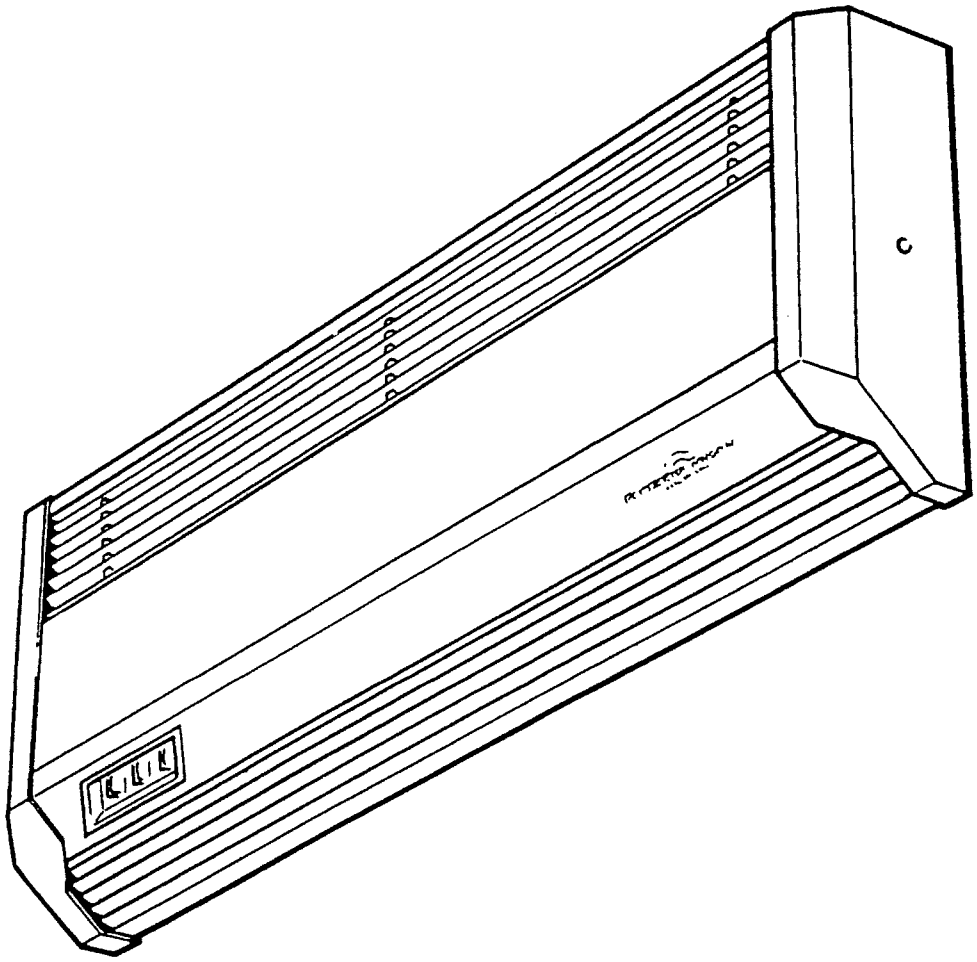
MYSON

# HI-LINE FAN CONVECTOR

**Models:-** **20 - 14** **15 - 10** **10 - 6** **7 - 4**

## USA



INSTALLATION, OPERATING &
MAINTENANCE INSTRUCTIONS

## CIRCUIT DESIGN

Myson Hi-Line fan convectors should only be used on closed circulation, two pipe, pump assisted systems.

Circuit and pump should be designed to ensure adequate flow and heat, in accordance with heat output table when balanced.

Due to the very small water content of the heat exchanger in modern fan convectors, it is important to ensure a good flow of water is maintained to compensate for the rapid cooling of the water as it passes through the high efficiency heat exchanger, and if fan convectors are used in conjunction with panel radiators it may be necessary to provide a separate flow and return circuit for the fan convectors. Pipe sizes should be in accordance with normal circuit design practise.

The unit may be controlled by a remote room thermostat if desired (see fig. 9 and supplementary notes).

## SELECTION

It is preferable to select the model with an output capable of maintaining the calculated heat losses of the room when operating at low speed at 140°F/60°C entering water temperature. This will enable the boost fan speed and the higher water temperatures to be used with great advantage for rapid warning of rooms from cold in excessive conditions. When establishing the temperature difference, allowance should be made for temperature drop in circuit. It is the temperature at the convector which dictates the output.

| Model | Power Consumption (watts) | Water content (litres) | Fan Speed | ENTERING WATER TEMPERATURE (°F) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 |
| 20-14 | 100 | 0.35 | Boost | 11073 | 12726 | 14380 | 16033 | 17687 | 19340 | 20994 | 22647 |
| | | | Medium | 9902 | 11388 | 12874 | 14350 | 15846 | 17332 | 18818 | 20304 |
| | | | Low | 8019 | 9220 | 10421 | 11623 | 12824 | 14025 | 15226 | 16427 |
| 15-10 | 80 | 0.27 | Boost | 8488 | 9759 | 11030 | 12301 | 13573 | 14844 | 16115 | 17386 |
| | | | Medium | 6546 | 7525 | 8507 | 9487 | 10467 | 11448 | 12428 | 13408 |
| | | | Low | 5833 | 6706 | 7579 | 8452 | 9325 | 10198 | 11072 | 11945 |
| 10-6 | 40 | 0.18 | Boost | 6064 | 6934 | 7805 | 8675 | 9546 | 10416 | 11287 | 12157 |
| | | | Medium | 4704 | 5409 | 6114 | 6819 | 7523 | 8226 | 8933 | 9637 |
| | | | Low | 3901 | 4485 | 5070 | 5654 | 6236 | 6822 | 7407 | 7991 |
| 7-4 | 30 | 0.15 | Boost | 4115 | 4731 | 5347 | 5963 | 6580 | 7196 | 7812 | 8428 |
| | | | Medium | 3158 | 3631 | 4104 | 4577 | 5050 | 5523 | 5996 | 6469 |
| | | | Low | 2293 | 2636 | 2980 | 3323 | 3667 | 4010 | 4353 | 4697 |

NOTE: THE OUTPUTS ARE BASED ON A FLOW RATE OF 1GPM

Correction Factor 3 gal/min multiply by 1.298

| Pressure drop (ft wg) | | | | |
|---|---|---|---|---|
| Flow Rate (gpm) | Model 7-4 | Model 10-6 | Model 15-10 | Model 20-14 |
| 1 | 0.22 | 0.27 | 0.45 | 0.58 |
| 3 | 1.36 | 1.57 | 2.08 | 2.68 |

TESTED IN ACCORDANCE WITH BS 4856 PART 1.1972
SUPPLY: 110v - 60Hz - 1ph
FLOW RATE: 340 litres/hr. - 75 gal/hr
WATER CONNECTIONS: ½" nominal tubing

## LOCATION

The Hi-Line unit may be fixed to any convenient wall and at such a height from floor level which suits the particular application, providing an unimpeded flow of warm air into the area to be heated. The maximum recommended height from floor level to the bottom of the unit is 2.13 metres (7ft), minimum distance from top of unit to ceiling is 20 mm (3/4"). (See fig. 1).

