4" SIZES DISCONTINUED BUT SOME PARTS AND BASKETS ARE AVAILABLE

PIPE SIZE						DIMENS	IONS							WEIGHT	HAYWARD
(NOMINAL)	A IN. MM.	B IN. MM.	C IN. MM.	D IN. MM.	E IN. MM.	F IN. MM.	G IN. MM.	H (NOM.) IN. MM.	J IN. MM.	K IN. MM.	L IN. MM.	M IN. MM.	N IN. MM.	LBS. KGS.	PART NO.
1" (25mm)	6.88 / 175	1.44 / 37	3.44 / 87	12.50 / 318	5.00 / 127	11.00 / 279	10.13 / 257	1/4 / 8	8.00 / 203	0.34 / 9	4.50 / 114	15 / 381	8.00 / 203	31 / 14	ST051010AF41A
1-1/2" (40mm)	9.38 / 238	1.56 / 40	4.69 /119	15.50 / 394	6.81 / 173	15.13 / 384	13.94 / 354	1/4 / 8	8.00 / 203	0.44 / 11	5.50 / 140	19 / 483	8.00 / 203	66 / 30	ST051015AF41A
2" (50mm)	10.63 / 270	1.94 / 49	5.31 /135	20.13 / 511	8.38 / 213	18.63 / 473	17.38 / 441	3/8 /10	8.50 / 216	0.56 / 14	7.69 / 195	24 / 610	16.00 / 406	122 / 55	ST051020AF41A
2-1/2" (65mm)	10.75 / 273	1.94 / 49	5.38 /137	20.13 / 511	8.38 / 213	18.63 / 473	17.38 / 441	3/8 /10	8.50 / 216	0.56 / 14	7.69 / 195	24 / 610	16.00 / 406	142 / 65	ST051025AF41A
3" (80mm)	13.50 / 343	2.50 / 64	6.88 /174	21.50 / 546	8.88 / 226	22.00 / 559	20.75 / 527	1/2 /15	8.50 / 216	0.56 / 14	8.94 / 227	26 / 660	16.00 / 406	193 / 88	ST051030AF41A
4" (100mm)	16.00 / 406	3.00 / 76	8.00 /203	27.13 / 689	13.25 / 337	23.00 / 584	21.50 / 546	1/2 /15	9.50 / 241	0.56 / 14	8.94 / 227	35 / 889	18.00 / 457	285 / 129	ST051040AF41A



NO.	PART NAME	MATERIAL
1	BODY	CAST IRON ASTM A126 CL.B
2	BASKET	
	PERF. DIA.	
	MESH SIZE	
3	DIVERTER PLUG	BRONZE ASTM B62
4	COVER O-RING	BUNA-N
5	WELL COVER	CAST IRON ASTM A126 CL.B
6	JACK BONNET O-RING	BUNA-N
7	JACK BONNET	DUCTILE IRON ASTM A395
8	LIFTING HANDLE	DUCTILE IRON
9	TURNING HANDLE	DUCTILE IRON
10	STEM O-RING	BUNA-N
11	YOKE	DUCTILE IRON
12	YOKE STUD	STEEL
13	LOCKING COLLAR	STEEL
14	CAPSCREW	ALLOY STEEL
15	T-BOLT	STEEL
16	PIPE PLUG	CARBON STEEL

NOTES:

- 1. INLET/OUTLET FLANGE CONNECTIONS PER ANSI B16.1.
- 2. MAX. WORKING PRESSURE: 200 PSI @ 100 F (13.8 BAR @ 37.8 C)

CERTIFIED FOR:

P.O. NO.: REG. NO.:

QUOTE NO.:

TAG NO.:

NAME MODEL 50 DUPLEX STRAINER
125# FLAT FACE FLANGE
SIZES 1" THRU 4" CAST IRON

DRAWN FC DATE 1/9/92 CERT. VAA DATE 1/9/92

SIZE DWG
A NO SD051081

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Installation, Operation & Maintenance Manual Model 50 Duplex Basket Strainer, Sizes 5" - 8"

Read all instructions before installation or operation of equipment.

Failure to comply with these instructions could result in bodily injury or property damage.



