H0691

January

IDEAL COMPACT EXTRA

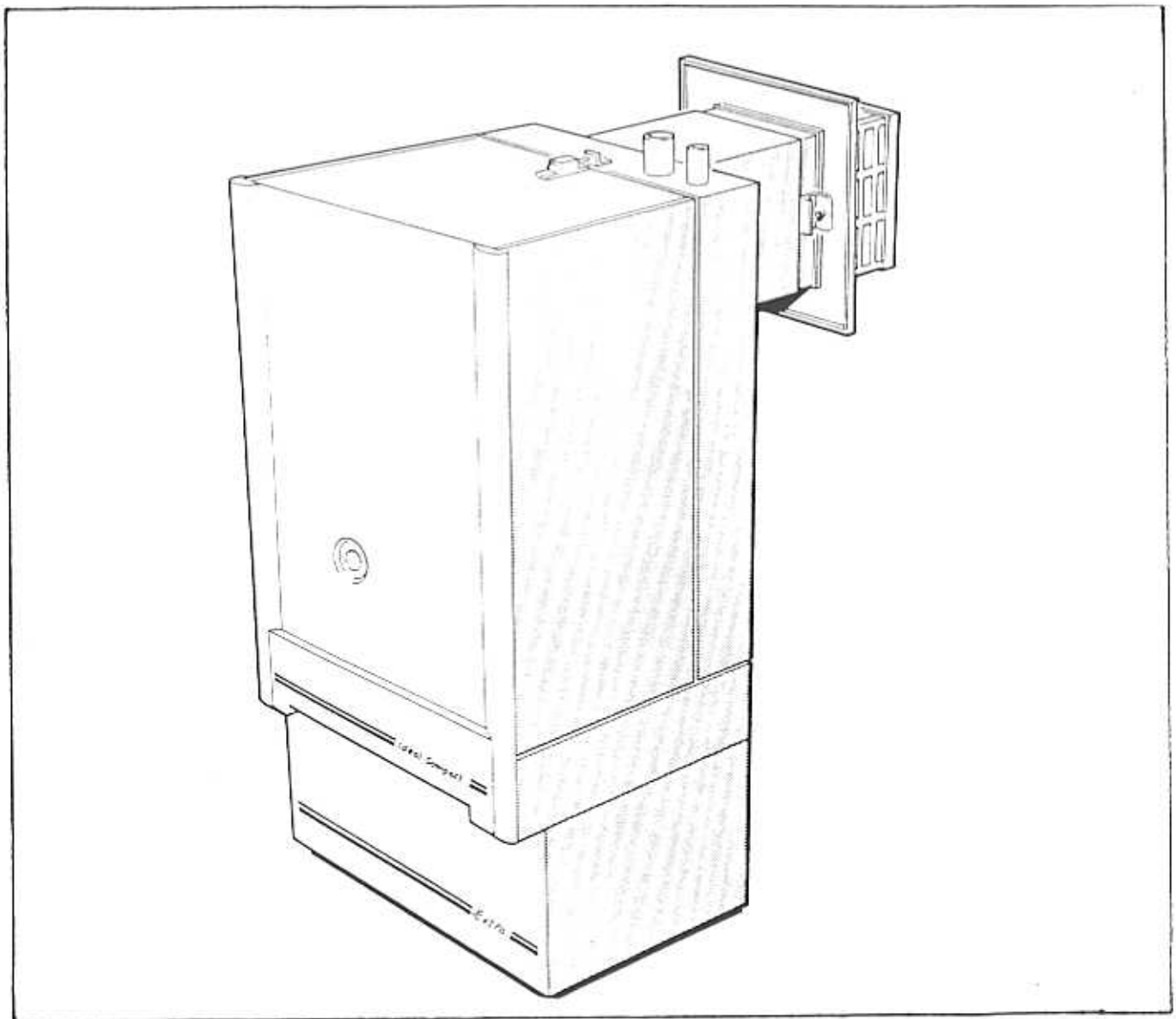
Wall mounted, Balanced Flue Gas Boiler.

Installation & Servicing

CAUTION: To avoid the possibility of injury during the installation, servicing or cleaning of this appliance, care should be taken when handling edges of sheet steel components.

IMPORTANT: The appliances are for use with NATURAL GAS ONLY.

G.C. Appliance No. 41 421 52



NOTE TO THE INSTALLER: LEAVE THESE INSTRUCTIONS ADJACENT TO THE GAS METER OR WITH THE USER

Stelrad Ideal

Table 1 - GENERAL DATA

Main Burner			FURIGAS TYPE R 118 500 047
Gas Control Valve			3/8 in. BSP SIT COMPOSIT 0680 009 240V
Burner Injector			Bray 103 900
Pilot Injector			SIT 0.27mm
Gas Supply Connection in.BSP/t			Rc ½ (½)
Flow & Return Connection			22mm O.D. Copper
MAXIMUM Static Water Head		m ft	30.5 100
MINIMUM Static Water Head		m ft	0.8 2.7
Electrical Supply			240V~ 50 Hz
External Fuse Rating			3A
Internal Fuse Rating			F2A
Water Content		litre(gal)	1.0 (0.22)
Dry Weight		Kg(lb)	23.5 (51.7)
Installation Weight		Kg(lb)	18.3 (40.3)
Boiler Size	Height	mm(in)	800 (32)
	Width	mm(in)	380 (15)
	Depth	mm(in)	300 (12)

Table 2 - PERFORMANCE DATA

Boiler Input	MINIMUM	kW	7.4
		Btu/h	25 200
	Gas Consumption	l/s (ft^3/h)	0.19 (243)
	MID	kW	9.2
		Btu/h	31 300
	Gas Consumption	l/s (ft^3/h)	0.24 (302)
	MAXIMUM	kW	11.00
		Btu/h	37 500
	Gas Consumption	l/s (ft^3/h)	0.28 (36.1)
Boiler Output to water	MINIMUM	kW	5.9
		Btu/h	20 000
	MID	kW	7.3
		Btu/h	25 000
	MAXIMUM	kW	8.8
		Btu/h	30 000
Burner Setting Pressure (Hot)	MINIMUM	mbar	4.9
		in.w.g.	2.0
	MID	mbar	7.7
		in.w.g.	3.1
	MAXIMUM	mbar	11.0
		in.w.g.	4.4

Notes:

1. Gas consumption is calculated using a calorific value of 38.7 MJ/m^3 (1038 Btu/h)

2. The appliance is pre-set at the factory to the highest nominal rating

INTRODUCTION

The IDEAL COMPACT EXTRA is a wall mounted, lightweight, natural draught, balanced flue gas boiler, incorporating within the same casing a circulating pump, electrically actuated 3-way diverter valve, by-pass, cold feed and vent connections, and associated pipework.
It is range rated to provide central heating (CH), or indirect hot water (DHW) outputs of 5.9kW (20,000 Btu/h) to 8.8kW (30,000 Btu/h).
System control is via low voltage room and DHW cylinder temperature sensors, supplied with the boiler. The sensor controls are mounted within the boiler controls compartment, together with a low voltage digital clock.
With a call for CH only the diverter valve is energised to supply the full output from the boiler to the radiators. With a call for DHW only the diverter valve remains de-energised to supply the full ouput from the boiler to the DHW cylinder.
With a call for CH and DHW, the DHW takes priority, though conversion to CH priority is possible by a simple wiring change.
The boiler casing is of white stove enamelled mild steel. The controls compartment, below the boiler heat exchanger, houses the gas control valve, diverter valve, circulating pump and pipework. Access to the gas control valve, comfort controls and timeclock is via a pull-off plastic door.
The boiler is supplied with a pre-wired one metre length of mains cable complete with three pin plug, and so, since the room and cylinder temperature controls are low voltage, a qualified electrician is not needed to install the boiler.
The boiler is suitable for connection to FULLY PUMPED OPEN VENTED SYSTEMS ONLY.
However, an optional overheat thermostat kit is available which, when fitted,enables the boiler to be connected to sealed systems.

GAS SAFETY (INSTALLATION & USE) REGULATIONS, 1984

It is the law that all gas appliances are installed by competent persons (e.g. CORGI identified by ⊛) in accordance with the above Regulations. Failure to install appliances correctly could lead to prosecution. It is in your own interest, and that of safety, to ensure that the law is complied with.
The installation of the boiler MUST also be in accordance with the current I.E.E. Wiring Regulations. The Building Regulations (1985), Building Standards (Scotland), the Bye-Laws of the Local Water Undertaking and any relevant requirements of the Local Authority.
Detailed recommendations are contained in the following British Standards Codes of Practice.

BS 6891:1988
Low pressure installation pipes.
BS 6798
Installation of gas fired hot water boilers of rated input not exceeding 60kW.
BS 5449:1
Forced circulation hot water systems (small bore and microbore domestic central heating systems).
BS 5546
Installation of gas hot water supplies for domestic purposes (2nd Family gases).
BS 5440:I
Flues (for gas appliances of rated input not exceeding 60kW).
BS 5440:2
Air supply (for gas appliances of rated input not exceeding 60KW).

GENERAL GUIDANCE

GAS SUPPLY/LOCATION

IMPORTANT

This appliance is certified by the British Standards Institute for safety and performance.It is therefore, important that no external controls devices (e.g. flue dampers, economisers etc.) are directly connected to this appliance unless covered by these Installation & Servicing Instructions otherwise recommended by Stelrad Group Ltd., in writing. If in doubt please enquire.

Any direct connection of a control device not recommended by Stelrad Group Ltd., could invalid the BSI Certification and normal appliance warranty. It could also infringe on Gas Safety Regulatior and the above Regulations or other statutory requirements. Manufacturers notes must NOT be take in any way, as overriding statutory obligations.

LOCATION OF BOILER

The boiler MUST be installed on a flat and vertical external wall capable of adequately supporting it weight. The boiler may be fitted on a combustible wall and insulation between the wall and the boile is not necessary - unless required by the Local Authority.

THE BOILER IS NOT SUITABLE FOR EXTERNAL INSTALLATION.

IMPORTANT NOTICE: If the boiler is to be fitted in a timber framed building it should be fitted in accordance with the British Gas publication 'Guide for Gas Installations in Timber Framed Housi Reference DM2.

If in doubt advice must be sought from the Local Gas Region of British Gas, or Stelrad Group Ltd

GENERAL GUIDANCE

GAS SUPPLY/LOCATION

The boiler may be installed in any room or internal space although particular attention is drawn to the requirements of the current I.E.E. Wiring Regulations and, in Scotland, the electrical provisions of the Building Regulations applicable in Scotland with respect to the installation of the boiler in a room or internal space containing a bath or shower.

Note: Where a room sealed appliance is installed in a room containing a bath or shower, any electrical control utilising mains electricity should be situated that it cannot be touched by a person using the bath or shower.

Where installation will be in an unusual location special procedures may be necessary and BS 6798 gives detailed guidance on this aspect.

A compartment used to enclose the boiler MUST be designed and constructed specially for this purpose. Details of essential features of cupboard/compartment design, including airing cupboard installations, are given in BS 6798.

In siting the boiler, the following limitations MUST be observed:-

1.

The position selected for installation MUST allow adequate space for servicing in front of the boiler and for air circulation around the boiler.

2.

This position MUST also permit the provision of a satisfactory flue termination.

GAS SUPPLY

The Local Gas Region of British Gas should be consulted at the installation planning stage, in order to establish the availability of an adequate supply of gas.

A gas meter can only be connected by the Local Region of British Gas plc or by their Contractor. An existing meter can only be connected by the Local Gas Region, or by a Local Gas Region Contractor. Installation pipes should be fitted in accordance with BS 6891:1988.

Do NOT use pipes of a smaller size than the boiler inlet gas connection.

The complete installation MUST be tested for gas soundness and purged as described in the above Code.

FLUEING

The flue must be installed in accordance with the requirements of BS 5440:1.
The following notes are intended for general guidance.

1.
The boiler MUST be installed so that the terminal is exposed to the external air.

2.
It is important that the position of the terminal allows the free passage of air across it at all times.

3.
The minimum acceptable spacings from the terminal to obstructions and ventilation openings are specified in Table 3.

4.
Where the lowest part of the terminal is fitted less than 2m (6.6ft) above a balcony, above ground, or above a flat roof to which people have access, the terminal MUST be protected by a purpose designed guard.
Terminal guards are available from:
Quinnel, Barrett & Quinnel Ltd., 884 Old Kent Road, London, SE15 (Model P6) and from Tower Flue Components Ltd., Vales Rise, Tonbridge, Kent TN 1TB (Model C).
Ensure that the guard is fitted centrally over the terminal.

5.
Where the terminal is fitted within 850mm (34in.) of a plastic or painted gutter, or 450mm (18in.) of painted eaves, an aluminium shield at least 750mm (30in.) long should be fitted to the underside of the gutter or painted surface.

6.
The air inlet/products outlet duct and the terminal of the boiler MUST be NOT closer than 25mm (1in.) to combustible material. Detailed recommendations on protection of combustible material are given in BS 5440:1 1978, sub-clause 20:1.

IMPORTANT: It is absolutely ESSENTIAL to ensure, in practice, that products of combustion discharging from the terminal cannot re-enter the building or any other adjacent building, through ventilators, windows, doors, other sources of natural air infiltration or forced ventilation/air conditioning. If this should occur, the appliance MUST be turned OFF immediately and the Local Region of British Gas plc called in to investigate.

Table 3.

	TERMINAL POSITION	MINIMUM SPACING
1.	Directly below an openable window, air vent or any other ventilation opening.	300mm (12.in.)
2.	Below guttering, drain pipes or soil pipes.	300mm (12in.)
3.	Below eaves.	300mm (12in.)
4.	Below balconies or a car port roof.	600mm (24in.)
5.	From vertical drain pipes or soil pipes.	75mm (3in.)
6.	From internal or external corners.	600mm (24in.)
7.	Above adjacent ground, roof or balcony level.	300mm (12in.)
8.	From a surface facing the terminal.	600mm (24in.)
9.	From a terminal facing the terminal.	600mm (24in.)
10.	From an opening in the car port [e.g. door, window] into dwelling.	1200mm (48in.)
11.	Vertically from a terminal on the same wall.	1500mm (60in.)
12.	Horizontally from a terminal on the same wall.	300mm (12in.)

TERMINAL

The flue terminal assembly can be adapted to accommodate various wall thickness - Refer to Frames 2 and 3 (Installation).

AIR SUPPLY

Detailed recommendations for air supply are given in BS 5440:2. The following notes are intended for general guidance:

1. It is NOT necessary to have a purpose provided air vent in the room or internal space in which the boiler is installed.

2. If the boiler is to be installed in a cupboard or compartment, permanent air vents are required [for cooling purposes] in the cupboard/compartment, at both high and low levels. The air vents must either communicate with room/internal space, or be direct to outside air.

   The minimum effective areas of the permanent air vents, required in the cupboard/compartment, are specified below and are related to maximum rated heat input.

Notes:

(a) Both air vents MUST communicate with the same room or internal space, or MUST be on the same wall to outside air.

(b) In siting the air vents care must be taken to avoid freezing of pipework.

Table 4.

Position of air vent	Air from room/ internal space	Air direct from outside
HIGH LEVEL cm^2 (in^2)	100 (16)	50 (8)
LOW LEVEL cm^2 (in^2)	100 (16)	50 (8)

WATER CIRCULATION SYSTEM

The boiler must NOT be used for direct hot water supply, or for sealed systems unless fitted with the sealed system overheat thermostat kit.

The boiler is suitable for connection to pumped open vent central heating systems, or central heating combined with indirect domestic hot water systems.

The central heating system should be in accordance with the relevant recommendations given in BS 6798 and, in addition, for small bore and microbore system - BS 5549:1.

The domestic hot water system, if applicable, should be in accordance with relevant recommendations to BS 5546.

Copper tubing, to BS 2871:1, is recommended for water carrying pipework.

The hot water storage cylinder MUST be of the indirect or self priming type, and should preferably be manufactured of copper. The hot water cylinder, and ancillary pipework, not forming part of the useful heating surface, should be lagged to prevent heat loss and any possible freezing, particularly where pipes run through roof spaces and ventilated under floor spaces, in accordance with the Water Bye Laws. The boiler MUST be vented.

If venting cannot be done via a flow connection, a separate vent MUST be fitted by the Installer.

Draining taps MUST be located in accessible positions which permit the draining of the whole system, including the boiler and hot water storage vessel.

Draining taps should be at least ½in. nominal size and be in accordance with BS 2879.

The hydraulic resistances of the boiler - including diverter valve and internal pipework - with an 11 °C [20 °F] temperature differential are shown in Table 5.

Table 5 - Water Flowrate and Pressure Loss

Boiler Output	kW	5.9	7.3	8.8
	Btu/h	20000	25000	30000
Water Flow Rate	l/min	7.6	9.5	11.4
	gal/h	100	125	150
Boiler Pressure loss	mbar	27	35	45
	in.w.g.	11	14	18
Available Pump Head Setting 1	mbar	152	130	105
	in.w.g.	61	52	42
Setting 2	mbar	301	279	254
	in.w.g.	121	112	102

ELECTRICAL SUPPLY

The boiler is supplied for 240V ~ 50Hz Single Phase. Fuse rating is 3A.

The method of connection to the mains electricity supply MUST facilitate complete electrical isolation of the boiler by the use of the fused three-pin plug supplied, and shuttered socket outlet complying with the requirements of BS 1363.

The point of connection to the mains should be readily accessible and adjacent to the boiler, except that for bathroom installations, the point of connection to the mains MUST be situated outside the bathroom. If the boiler is installed in a bathroom is MUST NOT be possible to reach the controls from within the bath or shower.

INSTALLATION

UNPACKING

Unpack and check the contents.

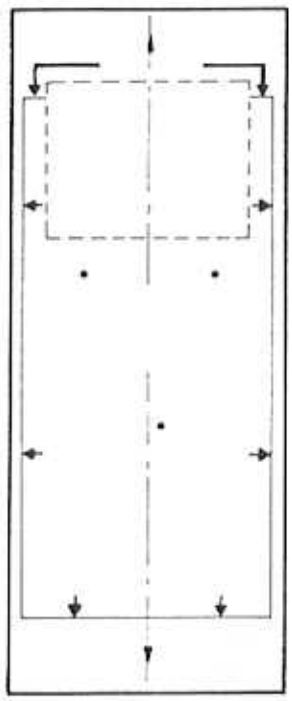
The boiler is supplied fully assembled in one pack 'A', together with Pack 'B' containing the flue terminal suitable for wall thicknesses of 229mm - 305mm [9in. - 12in.].

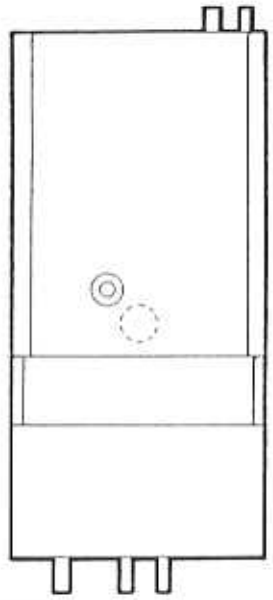
Note:

Flue terminals are available for other wall thicknesses on request - Refer to Frame 3.

Pack 'A' Contents

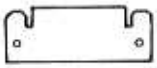
Wall Mounting Template



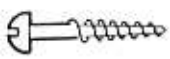


Complete Boiler

Pack 'A' Hardware Pack Contents



Wall Mounting Plate



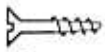
3 - off No 10 x 2 in lg screws

3 - off wall plugs

1 - off Output setting label

1 - off Room temperature sensor

1-off Cylinder temperature sensor & securing wire

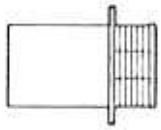


2 - off No.8 x 1in. lg screws

2 - off wall plugs

Pack B Contents

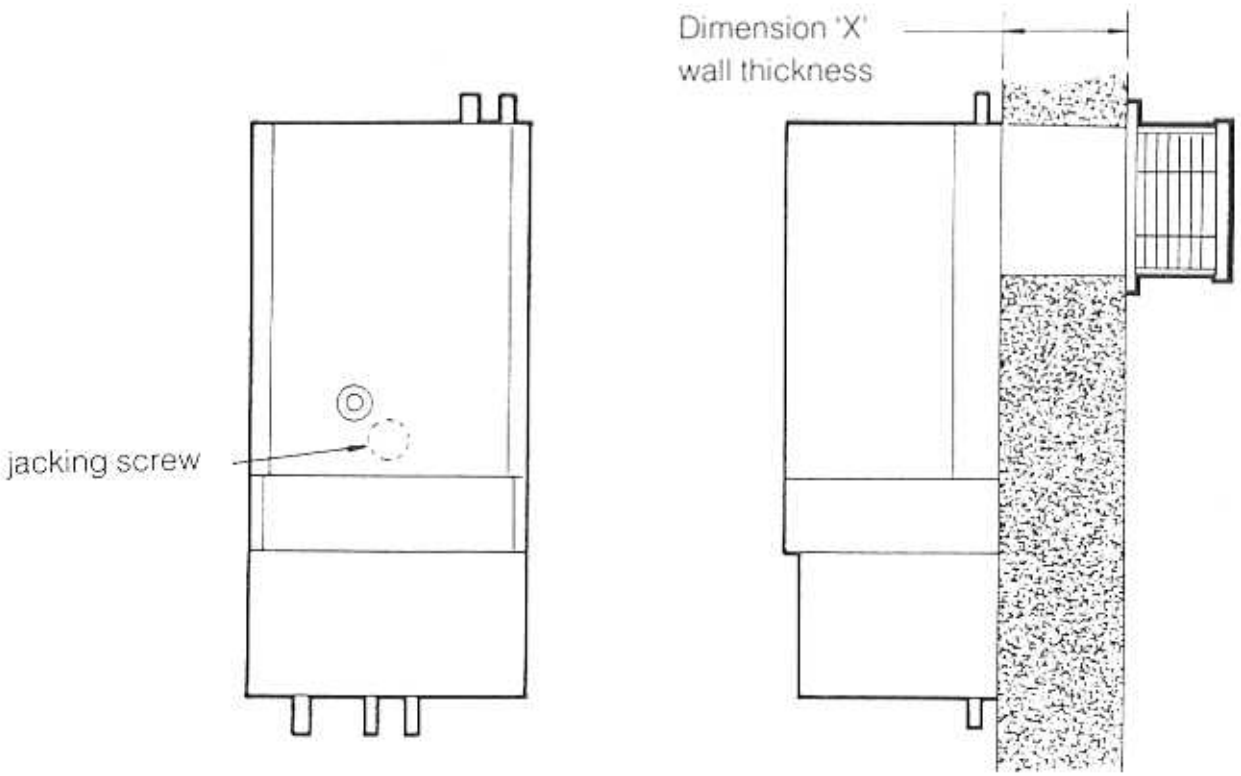
Sachet of sealing mastic (2)



Flue Terminal Assembly

2. WALL MOUNTING

1. It is important that the boiler is installed in a vertical position.
2. The flue duct should be horizontal, but a slight downward slope away from boiler is acceptable.
3. The wall must be of suitable load bearing capacity.
4. Use the jacking screw to align the boiler.



