

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS FOR

## Ceramic Radiant Heaters

Catalogue Numbers HSCEH7115N, HSCEH7230N & HSCEH7345N

PLEASE RETAIN THIS LEAFLET FOR FUTURE MAINTENANCE

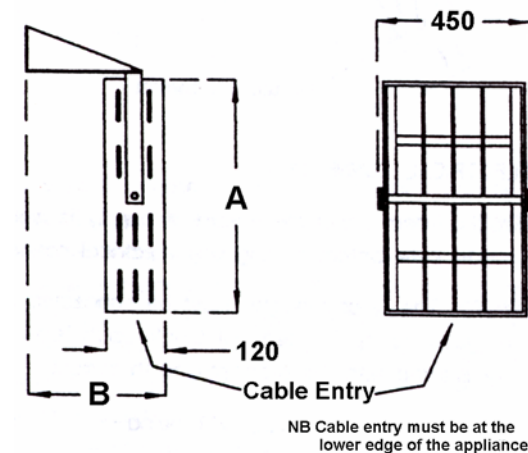
### 1. CATALOGUE NUMBERS

HSCEH7115N	Single Emitter unit 1.5 kW rating
HSCEH7230N	Twin Emitter unit 3.0 kW rating
HSCEH7345N	Triple Emitter unit 4.5 kW rating

### 2. GENERAL

Ceramic heaters are high intensity radiant appliances, using ceramic emitter elements as the energy source. The emitters radiate their energy primarily in the long-wave infrared waveband with high energy conversion efficiency and good heat penetrating properties. The heaters are supplied complete with wall mounting brackets. Their robust construction makes them suitable for most types of industrial and commercial situations. An outline drawing of the units, together with their overall dimensions is shown in figure 1.

Figure 1 – Outline Dimensions of Ceramic Heaters



UNIT	DIMENSION	
	A	B
HSCEH7115N	230	310
HSCEH7230N	370	410
HSCEH7345N	496	410

### 3. SAFETY NOTES

- The heaters should not be operated in ambient temperatures greater than 30°C (86°F), otherwise the life of the heater emitter could be shortened.
- The heaters should not be operated in areas subject to continuously high humidity, or excessive dust. Corrosive atmospheres should also be avoided.
- It is recommended that the heaters are mounted with the emitters in the horizontal position (See Fig 1).
- These radiant heaters are capable of projecting a significant amount of radiant energy for a considerable distance in front of the reflector. Great care should be taken with their mounting, if there are flammable materials in the vicinity. These heaters must not be used in areas subject to flammable vapours such as paint solvents or petrol fumes.

### 4. INSTALLATION

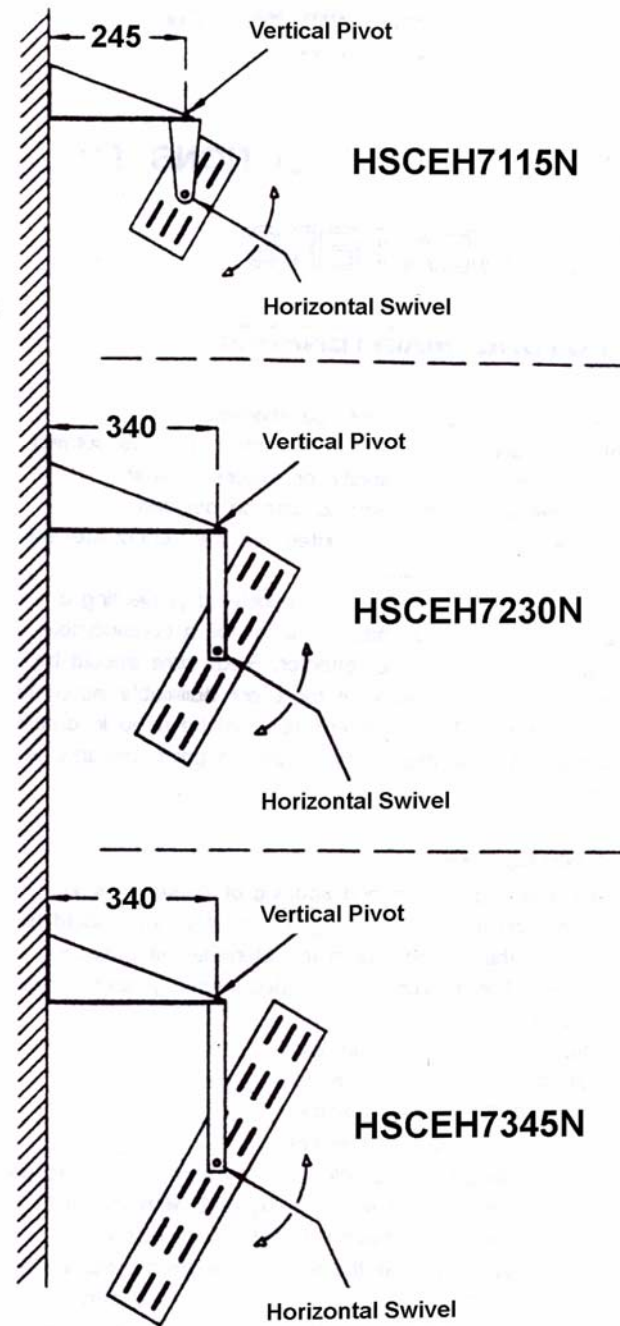
The mounting position and spacing of these units will depend on the mounting height and reference should be made to the technical data to determine the optimum position. The minimum recommended mounting heights are as follows:

