

Dimplex

ELECTRICAIRE

WARM AIR HEATING SYSTEM



**Models: R7 - 7kW / 46kWh, R8 - 8kW / 57kWh, R10 - 10kW / 69kWh,
R12 - 12kW / 80kWh, R15 - 15kW / 103kWh**

INSTALLATION INSTRUCTIONS

IMPORTANT

PLEASE READ THIS LEAFLET CAREFULLY AND RETAIN FOR FURTHER USE. NOTE ALSO THE INFORMATION GIVEN ON THE HEATER

IMPORTANT - IN EVERY CASE THE UNIT MUST BE FITTED ON TOP OF A PLENUM CHAMBER FOR CORRECT OPERATION

- The installation must be carried out by trained personnel.
- A means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- The heater must not be installed immediately below a socket outlet.
- The heater is not suitable for connection to a 30A ring circuit.
- Do not position the heater under windows where curtains can contact the heater casing.

WARNING - THE SURFACES ON THIS HEATER CAN BE HOT.

- This heater meets BS 3456 safety requirements. However, any heater type becomes hot in normal operation. Care must be taken to ensure that prolonged skin contact with the heater does not occur.
WHERE YOUNG CHILDREN, INFIRM PERSONS, OR THE AGED ARE LIKELY TO BE LEFT UNSUPERVISED IN THE VICINITY OF THE HEATER WE RECOMMEND THAT A GUARD IS FITTED. Contact your installer or the manufacturer for further advice.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

- THIS APPLIANCE IS EXTREMELY HEAVY. THE FLOOR MUST BE CHECKED TO ENSURE THAT IT IS CAPABLE OF BEARING THE WEIGHT OF THE UNIT, UP TO 750KG ($\frac{3}{4}$ TON). DO NOT UNDER ANY CIRCUMSTANCES ATTEMPT TO MOVE OR REPOSITION THIS HEATER WITHOUT SEEKING EXPERT ADVICE.
- To maintain stability, it is essential that the heater is placed on a level surface.
- The heater must be installed where it is impossible for switches and other controls to be touched by a person using a bath or shower.
- IMPORTANT - Due to the newness of materials the heater will produce a slight smell for the first few days of operation. ROOMS MUST BE WELL VENTILATED AND YOUNG CHILDREN, CAGED BIRDS, OR PERSONS WITH RESPIRATORY COMPLAINTS MUST NOT REMAIN IN CLOSE PROXIMITY TO THE HEATER DURING THE FIRST 48 HOURS OF THE COMMISSIONING PERIOD.
- IF, DURING ANY REASSEMBLY OF THE HEATER, A PART OF THE THERMAL INSULATION SHOWS DAMAGE OR DETERIORATION WHICH MAY IMPAIR SAFETY, IT SHOULD BE REPLACED BY AN IDENTICAL PART.
- The heater must stand at least 50mm clear of any walls and 150mm below ceilings.

