



Kingfisher open flue gas-fired boilers

Potterton Kingfisher CF 40

8.8 to 11.7kW (30,000 to 40,000 Btu/h) Output

Potterton Kingfisher CF 50

11.7 to 14.6kW (40,000 to 50,000 Btu/h) Output

Potterton Kingfisher CF 60

13.2 to 17.6kW (45,000 to 60,000 Btu/h) Output

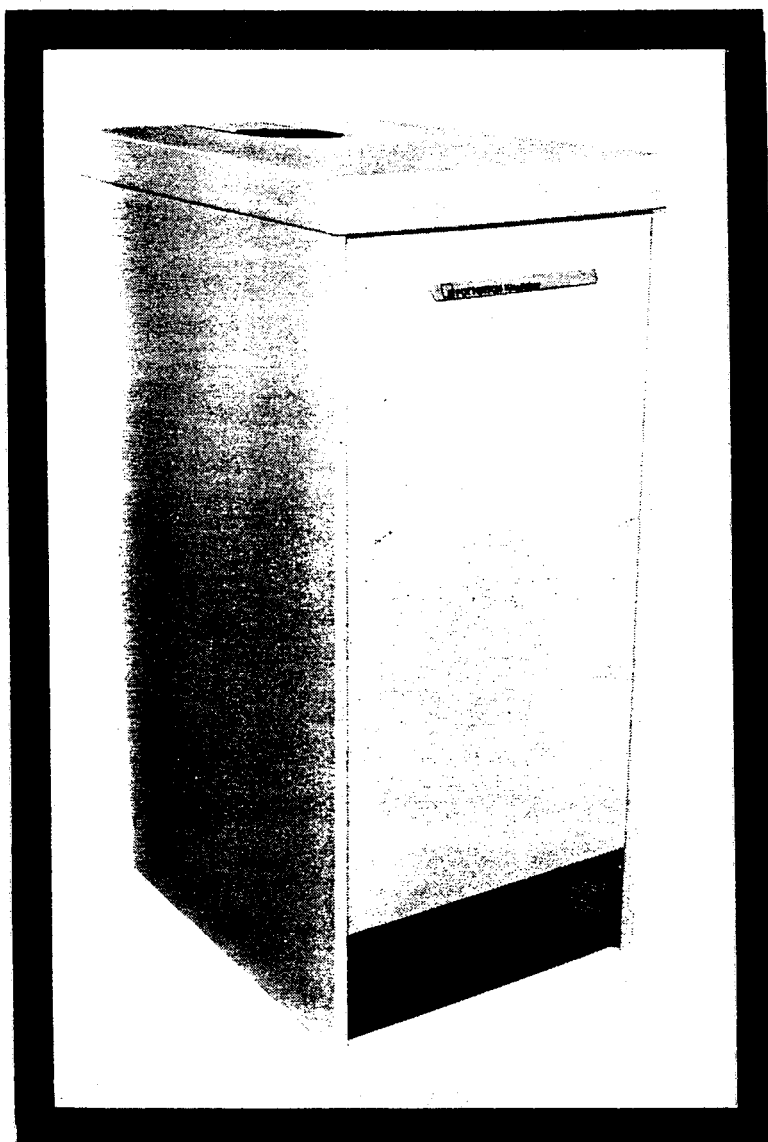
IMPORTANT

This appliance is for use with Natural Gas only. It must be installed by a competent person as stated in the Gas Safety (Installation and Use) Regulations 1984.

Leave these instructions adjacent to the gas meter.

- * Highly efficient, designed especially for natural gas operation.
- * Pipework can be run behind the boiler within its casing, from one side to the other, to suit particular site requirements.
- * No by-pass pipework required in the system.
- * A circulating pump can be mounted within the standard case (optional extra in kit form).

NOTE: THIS DOCUMENT IS TO BE LEFT WITH THE USER OR AT THE GAS SERVICE METER



DATA SECTION

GENERAL

These Potterton open flued appliances are automatically controlled and have been designed for combined systems, e.g. small bore or microbore central heating with an indirect domestic hot water supply which can either have pumped or gravity circulation. The boilers can also be used on pumped central heating or domestic hot water only systems.

DESCRIPTION — See Fig. 2 and 3.

Potterton Kingfisher boilers can be installed, either in a kitchen or utility room or inside a suitably ventilated, purpose designed or modified compartment. The boilers are enclosed in a white, stove enamelled, sheet steel casing, which conforms in height with other kitchen furniture. However, if the boiler is to be installed beneath a kitchen working surface, a replacement casing top panel must be fitted which lowers the overall height of the boiler: this is available as an optional extra. A kit which includes a pump, also available as an optional extra, can be supplied by the local distributor and fitted inside the boiler casing to convert the boiler to a small bore unit. However, if this kit is fitted, the boiler should not be installed beneath a kitchen working surface using the replacement casing top panel as previously described, unless the working surface is removable for maintenance purposes.

GENERAL DATA TABLE 1

		CF40	CF50	CF60
INPUT	kW Btu/h	11.7 to 15.4 40000 to 52600	15.8 to 19.2 53300 to 65700	17.6 to 23.1 60000 to 78900
OUTPUT	kW Btu/h	8.8 to 11.7 30000 to 40000	11.7 to 14.6 40000 to 50000	13.2 to 17.6 45000 to 60000
OUTPUT INTO AIR (Approx.)	kW Btu/h	0.6 to 0.76 2000 to 2630	0.6 to 0.8 2173 to 2693.7	0.8 to 1.1 2760 to 3629
EMPTY WEIGHT	kg lbs	68.6 151	68.6 151	69.5 153
WATER CONTENT	litres pints	5.7 10.0	5.7 10.0	5.7 10.0
BURNER PRESSURE	mbar in. wg.	5.6 to 9.6 2.2 to 3.8	9.9 to 15.0 4.0 to 6.0	9.4 to 15.5 3.75 to 6.2
INJECTOR SIZE		3.5 mm	3.5 mm	Bray Cat. 16 Size 900
GAS RATE (1035 BTU/c ft)	cu m/h cu ft/h	1.09 to 1.43 38.6 to 50.8	1.45 to 1.79 51.5 to 63.5	1.64 to 2.15 58.0 to 76.2
BRITISH GAS CODE		41.601.57	41.601.58	41.601.56
POTTERTON CODE LETTERS		GUA	GU8	GUC

Max Working Head: 2.7 bar (90ft wg)
 Gas Connection: To ½" BSP Loose Key Union Cock
 Electrical Connection: To 3-way Terminal Strip
 Combination Gas Control: Honeywell V460A 1023
 Thermostat: Ranco C26
 Pilot Burner: CF40 & CF50 Honeywell Q314A
 CF60 Honeywell Q359A
 Main Burner: CF40 Furigas
 CF50 Aeromatic, Furigas or Robinson
 CF60 Bray

THE SYSTEM — See Fig. 6 to 10.

The boilers can be installed in most types of system but the following notes are given as a general guide. The general recommendations given in BS 5376 Part 2 and BS 5449 Part 1 should be observed.

1. All systems should be designed so that the static head at the boiler is between a minimum of 90 mbar (3 ft. wg.) and a maximum of 2.7 bar (90 ft. wg.).
2. If the head is at or near the 90 mbar (3 ft. wg.) minimum, extra care should be taken when designing the system to ensure that pumping over or sucking

3. All gravity systems should have a minimum effective head of 1.2 m. (4 ft) between the centre line of the boiler heat exchanger and the centre line of the domestic hot water cylinder.
4. Most types of system controls, such as two-way valves, three-way valves, diverter valves, twin pumps, zone valves and room, cylinder and frost thermostats can be used in conjunction with these boilers.
5. An indirect domestic hot water cylinder should be used, incorporating a coil type of heat exchanger. In a fully pumped system, the primary pipework should include a lockshield valve.
6. The circulating pump should be selected with reference to fig. 1. The resistance through the boiler heat exchanger will not exceed 31 mbar (12.5 in. wg.) at a flow rate of 5.0 gall/min.
7. The resistance through any other type of system control such as three-way valves, should also be taken into account when selecting a pump; refer to their manufacturers literature.
8. The circulating pump may be fitted on either the flow or return side of the boiler. If fitted on the flow and the open vent pipe is located between the boiler and the pump, the risk of air being drawn into the system is reduced. If fitted on the return, the cold feed pipe should be connected between the pump and the boiler, but extra care should be taken to ensure that air will not be drawn into the system.
9. A drain cock(s) should be fitted at the lowest point(s) in the system, so that the whole system can be drained.

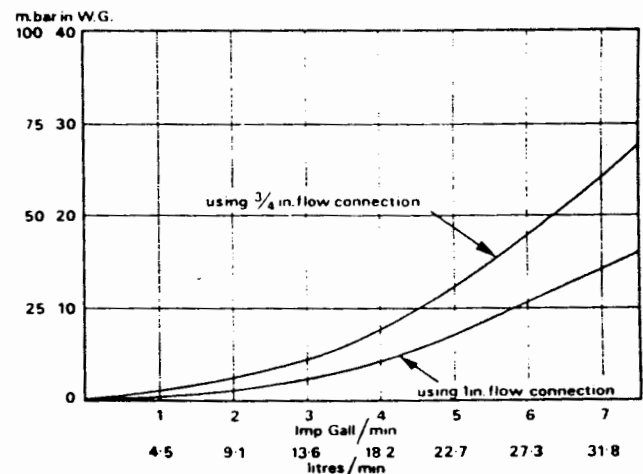


FIG. 1 PRESSURE LOSS ACROSS BOILER BOILER BASE

A level floor, which conforms to the Local Authority and Building Regulations, should be provided. Normally, no insulation beneath the boiler base tray is required as floor temperatures beneath the tray conform to the requirements of BS.5258. However, some composition floors which tend to soften or deform at low temperatures, may need insulating.

CLEARANCES AROUND THE BOILER

The position selected for the boiler must give the following minimum clearances for installation and maintenance:

- 610mm (2ft) at the front.
- 50mm (2in) at each side. (CF60)
- 25mm (1in) at each side. (CF40 and CF50)

The correct minimum clearance at the back of the boiler is automatically obtained once the boiler base tray is pushed up against the wall.

Both flow and return connections can be made from either side, there being room inside the casing to cross the pipework.

