

Temcana EPF10
balanced flue
convector heater

Installation and
servicing instructions



Vulcana Gas Appliances Limited
Bridge Road,
Haywards Heath,
West Sussex RH16 1TX
Telephone: 0444 415871



Fig. 1

Installation Instructions

This appliance must be installed in accordance with B.S. Code of Practice CP331, B.S.5376*, B.S.5440 Part 1 1978, the Building Regulations, Gas Safety Regulations and in agreement with Local Gas Regions and Local Authorities.

* In course of preparation as a revision of CP332 Part 1.

Having removed the components which are packed on top of the heater, together with the 2-side and back heater packing pieces, carefully tip and lower the carton to the floor so that the Heater **FRONT** is facing the floor. Slide the Heater, complete with the internal cardboard front piece, clear of the carton.

Check the contents against the following list.

(INSTALLER: Please pass these instructions to the electrician when fixing is completed).

- (1) EPF10 Heater
- (2) Flue Tube
- (3) Air Duct
- (4) External Air Inlet Assembly
- (5) External Flue Assembly
- (6) Putty
- (7) Fireclay Cement
- (8) Installation/ Servicing and Users Instructions
- (9) Accessories pack containing 6 - 1 ½" No. 8 Round Head Woodscrews, 3 sets — terminal fixing screws/nuts, 4 washers for woodscrews.

} TERMINAL

Siting the Heater

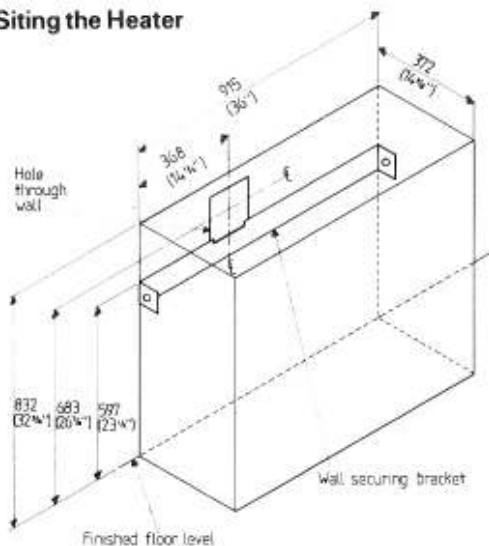


Fig. 2

Since the heater may be fitted on virtually any outside wall installation is relatively simple, but the following points should be borne in mind.

- (a) The following clearances are required (looking at the front of the heater).
- LEFT HAND SIDE: 100mm (4") for access to wall securing bracket screw.
- RIGHT HAND SIDE: 600mm (24") to enable the burner to be withdrawn for servicing purposes and air inlet.
- TOP: No clearance required for service purposes but if a shelf is fitted a min. clearance of 200mm (8") is required.
- (b) Generally the best position for the heater is mid-way along the wall on which it is to be fitted. This gives the best circulation effect.
- (c) Care must be taken to ensure that no curtains can be hung over or near the heater, nor any door swung in front of it.
- (d) Examine the area outside the building in the vicinity of the proposed terminal/flue position to be certain that it is clear of obstructions and that the base of the terminal is at least 300mm (12") above the external ground level and if possible, at least 600mm (24") away from any obstructions on the top or sides.
- (e) Balanced flue terminal should not be in any position that will allow the products of combustion to feed back into adjacent doors or windows. Where the terminal is wholly or partly beneath any opening (that is to say any part of a window capable of being opened, or any ventilator, inlet to a ventilation system or similar opening) ensure that no part of the terminal flue outlet is within 300mm (12") measured vertically to the bottom of that opening.
- (f) Balanced flue terminal positions that should be avoided are:
- Immediately below the eaves or a balcony.
 - At a re-entrant position on the face of the building.
 - Adjacent to any projection on the face of the building.

