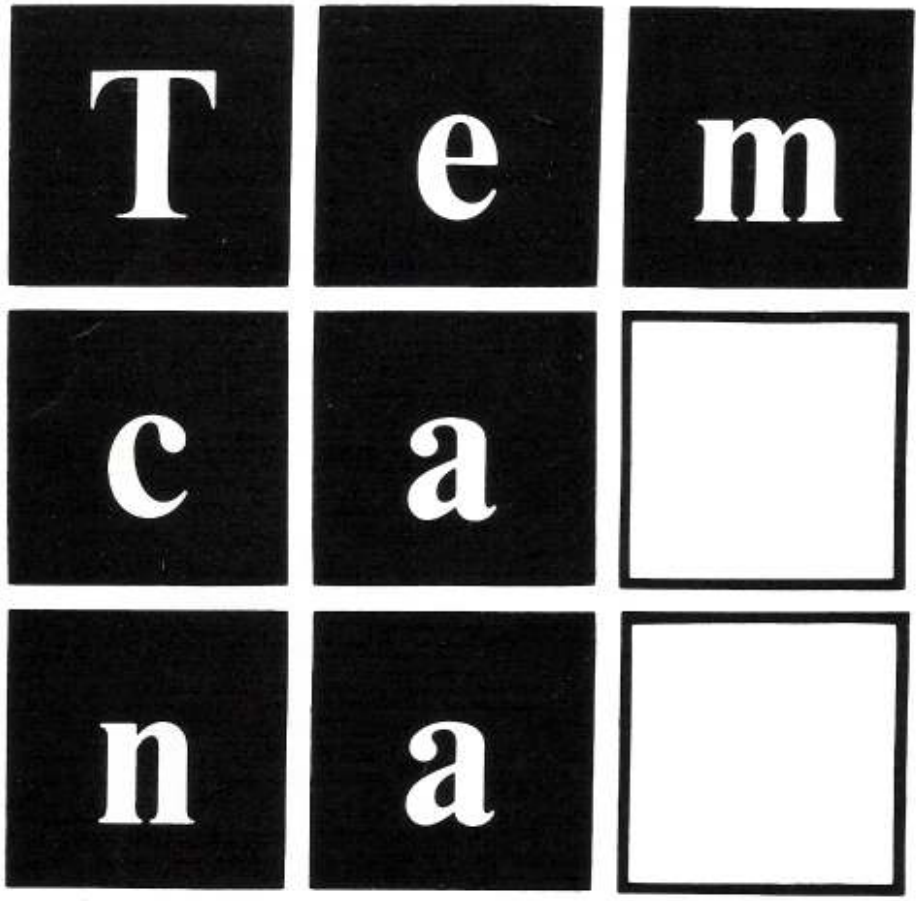


Temcana EPF20 (G.C. No. 35 935 64)
Temcana EPF20E (G.C. No. 35 935 63)
Balanced flued Convector heaters

Installation and Servicing Instructions

Please leave these instructions adjacent to the gas meter or with the site engineer.

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

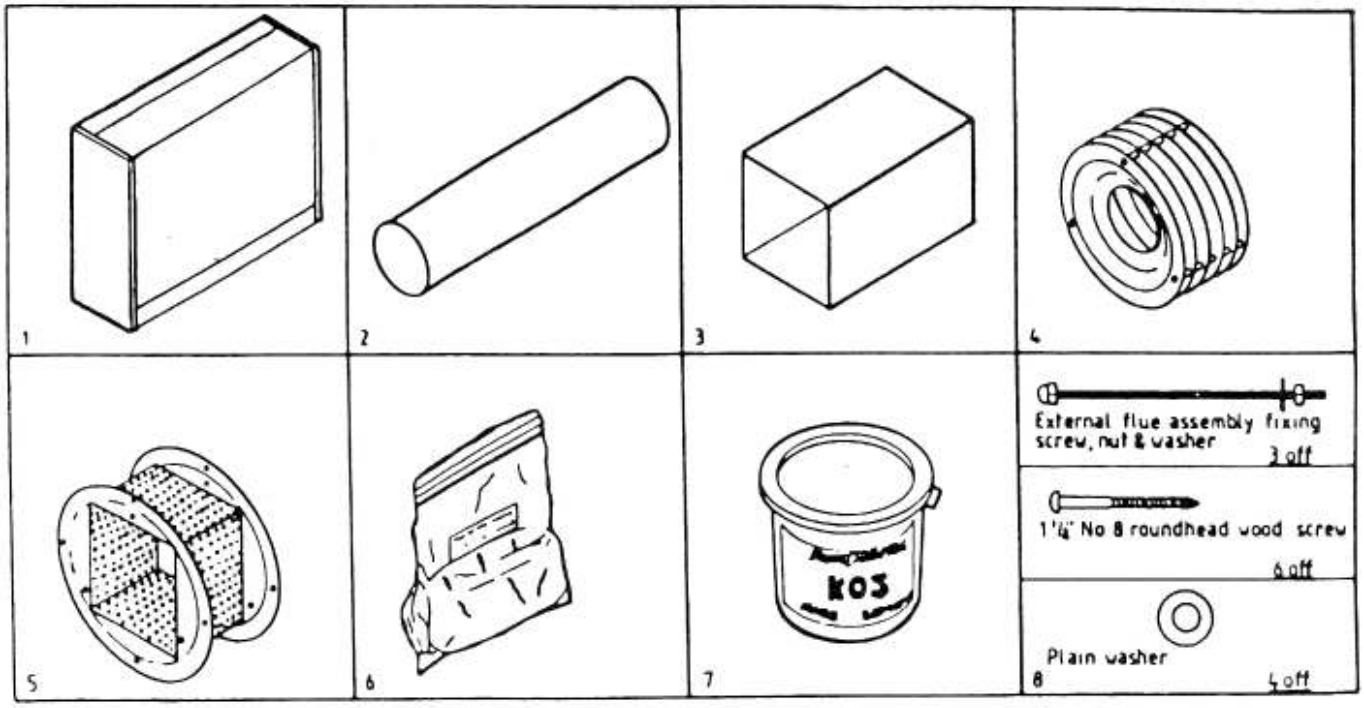


FIG.1

IMPORTANT — The Temcana EPF20E is for use on natural gas only and cannot be used on any other gas.

The Temcana EPF20 can be used on natural gas or propane, as indicated on the data badge.

Both heaters have been tested and certificated by British Gas for use on natural gas only.