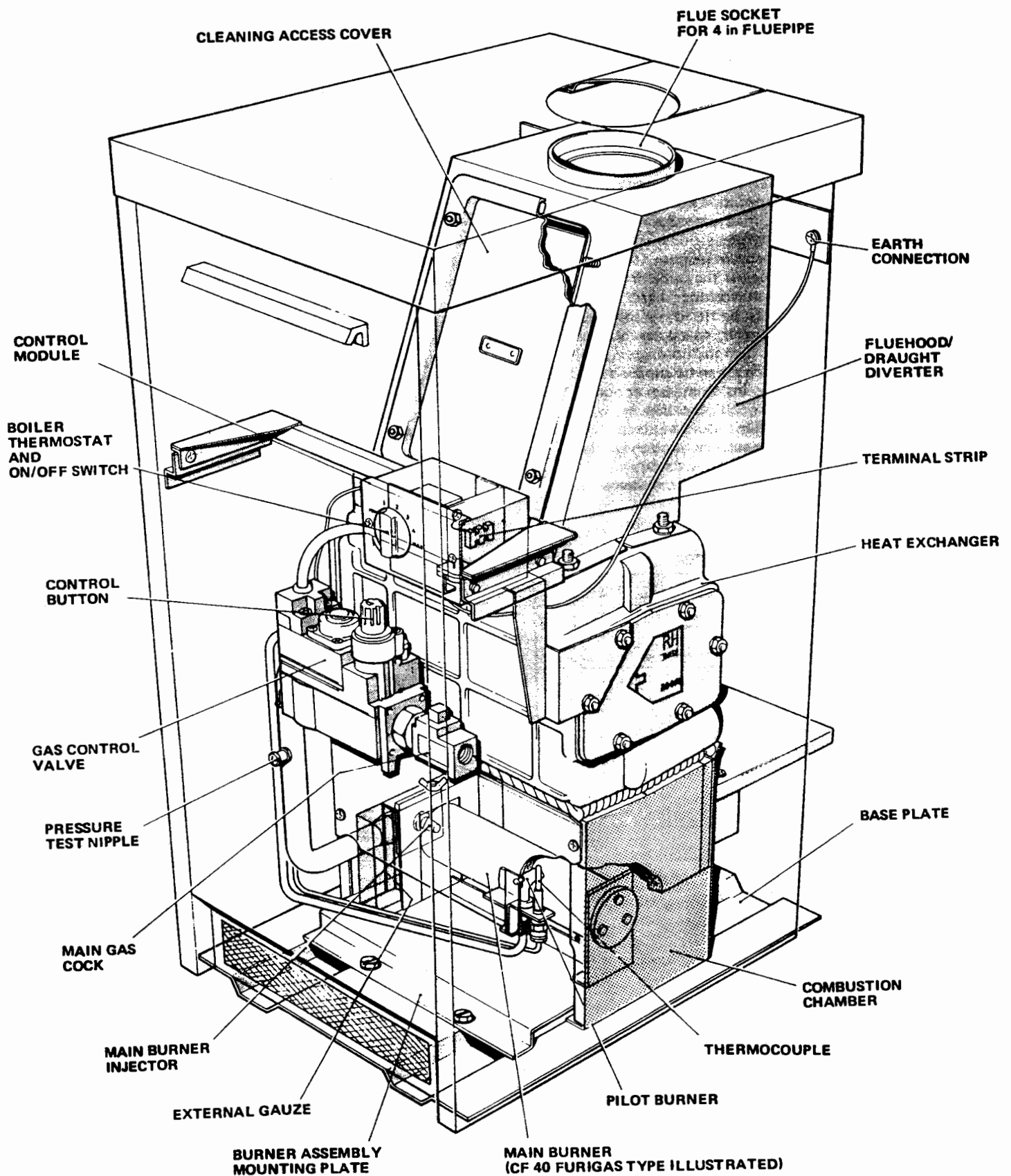


FIG. 2 GENERAL ARRANGEMENT

COMBUSTION AIR AND VENTILATION REQUIREMENTS

A. Ventilation of compartments containing gas boilers

There should be two permanent air vents, one at low level and one at high level, both communicating either directly with outside air or with a room or space which is suitably ventilated. Each opening, whether left free or furnished with a grille, must have a minimum effective area in accordance with table 2.

Any internal surface of the cupboard that is made of a combustible material and is nearer to the boiler than 75mm (3in.), should be insulated as described in British Gas publication "Material and Installation Specifications for Domestic Central Heating and Hot Water".

B. Ventilation of rooms containing gas boilers

The ventilation of the room containing the boiler shall include air for combustion and draught diverter dilution. This applies also when the boiler is sited in a compartment, unless the air vents are both direct to outside.

A permanent air vent shall be provided in an outside wall of the building at either high or low level.

This opening may be:

- Directly into the room or space containing the boiler, or
- Via a duct through a wall or the roof into the room, (where such a method is considered, British Gas should be consulted), or
- Into an adjacent room or space which has an internal permanent air vent of the same size, to the room containing the boiler. It is undesirable to ventilate via a kitchen, bathroom or toilet.

The air vent should be sited as far as possible from any extract fan to avoid short circuiting. To avoid the possibility of freezing water pipes, the vent should not be sited near the pipes.

The minimum effective area of the permanent air vent must be 39 sq. cm. (6 sq. in.) for the CF.40 boiler 57 sq. cm. (9 sq. in.) for the CF.50 or 73 sq. cm. (12 sq. in.) for the CF.60.

If the room (e.g. a kitchen) from which air is drawn, has an extract fan fitted, then the opening size of the permanent air vent should take this into account to ensure that the operation of the boiler flue is not adversely affected when the extract fan is running with all doors and windows closed.

C. Grilles and Ducts

Any grille and/or duct should be so sited and of a type not to become easily blocked or flooded and should offer low resistance to air flow.

FLUE

An efficient flue system must be provided to evacuate the products of combustion from the boiler. Reference should also be made to The Building Regulations and British Standard 5440 Part 1. The

following notes have been compiled for your guidance:—

- Ideally a flue should rise vertically to a termination point which is unaffected by downdraught or wind eddies and is not in a pressure zone. Therefore, for practical purposes, the flue should have the shortest possible run to external atmosphere, with as near vertical rise as possible; 90° bends should be avoided. The terminal must be at least above roof edge level.
- Wherever possible there should be at least 3 ft. (900 mm) of vertical flue from the boiler flue socket.
NOTE: Some Gas Regions insist on a split socket in this length.
- Horizontal runs should be avoided. If a near horizontal flue run is unavoidable, the total vertical height necessary should be calculated in accordance with section 12.7.2 of BS.5440 Part 1.
- Wherever possible internal stacks, lined if necessary, should be used.
- All brick chimneys without an integral lining must be lined with either asbestos cement flue pipe to BS.567 or stainless steel flexible lining.
- Where condensation is likely, a means of draining must be provided.
- If an existing flue is being used, ensure that it has been thoroughly swept before lining or connecting the boiler.

ELECTRICITY SUPPLY

A 240 volts, A.C., 50 Hz., single phase electricity supply fused to 3 amperes, must be provided in accordance with the latest edition of the Institute of Electrical Engineers Regulations for the Electrical Equipment of Buildings and Local Authorities and British Gas requirements. The current rating of the wiring to the boiler must exceed 3 amperes. The supply to the boiler and its associated equipment should be controlled by an unswitched plug and socket or a double pole switch, so that complete isolation from the supply can be achieved to enable maintenance work to be carried out in safety.

TABLE 2

COMBUSTION AIR AND VENTILATION REQUIREMENTS OF COMPARTMENTS

Boiler Type	Level of Air Vent	Area for Air From Room	Area for Air From Outside
CF.40	High	22 in. ² 142 cm ²	11 in. ² 71 cm ²
	Low	44 in. ² 284 cm ²	22 in. ² 142 cm ²
CF.50	High	27 in. ² 174 cm ²	13.5 in. ² 87 cm ²
	Low	54 in. ² 348 cm ²	27 in. ² 174 cm ²
CF.60	High	32 in. ² 202 cm ²	16 in. ² 101 cm ²
	Low	64 in. ² 404 cm ²	32 in. ² 202 cm ²

GAS SUPPLY

The gas meter and installation pipe should be checked to ensure that they are large enough for the boiler and any other appliance already installed; the local Gas Regional Office will assist in this matter. The recommendations of CP.331 Pts. 2 and 3 should be observed.

SAFETY VALVE

If the local authorities regulations stipulate that a safety valve should be fitted, this should be installed in the flow pipework as close to the boiler as possible.

MAINTENANCE

The efficient performance of this boiler is dependent upon regular servicing which should be carried out annually. Maintenance is best arranged by a contract placed with Potterton International Limited, and further details are available from the local Potterton Regional Service Office.

Maintenance is a simple matter, as once the casing front panel has been removed, all parts that are likely to require servicing are easily accessible.

SETTING UP

Each boiler has to be adjusted once it is installed and this is a skilled job which should only be undertaken by suitably qualified engineers. Potterton International offer this service on a chargeable basis.

ADDITIONAL CONTROLS

Potterton Electronic Programmers are available as optional extras. These electronic programmers have been developed to compliment your boiler and offer the user a variety of programmes to suit individual requirements and systems. They are attractively styled with a constant digital clock display, slider and push buttons which are easy to use and understand. This control is fully described in its own Data Sheet which is available on request.

LITERATURE

The following literature is supplied with each boiler:

Installation and Service Guide

Users Guide Card

NOTE: Illustrated parts catalogues for these boilers are available to installers and servicing agents on request to Potterton International Limited, Brooks House, Coventry Road, Warwick CV34 4LL.

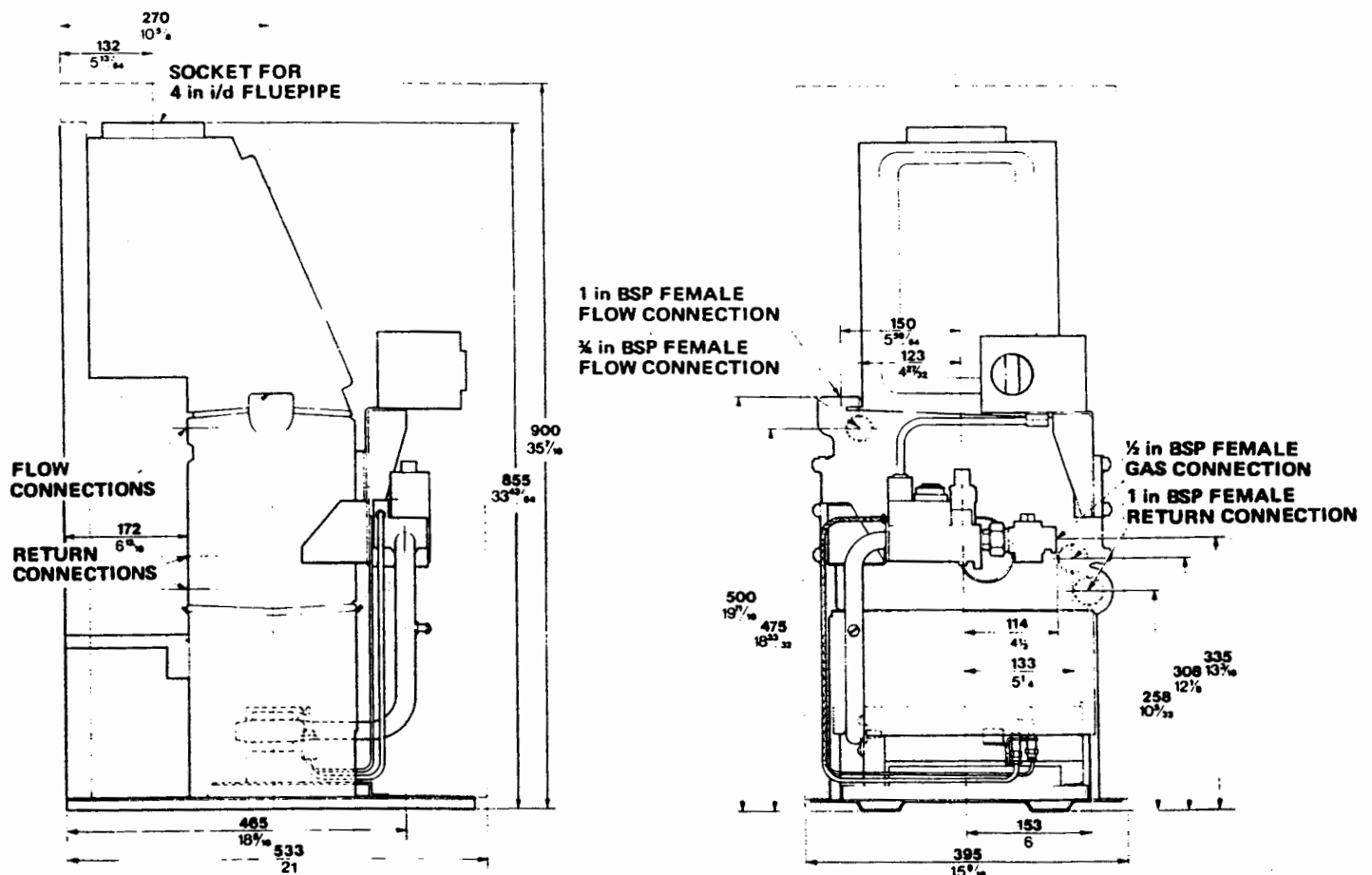


FIG. 3 CONNECTIONS AND DIMENSIONS

INSTALLATION SECTION

INSTALLATION INSTRUCTIONS

Installation must be carried out in accordance with the relevant British Standard Codes of Practice and I.E.E. recommendations. Reference should also be made to British Gas Publication "Material and Installation Specifications for Domestic Central Heating and Hot Water".

1. UNPACKING

A. The appliance will arrive on site in two cartons as follows:

Carton 1: Boiler Assy and Literature

Carton 2: a) Case Top; b) Side Panels; c) Case Front; d) Plinth Assy.; e) Fastener Pack; f) Case Tie Brkt; g) Side Panel Brace.

B. Open Carton No. 1 - Boiler Assy. - There is no need to open the casing carton at this stage.

2. POSITIONING THE BOILER

NOTE: The casing top panel extends to the rear as far as the boiler base tray. Therefore, if the tray is touching the wall, the top panel will extend right up to the wall, but if the tray is positioned up against the skirting board, a gap will still remain behind the top panel, unless the skirting board is first removed.

A. Manoeuvre the boiler into position, until the rear of the boiler base tray touches the wall (or skirting board).

B. When the boiler has been finally positioned, check that it is level.

2. CONNECTIONS — See Fig. 3.

A. Make the flow and return connections in accordance with normal practices, taking the following notes into account when applicable. Do not obstruct the flue cleaning access cover on the fluehood, or the opening beneath the draught diverter at the rear of the boiler.