Table of Contents

Introduction	. 1
Receiving, Handling & Inspection	1
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Introduction

A duplex strainer is a device installed in a pipe-line 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 re-moved for cleaning. Duplex strainers are designed for pressure and suction installations.

For additional information regarding Duplex Basket Strainers visit our website at: www.eaton.com/filtration

Receiving, Handling and Inspection

Inspect strainer after unpacking 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.

Remove preservative with solvent dampened cloths. Exercise care when using solvent. Check to be sure the rated pressure and temperature on the strainer name plate is not less than the maxi- mum pressure and temperature of the installation. The rated pressure shown on the name plate is the maximum pressure, including shock pressure, at which the strainer may be operated.

Installation, Operation & Maintenance Manual Model 50 Duplex Basket Strainer, Sizes 5" - 8"

Installation

Position the strainer in the line so that the fluid enters the connection marked **inlet**. Be sure sufficient headroom is provided for easy removal of cover and baskets.



CAUTION: Lift strainers with slings under the inlet and outlet connections. DO NOT lift the strainer by the jack bonnet located on top of the plug.

Support the strainer in the line as follows: Support on concrete or steel pads.

Connect the strainer to the line. Use same type flange faces. For example, DO NOT bolt raised face flanges to iron flat face flanges. Iron flanges must be flat face with full face gaskets.

Cast strainers are subject to face to face variations due to shrinkage and machining tolerances. Prefabricated piping systems must allow adjustment at the strainer connections.

For threaded strainers, use standard pipe practice when making connections.

Installation, Continued

Be sure flange gaskets are in place and fasteners are tight.

It is recommended that the drain plugs be re- moved and drain valves be installed at the bot- tom of each basket chamber as shown in Figure

1. A pressure equalizer, as shown in Figure 2, should be installed when the operating pressure exceeds 50 psi. This pressure equalizer greatly reduces the force required to transfer the position of the strainer valve plug.

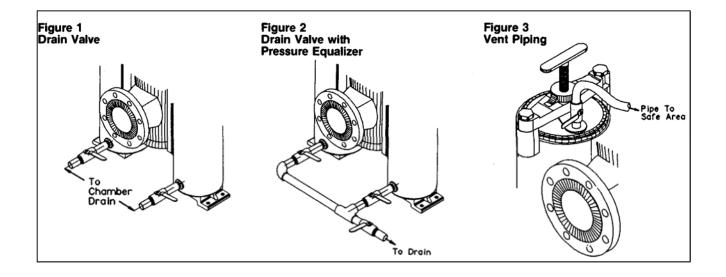
To insure proper valve plug seating, the clean-out plug at the bottom of the valve plug chamber should be periodically removed and the accumulated solids and debris washed out.



CAUTION: A vent is required when fluids other than water and with temperatures in excess of 120°F are to be handled by the strainer. The vent must be piped to a

safe discharge point to protect the operator (see Figure 3). Wear protective clothing which includes gloves, vests, and goggles when handling dangerous fluids.

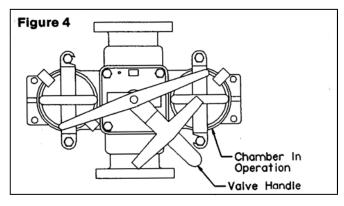
Pressure gauges near the strainer inlet and outlet are recommended. Cleaning frequency can be determined by the pressure drop across the strainer.



Installation, Operation & Maintenance Manual Model 50 Duplex Basket Strainer, Sizes 5" - 8"

Operation

The chamber in operation can be determined by observing the position of the valve handle. The handle is on the same side of the center line as the chamber in operation (see Figure 4).



Start up

Open both chamber vents, if strainer is so equipped (see figure 3), to expel air from the strainer.

Position valve handle in the center to allow both chambers to fill and close the equalizer valve, if strainer is so equipped (see figure 2).

Slowly allow fluid to enter strainer by opening OUTLET valve first, then followed by opening the INLET valve.



CAUTION: Start system GRADUALLY. This eliminates sudden shock to strainer and other equipment in the line.

