



Bulletin B-820D

Bell & Gossett



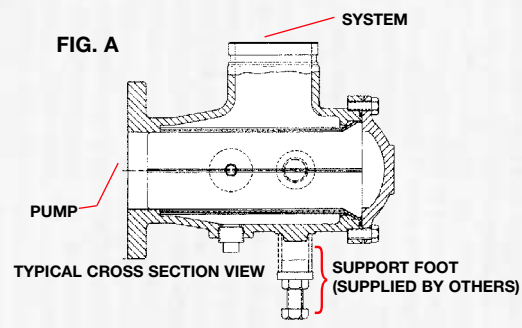
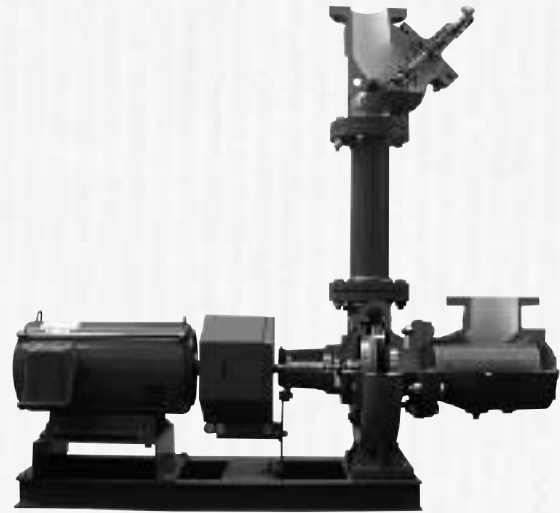
Suction Diffuser Centrifugal Pump Accessories

- **Oversize-Orifice Cylinder** assures minimum pressure drop
- **Full Length Straightening Vanes** assure uniform flow pattern for pump inlet
- **Easily Removable End Cap** with reusable O-ring
- **Pressure Gauge Tappings** permit checking of system conditions
- **Fine Mesh Throwing Start-Up Strainer** assures cleaner, more trouble free system
- **Plug/Blow Down Connection** permits routine maintenance
- **NPT, Flanged or Grooved End Connections** guarantee the right suction diffuser selection

Bell & Gossett Suction Diffusers Offer These Advantages

CENTRIFUGAL PUMP PROTECTION

- **DIFFUSER** — Provides ideal flow conditions for the pump providing NPSH requirements are met. Diffuser orifice cylinder serves as pump strainer with much more free area than conventional strainers.
- **START-UP STRAINER** — A necessity for hydronic systems and standard for suction diffusers for closed and domestic water systems. Remove it later without losing the protection of the larger perforations in the orifice cylinder.
- **FIELD SERVICEABLE** — All internal parts are easily replaced including the full length straightening vanes.
- **SAVES TIME** — No intermediate piping. Fewer joints to make.
- **SAVES SPACE** — Eliminates long pipe entrance, conventional strainer, pipe saddle, and floor flange.
- **SAVES MONEY** — Diffuser, strainer ... all in one piece. Fewer pipe joints. Faster to install.
- **ELIMINATES TROUBLE** — Good flow conditions promote trouble-free operation.
- **ANGLE BODY** — Provides an elbow which facilitates a close transition between system return piping and the system pump suction. Some NPT and flanged models perform as reducing elbows.