(1). Combined Systems, Gravity Hot Water and Pumped Central Heating

- (a) Connect the central heating flow pipework to the rear facing $\frac{3}{4}$ in. BSP flow connection.
- (b) Connect the gravity domestic hot water system flow pipework to the upwards facing 1in. BSP flow connection on top of the heat exchanger.
- (c) Connect the return from the gravity domestic circuit to the upper rear facing 1 in. BSP return connection.
- (d) Connect the return from the central heating circuit to the lower rear facing 1in. BSP return connection.

(2). Fully Pumped Systems or Pumped Central Heating Only

- (a) Connect the combined flow pipework to the 1in. BSP flow connection, facing upwards on top of the heat exchanger. The system vent pipe should be connected into the flow pipework as close to the boiler as possible.
- (b) Blank off the rear facing $\frac{3}{4}$ in. BSP flow connection.

NOTE: If for any reason, the $\frac{3}{4}$ in. flow connection has to be used instead of the 1in. BSP vertical connection, the 1in. connection should be separately vented.

(c) Connect the combined return pipework to the lower, rear facing 1in. BSP return connection.

(d) The upper, rear facing 1in. BSP return connection can either be blanked off or used to connect the cold feed.

B. On certain combined systems, i.e. pumped central heating and gravity hot water, it may be necessary to install a check valve to prevent gravity circulation in the heating circuit when the pump is not working. The valve must be installed with the arrow on it pointing vertically upwards in the direction of flow.

C. The circulating pump can be fitted in any position on either the flow or return, to suit the particular installation. Refer to "The System" and the pump manufacturers instructions.

D. Connect the gas supply pipe to the boiler main gas cock. The pipe must be run close along the side of the combustion chamber, then up to the cock. A cut-out is provided in the return edge of the adjacent casing side panel, so the pipe can run straight out from behind the boiler. There is only a minimum clearance for the pipe run.

E. Ensure the drain cock(s) is fitted.

F. Open all water valves and thoroughly flush the system.

G. Fill and vent the system and test for leaks; rectify if necessary.

4. FLUE

Make the flue connection to the boiler draught diverter, sealing the joint with a suitable compound.

5. WIRING — See Fig. 4 to 10

Care must be taken to ensure that all wiring to the boiler is kept clear of sharp edges and hot surfaces.

Unscrew the two screws and remove the control module from its housing, thus exposing the terminal strip.

The boiler terminal strip is not designed to accept wiring from all the on-site system controls and therefore, the installer will need to incorporate a suitable junction box. The principle of wiring up the boiler and its controls is shown in Fig. 4. However, the layout of a particular system will itself govern the most economical location for the junction box and its terminals.

Wire up the boiler and system controls as illustrated in Fig. 6, 7, 8, 9 or 10 depending on the type of system installed. The wiring arrangements shown, outline only the basic control requirements and will therefore require on-site interpretation of the various boiler installation arrangements. Fig. 9 illustrates a system with a zone valve which requires an electrical supply to motor it both to the open and closed positions. Zone valves which require an electrical supply to open them but not to close them, should be wired in a similar manner but ignoring the closed connection from the room thermostat. For this type of valve, a room thermostat with a single pole contact may be used. Certain zone valves may require an additional connection to the auxiliary switch (shown dotted). This would apply to those valves which internally are not suitable for giving an open signal from the normal opening voltage supply.

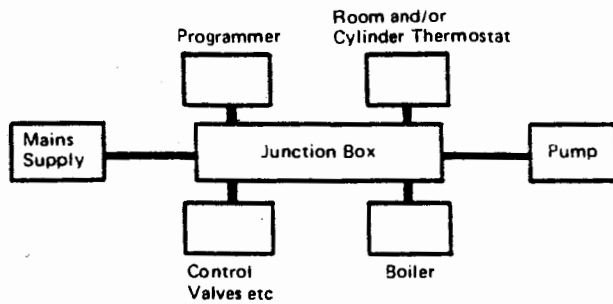


FIG. 4 PRINCIPLE OF WIRING

If a Potterton EP 2000/3000 Programmer is not being fitted, but a three terminal time clock is to be installed to control the system illustrated in Fig. 6, 7, 8, 9 and 10, the time control should be wired as follows:

Live to Time Clock Live
 Neutral to Time Clock Neutral
 Earth to Time clock Earth
 Wires normally connected to EP 2000/3000
 Terminals 3 & 4 to Time Clock Switch

A low limit thermostat can be installed to override the 'OFF' setting of the time control. Where an EP 2000/3000 or equivalent programmer is installed, a double pole or a single pole thermostat with change over contacts may be necessary; for the electrical connections and type required, see the relevant system wiring diagram. Where only a time control is fitted, the thermostat need only be a single pole type with its contact wired in parallel with the clock switch.

If a three-way (proportioning diverter) valve with a mid-position is being fitted in the system, the following instructions must be adhered to in addition to the valve manufacturers wiring information:

1. Neutral and earth connections must be made to boiler terminals N and E.
2. The switched supply from the system control circuit must be connected to boiler terminal L.
3. The live supply to the pump must be taken from the supply to boiler terminal L.

When all wiring is complete, refit the control module into its housing and secure it with the two screws.

FIG. 5 BOILER WIRING

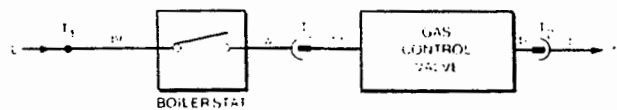


FIG. 5A WIRING DIAGRAM

FIG. 5B WIRING DIAGRAM

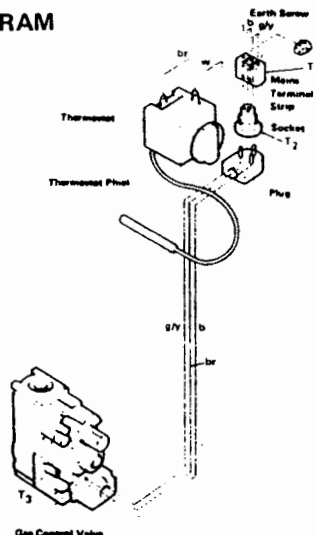


Fig. 6 GRAVITY HOT WATER WITH PUMPED CENTRAL HEATING

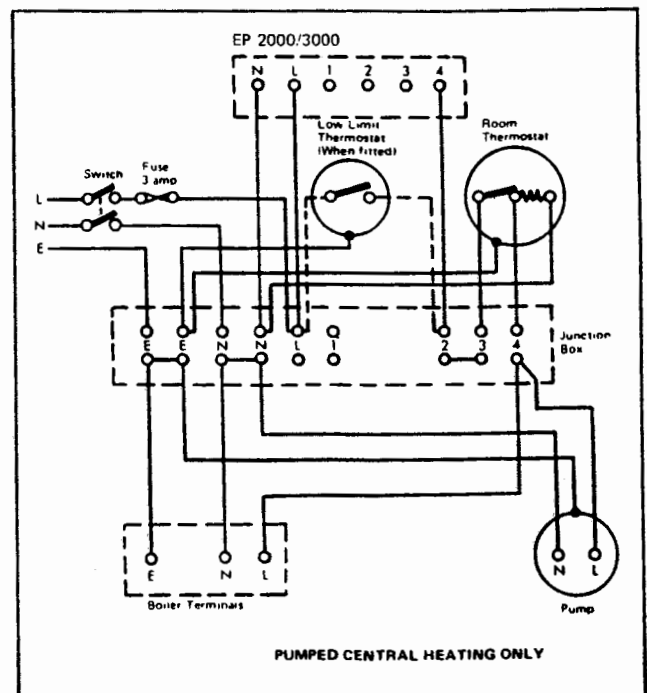
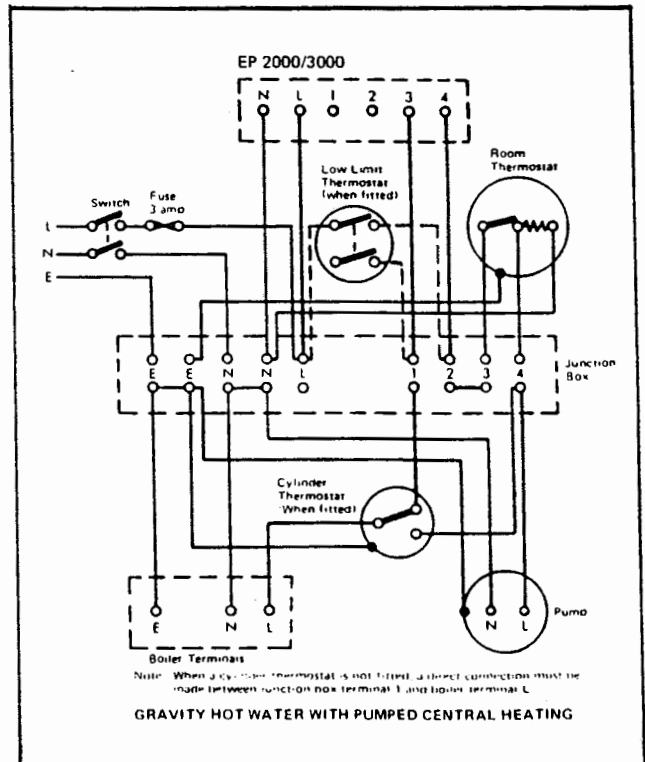
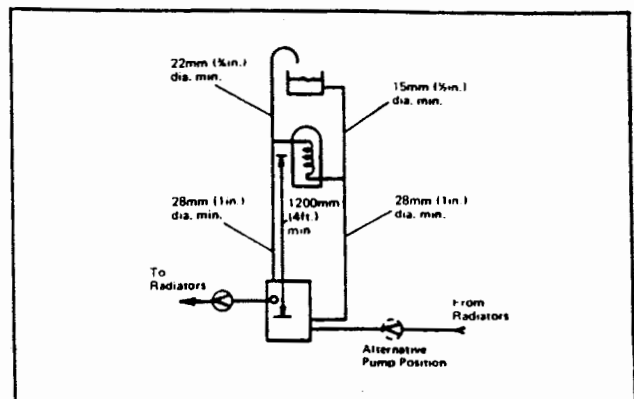


Fig. 7 GRAVITY HOT WATER WITH TEMPERATURE CONTROL AND PUMPED CENTRAL HEATING

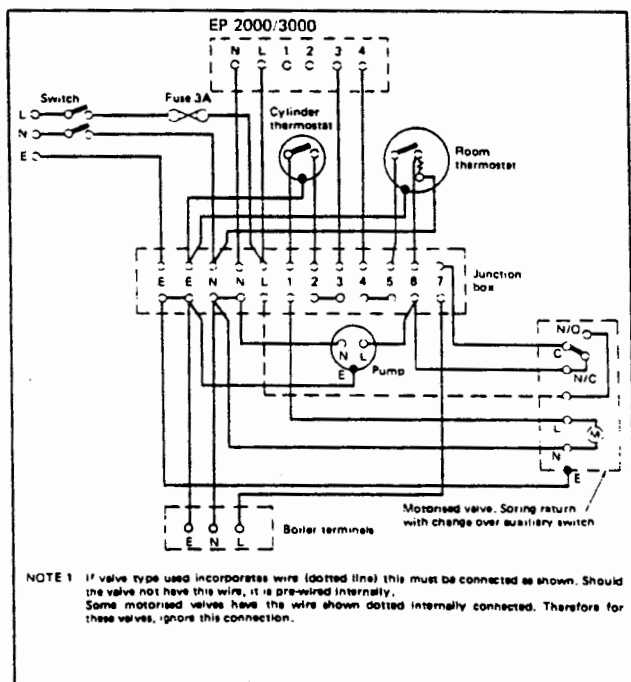
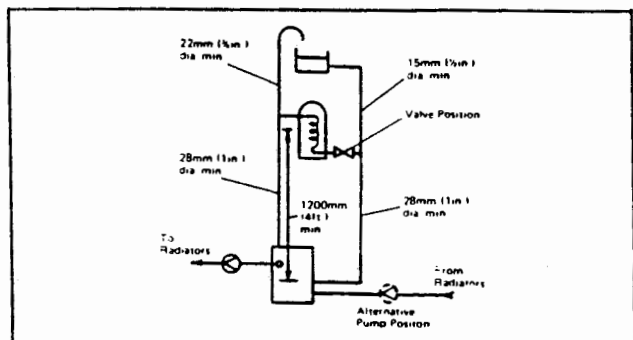


