

Applications

- Process Industry
- Power industry
- Chemical Industry
- Oil and Gas
- Metals and Mining
- Water and Waste
- Pulp and Paper

Suction Diffusers

Pressures to 790 PSIG
Temperatures to 800°F

FEATURES

- Filtration Down to 40 Microns
- Large Diffuser Screens
- Long and Short Neck Versions Available
- Fabricated Construction



MATERIALS

- Carbon Steel
- Stainless Steel
- Other materials upon request

END CONNECTIONS

- Flat Faced
- Raised Face
- Buttweld

SIZES RANGES

- Fabricated-Custom sized to meet Requirements

RATINGS

- ASME Class 150
- ASME Class 300



FF SERIES FABRICATED SUCTION DIFFUSERS

PRESSURES TO 740 PSIG (51 BARG)

TEMPERATURES TO 800°F (427°C)

Strainer, flow straightener, elbow and pipe reducer for pump applications

Standard and custom engineered designs

Integral straightening vanes reduce turbulence to improve pump efficiency

One, three or five pipe diameters of flow straightening (Type 1, 3 or 5)

Standard, undersized or oversized outlet connections

Direct mount to the suction side of a pump in either horizontal or vertical position

Supporting pads for easy mounting of standard I.D. support foot

Drain connection with plug furnished as standard

APPLICATIONS

Pump Protection

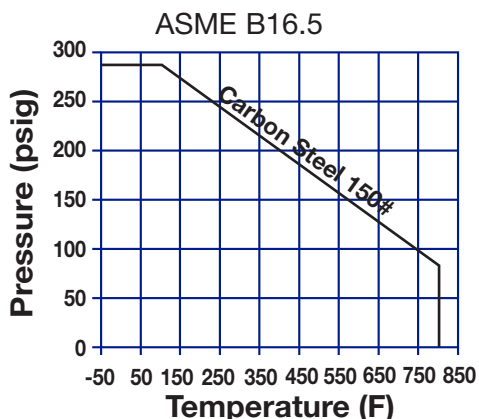
APPLICABLE CODES

Designed and manufactured in accordance with ASME B31.1, ASME B31.3 and/or ASME Section VIII, Div. 1

CRN available in all Provinces

Welders certified to ASME Section IX

PRESSURE/TEMPERATURE CHART



Contact Factory for higher ratings.

MODELS see Ordering Code below

Type 1 - One pipe diameter of flow straightening

Type 3 - Three pipe diameters of flow straightening

Type 5 - Five pipe diameters of flow straightening

OPTIONS

Customer specified materials, sizes and designs

Other flow straightening quality designs

Hinged or quick opening/operator assisted covers

Vent and/or differential pressure connections

ASME "U" stamped vessels on request

Other perforated screen and mesh liner baskets

Data Packages and MTR's available on request

Fabricated Suction Diffuser Ordering Code

Model	Material	Inlet Size	Class	Con- nections	Dash	Cover	Perf.	Mesh
F F 1	C	T	1	F	-	J	2	2
1	2	3	4	5	6	7	8	9
10	11							

Model - Position 1 - 3

FF1 - Type 1 - Standard Outlet
 FF2 - Type 1 - Undersized Outlet
 FF3 - Type 1 - Oversized Outlet
 FF4 - Type 3 - Standard Outlet
 FF5 - Type 3 - Undersized Outlet
 FF6 - Type 3 - Oversized Outlet
 FF7 - Type 5 - Standard Outlet
 FF8 - Type 5 - Undersized Outlet
 FF9 - Type 5 - Oversized Outlet
 FFZ - Custom Configuration

Standard Outlet is one size smaller than the inlet.

Undersized Outlet is two sizes smaller than the inlet.

Oversized Outlet is the same size as the inlet.

