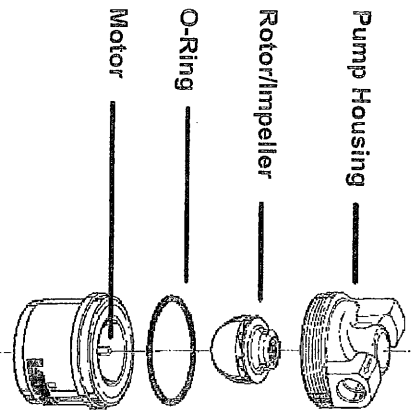
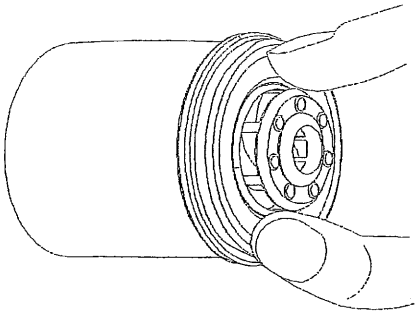


Lift the rotor/impeller unit to ensure it is free of foreign matter. Be sure to lift the rotor/impeller unit straight out of the motor cavity to prevent damage to the bearing support. There will be a magnetic force resisting



removal of the rotor/impeller. Use gentle, but steady lifting forces. Use fingers only. **DO NOT PRY UP ROTOR/IMPELLER UNIT WITH SCREW DRIVER.**

- ◇ If the rotor shows scratches or discoloration around its base check for the following conditions:
 - ◇ The bearing may be worn and replacement of the rotor/impeller assembly may be necessary. Replace the worn rotor/impeller assembly into the bearing with a new assembly and ensure that it spins freely.
 - ◇ Air may not be completely purged from the system causing cavitation and heat build-up as indicated by discoloration of the rotor or motor housing. Purge the system of air once again and replace the rotor if necessary.
 - ◇ After repair or replacement of the unit is complete, and after connecting the pump to the electrical supply, run the pump for a short while, during which the rotor/impeller unit should rotate freely.
 - ◇ If operating properly, refit the motor, open the isolation valves and the unit will operate normally.
 - ◇ If the pump does not operate normally, call the Laing Thermotech Industrial Service Department (619) 575-7466.

LAING THERMOTECH, INC.
 830 BAY BOULEVARD SUITE 101 • CHULA VISTA, CA 91911
 PH: (619) 575-7466 • FAX: (619) 575-2739

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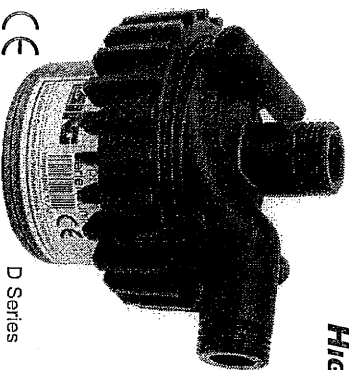
IM-17 (05/06)



ECO-CIRC™

INSTALLATION AND OPERATION MANUAL

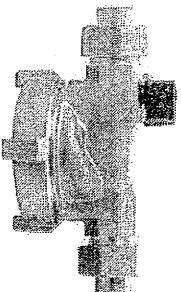
HIGH EFFICIENCY MAGNETIC DRIVE DIRECT CURRENT CIRCULATORS



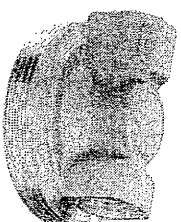
D Series

The EcoCirc magnetically driven spherical motor design offers many benefits over other pump styles. It operates on extremely low input at a specified nominal voltage up to 24 volts; the spherical permanent magnet eliminates impeller slippage; the motor does not have a shaft, is fully potted and has no moving parts; and the pump has no conventional seals. The brushless motor has a lifetime in excess of 40,000 hours when operated at 12 volts and can be powered directly by solar panels, battery or other DC power sources. The unique screw ring design for this series of pumps allows switching to AC motors without changing pump housings.