Fig. 8 FULLY PUMPED WITH TWO POSITION DIVERTER VALVE

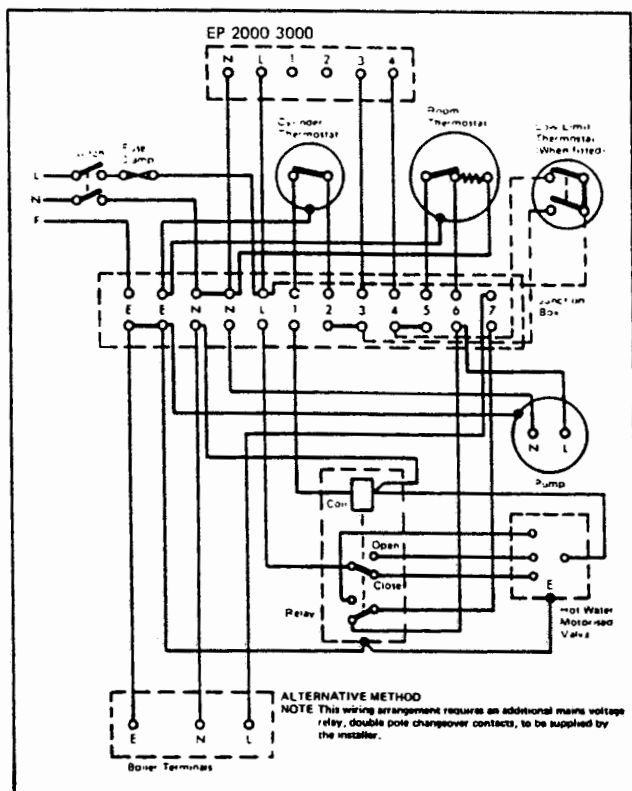
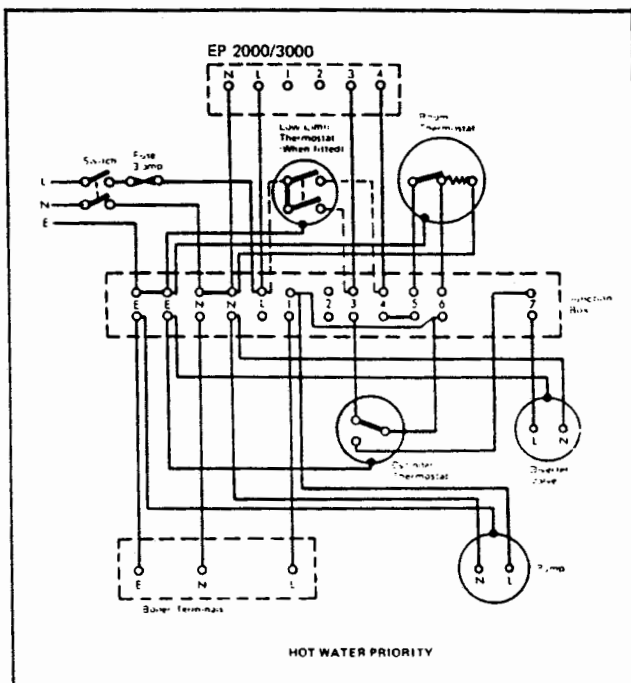
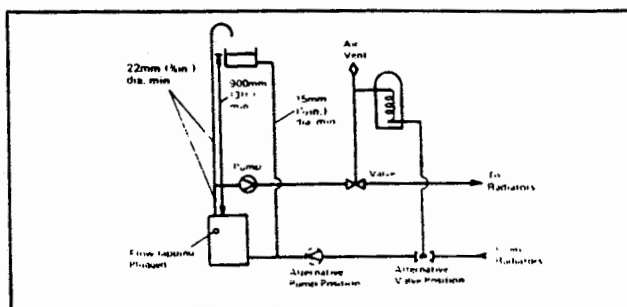


Fig. 9 FULLY PUMPED WITH ONE OR TWO TWO-WAY VALVES

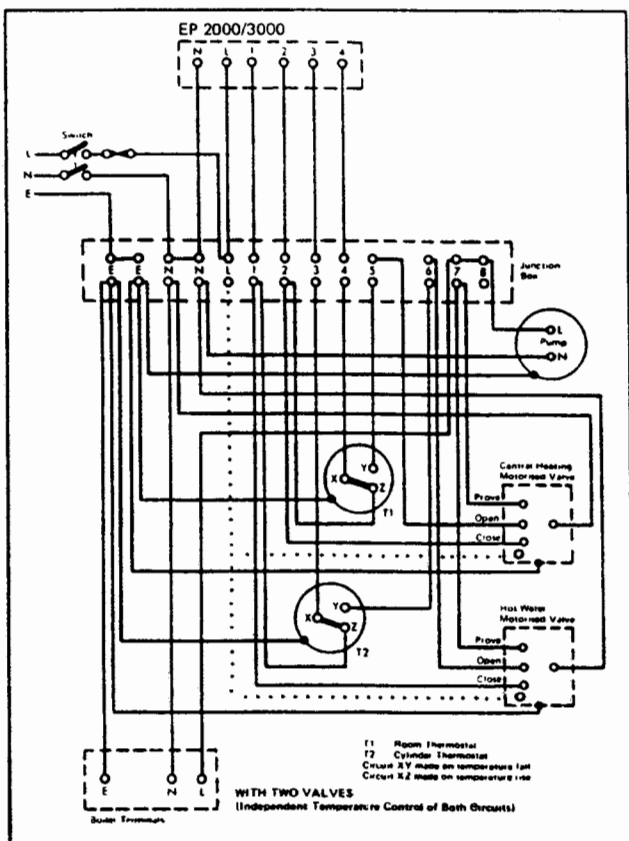
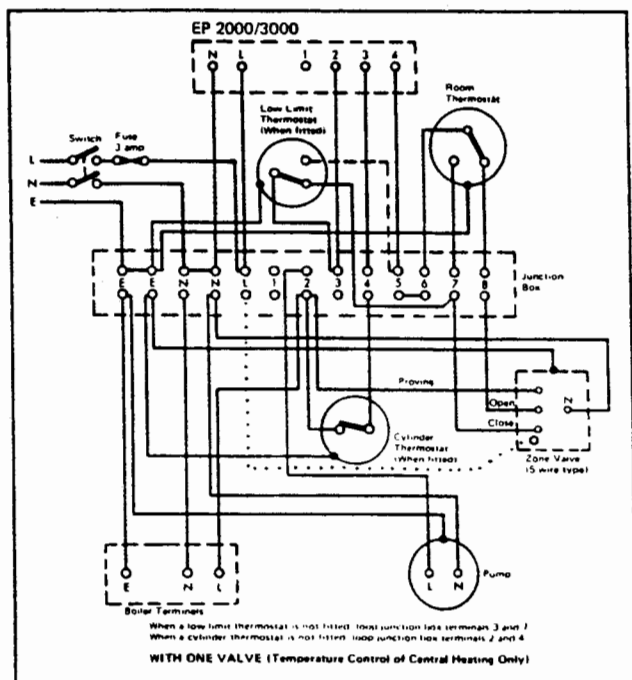
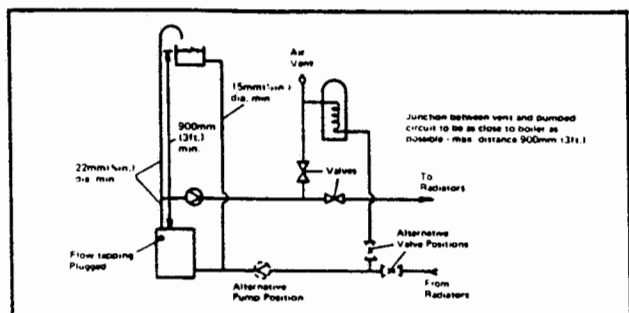
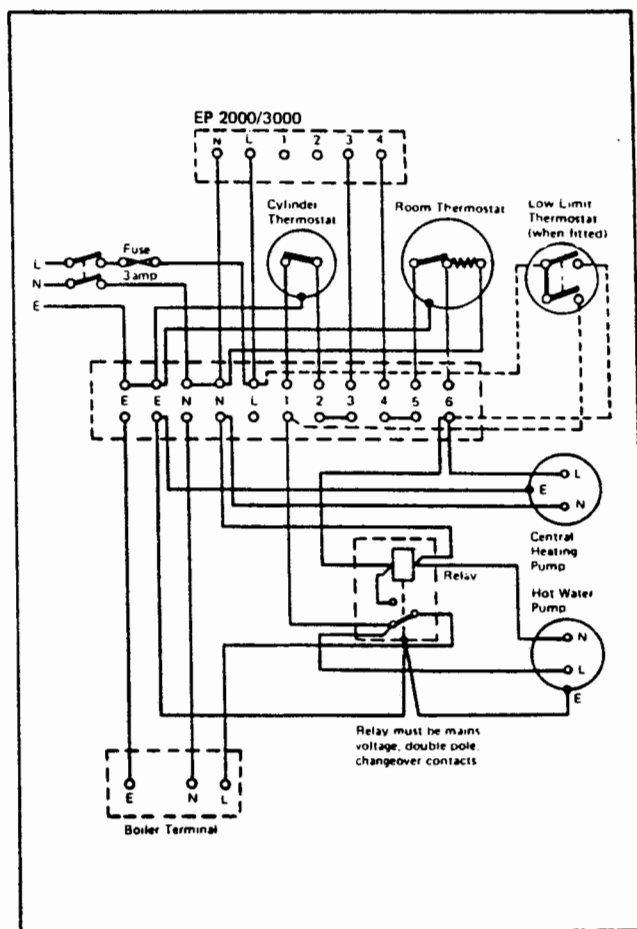
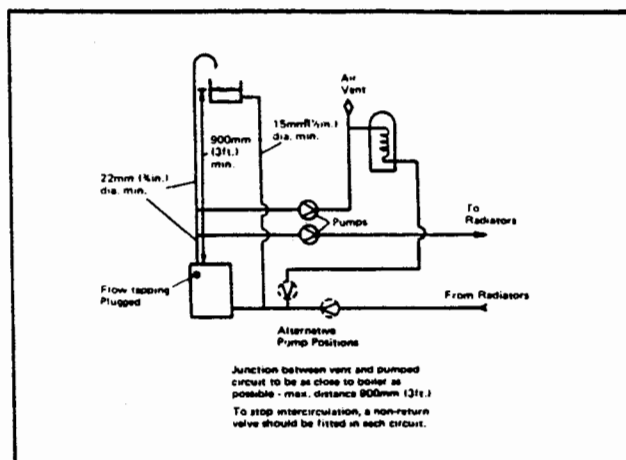


Fig. 10 FULLY PUMPED USING TWO PUMPS



6. FIRST LIGHTING

NOTE: Before lighting the boiler, the gas installation must be tested for soundness in accordance with CP.331, Part 3 1974. The electrical installation must be checked as follows:—

Preliminary Electrical System Checks (See Figs. 5A, 5B, 11)

A. Earth Continuity Check — appliance must be electrically disconnected — meter set on Ω (ohms) $\times 1$ scale and adjust zero if necessary.

- (a) Test leads from any appliance earth point to earth pin on plug — resistance should be less than 1Ω (ohm).

If the resistance is greater than 1Ω (ohm) check all earth wires for continuity and all contacts clean and tight.

If the resistance of earth is still greater than 1Ω (ohm) then this should be reported to your supervisor.

B. Short Circuit Check — appliance electrically disconnected, all switches ON (including stats) —

- (a) Meter set on Ω (ohms) $\times 1$ scale.

Test leads from L to N in appliance terminal strip/block — if meter reads 'O' then there is a short circuit.

- (b) Meter set on Ω (ohms) $\times 100$ scale.

Repeat test with leads from L to E. If meter reads less than ∞ (infinity) there is a fault.

NOTE:— Should it be found that the fuse has failed but no fault is indicated — a detailed continuity check (i.e. by disconnecting and checking each component) is required to trace the faulty component. It is possible that a fault could occur as a result of a local burning/arcing but no fault could be found under test. However, a detailed visual inspection should reveal evidence of burning around the fault.

C. Polarity Check

Appliance connected to mains supply and meter set on 300 Vac scale. Test at appliance terminal strip:—

- a) Test leads from L to N — meter reads approx. 240 Vac.
b) Test leads from L to E $\perp$ — meter reads approx. 240 Vac.
c) Test leads from N to E $\perp$ — meter reads from 0.15 Vac.