INSTALLATION INSTRUCTIONS

Standard - Single Phase

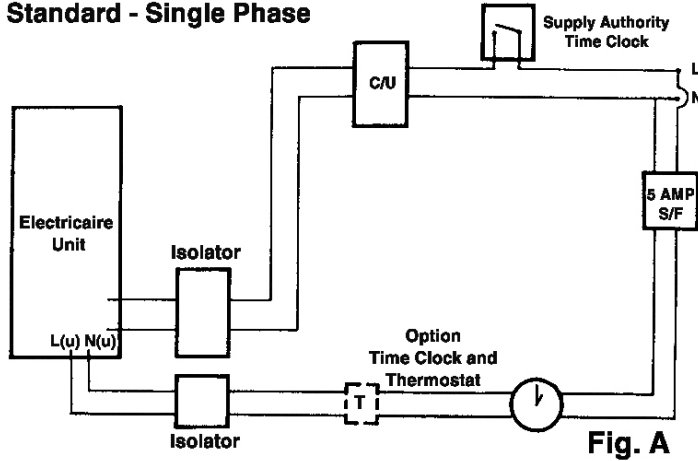


Fig. A

Standard - Three Phase

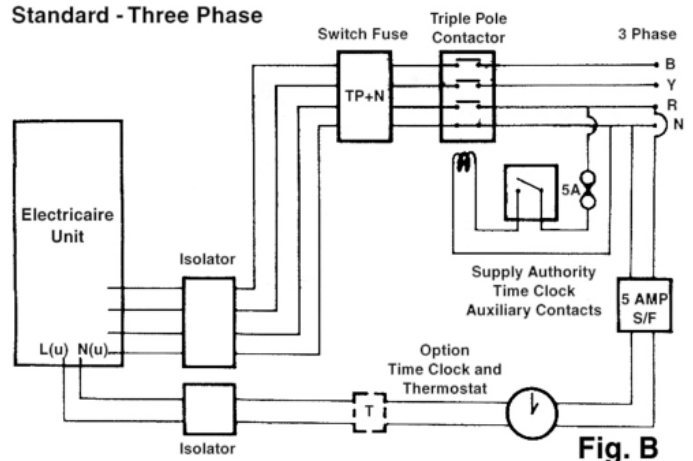


Fig. B

White Meter - Three Phase or Single Phase

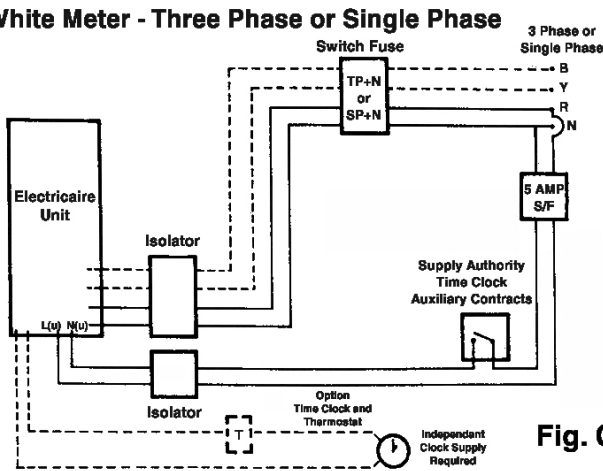


Fig. C

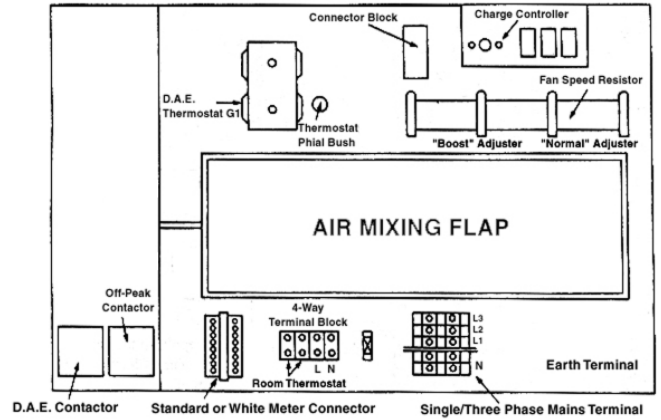


Fig. D

PREPARATION

The heater will arrive separately from its storage bricks, the following bricks will be required.

R 7 / 8 / 10	-	40 bricks
R12	-	48 bricks
R15	-	64 bricks

Electrical Supply

Two supplies are required for the operation of this heater - for 'on-peak' and 'off-peak' supply. Both supplies should be connected through isolator switches. A time clock / thermostat control circuit may be required.

WARNING - This appliance must be earthed

Only heat resisting cable (min. rating T85) should be used.

POSITIONING

Important - In every case the unit must be fitted on top of a plenum chamber for correct operation.

The unit can be installed free standing or in a suitable cupboard. For minimum clearances all around the heater refer to Fig. E. The floor must be checked to ensure that it is capable of bearing the weight of the unit, see warning on front cover. Also the floor should be flat and level. A concrete plinth measuring 700x700mm can be constructed. The plenum should be insulated from the floor or plinth by at least 13mm of non-compressible insulation material.

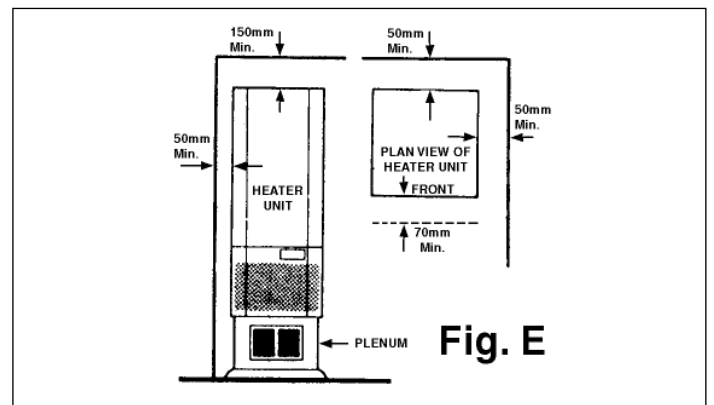


Fig. E

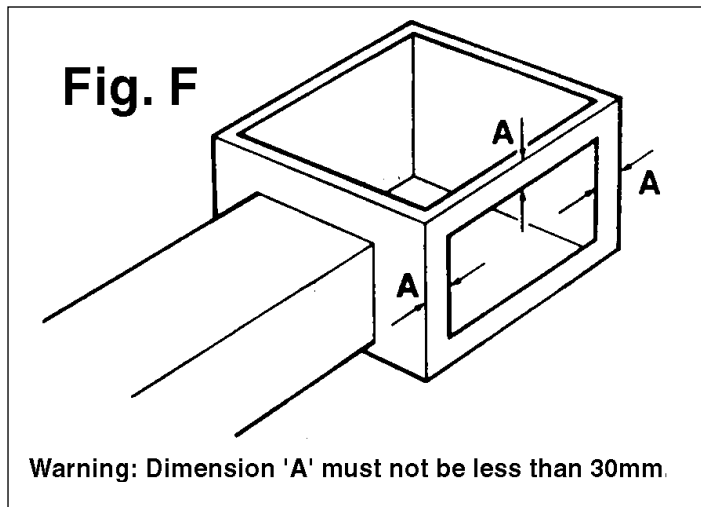
VENTILATION & DUCTING

Cupboard Ventilation - When the heater is installed in a cupboard, two return grilles should be provided in the cupboard door or wall. The top of the high level grille should be approximately 50mm below the top of the cupboard and the bottom of the low level grille approximately 25mm above the plenum top.