Material - Position 4

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

Inlet Size - Position 5

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

Class - Position 6

A - 125
 1 - 150
 2 - 250
 3 - 300
 Z - Other

Connection - Inlet Position 7

F - Flat Face Flange
 J - Ring Joint
 R - Raised Face Flange
 Z - Other

Dash - Position 8

Note:
 Standard Connections
 RF inlet x FF outlet

Cover - Position 9

B - Bolted
 C - C-Clamp
 J - Bolted w/ Hinge'
 D - Davit Bolted
 H - T-Bolt Hinged
 T - Threaded Hinged
 Y - Yoke Hinged
 Z - Other

1. J-Hinged Cover is standard.

2. For other screen materials, contact factory.

Perf. - Position 10

304SS Material²

A - None	5 - 5/32"
B - 3/64"	6 - 3/16"
1 - 1/32"	7 - 7/32"
2 - 1/16"	8 - 1/4"
3 - 3/32"	9 - 3/8"
4 - 1/8"	Z - Other

Mesh² - Position 11

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

FF SERIES FABRICATED SUCTION DIFFUSERS

SPECIFICATION

Suction Diffuser shall mount directly to the suction side of the pump in either a horizontal or vertical position. The Suction Diffuser shall be manufactured in accordance with ASME B31.1, ASME B31.3 and /or ASME Section VIII, Div. I. The Suction Diffuser shall be available with reduced outlet sizes. The Suction Diffuser shall be _____ inlet by _____ outlet and shall have a _____ perforated screen. The Suction Diffuser shall have the equivalent of _____ pipe diameters of flow straightening. The Suction Diffuser shall be SSI FF Series.

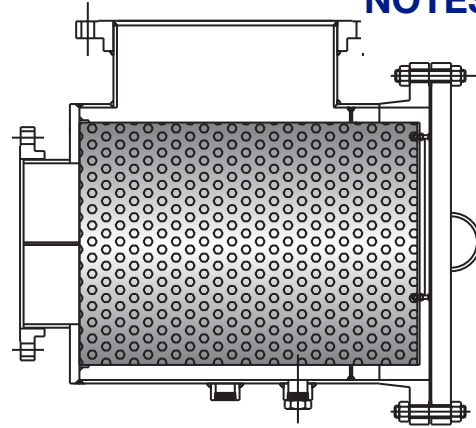
MATERIALS OF CONSTRUCTION*-(Std Carbon Steel Body)

Body	SA106-B CS
Cover	SA105 CS
Flanges	SA105 CS
Reducer Plate	SA516-70 CS
Coupling	SA105 CS
Plug	SA105 CS
Screen ¹	304 SS
Cover Gasket ¹	304 SS Spiral Wound
Stud	SA193-B7 CS
Nut	SA194-2H CS

* Other materials are available upon request.
Standard materials are subject to change.
Please contact factory for Certified drawings.

1 Recommended Spare Parts.

NOTES:



Connections:
10" x 6" – 24" x 24" RF Inlet x FF Outlet

SCREEN OPENINGS

SIZE	STANDARD SCREEN	MATERIALS
All	1/8" Perf.	304 SS

OPEN AREA RATIOS with Standard Perforated Screen

Opening 40%, 1/8" Diameter

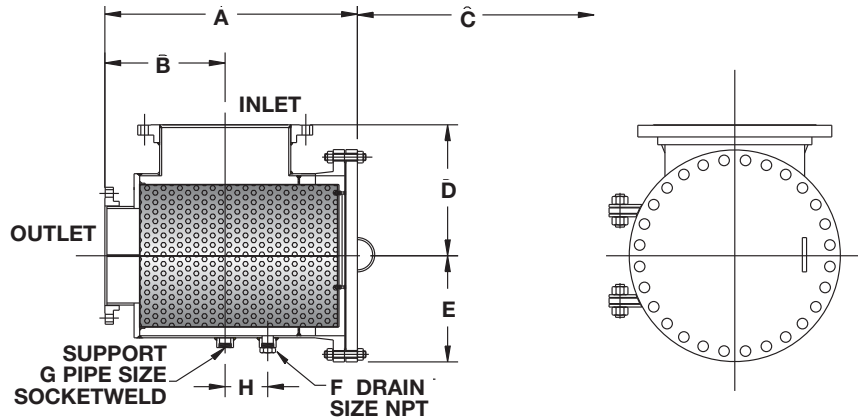
Size Inlet X Outlet	Nominal Outlet Area (in ²)	Gross Screen Area (in ²)	Free Screen Area (in ²)	Open Area Ratio (OAR)
10 x 6	28.89	455	182	6.3
10 x 8	50.03	455	182	3.6
10 x 10	78.85	700	280	3.6
12 x 8	50.03	524	210	4.2
12 x 10	78.85	700	280	3.6
12 x 12	113.10	811	324	2.9
14 x 10	78.85	700	280	3.6
14 x 12	113.10	811	324	2.9
14 x 14	137.89	1162	465	3.4
16 x 12	113.10	811	324	2.9
16 x 14	137.89	1162	465	3.4
16 x 16	182.65	1275	510	2.8
18 x 14	137.89	1162	465	3.4
18 x 16	182.65	1275	510	2.8
18 x 18	233.71	1470	588	2.5
20 x 16	182.65	1275	510	2.8
20 x 18	233.71	1470	588	2.5
20 x 20	291.04	2454	982	3.4
24 x 18	233.71	1470	588	2.5
24 x 20	291.04	2454	982	3.4
24 x 24	424.56	2454	982	2.3