- (g) Where the terminal/flue outlet of the appliance is less than 2m (6' 6") above the level of any ground, balcony, flat roof or space to which any person has access and which adjoins the wall in which the terminal is fitted, the terminal must be protected by a guard of a durable material. (A wire guard is available for the terminal as optional extra, obtainable from the manufacturers).
- (h) The maximum wall thickness that can be accommodated with the standard flue tube and air duct is 381mm (15"). Longer flue tube and air duct can be provided for wall thicknesses up to 635mm (25") at extra cost.
- (i) After selecting the site, carefully inspect the wall and the floor area to make sure that there are no obstructions that will interfere with the installation of the heater, the gas or the electrical supply.
- (j) Where the heat resistance of the floor covering is in doubt, mount the heater on heat resisting material.
- The temperature rise on the floor will be approximately 35°C.
- (k) For installation through combustible walls, the provisions of B.S.5440 Part 1 Clause 21 must be followed. (A 1 1/4" square duct and wall plate are available from the manufacturers at extra cost).

INSTALLATION

WARNING

- (a) The joints on the flue tube and air duct must be sealed according to the following instructions: failure to do so will result in malfunction of the heater.
- (b) Burner gas pressure is not pre-set; see para. 37 for correct setting procedure.
- (c) Warranty will be void if the heater is not installed and set according to the fore-going requirements and the following instructions.
- Using the dimensions given in Fig. 2 mark the wall for the "hole through the wall".
 - Cut a hole as neatly as possible 203mm (8") square, right through the wall. If the heater is to be fitted onto a timber or combustible wall this hole must be increased to 298mm (11 3/4") square.
 - Place the heater in position against the wall in the desired position. Make sure that it is level, if necessary add packing under the feet until the heater is level. Mark the exact position on the wall of the Wall Securing Bracket (see Fig. 2). If there is a skirting board in the heater position mark it at each end of the heater.
 - Remove the heater from its position and remove the wall securing bracket from the heater, carefully retaining the two screws which you have removed.
 - Place the securing bracket against the marks on the wall and mark the position for the two fixing screws.
 - Drill and plug the wall to take two 1 1/2" No. 8 R.H. woodscrews. Cut away skirting board, if fitted.

7. Fix the wall securing bracket to the wall using two 1 1/2" No. 8 R.H. woodscrews provided.
8. Refix the heater to the wall securing bracket.
9. From the outside of the building insert the air duct (Fig. 1 Item 3) through the hole and locate it on the square spigot on the back of the heater, make sure that it is held square and level.
10. Mark the air duct for the correct length, when finally fitted it must finish flush with the outside wall surface. Fig. 3 illustrates the correct length. Remove after marking.

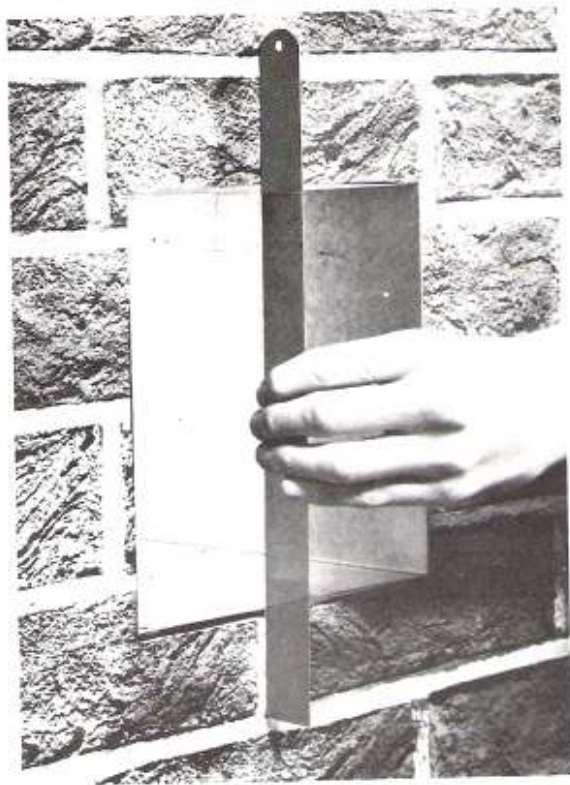


Fig. 3

11. Cut the air duct to the correct length, make sure that it is cut square.
12. From the outside of the building insert the flue tube (Fig. 1 Item 2) through the hole and push it firmly onto the collar on the back of the heater.
13. Mark the position on the flue tube of the outside wall surface, see Fig. 4.