FRONT VIEW SIDE VIEW

3. WALL THICKNESS

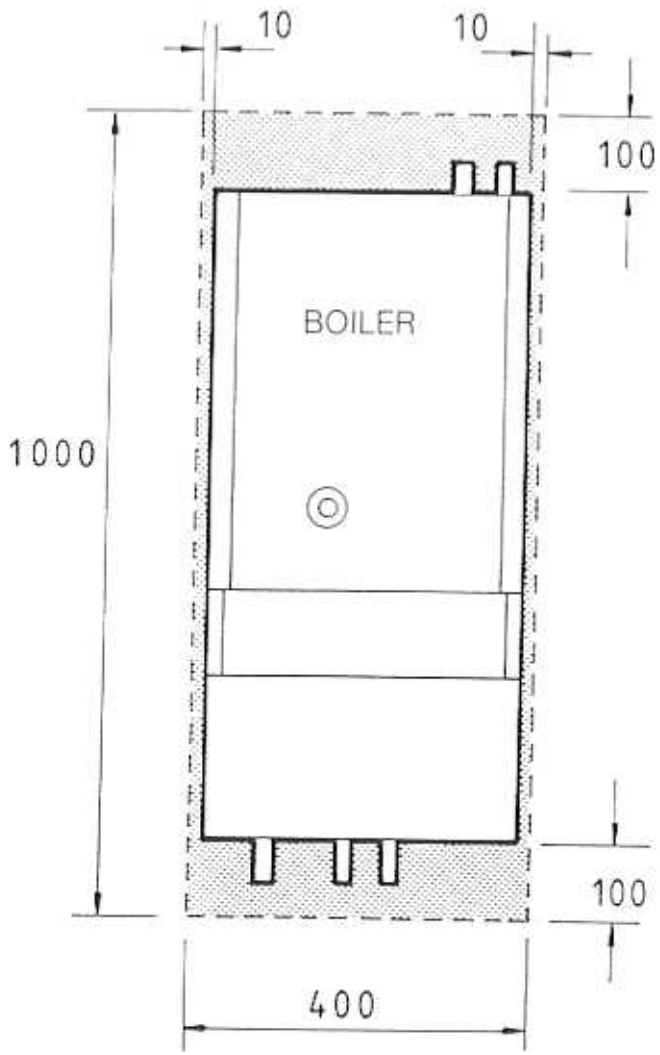
WALL THICKNESS - Dim. X shown in Frame 2	Flue Pack Required
114 - 191 mm	C
4 1/2 - 7 1/2 in.	
229 - 305 mm	B
9 - 12 in.	
318 - 394 mm	B1
12 1/2 - 15 1/2 in.	

4. BOILER CLEARANCES

The MINIMUM overall dimensions of the space in which the boiler is to operate, and to facilitate servicing, are as shown.
Additional space will be required for installation, depending upon site conditions.

Note: If the boiler requires automatic air vents to be fitted to feed and expansion **pipes** clearance at the top of the boiler will be needed.

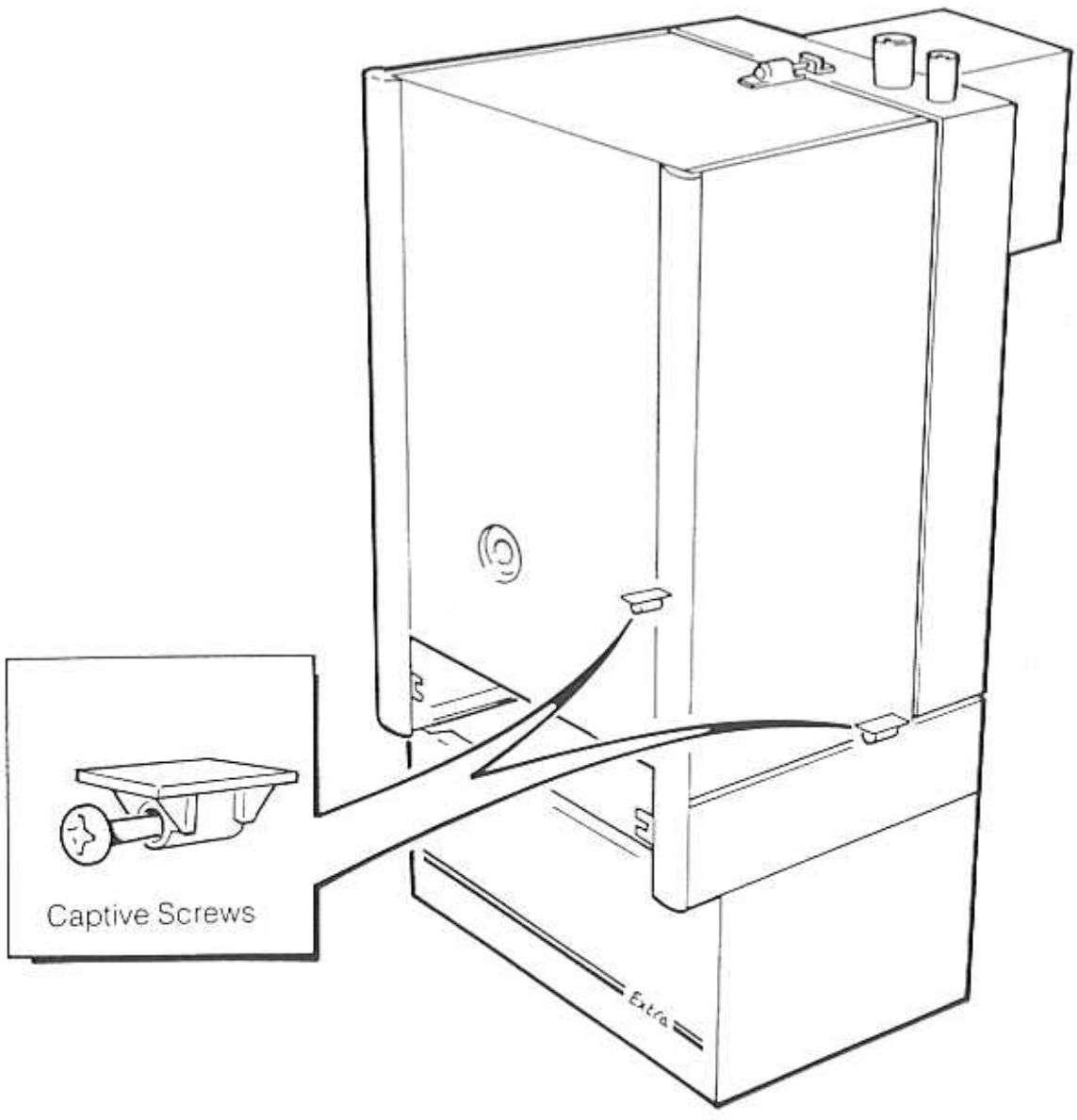
In addition, a MINIMUM clearance of 450mm [18in.] MUST be available at the front of the boiler for servicing.



5. BOILER CASING REMOVAL

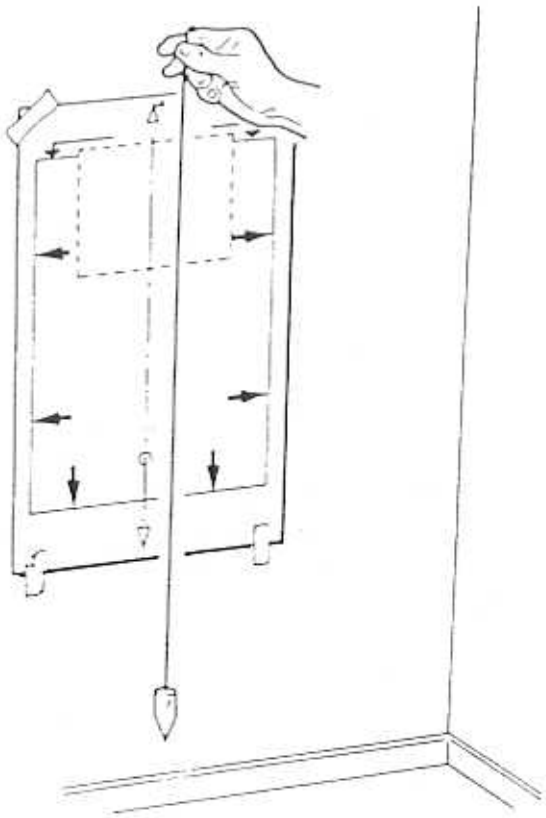
To install the boiler the casing MUST be removed.

1. Pull off the controls compartment door.
2. Release the three captive screws, lift the casing off the boiler, taking care not to damage the seals, and place it safely to one side.



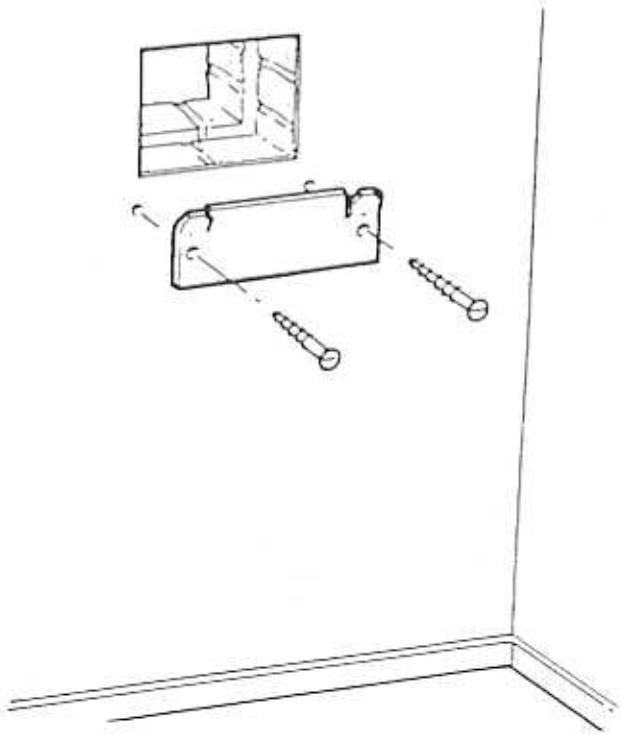
6. WALL MOUNTING PLATE

1. Tape the template into the selected position.
2. Ensure squareness by hanging plumbline as shown.
3. Mark onto the wall the two mounting plate screw positions, and the lower fixing screw position.
4. Mark onto the wall the position of the flue duct.
5. Remove the template from the wall.



7. PREPARING THE WALL

1. Drill the three fixing holes with an 8mm [5/16in.] masonry drill and insert the plastic plugs provided.
2. Cut the appropriate hole in the wall for insertion of the terminal assembly. Note: The terminal MUST not come into contact with a combustible material such as that used in non-standard construction of timber framework and plaster board etc.
3. Fix the mounting plate to the wall with two No. 10 x 2 in. lg. screws provided.



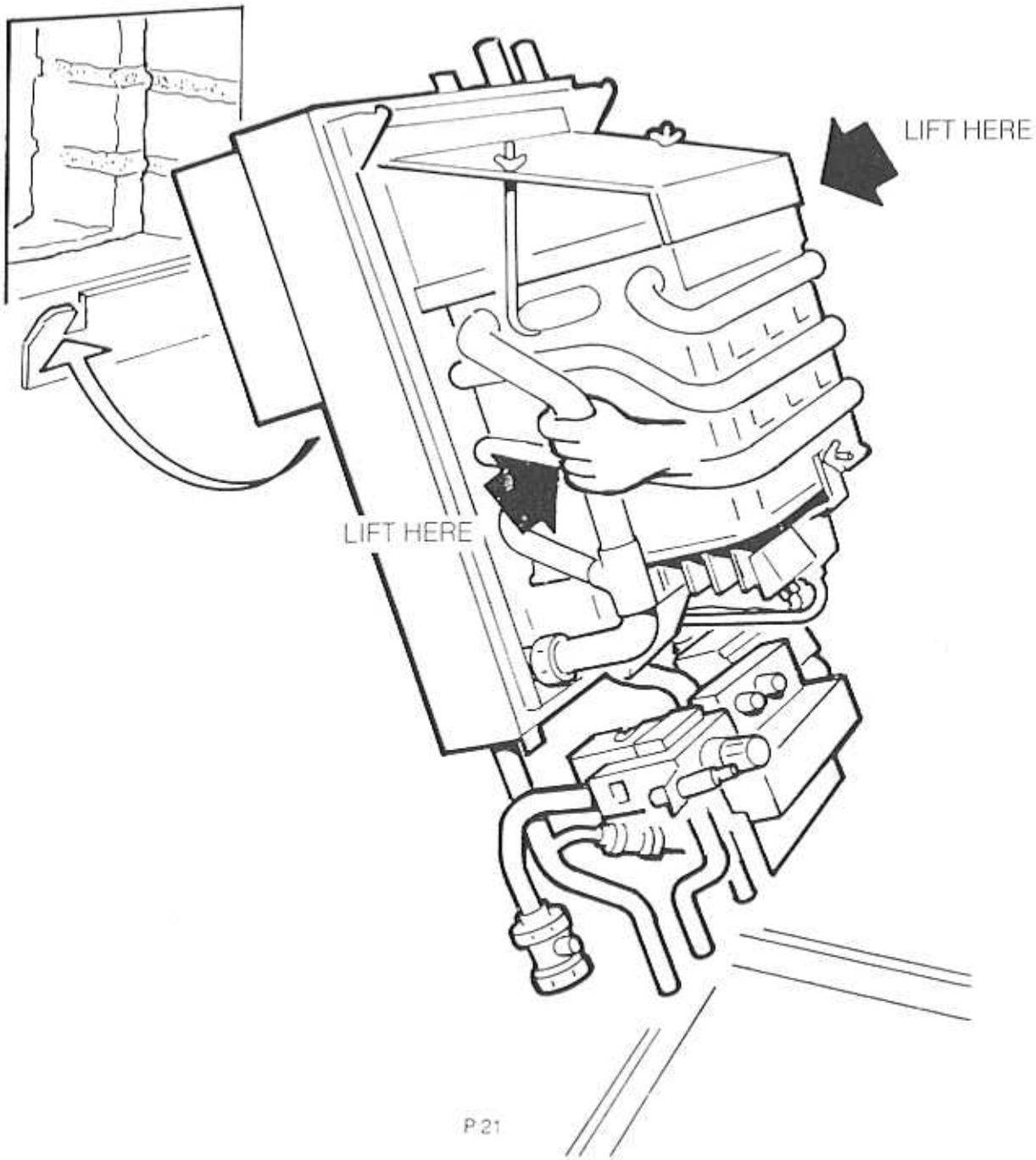
8. BOILER MOUNTING

1. Lift the boiler into position, entering the projecting air duct into the wall opening and engaging the back panel on the wall mounting plate lugs.

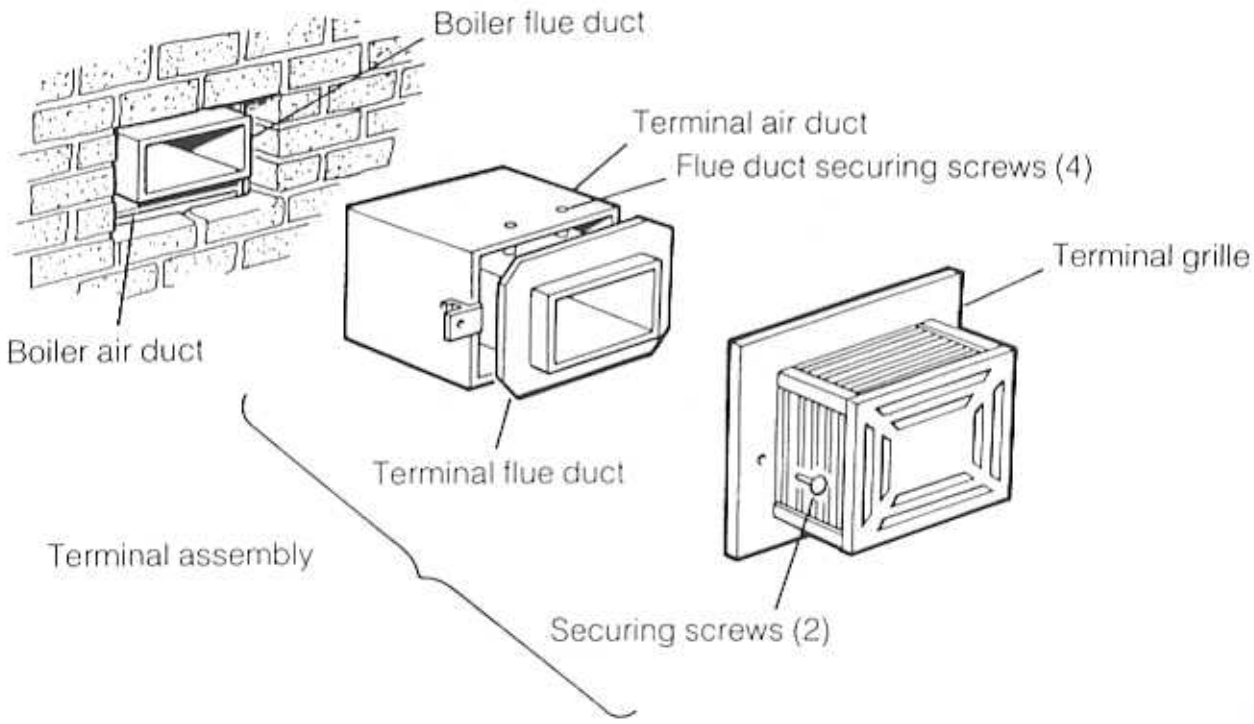
2. Check the boiler alignment using a spirit level, and adjust as necessary with the jacking screw - Refer to Frame 2.

3. Locate a No. 10 x 2 in. screw in the boiler lower fixing hole and secure to the wall.

4. Make good the brickwork around the wall opening.

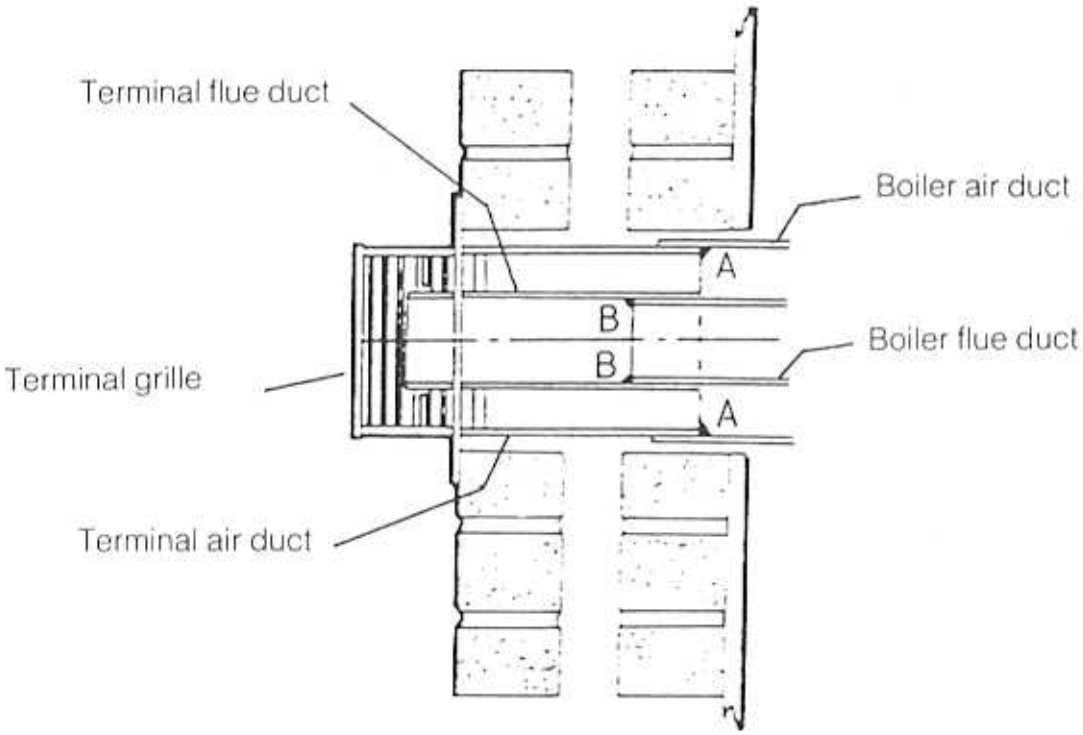


9. FITTING THE FLUE ASSEMBLY



1. Remove the two securing screws and separate the terminal grille from the terminal assembly.
2. Remove the four securing screws and separate the terminal flue duct from the terminal air duct.