It is recommended that a minimum of 150 mm (6") clearance is left at each end of the unit for access to the plastic trims and fixing screws.

For the quietest fan operation the wall to which the unit is fixed should be solid and robust. Flimsy partitions will promote noise and vibration.

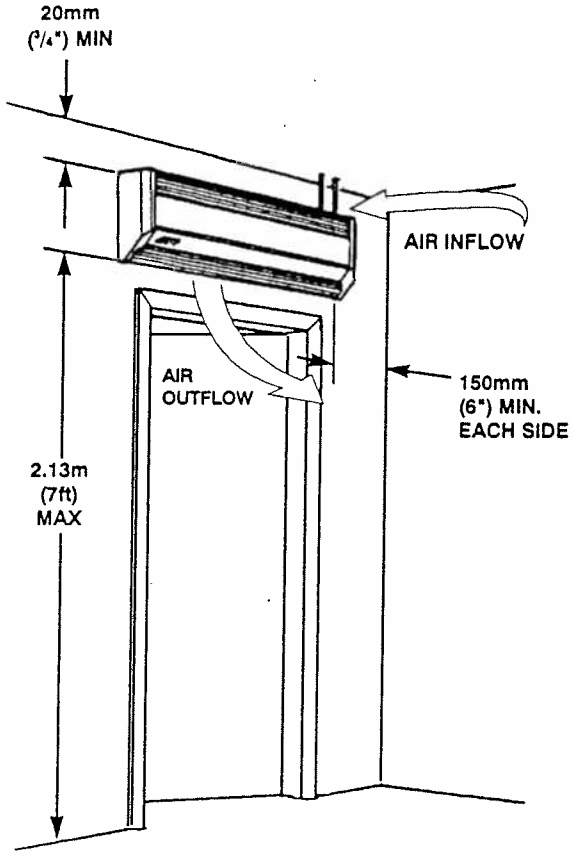
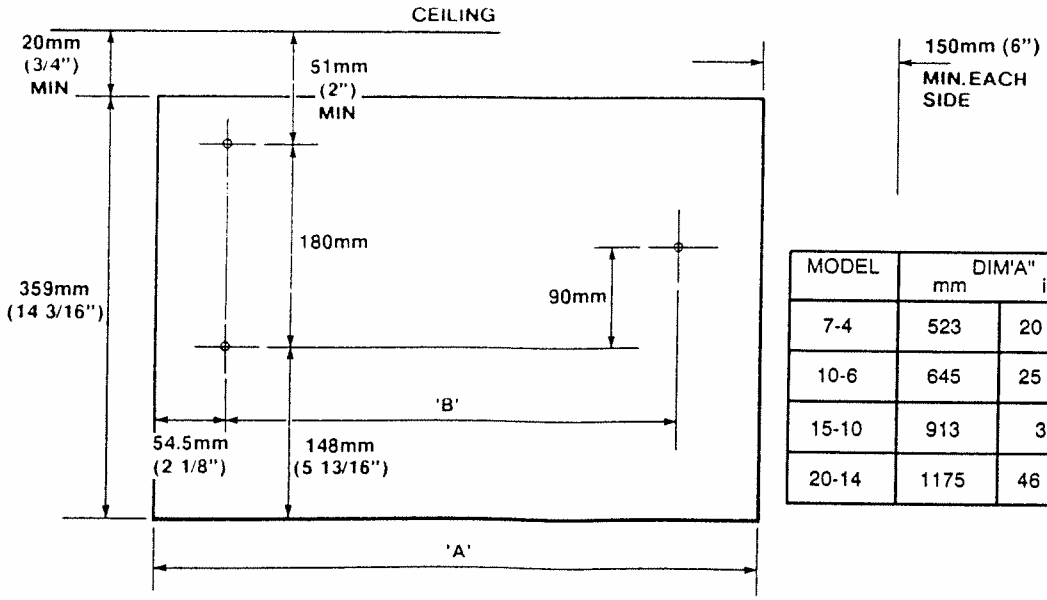