Fig. 4

14. Remove the flue tube and add 120mm (4 3/4") to point where it was marked, i.e. so that the flue tube will protrude 120mm (4 3/4") outside the building.
15. Cut the flue tube to the correct length, make sure that it is cut square.
16. Spread putty (Fig. 1 Item 6) approx. 3mm (1/8") thick by 13mm (1/2") wide, to the inside surface of one end of the air duct.
17. Insert the air duct through the hole and locate the end with the putty on to the square spigot on the back of the heater. Make certain that the air duct is horizontal and square to the heater, wedge it into position with brick or tile chips.
18. For brick or similar wall a sand and cement mixture should now be used to fill the cavity between the air duct and the wall, leaving a flush finish on the outside wall surface.
N.B. If this cavity is not excessive, say the hole through the wall does not exceed 216mm (8 1/2") square, then this may not be necessary.

For combustible wall insert a 298mm (11 3/4") square steel duct through the hole in the wall, its length equal to the total wall thickness.

19. Place the external air inlet assembly (Fig. 1 Item 4) into position making sure that the spigot of the assembly enters the air duct and that the word 'UP' is uppermost. Mark the position on the wall for the four fixing screws and remove the assembly.
20. For brick or similar walls drill and plug the wall, in the marked position, to take 1 1/2" No. 8 woodscrews.
21. Apply putty to fill generously the groove on the wall plate on the external air inlet assembly, see Fig. 5.



Fig. 5

For combustible wall also apply putty to the wall side of the additional wall plate, between the fixing holes and the outside edge.

22. Place the external air inlet assembly into position make sure that the spigot enters the air duct and the word 'UP' is uppermost.

For combustible wall the additional wall plate must be positioned between the wall and the

external air inlet assembly.

Fix the assembly into position using the 4 — 1 ½" No. 8 R.H. woodscrews and washers provided.

23. Ensure that the joint between the air duct and the square spigot on the back of the heater is completely sealed. Force additional putty into any unfilled spaces and finally smooth out the putty.
24. Push putty into the joint between the spigot of the external air inlet assembly and the air duct to make a complete seal, finally smooth out the putty.
25. If necessary apply additional putty to any unfilled spaces between the wall and the wall plate of the external air inlet assembly to make a waterproof joint.
26. Apply fireclay cement (Fig. 1 Item 7) approx. 3mm (⅛") thick by 13mm (½") wide around the inside of either end of the flue tube.
27. Insert the flue tube through the external air inlet assembly/air duct and push it firmly onto the collar on the back of the heater. Ensure that the joint is sealed.
28. Take the external flue assembly (Fig. 1 Item 5) and fix it to the external air inlet assembly with the nuts and bolts provided. Ensure that the spigot on the external flue assembly (which is off centre) is towards the top and enters the flue tube. See Fig. 6 for final assembly.



Fig. 6

GAS CONNECTION

29. The gas connection is Rc ½ (½" BSP internal thread). Connect the gas supply to the heater. A UNION SERVICE TAP must be incorporated as near to the inlet connections as practicable. The gas installation serving the heater should be in accordance with CP331 Part 3 (Installation of Pipes and Meters).
ENSURE THAT THE GAS SUPPLY DOES NOT INTERFERE WITH THE ACCESS DOOR.

