



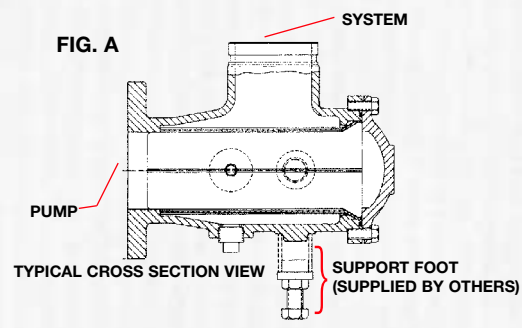
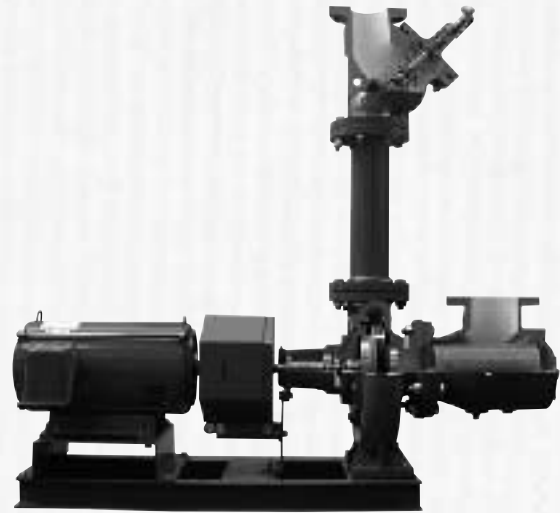
## Suction Diffuser Centrifugal Pump Accessories

- **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.

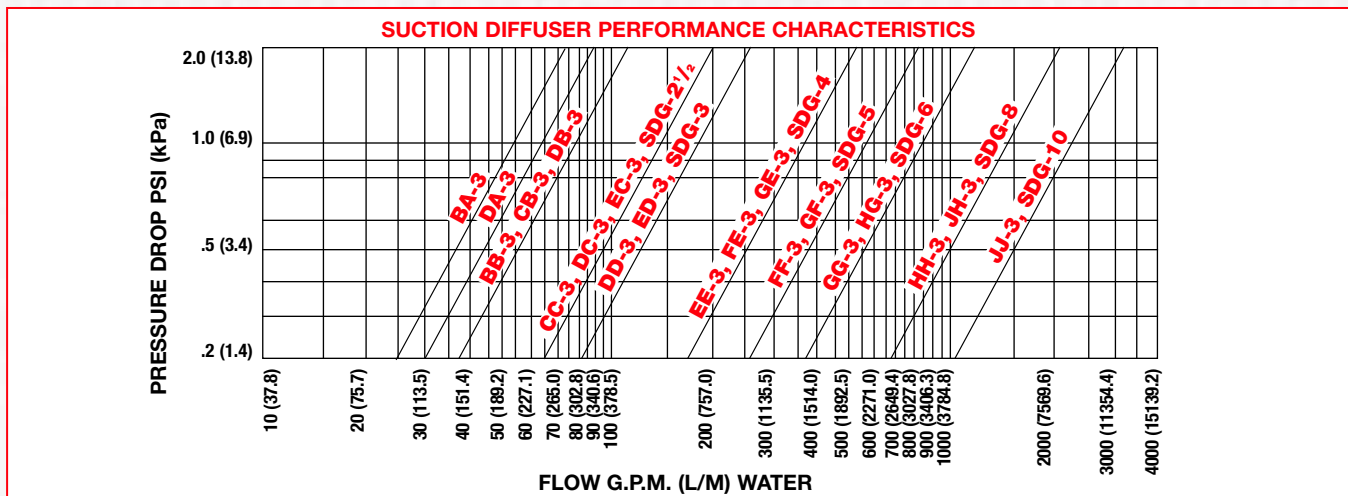


## CONSTRUCTION MATERIALS

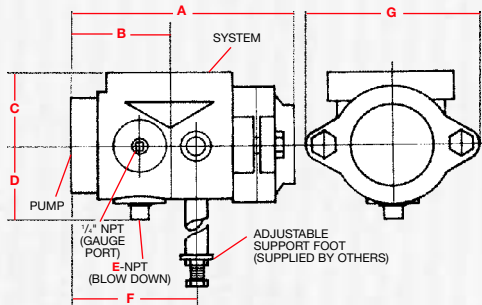
|                      |                                |                 |
|----------------------|--------------------------------|-----------------|
| Body & Cover:        | NPT & Flanged Models . . . . . | Cast Iron       |
|                      | Grooved Models . . . . .       | Ductile Iron    |
| 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

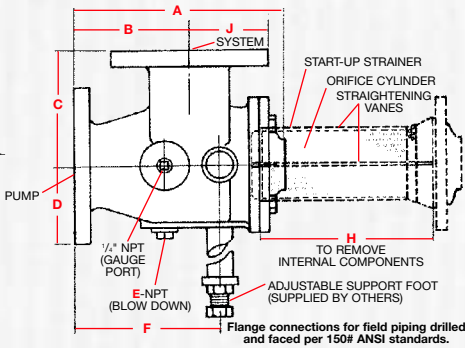
|                                   |              |
|-----------------------------------|--------------|
| Maximum Working Pressure          | PSIG (kPa)   |
| Cast Iron Models . . . . .        | 175 (1206.6) |
| Ductile Iron Models               |              |
| Grooved System with              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