Figure 1

## FITTING PROCEDURE

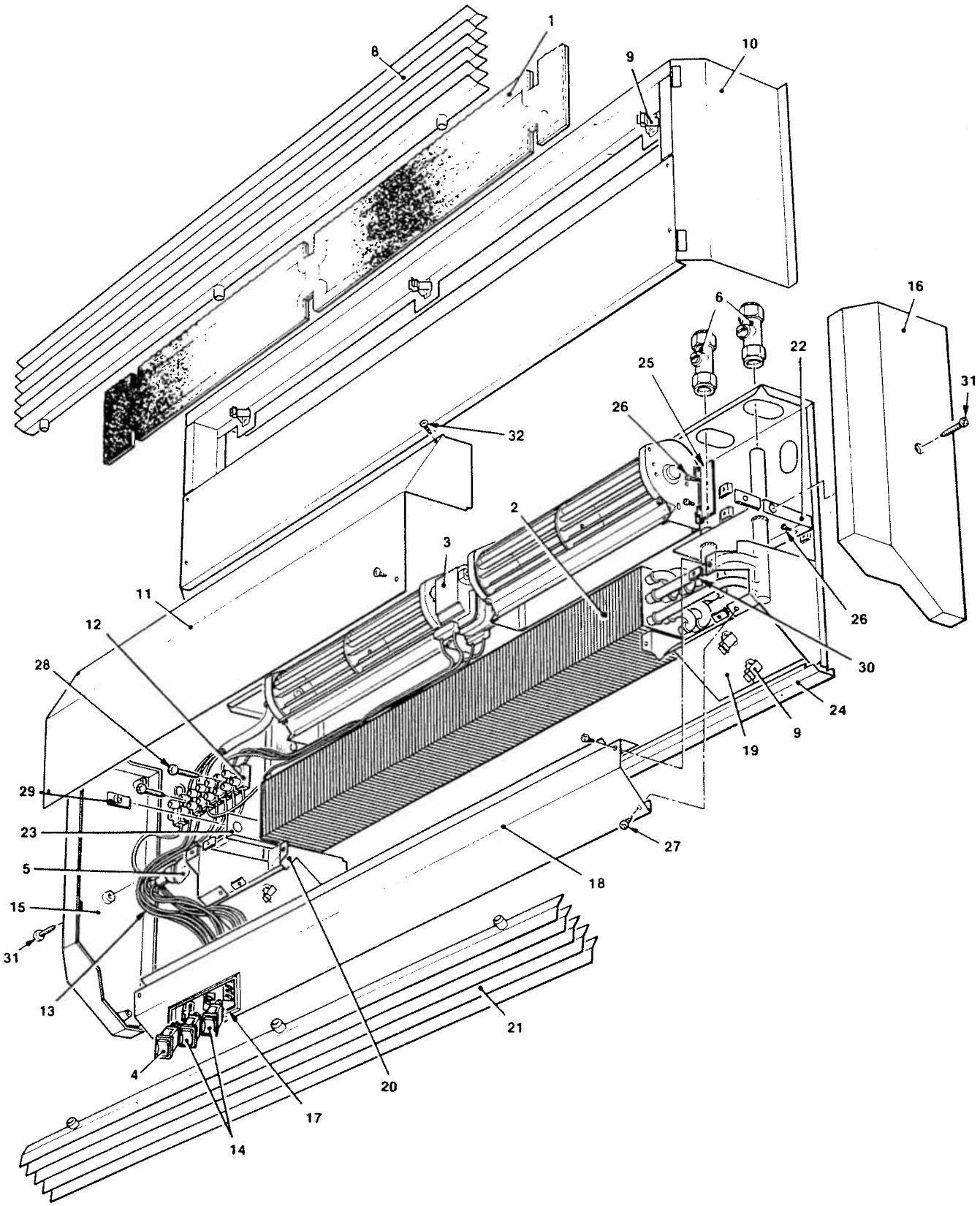
1. After unpacking unit cut mounting template from cardboard carton and position on wall. Check template is level and mark the hole positions through template. Remove template, drill and plug three holes for no. 8 x 1.5" round head woodscrews (not supplied). If preferred the holes may be marked on the wall using dimensions shown in fig. 2.

Remove the backing from the self adhesive washers and place on screws adhesive side towards the point. Screw screws into the wall leaving approximately 9mm (3/8") projecting. Press adhesive washers to the wall.




| MODEL | DIM'A" mm | DIM'A" in | DIM'B" mm | DIM'B" in |
|---|---|---|---|---|
| 7-4 | 523 | 20 5/8" | 390 | 15 1/3" |
| 10-6 | 645 | 25 1/2" | 512 | 20 1/6" |
| 15-10 | 913 | 36" | 780 | 30 3/4" |
| 20-14 | 1175 | 46 1/4" | 1104 | 43 1/2" |

Figure 2




MYSON

HI - LINE FAN CONVECTOR (USA)
SPARE PARTS LIST

## HI-LINE FAN CONVECTOR (USA)

| | | HI-LINE 7-4 | | HI-LINE 10-6 | | HI-LINE 15-10 | | HI-LINE 20-14 | |
|---|---|---|---|---|---|---|---|---|---|
| ITEM | DESCRIPTION | PART NO | QTY | PART NO | QTY | PART NO | QTY | PART NO | QTY |
| 1 | FILTER | 1290019 | 1 | 1290018 | 1 | 1290017 | 1 | 1290016 | 1 |
| 2 | ELEMENT | 8900041 | 1 | 8900042 | 1 | 8900043 | 1 | 8900044 | 1 |
| 3 | MOTOR/FAN ASSEMBLY | 7100043 | 1 | 7100042 | 1 | 7100041 | 1 | 7100040 | 1 |
| 4 | RED NEON SWITCH | 1300008 | 1 | 1300008 | 1 | 1300008 | 1 | 1300008 | 1 |
| 5 | LOW LIMIT THERMOSTAT | 1260007 | 1 | 1260007 | 1 | 1260007 | 1 | 1260007 | 1 |
| 6 | N/A UK ONLY | | | | | | | | |
| 7 | N/A UK ONLY | | | | | | | | |
| 8 | TOP GRILLE | 6200170 | 1 | 6200163 | 1 | 6200156 | 1 | 6200142 | 1 |
| 9 | GRILLE CLIP | 1355010 | 10 | 1355010 | 10 | 1355010 | 10 | 1355010 | 10 |
| 10 | SURROUND | 6200171 | 1 | 6200164 | 1 | 6200157 | 1 | 6200143 | 1 |
| 11 | FRONT BAFFLE | 6000837 | 1 | 6000824 | 1 | 6200150 | 1 | 6200148 | 1 |
| 12 | TERMINAL BLOCK | 1396000 | 1 | 1396000 | 1 | 1396000 | 1 | 1396000 | 1 |
| 13 | HARNESS ASSEMBLY | 3000010 | 1 | 3000010 | 1 | 3000010 | 1 | 3000010 | 1 |
| 14 | SWITCH (H8610B) | 1300009 | 2 | 1300009 | 2 | 1300009 | 2 | 1300009 | 2 |
| 15 | LH END CAP | 1443159 | 1 | 1443159 | 1 | 1443159 | 1 | 1443159 | 1 |
| 16 | RH END CAP | 1443158 | 1 | 1443158 | 1 | 1443158 | 1 | 1443158 | 1 |
| 17 | SWITCH MOUNTING PLATE | 1443157 | 1 | 1443157 | 1 | 1443157 | 1 | 1443157 | 1 |
| 18 | SWITCH MOUNTING PLATE C/W ITEM 17 | 6200166 | 1 | 6200159 | 1 | 6200152 | 1 | 6200145 | 1 |
| 19 | RH BAFFLE | 6200167 | 1 | 6200160 | 1 | 6200153 | 1 | 6200146 | 1 |
| 20 | LH BAFFLE | 6200168 | 1 | 6200161 | 1 | 6200154 | 1 | 6200147 | 1 |
| 21 | BOTTOM GRILLE | 6200165 | 1 | 6200158 | 1 | 6200151 | 1 | 6200149 | 1 |
| 22 | HEADER BRACE | 6000797 | 1 | 6000797 | 1 | 6000797 | 1 | 6000797 | 1 |
| 23 | RETAINING BRACKET | 6000798 | 1 | 6000798 | 1 | 6000798 | 1 | 6000798 | 1 |
| 24 | BACK CHASSIS | 6200169 | 1 | 6200162 | 1 | 6200155 | 1 | 6200144 | 1 |
| 25 | FAN BRACKET | 6000289 | 1 | 6000289 | 1 | 6000289 | 1 | 6000289 | 1 |
| 26 | SCREW PHD 2 6x1/4 IN | 1350020 | 6 | 1350020 | 6 | 1350020 | 6 | 1350020 | 6 |
| 27 | SCREW CSK 6x3/8 IN | 1350006 | 4 | 1350006 | 4 | 1350006 | 4 | 1350006 | 4 |
| 28 | SCREW PHD 8x1/2 IN | 1350005 | 2 | 1350005 | 2 | 1350005 | 2 | 1350005 | 2 |
| 29 | CAP NUT NO. 10 | 1355006 | 2 | 1355006 | 2 | 1355006 | 2 | 1355006 | 2 |
| 30 | CAP NUT NO. 6 | 1355004 | 4 | 1355004 | 4 | 1355004 | 4 | 1355004 | 4 |
| 31 | SCREW PHD 10x1 IN | 1350057 | 2 | 1350057 | 2 | 1350057 | 2 | 1350057 | 2 |
| 32 | SCREW PHD 6x3/8 IN | 1350021 | 4 | 1350021 | 4 | 1350021 | 6 | 1350021 | 6 |

