

Applications

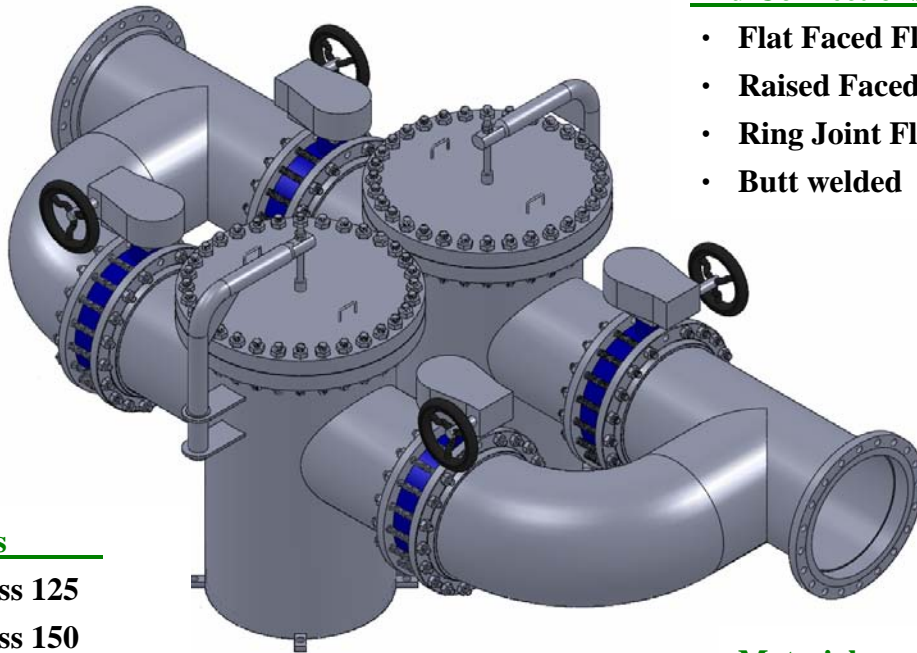
- Chemical Industry
- Process Industry
- Power Industry
- Oil & Gas
- LNG Terminal
- Metals & Mining
- Water & Waste Water
- Pulp & Paper
- Cooling Water System

Fabricated Duplex Strainers

Pressure to 1480 PSIG
Temperatures to 800°F

Features

- Standard or Custom configurations
- Bolted or Welded Construction
- Compact and Economical units available
- Large strainer baskets



End Connections

- Flat Faced Flanged
- Raised Faced Flanged
- Ring Joint Flanged
- Butt welded

Flange Ratings

- ASME Class 125
- ASME Class 150
- ASME Class 300
- ASME Class 600
- Higher class ratings
Upon request

Size

- 2" (50 mm) to 24"
(600 mm)
- Larger sizes
Upon request

Materials

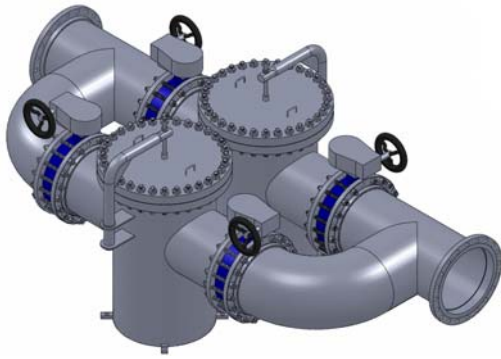
- Carbon Steel
- Stainless Steel
- Other materials
Upon request



K-FLOW ENGINEERING CO., LTD.

No.120-1, Niaosong 3rd., St., Yongkang City, Tainan Country 71042, Taiwan, R.O.C.