ELECTRICAL

30. Remove internal wire guard front — 3 nuts and washers, retain for use later.
All external wiring to the appliance should be in accordance with IEE Regulations and any local Bye-Laws. The electrical supply required is 240 volt AC 50 Hz. The supply should be fused 5A or 3A if via a 3-pin plug. The coding of the input mains to the appliance is:

EARTH:	GREEN AND YELLOW
LIVE:	BROWN
NEUTRAL:	BLUE

Connect the electrical supply, using 24/0.2mm cable to BS 6500, to the terminal block marked L.N. & E. (located above the fan on the right hand side, see Fig. 7). Ensure that this cable is anchored by the inlet cable gland provided (above access door) and connected to the designated terminals:

⊕	— EARTH
L	— LIVE
N	— NEUTRAL

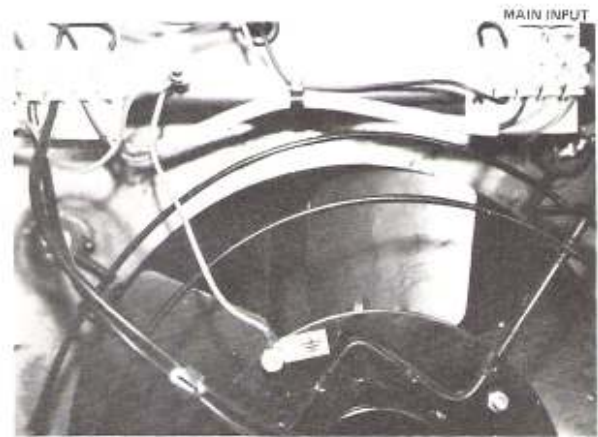


Fig. 7

IMPORTANT

There must be no surplus cable left between the terminal block and the first anchor point outside the heater.

CONTROL

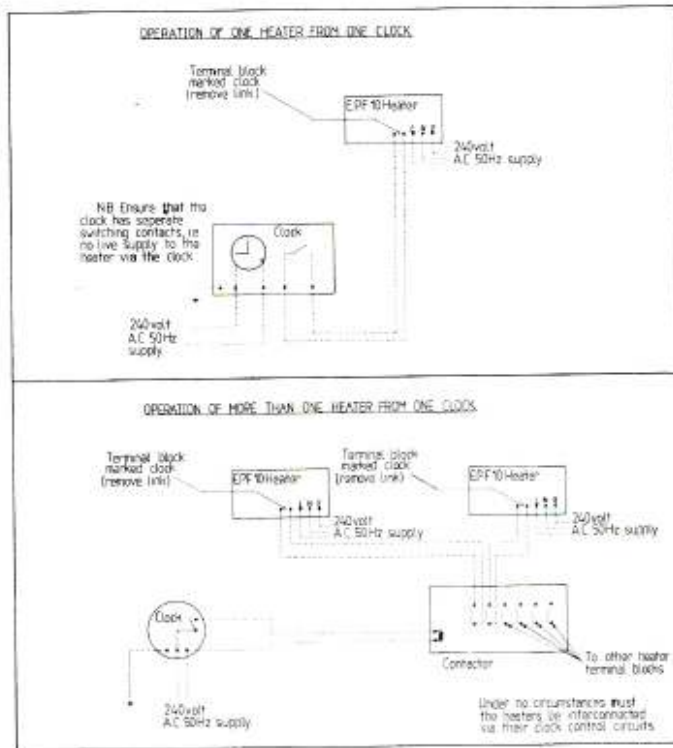
UNDER NO CIRCUMSTANCES MUST A CLOCK (or other control devices) BE WIRED TO SWITCH THE ELECTRICAL SUPPLY TO THE HEATER.
The electrical supply should not be switched off except to isolate the heater for service or in an emergency.

ENSURE THAT THE ELECTRICAL SUPPLY DOES NOT INTERFERE WITH THE ACCESS DOOR.

