Model 50 Large Duplex Basket Strainer

10" to 18" • Iron and Bronze • Flanged

FEATURES

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

OPTIONS

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

The Eaton Butterfly Valve Type Model 50 Duplex Basket Strainer is a special design with several important features and advantages for large size pipelines with high flow rates.

Flow is switched from one basket chamber to the other by a set of synchronized, high quality butterfly valves. This replaces the diverter plug used on smaller size strainers and gives a straight flow pattern with no sudden changes in flow direction. The result is a very low pressure loss. A 10" strainer of this type, for example, can handle 2000 gpm of water with a pressure drop on only 2 psi. This is the strainer to choose when you have a high flow rate application and a low pressure loss is critical.

Another important benefit of this design is a savings in overall size. It is more compact than other large size duplex strainers—which means less weight and a smaller profile. This can be very important when space requirements are tight.

This design also uses a unique basket design concept which incorporates a larger screening area. This is done by convoluting (pleating) the perforated sheet in the strainer basket, thus increasing the available screening area while reducing the total basket size. The flow enters the basket from the side, not the top—resulting in a straight-through flow pattern. What all this means in service is a lower pressure drop and greater time between basket cleanings than would be possible with standard-design baskets—a real savings in time and operating costs.

The butterfly valve assembly used to divert the flow from one basket chamber to the other is balanced so a minimum of effort is needed to switch the flow. There is a single handwheel operator, and it can be located on either side of the strainer if accessibility is a problem. There is an arrow on the top of the gear housing that indicates which basket chamber is in service and which is ready for cleaning.

Quick opening covers make strainer basket changing or cleaning quick and easy. No tools or lifting gear are required to open them. This is a feature not often found on strainers of these larger sizes.

If your strainer application is for larger size pipelines with high flow rates, the Eaton Model 50 Duplex offers you several unique features and advantages over other large size duplex strainers. Among them are: low pressure loss, operator friendly with quick open covers that don't require lifting gear, compact design with a smaller footprint than other strainers, and a special basket design to maximize time between basket cleanings. After you've investigated all the possibilities, you'll realize that this large size Eaton Model 50 Duplex Strainer is in a class by itself and it is cost effective.

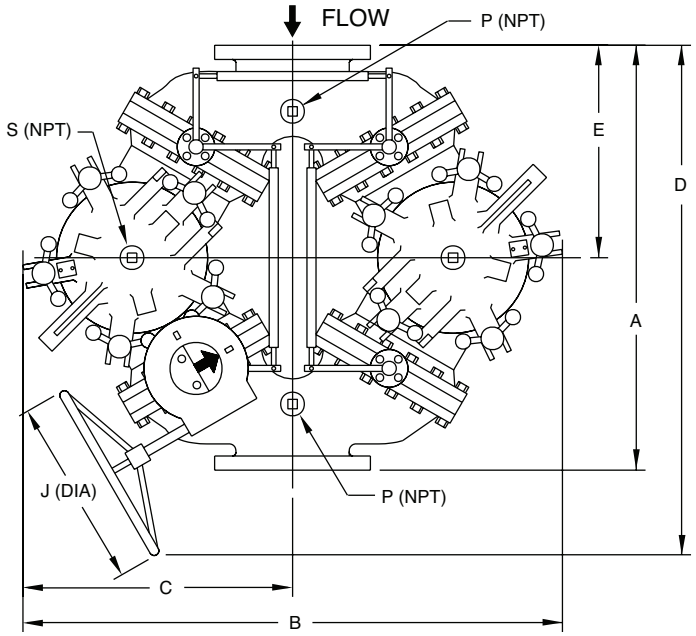
Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
10" to 12"	Iron	Flanged 125#	Buna N	200 psi @ 100°F
10" to 12"	Bronze	Flanged 150#	Buna N	200 psi @ 100°F
14" to 18"	Iron	Flanged 125#	Buna N	150 psi @ 100°F
14" to 18"	Bronze	Flanged 150#	Buna N	150 psi @ 100