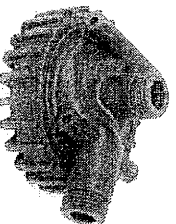
ECO-CIRC PUMP HOUSINGS



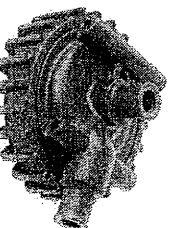
Brass union coupled



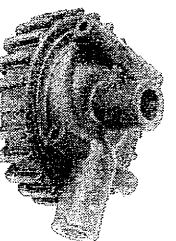
Brass 1/2" female thread/sweat



Noryl 1/2" male threaded



Noryl 1/2" hosebarb



Noryl 3/4" hosebarb

INSTALLATION PROCEDURES

- Do not connect the pump to the electric supply unless fluid is in the plumbing lines. Running the pump dry may cause premature failure and will void the warranty.
- For maximum pump performance, locate the pump at the point of highest static pressure at the lowest point of the system.
- For hot water systems, fluid temperatures above those rated for the pump may reduce pump life. The creation of steam in the plumbing lines may result in the pump running dry.
- Prevent back flow. The direction of flow is indicated by the arrow on the pump housing. Reverse flow will adversely affect the life of the pump. You may wish to install a check valve on the discharge side of the pump to prevent back flow.

NOTE: A swing-type check valve is preferred. If a spring-loaded check valve is used, it is important that the opening pressure be 1/2 PSI or less (3/4" or larger).

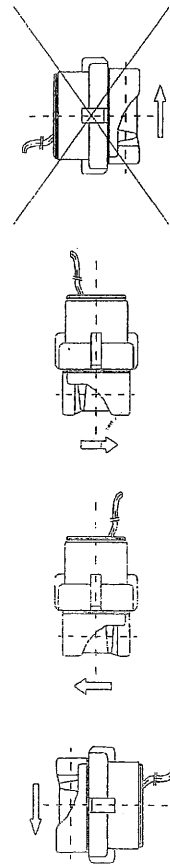
MOUNTING THE PUMP

Observe the permitted installation positions.

With brass models, do not sweat the housing into the plumbing line with the motor drive unit or o-ring attached. Always remove the motor drive unit and o-ring from the pump housing before installing the brass housing into the plumbing line.

NOTE: Pump is shipped with pump housing screw ring loosened to ease removal of pump from motor housing during installation. Before pressurizing system, be sure to tighten screw ring. Hand tightening is sufficient. DO NOT OVER TIGHTEN THE SCREW RING.

INSTALLATION POSITIONS



POWER SOURCE REQUIREMENTS

In order to ensure full service life of the D Series pump, it is important to provide a stable and non-degrading power source at the required voltage. Operating the pump out of the specified voltage range may reduce the life of the motor and will void the warranty.

ELECTRICAL CONNECTION

- The pump is provided with 6" pigtails for field hardwiring. The red lead is positive.
- Be certain that correct polarity is observed.
- Ensure that the electrical supply is correct and that the supply cable is suitable for the rated load indicated on the pump label.
- Wire the pump in accordance with your system application.
- A quick function test without liquid is acceptable at this time. However, if the system is not filled with liquid, reduce the time of this function test to an absolute minimum. The pump is liquid cooled and will build heat rapidly. Excessive heat generated by dry run operation for extended periods will damage the pump.
- After ensuring that the unit is functioning properly, fill the system and purge any air that may be trapped in the system loop.

START-UP

- Make certain that the system is filled with liquid and that the air has been purged.
- Open the isolation valves and any other valves that may have been closed during the pump installation.
- Switch the pump on.
- If you hear noise initially, this should abate after a short while as air is purged from around the impeller.
- Power cycling the pump several times accelerates the air removal.
- If the noise does not disappear or decrease substantially, purge the system once again.
- Once the system is running normally select the proper pump speed.

TROUBLE SHOOTING

- Check the electrical supply. Check electrical connections to the motor leads. Ensure the polarity is correct and the connections are secure. If the pump still does not operate, shut off the isolation valves and disconnect the electrical supply. Turn the screw ring and carefully remove the motor unit.