Return air grilles should be a minimum of 400mmx250mm. Grilles must be positioned to return air from the heated areas.

Ducting will be required if the heater is positioned in a cupboard and also in free standing installations if adjacent rooms are also to be heated.

Holes to the required dimensions (to suit airducts used) should be cut in the sides of the plenum chamber prior to siting. Holes should not be cut closer than 30mm to either sides, top or bottom of the plenum - see Fig F. The chamber can then be placed in position. The ductwork can now be firmly attached to the plenum internally, by means of 'bent over' flanges or externally by pop rivets. Ensure that all joints are sealed by 50mm wide tape.



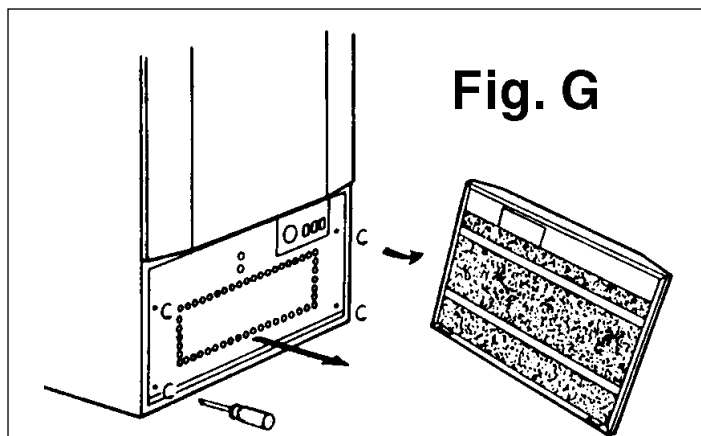
INSPECTION BEFORE INSTALLATION

Having removed the heater from its packing inspect it for possible damage caused in transit. Note - two sheets of mica insulation will be found underneath the heater. Retain these in a safe place, see Section 6. An inspection of the core bricks should also be made at this stage.

Remove the filter panel by pulling the top end away from the heater, and lift out of location hooks - see Fig G.

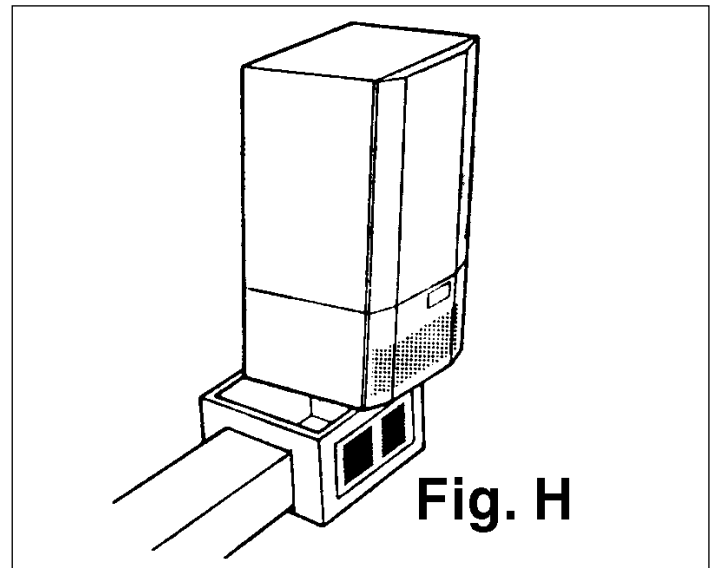
Remove the grille mesh by first unscrewing the fixing screws, then spring out one end - the grille should now lift clear.

Check that all wiring connections are secure and that the fan rotates freely.



INSTALLATION

1. Lift the heater onto the plenum and work it gently backwards to its correct location, see Fig. H. Position the heater exactly over the plenum with sides and rear flush to ensure stability. If fitted in a cupboard please ensure that the heater is facing the cupboard door to allow for ease of access.



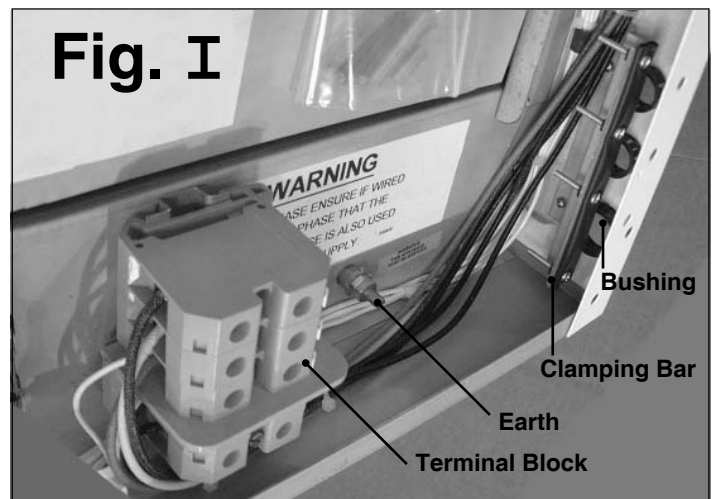
2. CONNECTION OF THE MAINS CABLE

Cable entry to the unit is at the bottom right hand corner when viewed from the front. See Fig. I. Conductors are to be fed through bushings and the clamping bar before being terminated in the terminal blocks on the lower wiring panel. Several blanking plugs are provided for any cable entry bushings that are not used.