INDEX OF CONTENTS

1.0 REFERENCE DOCUMENTS

This appliance must be installed by a competent person, in accordance with:—

Gas Safety (Installation and Use) Regulations: 1984
B.S. 6891:1988
B.S. 5871:1980
B.S. 5440: Part 1:1990
B.S. 5440: Part 2:1989
Local Building Regulations
I.E.E. Wiring Regulations
Health and Safety Act at Work etc. Act:1984
Any local gas region or local authority requirements must also be taken into account.

2.0 WARRANTY NOTE

Warranty will be invalidated if the appliance is not installed and adjusted according to the foregoing requirements and the following instructions.

3.0 CONTENTS LIST

The appliance is despatched as an assembled heater unit, with the flue components separately boxed.

Identify the various components from Fig. 1 and check to ensure that they are complete and undamaged.

1. Heater Unit
2. Flue Tube } Wall thickness 50mm
3. Air Duct } to 380mm
4. External Flue Assembly } Flue
5. External Air Inlet Assembly } Terminal
6. Putty
7. Fire Cement
8. Accessories Pack

*Long flue sets for wall thicknesses up to 635mm are available at extra cost.

4.0 TECHNICAL DATA

(A) Natural Gas

	EPF20	EPF20E
Main Burner Injector Dia.	2.5mm	2.5mm
Burner Pressure	13.0mbar (5.2in.wg)	
Heat Input	18.14kW (61 900 Btu/h)	
Heat Output	13.92kW (47 500 Btu/h)	

(B) Propane (EPF20 only)

Main Burner Injector Dia.	1.5mm
Burner Pressure	35mbar (14in.wg)
Heat Input	18.14kW (61 900 Btu/h)
Heat Output	13.92kW (47 500 Btu/h)

5.0 SITING THE HEATER

a) When selecting the site for the heater, it is essential to ensure that the flue terminal will also be sited correctly externally (see 6.0 Terminal Position).

b) Generally, the best position for the heater is mid-way along a wall of the room that the heater is to serve; this gives the best circulation effect.

c) Care must be taken to ensure that no door can be swung in front of the heater.

d) The heater must not be fitted where long curtains can be closed over it. The hem of any curtain must finish at least 200mm above the top of the heater cabinet.

5.1 Minimum Clearances

The following minimum clearances are required to gain access to the control compartment and to allow the removal of components during servicing:—

Left Hand Side : 100mm
Right Hand Side: 600mm
Top : No clearance is required for service purposes, but if a shelf is to be fitted above the heater, a minimum clearance of 200mm is required between the top of the heater cabinet and the underside of the shelf.

6.0 TERMINAL POSITION

6.1 Siting

a) The terminal must be positioned such that the products of combustion can disperse freely at all times.

b) The base of the terminal must be a minimum of 300mm above the external ground level.

c) The terminal should not be installed in a 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 openings) ensure that no part of the terminal flue outlet is within 300mm, measured vertically, to the bottom of that opening.

d) If a terminal is fitted within 850mm of a plastic gutter, an aluminium shield 1.5m long should be fitted to the underside of the gutter, immediately above the terminal position.

e) Where the terminal outlet is less than 2m above the level of any ground, balcony, flat roof or space to which any person has access and which adjoins the wall to which the terminal is fitted, the terminal must be protected by a guard of durable material. (A wire guard for this purpose is available at extra cost.)

6.2 Balanced Flue Terminal Position Guide

Terminal Position	Recommended Minimum Clearance
i) Directly below an openable window or other opening e.g. air brick	300mm
ii) Below guttering, (see also note 6.1d above) horizontal soil pipes or drain pipes	300mm
iii) Below Eaves	300mm
iv) Below Balconies	600mm
v) From vertical drain pipes or soil pipes	75mm
vi) From internal or external corners	600mm
vii) Above ground or balcony level	300mm
viii) From a surface or a terminal facing the terminal	600mm

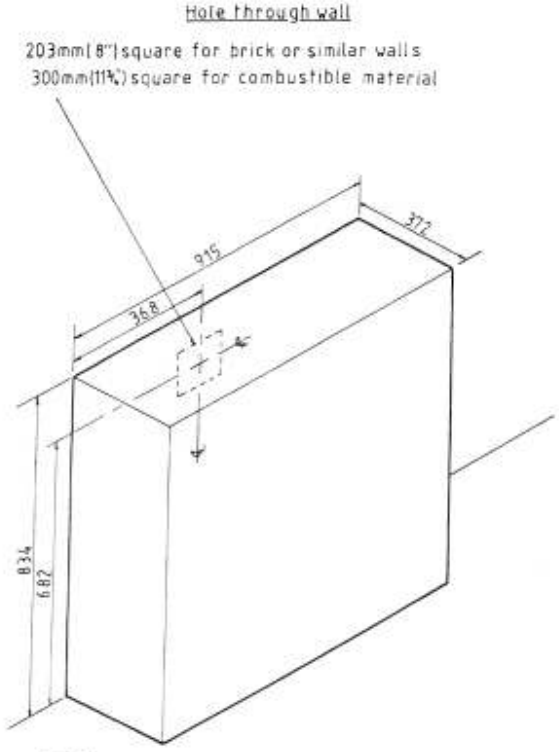


Fig.2

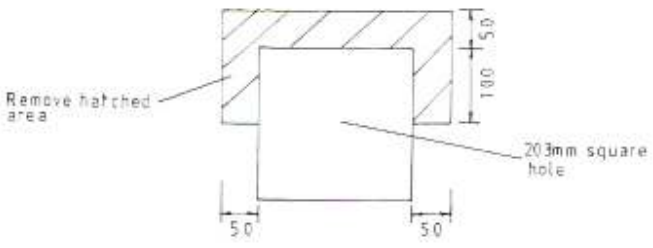


Fig.2A

7.0 INSTALLATION

7.1 Using the dimensions shown in Fig. 2, mark the position for the hole through the wall.

7.2 Cut a 203mm (8in) square hole, as neatly as possible, right through the wall. If the wall is constructed of combustible material, the hole must be increased to 300mm square, and a wall liner inserted. (Available at extra cost.)
If the wall is clad with combustible material, then this material must be removed as shown in Fig. 2A. The wall can then be considered to be non-combustible.

7.3 Place the heater against the wall in its correct position relative to the hole through the wall.

7.4 Mark onto the wall around the ends of the wall securing bracket (see Fig. 2)

7.5 Remove the heater from the wall and remove the wall securing bracket from the heater; retain the two screws for use later.