OAR = Free Screen Area divided by Nominal Outlet Area.
Free Screen Area = Opening % times Gross Screen Area.
Values shown are approximate. Contact factory for exact ratios.

FF SERIES

FABRICATED SUCTION DIFFUSERS

DIMENSIONS & WEIGHTS



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

Inlet	Outlet	A			B			C'	D	E	F	G	H	Weight ²
		TYPE 1	TYPE 3	TYPE 5	TYPE 1	TYPE 3	TYPE 5							
Standard Outlet														
10 (250)	8 (200)	22 ⁵ / ₁₆ (575)	26 ⁵ / ₁₆ (676)	30 ⁵ / ₁₆ (778)	11 ⁵ / ₁₆ (283)	15 ⁵ / ₁₆ (384)	19 ⁵ / ₁₆ (486)	17 ⁵ / ₁₆ (441)	12 ⁵ / ₁₆ (321)	8 (203)	1 (40)	1 (40)	4 ¹ / ₂ (105)	339 (154)
12 (300)	10 (250)	25 ¹ / ₁₆ (656)	30 ¹ / ₁₆ (783)	35 ¹ / ₁₆ (910)	13 ¹ / ₁₆ (333)	18 ¹ / ₁₆ (460)	23 ¹ / ₁₆ (587)	18 ¹ / ₁₆ (478)	12 ¹ / ₁₆ (327)	10 ¹ / ₂ (267)	1 ¹ / ₂ (40)	1 ¹ / ₂ (40)	4 ³ / ₄ (121)	530 (240)
14 (350)	12 (300)	26 ³ / ₁₆ (670)	32 ³ / ₁₆ (822)	38 ³ / ₁₆ (975)	13 ³ / ₁₆ (346)	19 ³ / ₁₆ (499)	25 ³ / ₁₆ (651)	21 ³ / ₁₆ (546)	15 ³ / ₁₆ (387)	11 ³ / ₄ (298)	1 ¹ / ₂ (40)	1 ¹ / ₂ (40)	5 ¹ / ₄ (133)	808 (366)
16 (400)	14 (350)	32 ⁵ / ₁₆ (821)	39 ⁵ / ₁₆ (998)	46 ⁵ / ₁₆ (1,176)	16 ⁵ / ₁₆ (425)	23 ⁵ / ₁₆ (603)	30 ⁵ / ₁₆ (781)	26 ⁵ / ₁₆ (679)	16 ⁵ / ₁₆ (413)	12 ⁵ / ₁₆ (318)	2 (50)	2 (50)	5 ¹ / ₂ (140)	1086 (493)
18 (450)	16 (400)	32 ⁷ / ₁₆ (827)	40 ⁷ / ₁₆ (1,030)	48 ⁷ / ₁₆ (1,233)	10 ⁷ / ₁₆ (270)	18 ⁷ / ₁₆ (473)	26 ⁷ / ₁₆ (676)	26 ⁷ / ₁₆ (676)	17 ⁷ / ₁₆ (448)	13 ³ / ₄ (349)	2 (50)	2 (50)	6 ¹ / ₂ (165)	1256 (570)
20 (500)	18 (450)	32 ⁹ / ₁₆ (816)	41 ⁹ / ₁₆ (1,045)	50 ⁹ / ₁₆ (1,273)	23 ⁹ / ₁₆ (588)	32 ⁹ / ₁₆ (816)	41 ⁹ / ₁₆ (1,045)	25 ⁹ / ₁₆ (641)	20 ⁹ / ₁₆ (511)	16 (406)	2 (50)	2 (50)	2 ⁷ / ₈ (73)	1793 (813)
