FLOW SOLUTIONS INTERNATIONAL INC

TEE STRAINER

Applications

- Steam, Liquid, Gas and Oil Service
- Process Equipment
- Power Industry
- Chemical Industry
- Water and Waste
- Pulp and Paper
- Metals and Mining

Pressures to 3705 PSIG
Temperatures to 800ºF

FEATURES

- Horizontal or Vertical Installations
- Stainless Steel Perforated Screens
- Thru Bolt Cover is Standard

TEE STRAINER WITH QUICK OPENING CLOSURE & DAVIT ASSEMBLY

END CONNECTIONS

- Buttweld End
- RTJ or RF Flanges

SIZES

- 2" (50mm) up to 24" (600mm) as standard
- Large sizes upon request

RATINGS

- ASME Class 150
- ASME Class 300
- ASME Class 600
- ASME Class 900
- ASME Class 1500

Higher Pressure Classes on Demand

HIGH EFFICENCY TEE STRAINER BASKET

MATERIAL

- Stainless Steel
- Carbon Steel
- Low Temp Carbon Steel
- Other materials upon request

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FT SERIES
FABRICATED T-STRAINERS

PRESSURES TO 3705 PSIG (255 BARG)
TEMPERATURES TO 800ºF (427ºC)

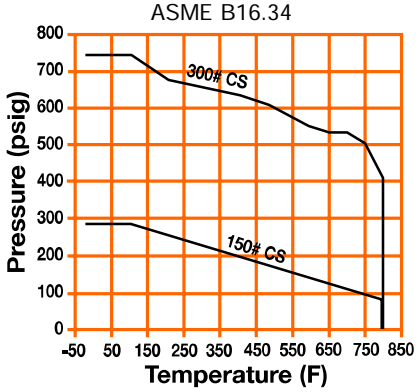
- **Custom engineered and fabricated T strainers**
- **RF or RTJ Flanges or Buttweld end connections in accordance with ASME 16.34 and 16.5**
- **Standard thru bolt cover design.**
- **Installation in horizontal or vertical pipelines.**
- **Three flow configurations available.**
- **Stainless steel perforated screens are standard**
- **Cover lifting lug standard on sizes 10" and larger**

APPLICATIONS

- Steam, liquid, gas and oil service
- Power Industry
- Pulp & Paper
- Process Equipment
- Chemical Industry
- Metal & Mining
- Water & Waste
- Metal & Mining

PRESSURE/TEMPERATURE CHART

ASME B16.34



For higher pressure classes & other materials, consult factory.

MODELS

- FT1 – Inline, straight through flow
- FT2 – 90 degree angle flow – top to side
- FT3 – 90 degree angle flow – side to top
- FTZ – Custom Configuration

OPTIONS

- Other materials, sizes and/or configurations
- Quick Opening covers
- Other screen, mesh, Higher open area ratio baskets
- Vent, Drain and/or differential pressure connections
- "U" stamped vessels
- NACE MRO10-75 Certification
- External/Internal coatings
- Contact Factory for other Options

APPLICABLE CODES

- Designed/Manufactured to meet ASME B31.1, ASME B31.3, or ASME B31.4 and/or ASME Section VIII, Div. 1.
- Canadian Registration Numbers (CRN) available
- Welders certified to ASME Section IX

FT Series Ordering Code

	Model			Material	Inlet Size	Class	Connection	Dash	Cover	Perf	Mesh
F	T	2	V	P	4	R	-	B	4	A	
1	2	3	4	5	6	7	8	9	10	11	

Model - Position 1 - 3
- FT1 - Inline Flow
- FT2 - 90 degree angle flow - Top to Side
- FT3 - 90 degree angle flow - Side to Top
- FTZ - Custom Configurations

Material - Position 4
- C - Carbon Steel
- L - Low Temp CS
- V - 304 SS
- T - 316 SS
- M - Monel
- Z - Other

For any variations, use the part numbering system above but clearly indicate the additional requirements.