7.6 Place the wall securing bracket against the marks on the wall and mark the positions for the two fixing screws.

7.7 Drill and plug the wall to take two 1½in. x No. 8 woodscrews.

7.8 Fix the wall securing bracket using the two 1½in. x No. 8 woodscrews provided; ensure that the cut out is uppermost.

7.9 Re-fix the heater to the wall fixing bracket using the two screws previously removed.

7.10 From outside the building, insert the air duct (Fig. 1 item 3) through the hole and locate it onto the square spigot at the rear of the heater; push the air duct fully onto the spigot.

7.11 Whilst holding the duct square and level, mark it for correct length, i.e. to finish flush with the outside wall surface (See Fig. 3).

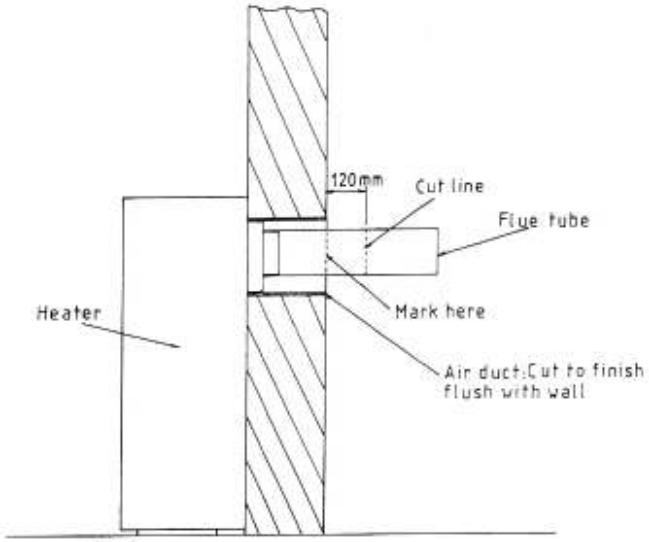


Fig.3

7.12 Remove the air duct and cut it to the correct length. Make sure that it is cut square, and remove any rough edges.

7.13 Apply fire cement (Fig. 1 item 7) to the inside surface of one end of the air duct.

7.14 Re-insert the air duct and push the end with the fire cement firmly onto the square spigot at the rear of the heater.

7.15 Place the external air inlet assembly (Fig. 1 item 5) into position, ensuring that the spigot of the assembly enters the air duct and that the word UP is at the top.

7.16 Mark the position for the four fixing screws and remove the assembly.

7.17 For brick or similar walls, drill and plug the wall in the marked positions to take the four 1½in. x No. 8 woodscrews provided.

7.18 Generously fill with putty (Fig. 1 item 6) the groove in the wall fixing plate of the air inlet assembly.

7.19 Place the air inlet assembly into position as in 7.15 above. Where a wall liner has been fitted, it will be necessary to insert a wall plate between the wall and the wall fixing plate of the air inlet assembly (Available at extra cost). Apply putty to the plate before inserting, to effect a weatherproof seal between the plate and the wall.

7.20 Secure the assembly to the wall with the four 1½in. x No. 8 woodscrews and washers provided.

7.21 Ensure that the gap between the air duct and the square spigot at the rear of the heater is completely sealed. If necessary, force additional fire cement into any unfilled space, then smooth off.

7.22 Insert the flue tube (Fig. 1 item 2) through the hole and push it firmly onto the round spigot at the rear of the heater.

7.23 Mark the position of the outside wall surface onto the flue tube (see Fig. 3).

7.24 Remove the flue tube and mark a further position 120mm from the previous mark i.e. so that the flue tube will protrude 120mm outside the building when cut.

7.25 Cut the flue tube to the correct length. Make sure that it is cut square, and remove any rough edges.

7.26 Apply fire cement to the inside surface of one end of the flue tube.

7.27 Re-insert the flue tube through the hole and push the end with the fire cement firmly onto the flue spigot. Smooth out excess fire cement and ensure that the gap is completely sealed.

7.28 Fit the external flue assembly (Fig. 1 item 4) to the external air inlet assembly and ensure that the round spigot fully enters the flue tube before securing with the three screws, nuts and washers provided.

7.29 If a terminal guard is to be fitted (see 6.1e) it must be fitted with the longest dimension vertical and with equi-distant clearances between the left and right hand sides and the top and the bottom, of the terminal and the guard.

8.0 GAS CONNECTION

a) The gas connection is Rc1/2 (½in. BSP internal) for the EPF20; Rc3/8 (⅜in. BSP internal) for the EPF20E.

b) It is situated at the lower right hand side of the heater.

c) When connecting the gas supply to the heater, it is essential that a union service tap is incorporated in an accessible position adjacent to the heater. (For propane supplies, this tap must be of the spring loaded type.)

d) The installation serving the heater should be in accordance with BS6891:1988.

e) On completion, pressure test and purge the gas installation in accordance with BS6891:1988.

9.0 ELECTRICAL

IMPORTANT — This appliance must be earthed.

a) All external wiring must be in accordance with I.E.E. wiring regulations and any local regulations which apply.

The electrical supply required is 240V 50Hz ∿ .

The supply must be fused at 3A.

The coding of the input mains supply is:—

EARTH — GREEN AND YELLOW
LIVE — BROWN
NEUTRAL — BLUE

b) Open the controls access door and remove the inner wire guard (4 screws EPF20, 2 screws EPF20E).

c) Connect the electrical supply using 24/0.2mm cable to BS6500. Care must be taken to ensure that the cable exits via the opening above the control access door and is anchored using the cable gland provided.

d) The method of connection to the electricity supply must facilitate complete isolation and should preferably be made via a fused double pole isolator having a contact separation of at least 3mm in all poles and supplying the appliance only.

Alternatively, connection may be made via a fused three pin plug and unswitched socket, both complying with the requirements of BS1363.

e) **Important** — There must be no surplus cable between the terminal block and the cable gland.

f) UNDER NO CIRCUMSTANCES MUST A CLOCK (or other control device) BE WIRED TO SWITCH THE ELECTRICAL INPUT SUPPLY TO THE HEATER.

g) The electrical input supply to the heater must not be switched off except for servicing or in an emergency.