Thus the terminal marked L is the live terminal. If the low Vac reading is given on terminals other than N to E ($\perp$) there is an electrical fault.

Repeat the test at the appliance plug/inlet spur to check the wiring system up to the appliance and rectify any fault. If necessary repeat the test at the supply system socket/spur — if the fault also occurs at this stage then there is a house system fault which requires attention by the Electrical Authority. The customer should be warned not to use the appliance until this examination has been carried out.

D. Resistance to Earth Check

Appliance must be disconnected from mains supply and meter set on Ω (ohms) $\times 100$ scale. All switches, including stats, ON - Test leads from L to E — if meter reads other than infinity (∞) there is a fault which should be

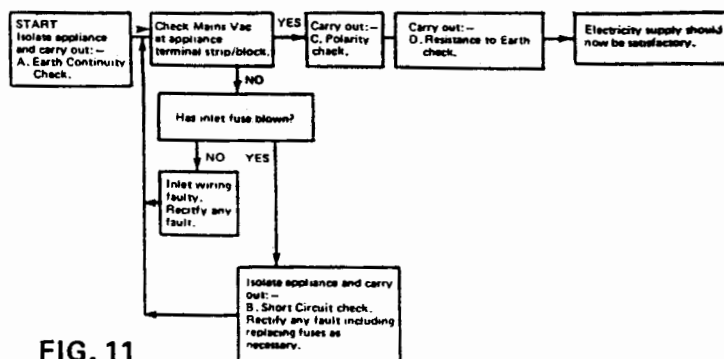


FIG. 11

isolated. A detailed continuity check is required to trace the faulty component.

IMPORTANT — This series of checks are the first electrical checks to be carried out during a fault finding procedure. On completion of the service/fault finding task which has required the breaking and remaking of electrical connections then the checks A. Earth Continuity, C. Polarity and D. Resistance to Earth — must be repeated.

7. LIGHTING

A. Check that the main electricity supply to the boiler is switched on and that the boiler thermostat is in the off position.

B. Turn on the main gas supply.

WARNING: OPEN ALL WINDOWS AND EXTINGUISH ANY NAKED LIGHTS IN THE ROOM AND PUT OUT PIPES AND CIGARETTES.

C. Break the union at the boiler main inlet cock, then open the cock and purge any air from the supply pipe. See CP. 331 Part 3.

D. Close the cock, remake the union then re-open the cock and test for gas soundness using a soap solution.

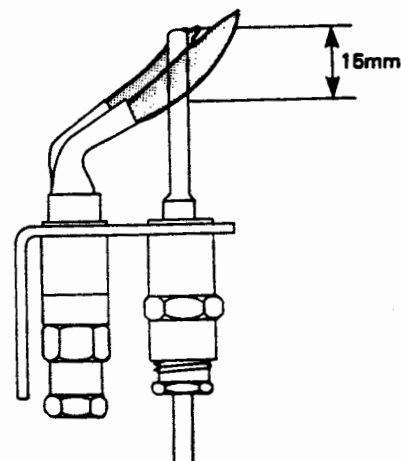
WARNING: DO NOT USE A NAKED FLAME.

E. Ensure that the system is full of water and that the pump and radiator isolating valves are open.

F. Ensure that the time control, if fitted, is in an on condition, and that the room and/or cylinder thermostats, where fitted, are set to high temperatures.

G. Turn the control button on the gas control valve clockwise as far as possible (approximately 1/12th of a turn) and release it. This ensures that the valve is in the off condition.

FIG. 12
APPROXIMATE
PILOT
SIZE



- H. Lift the tab and swing aside the small cover to reveal the pilot burner, then press and hold in the control button on the gas control valve whilst applying a light to the exposed burner. Continue to hold in the control button and check that the pilot has lit; hold in the control button for a further 20 seconds, then release it and the pilot should remain alight. Swing back the cover over the pilot burner.

NOTE: On first lighting, establishment of the pilot flame may be slightly delayed due to the presence of air in the pipework. If the pilot fails to light or goes out at any time, immediately turn the control button clockwise as far as possible (approximately 1/12th. of a turn), then release it and wait three minutes before repeating the lighting procedure. The control button should not be touched during this period.

- I. Turn the boiler thermostat on and to a high setting and the main burner will light.
J. Set the boiler thermostat and the room and/or cylinder thermostat(s) and time control, where installed, to their required operating conditions.
K. Check that there is no spillage or leakage of combustion products in accordance with BS 5440 Part 1
L. Switch off the boiler, using the thermostat knob.
M. Allow the system to reach maximum working temperature and examine for leaks. Drain the system whilst it is still hot, then refill and vent and make a final examination for leaks.

8. FINAL ADJUSTMENT

A. Gas Rate and Main Burner Pressure Setting

- (1) Fit a pressure gauge to the pressure test nipple at the left-hand side of the combustion chamber, in the main gas supply pipe between the burner and the control valve.

- (2) Turn on the boiler thermostat, then check that the burner pressure is in accordance with Table 1.
(3) If burner pressure adjustment is necessary, remove the screwed cap on the top of the control valve and turn the screw beneath clockwise to increase pressure or anti-clockwise to decrease. Refit the screwed cap when the pressure is correct. Shut down the boiler, remove the pressure gauge and refit the screw in the pressure test nipple.
(4) With the burner set to its correct pressure, the firing rate given in Table 1 should also be obtained and this should be checked by meter reading over a period of at least 10 minutes once the boiler is hot.

B. Pilot Burner

When correctly set, the pilot flame must be sufficient to heat the thermocouple so that the pilot safety device is "held in" but must not cause the thermocouple to glow bright red. If the pilot needs adjustment, turn the self sealing pilot adjustment screw, located adjacent to the pilot connection on the gas control valve clockwise to reduce or anti-clockwise to increase the flame. The correct adjustment is achieved when the length of the pilot flame completely envelops the top 15mm (approximately 0.5in.) of the thermocouple, see Fig. 12. When the pilot is set to the above instructions the E.M.F. generated by the thermocouple should be of the order of 18-32mv open circuit, 10-15mv closed circuit. Drop out should occur between 2-4mv closed circuit.

C. Boiler Thermostat

- (1) At its minimum and maximum settings, the thermostat should control the water flow temperature at approximately 55°C to 82°C (130°F - 180°F) respectively.

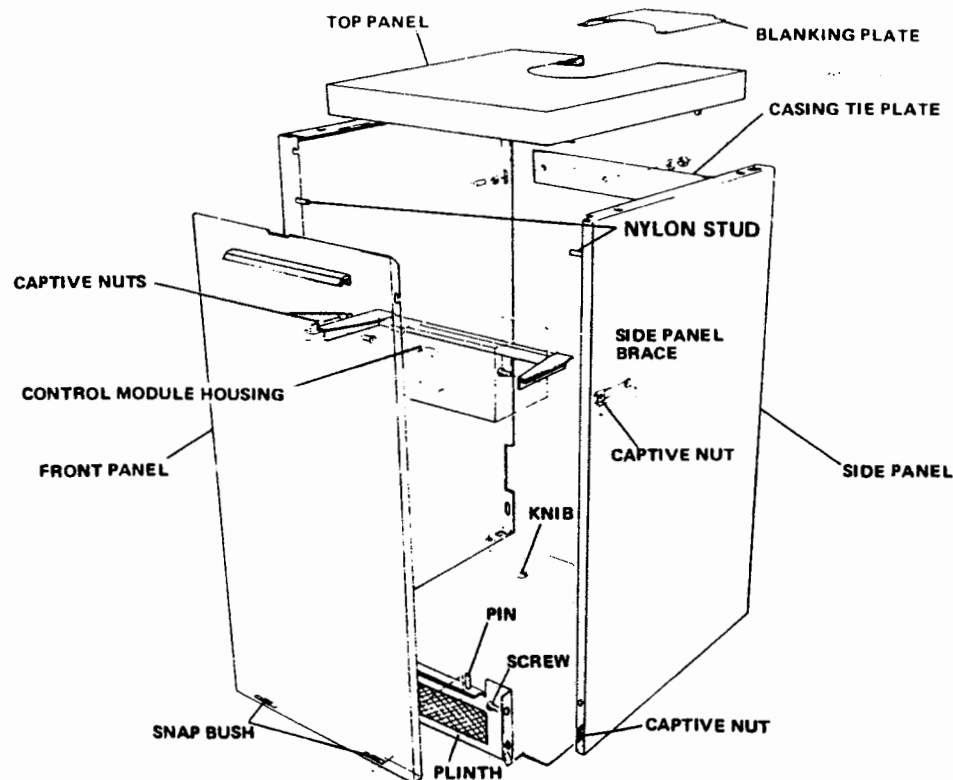


FIG. 13 CASING ASSEMBLY

- (2) The thermostat has been calibrated by the makers and no attempt should be made to recalibrate it on site. Turn the thermostat to the off position and check that the main burner shuts down.

D. Combination Control

Solenoid. Check the operation of the valve by turning off the electricity supply, either by the isolating switch or the time control, where installed. The main burner must shut down immediately.

Flame Safety Valve. Check the operation of the valve as follows with the boiler running normally:— Turn the control button clockwise as far as possible and a distinct click should be heard within 60 seconds indicating that the valve has closed.

E. Remote Controls

Check that any other remote control connected in the system such as time clocks and thermostats, control the boiler as required.

9. CASING ASSY. — See Fig. 13

A. Unpack the casing.

NOTE: The Fastener Pack will be found inside the top panel.

- B.** Use two nuts and shakeproof washers and secure the casing tie plate to the two studs on the rear of the fluehood.
- C.** Fit the three captive nuts to the brackets on the casing side panels as illustrated. The two brackets to be used are the lower pair, position slightly forward of the other brackets. Fit the two nylon studs to the holes in the side panels.
- D.** Position the casing side panels on the boiler base tray, locating the holes in the bottom edge of each panel over the raised knibs on the tray.
- E.** Use a screw and washer and secure the rear edge of each side panel to the casing tie plate. Use one screw to secure the earth lead from the control module.

- F.** Use two nuts and shakeproof washers and loosely secure the side panel brace to the two studs on the back of the control module housing. Use three screws and secure the brace to the brackets on the casing side panels. Fully tighten all nuts and screws.

- G.** Fit the plinth with the two pins uppermost between the two side panels, using the four captive nuts on the side panels and four screws in the plinth.

- H.** Use the cable clips provided, to secure the incoming electrical cables to the top edge of the relevant side panels.

- J.** Fit the casing top panel in position, then fit the blanking plate to blank off the space behind the flue pipe.

NOTE (i) If the top panel being fitted is the optional extra, used when installing the boiler beneath a working surface, ensure that the minimum distance between the base of the boiler and the underside of the working surface is 865mm (34 in.). This will then give a minimum 15mm (19/32") gap between the underside of the working surface and the casing top panel.

(ii) Also ensure that a gap of at least 15mm (19/32") exists all around the flue pipe where it passes through the working surface.

- K.** Affix the lighting instructions and data plate, supplied loose inside the literature envelope, on the inside of the casing front panel.

- L.** Indicate the set burner pressure on the lighting instruction and data plate.

- M.** Fit the two snap bushes to the holes in the bottom edge of the front panel.

- N.** Fit and secure the front panel by lifting onto the nylon studs projecting from the side panels.

10. USER'S GUIDE

A user's guide is provided with this boiler but if possible, the installer should explain the operation of the boiler and system to the householder.

SERVICE SECTION

SERVICE INSTRUCTIONS

To ensure continued efficient operation of the boiler, it is necessary to carry out maintenance and cleaning at regular intervals.

The frequency of cleaning will depend upon the particular installation conditions and the use to which the boiler is put, but in general, once per year should be adequate.

If there has been any delay in cleaning and the boiler has been switched off, it is desirable to operate the boiler for a short time to dry out deposits in the flueway which, if they are left in the cold state, will absorb moisture and become both corrosive and difficult to remove.

The following notes apply to the boiler and its controls, but it should be remembered that attention must also be paid to the heating circuit itself including radiator valves, thermostats, the time control and the expansion and feed water system. In all cases prior to maintenance, light up the boiler and check that the pilot and main burners have a clean, even flame and that the gas rate and main burner pressure is correctly set.

Before the start of any maintenance work, switch off the main electricity supply and disconnect the plug at the main isolating switch and socket. Turn off the boiler main gas inlet cock.

NOTE:

Where it is required to break any seal during maintenance, the seal should be examined carefully for damage and if necessary replaced. It is important to obtain the correct Potterton approved part for the seal replacement which is available from Interpart spares stockists, or where difficulty in supply is experienced, directly from Potterton International Limited.