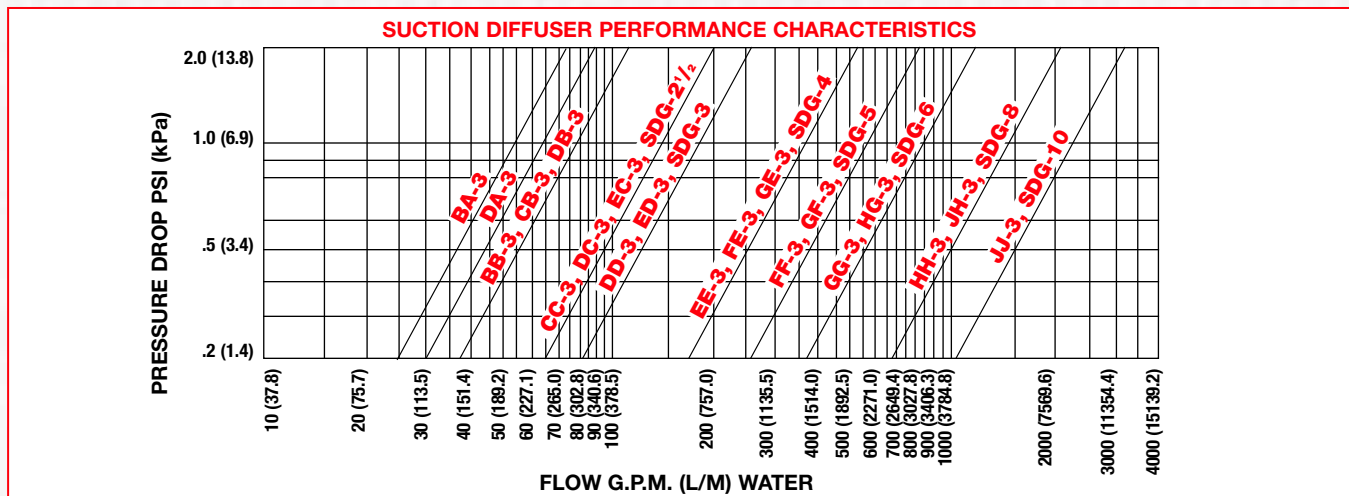


CONSTRUCTION MATERIALS

Body & Cover:	NPT & Flanged Models	Cast Iron
	Grooved Models	Ductile Iron
Straightening Vanes:	X Models	Steel
	Z & Grooved Models	Stainless Steel
Orifice Cylinder:	X Models	Steel
	Z & Grooved Models	Stainless Steel
Start Up Strainer:	X, Z & Grooved Models . . .	16 Mesh Bronze
O-Ring Seal:	All Models	EPDM

OPERATING DATA

Maximum Working Pressure	PSIG (kPa)
Cast Iron Models	175 (1206.6)
Ductile Iron Models	
Grooved System with	
Flanged pump connection	175 (1206.6)



