

All consequential expenses including loss of use, damages, or contingent liabilities arising out of any alleged deficiencies of the pump are specifically excluded from this warranty. This warranty is the sole and exclusive remedy for defects in materials and workmanship. All implied warranties of fitness and merchantability are hereby expressly excluded. There are no warranties that extend beyond the description on the face hereof.

Thermal Safety

! WARNING: - Extreme Temperature Hazard - If the pump, motor or piping are operating at extremely high or low temperature, guarding or insulation is required. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

Electrical Safety

! WARNING: - Electrical Shock Hazard - Electrical connections are to be made by a qualified electrician in accordance with all applicable codes, ordinances and good practices. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

! WARNING: - Electrical Grounding Hazard - Adequate electrical grounding is required for the safe operation of Laing Pumps. Ground the pump back to the service using a copper conductor at least the size of the circuit connectors supplying the pump. Connect the ground wire to the ground terminal in the wiring compartment. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

! WARNING: - Risk of Electric Shock - Do not install this pump in swimming pool or marine areas. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

Removal of Pump From Existing System For Replacement

! WARNING: - Electrical Shock Hazard - Disconnect and lockout the power before servicing. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

1. Close the valves on the suction and discharge sides of the pump. (if no valves have been installed, it may be necessary to drain the system.)

2. Disconnect the electrical supply lines to the pump.

! WARNING: - Hot Water Hazard - Before draining the system, allow water to cool to at least 100F, open the drain valve (take precautions against water damage) and leave the drain valve open until servicing is complete. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

! WARNING: - Electrical Shock Hazard - Be certain the electrical power is not present at the motor leads before continuing. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

! WARNING: - High Pressure Hazard - Pressure may be present in the pump body. This pressure can be relieved by loosening the flange bolts and shifting the pump assembly slightly to allow the pressurized water to escape. Failure to follow these instructions could result in serious personal injury and death.

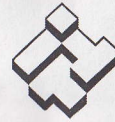
Copyright © 2009 ITT Corporation,
Printed in the U.S.A 1-10 IM-17

THE ITT ENGINEERED BLOCKS
SYMBOL AND ENGINEERED FOR LIFE
ARE REGISTERED TRADEMARKS OF ITT
MANUFACTURING ENTERPRISES, INC.

ITT
3878 S. Willow, Suite 104
Fresno, CA 93725
Tel: (559) 265-4730 (800) 554-6853
Fax: (559) 265-4740 (800) 453-7523
www.lainginc.com

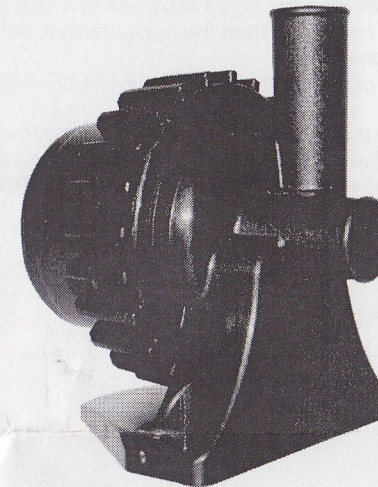


Installation, Operation & Service Instructions



ITT

Laing Thermotech Instruction Manual



ecoCirc® D5 Vario, Strong and Solar

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

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

Highly Efficient Magnetic Drive Direct Current Circulators

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 brush less motor has a lifetime in excess of 50,000 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 the pump housings.

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 and above 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).

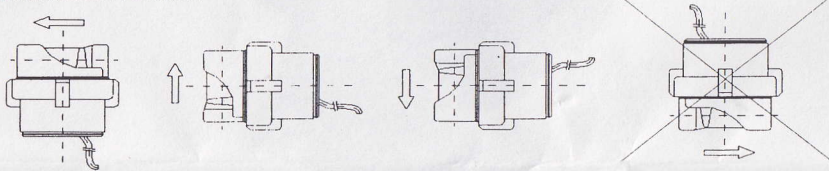
Mounting The Pump

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.

***Solar:** The Pump should be mounted on the supply line to the collectors pumping in an upward position.

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



Available Pump Housings



Noryl 3/4"
Hose barb



Noryl 1/2"
Hose barb



Noryl 1/2" Male
Threaded



Brass 1/2" Female
Thread/Sweat



Brass Union
Coupled

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

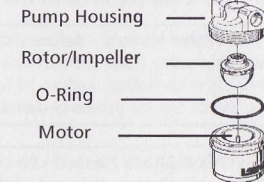
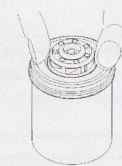
- The pump is provided with 6" pigtails for field hard wiring. The red lead is positive.
- Be certain that correct polarity is observed.
- Ensure that the electrical supply is correct and that the supply cable is suitable for the rated load indicated on the pump label.
- Wire the pump in accordance with 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.
- *Vario:** Once the system is running normally select the proper pump speed.
- *Solar:** It is recommended that the pump be left in the auto position for best results.

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.
- 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.



Warranty

Laing Thermotech pumps are warranted against defects in materials and workmanship for twenty four (24) months from the date of manufacture (see the manufacturing date label on the pump) or twelve (12) months from the date of user purchase, with proof of purchase, whichever is later. In order to receive warranty considerations, the product must be returned prepaid to the company from which it was originally purchased. If the pump is found defective within standard warranty conditions, it will be replaced or appropriate purchase credit will be issued. Any consequential damages resulting from a pump defect or malfunction are not covered by the Laing warranty. There shall be no other warranty or obligation, expressed or implied, oral or statutory. Laing Thermotech, its agents, or employees shall in no event be liable for injury to any person, or for any claim or damage, however arising. Laing Thermotech shall not be liable for any incidental or consequential damages for breach of any express or implied warranty, breach of contract, negligence, strict liability, or any other legal theory related to this product.