NOTE

EACH CARTON INCLUDES AN ACCESSORY PACK (7000011) WHICH CONTAINS:

| | | |
|---|---|---|
| 1 | CABLE CLAMP | 1440002 |
| 4 | RUBBER MOUNTING WASHERS | 1430003 |


**MARKETING & ADMINISTRATIONS**

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2. The system flow and return pipes should be positioned as shown in fig.3. It is unimportant which of the units pipes is connected to flow or return.

It is recommended that the pipework is arranged as shown in fig.4 as this allows the valves to be situated inside the unit. If the alternative pipe holes in the back of the unit are used, the valves must be fitted externally.

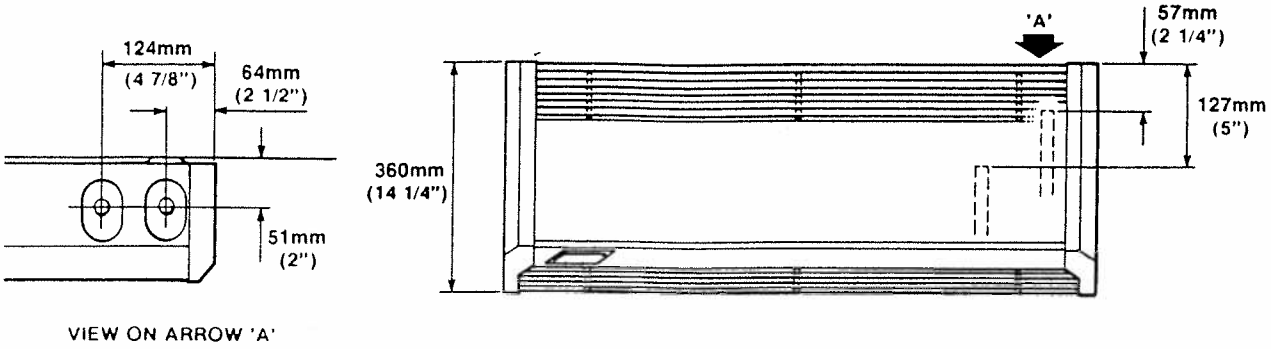


Figure 3

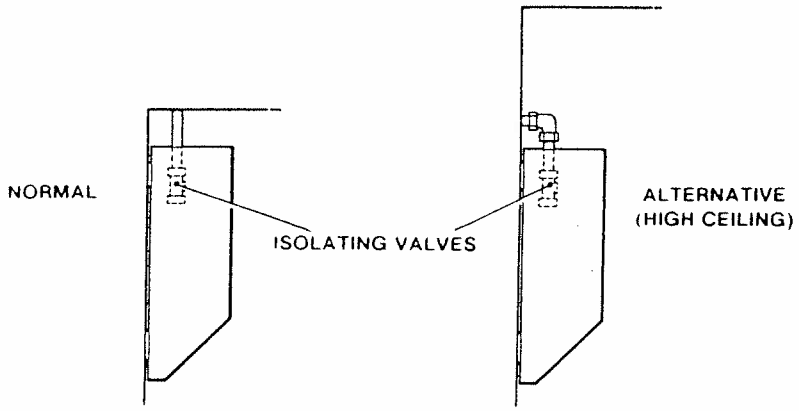


Figure 4

3. Remove screws from plastic trim at both ends of unit. Pull plastic trims off ends of unit and lift cover off chassis. (See fig.5).

