

Suction Diffuser

Installation, Operation and Service Instructions

INSTALLER: PLEASE LEAVE THIS MANUAL FOR THE OWNER'S USE.



SAFETY INSTRUCTIONS

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used, the safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.

OPERATIONAL LIMITS

	Pump Connection Flanged or NPT & System Connection Flanged, NPT, or Grooved	Pump Connection Grooved with Adapter Flange & System Connection Grooved
Max. Working Pressure	175 psi (1207 kPa)	300 psi (2069 kPa)
Max. Operating Temperature	250°F (121°C)	250°F (121°C)

INSTALLATION INSTRUCTIONS

- Before selecting a location for the pump Suction Diffuser, make sure that there is enough room provided to remove the Suction Diffuser orifice cylinder. The length requirements are shown as Dimension "A" in the adjacent table.
- If the pump pad is resilient mounted (rubber or spring), the pad should be large enough to include the adjustable Suction Diffuser support foot.
- A support leg (not furnished by B&G) is required between the Suction Diffuser and the support foot (not furnished by B&G) to support the Suction Diffuser and prevent strain on the pump. Bosses are provided on the Suction Diffuser to locate the support leg and facilitate mounting the Suction Diffuser in any of three positions. The length of the support leg will vary depending on the pump centerline to mounting surface dimension. The support leg can be made of schedule 40 pipe. Refer to Column "D" in the adjoining table for the required diameter of the support leg. Final height adjustment will be made with the adjustable support foot.

WARNING: Potential structural damage. Adjustable support foot must be installed and adjusted to support piping weight to prevent damage to Suction Diffuser and pump. Failure to follow these instructions could result in serious personal injury or death and property damage.

- When installing flanged model Suction Diffusers, a criss-cross pattern should be used when tightening the bolts. If Teflon tape is used when installing cast iron NPT Models, be careful not to over-tighten the connections otherwise cracks may develop in the casting.

WARNING: Potential gasket leakage. A criss-cross pattern must be used when tightening flanged joint bolts. Failure to follow these instructions could result in serious personal injury or death and property damage.

CAUTION: The use of Teflon impregnated pipe compound and Teflon tape on pipe threads provides lubricity which can lead to overtightening and breakage. Failure to follow these instructions could result in property damage and/or moderate personal injury.

- Suction Diffuser blowdown is best accomplished with the system connection in the 12 o'clock position. Blowdown will be less effective with the system connection in the 3 and 9 o'clock positions.
- When insulating the Suction Diffuser, provisions should be made to permit removal of the start up strainer, orifice cylinder, and inlet vane assembly.
- Bell & Gossett recommends a pressure-vacuum gauge be installed in the integral 1/4" NPT tapping to monitor pump inlet pressure.

OPERATING INSTRUCTIONS

The 16 mesh bronze start up strainer must be removed from the Suction Diffuser after the initial circulation and cleaning of the system. A pressure gauge installed in the Suction Diffuser will warn of a blockage. See Service Instructions for removal of the start up strainer.

CAUTION: Potential pump damage. Blockage in the Suction Diffuser can cause serious damage due to cavitation within the pump. NPSH requirement for the pump must be met and maintained. Check the pressure gauge installed in the Suction Diffuser periodically to prevent cavitation. Failure to follow these instructions could result in property damage and/or moderate personal injury.

SERVICE INSTRUCTIONS

1. Periodic inspection of inlet vanes and cleaning of the orifice cylinder is required to guard against damage to the pump. If damaged, they must be replaced.

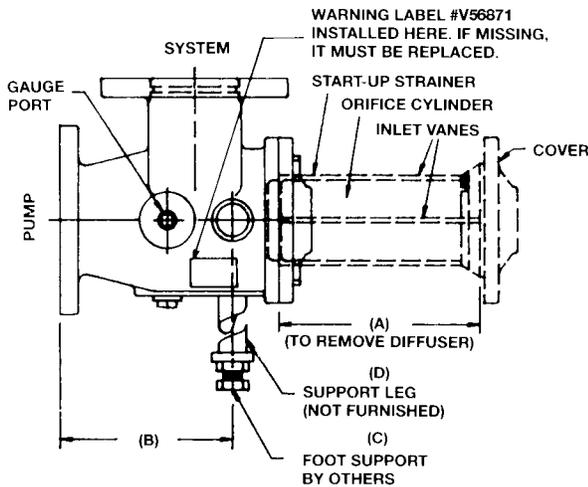
CAUTION: Potential pump damage. Inspect and replace damaged or corroded Suction Diffuser inlet vanes and orifice cylinder so that parts will not be forced into the system pump. Failure to follow these instructions could result in property damage or moderate personal injury.