Important - All mains supplies have to be installed with independent isolators.

WARNING

This appliance must be earthed



Main element supplies can be provided from either single phase or 3 phase supplies.

If 3 phase is chosen, the switching circuit must use the red phase.

An auxiliary or pilot circuit is also required, see Point 3. Control of the fan operation by a time clock or thermostat is also an option. Use wiring diagrams for more detail - Figs. A, B and C.

Important

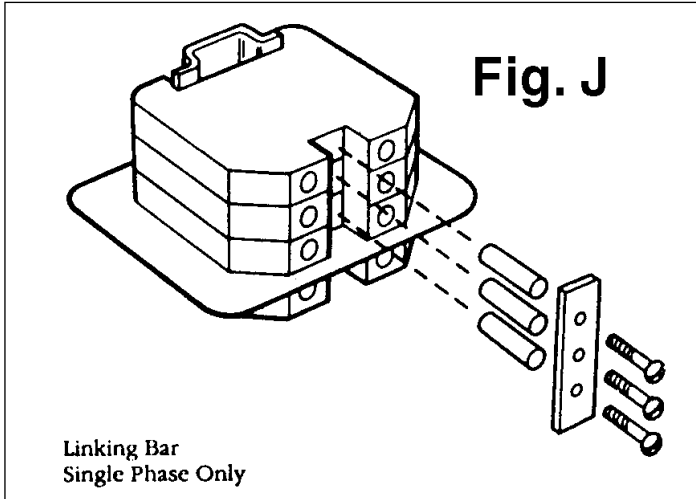
Clarify if the day energy provided by the main heating element is required. See Point 4.

Carry out the following instructions with care.

Main Element Supply - Single Phase

Connect the live (coloured red or brown) of the main supply cable (i.e. that cable supplying the heating elements) to the D.I.N. connector block marked 'L1' and the neutral lead (coloured blue or black) to the neutral terminal marked 'N'. Connect all earth leads (bare conductors or coloured green or green and yellow) to the earth terminal marked with the symbol \oplus . All bare earth conductors must be sleeved with earth sleeving.

Fit the D.I.N. connector linking bar assembly, see Fig. J, across D.I.N. connectors marked L1, L2, L3. The linking bar assembly drops into the centre groove in the top of the connector blocks once the transit screws, where fitted, are removed. It is essential that all screws are fitted and tightened securely.



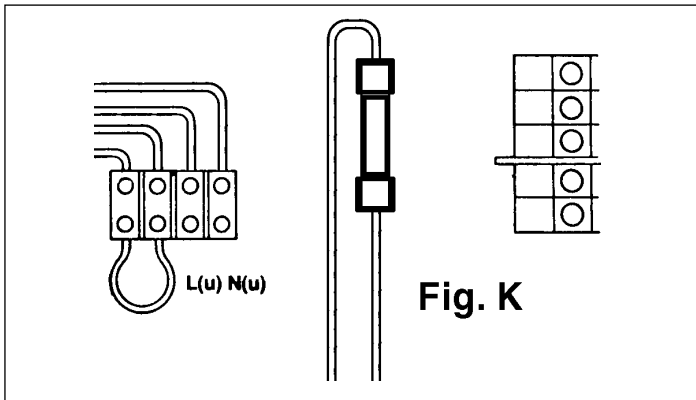
Main Element Supply - Three Phase Connection

Connect each phase of the incoming mains supply cable to the respective live terminal in the D.I.N. connector blocks i.e. red phase to L1, yellow phase to L2, blue phase to L3. (Note that the internal wiring is colour coded red, yellow, blue). Connect the neutral of the incoming mains supply, coloured black, to the terminal marked 'N' on the D.I.N. connector blocks.

Connect all earth leads (bare conductor or coloured green or green and yellow) to the earth terminal marked with the symbol \oplus . All bare conductors must be sleeved with earth sleeving.

3. CONNECTION OF AUXILIARY SUPPLY (FAN OR PILOT)

Connect the live lead of the fan or pilot supply (if day energy is required, see Point 4), coloured red or brown to the terminal marked L(u) and likewise the neutral coloured blue or black to the terminal marked N(u). These terminals are located in the four-way connector block placed in the centre of the bottom wiring panel. See Fig. K. and Fig. D



4. OPTIONS -

a) Time Clock / Thermostat

Remove the loop of wire from the terminals in the four-way connector block adjacent to the pilot supply terminal block, see Fig. K. Remake this connection with the leads from the time clock and/or thermostat.