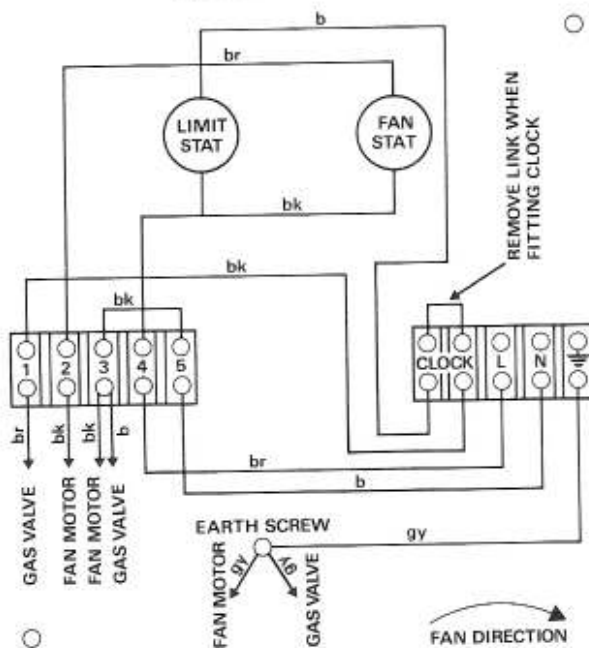
CLOCK CONTROL

31. A terminal block (located above the fan and adjacent to the L.N. & E. terminal block) is provided with two terminals marked CLOCK for the clock connection.
The two terminals are linked to facilitate operation without a clock for test purposes. This link must be removed when a clock is incorporated. When operating more than one heater from one

clock, a contactor **must** be used so that heaters are not interconnected.
SEE THE FOLLOWING WIRING DIAGRAMS.



INTERNAL WIRING DIAGRAM



240 volt A.C. 50Hz.
This Appliance Must Be Earthed

CLOCK NOT FITTED

If a clock is not fitted then a single pole switch **must** be incorporated in place of a clock, i.e. the single pole switch to be wired to the two terminals marked CLOCK after removing the LINK.

WARNING — Only one heater per single pole switch, circuits **must not** be interconnected.

Ensure that the cable from the clock or single pole switch is anchored by the inlet cable gland provided (above access door) and that it does not interfere with the access door. There must be no surplus cable between the terminal block and the first anchor point outside the heater.

Replace the internal wire guard, ensure that it is **firmly** held by the 3 nuts and washers.