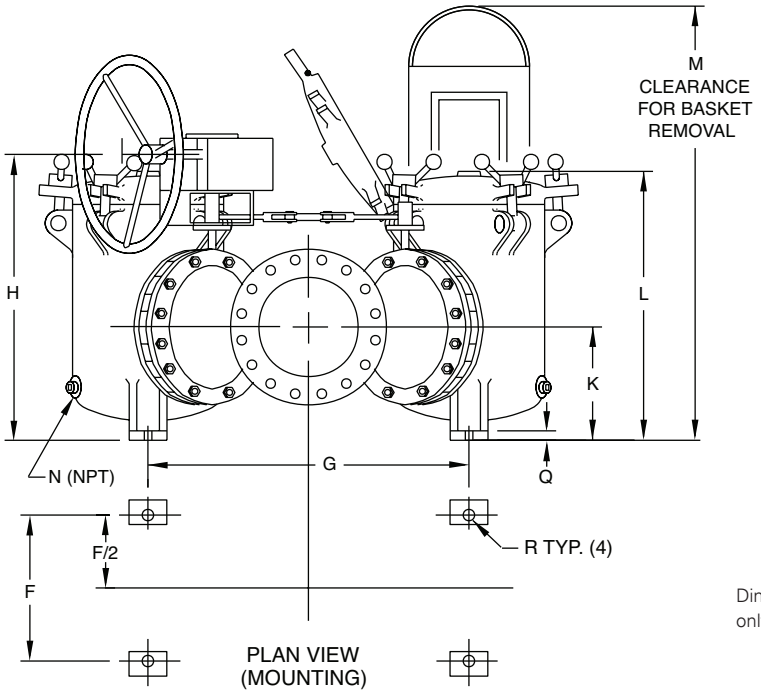
C_V Factors*

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

* For water with clean, perforated basket



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



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Dimensions (in/mm)

Pipe Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	Wt (lb / kg) Iron	Wt (lb / kg) Bronze
10	45	51	26	52	22-1/2	19	32	30-1/4	18	12-3/16	29	49	1-1/2	1/2	1	1	1/4	1600	2003
	1143	1295	660	1321	572	483	813	768	457	310	737	1245	50	20	32	32		727	910
12	62	64	32	66	31	23	41	36-5/8	16	16-3/4	38	66	1-1/2	1/2	1	1	1/4	2650	3318
	1574	1626	813	1676	787	584	1041	924	406	425	965	1676	50	20	32	32		1205	1508
14	72	76	38	79	35-1/2	27	48	44-3/4	24	18-3/4	44-1/2	77	1-1/2	1/2	1	1	1/4	4300	5384
	1829	1930	965	2007	902	686	1219	1137	610	476	1130	196	50	20	32	32	–	1955	2447
16	72	76	38	79	35-1/2	27	48	44-3/4	24	18-3/4	44-1/2	77	1-1/2	1/2	1	1	1/4	4400	5509
	1829	1930	965	2007	902	686	1219	1137	610	476	1130	196	50	20	32	32		2000	2504
18	72	76	38	79	35-1/2	27	48	44-3/4	24	18-3/4	44-1/2	77	1-1/2	1/2	1	1	1/4	4600	
	1829	1930	965	2007	902	686	1219	1137	610	476	1130	196	50	20	32	32		2087	