2. To service and inspect the Suction Diffuser, complete the following steps:
 - a. Shut the pump off and isolate the Suction Diffuser and pump from the system.
 - b. Allow system temperature to cool to below 100°F (38°C).

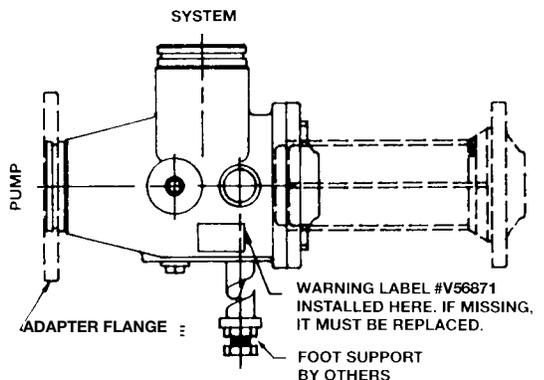
WARNING: High temperature and pressure hazard. Make sure that system temperature is below 100°F (38°C) and system pressure is reduced to and maintained at zero during servicing. Failure to follow these instructions could result in serious personal injury or death and property damage.

- c. Open a drain valve in the isolated Suction Diffuser piping and allow system pressure to drop to zero. If fluid continues to flow from the drain valve, repack or replace the isolation valves before proceeding.
- d. Loosen the screws that secure the Suction Diffuser cover and break it loose from the body. Make certain all drainage stops before removing the screws and cover.
- e. Grasp the inlet vane assembly with pliers and pull it out of the Suction Diffuser Body.
- f. Remove start up strainer if still in place and inspect the orifice and inlet vane assembly for damage. Replace damaged components with new components as required.
- g. Inspect the "O" ring seal and replace with new component as required.
- h. Reassemble the Suction Diffuser and secure the cover with a criss-cross tightening pattern.
- i. Open isolation valves slowly and inspect the gasket area for leaks.
- j. Return system to normal operation.

WARNING: Corrosion or leakage are indications that the Suction Diffuser may be about to cause serious damage from leakage, rupture or parts entering the pump. The Suction Diffuser must be periodically inspected and if noted, the Suction Diffuser must be serviced or replaced. Failure to follow these instructions could result in serious personal injury or death and property damage.



WORKING PRESSURE 175 PSI (1207 kPa), 250°F (121°C)



WORKING PRESSURE 300 PSI (2069 kPa), 250°F (121°C)

SCHEDULE

MODEL NO.	DIMENSIONS IN INCHES (MM)		PART NO. C	SCH. 40 DIA. D
	A*	B		
BA-3	8 (203.2)	3 ¹³ / ₁₆ (96.8)	A90982	3/4 (19.1)
BB-3	9 (228.6)	3 ⁷ / ₈ (98.4)		
CB-3	11 (279.4)	5 ⁵ / ₈ (142.9)		
CC-3	11 (279.4)	5 ⁵ / ₈ (142.9)		
SDG-2 ¹ / ₂	9 (228.6)	3 ⁷ / ₈ (98.4)		
DA-3	11 (279.4)	5 ⁵ / ₈ (142.9)		
DB-3	12 (304.8)	6 ⁷ / ₈ (174.6)		
DC-3	13 (330.2)	6 ⁷ / ₈ (174.6)		
DD-3	14 (355.6)	7 ⁵ / ₈ (193.7)		
ED-3	14 (355.6)	7 ⁵ / ₈ (193.7)		
SDG-3	15 (381)	9 (228.6)		
EE-3	15 (381)	7 ⁵ / ₈ (193.7)		
SDG-4	15 (381)	9 (228.6)		
FE-3	17 (431.8)	10 ¹ / ₈ (257.2)		
FF-3	17 (431.8)	10 ¹ / ₈ (257.2)		
SDG-5	18 (457.2)	11 (279.4)		
GE-3	21 (533.4)	11 (279.4)		
GF-3	21 (533.4)	11 (279.4)		
GG-3	25 (635)	13 ¹ / ₂ (342.9)		
SDG-6	25 (635)	13 ¹ / ₂ (342.9)		
HG-3	25 (635)	13 ¹ / ₂ (342.9)		
HH-3	25 (635)	13 ¹ / ₂ (342.9)		
SDG-8	25 (635)	13 ¹ / ₂ (342.9)		
JH-3	25 (635)	13 ¹ / ₂ (342.9)		
JJ-3	25 (635)	13 ¹ / ₂ (342.9)		
SDG-10	25 (635)	13 ¹ / ₂ (342.9)		

*Dimension includes orifice cylinder plus 2¹/₂" (63.5) clearance.



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