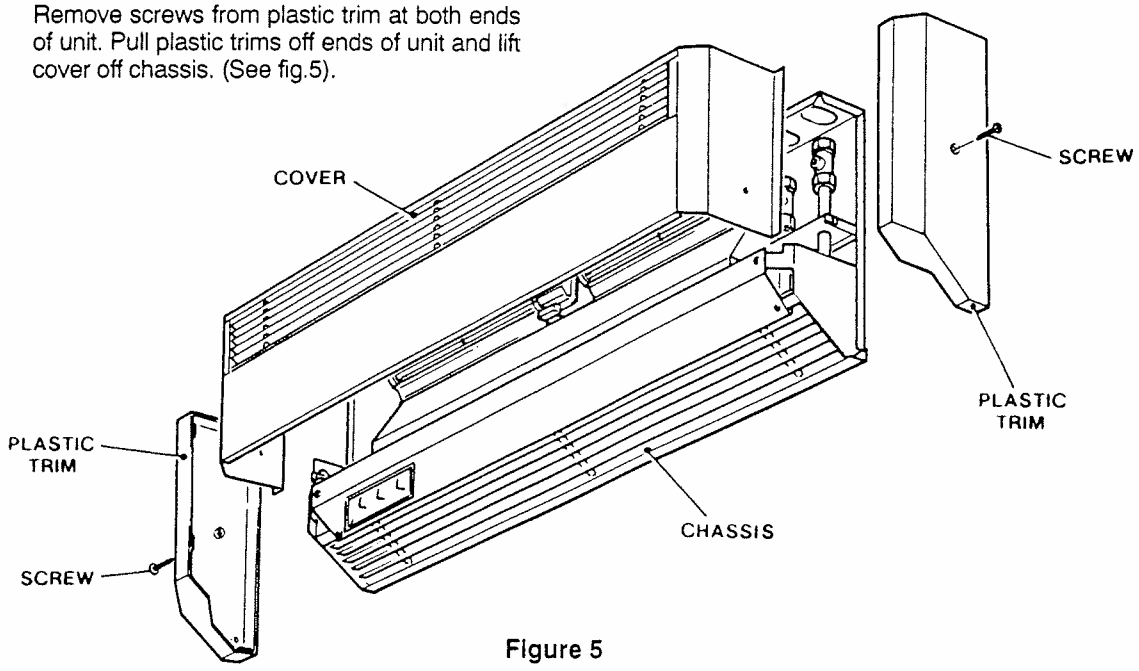


Figure 5

## CAUTION:

**Under no circumstances exert pressure on the fan wheel and the heat exchanger as this could cause permanent damage and impair the performance of the unit. Under no circumstances must any electrical components be tampered with.**

4. Fit chassis on to mounting screws, complete the pipe joints and firmly tighten mounting screws. If the wall is uneven a shim may be necessary to prevent vibration and to ensure maximum life of Fan Motor. (See fig. 6).

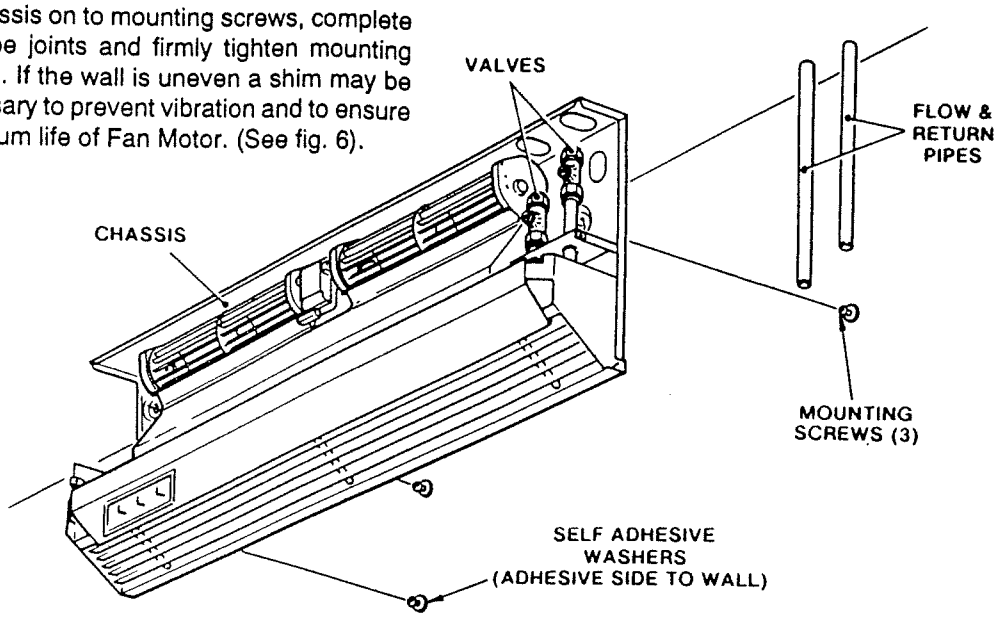


Figure 6

4. Open valves fully and check pipe connections for leaks.

## ELECTRICAL CONNECTIONS

1. Electrical connections may be made from a convenient switched 3 pin plug and socket, or a switch to fused spur.

2. Power supply cable entry to unit is at upper left hand side of unit. (See fig. 7).

3. Connect power supply to terminal block as shown on terminal block label.

4. If it is required to control the unit by means of a remote room thermostat, remove link lead between T1 and T2 and fit leads from remote thermostat to T1 and T2. See full schematic wiring diagram, fig. 9. Thermostat cable entry is by means of the extra hole provided alongside power cable entry. (See fig. 8)

5. The unit is fitted with a three speed motor and is factory wired to use low and boost speeds. If low and medium are preferred, move the white wire from terminal C to terminal B see fig 9).

6. Replace cover on chassis then push plastic end trims onto the unit ensuring the three clips moulded in each trim engage properly on the unit. Replace screws through trims into captive nuts in unit and tighten (see fig 5)