HSCEH7115N	(1.5 kW)	2.3 metres
HSCEH7230N	(3.0 kW)	2.7 metres
HSCEH7345N	(4.5 kW)	3.0 metres

For wall mounting, a bracket arrangement is supplied as standard and this is shown in figure 2. With the unit wall mounted, it is essential that the radiant energy is directed away from the wall. The minimum clearances from the ceiling or the adjacent walls are shown in figure 3. For maximum heating effect on the occupants of the room, the angle of the front face of the unit to the horizontal should be about 45°.

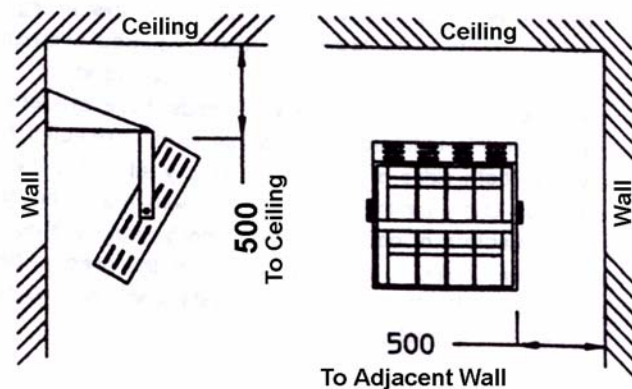
As well as an efficient conversion of electrical energy into radiant heat energy, the effectiveness of radiant heaters depends on efficient absorption of this energy by the people in the building. More efficient absorption is obtained if the radiant heat is directed from one or both sides of the person. In any situation, the optimum angle for the heaters will be with the plane of the reflectors at about 45° to the horizontal. Heating schemes should be designed such that the area to be heated is effectively covered by units which are mounted close to this angle. The heaters must not be mounted with the heater body in a horizontal position.

Figure 2 – Wall Mounting of Ceramic Heaters



NOTE: **Must not be mounted with body in horizontal position**

Figure 3 – Minimum Clearances to Adjacent Wall and Ceilings

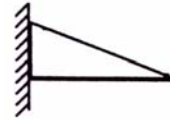


## 5. ASSEMBLY

Unpack the heater, remove all outer packaging. Although the appliance's construction is robust, care should be taken when assembling the yoke and when securing onto the hanging bracket the yoke/heater assembly.

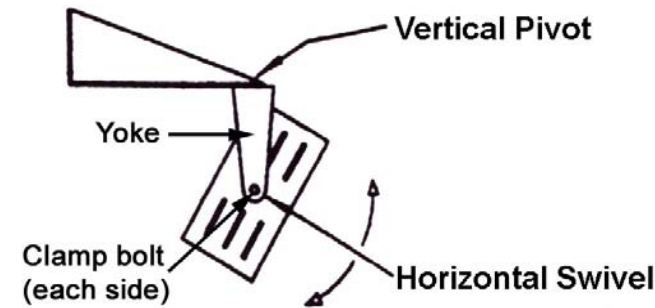
For all units, assemble the yoke onto the heater body, tightening the clamp bolts finger tight.

Secure to the wall, with suitable fixings, the hanging bracket. Ensure the position of this bracket will allow suitable clearances between the heater, when fitted, and adjacent walls, ceilings or objects. See Fig 3.



Mount the yoke/heater assembly to the hanging bracket using the bolt, washer and nut provided.

Finally adjust the direction of the heater to irradiate the desired area and tighten up all clamping nuts and bolts.