9.1 Controlling the Heater

a) A terminal block is provided with two terminals marked 'CLOCK' for connection of an external mains switching device, e.g. time switch (see Fig. 4).

b) The 'CLOCK' terminals are linked to allow the heater to be commissioned and tested using a temporary lead. The link must be removed when an external switching device is incorporated.

c) When operating more than one heater from a single clock, or other mains switching device, a multi outlet contactor or individual relays must be incorporated to avoid interconnection between the heaters.

d) Ensure that the cable exits via the opening above the control access door and is anchored using the cable gland provided.

e) **Important** — There must be no surplus cable between the terminal block and the cable gland.

f) The Temcana EPF20 does not incorporate a room thermostat. If one is to be fitted, it must be wired into the 'CLOCK' circuit.

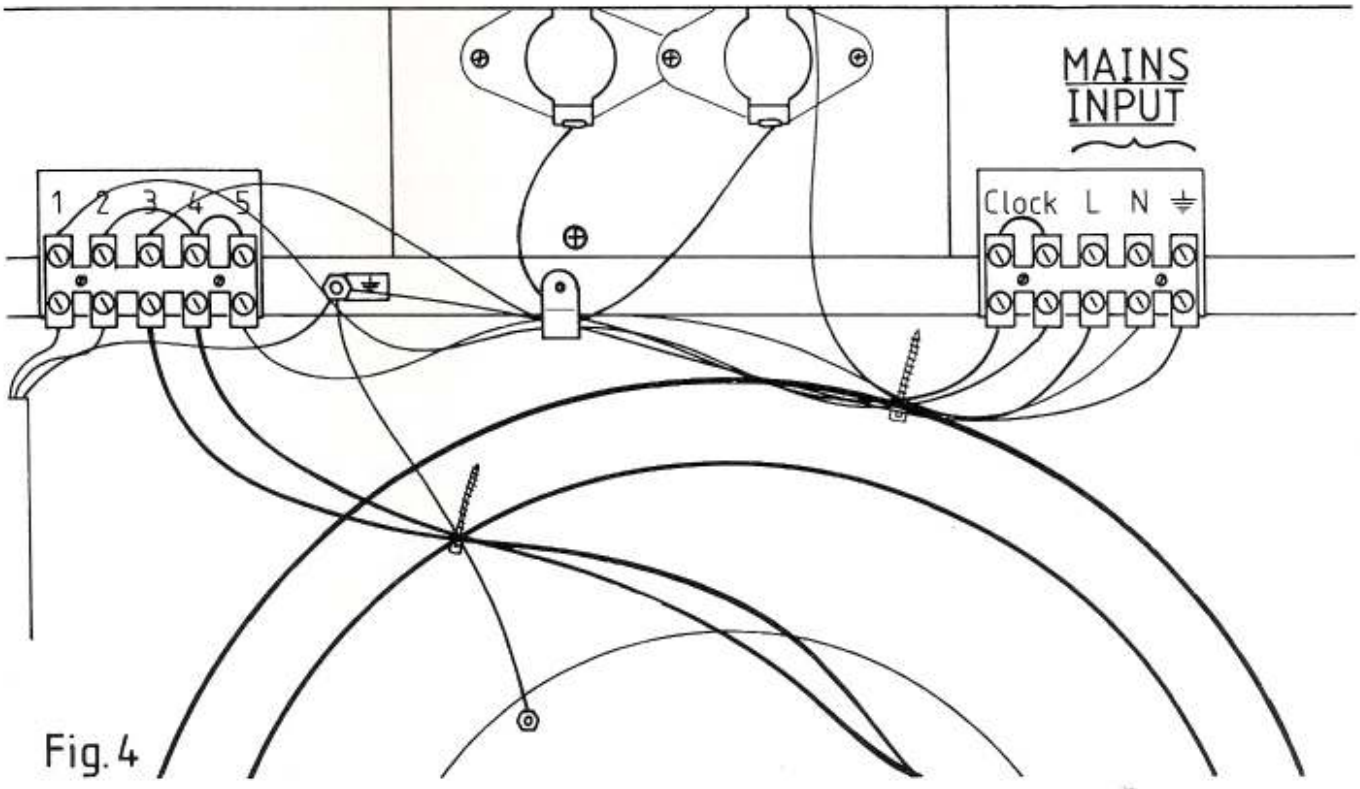
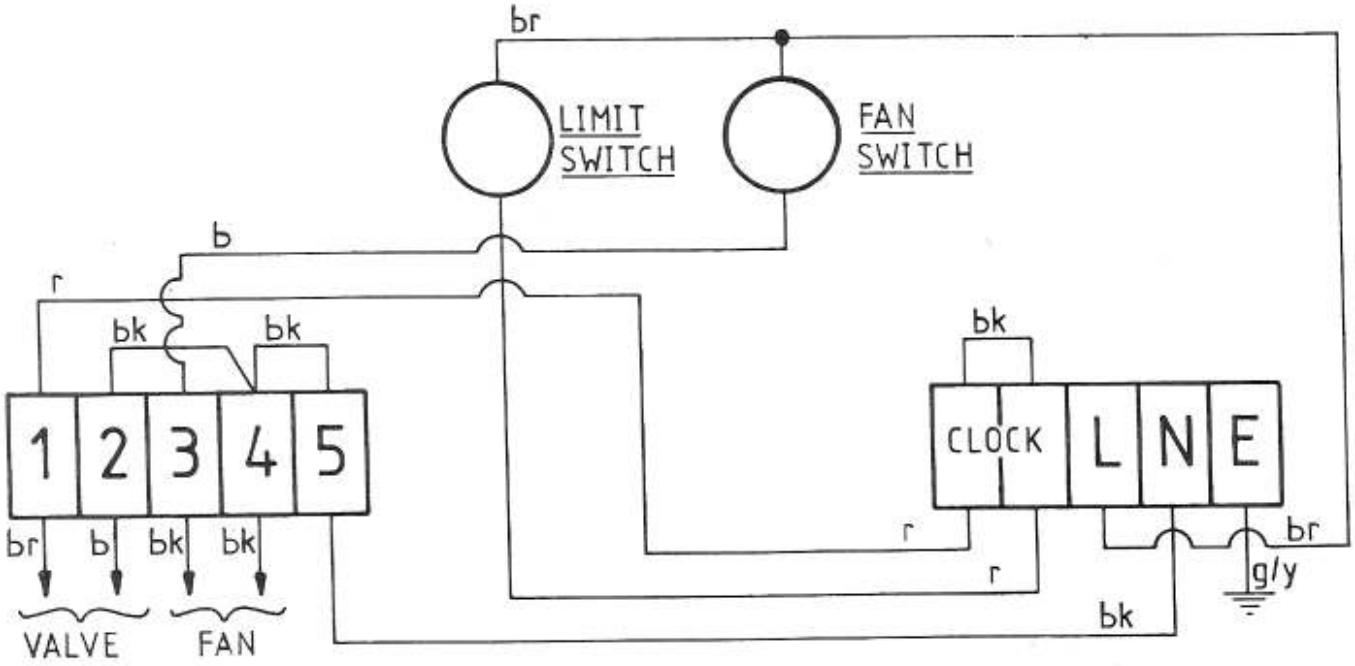
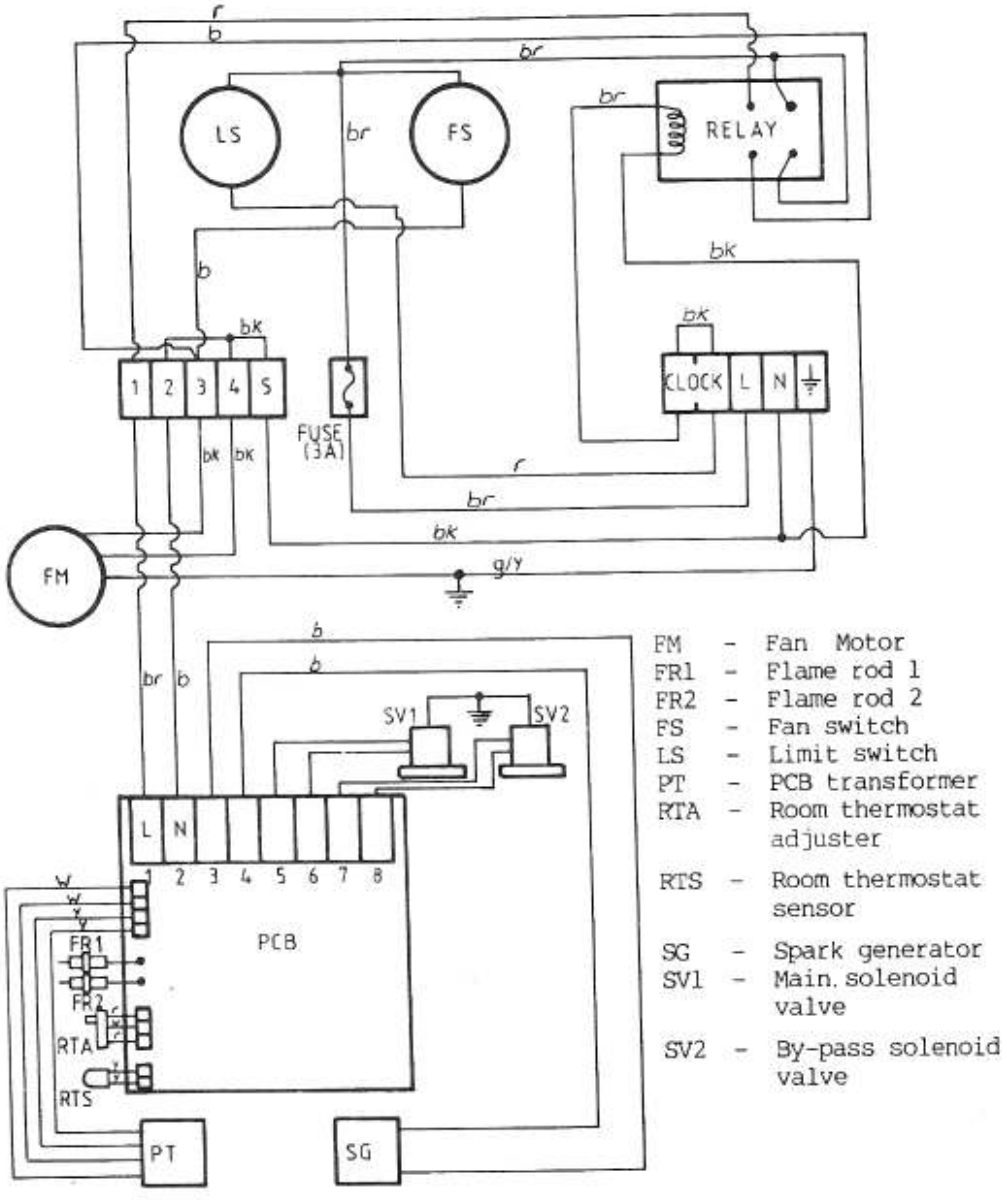