1. Preparing the Boiler

- A. Lift off the casing door.
- B. Remove the four securing screws, then remove plinth.
- C. Unscrew the four screws securing the combustion chamber front plate across the front of the combustion chamber, and remove the plate.

2. Main Burner Assembly – Removal and Cleaning

- A. Disconnect the union at the boiler main gas cock.
- B. Unscrew and remove the two screws securing the burner mounting plate to the boiler base tray.
- C. Unscrew and remove the two screws securing the gas control valve retaining bracket to the heat exchanger assembly.
- D. Unplug the electrical lead from the valve at the control module.
- E. Remove the burner and control assembly from the combustion chamber.
- F. Cover the injector orifice to stop dirt particles entering.
- G. On boilers using burners fitted with external gauzes, remove all deposits from the burner(s), then remove the end cover(s) and clean any dirt from inside the burner(s). Use a brush or vacuum cleaner and remove any fluff from the gauze at the injector end of the burner. Refit the end cover(s).
- H. On boilers using burners fitted with internal gauzes, remove all deposits from the burner, then remove the end cover and inner gauze. Remove all deposits from inside the burner and from the gauze using a brush or vacuum cleaner. Refit the gauze and end cover.
- J. Use a soft brush and remove any visible deposits from the pilot and thermocouple assembly.
- K. Do not refit the assembly to the boiler at this stage as the flueways in the heat exchanger have first to be cleaned.

3. Heat Exchanger

- A. Unscrew the four nuts and remove the access cover from the fluehood.
- B. Working from above and below the heat exchanger, using a suitable brush, remove all deposits from between the fins of the casting.

- C. Refit the fluehood cover, ensuring that a good seal is made. Tighten the four nuts.

- D. Remove all deposits from inside the boiler combustion chamber.

4. Main Burner Assembly – Replacement

- A. Replace the main burner assembly in position and secure the mounting plate to the base tray with the two screws.
- B. Using the two screws and washers, secure the control valve retaining bracket to the heat exchanger assembly.
- C. Reconnect the union at the boiler gas cock.
- D. Plug the lead from the valve into the control module.

5. Other Boiler Components

No further maintenance has to be carried out on any other unit. Repair is by replacement and instructions on this are given later.

6. Final Adjustment

- A. Refit the combustion chamber front plate across the front of the combustion chamber and secure it with the four screws.
- B. Fit a pressure gauge to the pressure test nipple in the main gas supply line on the left hand side of the boiler.
- C. Switch on the main electricity supply to the boiler and check that the boiler thermostat is in the off position.
- D. Turn on the main gas supply.
- E. Ensure that the system is full of water and that the pump and radiator isolating valves are open.
- F. Ensure that the time control, if fitted, is in an on condition, and that the room and/or cylinder thermostats, where fitted, are set to high temperatures.
- G. Turn the control button on the gas control valve clockwise as far as possible (approximately 1/12th of a turn) and release. This ensures the valve is in the off condition.
- H. Lift the tab and swing aside the small cover to reveal the pilot burner, then press and hold in the control button on the gas control valve whilst applying a light to the exposed burner. Continue to hold in the control button and check that the pilot has lit, hold in the control button for a further 20 seconds, then release it and the pilot should remain alight. Swing back the cover over the pilot burner.

NOTE: On first lighting, establishment of the pilot flame may be slightly delayed due to the presence of air in the pipework. If the pilot fails to light or goes out at any time, immediately turn the control button clockwise as far as possible (approximately 1/12th of a turn) then release it and wait three minutes before repeating the lighting procedure. The control button should not be touched during this period.

- J. When correctly set, the pilot flame must be sufficient to heat the thermocouple so that the pilot safety device is "held in" but must not cause the thermocouple to glow bright red. If the pilot needs adjustment, turn the self-sealing pilot adjustment screw, located adjacent to the pilot connection on the control valve, clockwise to reduce or anti-clockwise to increase the flame. The correct adjustment is achieved when the length of the pilot flame completely envelops the top 15mm (approximately 0.5 in) of the thermocouple, see Fig.12. When the pilot is set to the above instructions the E.M.F. generated by the thermocouple should be of the order of 18-32 mv open circuit, 10-15 mv closed circuit. Drop out should occur between 2-4 mv closed circuit.

- K. Turn on the boiler thermostat and set it to the required temperature and the main burner will light. Check that the burner pressure is in accordance with Table 1.

L. If burner pressure adjustment is necessary, remove the screwed cap on the top of the control valve and turn the screw beneath clockwise to increase pressure or anti-clockwise to decrease. Refit the screwed cap when the pressure is correct. Shut down the boiler, remove the pressure gauge and refit the screw in the pressure test nipple. With the burner set to its correct pressure, the heat input given in Table 1 should also be obtained and this should be checked by meter reading over a period of at least 10 minutes once the boiler is hot.

M. Refit the casing plinth and secure with the four screws.

N. Fit the casing door.

7. Removal/Replacement of Boiler Components

A. MAIN BURNER AND INJECTOR

- (1) Carry out operations A, B and C under 1. "Preparing the Boiler".
- (2) Turn off the boiler main gas cock.
- (3) Switch off the main electricity supply to the boiler.
- (4) Carry out operations A to E under 2. "Main Burner Assembly - Removal and Cleaning".
- (5) Unscrew the two screws and remove the pilot assembly from the main burner.
- (6) Unscrew the two screws, nuts or wingnuts securing the burner to the burner manifold. On CF60 remove gauze.
- (7) Unscrew retaining nut and remove external gauze where fitted.
- (8) Unscrew the four screws or nuts securing the burner(s) to the mounting plate.
- (9) Unscrew the injector(s) from the manifold.
- (10) Replacement is the reverse of removal.
- (11) Test the boiler as described in 6. "Final Adjustment".

B. PILOT BURNER AND INJECTOR

- (1) Carry out operations A, B and C under 1. "Preparing the Boiler".
- (2) Turn off the boiler main gas cock.
- (3) Switch off the main electricity supply to the boiler.
- (4) Carry out operations A to E under 2. "Main Burner Assembly - Removal and Cleaning".
- (5) Remove the two screws securing the pilot assembly to its mounting bracket.
- (6) Disconnect the thermocouple lead from the pilot assembly.
- (7) Disconnect the pilot supply pipe at the base of the pilot. The pilot injector may be extracted using a blunt tool such as an Allen key.
- (8) Replacement is the reverse of removal.
- (9) Test the boiler as described in 6. "Final Adjustment".

C. THERMOCOUPLE

- (1) Carry out operations (1) to (6) under 7B "Pilot Burner and Injector".
- (2) Disconnect the thermocouple lead from the gas control valve, noting the route the lead takes from the pilot assembly. The replacement lead must be routed in a similar manner, so that sharp bends in the lead are eliminated.
- (3) Replacement is the reverse of removal.
- (4) Test the boiler as described in 6. "Final Adjustment".

D. GAS CONTROL VALVE

- (1) Lift off the casing door.
- (2) Turn off the boiler main gas cock.
- (3) Switch off the main electricity supply to the boiler.
- (4) Disconnect the union at the boiler main gas cock.
- (5) Disconnect the pilot supply tube and the thermocouple lead from the gas control valve.
- (6) Disconnect the electrical connection from the valve by unplugging it from the control module.
- (7) Remove the four screws securing the gas control valve to the burner manifold. Retain the gasket for use when fitting the new valve.
- (8) Unscrew the half union from the old valve and fit it to the replacement one.
- (9) Unscrew electrical connector cover retaining screw from old valve and remove cover. Detach wires, noting their positions. Re-fit to new valve.
- (10) Replacement is the reverse of removal.
- (11) Test the boiler as described in 6. "Final Adjustment".

E. BOILER THERMOSTAT

- (1) Lift off the casing door.
- (2) Turn off the boiler main gas cock.
- (3) Switch off the main electricity supply to the boiler.
- (4) Remove the clip then withdraw the thermostat phial from its pocket in the heat exchanger.
- (5) Unscrew the two screws securing the control module facia in its housing, and withdraw the module.
- (6) Disconnect the two wires from the thermostat.
- (7) Pull off the thermostat knob, then unscrew the backnut from around the spindle of the thermostat. Remove the thermostat complete with its capillary.
- (8) Replacement is the reverse of removal. Ensure that the thermostat phial is inserted to the full depth of its pocket.
- (9) Test the boiler as described in 6. "Final Adjustment".

8. Fault Finding

As well as the fault finding chart given, reference should also be made to the wiring diagrams Figs. 5A & 5B. Electrical procedures are in accordance with the Instructions for British Gas Multimeter booklet.

CONDITION	POSSIBLE CAUSE	REMEDY
A. Pilot fails to light	(1) No gas supply. (2) Control button not pressed fully down. (3) Blocked pilot filter. (4) Blocked pilot injector.	Check all cocks are open in the supply to the boiler. Control button must be pressed fully down. (a) Remove plastic electrical terminal cover from top of gas control valve, by unscrewing the screw. (b) Remove the four screws securing the solenoid valve to the top of the control valve. (c) Lift off the solenoid valve and the gasket beneath. (d) Unscrew and remove the single screw securing the flat plate to the main valve body, then lift off the plate and the gasket beneath. (e) Lift out the filter and replace as necessary. (f) Re-assemble in the reverse order. Remove and clean the injector as described in Section 7.B.
B. Main burner fails to light and pilot is extinguished when pressure on the control button is released.	(1) Control button not held down long enough. (2) Loose thermocouple connection into control valve. (3) Pilot rate too low. (4) Partially blocked pilot filter or pilot injector. (5) Failure of thermocouple, power unit or latching mechanism.	Control button must be fully pressed down for 20 seconds before main valve can be energised. Tighten thermocouple union nut finger tight plus $\frac{1}{4}$ turn only. Ensure connection is clean and dry. TOO MUCH PRESSURE MAY DAMAGE INSULATION AND CAUSE FAILURE. Adjust the pilot flame, see Section 6. As item A(3) and A(4). After pilot has been on for 20 seconds release control button. If pilot goes out: (a) Check F.F.D. and thermocouple using procedure given in Fig. 14 (b) If thermocouple has failed, replace as described in 7.C. Similarly, if control valve has failed, replace as described in 7.D.
C. Main burner fails to light, pilot burning.	(1) Boiler thermostat set to 'off' or low setting. (2) Additional controls not calling for heat. (3) Honeywell control solenoid valve failed. (4) Thermostat out of calibration or faulty. (5) Blocked main burner injector.	Note reading of thermostat dial and check temperature of flow pipe. Check programmer or clock is ON and that room thermostat or other distant control is not closed down. Carry out preliminary electrical system checks. Check solenoid using procedure given in Fig. 15. If Solenoid valve has failed, replace as described in A(3) above. Check thermostat using procedure given in Fig. 16. If faulty, replace thermostat as detailed in 7.E. Clean or replace injector as detailed in Section 7.A.
D. Burner fails to shut down when water reaches predetermined temperature.	(1) Thermostat out of calibration or faulty. (2) Dirt on valve seat of Honeywell control.	Remedy as in item C(4). Clean the valve seat as follows:- (a) Remove the solenoid valve and the plate beneath as described in A(3). (b) Clean the valve seat and the valve chamber. (c) Re-assemble in the reverse order.