Inlet Size - Position 5

H - 2	U - 16
J - 2½	V - 18
K - 3	W - 20
M - 4	X - 22
N - 5	Y - 24
P - 6	1 - 28
Q - 8	2 - 30
R - 10	3 - 36
S - 12	4 - 40
T - 14	Z - Other

Class - Position 6
- 1 - 150
- 2 - 250
- 3 - 300
- 4 - 600
- 5 - 900
- 6 - 1500
- Z - Other

Connection - Position 7
- B - Butt Weld[1]
- F - Flat Face Flange
- J - Ring Joint Flange
- R - Raised Face Flange
- Z - Other

Dash - Position 8

Cover - Position 9
- B - Bolted
- C - Bolted w/C-Clamp
- D - Bolted w/Davit
- J - Bolted w/Hinge
- H - T - Bolt Hinged
- T - Threaded Hinged
- Y - Yoke Hinged
- Z - Other

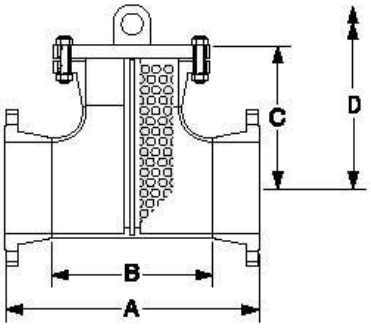
Perf - Position 10
304 SS Material
- B - 3/64"
- 1 - 1/32"
- 2 - 1/16"
- 3 - 3/32"
- 4 - 1/8"
- 5 - 5/32"
- 6 - 3/16"
- 7 - 7/32"
- 8 - 1/4"
- 9 - 3/8"
- Z - Other

Mesh - Position 11
- A - None
- 1 - 10
- 2 - 20
- 3 - 30
- 4 - 40
- 5 - 50
- 6 - 60
- 7 - 80
- 8 - 100
- 9 - 120
- Z - Other

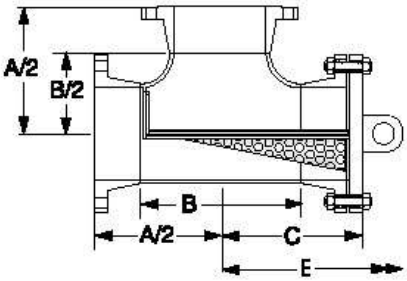
1. For Buttweld connections please specify mating pipe schedule.
2. For other screen material, contact factory.

FLOW SOLUTIONS INTERNATIONAL

FSI MODEL FT150 / FT 150BW, FT 300 / FT300BW
DIMENSIONAL SPECIFICATIONS



STYLE 1



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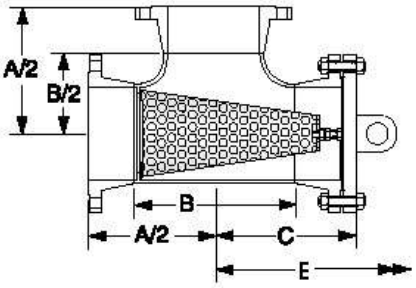


STYLE 3

DIMENSIONS inches (mm) AND WEIGHTS pounds (kg)