DIMENSIONS & WEIGHTS

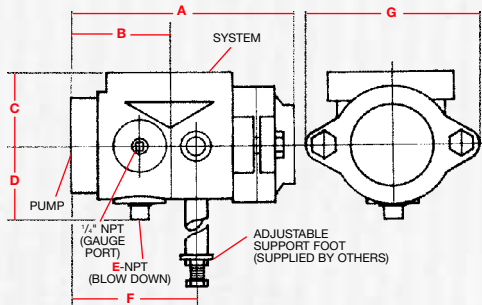


FIG. B NPT MODEL

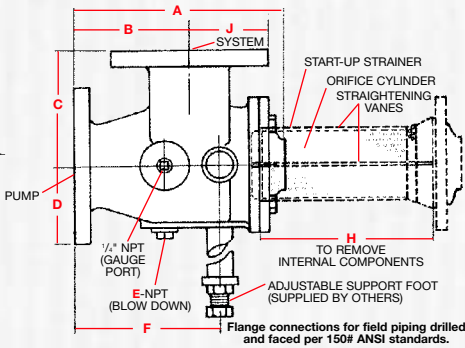


FIG. C FLANGED MODEL

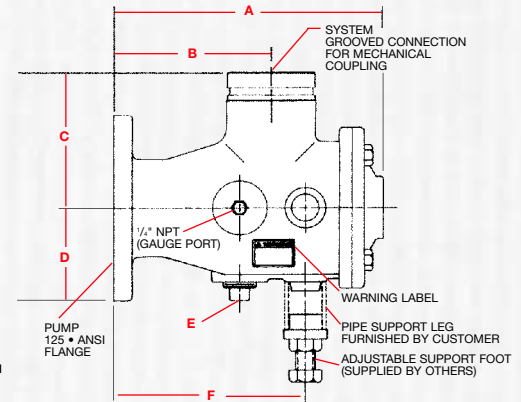


FIG. D GROOVE TO FLANGE MODEL

MODEL NO.	DIMENSION IN INCHES (MM)											ORIFICE CYLINDER FREE AREA SQ. IN. (mm ²)	APPROX. SHPG. WT. LBS. (Kg)		
	SYSTEM SIDE	PUMP SIDE	A	B	C	D	E	F	G	H*	J				
NPT & FLANGED CAST IRON MODELS															
BA-3	2 (51)	N	1 1/2 (38)	N	6 13/16 (173)	3 (76)	2 1/4 (57)	2 5/8 (60)	3/4 (19)	3 13/16 (97)	5 1/4 (133)	8 (203)	NA	11 (7,097)	13 (5.9)
BB-3			2 (51)		8 3/8 (213)	3 3/8 (98)	2 3/4 (70)	2 3/4 (70)		3 7/8 (98)	5 1/4 (146)	9 (229)		20.5 (13,226)	14 (6.4)
CB-3	2 1/2 (64)	F	2 1/2 (64)	F	9 (229)	4 3/4 (121)	4 3/4 (121)	3 1/2 (89)	3/4 (19)	5 5/8 (143)	NA	11 (279)	3 1/2 (89)	26 (16,774)	36 (16.3)
CC-3			2 1/2 (64)		9 (229)	4 3/4 (121)	4 3/4 (121)	3 1/2 (89)		5 5/8 (143)	NA	11 (279)		3 1/2 (89)	26 (16,774)
DA-3	3 (76)	N	1 1/2 (38)	N	8 3/8 (213)	3 3/8 (98)	2 3/4 (70)	2 3/4 (70)	3/4 (19)	3 7/8 (98)	5 1/4 (146)	9 (229)	NA	20.5 (13,226)	17 (7.7)
DB-3			2 (51)		8 3/8 (213)	3 3/8 (98)	2 3/4 (70)	2 3/4 (70)		3 7/8 (98)	5 1/4 (146)	9 (229)		NA	20.5 (13,226)
DC-3	4 (102)	F	2 1/2 (64)	F	9 (229)	5 (127)	5 (127)	3 1/2 (89)	3/4 (19)	5 5/8 (143)	NA	11 (279)	3 3/4 (95)	26 (16,774)	44 (20.0)
DD-3			3 (76)		9 (229)	5 (127)	5 (127)	3 1/2 (89)		5 5/8 (143)	NA	11 (279)		3 3/4 (95)	26 (16,774)
EC-3	4 (102)	F	2 1/2 (64)	F	9 (229)	6 1/2 (165)	6 1/2 (165)	3 1/2 (89)	1 (25)	5 5/8 (143)	NA	11 (279)	4 1/2 (114)	26 (16,774)	42 (19.1)
ED-3			3 (76)		9 (229)	6 1/2 (165)	6 1/2 (165)	3 1/2 (89)		5 5/8 (143)	NA	11 (279)		4 1/2 (114)	26 (16,774)
EE-3	5 (127)	F	4 (102)	F	10 (254)	7 1/2 (191)	7 1/2 (191)	4 1/2 (114)	1 (25)	6 7/8 (175)	NA	13 (330)	5 (127)	37.5 (24,194)	55 (24.9)
FE-3			4 (102)		10 (254)	7 1/2 (191)	7 1/2 (191)	4 1/2 (114)		6 7/8 (175)	NA	13 (330)		5 (127)	37.5 (24,194)
FF-3	6 (152)	F	5 (127)	F	12 5/8 (321)	8 (203)	8 (203)	5 (127)	1 1/4 (32)	7 7/8 (194)	NA	14 (356)	15 (381)	65 (41,935)	72 (32.7)
GE-3			4 (102)		12 5/8 (321)	8 (203)	8 (203)	5 (127)		7 7/8 (194)	NA	14 (356)		15 (381)	65 (41,935)
GF-3	8 (203)	F	5 (127)	F	14 1/4 (362)	8 (203)	8 (203)	5 (127)	1 1/4 (32)	9 (229)	NA	17 (432)	5 1/2 (140)	90 (58,064)	100 (45.4)
GG-3			6 (152)		14 1/4 (362)	8 (203)	8 (203)	5 (127)		9 (229)	NA	17 (432)		5 1/2 (140)	90 (58,064)
HG-3	8 (203)	F	6 (152)	F	16 3/8 (416)	9 (229)	9 (229)	5 1/2 (140)	1 1/4 (32)	10 1/8 (257)	NA	18 (457)	6 3/4 (171)	127 (81,935)	134 (60.8)
HH-3			8 (203)		16 3/8 (416)	9 (229)	9 (229)	5 1/2 (140)		10 1/8 (257)	NA	18 (457)		6 3/4 (171)	127 (81,935)
JH-3	10 (254)	F	8 (203)	F	20 1/2 (521)	10 (254)	11 (279)	6 3/4 (171)	1 1/4 (32)	11 (279)	NA	21 (533)	8 (203)	218 (140,645)	250 (113.4)
JJ-3			10 (254)		20 1/2 (521)	10 (254)	11 (279)	6 3/4 (171)		11 (279)	NA	21 (533)		8 (203)	218 (140,645)
SDG-2 1/2	2 1/2 (64)	2 1/2 (64)	9 3/16 (249)	5 3/8 (141)	4 1/4 (121)	3 1/2 (89)	3/4 (19)	6 7/16 (164)	1 (25)	11 (279)	1 7/16 (37)	26 (168)	29 (13.2)		
SDG-3	3 (76)	3 (76)	10 3/16 (275)	6 1/8 (160)	5 1/2 (140)	3 3/4 (95)	1 (25)	7 11/16 (195)		1 1/4 (32)	12 (305)	1 3/4 (44)	37.5 (242)	40 (18.1)	
SDG-4	4 (102)	4 (102)	13 1/2 (343)	7 3/8 (187)	6 1/2 (165)	4 1/2 (114)	1 (25)	8 1/2 (216)	1 1/4 (32)		14 (356)	2 1/4 (57)	65 (419)	59 (26.8)	
SDG-5	5 (127)	5 (127)	15 1/8 (384)	8 3/8 (213)	7 1/2 (191)	5 (127)	1 1/4 (32)	9 7/8 (251)		1 1/4 (32)	15 (381)	2 3/8 (71)	90 (581)	85 (38.6)	
SDG-6	6 (152)	6 (152)	17 3/8 (441)	9 (229)	8 (203)	5 1/2 (140)	1 1/4 (32)	11 1/8 (283)	1 1/4 (32)		17 (432)	3 3/16 (84)	127 (819)	115 (52.2)	
SDG-8	8 (203)	8 (203)	21 1/4 (552)	10 1/4 (260)	9 (229)	6 3/4 (171)	1 1/4 (32)	12 1/4 (311)		1 1/4 (32)	21 (533)	4 5/16 (110)	218 (1406)	220 (99.8)	
SDG-10	10 (254)	10 (254)	26 5/8 (676)	12 3/4 (314)	11 (279)	8 (203)	1 1/4 (32)	14 7/8 (378)	1 1/4 (32)		25 (655)	5 5/8 (137)	338 (2180)	372 (168.7)	