Fig. 4



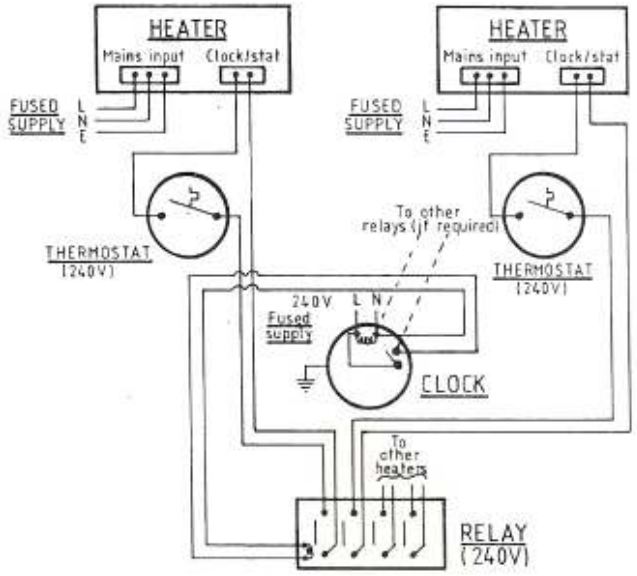
INTERNAL WIRING DIAGRAM EPF20



FM - Fan Motor
FR1 - Flame rod 1
FR2 - Flame rod 2
FS - Fan switch
LS - Limit switch
PT - PCB transformer
RTA - Room thermostat adjuster
RTS - Room thermostat sensor
SG - Spark generator
SV1 - Main. solenoid valve
SV2 - By-pass solenoid valve

EPF20E INTERNAL WIRING DIAGRAM

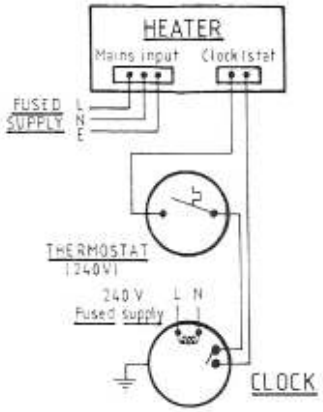
OPERATION OF MORE THAN ONE HEATER FROM ONE CLOCK



As an alternative, one relay per heater may be fitted in place of the multi-outlet relay as shown. For details, contact the manufacturer.