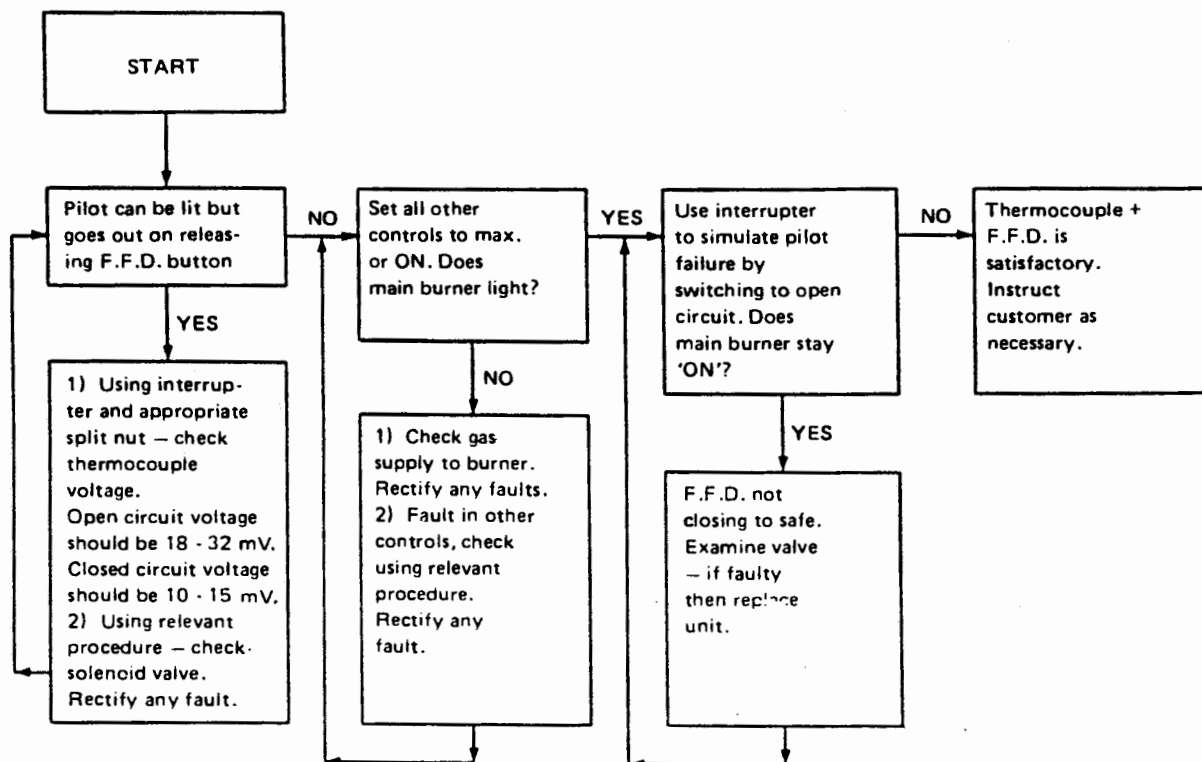


FIG. 14 F.F.D. AND THERMOCOUPLE

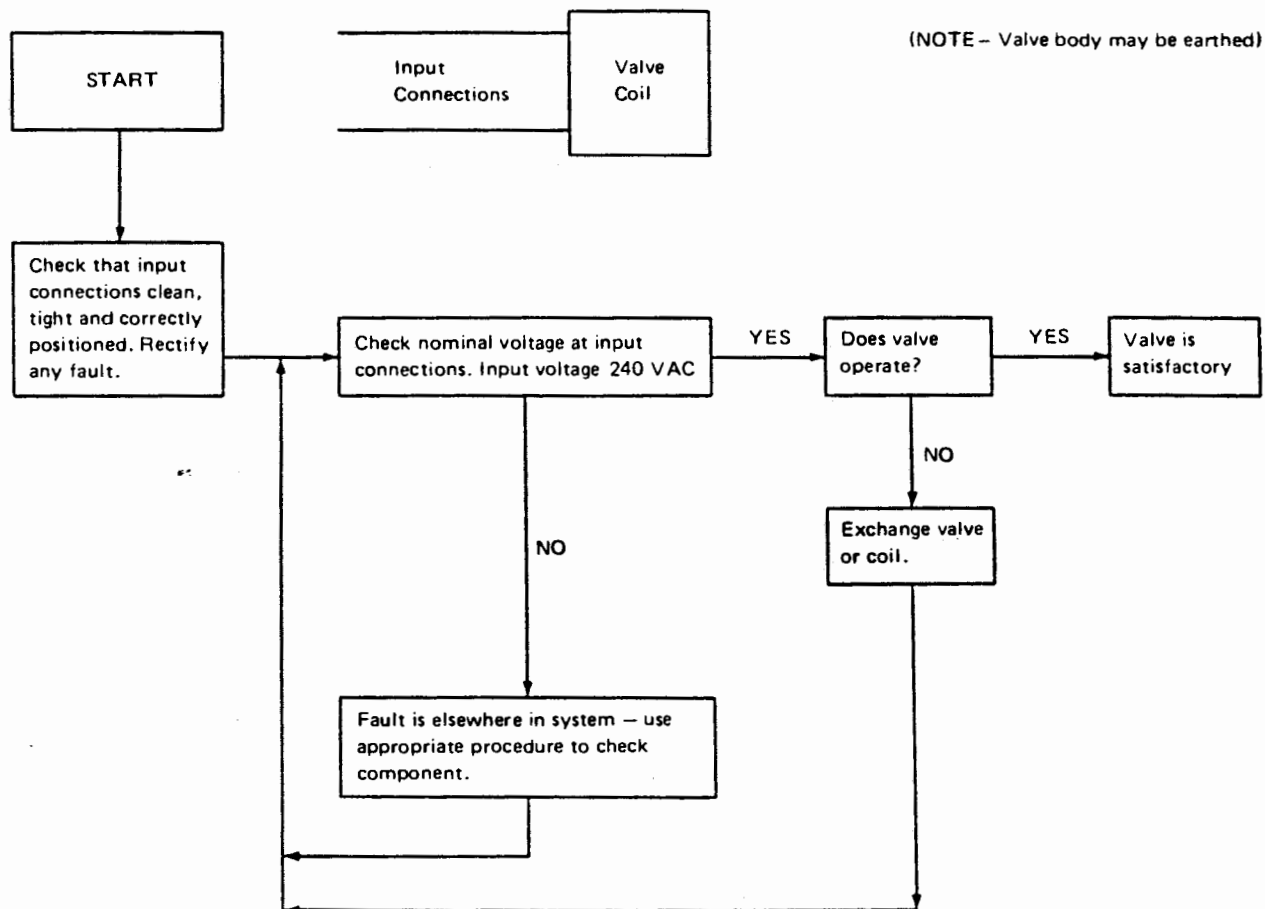


FIG. 15 SOLENOID VALVE

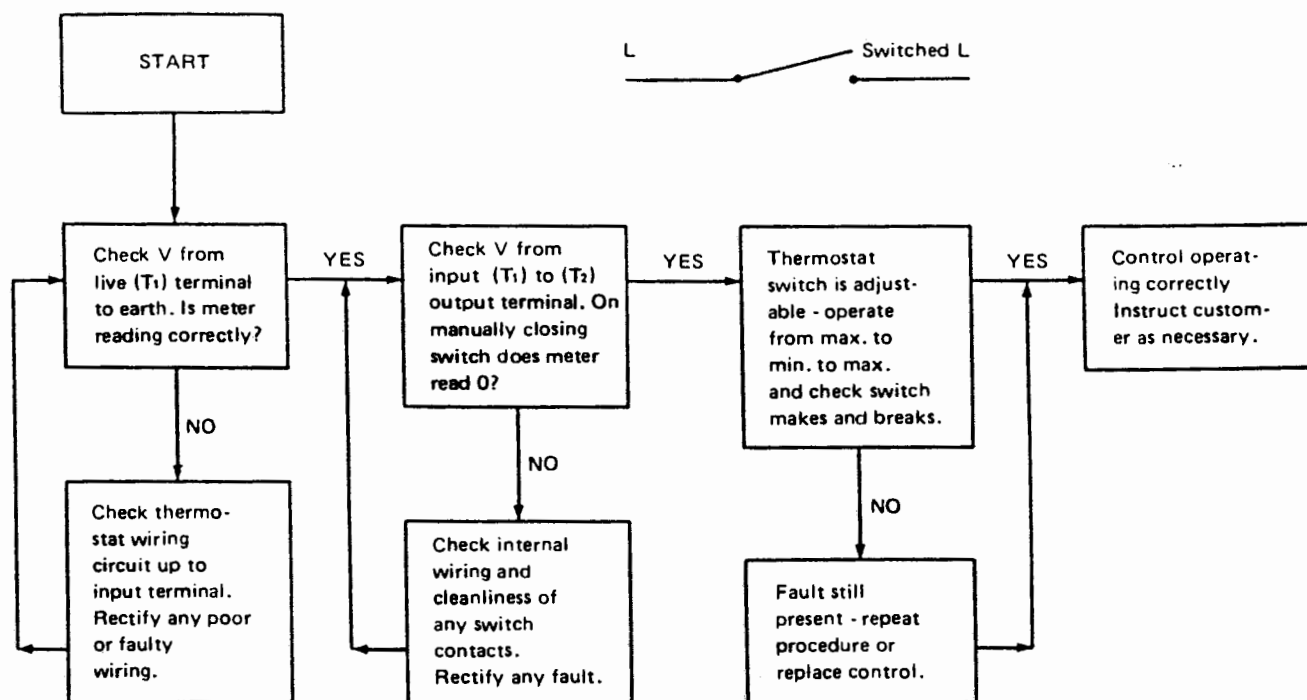
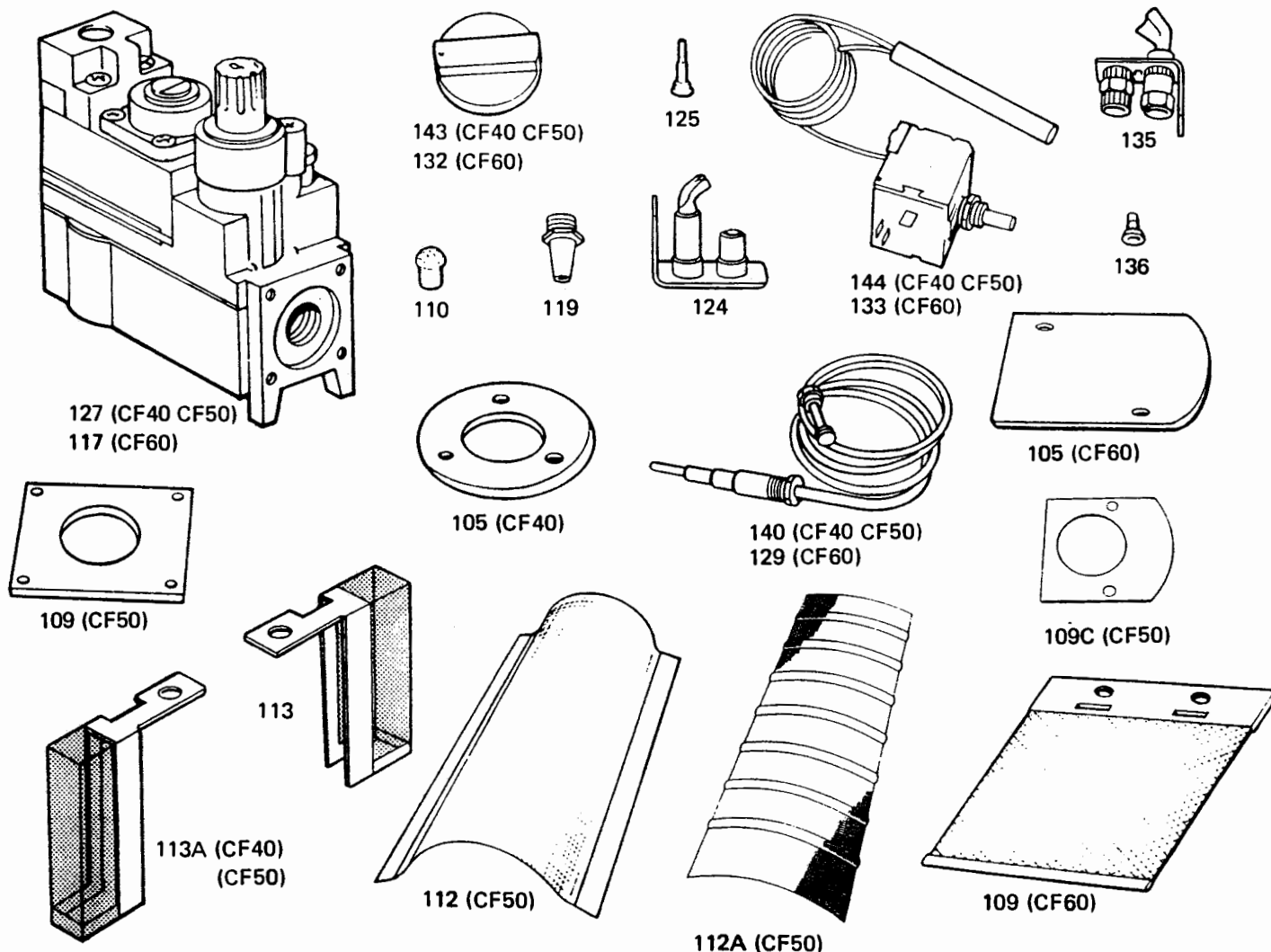