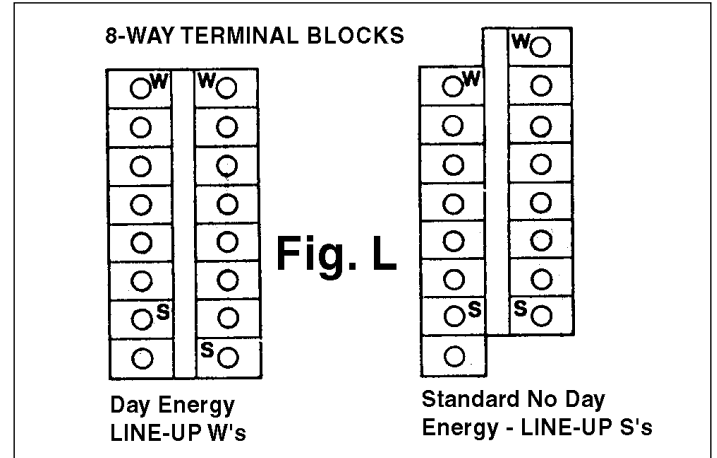
Where centre control of the fan is required with the day energy option the fan supply from the D.I.N. connectors will need to be removed. Another circuit is required.

Important

Ensure that all cables are routed neatly to the cable clamp, that no excess wire is left inside the heater and that no wire is left so that it can 'foul' the air mixing flap. Tighten the clamp firmly on all incoming cables.

b) Day Energy

The installation design may require the use of the day energy facility provided by the main heating elements. This facility can be easily selected using the 8 way snap connectors on the left hand corner of the lower wiring panel, see Fig. L and Fig. D.



i) Day Energy Operation - If the day energy facility is required the supply to the mains block will have to be permanently live.

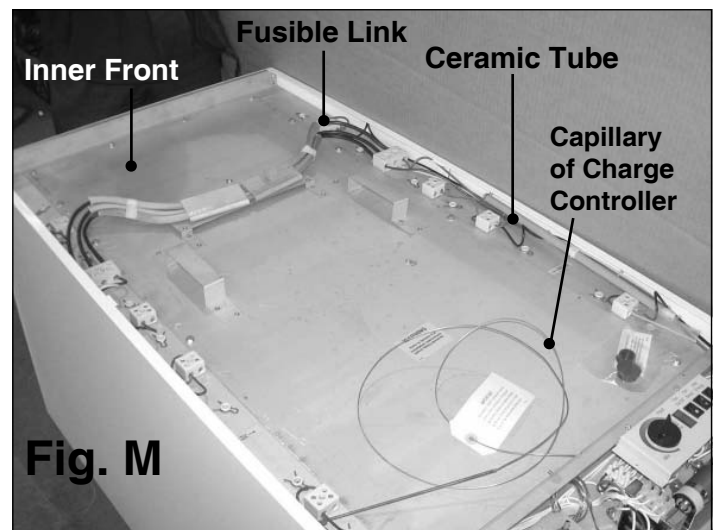
Locate the 8-way connector block and position the two strips so that the 'W's stamped on the strips line up.

ii) Standard Operation - For standard operation position the 8-way connector so that the 'S's stamped on the strips line up.

NOTE: The heater is normally shipped set up for Day Energy Operation.

5. PREPARATION FOR CORE ASSEMBLY -

i) Remove two screws securing bottom of outer front panel and lift upwards to withdraw. **The ceramic tube for the phial of the input controller will be taped to a vertical terminal panel - Fig. M. Remove and keep in a safe place as it will be required when reassembling the heater - see section 8(e).**



ii) Remove the fusible links located halfway up the inner front panel.

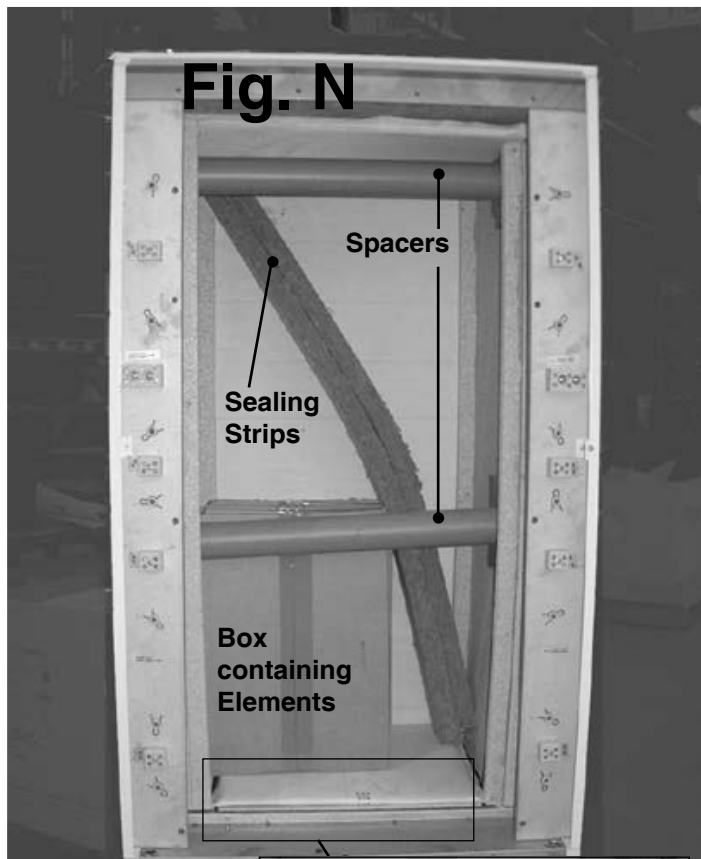
iii) Bend the capillary back to ensure that the inner front panel can be removed without damaging either capillary or phial.

iv) Remove the inner front panel by removing the securing screws. This panel can now be pulled forward and then withdrawn by tilting the top outwards and lifting.