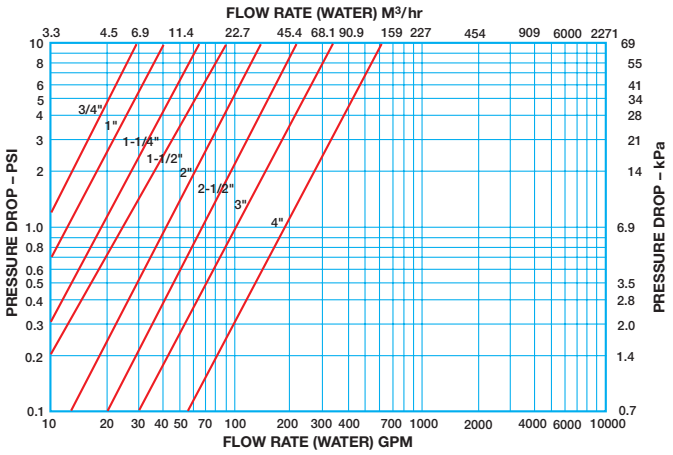
Model 53BTX & 50 Pressure Drop Curves

Pressure Drop vs Flow Rate

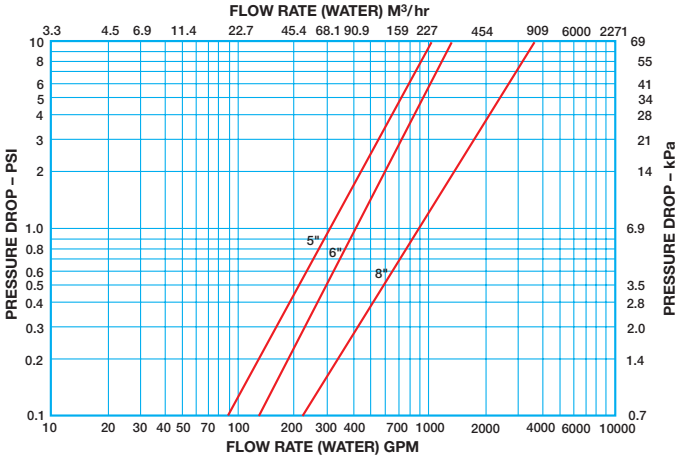
These curves are for clean baskets, without mesh liners—and with water flowing through the strainer.

For mesh-lined baskets and/or for other fluids, you must first compute a correction factor. See Page 29 for full details.

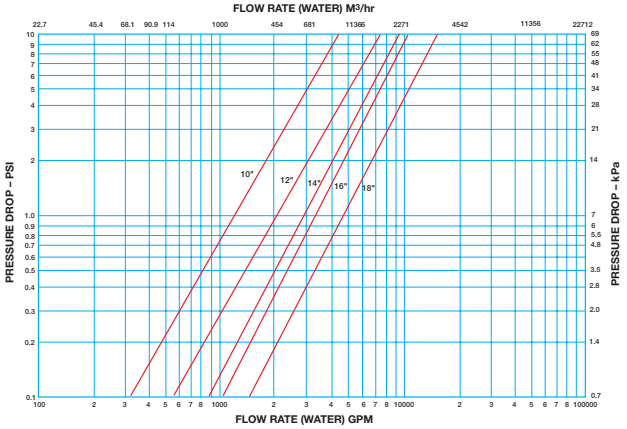
Model 53BTX Duplex – 3/4" Through 4"