TEL:+886-6-2423111 FAX:+886-6-2425699



DFSS SERIES

FABRICATED DUPLEX STRAINERS

Pressures to 1480 PSIG (102 BARG)

Temperatures to 800°F (427°C)

- **Standard or Custom Configurations for tight installations, performance and/or economy**
- **Bolted cast or fabricated headers and/or strainers**
- **Four individual operated isolation valves are used to divert and isolate flow.**
- **Drain connections furnished with plug as standard**
- **SS Perforated baskets are standard**

Applications

- Water, oil systems
- Other liquid systems
- Protection of pumps, meters, valves and other similar equipment

Options

- Other Materials, Sizes and/or Configurations
- Quick Opening Covers
- Other Shut off valves/check valves
- Slave linked isolation valves
- Other Screen, Mesh or Wedge wire
- Vent and/or Differential Pressure Connections
- Legs and other supports
- “U” Stamped Vessels
- Steam Jacketing
- Air Vents
- NACE MR010-75 Certification
- External/Internal Coatings

Applicable Codes

- Fabricated strainer and header bodies are Designed/Manufactured to meet ASME B31.1, ASME B31.3 and/or ASME Section VIII, Div I
- Welders Certified to ASME Section IX

DFSS Series Ordering Code

D	F	S	S	6	H	1	R	-	H	4	2	D
1	2	3	4	5	6	7	8	9	10	11	12	13

Model – Position 1-4 DFSS	Inlet Size – Position 6 H - 2 J - 2-1/2 K - 3 M - 4 N - 5 P - 6 Q - 8 R - 10 S - 12 T - 14 U - 16 V - 18 W - 20 X - 22 Y - 24 Z - Other	I/O Connection – Position 8 B - Butt Weld F - Flat Face Flange N - NPT J - Ring Joint Flange R - Raised Face Flange Z - Other Dash – Position 9 - Cover – Position 10 A - Eye Nut Bolted B - Bolted C - Bolted w/C-Clamp D - Bolted w/Davit J - Bolted w/Hinge Q-Quick Opening Covers	Perf – Position 11 A - None B - 3/64 1 - 1/32 2 - 1/16 3 - 3/32 4 - 1/8 5 - 5/32 6 - 3/16 7 - 7/32 8 - 1/4 9 - 3/8 Z - Other Mesh – Position 12 A - None 1 - 10 2 - 20 3 - 30 4 - 40 5 - 50 6 - 60 7 - 80 8 - 100 9 - 120 Z - Other	Isolation Valves – Position 13 C - CS Body, Butterfly Valves T - SS Body, Butterfly Valves Z - Other NOTE: For any variation, use the part numbering system above but clearly indicate the additional requirements.
Material – Position 5 C - Carbon Steel CR - Carbon Steel w/ Rubber lining L - Low Temp CS S - 304 SS 6 - 316 SS 6L - 316L SS Ti-Titanium M-Monel DU-Duplex Basket- S-304SS 6-316SS 6L-316LSS Ti-Titanium M-Monel H-Hastelloy	Class – Position 7 1 - 150/125 2 - 300 3 - 600 4 - 900 Z - Other			

DFSS SERIES

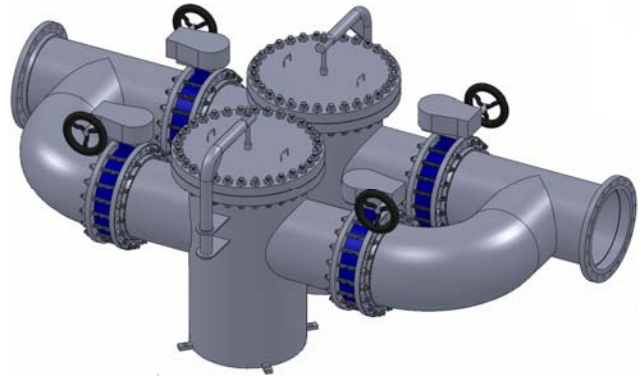
FABRICATED DUPLEX STRAINERS

Operation/Selection

The K-Flow Fabricated Duplex Strainer is used in applications where fluid flow cannot be interrupted when the basket is removed for cleaning and/or maintenance. The K-Flow Duplex Strainer consists of the following parts:

- (2) Basket Strainers
- (2) Header assemblies – Inlet and outlet
- (4) Isolation shut off valves