10. FITTING THE FLUE ASSEMBLY - Continued



3. From OUTSIDE the building pass the terminal air duct through the wall opening and slide it into the boiler air duct, locating it as shown.

4. Push the terminal air duct fully in until the fixing brackets contact the wall face.

5. Make good between the wall and duct, OUTSIDE the building.

6. From OUTSIDE the building seal the duct join A with the mastic provided.

7. From OUTSIDE the building pass the terminal flue duct through the wall opening and slide it into the boiler flue duct, locating it as shown, and fix it in position with the four screws previously removed.

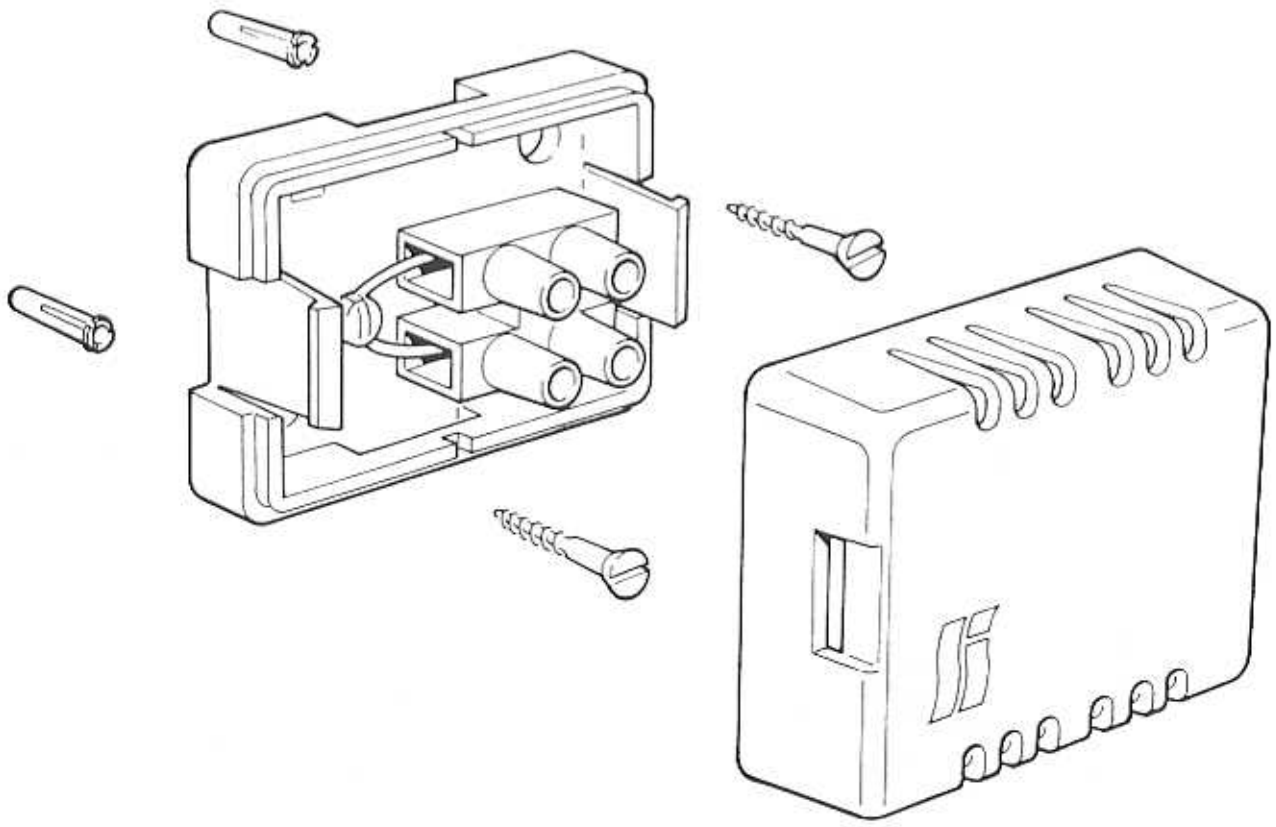
8. From OUTSIDE the building seal the duct join B with the mastic provided.'

9. Fasten the terminal grille to the duct assembly.

11. ROOM TEMPERATURE SENSOR MOUNTING

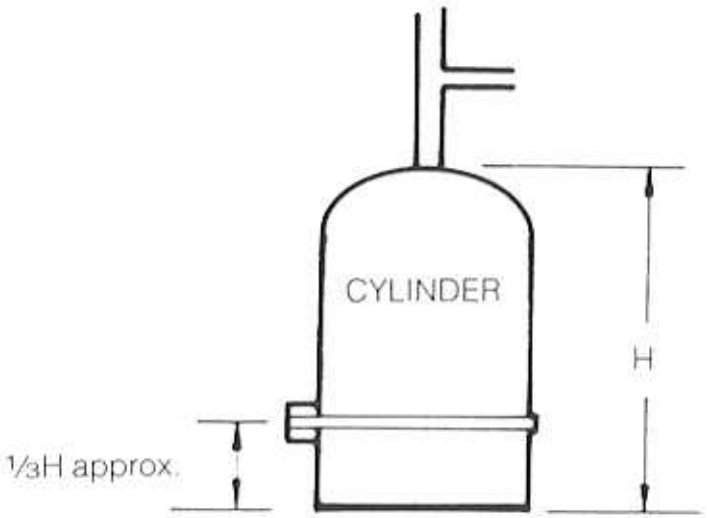
Note: If thermostatic radiator valves are to be used, refer also to Frame 19.

1. Select the room in which the sensor is to be sited.
2. Using the sensor mounting plate as a template, mark onto the wall the two fixing screw positions.
3. Drill the fixing holes with a 6mm (1/4in.) masonry drill and insert the plastic plugs provided.
4. Secure the temperature sensor to the wall with the two No.8 x 1in. long screws provided.

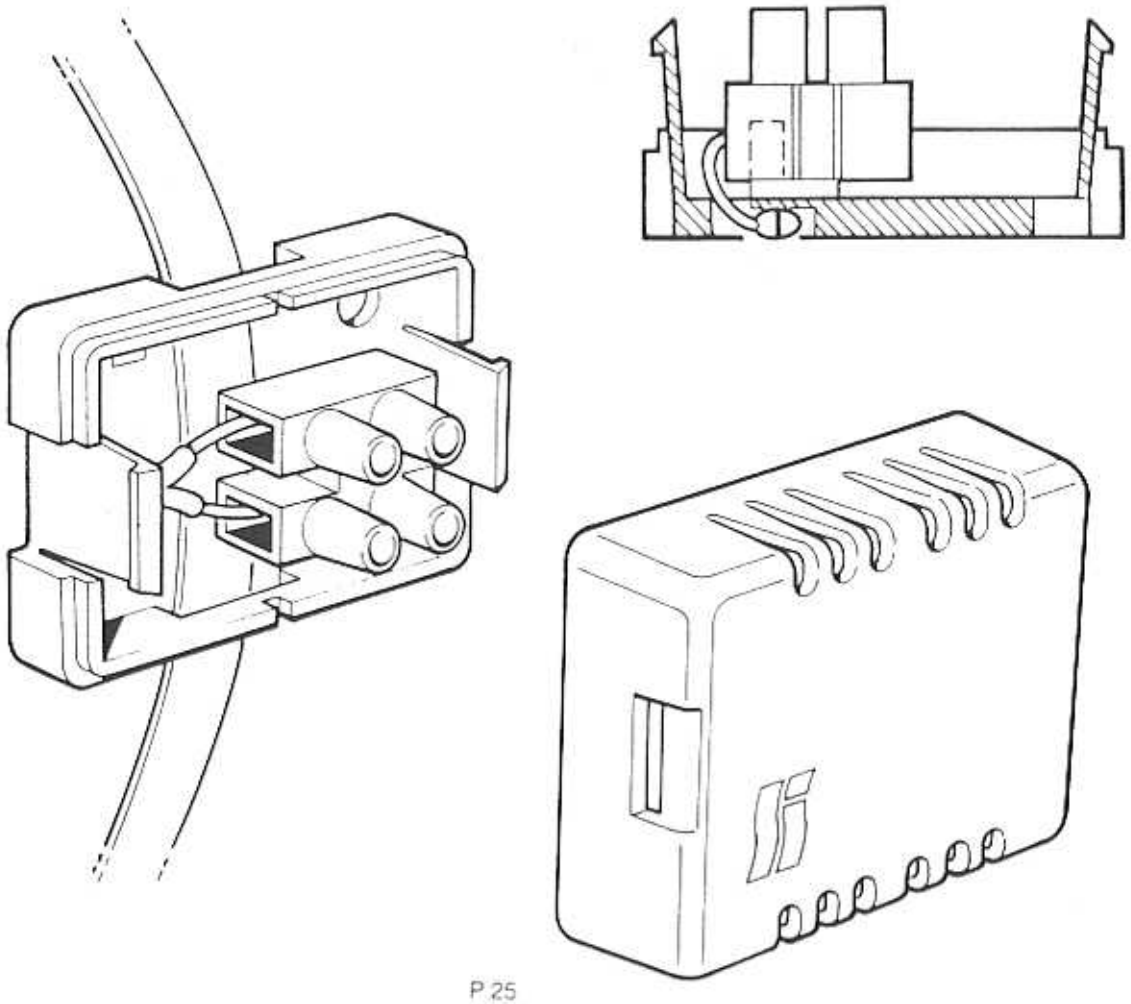


12. CYLINDER TEMPERATURE SENSOR MOUNTING

Position the sensor on the DHW cylinder as shown, and secure with the retaining wire provided, and tie.



Note: Ensure that the sensor is in contact with the bare metal surface of the cylinder.



13. WATER CONNECTIONS

1. Connect the system flow and return pipes to the pipes at the bottom of the boiler labelled:

CH FLOW	(22mm copper)
DHW FLOW	(22mm copper)
RETURN	(22mm copper)

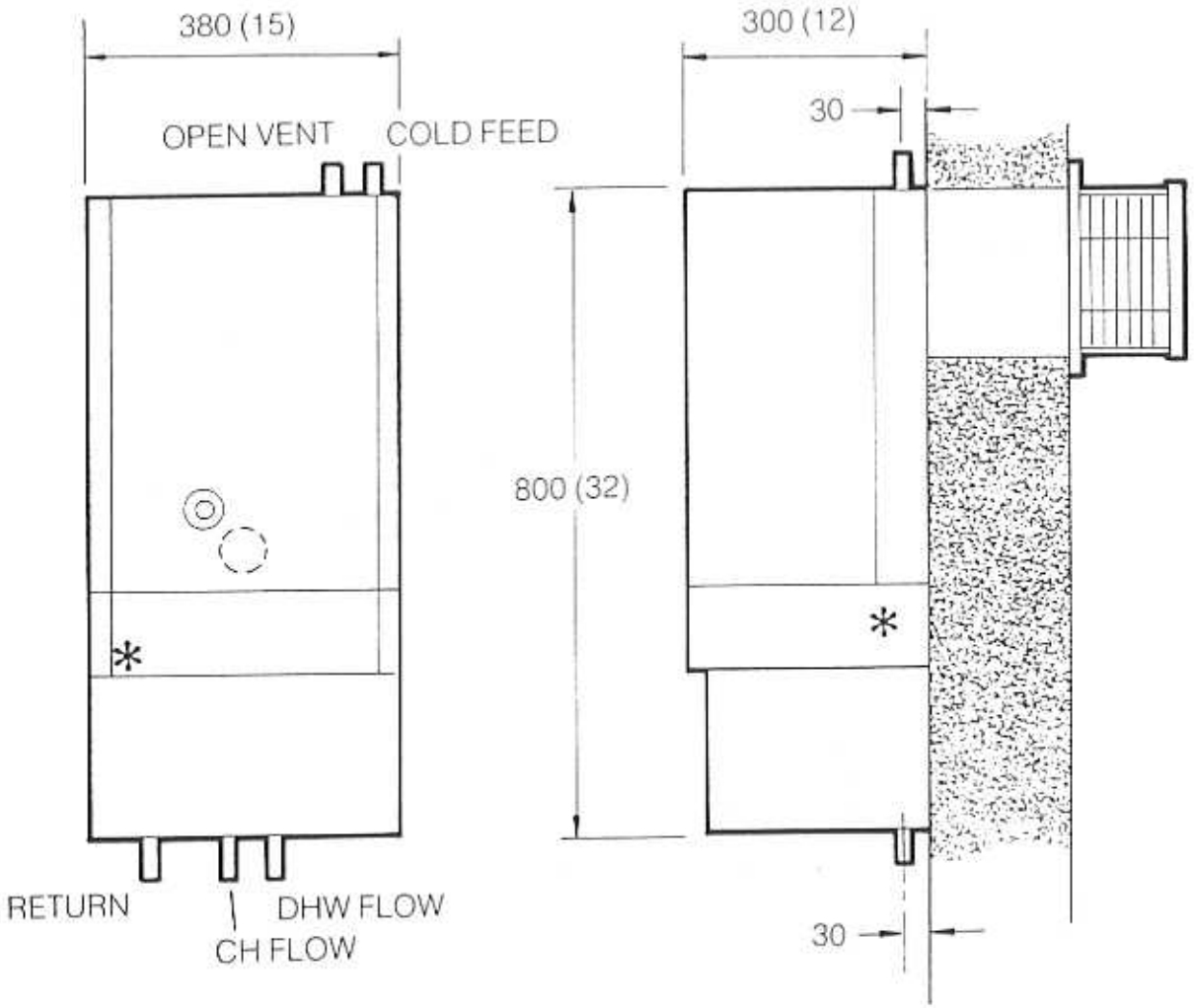
2. Connect the system cold feed and open vent to the pipes at the top of the boiler labelled:

COLD FEED	(15mm copper)
OPEN VENT	(22mm copper)

Take care NOT to damage the rubber grommets at the top of the boiler.

Notes:(a) If a single feed indirect DHW cylinder is fitted, these two pipe connections must be fitted with automatic air vents.

(b)This appliance is NOT suitable for use with a direct hot water cylinder.



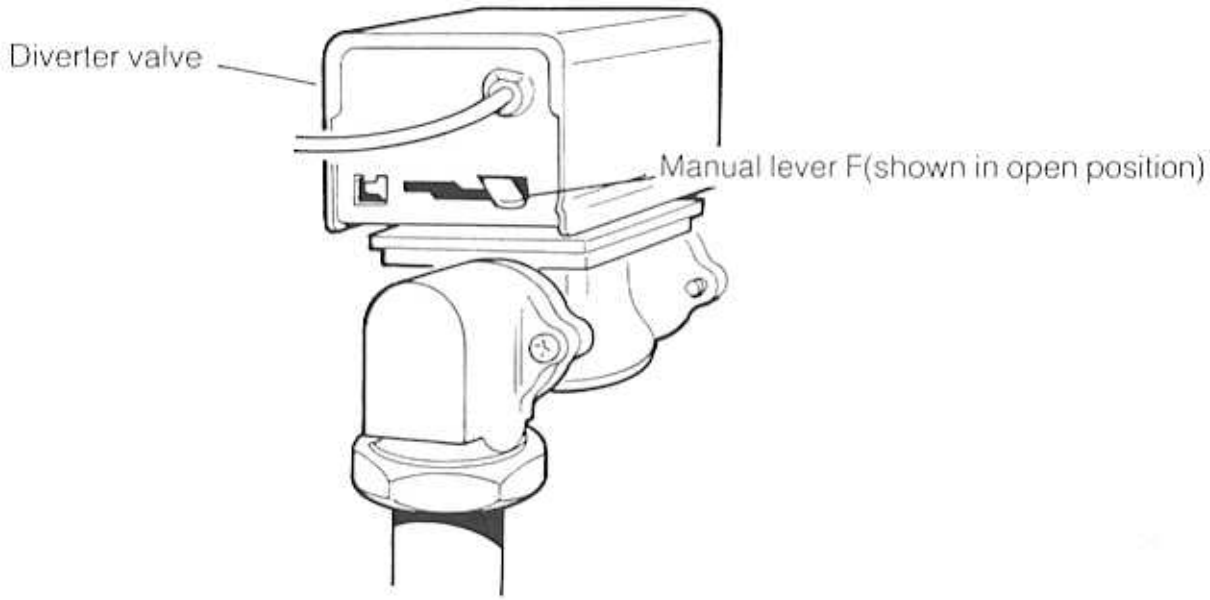
* Gas Inlet ½ in BSP

14. WATER CONNECTIONS - Continued

3. Ensure that all valves are open, fill and vent the system and check for water soundness.

IMPORTANT

(a) Set and lock the diverter valve manual lever in to the OPEN position when filling.

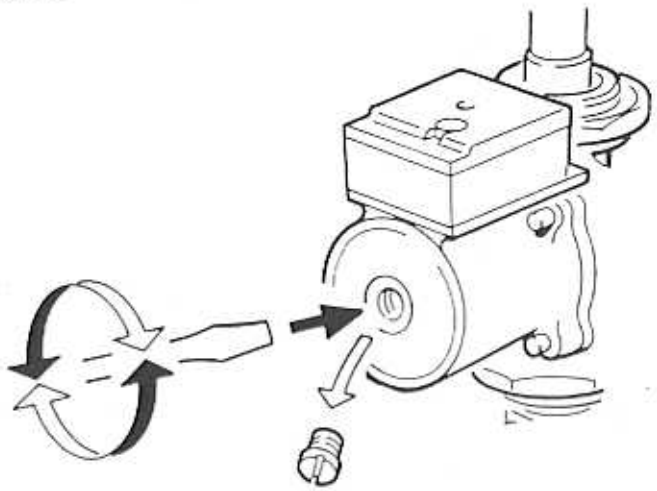


(b) Ensure that the pump is free to rotate.

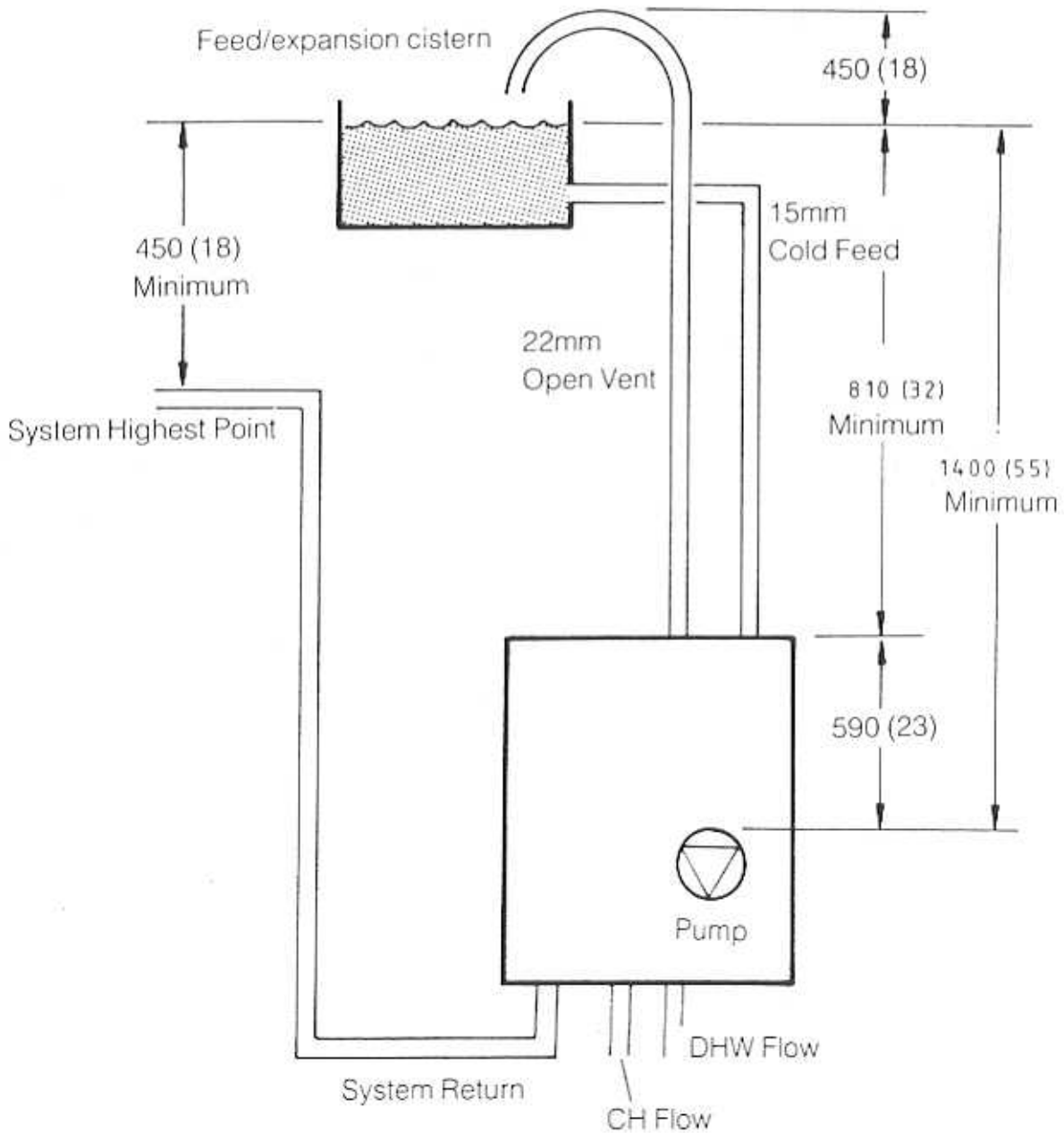
i. Remove the vent plug

ii. Insert a screwdriver into the slot in the shaft end and rotate the shaft several times.

iii. Replace the vent plug.