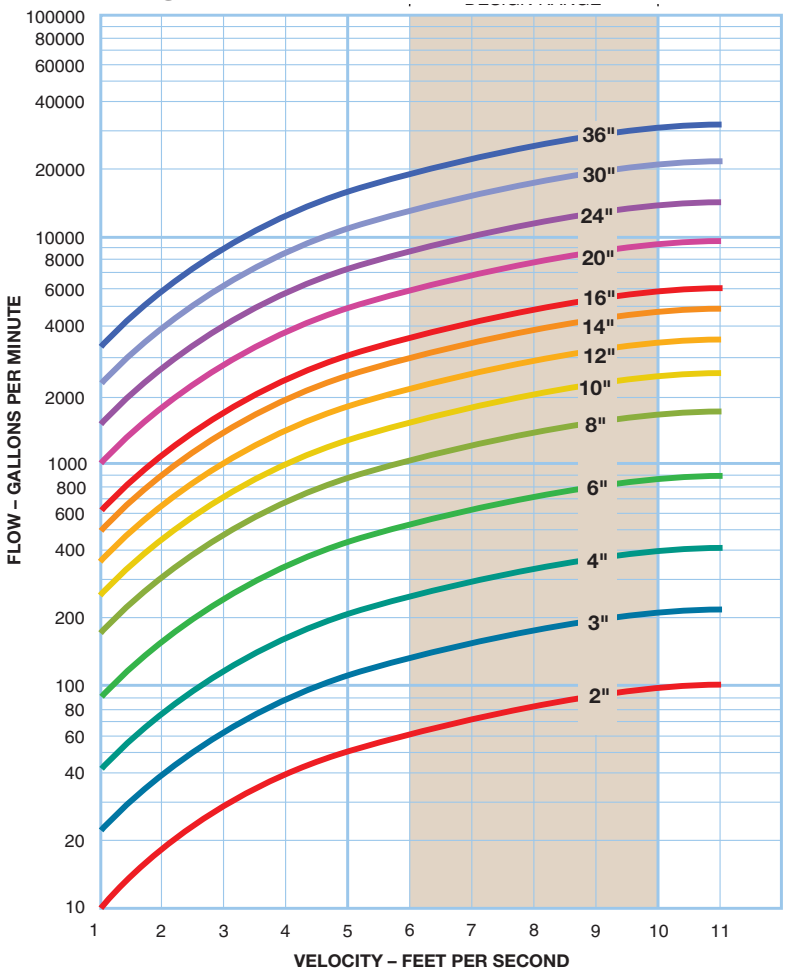
Model 50 Duplex – 5" Through 8"



Model 50 Multi-Basket Duplex – 10" Through 18"



Strainer Sizing Chart



Strainer Basket Opening Equivalents

Mesh	Inches	Millimeters	Microns
400	0.0015	0.0381	38
300	0.0018	0.0457	45
250	0.0024	0.0609	60
200	0.0027	0.0686	68
150	0.0041	0.1041	104
100	0.0065	0.1651	165
80	0.007	0.1778	177
60	0.009	0.2286	228
40	0.015	0.8636	380
20	0.034	0.8636	862

Perf	Inches	Millimeters	Microns
1/32	0.033	0.838	838
3/64	0.045	1.143	1143
1/16	0.070	1.778	1776
3/32	0.094	2.387	2387
1/8	0.125	3.175	3175
5/32	0.150	3.810	3810
3/16	0.1875	4.762	4762
1/4	0.250	6.350	6350
3/8	0.375	9.525	9525
1/2	0.500	12.700	12700

Metal Alloys used in Eaton Strainers

Carbon Steel – ASTM A-216 Grade WCB
Tensile Strength: . . . . . 70,000 lb/sq in
Yield: . . . . . 36,000 lb/sq in
Elongation: 22%
Chemical Composition:
C (Carbon) 0.30%
Si (Silicon) 0.60%
P (Phosphorus) 0.04%
S (Sulfur) 0.045%
Mn (Manganese) 1.00%
Residual Elements . . . . . 1.00% max

Aluminum Bronze – ASTM B-148 Grade C95400
Tensile Strength: . . . . . 75,000 lb/sq in
Yield: . . . . . 30,000 lb/sq in
Elongation: 12%
Chemical Composition:
Cu (Copper) 85%
Fe (Iron) 4%
Al (Aluminum) 11%

Stainless Steel – ASTM A-351 Grade CF8M
Tensile Strength: . . . . . 70,000 lb/sq in
Yield: . . . . . 30,000 lb/sq in
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
Compressive Strength: . . . . . 109,000 lbs/sq in
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
Yield: . . . . . 40,000 lb/sq in
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.

Bronze - ASTM B-62
Tensile Strength: . . . . . 30,000 lb/sq in
Yield: . . . . . 14,000 lbs/sq in
Elongation: 20%
Chemical Composition:
Cu (Copper) 85.0%
Sn (Tin) 5.0%
Pb (Lead) 5.0%
Zn (Zinc) 5.0%
Ni (Nickel) . . . . . 1.0% max.
Fe (Iron) . . . . . 0.3% max.
P (Phosphorus) . . . . . 0.05% max.