COMMISSIONING AND TESTING

1.1 Initial Lighting (See Fig. 8)

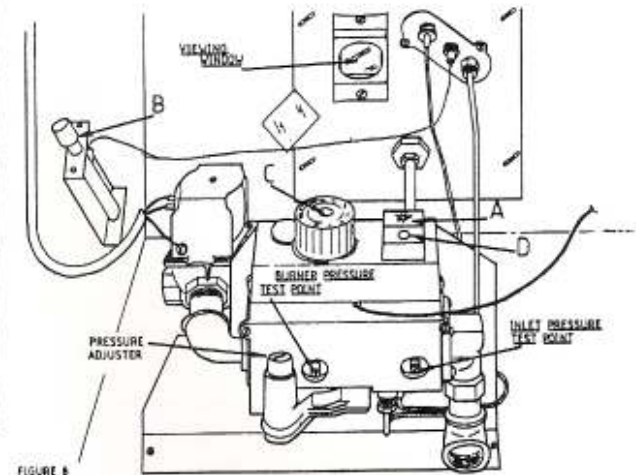


FIGURE 8

- (a) Ensure that the electrical supply to the heater is switched off.
- (b) Ensure that the clock, if fitted, is set to an ON period or that any alternative switching device is switched on.
- (c) Turn the thermostat knob 'C' to its highest setting i.e. fully anti-clockwise.
- (d) Turn on the gas supply at the union service tap in the supply and purge any air from the line.
- (e) Remove the burner pressure test point sealing screw and attach a suitable pressure gauge.
- (f) Push in button 'A' as far as it will go, taking care not to touch button 'D'.
- (g) Continue pushing button 'A' and at the same time, push down igniter knob 'B' and release; a click will be heard.
- (h) Whilst continuing to hold in button 'A', check that the pilot is alight by looking through the viewing window. If the pilot is not alight, repeat (g) until it does light, remembering to keep button 'A' pushed firmly in.
- (i) Once the pilot is alight, continue pushing button 'A' for a further 15 - 20 seconds.
- (j) Release button 'A' and the pilot should remain alight. If it does not, repeat (f), (g), (h) and (i), but this time, keep button 'A' pushed in a little longer.

- (k) Switch on the electrical supply to the heater and ensure that the main burner ignites smoothly from the pilot. The convection fan will not operate until the heat exchanger has warmed sufficiently.

1.2 Testing and Adjusting

- (a) With the heater operating, test for gas soundness around all pipework, including that from the gas control valve to the burner. Use a suitable soap solution or leak detection fluid.
- (b) Check that the burner pressure is correctly set (see table below). If adjustment is necessary, remove the grey plastic cap (see Fig. 8) to expose the pressure adjuster and turn the pressure adjuster (clockwise to increase). Replace the grey plastic cap after adjustment.
- (c) Push in button 'D' and release to extinguish the main burner and pilot.
- (d) Remove the pressure gauge and replace the burner pressure test point sealing screw ensuring that it is gas tight.

	<u>Natural gas</u>	<u>Propane</u>
Main Injector dia.	2.75 mm	1.9 mm
Burner pressure	10.7 mbar (4.3 in wg)	24.4 mbar (9.8 in wg)
Heat input	10.04 kW (34260 Btu/h)	10.04 kW (34260 Btu/h)
Heat output	7.83 kW (26700 Btu/h)	7.83 kW (26700 Btu/h)

1.3 Propane Heaters

Warning – The propane gas supply to the heater must be externally regulated to give an inlet pressure to the gas control valve of 37 mbar (14.8 in wg). Failure to regulate the gas supply pressure may result in damage to the gas control valve. (See Fig. 8 for inlet pressure test point.)

2. INSTRUCTIONS TO USER

Instruct the user in the operation of the heater and hand over the User Instructions. Advise the user that for the continued efficient and safe operation of the heater it is important that adequate servicing is carried out at intervals as recommended by the local gas region.

3. SERVICING INSTRUCTIONS

IMPORTANT – ALWAYS ISOLATE THE GAS AND ELECTRICAL SUPPLIES TO THE HEATER BEFORE CARRYING OUT ANY SERVICE WORK. Upon completion of servicing, ensure that:-

- (a) The heater is tested for gas soundness using a suitable soap solution or leak detection fluid.
- (b) The burner pressure is correctly set (see above table).

3.1 General Access for Servicing

All servicing and exchange procedures may be carried out through the fan/controls compartment. Access to this compartment is gained by opening the louvred door at the right hand side of the heater (coin slotted screw) and then removing the inner wire guard (3 nuts).

3.2 To Remove the Gas Control Valve Assembly/ Solenoid Valve

- (a) Gain general access as in 3.1 above.
- (b) Disconnect the gas supply by undoing the union at the inlet to the heater.
- (c) Remove the earth screw from the solenoid valve to disconnect the earth wire.
- (d) Pull off the remaining two electrical connections from the solenoid valve.
- (e) Disconnect and remove the main burner supply tube.
- (f) Unscrew the pilot tubing nut at the gas control valve.
- (g) Unscrew the thermocouple connection at the gas control valve.
- (h) Release the thermostat phial from its bracket.
- (i) Remove the two screws securing the gas control valve to its mounting bracket.
- (j) Carefully withdraw the gas control valve assembly taking care not to damage the pilot tube, thermocouple lead or thermostat capillary.
- (k) The solenoid valve coil may now be removed after removing the four securing screws. Take care not to drop the plunger and spring.