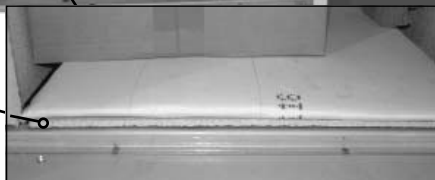
v) Note carefully the correct location of the hole in the next layer of insulation and remove. Check that the interior insulation has not been disturbed in transit.

vi) Raise the plastic spacers separating the moulded air passages slightly and remove packs containing elements and sealing strips. Do not remove spacers until bricks have been built up to same level as this helps to keep insulation in place - Fig. N.

Ensure both pieces of base insulation have not be disturbed in transit.



Ensure base insulation has not moved during transit.
Do not cover air inlet and outlet holes.



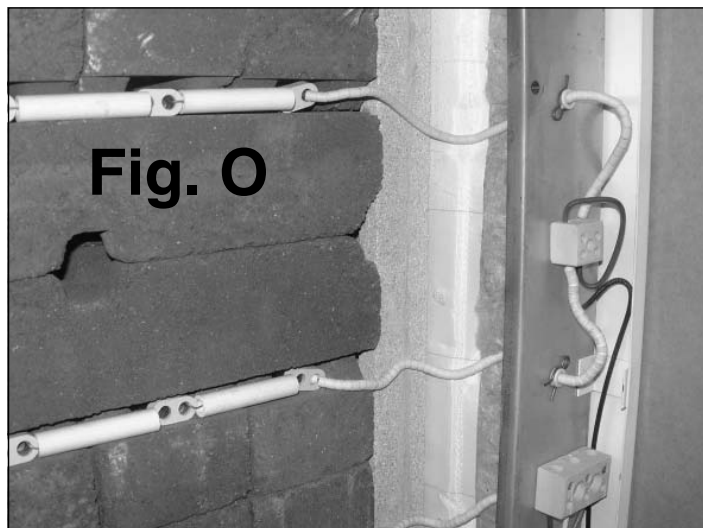
The first layer is constructed from 4 bricks running front to back and the grooves on top as shown in Fig. S (a). Ensure these sit firmly on the base and locate neatly between the moulded air ducts.

Handle the element with great care. Carefully locate each leg of the element in a groove of the brick. The second layer can now be positioned with the brick running from side to side as layer b. (Except R15 Models - see Fig. T).

Refer to the table and sketch - see Fig. T and fit the brick exactly as shown. Element positions are indicated by the numbers.

7. CONNECTING THE ELEMENTS

It is important that no part of the bare element wire is exposed or is close to the brick. The elements are insulated with porcelain fish-spine beads and can be pushed over the wire to ensure there are no gaps. Locate each element tail in the appropriate groove and route it round against the side and thread it through the ceramic bush in the vertical terminal panel. Connect the end of the tail to the appropriate terminal block. See Fig. O. Note: there is a maximum of two element tails per terminal block. Check the wiring at this stage for electrical continuity and insulation resistance. To ensure that the elements are correctly tightened into the terminal block it is imperative to tighten it again. This should be done at least three times.



vii) Inspect each element and the charge controller for damage during transit.

6. CORE ASSEMBLY - see Fig. T

NOTE: It is essential that the thermal insulation, especially the moulded air passages, are not damaged during assembly. Follow these instructions carefully.

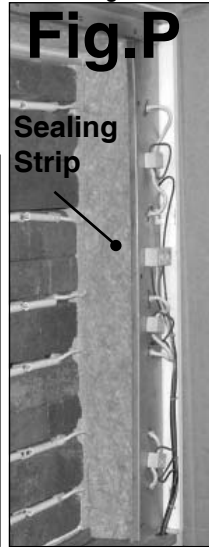
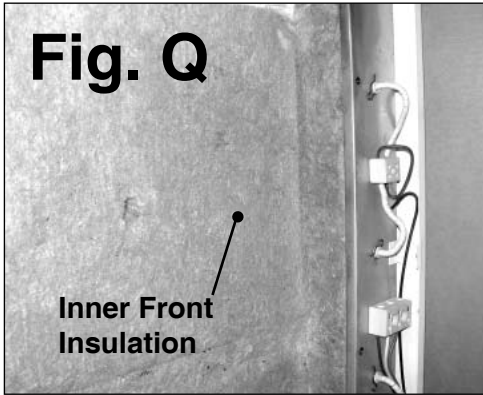
Care must be taken to ensure that the bricks, when fitted, do not intrude into the space allowed for air passages around the core. Air inlet and outlet holes in the bottom of the core must not be covered. Avoid excess gaps in the core by placing the bricks as close as possible during assembly.