15. SYSTEM REQUIREMENTS

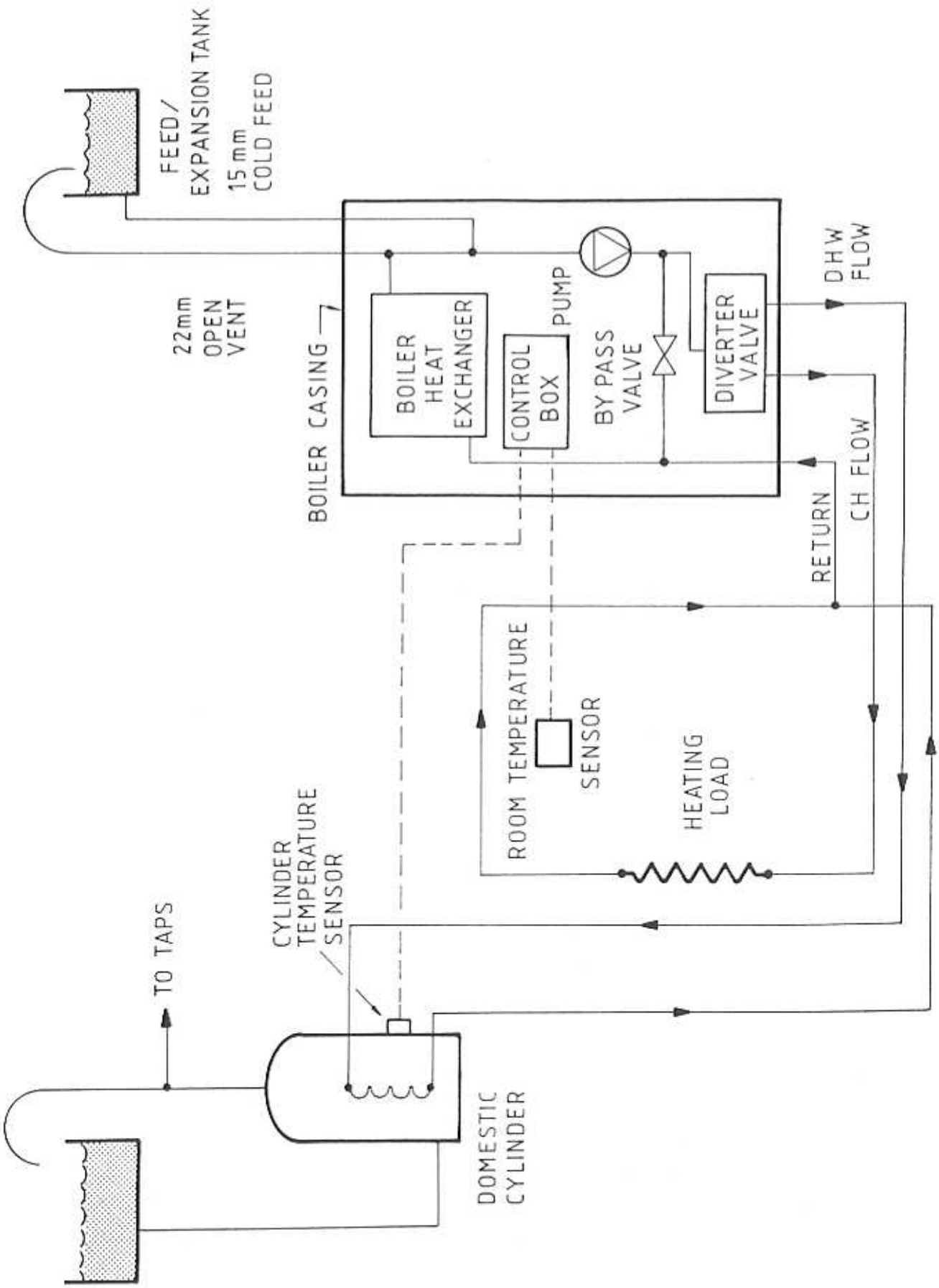


1. There should be a minimum height - 450mm (18in.) of open vent above cistern water level.

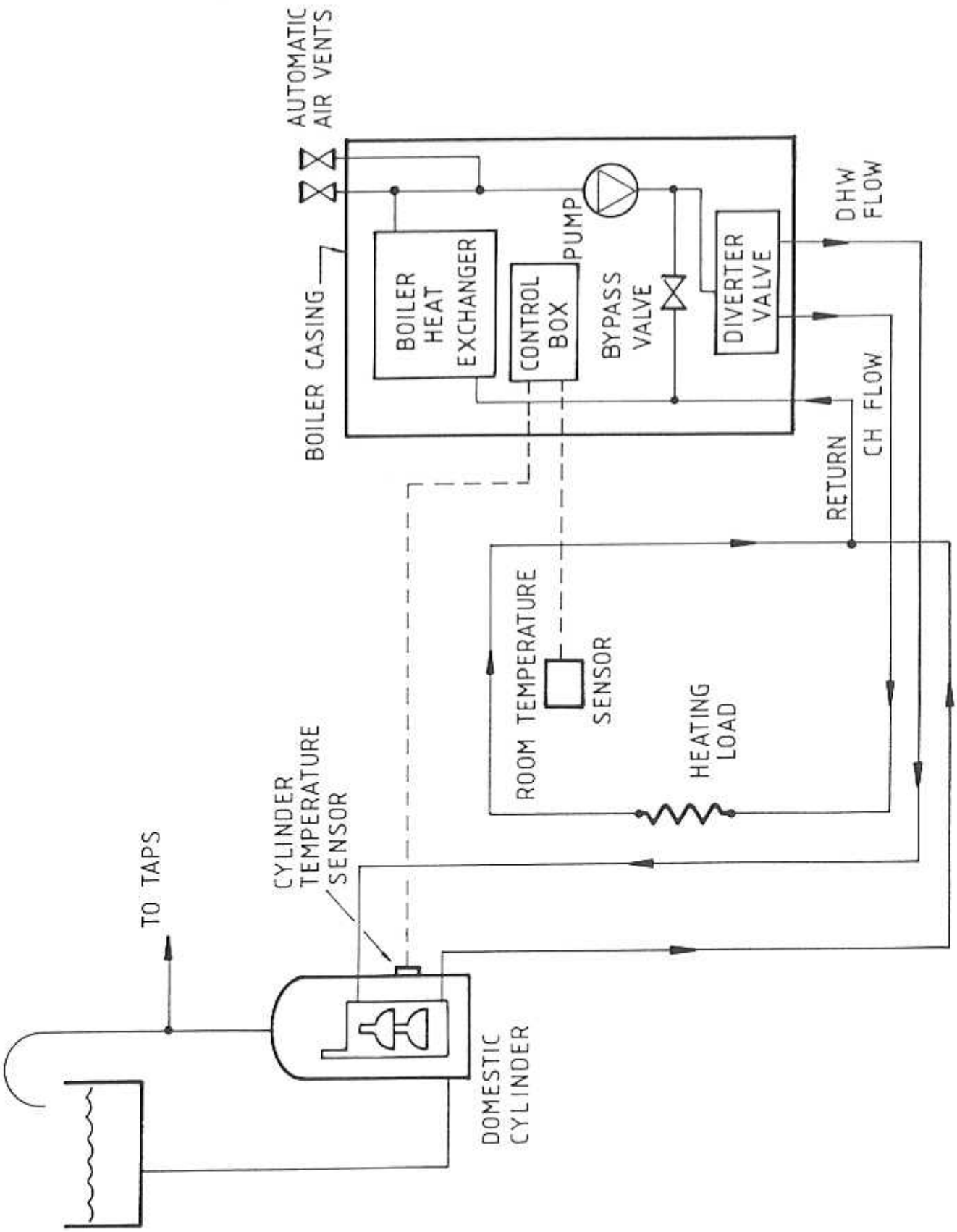
2. The vertical distance between the highest point of the system and the feed/expansion cistern water level MUST not be less than 450mm (18in.).

3. The vertical distance between the pump and feed/expansion cistern MUST comply with the pump Manufacturers minimum requirements to avoid cavitation.
   Should these conditions not apply, raise the cistern above minimum requirement specified by Stelrad Group Ltd.

16. SCHEMATIC PIPEWORK WITH INDIRECT DHW CYLINDER



SCHEMATIC PIPEWORK WITH SINGLE FEED INDIRECT DHW CYLINDER



18. BYPASS

The boiler incorporates a bypass within the casing, so no external bypass is necessary.
For adjustment refer to Frame 33.

19. THERMOSTATIC RADIATOR VALVES

Stelrad Group Ltd., support the recommendations made by leading manufacturers of domestic heating controls that heating systems utilising full thermostatic radiator valve control of temperature in individual rooms should also be fitted with the room temperature sensor, supplied, controlling the temperature in a space served by radiators not fitted with such a valve.

Such an arrangement will provide for a potentially more efficient control of the environment and will also avoid the continuous running of the circulation pump during programmed heating On periods, thus saving electrical energy.

It is recommended strongly therefore that, when thermostatic radiator valves are used, that space heating temperature control over living/dining area or hallway having a heating requirement of at least 0.9kW (3,000 Btu/h) be achieved using the room temperature sensor supplied, whilst other rooms are individually controlled by thermostatic radiator valves.

20. GAS CONNECTION

1. A MINIMUM working gas pressure of 20mbar (8 in.w.g.) MUST be available at the boiler inlet.

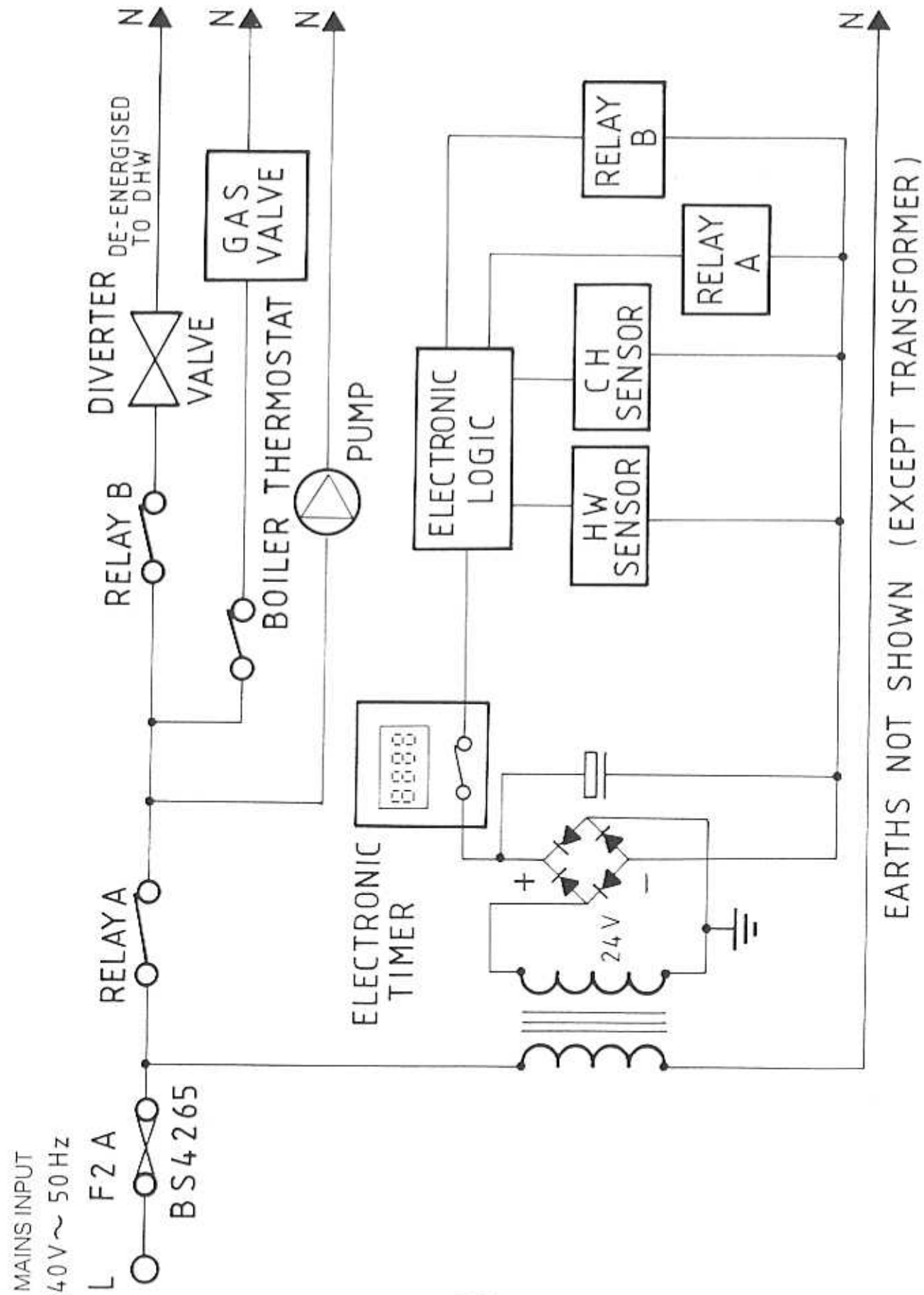
2. Extend a gas supply pipe NOT LESS THAN 15mm OD to the boiler and connect to the gas service cock situated at the left hand side of the controls compartment - Refer to Frame 13.
   Connection MUST be made from BELOW the boiler.
   Ensure that the gas supply pipe does not foul the boiler casing when fitted.

3. Test the gas installation for soundness and purge in accordance with BS 6891:1988 to Frame 26(b).

21. ELECTRICAL CONNECTIONS

WARNING:
This appliance MUST be efficiently earthed.
A mains supply of 240V~50 Hz Single Phase is required.
External wiring need only be suitable for 50V AC i.e. 0.5mm^2 non-sheathed flexible cord to BS 6500:1984 Table 14 (Bell Wire).
The supply connection MUST be made via ther removable plug supplied, to a shuttered socket-outlet adjacent to the boiler.

22. FLOW WIRING DIAGRAM



23. INTERNAL WIRING

Flow and pictorial wiring diagrams are shown in Frame 22 and 25.

A schematic wiring diagram is included on the Lighting Instructions Label.

The boiler is supplied with a pre-wired 1m (3ft) length of mains cable complete with 3 pin plug

The low voltage room and cylinder temperature sensors only, need to be wired into the control box.

NOTE : Both sensors MUST be connected.

1. Remove the control box cover.

(a) Pull off the C.H. and D.H.W. temperature control knobs.

(b) Swing the control box aside.

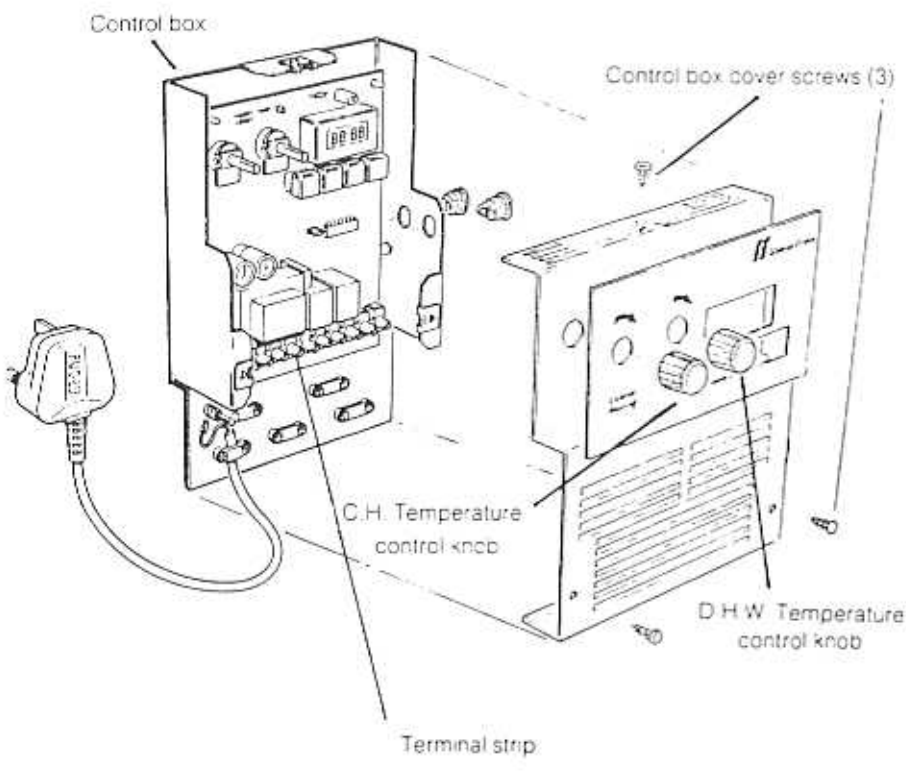
(c) Remove the 3 screws securing the control box cover and lift off the cover.

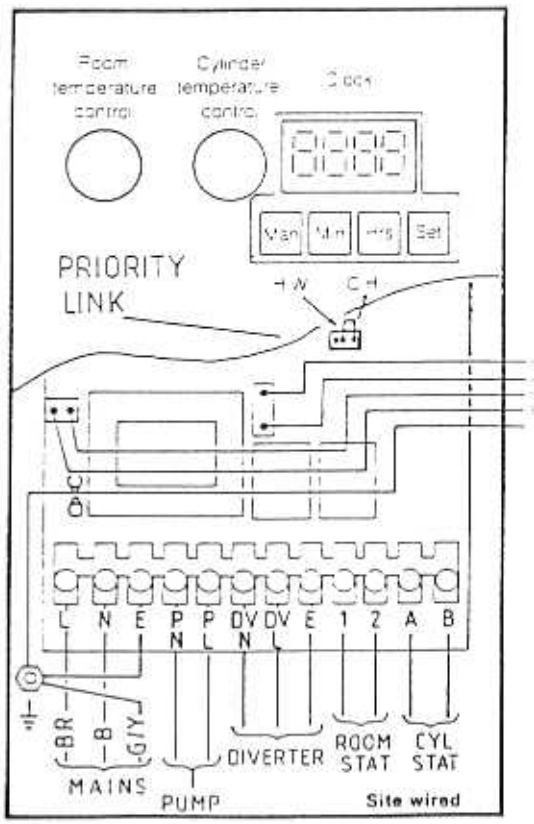
2. Route the sensor leads into the box and connect as shown,

i.e. Room temperature sensor to terminals 1 & 2.
Cylinder temperature sensor to terminals A & B.

Secure each lead with one of the cable clamps provided.

Note: If Central Heating priority is required, re-connect the link as shown.



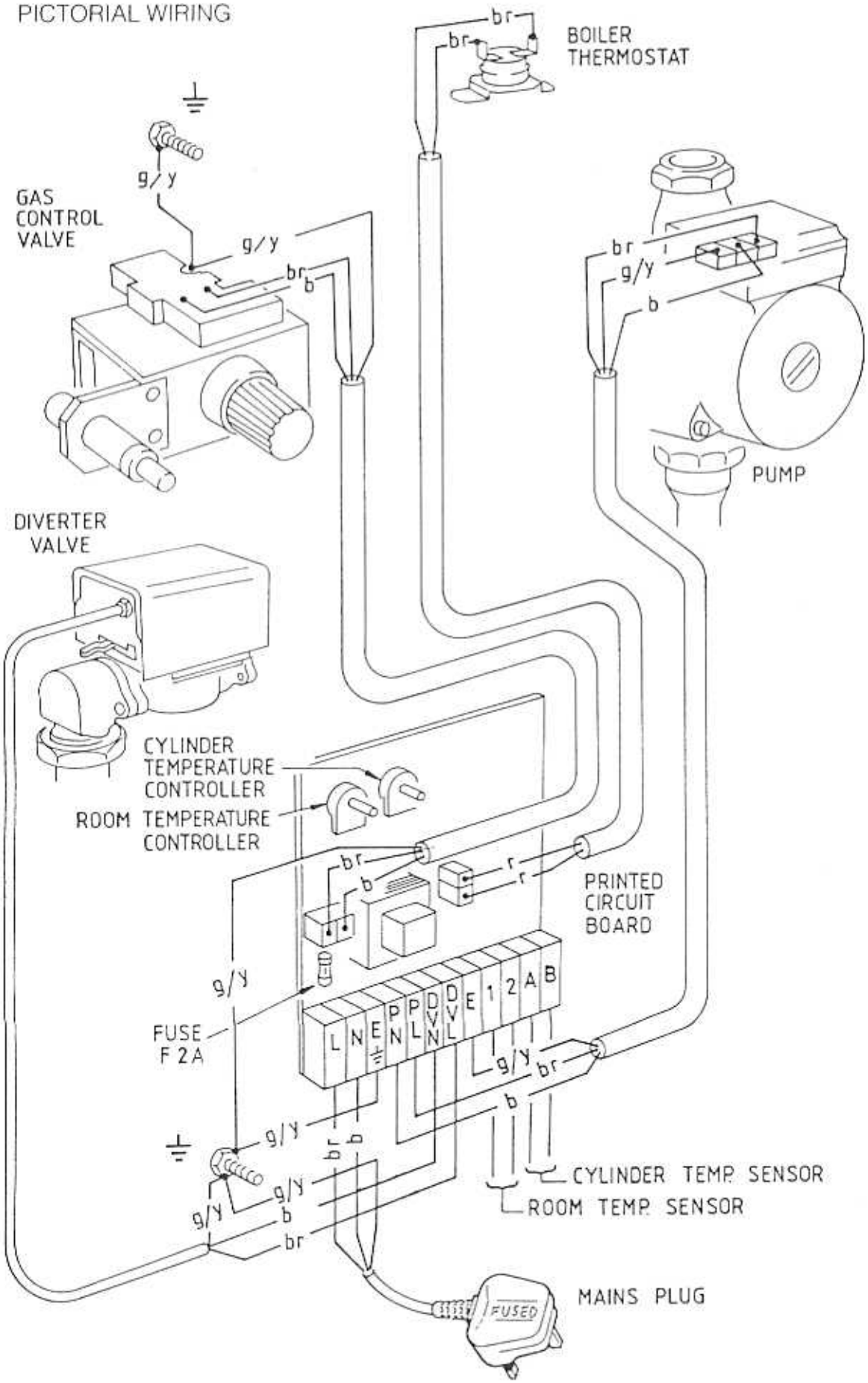


24. EXTERNAL WIRING

1. Route the leads to room and cylinder temperature sensors and connect as follows:
   Room to terminals 1 and 2 on the sensor.
   Cylinder to terminal A and B on the sensor.