Close vents when air is expelled and fluid begins to leak out vent.

Move valve handle to extreme travel position over one clean basket. DO NOT leave valve handle in the center position as both baskets will become dirty. This would require interrupting flow to clean them.

Seat valve plug lightly by turning valve yoke clockwise. To avoid excessive stresses, stuck valve plugs etc. when operating at temperatures above 120°F use only minimum hand pressure on the valve yoke to position the valve plug against the seat.

The valve plug should be firmly seated during basket cleaning to prevent excessive leakage into the opened chamber.

Start up, Continued



NOTE: The strainer valve plug is intended to divert flow. It is not designed to provide absolute tight shut off. Product design criteria requires valve plug seepage to be low enough to provide time for basket cleaning only.

Shut Down

Tightly close pipeline valve on inlet and outlet connections of the strainer. Open vents, (see figure 3), to relieve liquid pressure in the strainer.



CAUTION: DO NOT loosen body covers while there is liquid or air flow from the

Switching Flow

Without Equalizer

Turn lifting handle counterclockwise to lift valve plug and position turning handle (to extreme travel position) over clean basket. Seat valve plug slightly by turning lifting handle clockwise.

With Equalizer

Open pressure equalizer valve and turn lifting handle counterclockwise to lift valve plug.

Position turning handle (to extreme travel posi-tion) over clean basket and seat valve plug tightly by turning lifting handle clockwise.

Close equalizer valves.

Basket Removal (Yoke Cover)

Transfer flow from dirty to clean chamber (see Switching Flow) and open vents, and/or drain valve to relieve liquid pressure in dirty chamber.

When pressure is relieved, loosen, but do not remove, Tbolt. Then drain fluid away through the chamber drain connection to a level below the basket seat. prevents by-pass of dirty fluids.

Swing yoke away from body yoke stud and clear of body cover. Remove cover.

Remove dirty basket.



Installation, Operation & Maintenance Manual Model 50 Duplex Basket Strainer, Sizes 5" - 8"

Basket Replacement (Yoke Cover)

Place new or clean basket squarely on basket seat and be sure the basket handle is sufficiently high to be compressed by the strainer body cover.

Inspect body cover O-ring and seal surface. Clean seat and replace body cover O-ring as necessary.

Always keep spare O-ring gaskets in storage. Replace body cover, making sure body cover is centered in body opening. If strainer is on suction service, fill basket chamber from outside source before installing body cover.

Swing yoke into position over body cover and onto yoke stud, making sure yoke is level with body. If not, adjust both studs to level the yoke.

Hand tighten yoke studs and tighten the center T- bolt. Make sure vent is open, if strainer is so equipped, (see Fig 3); close drain valve and refill basket chamber with fluid as follows:

Lift valve plug and rotate valve plug handle approximately 20° towards center position until all air is vented from the basket chamber.

Close vents and return valve plug handle to extreme position and reseat tightly.

With Equalizer

Open pressure equalizing valve. Close vent when air is expelled. Close pressure equalizing valves.

Basket Cleaning

When to Clean

Clean baskets when there is a 5 PSI increase in the pressure loss across the strainer



CAUTION: To prevent damage to the baskets, DO NOT permit strainer pressure differential between inlet and outlet connections to exceed 20 PSI.

When to Clean, Continued

During shut down for a temporary period, drain fluid and clean baskets.

How to Clean

Invert basket and wash out debris by directing a stream of air or water against the basket exterior. Follow manufacturer's instructions when using a solvent to clean the baskets.



NOTE: Do not allow basket contents to dry as this will make cleaning most difficult.

Inspect baskets at each cleaning for holes or tears, replace as required. Always keep spare baskets in stock.

Shutdown Periods

During shutdown periods: Remove valve plug from strainer.

Apply a heavy coat of grease to both the valve plug and the plug cavity in the strainer body.

Replace valve plug and its cover. Do not seat valve plug until strainer is again placed into service.

Recommended Spare Parts

- 1 Eaton Replacement Basket
- 1 Eaton Replacement Gasket

When ordering spare parts specify all nameplate data as well as the description and quantity of parts.

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

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



EXPLODED VIEW