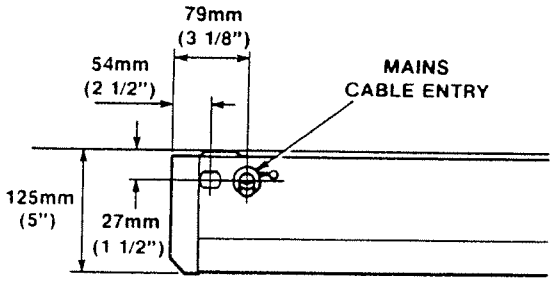


Figure 7

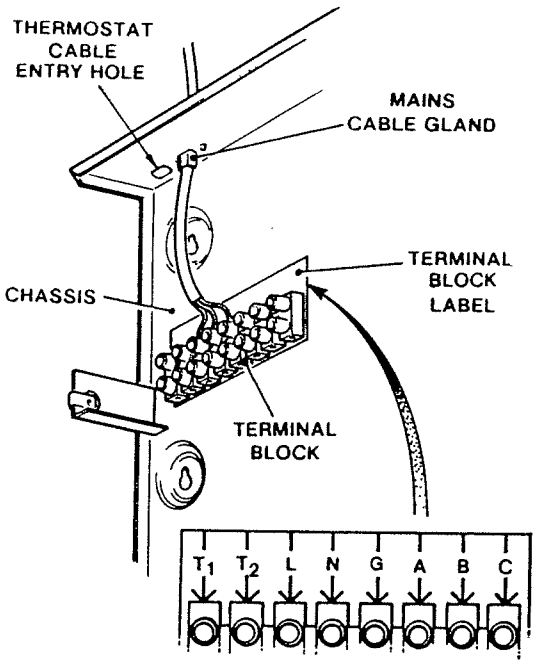


Figure 8

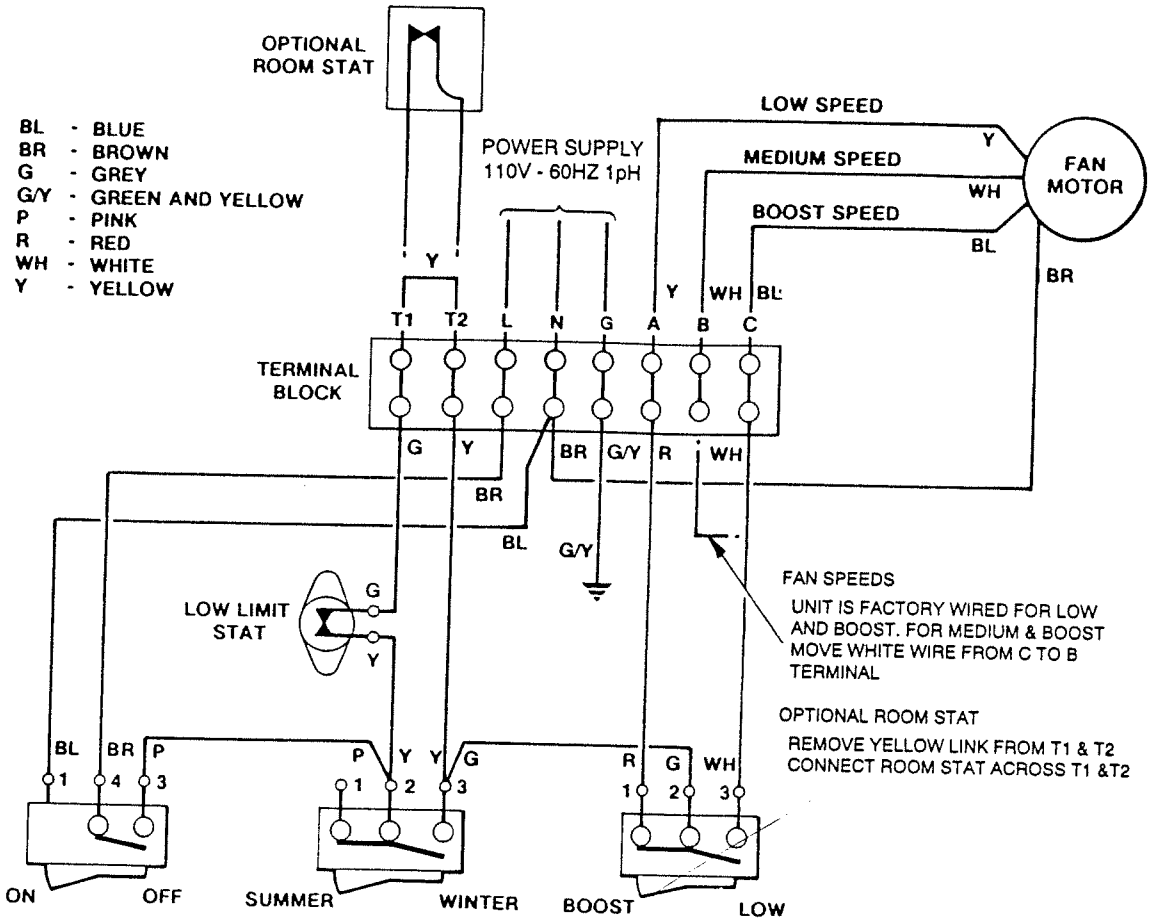


Figure 9

# OPERATING INSTRUCTIONS

## WINTER USE

1. Switch on power supply and switch unit on. On/off switch will light.

2. Ensure Summer/Winter switch is switched to the winter position indicated by W.

3. Set fan speed control to desired position, low (1) or boost (2).

4. Fan will now commence running if hot water is circulating throughout the unit.

NOTE:
There is a delay of approximately 4 minutes for fan to commence running after hot water has started to circulate through the heat exchanger, but will vary slightly according to water temperature.

## SUMMER USE - FOR CIRCULATION

If it is desired to use the unit in Summer for air circulation without heat, the Summer/Winter switch, (see fig. 10) must be switched to the summer position, indicated by S. Where a remote room thermostat is incorporated, this should be set to a maximum.

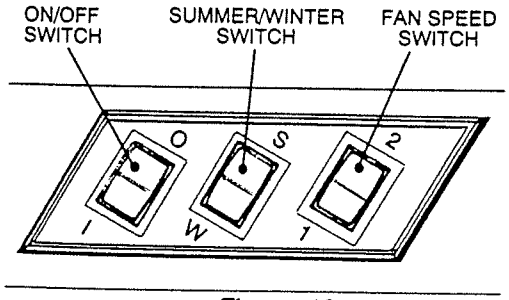


Figure 10

## GENERAL NOTES

When unit is operating as described above, the low limit thermostat which is fitted will operate automatically. If boiler is time clock controlled or if boiler is switched off manually i.e. if hot water ceases to circulate or temperature drops below approximately 140°F (60°C) the unit will cut out. On the resumption of hot water again circulating, the fan will automatically commence running.

# MAINTENANCE

Routine user maintenance is limited to external cleaning of the unit and occasional cleaning of the filter. We do not recommend the user to undertake any further servicing.

## EXTERNAL CLEANING

The surface may be wiped over with warm water and mild detergent, taking care to avoid water entering the grille areas and controls panel.

**Dry out thoroughly before switching on.**

## MONTHLY CLEANING - FILTER

1. Isolate from mains supply.
2. Pull air entry grille out of retaining clips and remove from unit. (See fig. 11 ).
3. Lift out filter, handling by the frame, taking care not to damage mesh.
4. Gently tap out loose dirt, then if required, filter may be washed in luke warm water with mild detergent.
5. Shake lightly after washing to remove excess water and allow to dry.
6. Replace filter and push grille back into position on retaining clips.

NOTE:
On no account let the filter become heavily clogged with fluff and dirt as this will impair the efficiency of the appliance.