N.B.
The thermostat shown in the above diagrams is only to be fitted for EPF20 heaters. It should not be fitted for the EPF20E as this heater incorporates its own integral electronic thermostat

OPERATION OF ONE HEATER FROM ONE CLOCK



If a clock is not to be fitted, a single pole switch must be fitted in place of the clock.

10.0 COMMISSIONING AND TESTING

10.1 Initial Lighting EPF20 (see Fig. 5)

a) Ensure that the electrical input supply to the heater is switched off.

b) Ensure that the time switch (if fitted) is set to an ON period or that the alternative switching device is switched on and that the remote room thermostat (if fitted) is set to its highest setting.

c) Turn on the gas supply at the union service tap in the supply.

d) Remove the burner pressure test point sealing screw and attach a suitable pressure gauge.

e) Set the 'star' symbol on the control knob to the adjacent pointer; it will be necessary to slightly depress the control knob while turning.

f) Push in the control knob as far as it will go.

g) Continue pushing in the control knob, and at the same time, press down then release the igniter.

h) Whilst continuing to push in the control knob, check to see if the pilot is alight by looking through the viewing window. If the pilot is not alight, repeat g) until it does light, remembering to continue pushing in the control knob.

i) Once the pilot is alight, hold in the control knob for a further 10 seconds or so.

j) Release the control knob and the pilot should remain alight. If it does not, repeat f), g), h) and i) but this time, keep the control knob pushed in for a little longer.

k) Switch on the electrical supply to the heater.

l) Press in the control knob slightly and turn it until the 'flame' symbol is adjacent to the pointer. Ensure that the main burners ignite smoothly from the pilot.

m) Set the remote room thermostat to the desired setting.