Follow the instructions below and refer to Fig. T to ensure safe installation.

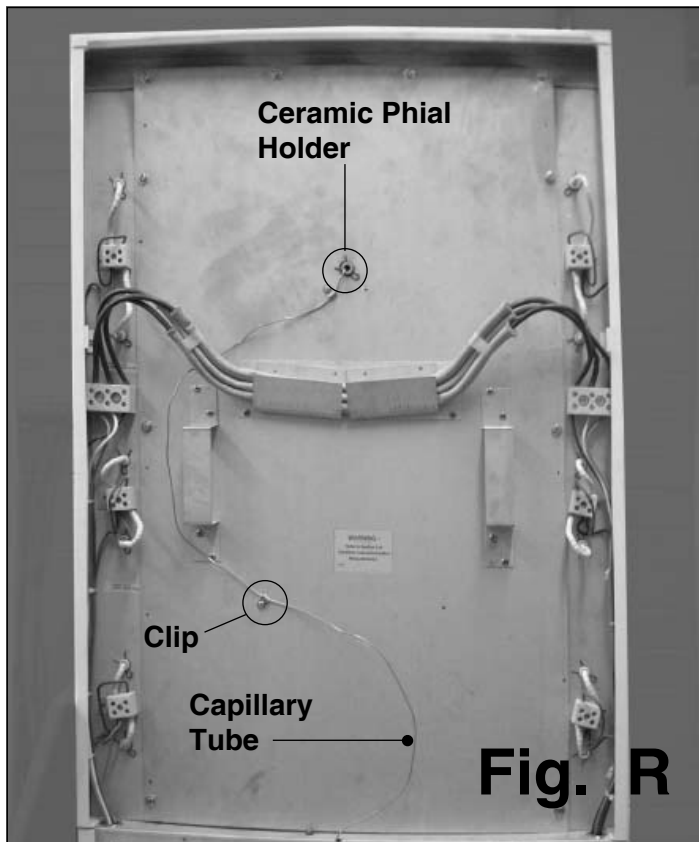
Each layer uses 4 double sized bricks. Build the core a layer at a time and include the elements at the appropriate position as shown by the number indicated in Fig. T.

8. REASSEMBLY OF THE UNIT

- i) Fit side insulation strips on each side between the cold tails and the inner front panel - Fig. P.
- ii) Replace inner front insulation. Ensure that when insulation is fitted the hole for the charge controller lines up with the grooves in the second and third layer of bricks down from the top. In the R15/104 unit only, the charge controller is entered in grooves between the fourth and fifth layers from the top - Fig. Q



- iii) Replace inner front panel and secure with screws. Ensure that hole for charge controller in this panel lines up with that in the inner front insulation.
- iv) Reconnect the fusible links and check for electrical continuity. Ensure that the fusible links fit properly into the support bracket.
- v) A special ceramic tube houses the phial of the input controller. Fit the ceramic tube by inserting it through the hole in the safe door pushing it in the full length - Fig. R.
- vi) Fit the input controller phial into the ceramic tube until the end of the phial bottoms in the tube. About 150mm of the capillary also goes into this tube. Secure the remainder of the capillary to the safe door using the clips provided.



- vii) Replace the outer front panel.
- viii) Replace the grille mesh.
- ix) Replace the filter panel.

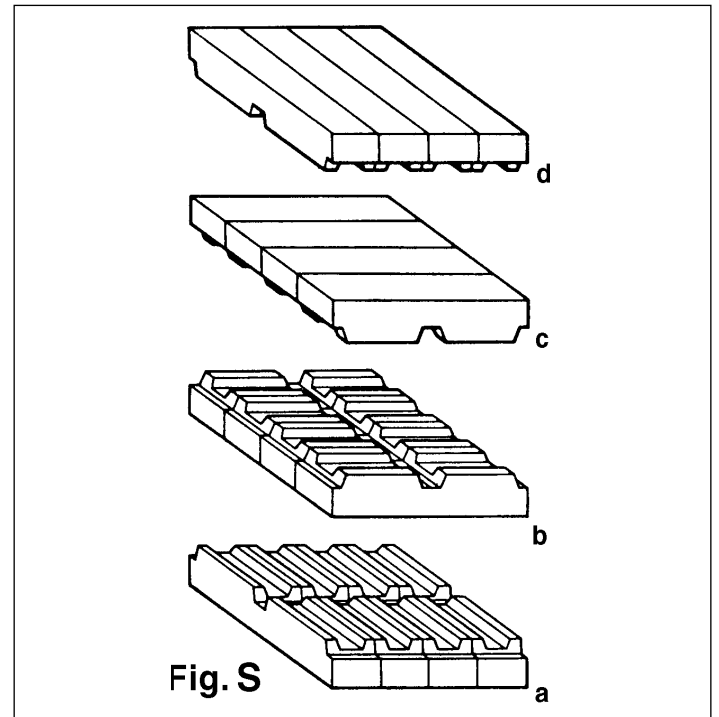
IMPORTANT - Recheck all electrical connections for tightness.