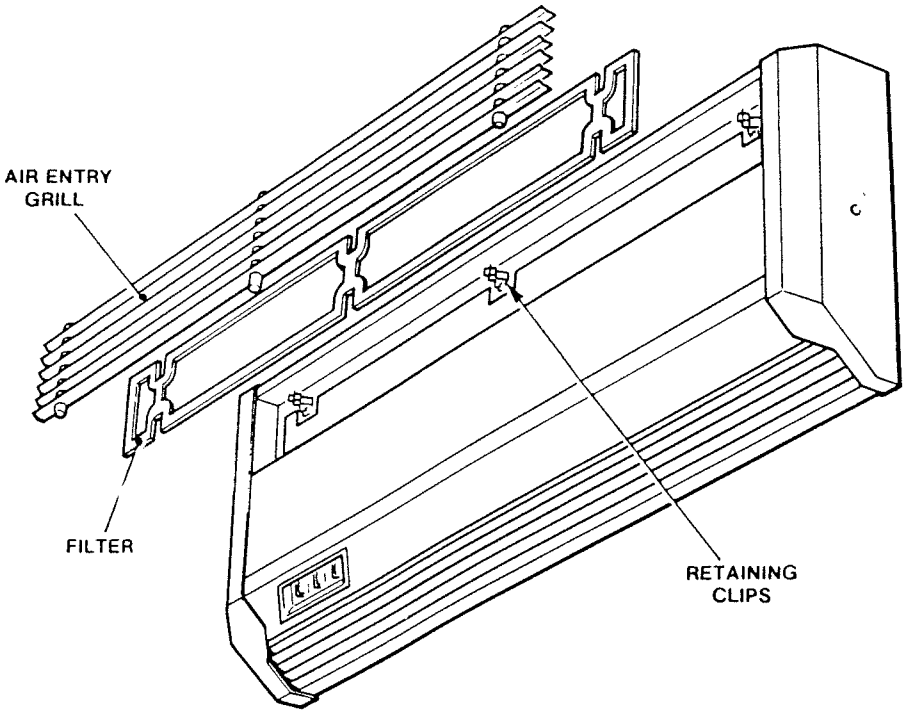


Figure 11

## ANNUAL SERVICE

To obtain maximum efficiency from the unit it is recommended that it be serviced annually.

## UNIT WEIGHTS

| Model | Unpacked | |
|---|---|---|
| | Kg | lb |
| 7-4 | 6.8 | 15.0 |
| 10-6 | 9.1 | 20.1 |
| 15-10 | 11.1 | 24.5 |
| 20-14 | 123.3 | 29.4 |

## DIMENSIONS

| Model | Dimensions | |
|---|---|---|
| | mm | in |
| 7-4 | 523 | 20 5/8 |
| 10-6 | 645 | 25 1/2 |
| 15-10 | 913 | 36 |
| 20-14 | 1175 | 46 1/2 |

NOTE: ALL IMPERIAL DIMENSIONS ARE APPROXIMATE

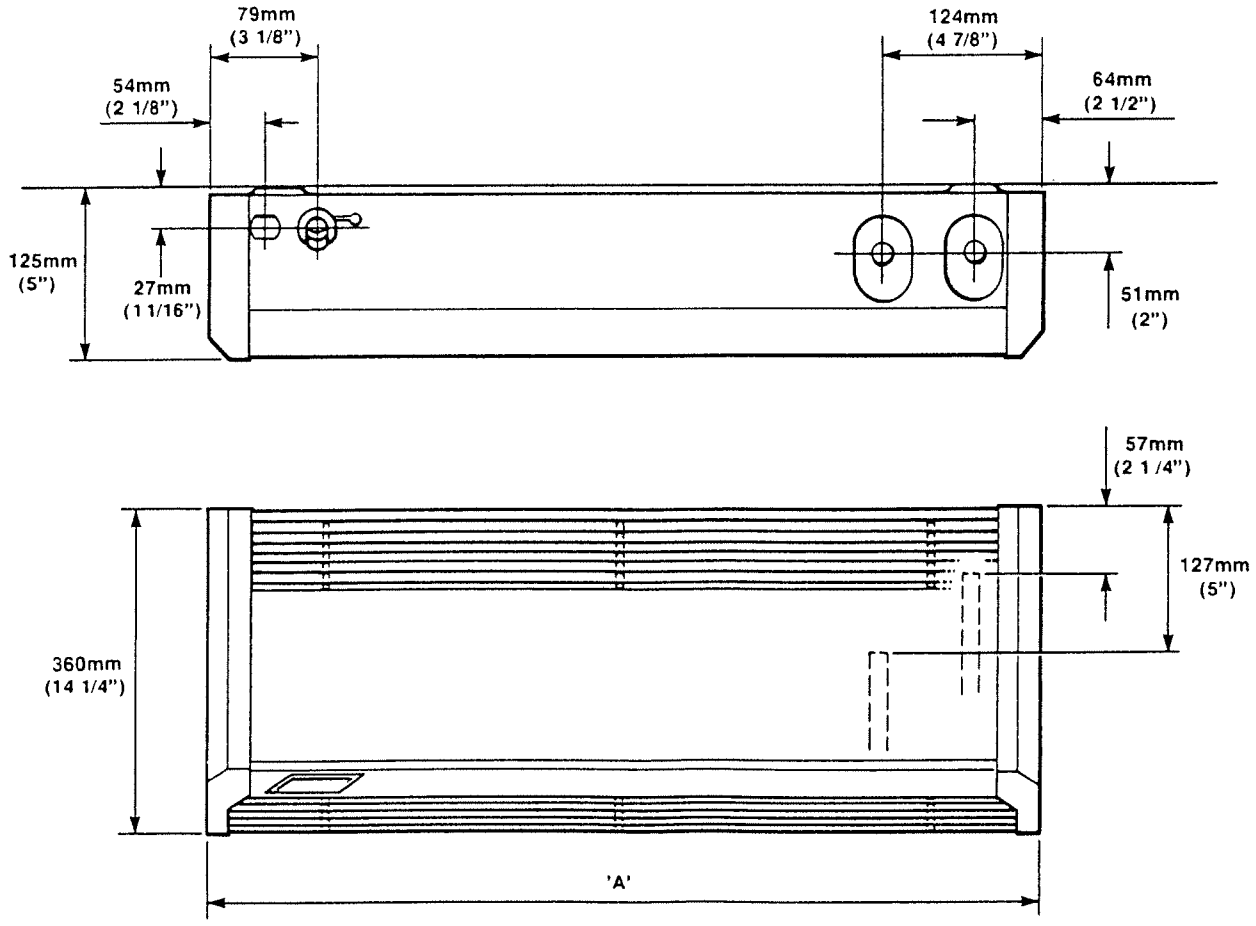


Figure 12

# SUPPLEMENTARY NOTES

1. FOR USE OF MYSON FAN CONVECTORS ON 2-PIPE SYSTEMS IN CONJUNCTION WITH PANEL RADIATORS.

## BALANCING

Due to the very small water content of the heat exchanger in modern fan convectors, when compared with panel radiators, it is important to ensure that a good flow of water is maintained to compensate for the rapid cooling of the water as it passes through the high efficiency heat exchanger, and the following method of balancing the circuit has been found most satisfactory where fan convectors and radiators are used on the same system circuit.