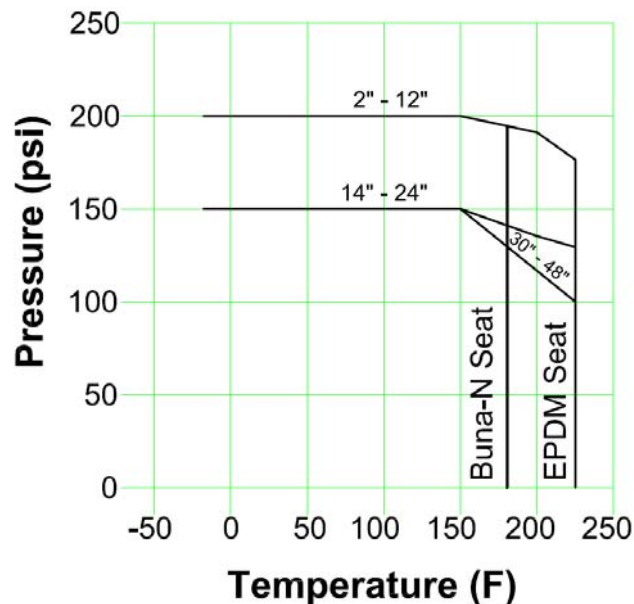
The unit is designed to allow changeover from one strainer to the other when cleaning or maintenance work is required. The changeover is accomplished by isolating the particular strainer via closing the two isolation valves around the strainer to provide a tight shut off between the strainer chamber.



The Strainer and Header assemblies are custom designed and engineered to meet the specific requirements of the application. Many options are available including higher pressure ratings, quick opening covers, various types of isolation valves, special internal coatings and more. K-Flow offers seven standard model Duplex Strainers as well as our custom designed units to meet both your application and cost requirements as outlined below.

Pressure/Temperature Chart⁽¹⁾

All Duplex models using Butterfly Valve (EPDM-Seat as Standard)



NOTES: For higher pressure classes and other materials, consult factory.

DFSS SERIES

FABRICATED DUPLEX STRAINERS

Specification

Fabricated Strainer and header bodies shall be designed and manufactured to meet ASME B31.1, ASME B31.3 and/or ASME Section VIII, Div I. The duplex strainer shall have four butterfly isolation valves. The strainer body and header shall be fabricated steel or other specified material and inlet/outlet connections shall be In-Line Center Design. The strainer shall be a single basket type with a slant top design. The strainer shall be size furnished with a bottom blow down capability. The screen shall be size _____ perforated SS. The Duplex Strainer shall have an inlet size of _____ and Open Area Ratio of _____. The Duplex Strainer shall be K-Flow DFSS _____.

Materials of Construction (Carbon Steel Shown⁽¹⁾)

Basket Strainers

StandardSA53-A/B, SA106-B or SA516-70

Headers

PipeSA53S/B or SA106-B

FlangesSA105

CouplingsSA105

Shutoff Valves

StandardButterfly valves SA216 WCB Body
(non wetted part) SA216 WCB Disc,
EPDM seats⁽³⁾

Hardware

StudSA193-B7

NutSA194-2H

1. Other Materials and/or Valves Available – contact K-Flow
2. For recommended spare parts – Cover Seal & Basket are required
3. Material specification will change when NACE MR01-75 is required.
4. Levers are standard on 8" and lower, Gears on 10" and higher

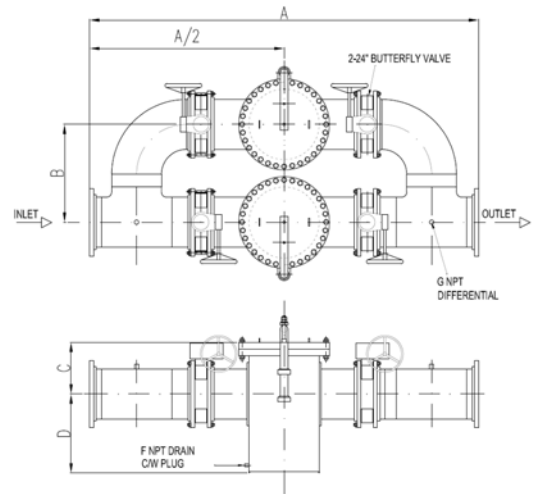
DIMENSIONS mm (inches) AND WEIGHTS kg (pounds)*

150# Class flanges shown (For 300# and 600# dimensions and weights, contact factory.)

