

Installation, Operating,
Maintenance and Safety Instructions
for
CW239, CW240, CW278, CW279, CW423
ELECTRIC IMMERSION HEATERS



IMPORTANT

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE FITTING THE IMMERSION HEATER TO YOUR C-WARM WATER STORAGE HEATER. FAILURE TO FOLLOW THE RECOMMENDED PROCEDURES MAY RESULT IN DAMAGE TO YOUR WATER STORAGE HEATER, TO OTHER EQUIPMENT IN YOUR VESSEL, TO THE VESSEL ITSELF, OR IN PERSONAL INJURY, AND MAY INVALIDATE THE SUPPLIER'S WARRANTY

WARNING



Immersion heaters *CW239, CW240, CW278, CW279, and CW423* are intended solely for use fitted to C-Warm water storage heaters in marine pressurised water systems. They are not intended for use with any other type of marine or domestic water storage heater, or for any other purpose whatsoever and we take no responsibility for their use with such equipment or for such purposes.



WATER STORAGE HEATER SAFETY



A combined **temperature / pressure relief valve** is an essential component in a closed water heating system fitted with an electric immersion heater. In the unlikely event of overheating due to failure of both the control and high-limit thermostats, the relief valve will open, preventing the water from boiling under pressure. The valve will discharge hot water, which must be piped overboard, or to the bilge, or to a suitable safe space.



A combined **temperature / pressure relief valve** should always be fitted to your C-Warm water storage heater, as directed in the instructions supplied with every storage heater. If in any doubt or difficulty about fitting the immersion heater or the temperature / pressure relief valve in your water storage heater, contact your supplier.

FITTING AN ELECTRIC IMMERSION HEATER

Before fitting the immersion heater, check that your a.c. supply voltage corresponds to that indicated on the immersion heater.

1. Remove the dummy boss.
2. **AVOID LEAKS** - make sure all surfaces are clean! Clean the seating surface on the tank boss, and the screw threads on the boss and the immersion heater. Lightly coat the o-ring washer and the face and threads on the tank and immersion heater with silicone grease.
3. Screw in the heater. Remove the heater cover, bend the cable to one side, fit a 2¼" box spanner over the hexagonal base of the heater, and tighten carefully. (CW493 Immersion heater box spanner)
4. To make the electrical connections, follow the wiring instructions over leaf

The use of a standard domestic immersion heater with a single thermostat is not recommended.

A Cleghorn Waring double-protected immersion heater, fitted with a high-temperature cut-out in addition to the control thermostat, is strongly recommended. Should the control thermostat fail, the high-temperature cut-out will isolate the immersion heater when the water temperature reaches 85°C.

THERMOSTAT SETTINGS

The **control thermostat** on the immersion heater is pre-set to cut out when the water temperature reaches 60°C. This is ample for domestic use.

In an attempt to reduce the likelihood of scalding, we recommend that the control thermostat is set no higher than 65°C

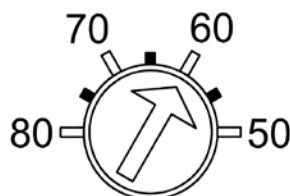
The **high temperature cut-out thermostat** is pre-set to 85°C and comes with a tamper proof seal. If required the **high temperature cut-out thermostat** can be altered, however it should be set at least 15°C above that of the control thermostat setting.

Check the thermostat settings before using your immersion heater for the first time. Isolate the immersion heater from its power supply before removing the cover. If necessary adjust the control thermostat setting by turning the dial with a screwdriver blade until the arrow points to the desired temperature.

DO NOT set the high temperature cut-out to operate below the cut-out temperature of the control thermostat.

CONTROL THERMOSTAT DIAL

Screwdriver Slot



40°C = 104°F

50°C = 122°F

60°C = 140°F

70°C = 158°F

80°C = 176°F

In the event of a high temperature cut-out the system should be thoroughly checked before the manual re-set button is pushed. It is advisable to replace the control thermostat before the immersion heater is used again. Contact your supplier for replacement thermostat. thermostat before the immersion heater is used again.

WIRING INSTRUCTIONS

1. It is essential that the correct size of fuse or circuit breaker be fitted.
2. Check that the mains supply voltage corresponds with the voltage indicated on the heater.
3. Isolate the electrical supply to the cable.
4. Make the supply cable connections as follows.
Standard colours in the UK are:
Brown = Live
Blue = Neutral
Green/Yellow = Earth



**THE IMMERSION HEATER
MUST BE EARTHED**

Before you switch on the immersion heater, check that the water storage heater is full of water, and that the temperature-and-pressure relief valve has been properly fitted.

IF YOU ARE IN ANY DOUBT ABOUT FITTING THE IMMERSION HEATER, OBTAIN THE SERVICES OF A QUALIFIED ELECTRICIAN.

Model Number CW423

3kW
Voltage = 220-240 v a.c.
Recommended fuse: 13 amp

Model Number CW279

2kW
Voltage = 220-240 v a.c.
Recommended fuse: 10 amp

Model Number CW278

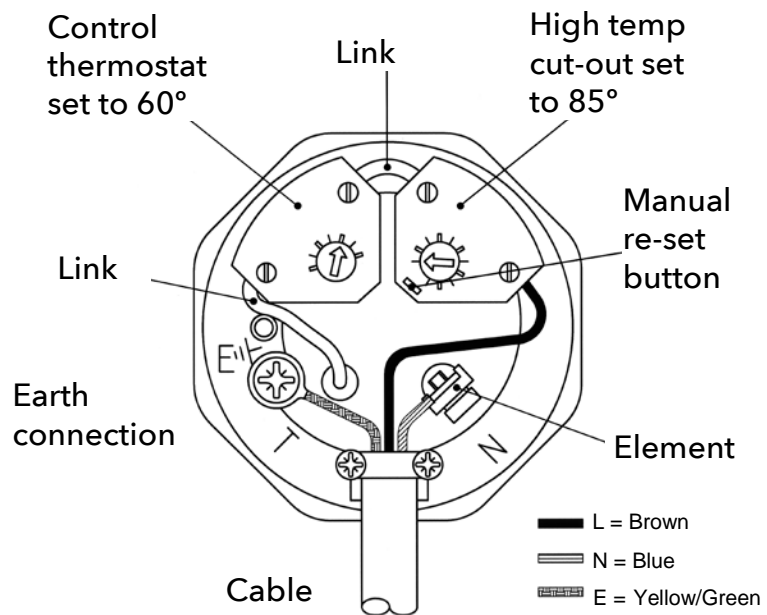
1.25kW
Voltage = 220-240 v a.c.
Recommended fuse: 5 amp

Model Number CW240

0.75kW
Voltage = 220-240 v a.c.
Recommended fuse: 3 amp

Model Number CW239

1kW
Voltage = 110-115 v a.c.
Recommended fuse: 10 amp



Wiring diagram for a Cleghorn Waring double-protected Immersion Heater