



IMPORTANT SAFETY INSTRUCTION

Electric coolant heater with circulating pump for marine engines and generating sets.

Please read carefully for a correct installation and a proper use of the heater. Keep these instructions after installation.

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1. UNPACKING

Check to make sure you have the following components and accessories before disposing of the packaging material.

1. pumped heater
2. Mounting braces
3. User's guide
4. Quality control check list

2. SAFETY FIRST



The present user's guide contains instructions to be fulfilled during the mounting and the starting stage. It should be read carefully by the technician and the user.

Qualified personnel

The mounting should be carried out by a qualified technician only.

Danger in case of non-compliance with the present guidelines

The non-compliance with present guidelines could have serious consequences for the safety of people and could damage the equipment, thus making the warranty void. The strictest rigour is required for the electrical and mechanical aspects of the mounting.

Safety measures meant for the user

Avoid any risks linked to the mains network by strictly observing local safety instructions in force.

Check or have checked by an authorized technician that your electrical installation is protected by a differential current system and that the earthing is in compliance with the local safety prescriptions.

Modifications to the heater and use of unauthorized parts

Any modification to the heater will be made only in agreement with the manufacturer. The use of official spare parts and accessories guarantees your safety. The manufacturer disclaims any liability in case non-original parts are used.

Inappropriate use of the equipment

The equipment supplied with the present guidelines is exclusively meant for the applications described in the chapter « Directions for use »

3. MOUNTING INSTRUCTIONS Meant for the technician



The installation has to be made by an authorized technician in strict compliance with the instructions of the manufacturer. Do not connect to the mains before having followed the present instructions. Do not connect the heater to the mains if you are not sure that it is filled with coolant.

A. Mounting and fixing instructions

See Fig. 1 Mounting in Horizontal Position

The heating should be mounted in horizontal position. In no circumstances should the axis of the pump be placed in a vertical position.

Fix the heater as low as possible to the chassis or any other suitable place. Be careful not to mount the heater, the hoses or the power cord close to the engine exhaust. Keep a minimum distance of 25 cm (10 inches). The heater should be below the lowest level of the water jacket and the coolant inlet must be below the point of removal of the coolant from the engine. Choose a position that will allow to decrease as much as possible the coolant hoses length. The support for the fixing of the heater should be rigid enough. If the heater is mounted on the engine chassis, it is necessary to use the supplied silent-blocks in order to reduce vibrations to the heater.

B. Connecting the heater to the water circuit

The heating is connected in parallel to the coolant circuit.

B1. Drain off completely the water circuit.

Unscrew the drain plug or disconnect the lower hose in order to completely drain off the coolant circuit.

B2. Connecting the heater inlet.

The heater inlet and outlet are meant for hoses (not supplied) with an internal diameter of 11/16" (17 mm). For engines equipped with a drain plug, replace the plug by a hose connector with an internal diameter of 11/16" (17 mm) in order to make the connection to the heater inlet. Make sure to use a connector with a proper thread and use a watertightness product on the thread to ensure watertightness. We recommend the use of Loctite @ 577, Loctite @ 243 or any other product with similar properties. In case the engine is not equipped with a drain plug or the drain plug is not reachable, use a connector and a radiator hose (not supplied) to connect the inlet of the heater to the lower radiator hose. Use clamp collars (not supplied) for the fixing of the hoses. If the heater is connected to a rigid pipe, use a piece of flexible radiator hose that is long enough to prevent engine vibrations being transmitted to the heater.

B3. Connecting the heater outlet.

In order to guarantee an optimum heating of the engine the coolant return hose from the heater to the engine should be placed at the highest possible point on the engine. Use any available coolant jacket opening and install a connector for the outlet hose. In case no opening is available, install a « Y » fitting (not supplied) 11/16" (17 mm) on a pipe entering the cylinder head.

B4. Checking and re-filling the coolant circuit

Make sure that the hose clamp collars are properly tightened. Fill the coolant circuit. In order to eliminate air pockets and obtain a good circulation, run the engine a few minutes. Then shut off the engine and check that the water circuit is properly flushed. Check that all connections are watertight and that hose clamps are properly tightened. When the engine has cooled down, check the level of coolant in the circuit and adjust if necessary without exceeding the recommended proportion 50% glycol, 50% water.

B5. Fixing the power supply cord

Fix the cord with clamp collars in order to avoid any contact with hot or moving parts. It is recommended to use a protection sheath for the cord.

B6. Checking the installation before connecting the heater to electricity

Check the information regarding voltage and power on the heater label before connecting the heater to electricity. An improper connection to the mains could irretrievably damage your heater. Make sure that the voltage is correct and the earthing is in compliance with local rules.

B7. Connecting the heater to the mains and checking the functioning

BEWARE: DON'T START THE HEATER IF NOT FILLED WITH COOLANT AND NEVER RUN THE PUMP WITHOUT LIQUID.

Follow the procedure described hereafter:

- Check all the electric connections and tighten all hoses.
- Make sure that the valves are open before starting the system.
- Run the engine for 10 minutes before starting the heater. This will bleed the air from the pump and the heating body.
- Untighten the flange of the pump to purge the air.
- Connect the plug.
- The regulating thermostat is adjusted on 50°C (122°F) at the factory.
- Touch the heater inlet and outlet hoses at regular intervals during one hour. If the heater works correctly, the outlet hose should be warm and the inlet hose relatively cold. If the inlet hose becomes very hot before the outlet hose, the circulation is not good.
- After checking that the circulation through the heating body and the engine is correct and the air has been properly purged, adjust the regulating thermostat on the required temperature.
- When starting the circulating pump for the first time, it may be that the axle turns slowly until bearings are completely immersed in water. If the pump does not work, the axle can be turned manually. To do this, switch off the supply and close the valves. Remove the screw in the middle of the pump identification plate. Insert a small flat screwdriver at the end of the axle and turn gently until the axle moves freely. Put the screw back and tighten it. Open the valves and wait 2 or 3 minutes for the pressure to level out before restarting the heater.

See Fig. 2 Examples of Correct / Incorrect Mounting.