MODEL FT-150 / FT-150BW

Size	A	B	C	D	E	Cover Weight	Unit Weight FLG	Unit Weight BW
2 (50)	10.00 (254)	5.00 (127)	5.75 (146)	11.00 (279)	12.50 (318)	5 (2)	28 (13)	16 (7)
3 (80)	12.25 (311)	6.75 (172)	7.06 (179)	13.75 (349)	15.25 (387)	9 (4)	52 (24)	32 (15)
4 (100)	14.25 (362)	8.25 (210)	8.06 (205)	16.25 (413)	18.38 (467)	17 (8)	79 (36)	49 (22)
5 (125)	16.75 (425)	9.75 (248)	9.31 (237)	19.25 (489)	21.63 (549)	20 (9)	105 (8)	67 (30)
6 (150)	18.25 (464)	11.25 (286)	10.13 (257)	21.25 (540)	23.68 (606)	26 (12)	140 (64)	92 (42)
8 (200)	22.00 (559)	14.00 (356)	12.13 (308)	26.00 (660)	29.00 (737)	45 (20)	230 (104)	152 (69)
10 (250)	25.00 (635)	17.00 (432)	13.69 (348)	30.00 (762)	33.50 (851)	70 (32)	325 (148)	221 (100)
12 (300)	29.00 (737)	20.00 (508)	15.75 (400)	35.00 (889)	39.00 (991)	110 (50)	500 (227)	340 (154)
14 (350)	32.00 (813)	22.00 (559)	17.38 (441)	39.00 (991)	43.00 (1092)	140 (64)	710 (322)	490 (222)
16 (400)	34.00 (864)	24.00 (610)	18.44 (468)	42.00 (1067)	46.00 (1168)	180 (82)	860 (390)	580 (263)
18 (450)	38.00 (965)	27.00 (686)	20.56 (522)	47.00 (1194)	51.50 (1308)	220 (100)	1025 (465)	725 (329)
20 (500)	41.36 (1051)	30.00 (762)	22.38 (568)	51.38 (1305)	56.38 (1432)	285 (129)	1350 (613)	990 (449)
24 (600)	46.00 (1168)	34.00 (864)	24.88 (632)	58.00 (1473)	63.00 (1600)	430 (195)	2100 (953)	1580 (717)

Notes:
(1) Drains and differentials are optional.
(2) Cover lifting lug standard on sizes 10" and larger.

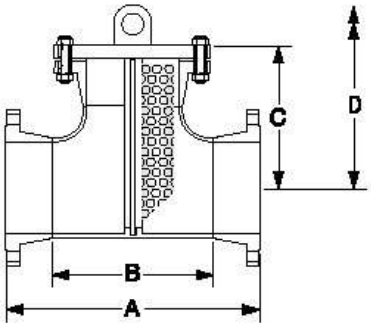
MODEL FT-300 / FT-300BW

Size	A	B	C	D	E	Cover Weight	Unit Weight FLG	Unit Weight BW
2 (50)	10.50 (267)	5.00 (127)	6.13 (156)	11.50 (292)	13.00 (330)	8 (4)	42 (19)	24 (11)
3 (80)	13.00 (330)	6.75 (172)	7.63 (194)	14.50 (368)	16.00 (406)	16 (7)	72 (33)	42 (19)
4 (100)	15.00 (381)	8.25 (210)	8.75 (222)	17.00 (432)	19.13 (486)	27 (12)	125 (57)	75 (34)
5 (125)	17.50 (445)	9.75 (248)	10.13 (257)	20.00 (508)	22.38 (568)	35 (16)	160 (73)	96 (44)
6 (150)	19.00 (483)	11.25 (286)	10.94 (278)	22.00 (559)	24.63 (625)	50 (23)	225 (102)	141 (62)
8 (200)	22.75 (578)	14.00 (356)	13.00 (330)	26.75 (679)	29.75 (756)	81 (37)	350 (159)	216 (98)
10 (250)	26.25 (667)	17.00 (432)	15.00 (381)	31.25 (794)	34.75 (883)	124 (56)	495 (225)	313 (142)
12 (300)	30.25 (768)	20.00 (508)	17.13 (435)	36.25 (921)	40.25 (1022)	185 (84)	765 (347)	485 (220)
14 (350)	33.25 (845)	22.00 (559)	18.75 (476)	40.25 (1022)	44.25 (1124)	250 (114)	1025 (465)	665 (302)
16 (400)	35.50 (902)	24.00 (610)	20.00 (508)	43.50 (11.05)	47.50 (1207)	295 (134)	1320 (599)	820 (372)
18 (450)	39.50 (1003)	27.00 (686)	22.13 (562)	48.50 (1232)	53.00 (1346)	395 (179)	1700 (772)	1060 (481)
20 (500)	32.75 (832)	30.00 (762)	23.88 (606)	42.75 (1086)	47.75 (1213)	505 (229)	2250 (1022)	1450 (658)
24 (600)	47.25 (1200)	34.00 (864)	26.38 (670)	59.25 (1505)	64.25 (1632)	790 (359)	2340 (1544)	2240 (1017)

Notes:
(1) Drains and differentials are optional.
(2) Cover lifting lug standard on sizes 8" and larger.