2. FROST PROTECTION
   Proprietry frost thermostats cannot be used with this appliance. For further information on frost protection, please contact Stelrad Group Ltd.
   Warning: If no frost protection is provided and frost is likely during a short absence from home leave the heating controls at a reduced temperature setting.
   For longer periods, the entire system should be drained, including the domestic hot water supply.

25. PICTORIAL WIRING



26. COMMISSIONING & TESTING

(a) Electrical Installation

1. Checks to ensure electrical safety should be carried out by a competent person.

2. ALWAYS carry out electrical system checks, i.e. earth continuity polarity, resistance to earth, short circuit, using a suitable test meter.

(b) Gas Installation.

1. The whole of the gas installation, including the meter, should be inspected and tested for soundness, and purged in accordance with the recommendations of BS 6891:1988.
   WARNING:Whilst effecting the required gas soundess test and purging air from the gas installation, open all windows and doors, extinguish naked lights and DO NOT SMOKE.

2. Purging air from the gas installation may be expedited by loosening the union on the gas service cock and purging until gas is smelled.

3. Retighten the union and check for gas soundness.

27. INITIAL LIGHTING - Continued in Frame 29 (Refer to diagrams in Frame 30).

1. Check that the gas service cock (D) is ON, and the electricity supply is switched OFF.

2. Remove the screw in the burner pressure test nipple (H) and connect a pressure gauge via a flexible tube.
3. Push in the gas control knob (B) and turn it CLOCKWISE to the OFF (•) position.

4. Turn the knob ANTICLOCKWISE to the PILOT (✱) position.

5. Push in and retain fully depressed thje gas control knob (B), press and release the piezo ignition button (C) repeatedly until the pilot lights.

6. Hold the gas control knob (B) depressed for 15 seconds after the pilot burner has ignited.

7. If the pilot fails to remain alight at this stage repeat the procedure detailed above, but wait longer than 15 seconds before releasing the gas control knob.

8. Check the appearance of the pilot flame to ensure that it envelops the tip of the thermocouple and is approximately 25mm (1in.) long.
   The pilot flame is factory set, but if adjustment is necessary, refer to Frame 7 (Servicing).
   Note: The recommended range of thermocouple outputs is 6 -10mV closed circuit.

9. Test the pilot supply connections for gas soundess using leak detection fluid.
   Also check the gas inlet connection at the gas valve.

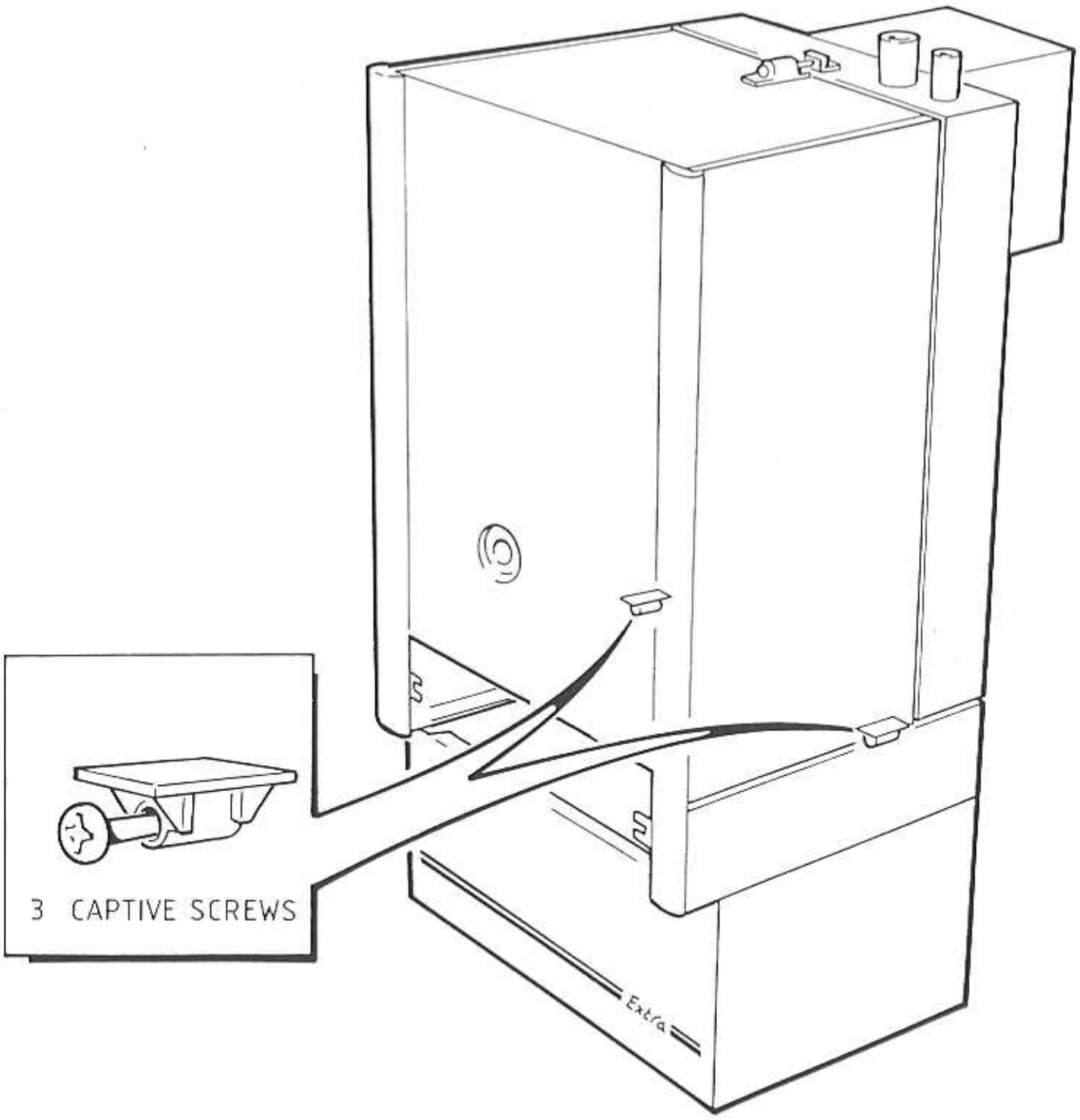
10. If the boiler output is to be set to MID or MINIMUM , affix the appropriate indicator label, supplied, to the Data Plate, located at the bottom right hand side of the back panel.

11. Refit the control box cover and swing the box back to its normal working position.

12. Fit the boiler casing - Refer to Frame 28.

28. FITTING THE CASING

IMPORTANT:This appliance MUST NOT be operated without the casing being correctly fitted and forming an adequate seal.
Lift the boiler casing up to the boiler assembly and secure with the 3 captive screws.
The casing MUST seat correctly and compress the sealing strip to make an airtight joint. If side clearance is limited, this may be checked by ensuring that the top and bottom edges of the casing are correctly located.



29. INITIAL LIGHTING - Continued from Frame: 27

1. Switch the electricity supply ON and check that the room and cylinder temperature controllers are calling for heat i.e. they are turned fully CLOCKWISE.

2. Activate the clock - refer to Frames 35-37

3. Turn the gas control knob (B) ANTICLOCKWISE to the MAIN BURNER (♦) position.
   Check that the burner cross-lights smoothly.

4. Test any remaining joints for gas soundness using leak detection fluid.

5. Operate the boiler for ten minutes to stabilise the burner temperature. The boiler is pre-set at the factory to its highest nomimal rating ,but can be range rated to suit the design requirements, Refer to Table 2
   If the burner pressure setting requires adjustment proceed as follows:

(a) Remove the cover from the pressure adjuster (G).

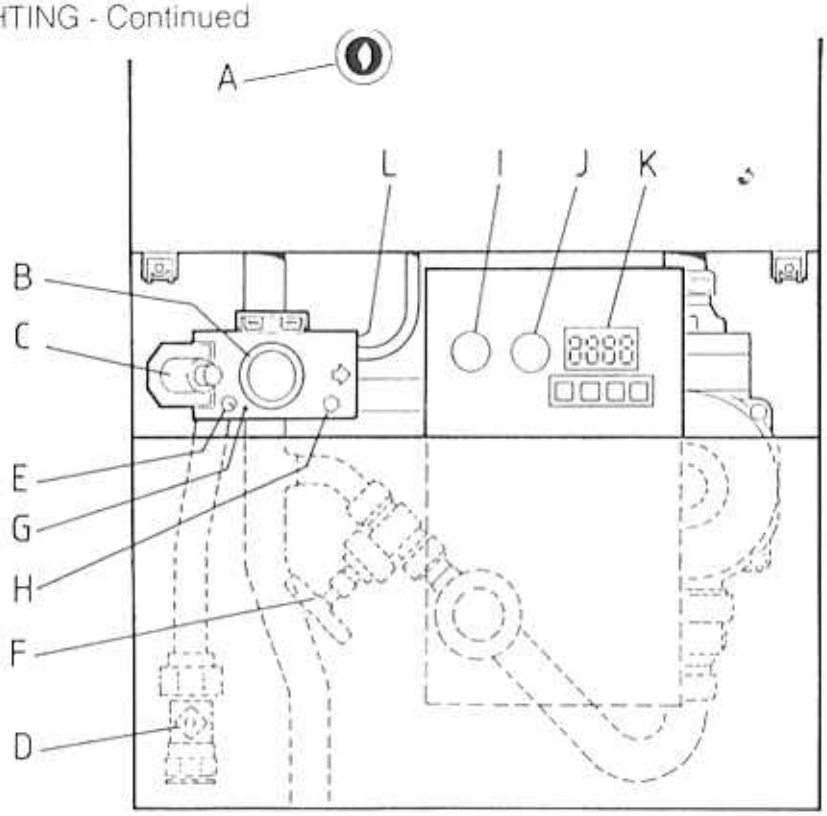
(b) Turn the pressure adjusting screw (G) ANTICLOCKWISE to INCREASE the pressure.

(c) Replace the cover.

6. Switch the electricity supply OFF.
   Note: With the clock in the OFF mode a battery back-up system allows interruption of the mains electricity supply for up to FIVE minutes before re-programming is necessary.

7. Remove the pressure gauge and tube and refit the screw in the pressure test nipple, ensuring that a gas-tight seal is made.

30. INITIAL LIGHTING - Continued



LEGEND

A Sight glass

B Gas control knob

C Piezo ignition button

D Gas service cock

E Inlet pressure test nipple

F Bypass valve

G Main burner pressure adjuster

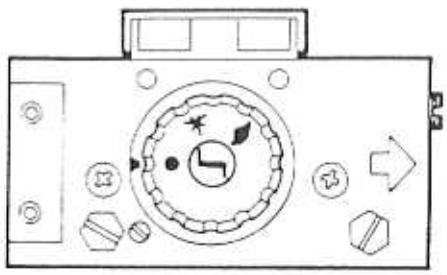
H Burner pressure test nipple

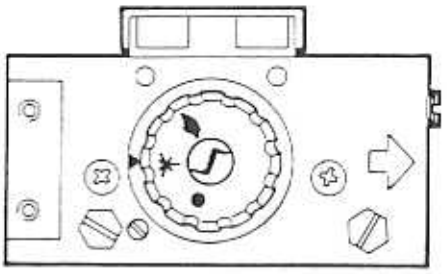
I Room temperature controller

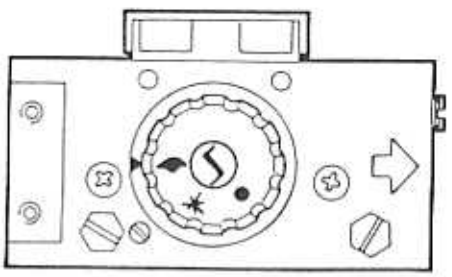
J Cylinder temperature controller

K Clock

L Pilot pressure adjuster







31. GENERAL CHECKS

Make the following check for correct operation.

1. Set the clock to OFF and ON and check that the main burner lights and extinguishes in response.

2. With the system hot, check that the room temperature and cylinder controllers (I) and (J) function correctly. Operate each control separately and check that the main burner, circulating pump and/or diverter valve respond. This may be checked by noting the route of flow of hot water from the boiler.

3. Flame Failure Device

Check the operation of the flame failure device in the gas control valve as follows:

(a) Turn the clock to OFF.

(b) Extinguish the pilot flame by closing the gas service cock (D) and note the time taken for the flame failure device to shut down, identified by a click within the gas control valve.
This MUST NOT be longer than 60 seconds.

(c) Open the gas service cock and re-light the pilot.

(d) Turn the clock ON and the burner should light.

(e) Turn the gas control knob (B) to the OFF ( ) position - refer to Frame 30. The main burner and pilot flame should shut down immediately.

Notes:

i. A latch in the gas control calve provides a safety delay period of approximately 30 seconds before the boiler can be re-lit.
ii. If the pilot is extinguished for any reason WAIT 3 minutes before attempting to re-light.

32. GENERAL CHECKS - Continued

4. Water Circulation System

(a) With the system HOT, examine all water connections for soundness.

(b) With the system still hot turn off the gas, water and electricity supplies to the boiler and drain down in order to complete the flushing process.

(c) Re-fill and vent the system, clear all air locks and again check for water soundness.

(d) Reset the clock - Refer to Frames 35 - 37.

(e) Balance the system and set the bypass - Refer to Frame 33.
Finally
Set the controls to the Users requirements, and refit the controls compartment door.
Note:
The boiler thermostat will control the flow tewmperature at approximately 82°C.
Warning:
The boiler MUST NOT be operated with the casing removed, or not forming a proper seal.

33: BYPASS ADJUSTMENT

WATER FLOW AND PRESSURE LOSS

Boiler Output	kW	5.9	7.3	8.8
	Btu/h	20000	25000	30000
Water Flow Rate	l/min	7.6	9.5	11.4
	gal/h	100	125	150
Boiler Pressure loss	mbar	27	35	45
	in.w.g.	11	14	18
Available Pump Head Setting 1	mbar	152	130	105
	in.w.g.	61	52	42
Setting 2	mbar	301	279	254
	in.w.g.	121	112	102

Note: The flow through the boiler MUST NOT fall below the values shown in the above table.

1. With the boiler firing and all the circuits OPEN and the by-pass CLOSED - adjust the pump to give 11 °C (20 °F) temperature differential across the BOILER & SYSTEM.

2. With one small radiator ONLY OPEN, open the bypass to give 11 °C (20 °F) temperature differenti across the BOILER.

3. With ALL circuits OPEN re-adjust the pump to give 11 °C (20 °F) temperature differential across th SYSTEM. If in doubt contact Stelrad Group Ltd.

34. HANDING OVER

After compieting the installation and commissioning of the boiler system, the Installer should hanc over to the Householder by the following actions:

1. Hand the User's Instructions to the Householder and explain his/her responsibilities under the Gas Safety (Installation and Servicing) Regulations, 1984.

2. Draw attention to the Lighting Instruction label affixed to the inside of the pull-off controls door.

3. Explain and demonstrate the lighting and shutting down procedures.

4. The operation of the boiler and use and adjustment of ALL system controls should be fully explained to the Householder, to ensure the greatest possible fuel economy, consistent with household requirements of both heating and hot water consumption.
Advise the User of the precautions necessary to prevent damage to the system, and to the buildir in event of the system remaining inoperative during frost conditions.

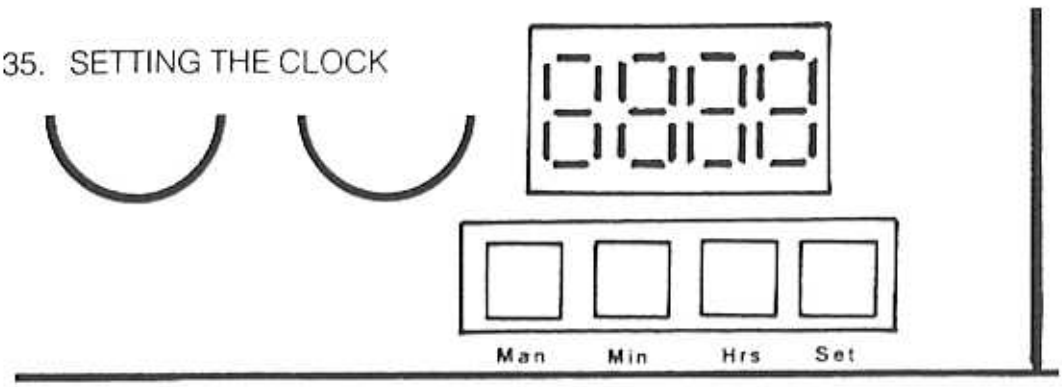
5. Explain the function and the use of the boiler room temperature and cylinder controllers (and thermostatic radiator valves if fitted).

6. Explain and demonstrate the functions of the clock.

7. Explain and demonstrate the function of time and temperature controls for the economic use of the system.

8. Stress the importance of regular servicing by the Local Gas Region or by a qualified Heating Engineer, and that a comprehensive service should be carried out AT LEAST ONCE A YEAR.

35. SETTING THE CLOCK



1. ACTIVATION

   Press SET and MAN together - the colon will flash on and off.

2. SETTING TIME

   (a) Press SET, colon stops flashing 'T' appears

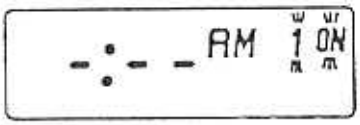
   (b) Press HRS and set hours to correct time, then press MIN and set minutes to correct time.

   N.B. When buttons are pressed for more than 2 seconds, figures advance rapidly.

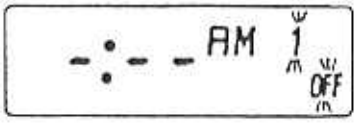
3. SETTING PROGRAMMES

   (a) Programme 1

   i. To programme switch-on time, press SET. Display appears as illustrated with '1 ON' flashing. Set required Switch-On time by pressing HRS and MIN buttons as described in 2(b).

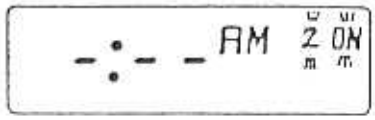


   ii. To programme Switch-Off time press SET. Display appears as illustrated with '1 OFF' flashing. Set required Switch-Off time by pressing HRS and MIN buttons as described above.



36. SETTING THE CLOCK - Continued

(b) Programmes 2 and 3

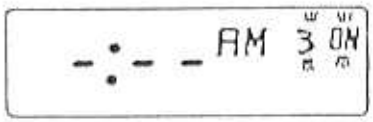


i. Press SET.

Display appears with '2 ON' flashing

ii. Programme On and Off times as described for setting in Programme 1.

iii. Press SET again and display appears with '3 ON' flashing



Note: To omit Programme 3 press SET twice

iv. Programme On and Off times as described for setting in Programme 1.

v. Finally press SET again, this will return the time to its normal operating mode and the correct time will be displayed with the colon flashing.

4 TO REVIEW SETTING

Press SET button. Each time the button is pressed the display shows the next stage of the programmed sequence. The part of the display which is flashing shows the stage of the programme displayed, e.g. '1 ON' flashing means the first ON time is shown. Continue pressing SET button to return to normal operating mode.

5. MANUAL OVERRIDE

To switch on the appliance when the display is in Off mode, press MAN - the 'ON' on the display will flash to show the switch is not in its programmed position. To return to 'Off' press the MAN button again.

6. SUSPEND

To suspend previously set On and Off times, press SET button until the setting to be suspended is reached. Press MAN button, an 'X' will appear on the display to show this setting has been suspended. Press MAN again to cancel suspend. Return display to normal operation by pressing SET until this is reached.

37. SETTING THE CLOCK - Continued

7. CLEAR

To clear all programmes, press SET and MAN buttons together.

The switch may then be reset as shown in 1 & 2.