9. COMMISSIONING THE UNIT

When the heater has been completely assembled it will be necessary to commission the unit. This entails checking that the unit is functioning properly, that the airflow delivered is correct for the installation and that the outlet air temperatures are acceptable.

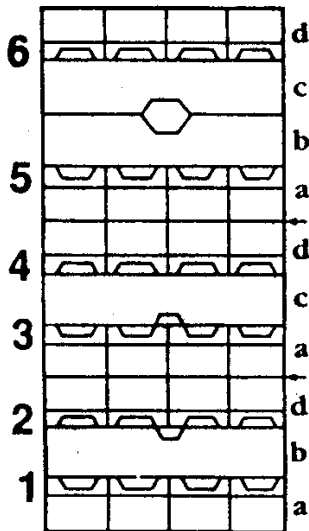
Fan speeds and outlet temperatures are factory preset but the fan speed can be adjusted by following the points below;

- i) Switch on the heater with the charge controller set at Max and allow to charge up overnight.
- ii) Switch 'on' the fan at 'Boost' speed and run for fifteen minutes.
- iii) Check the airflow delivered and if incorrect adjust as follows; Switch off mains supplies (both restricted and unrestricted). Remove filter panel. Remove grille. Loosen the first moveable band from the left on the fan speed resistor (see Fig. D) and move towards the left-hand end to increase the fan speed, towards the right-hand end to decrease the fan speed. Tighten up the band on the resistor and reassemble the heater. Switch on and check the airflow. Repeat the adjustment if necessary.
- iv) Switch the fan on to normal speed. After 15 minutes check the airflow delivered, if it is incorrect adjust as above, but in this case it is the second moveable band from the left which alters the speed.

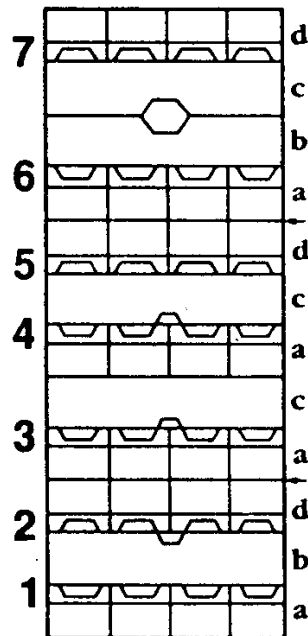


BUILD ORDER FROM BOTTOM UP

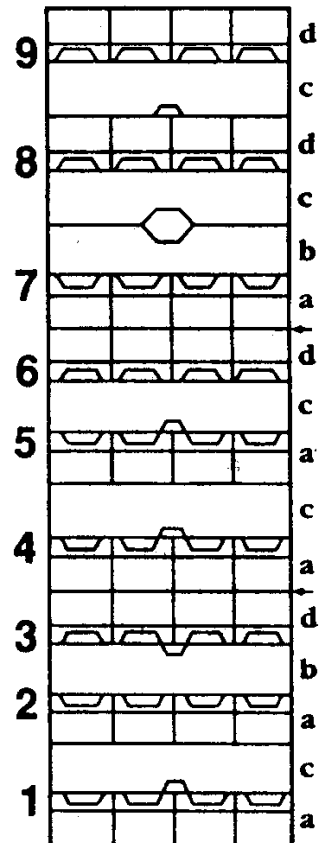
R7 a b d a c d a b c d
 R8 a b d a c d a b c d
 R10 a b d a c d a b c d
 R12 a b d a c a c d a b c d
 R15 a c a b d a c a c d a b c d c d



Model No. R7/8/10
 6 Elements
 40 Bricks



Model No. R12
 7 Elements
 48 Bricks



Model No. R15
 9 Elements
 64 Bricks

Fig. T

SPECIAL INSTRUCTIONS FOR CONVERSION FROM R10 TO R7 / R8 HEATER

Follow these instructions carefully to ensure the Electricaire units operate safely and reliably.

The build of the storage core for models R7, R8 and R10 is identical (see diagram Model No. R7/8/10). Elements must only be fitted as indicated below.

MODEL R7

Only four elements must be used for this specification. Install elements in positions 3, 4, 5 and 6 only. See diagram Model No. R7/8/10.

MODEL R8

Only five elements are to be used for this specification. Fit elements into positions 2, 3, 4, 5 and 6 only. See diagram Model No. R7/8/10.

MODEL R10

All 6 elements are installed as per diagram Model No. R7/8/10.

Important

Self adhesive rating labels are supplied. Please ensure the correct rating label, identifying the correct model, is fitted. The rating label is fixed to the mesh panel behind the detachable filter.

Installer Note: Please ensure that the USER INSTRUCTIONS are handed to the User when you have completed the installation if applicable, or left with the heater if the building is unoccupied when the installation is carried out.

RECYCLING



For electrical products sold within the European Community. At the end of the electrical products useful life it should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice in your country.

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