SIZE	A	B	C	D	F NPT	G NPT	WEIGHT	
							Cover	Unit
50 (2)	856 (33.7)	254 (10)	152 (6)	225 (8.9)	13 (½)	13 (½)	7.7 (17)	80.5 (178)
80 (3)	1065 (41.9)	305 (12)	159 (6.3)	295 (11.6)	13 (½)	13 (½)	11.8 (26)	181.2 (399)
100 (4)	1194 (47)	330 (13)	220 (8.7)	290 (11.4)	13 (½)	13 (½)	11.8 (26)	237.3 (523)
150 (6)	1426 (56.1)	432 (17)	240 (9.4)	350 (13.8)	19 (¾)	13 (½)	20.4 (45)	337.6 (744)
200 (8)	1706 (67.2)	533 (21)	283 (11.1)	420 (16.5)	25 (1)	13 (½)	31.8 (70)	658.4 (1451)
250 (10)	1919 (75.6)	635 (25)	335 (13.2)	665 (26.1)	38 (1½)	13 (½)	49.9 (110)	847.2 (1868)
300 (12)	2302 (90.6)	711 (28)	390 (15.4)	665 (26.2)	38 (1½)	13 (½)	63.1 (139)	1297 (2859)
350 (14)	2550 (100.4)	787 (31)	390 (15.4)	665 (26.2)	38 (1½)	13 (½)	81.6 (180)	2157.2 (4756)
400 (16)	2774 (109.2)	864 (34)	420 (16.5)	765 (30.1)	50 (2)	13 (½)	129.3 (285)	3153 (6951)
450 (18)	3126 (123.1)	965 (38)	450 (17.7)	825 (32.5)	50 (2)	13 (½)	129.3 (285)	3421.1 (7542)
500 (20)	3410 (134.3)	1041 (41)	525 (20.7)	875 (34.4)	50 (2)	13 (½)	195 (430)	4556.5 (10045)
600 (24)	3801 (149.6)	1194 (47)	781 (30.7)	919 (36.2)	50 (2)	13 (½)	437.7 (965)	6746.8 (14874)

*Weights and dimensions with Bolted Cover.

Dimensions shown are subject to change. Contact factory for certified prints when required.



Note: Standard Covers on basket strainers are bolted.

**Inlet/Outlet Connections⁽⁵⁾: 2-24"
RF, FF, RTJ Flanged or Buttweld**

5. Larger sizes available upon request. For Buttweld Connection please specify mating pipe schedule

SCREEN OPENINGS (Basket Strainers)

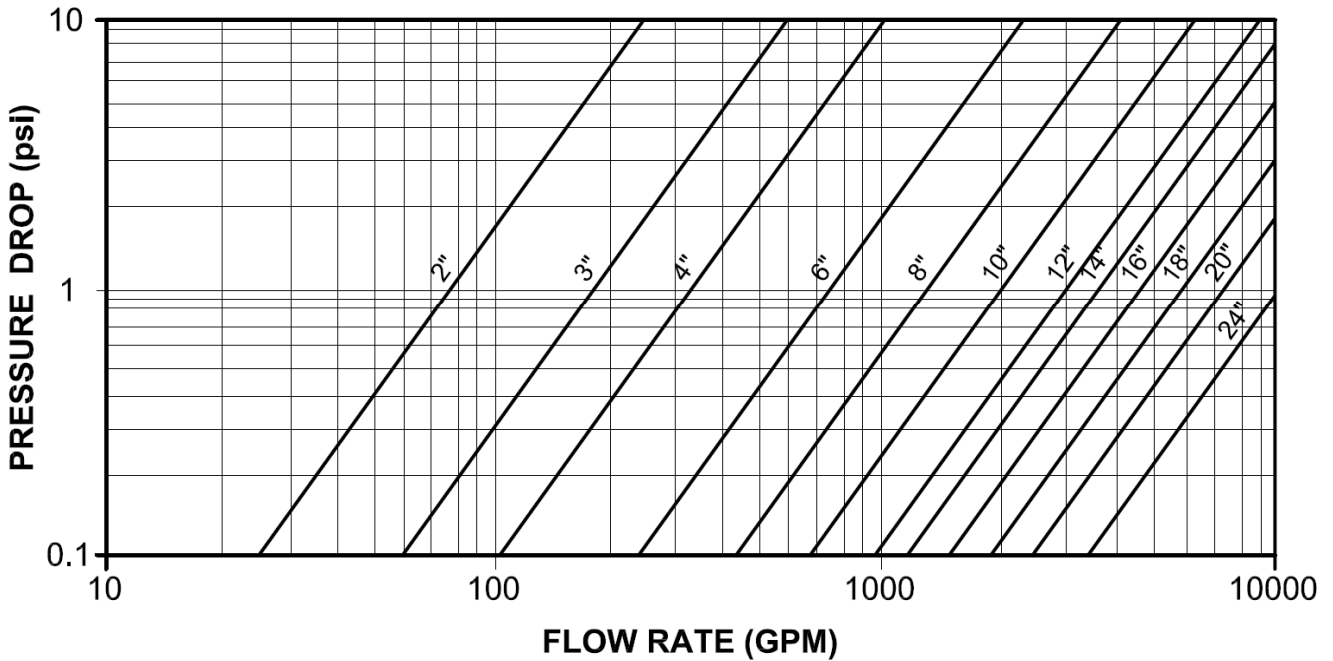
SIZE	STANDARS SCREEN	MATERIALS
2"-12"	1/8" Perf.	304SS
14"-24"	3/16" Perf.	304SS

