

APPLICATION

The CX range of immersion heaters are intended to heat water or oil and are specifically designed to allow the element to be withdrawn from the heater without removing the heater from the vessel. This is particularly advantageous where it is not practical to drain the vessel in order to inspect or replace the element. The heaters are suitable for horizontal mounting only. To avoid localised boiling or air locks, care should be taken to ensure that the cold zone extends beyond any neck piece. Refer to the supplied Data Sheet for the detailed construction, specification and wiring of the heater.

CONSTRUCTION

The element tube is expanded into the screwed boss and it houses the removable element which is constructed from high grade resistance wire wound inside ceramic formers. The boss is screwed to suit a British Standard Pipe thread fixing and comes complete with a fibre gasket. The terminal enclosure is cream beige polypropylene and is rated to 'IP55' with one conduit entry (M20 or M25). The CX range maximum operating temperature is 120°C and the maximum operating pressure is 6 bar.

INSTALLATION

MECHANICAL INSTALLATION INSTRUCTIONS

- The heater is supplied with a gasket, ready to be screwed to the appropriate flange on the vessel. It is not recommended that sealing compounds are used.
- Installation to be carried out with the **thermostats uppermost**.
- Heaters with immersed lengths of 1200mm and longer should be provided with internal tank support.
- After fitting the heater into the vessel, the system should be filled with water and checked for leaks around the joint. The Vessel should be filled according to your standard procedure ensuring that all air pockets are purged from the system.
- Control thermostats should be set to suit site requirements. The Control thermostat is provided to regulate the temperature to the desired setting. Recommended settings are as follows :

Soft water areas	Up to 82°C.
Medium hard water areas	Up to 71°C.
Hard water areas	Up to 65°C.
- **Note : Scald temperature of water is 66°C.**
Heaters for oil must be set at a temperature to suit the specific site requirements. Refer to the oil manufacturers data sheet.
- If any cleaning or sterilising solutions are to be 'flushed' through the system prior to commissioning, a check should be made to ensure that the solution will not damage the heater.

Warning : Do not cover the heater terminal enclosure.

ELECTRICAL INSTALLATION INSTRUCTIONS

All electrical wiring must be carried out by a qualified person and must comply with the current I.E.E Regulations to B.S.7671.

We recommend that the insulation of the each circuit within the heater is checked prior to installation. The minimum insulation reading between live and earth should not fall below 1MΩ. Refer to the procedure in the Operational Faults section of this leaflet if the insulation is below 1MΩ.

- A terminal layout drawing is supplied on the Data Sheet to use as a guide when wiring the heater.
- The immersion heater **must** be connected to fixed wiring.
- Check all electrical connections to ensure that they are tight.
- After all electrical connections have been made replace the heater terminal enclosure.

- Immersion heaters are designed to operate **ONLY** when the heating elements are totally immersed in water and **must not** be switched on when the heating elements are exposed to air.
- The heater will only heat the contents of the tank above the immersion heater.
- Should the vessel be drained at any time and the heater removed, this installation procedure must be repeated before proceeding to switch the heater on.

Warning : This appliance must be earthed.

OPERATIONAL FAULTS

Always isolate electrical power at the mains switch before removing the terminal enclosure.

HEATER NOT OPERATING

Check :

- a) Main Fuses.
- b) Main Electrical Supply.
- c) If the control thermostat has been incorrectly set.
- d) Control Thermostat for failure in 'open' position.
- e) Wiring to heater (No loose connections).
- f) Element continuity (resistance) - If faulty order a replacement heater (See spare parts section).

LOW ELEMENT INSULATION

Storage conditions after despatch are not always ideal. In particular, if there is a long delay between purchase and commissioning there may be some degree of water ingress into the element tube. The immersion heater will not be affected by the low insulation readings. However to allow any current control devices to operate it is suggested that the following procedures are carried out:

- 1) The terminals on the end of the element can be dried to remove any moisture. e.g. with a hairdryer or similar device.
- 2) When brought into operation, the element will naturally improve in insulation.
- 3) If an RCD is being used this can be disconnected for a short time while the heater is switched on to allow the insulation readings to increase.
- 4) The heater can be placed in an oven at 200-250°C for a period of time to raise the insulation levels. If an oven is not available, the heater can be returned to H.D. Howden.
- 5) To maintain the insulation during periods of low use it is advisable to switch the heater on in the tank, in water, approximately once a month for 48 hours.

SPARE PARTS & REPLACEMENTS

All spare parts are to be ordered from H.D. Howden Ltd quoting the heater list number and serial number.

GUARANTEE

The manufacturer will make good, by repair or at his option by the supply of a replacement, defects which, after proper installation, appear in the goods, within a period of twelve calendar months after the goods have been delivered and arise solely from faulty design, materials or workmanship. Provided always that defective parts are promptly returned by the user free to the manufacturer's works, unless otherwise arranged, the repaired or new parts will be repaired or new parts will be delivered by the manufacturer free of charge.

The policy of H.D. Howden Ltd is that of continuous improvement and development, the right is therefore reserved to change specifications without notice.