24 (600)	20 (500)	40 (1,016)	50 (1,270)	60 (1,524)	21 ¹ / ₁₆ (537)	31 ¹ / ₁₆ (791)	41 ¹ / ₁₆ (1,045)	32 ¹ / ₁₆ (826)	22 (559)	17 ¹ / ₂ (444)	2 (50)	2 (50)	9 (227)	3545 (1,608)
Undersized Outlet														
10 (250)	6 (150)	21 ¹ / ₁₆ (556)	24 ¹ / ₁₆ (632)	27 ¹ / ₁₆ (708)	11 ¹ / ₁₆ (298)	14 ¹ / ₁₆ (375)	17 ¹ / ₁₆ (451)	17 ¹ / ₁₆ (440)	11 ¹ / ₁₆ (283)	8 (203)	1 (25)	1 (25)	4 (102)	261 (118)
12 (300)	8 (200)	22 ¹ / ₁₆ (572)	26 ¹ / ₁₆ (673)	30 ¹ / ₁₆ (775)	11 ¹ / ₁₆ (286)	15 ¹ / ₁₆ (387)	19 ¹ / ₁₆ (489)	18 ¹ / ₁₆ (478)	12 ¹ / ₁₆ (327)	9 ¹ / ₂ (241)	1 ¹ / ₂ (40)	1 ¹ / ₂ (40)	4 ³ / ₄ (118)	437 (198)
14 (350)	10 (250)	25 ¹ / ₁₆ (657)	30 ¹ / ₁₆ (784)	35 ¹ / ₁₆ (911)	13 ¹ / ₁₆ (333)	18 ¹ / ₁₆ (460)	23 ¹ / ₁₆ (587)	18 ¹ / ₁₆ (480)	14 (356)	10 ¹ / ₂ (267)	1 ¹ / ₂ (40)	1 ¹ / ₂ (40)	5 ¹ / ₄ (133)	670 (304)
16 (400)	12 (300)	26 ³ / ₁₆ (667)	32 ³ / ₁₆ (819)	38 ³ / ₁₆ (972)	13.63 (346)	19 ³ / ₁₆ (499)	25 ³ / ₁₆ (651)	21 ³ / ₁₆ (546)	15 ³ / ₁₆ (394)	11 ³ / ₄ (298)	2 (50)	2 (50)	5 ⁵ / ₁₆ (129)	913 (414)
18 (450)	14 (350)	29 ⁵ / ₁₆ (744)	36 ⁵ / ₁₆ (922)	43 ⁵ / ₁₆ (1,100)	16 ⁵ / ₁₆ (425)	23 ⁵ / ₁₆ (603)	30 ⁵ / ₁₆ (781)	26 ⁵ / ₁₆ (679)	16 ⁵ / ₁₆ (416)	12 ⁵ / ₁₆ (318)	2 (50)	2 (50)	5 ⁷ / ₈ (149)	1058 (480)
20 (500)	16 (400)	32 ⁷ / ₁₆ (827)	40 ⁷ / ₁₆ (1,030)	48 ⁷ / ₁₆ (1,233)	17 ⁷ / ₁₆ (437)	25 ⁷ / ₁₆ (640)	33 ⁷ / ₁₆ (843)	26 ⁷ / ₁₆ (676)	17 ⁷ / ₁₆ (454)	13 ³ / ₄ (349)	2 (50)	2 (50)	6 ¹ / ₈ (168)	1452 (659)