8. REMEMBER

(a) When programming, you must fully complete the sequence by repeatedly pressing the SET button until the colon between hours and minutes flashed indicating that the unit is in the normal operating mode. this applied even if you are only using 1 (or 2) ON/OFF programmes.

(b) Normal Operation

The flashing colon shows that the switch is in normal operating condition and will always display the correct time (unless you have set it incorrectly).

'ON' shows that it has switched on at a programme setting.

(c) Manual Override

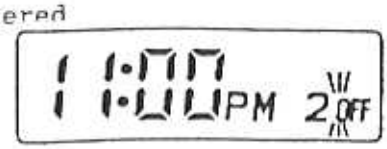
The 'OFF' is flashing to indicate that a previous programme has been overridden and the switch is now Off. It will revert to its normal programmed operation at the next setting.

(d) Suspend

The 'X' shows that a programme instruction has been suspended.

(e) Setting or Review

If the colon between hours and minutes is stationary you are in the programming condition. After pressing SET, the '2OFF' flashing on the display indicates that the second Off time is being shown and may be altered if required.



1. SCHEDULE

   THE FOLLOWING SHOULD BE CARRIED OUT AT PERIODS NOT EXCEEDING ONE YEAR.

(a) Light the boiler and carry out a pre-service check, noting any operational faults.

(b) Clean the main burner.

(c) Clean the heat exchanger.

(d) Clean the main injector.

(e) Check the condition of the thermocouple.

(f) Check that the flue terminal is unobstructed and that the flue system, including the inner cover, is sealed correctly.

(g) If the appliance has been installed in a compartment check that the ventilation areas are clear.

THE SERVICING PROCEDURES ARE COVERED MORE FULLY IN FRAMES 2 TO 7 AND MUST BE CARRIED OUT IN SEQUENCE

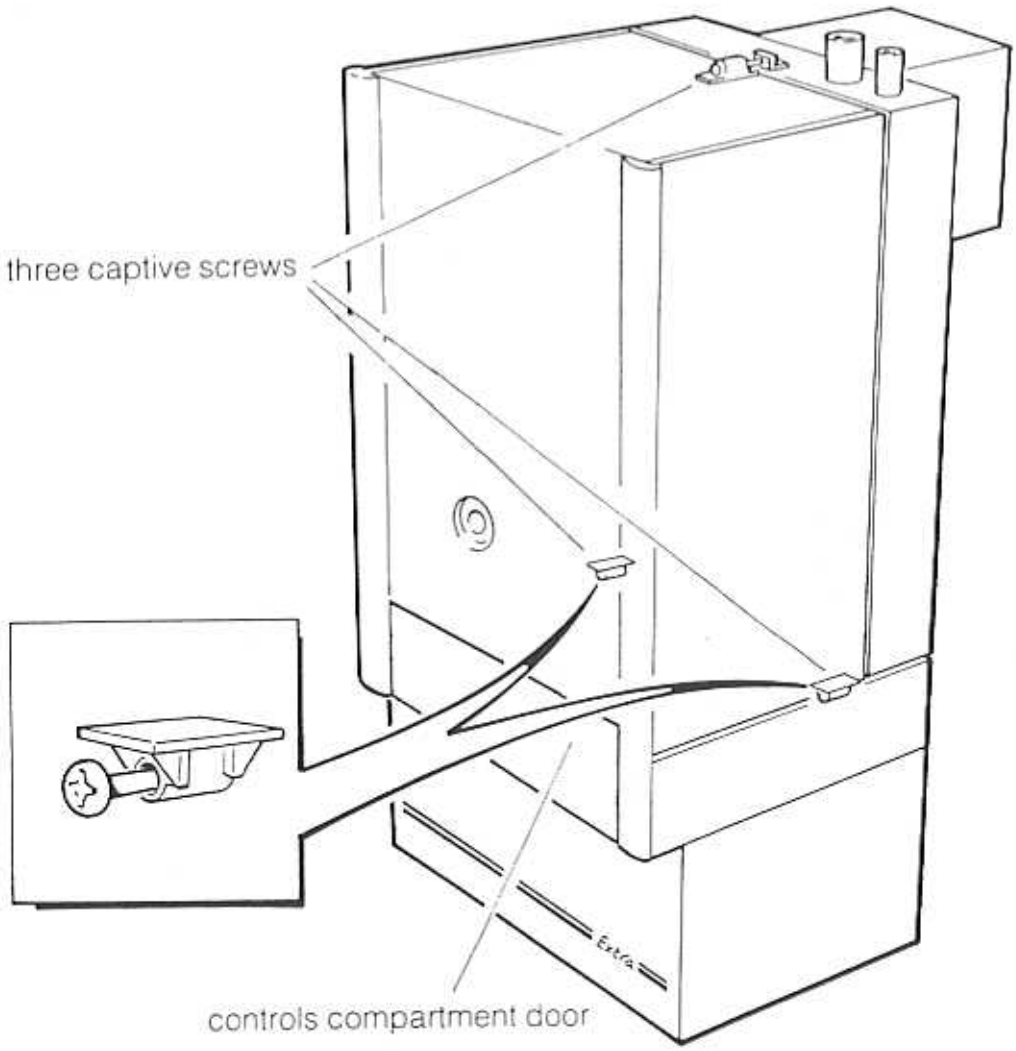
WARNING: Always turn OFF the gas supply at the gas service cock and switch OFF and DISCONNECT the electricity supply to the appliance BEFORE SER VICING.

IMPORTANT: After completing servicing or exchange of components always test for gas soundness and carry out functional checks as appropriate.

2. BOILER CASING REMOVAL

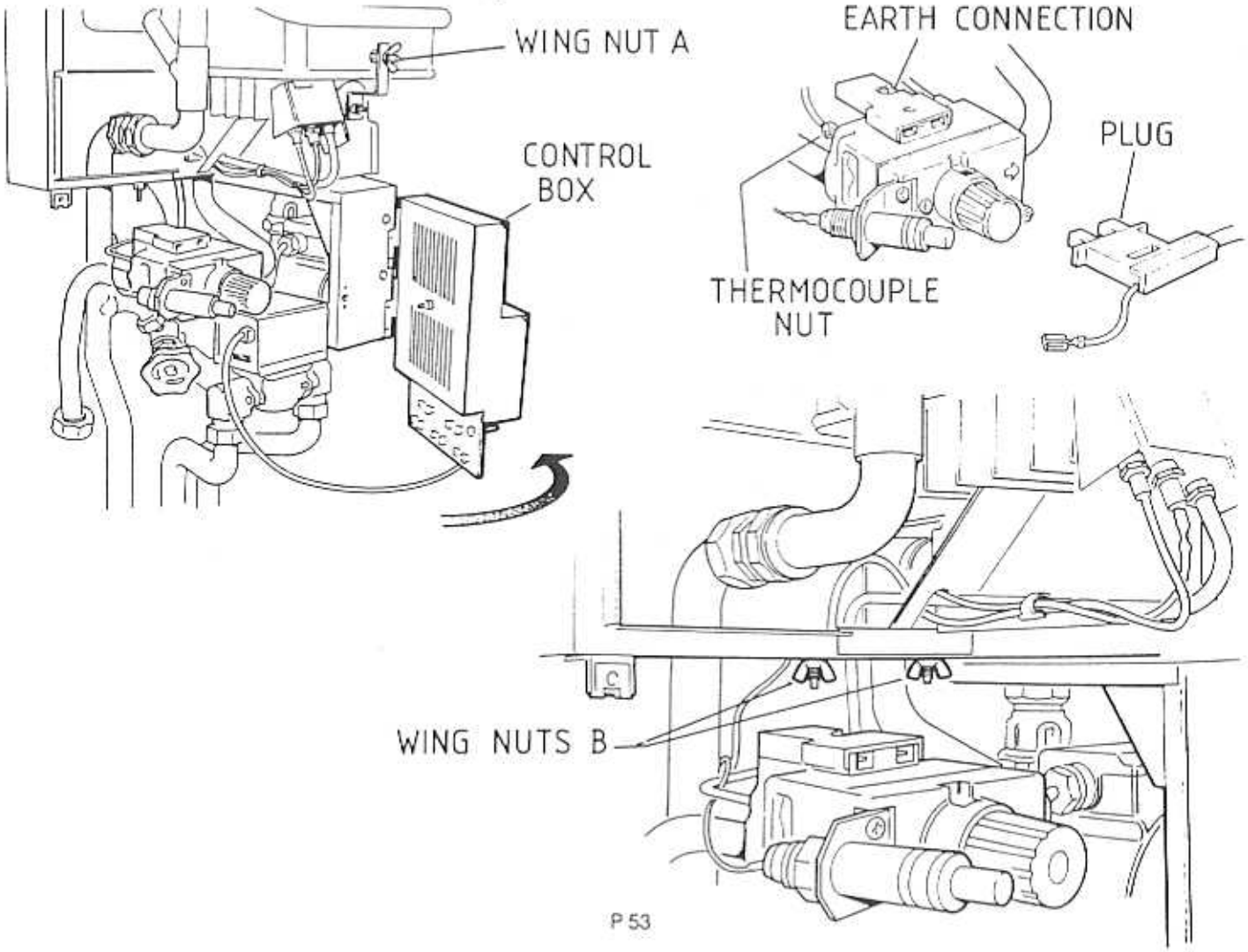
1. Pull off the controls compartment door.

2. Release the three captive screws, lift the casing off the boiler, taking care not to damage the seals, and place it safely to one side.



3. BURNER ASSEMBLY REMOVAL

1. Swing the control box aside.
2. Pull off the two earth leads from the gas valve plug.
3. Pull out the electrical plug from the gas valve.
4. Undo the gas service cock union nut.
5. Remove the front wing nut A.
6. Support the burner and remove the two wing nuts B.
7. If an overheat thermostat is fitted, release the thermocouple nut at the rear of the valve and withdraw the interrupter lead.
8. Lift the rear of the burner/controls assembly, withdraw it from the boiler, and place it on a convenient working surface.



4. CLEANING BURNER ASSEMBLY

1. Brush off any deposits that may have fallen onto the burner head - ensuring that the flame ports are unobstructed.
Remove any debris that may have collected on the assembly components.
NOTE:Brushes with metallic bristles MUST NOT be used.

2. Remove the main burner injector and ensure that there is no blockage or damage. Clean or renew an necessary.
Note: The main burner must be removed - Refer to Frame 16.

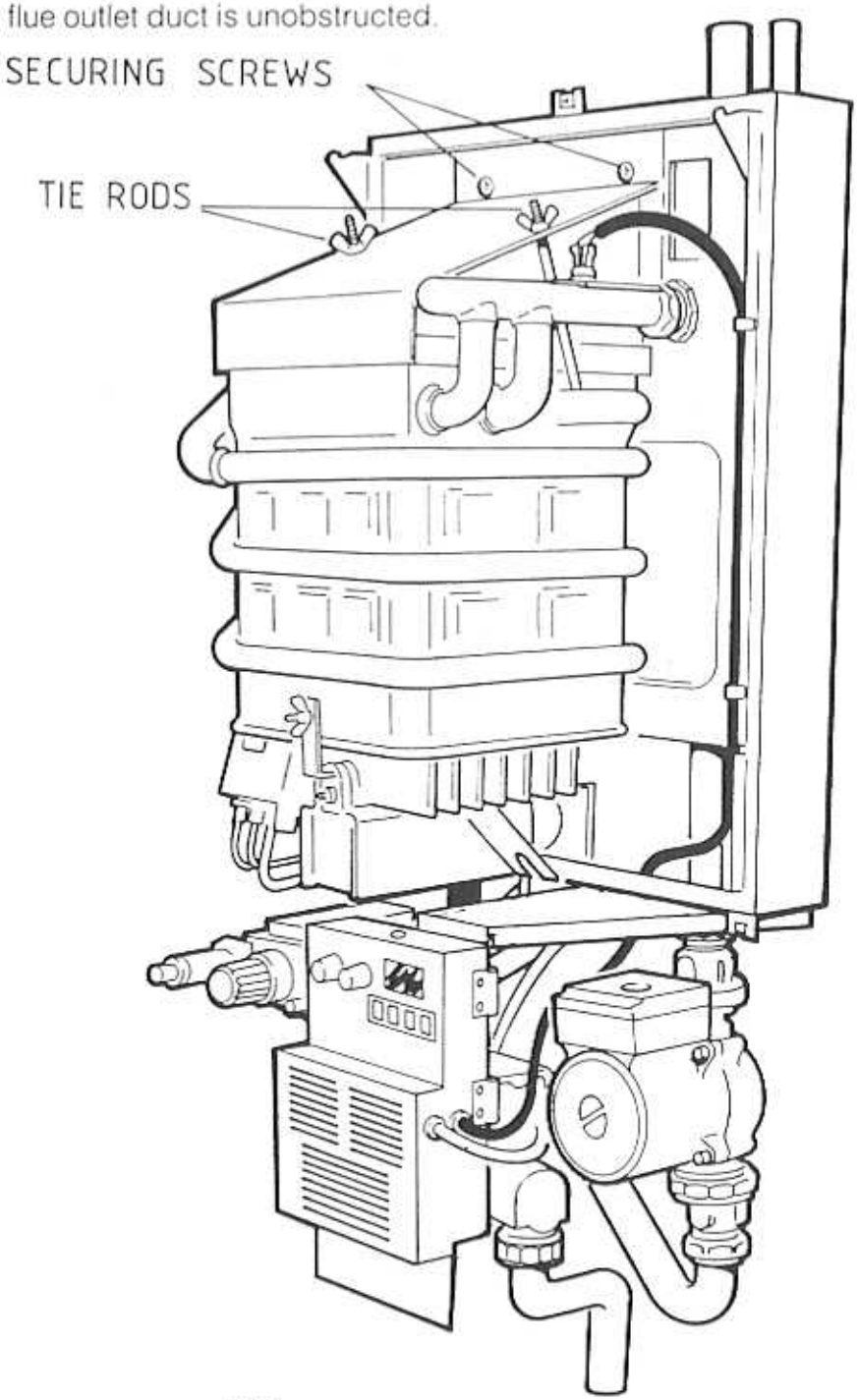
3. Refit the injector using an approved jointing compound sparingly.

4. Inspect the pilot, thermocouple and spark electrode; ensure that they are clean and in good condition.
In particular check that:
(a) The pilot burner is clean and unobstructed;
(b) The spark electrode is clean and undamaged;
(c) The spark lead is in good condition and securely connected;
(d) The spark gap is correct - Refer to Frame 7;
(e) The thermocouple tip is not burned or cracked;
(f) The position of the thermocouple relative to the pilot burner is correct - Refer to Frame 7.
(g) The thermocouple terminal at the gas valve is clean.

Clean or renew components as necessary.

5. CLEANING - FLUEWAYS

1. Remove the two securing screws and washers.
2. Slacken the two wing nuts, disengage the tie rods and remove the collector hood.
3. Place a plastic sheet or similar beneath the boiler, and remove all loose deposits from the heat exchanger finned block brushing from above and below, and also from the copper skirt, using a suitable brush and/or cleaning rod.
4. Check that the flue outlet duct is unobstructed.



6. RE-ASSEMBLY

Re-assemble the boiler in the following order:

1. Refit the flue collector hood - renewing any damaged or deteriorating sealing gasket.

2. Refit the burner and controls assembly.

3. Reconnect the gas service cock and electrical wiring.

4. Check the sightglass in the boiler casing.
   Clean or renew as necessary.

5. Refit the boiler casing.

IMPORTANT When work is complete the casing MUST be correctly fitted - ensuring that a good seal is made.

The boiler MUST NOT be operated if the casing is not fitted.

7. GAS PRESSURE ADJUSTMENT

(a) Pilot

Light the boiler and check that the pilot flame is 25mm (1in.) long.

The pilot adjuster screw is factory set to maximum and no further adjustment should be necessary.

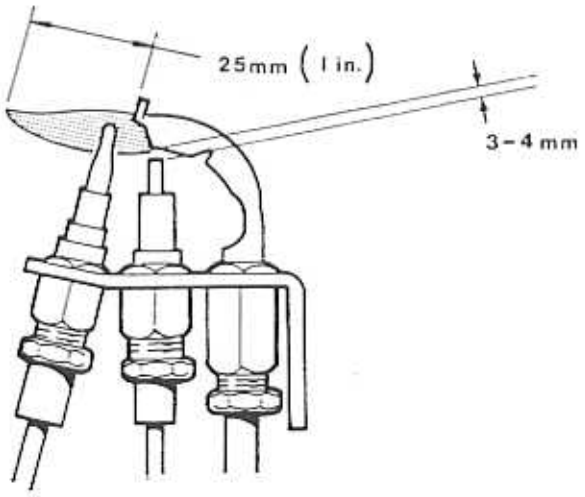
However, if the pilot flame length is incorrect proceed as follows:- (Refer to Frame 30 - Installation).

i. Turn the gas control knob (B) fully CLOCKWISE to the OFF (●) position.

ii. Turn the pilot pressure adjuster screw (L) CLOCKWISE until fully CLOSED.

iii. Turn the pilot pressure adjuster screw ANTICLOCKWISE four full turns to give maximum setting.

iv. Relight the pilot. If the pilot flame length is still incorrect replace the pilot injector - Refer to Frame 12.



(b) Main Burner

After servicing reference should be made to Table 2 which quotes details of rated output with the related burner setting pressure and heat input.

Any required adjustments should be made using the pressure adjuster screw - Refer to 'Initial Lighting' Frame 29 (Installation).

Finally fit the controls compartment door.

Note: To replace the components in Frames 8 to 25 it is necessary to remove the boiler casing - Refer to Frame 2.
IMPORTANT: When work is complete the casing MUST be correctly fitted.

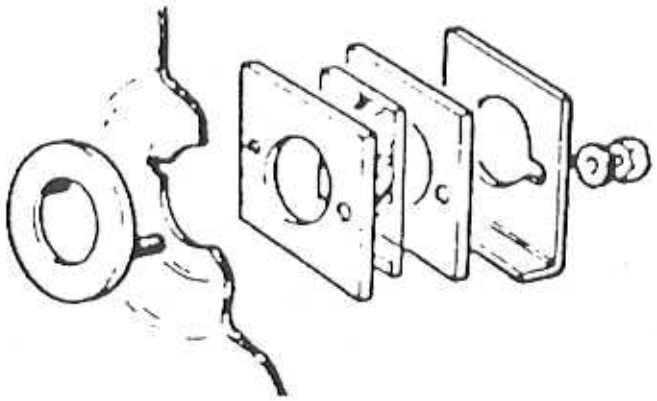
The boiler MUST NOT be operated if the casing is not fitted.