FIG. 16 THERMOSTAT

9. SHORT PARTS LIST

Key No.			Description	Potterton Part No.	British Gas Part No.
CF40	CF50	CF60			
135	135	•	Pilot Burner Honeywell Q314A CF40 & CF50	402464	390 444
•	•	124	Pilot Burner Honeywell Q359A CF60	402821	358 611
136	136	•	Pilot Burner Injector BCR 18 CF40 & CF50	410209	390 794
•	•	125	Pilot Burner Injector 38/36A CF60	410917	•
127	127	117	Gas Control Valve Honeywell V4 600A	402803	393 059
140	140	129	Thermocouple Honeywell Q309A	402257	390 038
144	144	133	Thermostat Ranco C26	404456	382 291
143	143	132	Thermostat Knob	202125	357 808
119	119	•	Main Burner Injector CF40 & CF50	410902	384 512
•	•	110	Main Burner Injector CF60	410492	398 344
113	113	•	Main Burner Lint Resistant Gauze R.H. (CF40) Furigas Burner (CF50) Robinson Burner	203130	384 895
113A	113A	•	Main Burner Lint Resistant Gauze L.H. (CF40) Furigas Burner (CF50) Robinson Burner	203131	384 896
105	•	•	Main Burner End Plate Gasket CF40	905359	358 033
•	112	•	Main Burner Lint Resistant Gauze CF50 Aeromatic	905357	358 031
•	109	•	Main Burner End Plate Gasket CF50 Aeromatic	905358	358 032
•	•	109	Main Burner Lint Resistant Gauze CF60	204646	358 687
•	•	105	Main Burner End Plate Gasket CF60	905484	358 686
•	109C	•	Main Burner End Plate Gasket CF50 Furigas	906242	384 893
•	112A	•	Main Burner Lint Resistant Gauze CF50 Furigas	906240	384 894



"All descriptions and illustrations contained in this leaflet have been carefully prepared but we reserve the right to make changes and improvements in our products which may affect the accuracy of the information contained in this leaflet"

 **POTTERTON**
INTERNATIONAL LIMITED

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Group of companies

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POTTERTON KINGFISHER II

CF 40, 50 & 60

IMPORTANT

This appliance is for use with Natural Gas only. It must be installed by a competent person as stated in the Gas Safety (Installation and Use) Regulations 1984.

INTRODUCTION

The information given on this card will help you to obtain the maximum comfort from your boiler with the minimum trouble and cost. Once the pilot is lit your boiler is fully automatic in operation and requires very little attention apart from setting the thermostat. Regular servicing of the boiler will ensure that it operates efficiently at all times and further information on this subject is given at a later stage.

THE BOILER THERMOSTAT

The boiler thermostat enables you to control the temperature of the water as it leaves the boiler and it is also used for turning the boiler off and on. The thermostat knob can be set to 'O' (OFF) Min. 1,2,3,4 or Max. The graduations, Min. to Max. correspond approximately to a temperature range of 55°C to 82°C (130°F to 180°F).

During the summer months when the boiler is only being used to supply domestic hot water and there is no independent hot water temperature control, the thermostat can be set to position 1 or 2 which will probably be hot enough for bathing or washing up requirements. For washing clothes, a higher setting may be necessary.

In winter weather when central heating is required, the thermostat knob can be turned up higher but it must be remembered that unless the temperature of the water in the domestic hot water tank is independently controlled, the stored hot water could be at a temperature that could scald.

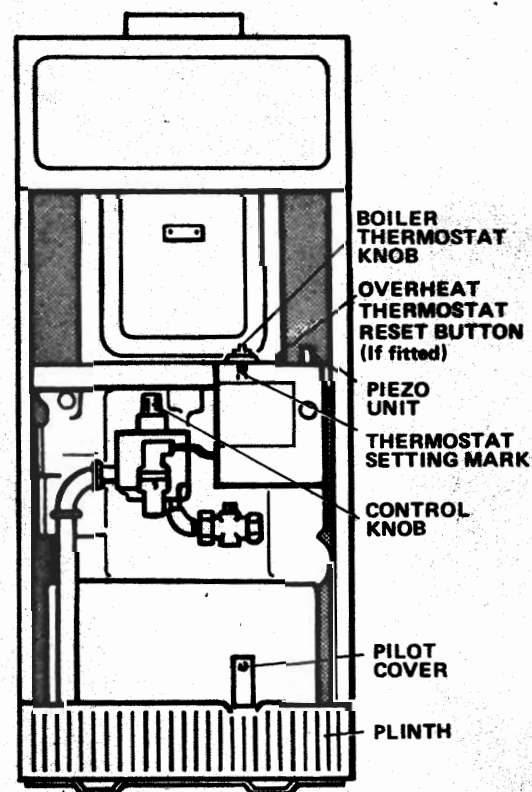
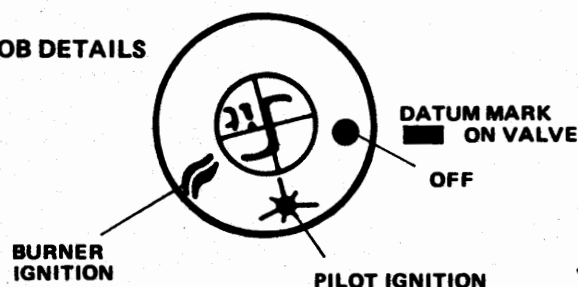
OTHER CONTROLS

A Potterton Electronic Programmer or other time control may have been fitted in your system, together with room and/or cylinder thermostats. Full instructions on the use of these controls should be supplied with them.

LIGHTING THE BOILER

- Remove the casing front panel by pulling forward the brown coloured handle.
- Check that the main electricity supply to the boiler is switched on and that the boiler thermostat knob is in the 'O' (OFF) position.
- Ensure that the time control, if fitted, is in an 'ON' condition, and that the room and/or cylinder thermostats, where fitted, are set to high temperatures.
- Turn the control knob clockwise as far as possible (see knob details) to (●) position, this ensures the valve is in the 'OFF' condition.

KNOB DETAILS



POTTERTON

user's
guide

- E. Turn the control knob anti-clockwise to the pilot ignition position (see knob details) and hold it in whilst pressing and releasing the piezo unit button several times. Continue to hold in the control knob, swing aside the pilot cover and check that the pilot has lit. (On initial lighting after a long period out of use, the pilot may take several attempts to light). When lit, continue to hold in the control knob for about 15 seconds, and the pilot should remain alight. Turn the control knob to the burner ignition symbol.

NOTE

If the pilot fails to light or goes out at any time, turn the control knob clockwise to the 'OFF' position, release and **WAIT THREE MINUTES** before attempting to relight. (If the pilot goes out having released the knob during the lighting procedure, hold in the knob for a little longer after lighting the pilot on the relight attempt).

If the pilot, for any reason must be lit when the appliance is hot, use a blunt metal object to swing back the pilot cover as the cover gets very hot is use.

F. Turn the boiler thermostat knob clockwise to a high setting and the main burner will light.

G. Set the boiler thermostat and the room and/or cylinder thermostat(s) and any time control, to their required operating conditions.

H. Refit the front panel by locating the slots at the base of the panel over the plinth lugs and push into the locators in the side panels.

TO SHUT THE BOILER OFF

1. **Temporarily:** Turn the thermostat knob to 'O' (OFF) or switch off the time control (if fitted). To bring the boiler back on, turn the thermostat knob to a high setting, or switch on the time control.
2. **Longer periods:** Turn off the time control, if fitted, turn off the boiler thermostat, then turn the control knob clockwise as far as possible and release it. Switch off the electricity supply. To relight the boiler follow the full procedure "LIGHTING THE BOILER".

SAFETY

1. Minimum Boiler Clearances

TOP:	20mm from top of boiler casing to underside of kitchen worktop.
FRONT:	610mm for servicing.
SIDE:	CF.40, CF.50: 25mm CF.60 50mm

2. If the appliance is installed in a compartment, do not obstruct any purpose provided ventilation openings and do not use for storage purposes.
3. If a gas leak or fault is suspected, turn off the appliance and consult your local Service Engineer/Gas Region.

ELECTRICITY SUPPLY

WARNING: THIS APPLIANCE MUST BE EARTHED.

Connection should be made to a 240V 50 Hz supply. The appliance must be protected by a 3 amp fuse if a 13 amp (BS.1363) plug is used or if any other type of plug is used by a 5 amp fuse in the circuit.

To connect a plug:

As the colour of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying terminals in your plug, proceed as follows:—

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol $\perp$ or coloured green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Gas and electricity are required to operate your boiler. It will not be affected by normal variations in the gas or electricity supply, but a gas failure will put the boiler out of operation and it should be re-lit in the normal manner. In the case of a failure of the electrical supply, the boiler will relight automatically when the supply is restored, provided the time control is in an ON period.

In the event of your boiler not working, there are several checks you should carry out before calling in a service engineer as this could save you unnecessary expense.

1. Check that the gas, electricity and water are all turned on at the main supply.
2. Check that the time control, if fitted, is in an 'ON' period.
3. Check that all thermostats in the system are not on too low settings.

OVERHEAT THERMOSTAT

Your appliance may be fitted with an overheat safety cut-out thermostat. Should this operate for any reason, the thermostat will need to be reset to allow the boiler to operate. This is achieved by pressing the reset button (see boiler sketch) on the control box. Should the device persistently shut down the boiler, a fault is indicated and your local service engineer must be consulted.

Having checked these points, run through the lighting sequence once more and if the boiler still fails to light, call in your local service engineer.

CARE OF YOUR BOILER AND SYSTEM

Regular skilled servicing is required to maintain the safe and efficient operation of your boiler throughout its long working life. It is also advisable to have the whole heating system checked over annually so that excessive costs are not incurred by such things as air temperature thermostats or radiator valves getting out of adjustment. Servicing should be carried out by a trained service engineer, and it is suggested that an annual contract be arranged. Contact your local Potterton Regional Service Office who will be able to offer a service contract. The outside of the boiler casing can be wiped when necessary using a damp cloth to remove finger marks, etc. Do not use an abrasive material.

FROST PRECAUTIONS

If your boiler has to be shut down for several hours or more during very cold weather, it may be in danger of freezing due to its position, as it may be in an outhouse, or part of the pipework may be vulnerable to frost.

To avoid freezing, three methods of protection can be used:—

1. Insulation of the boiler and pipework taking care not to impede any ventilation air supply.
2. Completely draining the water system when the boiler is not to be used for a long period. (If the appliance is installed on a sealed water system, draining and refilling must be carried out by a competent person).
3. Having a low limit thermostat fitted. Seek advice from your installer.

If a low limit thermostat has been fitted, it cannot operate if the boiler is completely shut down and the electricity supply turned off. In this instance, the system will have no protection and one of the other methods must be used.

If no protection against frost is provided, it may be necessary to run the boiler at times when it would normally be shut off.

INSULATION

Today most people are aware of the need of good house insulation, particularly in the roof space. When installing a heating system, it is important to remember that draughts

remove warmth that is needed indoors. All ill-fitting external doors and window frames should be suitably weather stripped, and unused fireplaces panelled or otherwise closed (do not seal completely or trouble may arise through damp). If you intend to keep a fireplace in use, make sure that it is of the restricted flue type. It is a good plan to consult your installer about these points; if they are not attended to, your heating costs may well be higher than you anticipate.

Potterton International Limited Portobello Works, Emscote Road, Warwick

Northern/Scottish Regional Service Office
South Western/Midland Regional Service Office
Southern Regional Service Office

8 The Gills, Otley, Leeds. LS21 2AH
Brooks House, Coventry Road, Warwick. CV34 4LL
10 Hardwicks Way, London, SW18 4AJ

0943-465666
0926-496896/7
01-870 4131

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Brooks House, Coventry Road, Warwick, CV34 4LL

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0926-493471

 **POTTERTON**
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CARE OF YOUR POTTERTON EQUIPMENT

This Potterton appliance is fully automatic in operation, requiring no attention from you apart from setting the controls. Your installer will assist you by explaining their adjustment and this instruction card provides a permanent reminder for the future. Regular skilled servicing is essential for reliable and economical running. By arranging for maintenance now you will avoid the inconvenience and unnecessary expense of failures.

Service would be most conveniently carried out by a Potterton Service Engineer or one of our Approved Service Contractors. These Engineers are fully conversant with the design and installation of all central heating equipment. By completing and posting the attached card, you will be sent full details of the recommended service requirements.

CUT HERE

MAINTENANCE

PLEASE SEND ME A SCHEDULE FOR COMPLETE CENTRAL HEATING MAINTENANCE

Owner's Name and Address

CUT HERE

..... Telephone No.

INSTALLER

Size and Type of Boiler **Kingfisher II, CF.40, 50 & 60** Date Installation Completed