24 (600)	18 (450)	32 ⁹ / ₁₆ (816)	41 ⁹ / ₁₆ (1,045)	50 ⁹ / ₁₆ (1,273)	17 (432)	26 (660)	35 (889)	25 ⁹ / ₁₆ (651)	23 ⁹ / ₁₆ (607)	16 (406)	2 (50)	2 (50)	7 ¹ / ₈ (198)	2382 (1,080)
Oversized Outlet														
10 (250)	10 (250)	25 ¹ / ₁₆ (656)	30 ¹ / ₁₆ (783)	35 ¹ / ₁₆ (910)	13 ¹ / ₁₆ (333)	18 ¹ / ₁₆ (460)	23 ¹ / ₁₆ (587)	18 ¹ / ₁₆ (478)	13 ¹ / ₁₆ (346)	10 ¹ / ₂ (267)	1 (25)	1 (25)	5 ⁵ / ₁₆ (135)	420 (190)
12 (300)	12 (300)	26 ³ / ₁₆ (670)	32 ³ / ₁₆ (822)	38 ³ / ₁₆ (975)	13 ³ / ₁₆ (346)	19 ³ / ₁₆ (499)	25 ³ / ₁₆ (651)	21 ³ / ₁₆ (546)	15 ³ / ₁₆ (384)	11 ³ / ₄ (298)	1 ¹ / ₂ (40)	1 ¹ / ₂ (40)	4 ¹ / ₁₆ (119)	650 (295)
14 (350)	14 (350)	32 ⁵ / ₁₆ (816)	39 ⁵ / ₁₆ (994)	46 ⁵ / ₁₆ (1,172)	16 ⁵ / ₁₆ (425)	23 ⁵ / ₁₆ (603)	30 ⁵ / ₁₆ (781)	26 ⁵ / ₁₆ (679)	16 (406)	12 ⁵ / ₁₆ (318)	1 ¹ / ₂ (40)	1 ¹ / ₂ (40)	5 (127)	964 (437)
16 (400)	16 (400)	32 ⁷ / ₁₆ (827)	40 ⁷ / ₁₆ (1,030)	48 ⁷ / ₁₆ (1,233)	17 ⁷ / ₁₆ (437)	25 ⁷ / ₁₆ (640)	33 ⁷ / ₁₆ (843)	26 ⁷ / ₁₆ (676)	17 ⁷ / ₁₆ (445)	13 ³ / ₄ (349)	2 (50)	2 (50)	8 ¹ / ₁₆ (205)	1280 (580)
18 (450)	18 (450)	32 ⁹ / ₁₆ (816)	41 ⁹ / ₁₆ (1,045)	50 ⁹ / ₁₆ (1,273)	17 (432)	26 (660)	35 (889)	25 ⁹ / ₁₆ (641)	19 ⁹ / ₁₆ (505)	16 (406)	2 (50)	2 (50)	5 ⁵ / ₈ (151)	1572 (713)
20 (500)	20 (500)	40 (1,016)	50 (1,270)	60 (1,524)	21 ¹ / ₁₆ (537)	31 ¹ / ₁₆ (791)	41 ¹ / ₁₆ (1,045)	32 ¹ / ₁₆ (826)	21 ¹ / ₁₆ (549)	17 ¹ / ₂ (444)	2 (50)	2 (50)	8 (203)	2560 (1,161)
24 (600)	24 (600)	41 ¹ / ₁₆ (1,051)	53 ¹ / ₁₆ (1,356)	65 ¹ / ₁₆ (1,661)	22 ¹ / ₁₆ (562)	34 ¹ / ₁₆ (867)	46 ¹ / ₁₆ (1,172)	34 ¹ / ₁₆ (886)	23 ¹ / ₁₆ (606)	17 ¹ / ₂ (444)	2 (50)	2 (50)	7 ⁵ / ₁₆ (198)	3600 (1,633)