8. SIGHTGLASS REPLACEMENT

1. Unfasten the two nuts and washers and remove the assembly.

2. Fit the new sightglass and reassemble as shown.

3. Retighten the two nuts to ensure an airtight seal but DO NOT overtighten.

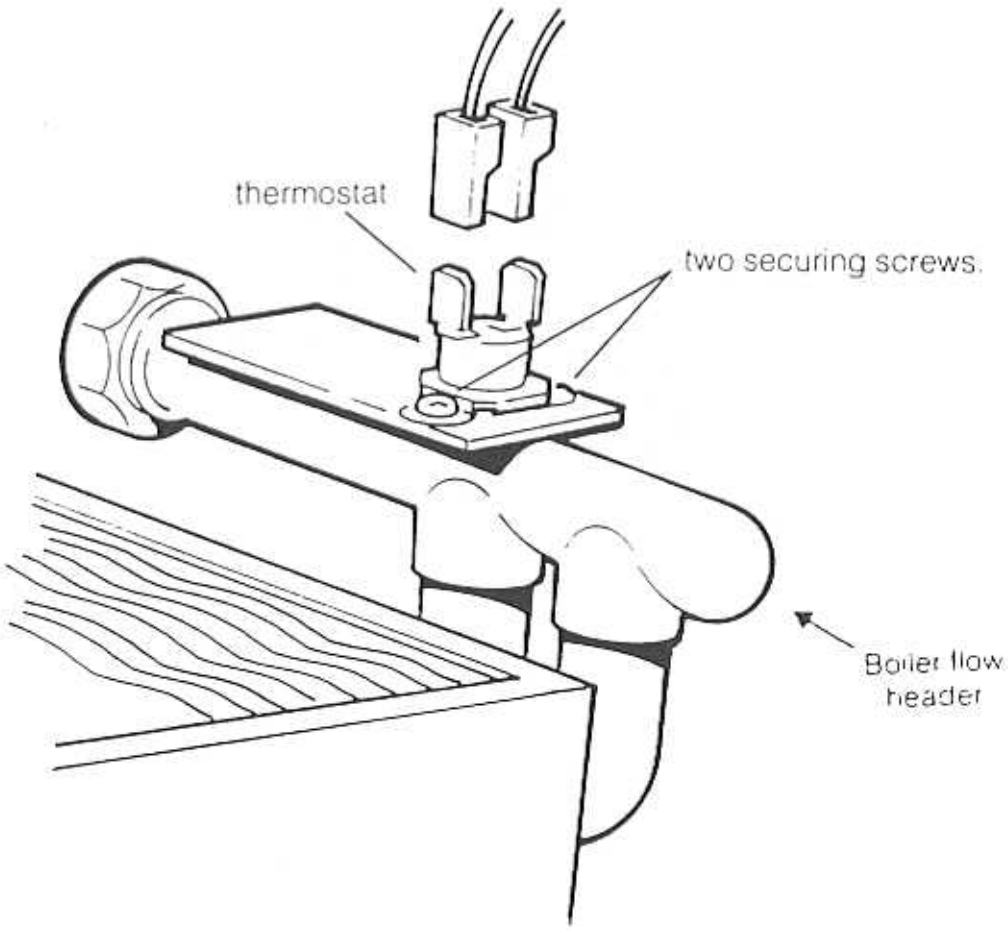


9. CONTROL THERMOSTAT REPLACEMENT

1. Remove the two securing screws.

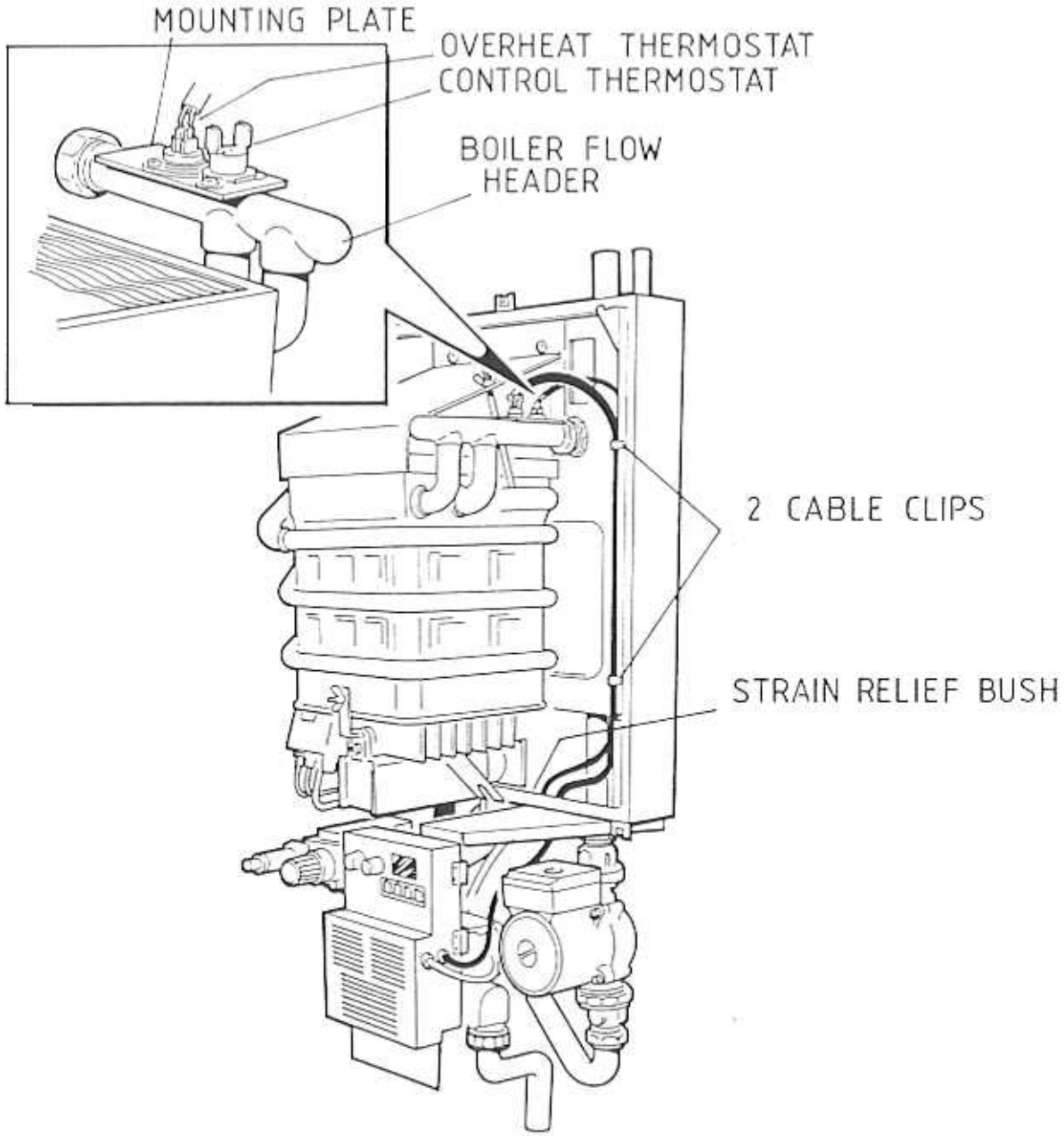
2. Disconnect the two electrical leads.

3. Fit the new thermostat and re-assemble in reverse order.



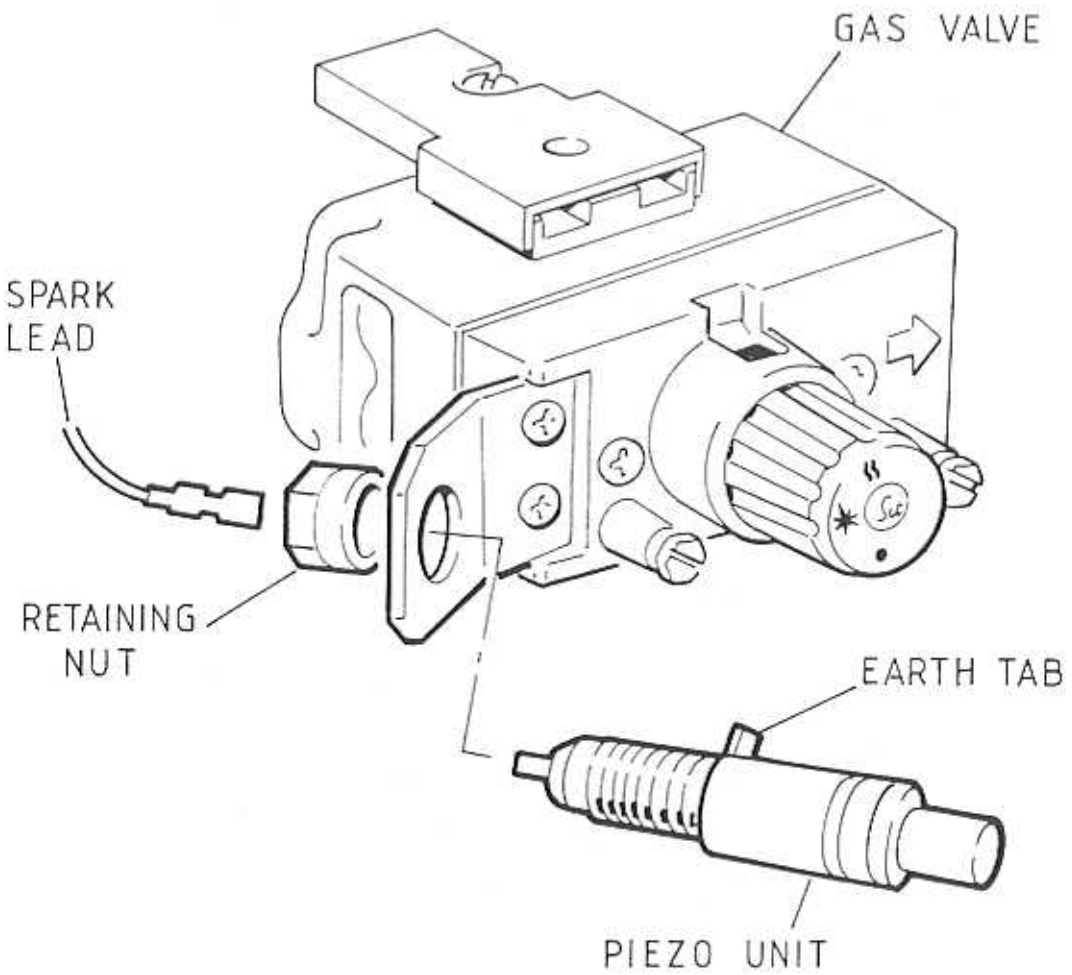
9A. OVERHEAT THERMOSTAT REPLACEMENT (IF FITTED).

1. Remove the burner and controls assembly - Refer to Frame 3.
2. Release the strain relief bush and withdraw the interrupter leads.
3. Unclip the leads from the back panel.
4. Remove the two securing screws and withdraw the thermostat.
5. Fit the new thermostat and re-assemble in reverse order, ensuring that the strain relief bush is correctly fitted.



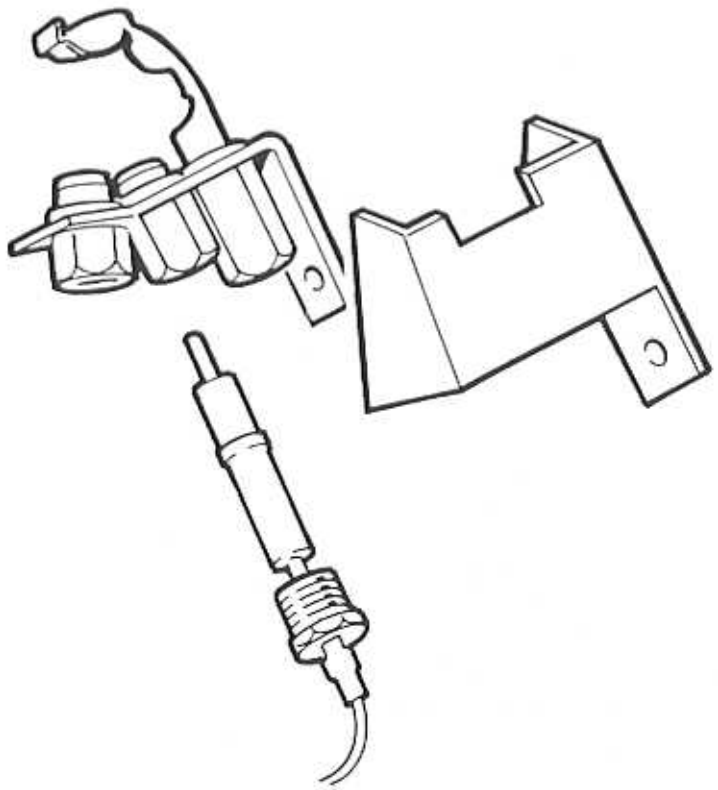
10. PIEZO UNIT REPLACEMENT

1. Disconnect the spark electrode lead from the piezo unit body.
2. Remove the retaining nut and withdraw the unit as shown.
3. Fit the new unit and re-assemble in reverse order.
   Note: Bend the earth tab and ensure that it makes good contact with the mounting bracket.



11. SPARK ELECTRODE

1. Undo the thermocouple connection and pull the thermocouple clear.
2. Disconnect the spark lead.
3. Undo the spark electrode retaining nut and withdraw the electrode.
4. Fit the new electrode and re-assemble in reverse order.



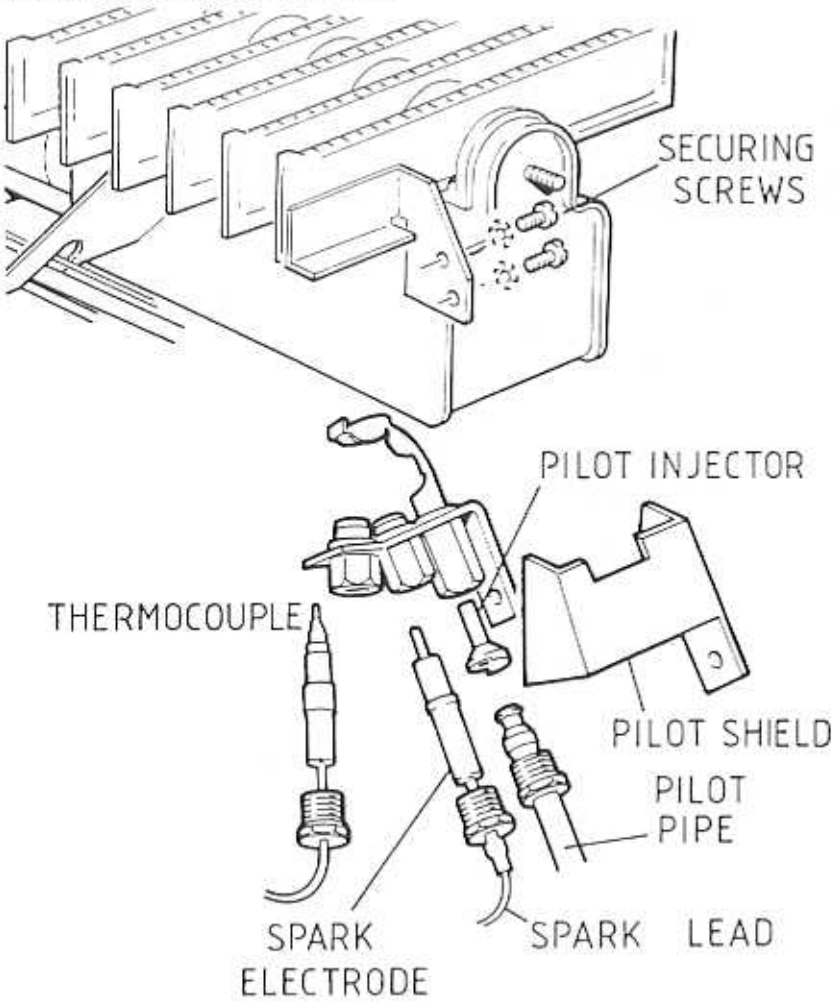
12. PILOT BURNER REPLACEMENT

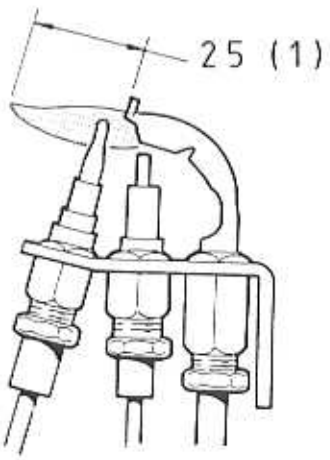
1. Undo the thermocouple connection and pull the thermocouple clear.
2. Disconnect the spark lead.
3. Undo the retaining nut and withdraw the spark electrode.
4. Undo the pilot supply connection and ease clear of the pilot burner. DO NOT lose the pilot injector which engages on the end of the pilot pipe.
5. Remove the two securing screws and washers and withdraw the pilot assembly and shield.
6. Fit the new pilot burner and re-assemble in reverse order ensuring that:

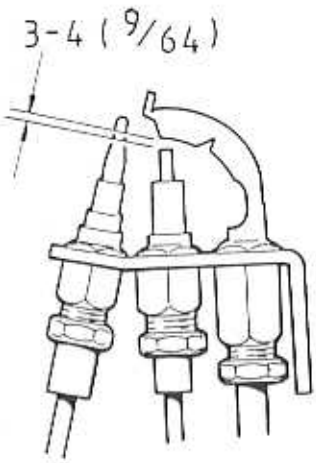
(a) The injector is in position when refitting the pilot supply.

(b) A gas-light joint is made - Refer to Frame 27 (Installation).

(c) The spark gap is correct.



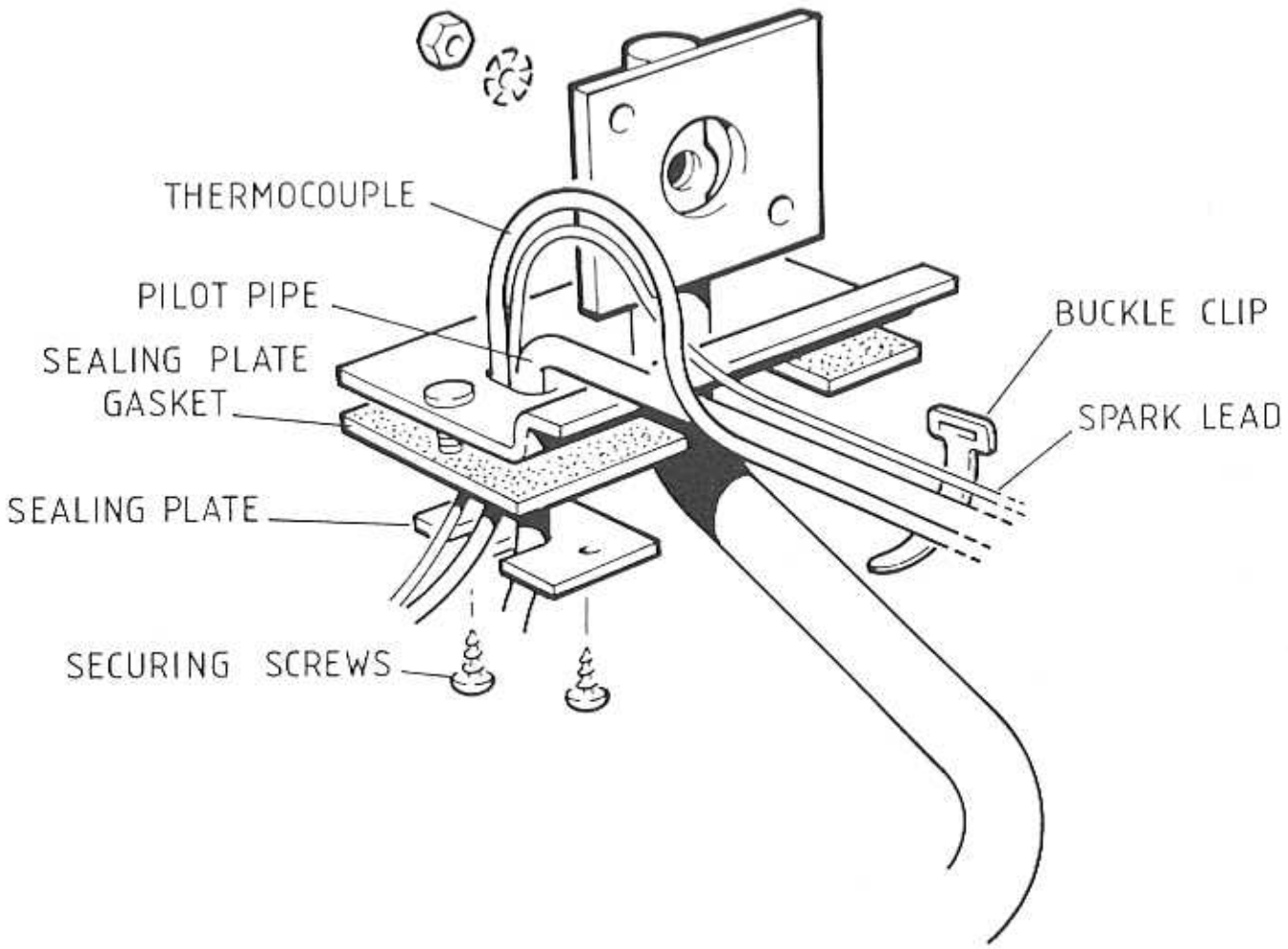




VIEWS WITH PILOT SHIELD REMOVED

13. SPARK LEAD REPLACEMENT

1. Remove the burner and controls assembly - Refer to Frame 3.
2. Remove the buckle clip.
3. Remove the two securing screws and withdraw the sealing plate.
4. Disconnect the lead from the base of the electrode and the pieze unit, and withdraw the lead.
5. Fit the new lead and re-assemble in reverse order.



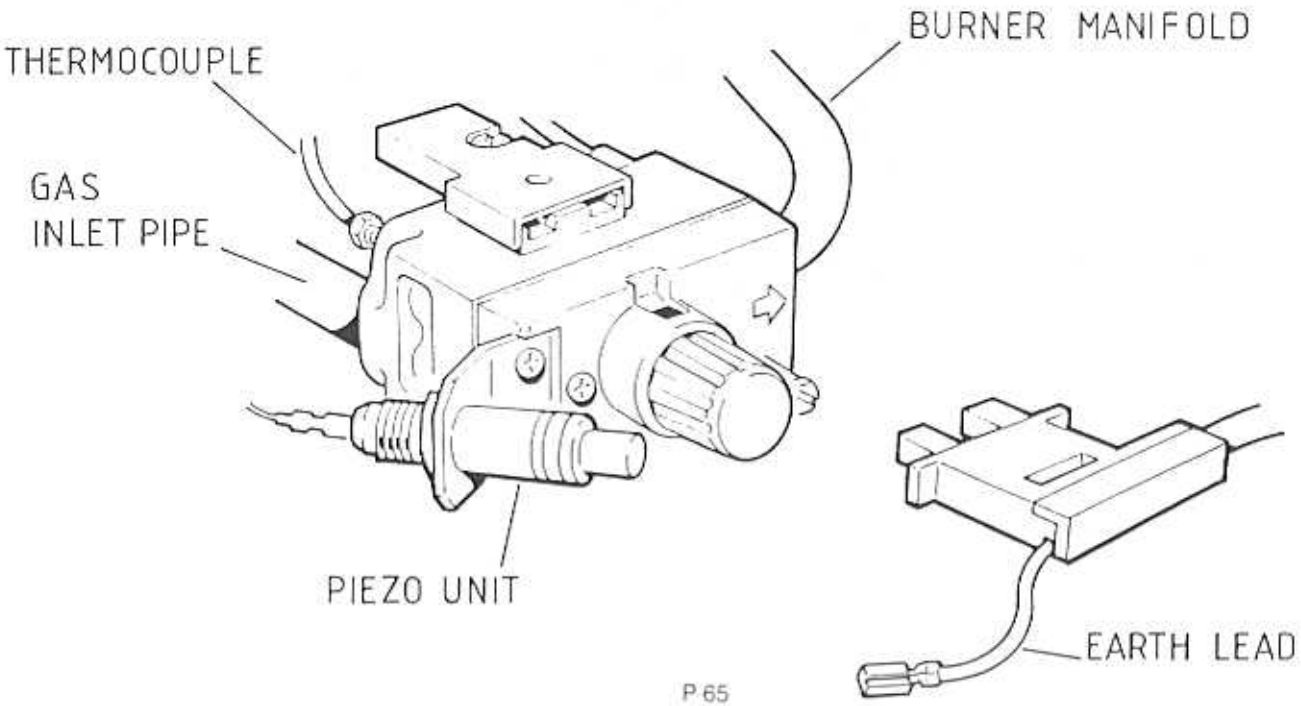
14. GAS VALVE REPLACEMENT

1. Remove the burner and controls assembly - Refer to Frame 3.
2. Undo the pilot supply connection at the gas valve and the pilot burner.
3. Undo the thermocouple connection at the gas valve.
4. Disconnect the spark lead from the piezo unit.
5. Remove the two screws securing the piezo unit bracket and transfer the complete assembly to the new valve.
6. Unscrew the gas inlet pipe from the valve.
7. Unscrew the valve from the burner manifold.
8. Transfer the thermocouple interrupter block (if fitted) to the new valve.
9. Fit the new valve ensuring that:-

(a) The valve is fitted the right way round - an arrow engraved on the valve indicates the direction of flow.