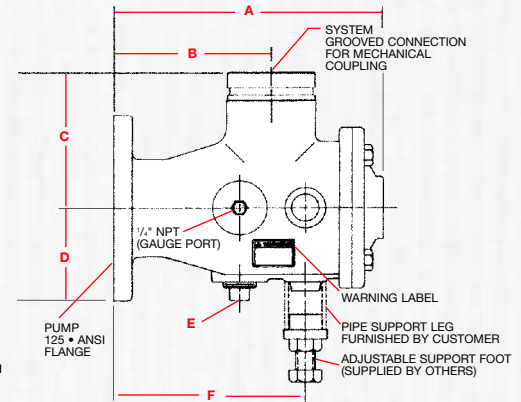
# DIMENSIONS & WEIGHTS



**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 <sup>2</sup> ) | 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<br>(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                           |                          |           |            |   | 8 3/8 (213)   | 3 3/8 (98)   | 2 3/4 (70)  | 2 3/4 (70)  |            | 3 7/8 (98)    | 5 3/4 (146)  | 9 (229)   |                             | 20.5 (13,226) | 14 (6.4)      |
| CB-3                           | 2 1/2<br>(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                           |                          |           |            |   | 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<br>(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 3/4 (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 3/4 (146)   |                             | 9 (229)       | 20.5 (13,226) |
| DC-3                           | 4<br>(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)    |
| EC-3                           | 4<br>(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)   |
| EE-3                           | 5<br>(127)               | F         | 4 (102)    | F | 12 5/8 (321)  | 7 1/2 (191)  | 7 1/2 (191) | 4 1/2 (114) | 1 (25)     | 7 7/8 (194)   | NA           | 14 (356)  | 5 (127)                     | 65 (41,935)   | 72 (32.7)     |
| FE-3                           |                          |           |            |   | 4 (102)       | 12 5/8 (321) | 7 1/2 (191) | 7 1/2 (191) |            | 4 1/2 (114)   | 7 7/8 (194)  | NA  |                             | 14 (356)      | 5 (127)       |
| FF-3                           | 6<br>(152)               | F         | 5 (127)    | F | 14 1/4 (362)  | 8 (203)      | 8 (203)     | 5 (127)     | 1 1/4 (32) | 9 (229)       | NA           | 15 (381)  | 5 1/2 (140)                 | 90 (58,064)   | 100 (45.4)    |
| GE-3                           |                          |           |            |   | 4 (102)       | 14 1/4 (362) | 8 (203)     | 8 (203)     |            | 5 (127)       | 9 (229)      | NA  |                             | 15 (381)      | 5 1/2 (140)   |
| GF-3                           | 8<br>(203)               | F         | 5 (127)    | F | 14 1/4 (362)  | 8 (203)      | 8 (203)     | 5 (127)     | 1 1/4 (32) | 9 (229)       | NA           | 17 (432)  | 6 3/4 (171)                 | 90 (58,064)   | 105 (47.6)    |
| GG-3                           |                          |           |            |   | 6 (152)       | 14 1/4 (362) | 8 (203)     | 8 (203)     |            | 5 (127)       | 9 (229)      | NA  |                             | 17 (432)      | 6 3/4 (171)   |
| HG-3                           | 10<br>(254)              | 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)  | 8 (203)                     | 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)      | 8 (203)       |
| JH-3                           | 10<br>(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)       |
| SDG-2 1/2                      | 2 1/2 (64)               |           | 2 1/2 (64) |   | 9 13/16 (249) | 5 7/8 (141)  | 4 1/4 (121) | 3 1/2 (89)  | 3/4 (19)   | 6 7/16 (164)  | NA           | 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) | NA           | 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)   | NA           | 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)   | NA           | 15 (381)  | 2 5/8 (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)  | NA           | 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)  | NA           | 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)  | NA           | 25 (655)  | 5 7/8 (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.

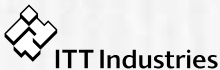
#### B. Ductile Iron Models with a Grooved System and Flanged Pump Connection Rated for a Maximum Working Pressure of 175 PSIG.

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.



**Bell & Gossett**

**USA**  
Bell & Gossett  
8200 N. Austin Avenue  
Morton Grove, IL 60053  
Phone: (847) 966-3700  
Facsimile: (847) 966-9052  
<http://www.bellgossett.com>



**INTL.**  
Bell & Gossett / Export Dept.  
8200 N. Austin Avenue  
Morton Grove, IL 60053  
Phone: (847) 966-3700  
Facsimile: (847) 966-8366  
<http://www.bellgossett.com>

**CANADA**  
Fluid Products Canada  
55 Royal Road  
Guelph, Ontario,  
N1H 1T1, Canada  
Phone: (519) 821-1900  
[www.ittpc.ca](http://www.ittpc.ca)