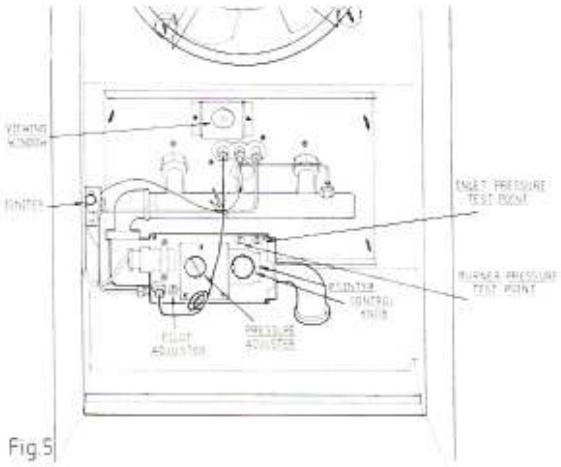


Fig.5

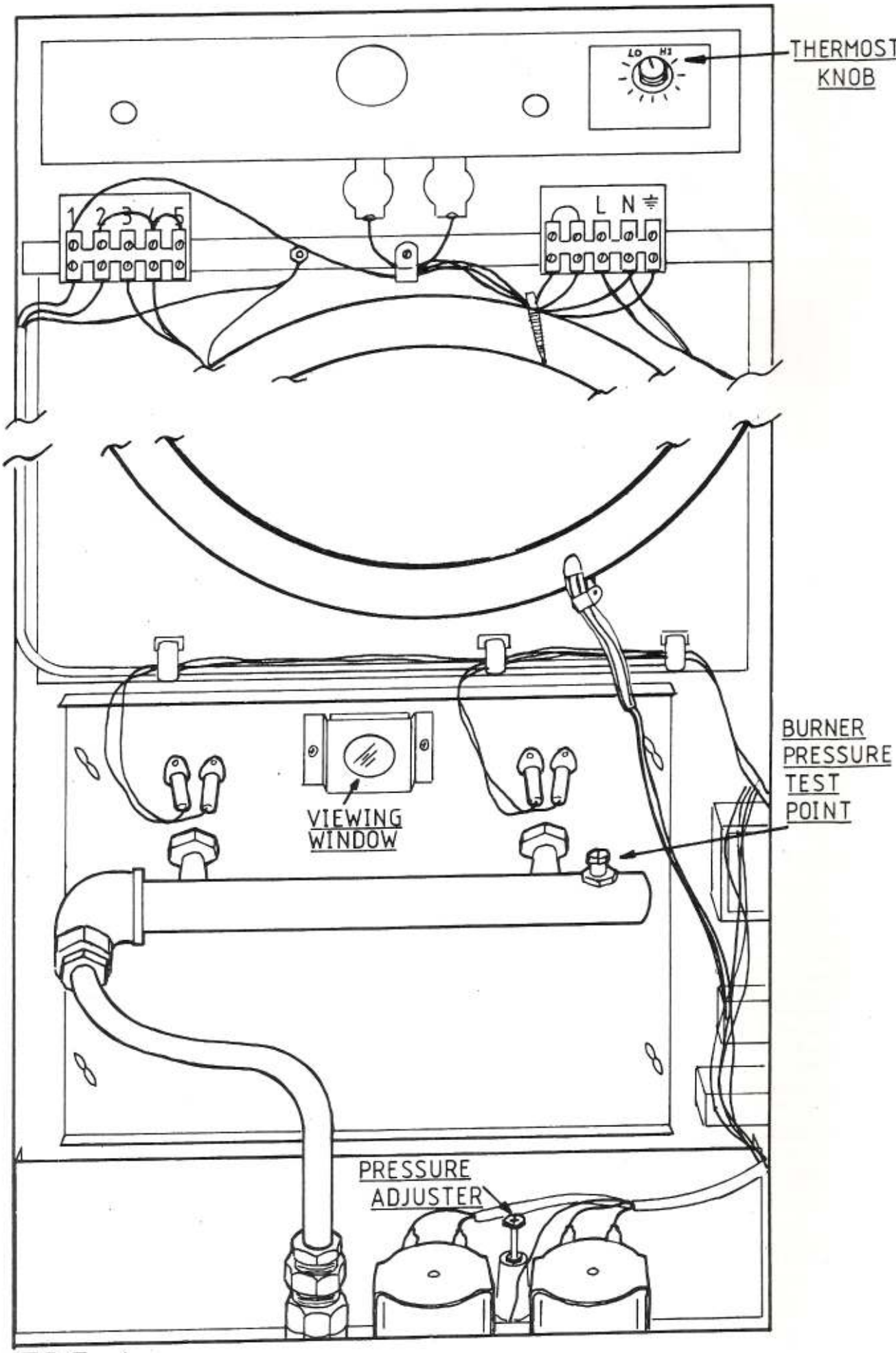

THERMOSTAT KNOB
LO
HI
1 2 3 4 5
L N
VIEWING WINDOW
BURNER PRESSURE TEST POINT
PRESSURE ADJUSTER

FIG.6

10.2 Initial Lighting EPF20E (see Fig. 6)

a) Ensure that the electrical supply to the heater is switched off.
b) Ensure that the time switch is set to an ON period or that the alternative mains switching device is switched on.
c) Turn on the gas tap at the union service tap in the supply.
d) Remove the burner pressure test point sealing screw and attach a suitable pressure gauge.
e) Turn the thermostat knob to its highest setting i.e. fully anti-clockwise.
f) Switch on the electrical supply to the heater.
g) The automatic ignition sequence will now commence and the burners should ignite within a few seconds; this can be verified by looking through the viewing window.

N.B. If the burners do not ignite during the ignition period, the P.C.B. will go to 'lock out' and must be reset by switching the electrical supply to the heater off and then on again. (Wait 3 minutes before switching on.)

10.3 Testing and Adjusting

a) With the heater operating, test for gas soundness around all internal pipework and gas carrying components; use a suitable soap solution or leak detection fluid.
b) Check that the burner pressure is correctly set (see 4.0 Technical Data). Wait at least 20 seconds after the main burners have ignited before reading the burner pressure. If adjustment is required, remove the cap from the governor to expose the pressure adjuster (EPF20) (for EPF20E heaters, slacken the lock nut on the pressure adjuster) and turn the pressure adjuster (clockwise to increase). Replace the cap/tighten the lock nut after adjustment.
c) Switch off the electrical supply to the heater.
d) Remove the pressure gauge and replace the pressure test point sealing screw, ensuring that it is gas tight.

10.4 Pilot Adjustment (EPF20 only)

The pilot flame length should be such that it just envelops the thermocouple (Approx 20mm). If pilot adjustment is required, turn the small brass screw adjacent to the thermocouple connection on the valve (clockwise to decrease the length of the pilot flame).

10.5 Propane Heaters (EPF20 only)

Warning — The gas supply to the heater must be regulated externally to give an inlet pressure to the heater of 37mbar (14.8in wg). Failure to regulate the gas supply may result in damage to the control valve.

11.0 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 safe and efficient operation of the heater, it is important that regular annual servicing is carried out.

12.0 SERVICING INSTRUCTIONS

IMPORTANT — ALWAYS ISOLATE THE GAS AND ELECTRICITY SUPPLIES TO THE HEATER BEFORE CARRYING OUT ANY SERVICING

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 4.0 Technical Data).

12.1 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 and removing the inner wire guard (4 screws EPF20, 2 screws EPF20E).

A. EPF20 ONLY

12.2 To Remove the Control/Main Burner Assembly

a) Gain general access as in 12.1 above.
b) Turn off and disconnect the gas supply by undoing the union at the inlet to the heater.
c) Pull off the electrical plug at the left hand side of the gas control valve.
d) Pull off the H.T. spark lead from the spark electrode.
e) Remove the four wing nuts securing the burner flange to the heat exchanger.
f) Carefully withdraw the complete burner flange/control/main burner assembly, taking care not to damage the burner flange gasket.
g) The gas control valve may now be removed from the assembly as follows:—
   i) Disconnect and remove the pilot supply tube.
   ii) Unscrew the thermocouple connection at the gas control valve.
   iii) Remove the four screws securing the valve to its service connection at the outlet and remove the valve, taking care not to lose the 'O' ring.

Reasssembling Notes

i) When replacing the gas control valve, the fittings at the inlet to the valve must be transferred from the old valve.
ii) Ensure that the 'O' ring is correctly seated in the valve/outlet elbow before tightening the four securing screws.
iii) Should the burner gasket be damaged, a new one must be fitted when re-fitting the assembly.

12.3 To Remove the Pilot Injector

a) Gain general access as in 12.1 above.
b) Disconnect the pilot supply tube at each end.
c) Carefully remove the tube and the pilot injector will be automatically withdrawn from the pilot assembly.

12.4 To Remove the Cross Over Pilot Injector

a) Gain general access as in 12.1 above.
b) Disconnect and remove the cross over pilot supply tube.
c) Unscrew and remove the cross over pilot injector, taking care not to lose the washer.

12.5 To Gain Access to the Main Burner Injectors

a) Remove the control/main burner assembly as in 12.2 above.
b) The main burner injectors are located at the burner flange end of the main burners 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.

12.6 To Remove the Cross Over Pilot

a) Remove the control/main burner assembly as in 12.2 and the cross over pilot injector as in 12.4 above.
b) Remove the two nuts securing the cross over pilot to the main burners and remove the cross over pilot.

12.7 To Remove the Main Burners

a) Remove the cross over pilot as in 12.6 above.
b) Remove the two nuts securing the tie bar to the main burners and remove the bar.
c) Disconnect and remove the pilot supply tube; take care not to lose the pilot injector.
d) Unscrew the two tubing nuts securing the manifold/gas control valve to the burner flange.
e) Unscrew and remove the two injector holders.
f) Remove the two screws securing each burner to the burner flange and remove the burners.

12.8 To Remove the Thermocouple

a) Gain general access as in 12.1 above.
b) Remove the cable tie securing the thermocouple lead to the pilot tube.
c) Disconnect the thermocouple at the control valve and the pilot, and remove the thermocouple.

12.9 To Remove the Spark Electrode

a) Remove the thermocouple as in 12.8 above.
b) Pull off the igniter cable from the spark electrode.
c) Remove the nut securing the spark electrode to the pilot assembly and remove the electrode.

12.10 To Remove the Pilot Assembly

a) Remove the control/main burner assembly as in 12.2 above.
b) Remove the thermocouple as in 12.8 above.
c) Disconnect and remove the pilot supply tube; take care not to lose the pilot injector.
d) Remove the two nuts and screws securing the pilot assembly to the burner flange and remove the pilot assembly.