FLOW SOLUTIONS INTERNATIONAL

FSI- MODEL FT 600 / FT 600BW
DIMENSIONAL SPECIFICATION



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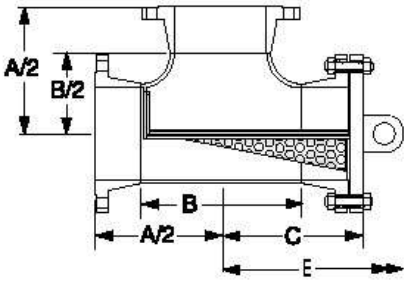
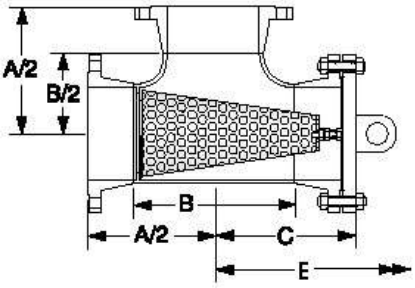


STYLE 2



STYLE 3

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

Size	A	B	C	D	E	Cover Weight	Unit Weight	
							FLG	BW
2 (50)	11.25 (286)	5.00 (127)	6.88 (175)	12.25 (311)	13.75 (349)	10 (5)	52 (24)	28 (13)
3 (80)	13.75 (349)	6.75 (172)	8.38 (213)	15.25 (387)	16.75 (425)	20 (9)	100 (45)	54 (25)
4 (100)	16.75 (425)	8.25 (210)	10.13 (257)	18.75 (476)	20.88 (530)	41 (19)	190 (86)	106 (48)
5 (125)	19.25 (489)	9.75 (248)	11.63 (295)	21.75 (552)	24.13 (613)	68 (31)	295 (134)	159 (72)
6 (150)	21.00 (533)	11.25 (286)	12.63 (321)	24.00 (610)	25.63 (676)	86 (39)	365 (166)	203 (92)
8 (200)	25.00 (635)	14.00 (356)	14.94 (379)	29.00 (737)	32.00 (813)	140 (64)	580 (263)	340 (154)
10 (250)	29.50 (749)	17.00 (432)	17.50 (445)	34.50 (876)	38.00 (965)	230 (104)	900 (409)	520 (236)
12 (300)	32.75 (832)	20.00 (508)	19.25 (489)	38.75 (984)	42.75 (1086)	295 (134)	1150 (522)	700 (318)
14 (350)	35.50 (902)	22.00 (559)	20.75 (527)	42.50 (1080)	46.50 (1181)	355 (161)	1480 (672)	920 (418)
16 (400)	38.50 (978)	24.00 (610)	22.50 (572)	46.50 (1181)	50.50 (1283)	495 (225)	1950 (885)	1170 (531)
18 (450)	42.00 (1067)	27.00 (686)	24.50 (622)	51.00 (1295)	55.50 (1410)	630 (286)	2450 (1112)	1500 (681)
20 (500)	45.50 (1156)	30.00 (762)	26.50 (673)	55.50 (1410)	60.50 (1537)	810 (368)	3150 (1430)	1970 (894)
24 (600)	50.50 (1283)	34.00 (864)	29.50 (749)	62.50 (1588)	67.50 (1715)	1250 (568)	4600 (2088)	2940 (1335)

Notes:
(1) Drains and differentials are optional.
(2) Cover lifting lug standard on sizes 8" and larger.