Note: Other screens and mesh liners available

DFSS SERIES
FABRICATED DUPLEX STRAINERS
PRESSURE DR DROP VS FLOW RATE

Water Service, Clean Basket, 1/32" – 1/4" Perforated Screen*

(Sizes 2" - 24")



PRESSURE DROP CORRECTION FACTORS

Mesh Lined Baskets and/or Fluids with a Viscosity other than Water

Centistokes	SSU	Unlined Perforated Basket	20 Mesh Lined Basket	40 Mesh Lined Basket	60 Mesh Lined Basket	80 Mesh Lined Basket	100 Mesh Lined Basket	200 Mesh Lined Basket
2	30(water)	1	1.05	1.2	1.4	1.6	1.7	2
100	500	1.6	1.7	1.9	2.1	2.4	2.6	3.1
216	1000	1.7	2	2.2	2.4	2.6	2.8	3.3
433	2000	1.9	2.2	2.4	2.7	2.9	3.2	3.8
650	3000	2	2.3	2.6	2.9	3.2	3.5	4.1
1083	5000	2.2	2.6	3	3.5	4	4.5	5.3
2200	10000	2.5	3	3.5	4.2	5	6	7.1

- 1) Obtain water pressure drop from graphs on appropriate product page.
- 2) Multiply the pressure drop obtained from (1) by the specific gravity of the liquid.
- 3) Multiply the pressure drop from (2) by the appropriate correction factor for the mesh liner and/or viscosity.

CORRECTION FACTORS FOR CLOGGED SCREENS

% Clogged	Ratio of Free Screen Area to Pipe Area						
	10 : 1	8 : 1	6 : 1	4 : 1	3 : 1	2 : 1	1 : 1
10							3.15
20						1.15	3.9
30						1.4	5
40						1.8	6.65
50					1.25	2.5	9.45
60				1.15	1.8	3.7	14.5
70				1.75	2.95	6.4	26
80		1.1	1.75	3.6	6.25	14	58
90	2.3	3.45	6	13.5	24	55	

* Multiply values obtained from Pressure Drop Charts by the appropriate values shown below.

DFSS SERIES FABRICATED DUPLEX STRAINERS OPEN AREA RATIOS

Size	Opening diameter (in)	Opening %	Nominal Outlet Area (in ²)	Gross Screen Area (in ²)	Free Screen Area (in ²)	Open Area Ratio (OAR)
2	1/8	40%	3.4	78	31	9.3
3	1/8	40%	7.4	133	53	7.2
4	1/8	40%	12.7	133	53	4.2
6	1/8	40%	28.9	266	106	3.7
8	1/8	40%	50.0	451	180	3.6
10	1/8	40%	78.9	562	225	2.9
12	1/8	40%	113.1	703	281	2.5
14	3/16	50%	137.9	938	469	3.4
16	3/16	50%	182.7	1204	602	3.3
18	3/16	50%	227.0	1429	715	3.1
20	3/16	50%	291.0	1916	958	3.3
24	3/16	50%	402.0	3393	1696	4.2

OAR = Free Screen Area / Nominal Inlet Area

Free Screen Area = Opening % x Gross Screen Area

Values shown are approximate. Consult factory for exact ratios.