



HOT BLOCK 65

Electric Fan Heater



OPERATING INSTRUCTIONS

General Safety

The units are designed for "indoor" use only.

The units should be mounted on the floor. If this is impossible ensure that they are provided with a very stable platform.

Do not position on surface water or where airborne water (liquid) is present.

Position the unit to allow clear air input and exit from the unit. A minimum distance of 2 meters should be allowed between the outlet nozzle of the heater and any obstruction.

Do not use the units when surrounded by combustible materials.

Maximum surrounding air temperature 40°C

Electrical Safety

The units must be installed in compliance with the appropriate requirements of the I.E.E. Regulations, 15th Edition.

The units must only operate in conjunction with a permanent earth connection.

The electrical supply should be appropriately protected by fuse or circuit breaker as follows:-

Hot Block 25	240 Volt	13 -16 Amps maximum
Hot Block 25	110 Volt	32 Amps maximum
Hot Block 65	415 Volt	20 Amps/phase maximum
Hot Block 95	415 Volt	32 Amps/phase maximum

For use on construction sites refer to CP1017 - Electrical Distribution on Building Sites.

Trouble Shooting

ALWAYS ISOLATE UNIT FROM ELECTRICITY SUPPLY BEFORE MAINTENANCE

Fault	Likely Problem	Remedial Action
No fan	No electricity supply	Check fuses/breakers. Check supply cable. *Meter heater terminal block for correct supply voltage. Meter selector switch for continuity. Check security of terminals and cables. Check fan blade is secure on motor shaft. Exchange motor.
No heat	Lack of air	*Meter correct voltage at unit. Ensure clear access for air through unit. Check fan as above. Check that heat returns after cool down period. If unit continues to cycle, identify faulty overheat protector and exchange. Check for continuity through each heating element and exchange as appropriate.

*NOTE: A valid check of the correct voltage at the unit can only be carried out when the unit is operating under full load. This requires the unit to be run with covers removed. Any fault finding work should be carried out by a qualified electrical engineer and the unit run with covers off for the minimum period possible. During maintenance always check that all components are securely mounted and that all electric terminals are tight.

Installation

Ensure that the units are always provided with a sound earth connection.

Usually, and to keep running costs to a minimum, it is best to keep outside doors and windows closed. However when drying out a room or building it may be preferable to keep windows ajar to allow some through draft. The internal air can only support so much water vapour before condensation will start. Condensation means lack of ventilation.

Position a single unit as centrally as possible in the heated area. Where a number of units are present in one area space them out equally throughout the area. Ensure that one heater outlet is not blowing directly towards another's inlet. Do not fit air transfer ducting to the units.

The Hot Block 65 and Hot Block 95 are fitted with a 5 position selector switch that allows the user to choose from 3 separate heat outputs and a Fan Only position for summer ventilation.

Hot Block 65

Setting	0	Off	
	1	Fan Only	
	2	6.5 kw	9.1 Amps/phase
	3	9.7 kw	13.6 Amps/phase
	4	13.0 kw	18.3 Amps/phase

Hot Block 95

Setting	0	Off	
	1	Fan Only	
	2	10.0 kw	14.0 Amps/phase
	3	15.0 kw	21.0 Amps/phase
	4	20.0 kw	28.0 Amps/phase

Disconnect electrical supply before removing covers.

Do not operate units with covers off.

Supply cable lengths should be kept to a minimum and maintained to be damage free at all time. For extended runs of cable across large floor areas armoured cable is preferred.

Principle of Operation

The source of the heat in each unit is a range of sheathed electric elements. These are mounted within a "metal tube" inside the outer casing, thus the outer case remains cool at all times.

An electric fan draws air in at the rear of the heater and blows the air over the heating elements.

Should the air flow be restricted, either because the inlet or outlet are blocked, or because the fan motor fails, the elements will overheat. This possible condition is constantly monitored by one or more overheat switches mounted above the elements and which switch off the electrical supply to the elements. As the elements cool down the overheats reset automatically. When this characteristic is observed the unit should be isolated immediately and the reason for the overheat identified and remedied. See the "Trouble Shooting" section

Principles of Construction

Electrical wiring diagrams are mounted inside the units. Remove the cover to refer. Units are built to IP.44 standards. The dual voltage (110/240v) version can be wired internally at a reduced capacity of 1.5kw on 110 volts.

To alter the supply on the dual voltage unit, 110v to 240v, or vice versa, refer to the wiring diagram.

Remember to rotate the supply identification plate on the top of the unit to match the appropriate wiring configuration for the dual voltage unit. Connecting the wrong supply to the unit can damage components and as such is not classed as a warranty fault.

No neutral wire is required for the 415/3/50 units. Just 3 phases and earth wires.

The units are all supplied with carrying handles on the top cover.

The top cover consists of the sides and top and is held in place by screws along the bottom of the sides. These screws are most easily removed using a socket spanner.

The remainder of the "fixings" in the unit are rivets. Although we acknowledge this makes the exchange of parts potentially more difficult, as compared with the use of screws or bolts, experience has shown that any such exchanges are intermittent that the advantages of not having screws coming loose and/or them "seizing" over long periods, more than outweighs any disadvantage.

Plugs and Cables

Plugs and sockets have to be carefully selected to suit the capacity and voltage of the unit.

The bare ends of the cable supplied with the heater are tinned. This is appropriate for connection into large terminal blocks. For smaller terminals, remove the length of tinning, leaving a short length of bare strands.

Recommended Plugs

Hot Block 25	240 Volt	13 Amp 3 Pin Plug
		16 Amp 2 Pole + E Industrial Plug
Hot Block 25	110 Volt	32 Amp 2 Pole + E Industrial Plug
Hot Block 65	415 Volt	32 Amp 3 Pole + E Industrial Plug
Hot Block 95	415 Volt	32 Amp 3 Pole + E Industrial Plug

The Hot Block 25 on a 110 volt supply requires a minimum of 3kVA continuously rated transformer power. Any less transformer power reduce the heat output by reference to the wiring diagram inside the unit.

For extended runs of supply cable, in excess of the cable supplied with the unit, the following schedule will allow for a maximum volt drop at the unit of 10 volts on maximum heat setting:-

Hot Block 25	110 Volt	0 to 20 metres	2.50mm ² cables
		25 to 40 metres	4.00mm ² cables
Hot Block 25	240 Volt	0 to 50 metres	2.50mm ² cables
		50 to 100 metres	4.00mm ² cables
Hot Block 65	415 Volt	0 to 50 metres	2.50mm ² cables
		50 to 75 metres	4.00mm ² cables
		75 to 100 metres	6.00mm ² cables
Hot Block 95	415 Volt	0 to 50 metres	4.00mm ² cables
		50 to 75 metres	6.00mm ² cables

At the unit a voltage drop of more than 15% below the normal supply rating will cause damage to the heater.