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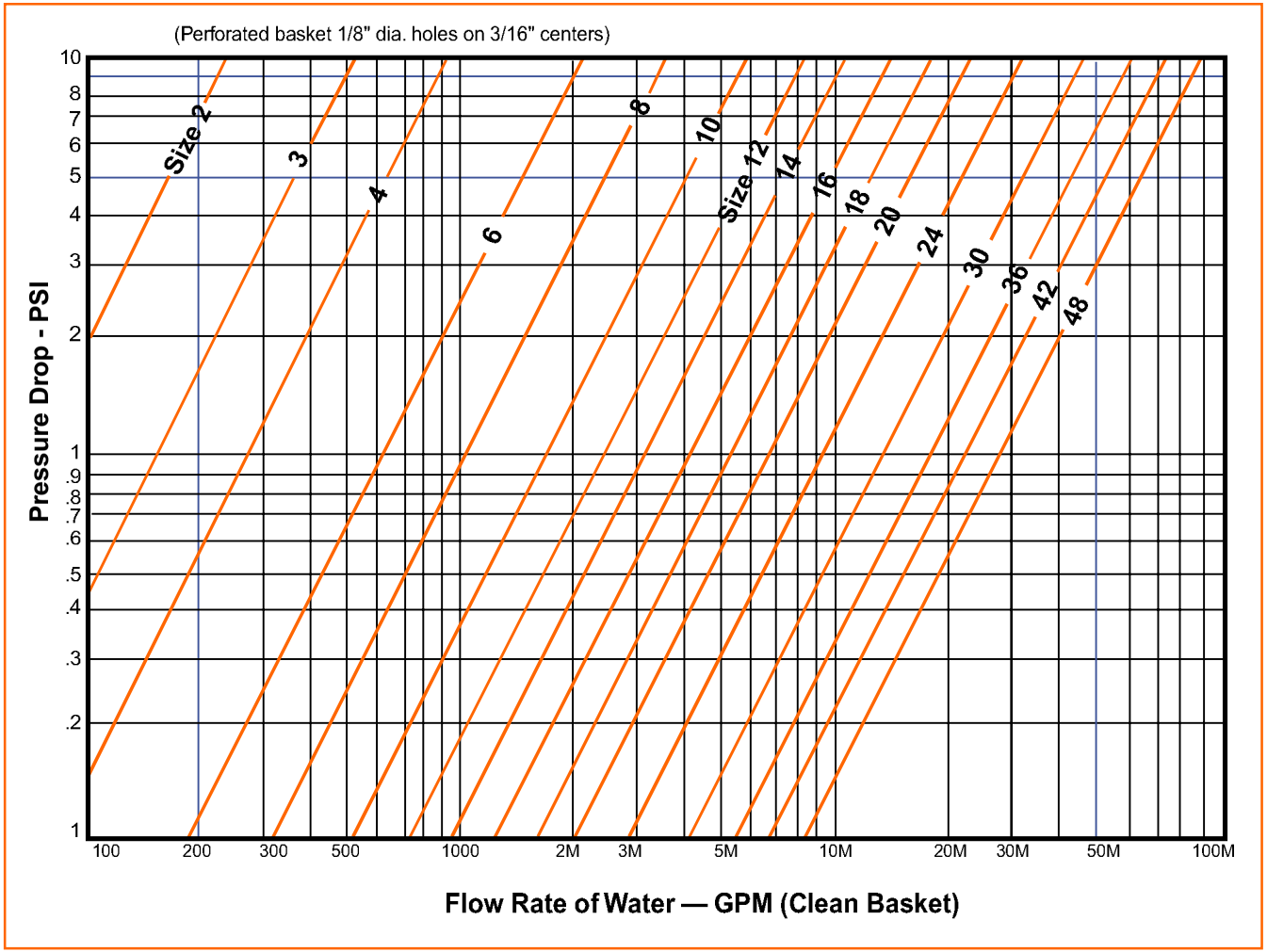
PRESSURE DROP CHART

Fabricated T-Type Strainers



This pressure drop chart is based on the flow of clean water through the FSI Fabricated TEE type Type strainers with 6 mesh (approx 1/8" hole size) perforations.