Reassembling Notes

- (i) When replacing the solenoid valve coil ensure that:-
 - (a) The plunger spring is correctly fitted into the top of the plunger before fitting the plunger into the coil.
 - (b) The coil is correctly positioned on the body i.e. so that the electrical connections are facing towards the front of the heater.
 - (c) The rubber 'O' ring is correctly positioned in the valve body (flat side down) before tightening the four securing screws.
- (ii) When replacing the gas control valve, the gas inlet and outlet flange elbows must be transferred from the old valve. Ensure that the rubber 'O' rings are correctly positioned before tightening the four securing screws.

3.3 To Remove the Thermocouple

- (a) Gain general access as in 3.1 above.
- (b) Unscrew the thermocouple connection at the gas control valve.
- (c) Slacken the nut securing the thermocouple at the pilot.
- (d) Withdraw the thermocouple.

3.4 To Remove the Burner Flange

- (a) Gain general access as in 3.1 above.
- (b) Disconnect and remove the pilot supply tube.
- (c) Remove the thermocouple as in 3.3 above.
- (d) Disconnect and remove the main burner supply tube.
- (e) Pull off the H.T. spark lead from the electrode.
- (f) Remove the four wing nuts securing the burner flange to the heat exchanger.
- (g) Carefully withdraw the burner flange, taking care not to damage the gasket.

3.5 To Gain Access to the Main Burner Injector

- (a) Remove the burner flange as in 3.4 above.
- (b) The main burner injector is located at the end of the injector supply tube and can be unscrewed to remove.

Important – The orifice of a gas injector is machined to precision limits. Do not clean with a hard, sharp object that could damage or enlarge the orifice.

3.6 To Remove the Main Burner

- (a) Remove the burner flange as in 3.4 above.
- (b) Remove the two screws securing the burner to the heat exchanger.
- (c) Carefully withdraw the burner, taking care to support it as it emerges.
- (d) The burner may be cleaned with a wire brush. Shake the dirt from the burner after cleaning.

4. To Remove the Fan and Motor Assembly

- (a) Disconnect the electrical wires from terminals 2 and 3 (from fan motor) and remove the earth connection to the earth bond screw.
- (b) Unscrew and remove the four wing nuts, washers and rubber washers securing the fan/motor guard to the fan partition (between the control compartment and the heat exchanger).

- (c) Carefully withdraw the complete assembly from the mounting studs and out of the heater cabinet, taking care not to damage the fan blades.
- (d) The fan blade assembly may be removed from the motor shaft after releasing the socket headed grub screw.
NOTE THE POSITION OF THE FAN ON THE SHAFT.
- (e) The fan motor may be removed from the wire guard by unscrewing and removing the four securing nuts.
When replacing, ensure that:-
 - (i) the motor is correctly located in the wire guard, i.e. so that the elongated hole in the back of the motor (wire entry) is in line with the cut-out in the circular mounting plate on the wire guard.
 - (ii) all the rubber mounting washers are correctly replaced.
 - (iii) the fan blades are clear of all obstructions and refixed to the shaft in same relative position as noted in (d) above.

5. To Remove either the Fan or the Limit Stat

- (a) Disconnect the following wires:-
 - Black from Terminal No. 4
 - Brown from Terminal No. 2
 - Blue from 'Clock' Terminal
- (b) Unscrew and remove the two nuts holding the fan and limit stat bracket assembly to the fan partition.
- (c) The complete assembly may now be withdrawn from the heater, exposing the fan and limit stat.
- (d) Pull off the tag wiring to the appropriate stat.
- (e) Remove the appropriate stat from the bracket by removing the two securing screws.

6. To Remove the Piezo Igniter

- (a) Pull the cable off the igniter.
- (b) Unscrew and remove the two screws securing the igniter to the side of the cabinet. Remove the igniter from the cabinet.