## 6. ELECTRICAL CONNECTIONS

**WARNING:** Ensure that the electrical supply is isolated and made safe before making any electrical connections.

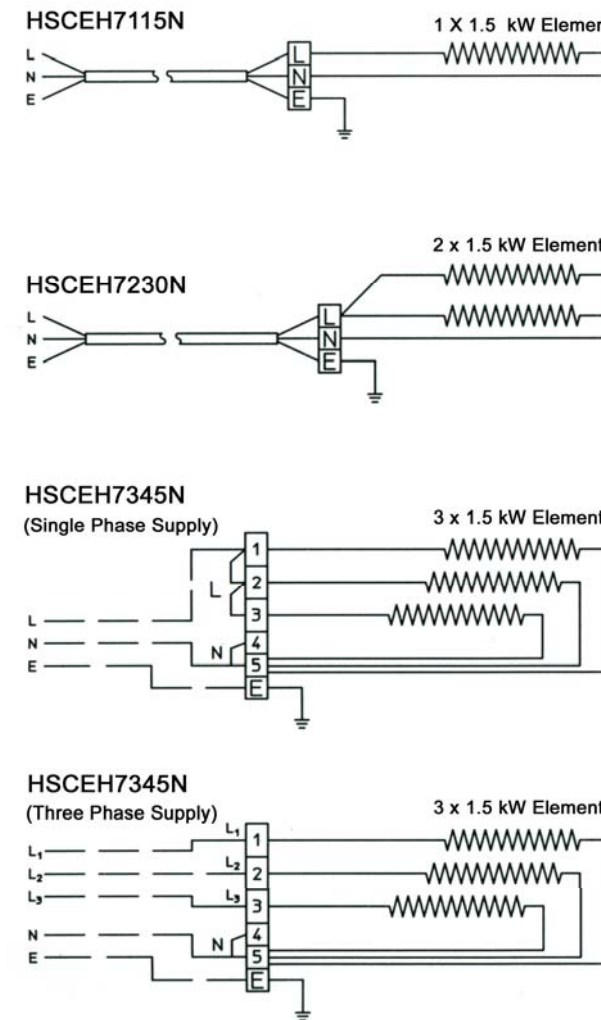
**WARNING:** The Ceramic heater must be connected to a known good earth. The terminal block earth terminal is clearly marked with the standard earth symbol.

The HSCEH7115N and the HSCEH7230N units should be connected to a 240 Volt single phase supply.

The HSCEH7345N (4.5 kW) unit is supplied wired for 240 Volt single phase operation but may be adapted for a three phase 415 Volt supply by removing the linking plates joining the three line terminals at the terminal block.

Mains wiring, supplying power to the appliance, **MUST** be in a suitable high temperature cable.

Fig 4 – Circuit Diagrams of Ceramic Heaters



Access to the mains supply terminal block can be obtained by removing the entry plate at the rear of the heater, the plate being secured by two screws. The terminal block is fitted to this plate. The plate is connected to the heater body via an earthing cable. Ensure that the cables are tightly connected in the terminal block; ensure that the cables are secure in the cable gland and that the cables are tight against the entry plate. Ensure that the cables do not contact the rear of the reflector.

NOTE: Care should be taken when connecting a single phase supply to the HSCEH7345N (4.5 kW) unit. Ensure that the presence of the linking plate does not cause the conductor to become loose.

Whenever the unit is mounted ensure that side containing the cable entry is in the lower position. This will assist in keeping the terminals and cable cool. The installation should comply with the requirements of the IEE wiring regulations and the heaters should be connected to a suitable isolating switch.

## 7 CONTROL

In control systems, heaters may be switched on and off, using suitable contractors, linked to the time switches or thermostats. Temperature control using either air thermostats or black bulb thermometers is possible, but the characteristics of radiant heating make it difficult to achieve comfort control without very careful choice of the thermostat and its position. Details of suitable circuits and advice on the correct siting may be obtained from Claudgen.

With the HSCEH7345N (4.5 kW) unit, the three emitters are connected to three separate terminals. If the links are removed, as for three phase operation, it is possible to connect these units for up to three levels of radiant heat output.

Details of suitable circuits may be obtained from Claudgen

## 8. MAINTENANCE

**WARNING:** Before opening the heater to carry out any maintenance, ensure that the mains supply is switched off and made safe. Also ensure that the unit has cooled and is not too hot to handle.

Because of the high heat output and the open nature of the construction, there is a substantial convected airflow through the unit. Any dust in the atmosphere will also be carried up through the heater and, in due course, deposits of dust may build up within the unit. It is essential that such deposits are removed at regular intervals, otherwise they could become a fire hazard. To maintain the efficiency of the unit, the reflector should be cleaned regularly. Before cleaning ensure the appliance is switched OFF and has cooled down. Cleaning the reflector should require no more than a damp cloth. Avoid using any abrasive cleaners. It should not be necessary to remove the ceramic emitters during cleaning; carefully wipe around them.

## 9. SPARES

HSC1500CE – Spare Emitter (1.5 kW) suits:  $\left\{ \begin{array}{l} \text{HSCEH7115N} \\ \text{HSCEH7230N} \\ \text{HSCEH7345N} \end{array} \right.$