Fill and vent the circuit thoroughly, then open all fan convector and radiator valves fully. Allow system to reach operating temperature, re-vent, close all radiator lockshield valves fully and check that flow and return temperatures of fan convectors are normal for the output required. (If more than one fan convector is used, slight balancing between them may be necessary). Check that fan convectors are now working correctly then proceed to open valves very slightly on radiators and adjust carefully until required temperature of the radiators is obtained. Re-vent complete circuit.

Insufficient output may be caused by the following factors:-

1. Undersizing of fan convector for the room;
2. Air lock in system;
3. Water temperature insufficient at fan convector which could be caused by one or more of the following factors:

   a) Boiler temperature set too low.

   b) Poor circulation which could be caused by:

      i) High resistance in circuit due to acute bends or stoppages;

      ii) Incorrect balancing of circuit whereby the bulk of water is circulating through radiators rather than through the fan convectors which, of course, have a higher hydraulic resistance than radiators.

## REMOTE ROOM THERMOSTAT (IF FITTED)

The operation of the variable thermostat is to stop the fan when the room has reached the required comfort level which should be pre-set by the occupant. When the room temperature drops, the thermostat will cut in and re-start the fan. It will therefore be seen that the fan motor will cycle, i.e., cut in and out. The frequency of the cycling, i.e., duration of the fan running or not running, is controlled by several factors, namely, heat output in relation to the heat losses of the room, i.e., the colder the ambient outside temperature and the lower the boiler temperature, the longer will be the duration of the running of the fan. Conversely, the warmer the ambient or the higher the boiler temperature, the shorter the running periods. It will also be seen that the size of the fan convector, relative to the size of the room will affect this whereby the selection of a unit not capable of coping with the heat losses will result in the unit running continuously under such conditions.

NOTE:
UNDERSIZING OF UNITS OR TOO LOW A WATER TEMPERATURE WILL PREVENT THE UNITS FROM CYCLING AS THEY WILL BE UNABLE TO ATTAIN THE REQUIRED ROOM TEMPERATURE.

## LOW LIMIT THERMOSTAT

The low limit thermostat is incorporated in the unit for the sole purpose of shutting down the fan convector at the end of timer programme when used in conjunction with a time controlled boiler-pump system. There is inevitably a short delay in the operation of this thermostat dependant upon the residual heat in the system. This normally is about 3-4 minutes, however, on some systems where thermosyphoning occurs, it can be longer and extend until the whole system has cooled sufficiently to prevent thermosyphoning.

## SUPPLEMENTARY NOTES (continued)

2. USE OF MYSON FAN CONVECTORS IN SYSTEMS WHERE THE CIRCULATING PUMP IS CONTROLLED BY A REMOTE ROOM THERMOSTAT

On installations employing both fan convectors and panel radiators, the optimum method of control is to have a separate circuit to the fan convectors, the pump running continuously and the panel radiator circuit zone controlled by motorised valve and room thermostat. Alternatively, a single circuit may be used with a continuously running pump and thermostat control valves on the panel radiators.
However, when it is considered that either of these two methods may be too expensive for a particular installation, the use of a room thermostat to control pump may be successfully employed if the following recommendations are observed.

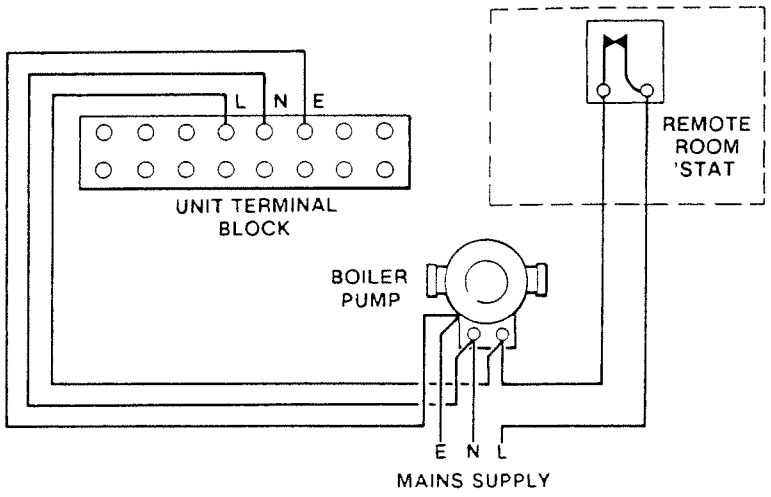


Figure 13

Wiring by fig.13 will ensure that the fan convector will cease to run immediately if remote room thermostat is satisfied - irrespective of the room temperature in which the fan convector is situated unless, of course, the room thermostat is situated in the same room.

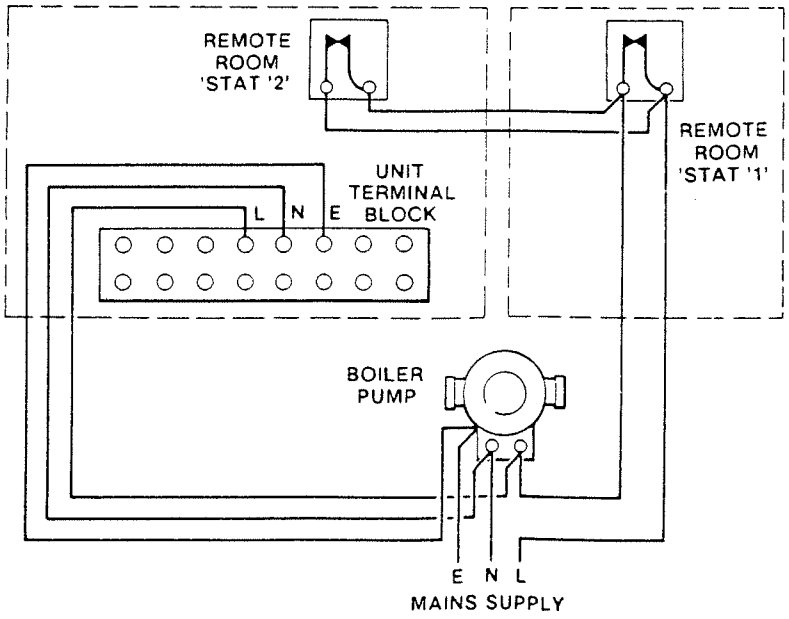


Figure14

Wiring by fig.14 will ensure that the fan convector will cease to run immediately pump stops. The pump and fan convector will continue running until desired temperature is reached in room containing fan convector and room thermostat number 2.