*Includes 2 1/2" (63.5 mm) clearance. N = NPT. F = Flanged. NA = Not Applicable.

TYPICAL SPECIFICATION

Furnish and install as shown on plans, an angle pattern flow straightening fitting equipped with a combination diffuser-strainer-orifice cylinder, flow straightening vanes, start-up strainer and adjustable support foot (supplied by others). The combination diffuser-strainer-orifice cylinder shall be designed to withstand pressure differential equal to the

system pump shutoff head (maximum _____ PSIG) and shall have a free area equal to five times the cross section area of the pump suction opening. The length of the flow straightening vanes shall be no less than $2\frac{1}{2}$ times the diameter of the system pump suction connection.

SELECT PARAGRAPH A, B OR C

A. Cast Iron NPT and Flanged Models Rated for a Maximum Working Pressure of 175 PSIG.

The flow straightening fitting shall be of cast iron construction with _____" (select one: NPT or Flanged) _____ system and _____" (select one: NPT or Flanged) _____ pump connections. The fitting shall have a (select one: Carbon or Stainless) _____ steel combination diffuser-strainer-orifice cylinder with $\frac{3}{16}$ " diameter perforations to protect the system pump. The full length (select one: Carbon or Stainless) _____ steel flow straightening vanes shall provide nonturbulent flow to the suction side of the system pump. The start-up strainer shall be of 16 mesh bronze, and the support foot (supplied by others) shall eliminate pipe strain at the flow fitting/pump connection. All internal components shall be replaceable.

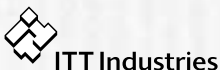
B. Ductile Iron Models with a Grooved System and Flanged Pump Connection Rated for a Maximum Working Pressure of 175 PSIG.

The Flow Straightening Fitting shall be of ductile iron construction with a _____" grooved system connection and a _____" flanged pump connection.

The fitting shall have a stainless steel combination diffuser-strainer-orifice cylinder with $\frac{3}{16}$ " diameter perforations to protect the system pump, and full length flow straightening vanes shall provide nonturbulent flow to the suction side of the system pump. The start-up strainer shall be of 16 mesh bronze, and the support foot (supplied by others) shall eliminate pipe strain at the flow fitting/pump connection. All internal components shall be replaceable.

C. The Flow Straightening Fitting shall be of ductile iron construction with grooved system and pump connections. The fitting shall have a stainless steel combination diffuser-strainer-orifice cylinder with $\frac{3}{16}$ " diameter perforations to protect the system pump, and full length flow straightening vanes shall provide nonturbulent flow to the suction side of the system pump. The start-up strainer shall be of 16 mesh bronze, and the support foot (supplied by others) shall eliminate pipe strain at the flow fitting/pump connection. All internal components shall be replaceable.

Each flow straightening fitting shall be ITT Bell & Gossett Model No. _____ Suction Diffuser.



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