1. Distance required for screen removal.

2. Weight shown for Type 1. For Type 3 and 5 multiply Type 1 weight by 1.1 and 1.2, respectively.

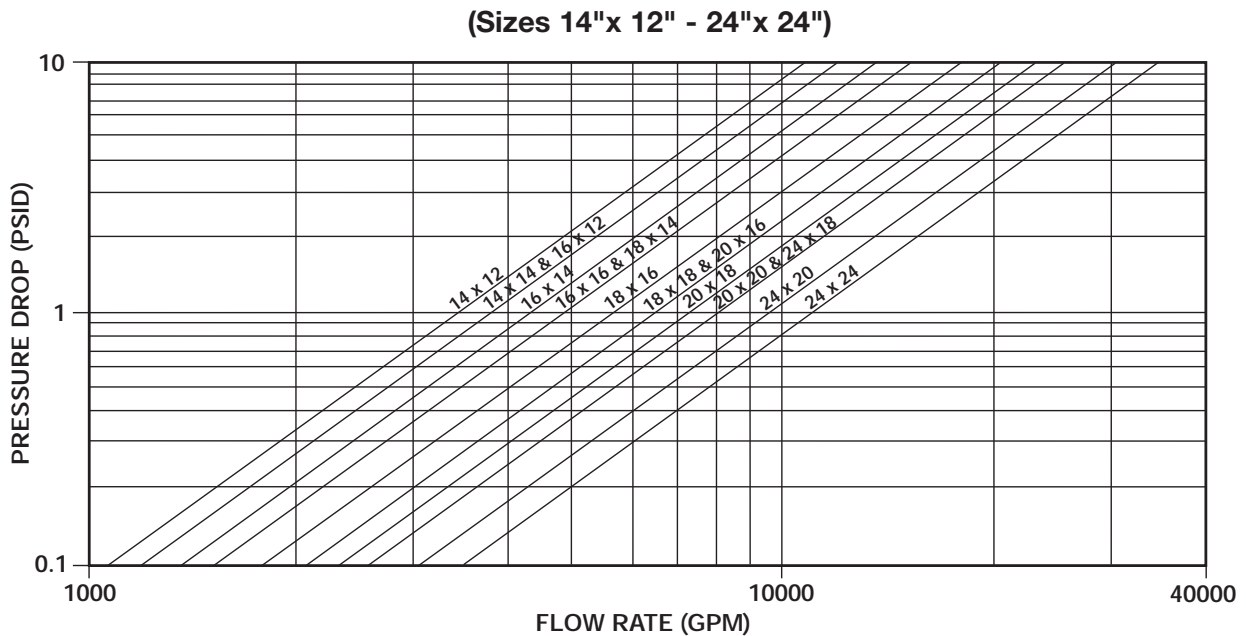
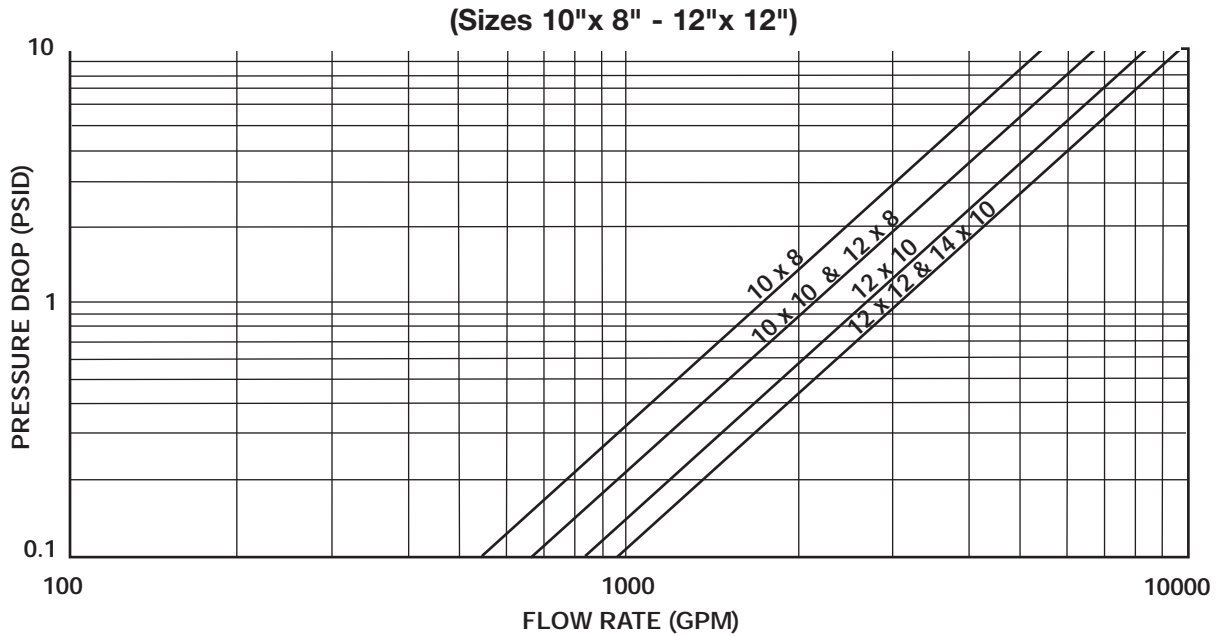
* Dimensions are subject to change. Contact factory for certified drawings when required. Custom dimensions available upon request.

FF SERIES

FABRICATED SUCTION DIFFUSERS

PRESSURE DROP VS FLOW RATE

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



* For other viscous liquids or mesh liners, contact factory.

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