TO USE CHARTS:

Find your desired rate of flow (GPM) on the left hand side of the chart. Follow its corresponding horizontal line to the point where it intersects the diagonal line indicating the strainer pipe size. From this point of intersection, follow the vertical line down to the bottom of the chart to determine the approximate pressure drop.

CORRECTION FACTORS:

For finer mesh screens that are backed with a perforated sheet, multiply the pressure drops shown at right by the following:

40 mesh	x 1.2
60 mesh	x 1.4
80 mesh	x 1.6
100 mesh	x 1.7

Please refer to the next page for correction factor for liquids of viscosity other than water

FLOW SOLUTIONS INTERNATIONAL INC

Correction Factor Chart
(To be used in conjunction with strainer pressure loss calculations.)

CORRECTION FACTOR TABLE														
VISCOSITY		PERF. (UNLINED)	PERFORATED WITH WIRE CLOTH											
Centistokes	(SSU)		20 MESH	40 MESH	60 MESH	80 MESH	100 MESH	120 MESH	150 MESH	200 MESH	300 MESH	25 Micron	10 Micron	5 Micron
2	30 (Water)	1.00	1.05	1.2	1.4	1.6	1.7	1 . 8	2 . 0	2 . 2	2.35	3.0	3.5	4.0
10	60	1.1	1.15	1.4	1.5	1.7	1.8	2.2	2.3	2 . 4	2.55	---	---	---
20	100	1.2	1.25	1.5	1.6	1.9	2.1	2.35	2.45	2 . 6	2.75	---	---	---
32	150	1.3	1.35	1.6	1.7	2	2.2	2.45	2.85	3	3.15	---	4.0	---
43	200	1.4	1.45	1.7	1.8	2.1	2.3	2.55	3.0	3.2	3.35	4.0	---	---
54	250	1.45	1.5	1.75	1.85	2.2	2.35	2.65	3.1	3.3	3.4	---	---	---
76	350	1.5	1.6	1.8	1.9	2.3	2.45	2.75	3.2	3.4	3.5	---	---	---
100	500	1.6	1.7	1.9	2.1	2.4	2.6	2.8	3.35	3.6	3.75	---	---	---
162	750	1.65	1.9	2.1	2.3	2.5	2.7	2.9	3.5	3.7	3.9	---	---	---
216	1000	1.7	2.0	2.2	2.4	2.6	2.8	3.0	3.6	3.8	4.0	---	---	---
325	1500	1.8	2.1	2.3	2.6	2.75	3	3.2	3.8	4.1	4.3	---	---	---
433	2000	1.9	2.2	2.4	2.7	2.9	3.2	3.4	4.05	4.6	5.5	---	---	---
650	3000	2.0	2.3	2.6	2.9	3.5	3.5	3.8	4.6	5.0	5.2	---	---	---
866	4000	2.1	2.45	2.8	3.15	3.6	3.9	4.2	4.9	---	---	---	---	---
1083	5000	2.2	2.6	3	3.4	3.8	4.2	4.6	---	---	---	---	---	---
1624	7500	2.35	2.8	3.4	3.8	4.3	4.75	---	---	---	---	---	---	---
2200	10000	2.5	3.0	3.5	4.0	4.5	5.0	---	---	---	---	---	---	---
3000	13500	3.0	3.5	---	---	---	---	---	---	---	---	---	---	---
5000	22500	4.0	4.5	5.0	5.5	6.0	6.5	7.5	8.0	8.5	9.0	9.5	10.0	10.5
6000	27300	4.2	---	---	---	---	---	---	---	---	---	---	---	---
15000	67000	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0
18900	86000	8.0	8.5	---	---	---	---	---	---	---	---	---	---	---
20000	89300	8.5	9.0	---	---	---	---	---	---	---	---	---	---	---

These multipliers should be used to determine pressure drops for filters fitted with mesh lining or handling liquids of viscosity other than water.

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Correction Factor Chart for Mesh and Viscosity