12.11 To Remove the Piezo Igniter

a) Gain general access as in 12.1 above.
b) Pull off the igniter cable from the piezo igniter.
c) Remove the two screws securing the piezo igniter and remove the igniter.

B. EPF20E ONLY

12.12 To Remove the Main Burner Assembly

a) Gain general access as in 12.1 above.
b) Disconnect and remove the main burner supply tube.
c) Pull off the wires from the spark electrodes and the flame sensor probes.
d) Remove the four wing nuts securing the burner flange to the heat exchanger.
e) Carefully withdraw the main burner assembly, taking care not to damage the burner flange gasket.

NB Should the burner flange gasket be damaged, a new one must be fitted when re-fitting the assembly.

12.13 To Remove the Main Burners

a) Remove the main burner assembly as in 12.12 above.
b) Remove the two nuts securing the tie bar to the main burners and remove the bar.
c) Unscrew the two tubing nuts securing the manifold to the burner flange.
d) Unscrew and remove the two injector holders.
e) Remove the two screws securing each burner to the burner flange and remove the burners.

12.14 To Gain Access to the Main Burner Injectors

a) Remove the main burner assembly as in 12.12 above.
b) The main burner injectors are located at the burner flange end of the main burners 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.

12.15 To Remove the Spark Electrodes and/or Flame Sensor Probes

a) Remove the main burner assembly as in 12.12 above.
b) Pull off the wire(s) from the electrode(s)/flame sensor probe(s) to be removed.
c) Remove the nut(s) and screw(s) from the electrode(s)/flame sensor probe(s) to be removed and remove the electrode(s) and flame sensor probe(s).

Reassembling Notes

i) The spark electrodes must be fitted in the outer holes on the burner flange and have the green H.T. cable fitted to them.
ii) The gaps between the main burners and the spark electrodes/flame sensor probes should be 4mm/6mm respectively. These gaps are fixed and no adjustment is required.

12.16 To Remove the Room Thermostat Sensor

a) Gain general access as in 12.1 above.
b) Remove the cable tie securing the sensor lead to the solenoid valve cables.
c) Remove the nut and 'P' clip securing the thermostat sensor head to the fan motor support frame.
d) Pull off the two pin socket connecting the room thermostat sensor to the P.C.B. and remove the sensor.

12.17 To Remove the Room Thermostat Adjuster

a) Gain general access as in 12.1 above.
b) Pull off the thermostat knob.
c) Pull off the three pin socket connecting the room thermostat adjuster to the P.C.B.
d) Remove the nut and washer securing the room thermostat adjuster to the inner guard upper bracket.
e) Release the buckle clips securing the room thermostat adjuster wire to the heater rear panel and remove the adjuster.

12.18 To Remove the Double Solenoid Valve and Governor Assembly

a) Gain general access as in 12.1 above.
b) Disconnect and remove the main burner supply tube.
c) Pull off the electrical connectors, and disconnect the earth wire, from the solenoid valves.
d) Turn off and disconnect the gas supply by undoing the union at the inlet to the heater.
e) Remove the four screws securing the double solenoid valve and governor assembly to the base of the heater and remove the assembly.
f) The solenoid valve coils may be removed after removing the four screws securing each coil to the body. Take care when removing the coil that the plunger, spring and rubber sealing ring are not lost.

Reassembling Notes

i) When replacing a solenoid valve coil, ensure that the spring enters the hole in the plunger and that the rubber sealing ring is correctly seated (flat side down) before tightening the four fixing screws.
ii) The solenoid heads must be replaced with their electrical connecting tabs facing the heat exchanger.

12.19 To Remove the Printed Circuit Board (P.C.B.), the Spark Generator or the P.C.B. Transformer

a) Gain general access as in 12.1 above.
b) Pull off the two pin socket, three pin socket and four pin socket, together with the two flame sensor probe wires, from the left hand side of the P.C.B.
c) Disconnect the wiring from the top of the P.C.B.
d) Pull off the H.T. spark leads from the spark generator.
e) Remove the four screws securing the P.C.B./ spark generator/P.C.B. transformer mounting plate to the heater rear panel and remove the mounting plate complete.
f) Any of the three components may now be removed.
g) The P.C.B. may be removed by pressing in each of the plastic securing clips in turn, and pulling the board clear.
h) The P.C.B. transformer and spark generator are both secured with two screws.

12.20 To Remove the Fuse and/or the Relay

a) Gain general access as in 12.1 above.
b) The fuse and relay are mounted on the same bracket at the upper right hand side of the rear panel.
c) To remove the relay, slide off the retaining clip and pull the relay off its base.
d) The fuse may now be removed by easing out with a screwdriver. It must be replaced with one of the same size and value. (1¼ x ¼in — 3A.)

C. INSTRUCTIONS COMMON TO EPF20 AND EPF20E

12.21 To Remove the Fan and Motor Assembly

a) Gain general access as in 12.1 above.
b) Disconnect the electrical wires from the fan motor at terminals 3 and 4 on the left hand terminal block and remove the motor earth connection from the earth bond screw located between the two terminal blocks.
c) Remove the room thermostat sensor as in 12.16 above (EPF20E only).
d) Remove the 4 nuts, washers and rubber washers securing the fan and motor assembly to the fan support panel.
e) Carefully withdraw the complete assembly, taking care not to damage the fan blades.
f) The fan blade assembly may now be removed from the motor shaft after slackening the socket headed grub screw; note the relative position of the fan blade assembly on the motor shaft before removal.
g) The fan motor may be removed from the wire cage after removing the securing nuts and washers.

Reassembling Notes

i) When replacing the fan blade assembly onto the motor shaft, ensure that the boss is facing away from the motor and that the assembly is positioned on the shaft as noted in f) above.
ii) When reassembling the motor into the cage, ensure that the motor is correctly positioned, i.e. so that the elongated hole in the back plate of the motor (wire entry) is in line with the cut out in the circular mounting plate of the cage.
iii) Check that the fan blades are clear of obstruction before operating the heater.

12.22 To Remove the Fan and/or Limit Switch

a) Gain general access as in 12.1 above.
b) Pull off the four electrical connectors from the switches.
c) Remove the two screws securing the fan and limit switch mounting plate to the fan support panel and remove the mounting plate complete.
d) Both switches are secured to the mounting plate with two screws and nuts.

Reassembling Note

When re-fitting the complete assembly, ensure that: The limit switch is positioned to the left of the fan switch, the red wire is connected to the lower connection of the limit switch and the blue wire is connected to the lower connection of the fan switch.