(b) An approved jointing compound is used when re-connecting the inlet pipe and burner manifold to the valve.

10. Re-assemble in reverse order.



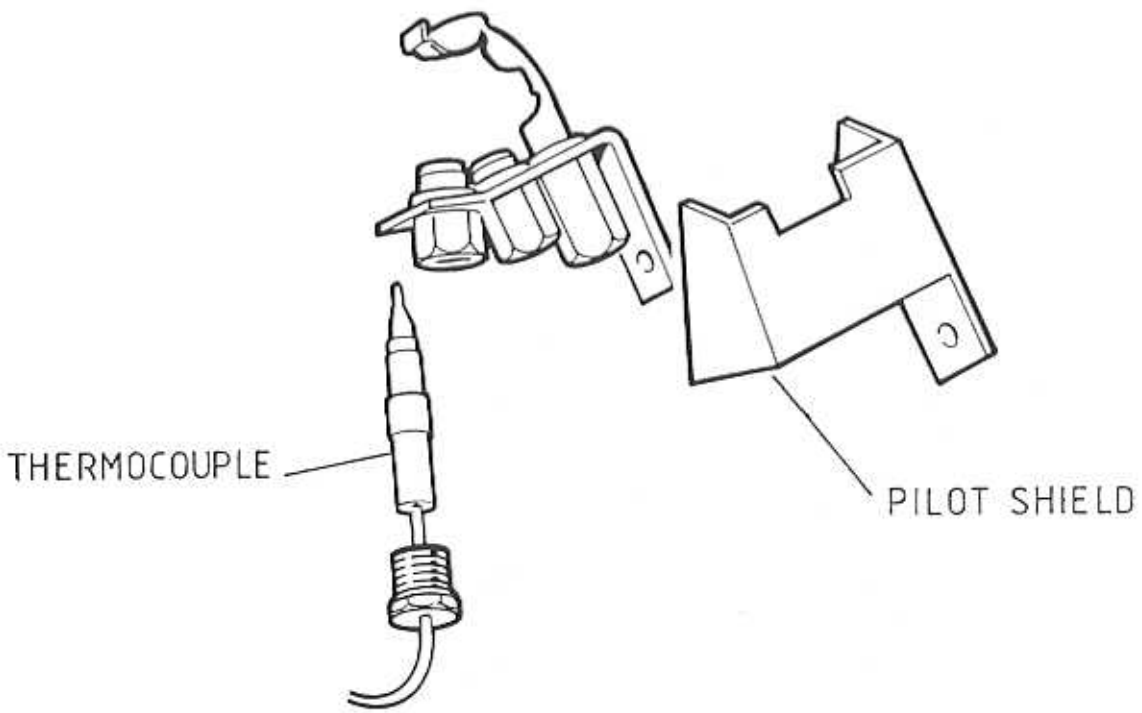
15. THERMOCOUPLE REPLACEMENT

1. Remove the burner and controls assembly - Refer to Frame 3.

2. Remove the buckle clip.
3. Undo the thermocouple connections at the pilot burner and valve.

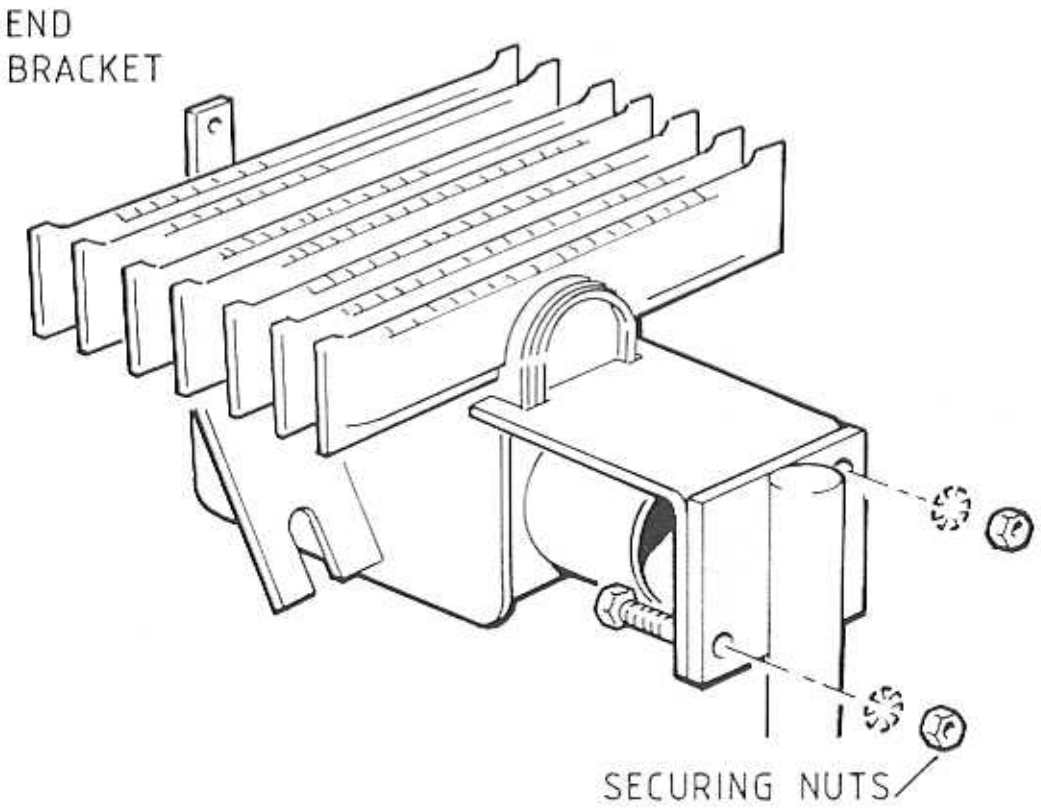
4. Remove the sealing plate and gasket - Refer to Frame 13 and withdraw the thermocouple.

5. Fit the new thermocouple and re-assemble in reverse order. Note: Avoid sharp bends in the thermocouple lead and enure that it follows the same route as previously.



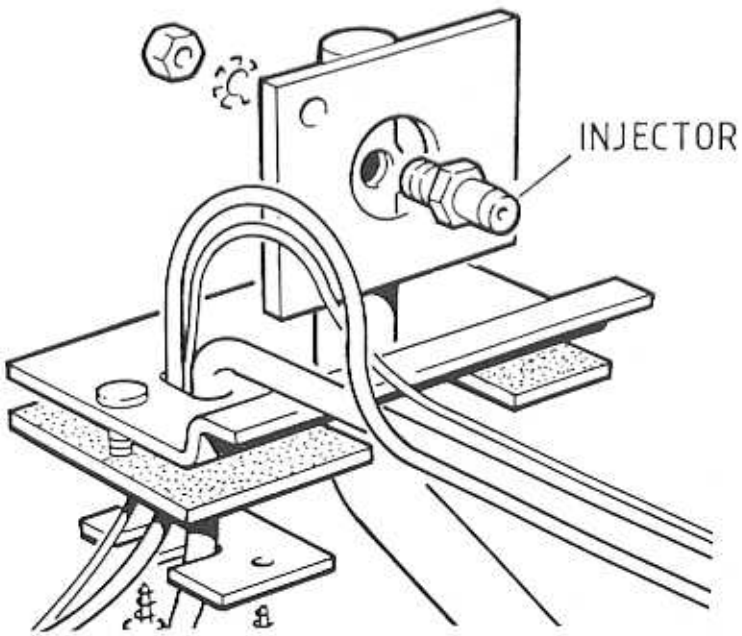
16. MAIN BURNER REPLACEMENT

1. Remove the burner and controls assembly - Refer to Frame 3.
2. Remove the pilot burner assembly - Refer to Frame 12.
3. Remove the two nuts and washers securing the burner to the manifold, and withdraw the burner.
4. Transfer the burner end bracket to the new burner.
5. Fit the new burner and re-assemble in reverse order taking care not to damage the burner injector which is screwed into the burner manifold.



17. MAIN BURNER INJECTOR REPLACEMENT

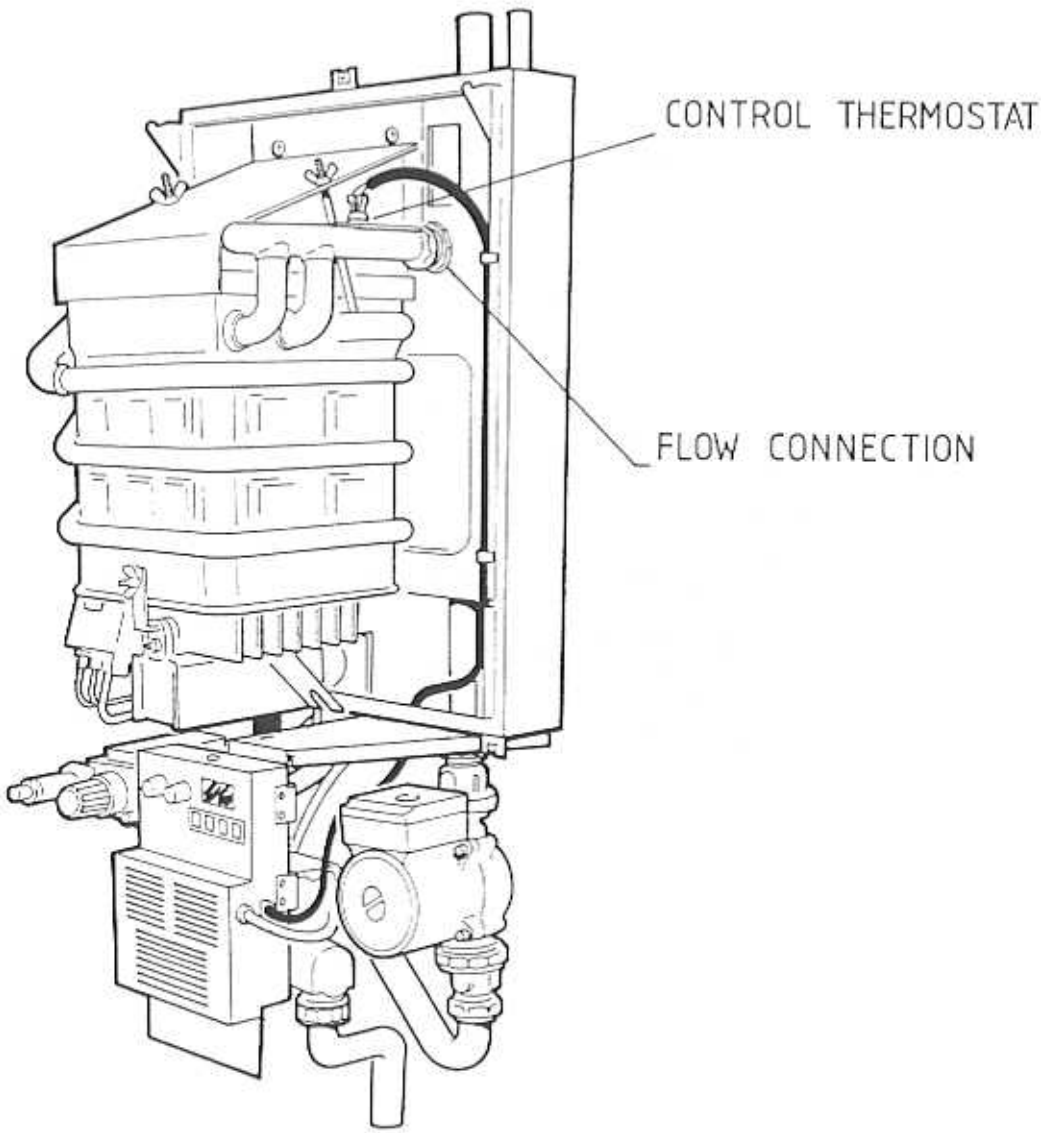
1. Remove the main burner - Refer to Frame 16.
2. Unscrew the burner injector from the manifold.
3. Fit the new injector using an approved jointing compound, and re-assemble in reverse order.



18. HEAT EXCHANGER REPLACEMENT

IMPORTANT: Before starting the removal procedure protect the gas and electrical controls with a waterproof sheet or similar.

1. Drain down the system.
2. Remove the burner and controls assembly - Refer to Frame 3.
3. Remove the flue collector hood - Refer to Frame 5.
4. Remove the control thermostat - Refer to Frame 9.
5. Remove the overheat thermostat (if fitted) - Refer to Frame 9A.
6. Support the heat exchanger and undo the flow pipe connection.



19. HEAT EXCHANGER REPLACEMENT - Continued

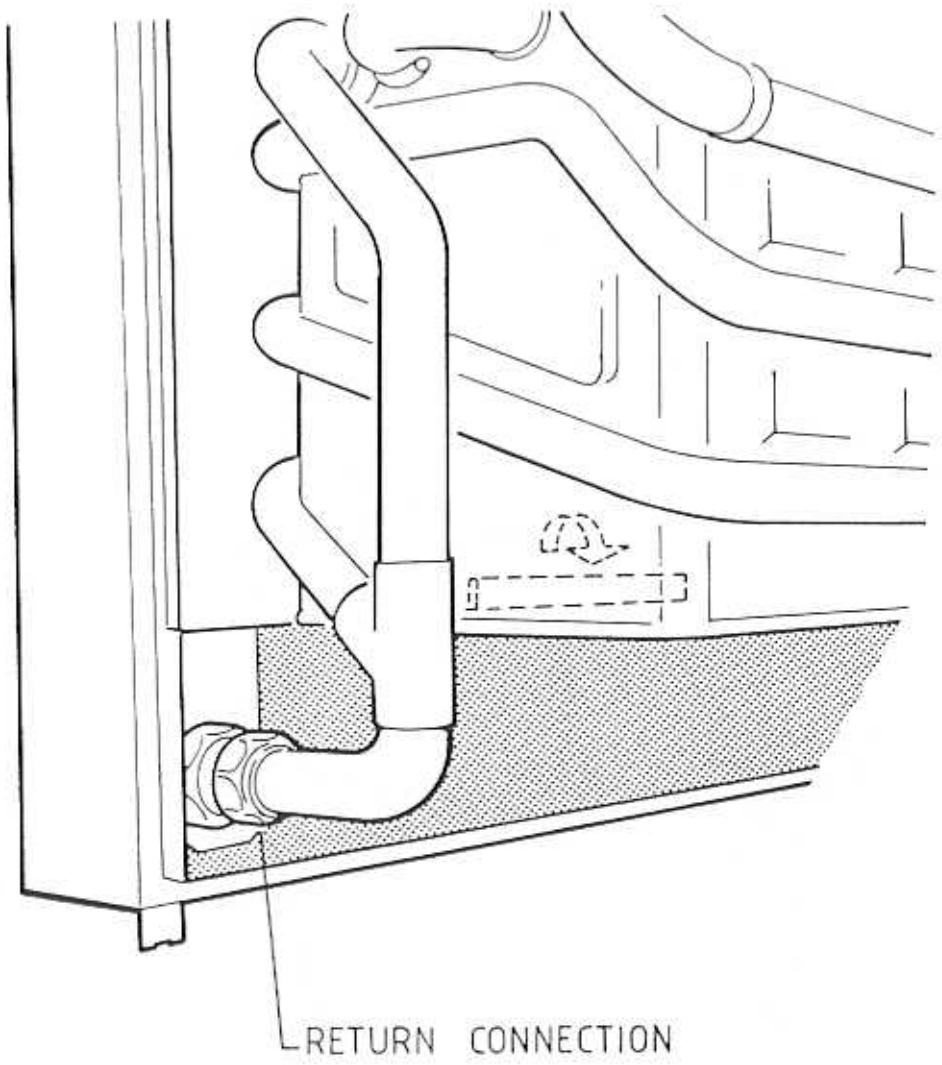
6. Undo the return pipe connection.

7. Disengage the skirt from the interpanel and ease the heat exchanger forward to drain the water from the return connection.

8. Withdraw the heat exchanger from the inter panel.

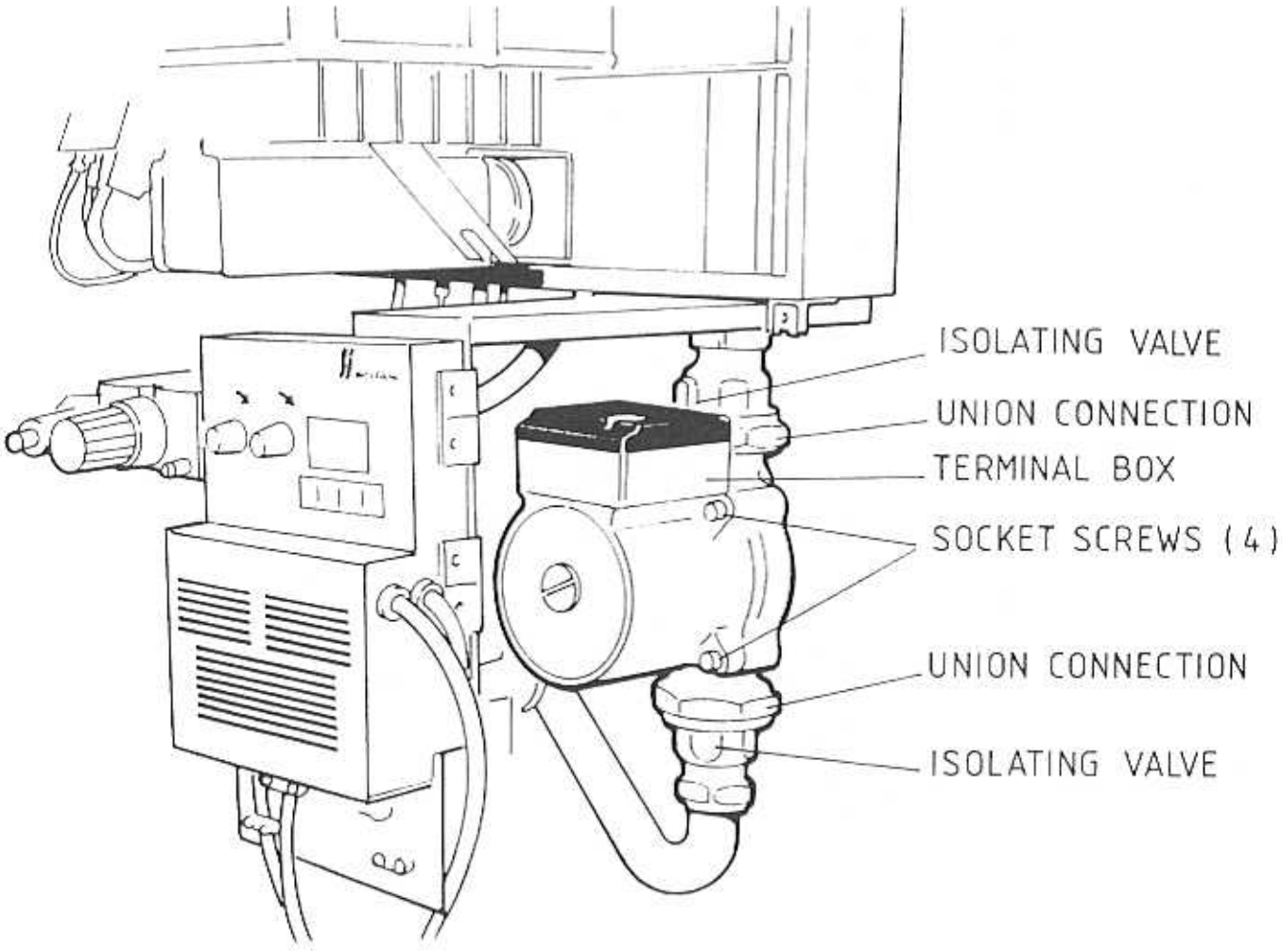
9. Fit the new heat exchanger in reverse order.

10. Refill and vent the system and check for water soundness.



20. PUMP REPLACEMENT

1 Remove the burner and controls assembly - Refer to Frame 3
2 Remove the control box cover and disconnect the pump lead - Refer to Frame 23 (Installation).
3 Close the pump isolating valves.
4 Remove the four socket screws and lift off the pump head.
5 Undo the pump union connections and withdraw the pump body.
6 Transfer the electrical lead to the new pump.
7 Fit the new pump and re-assemble in reverse order, ensuring that;
(a) New sealing gaskets, provided they are fitted.
(b) The electrical connections are correctly remade.



21. DIVERTER VALVE ACTUATOR REPLACEMENT

1. Remove the control box cover - Refer to Frame 23 (Installation).

2. Remove the burner and controls assembly - Refer to Frame 3.

3. Disconnect the valve electrical lead from the terminal strip in the control box.

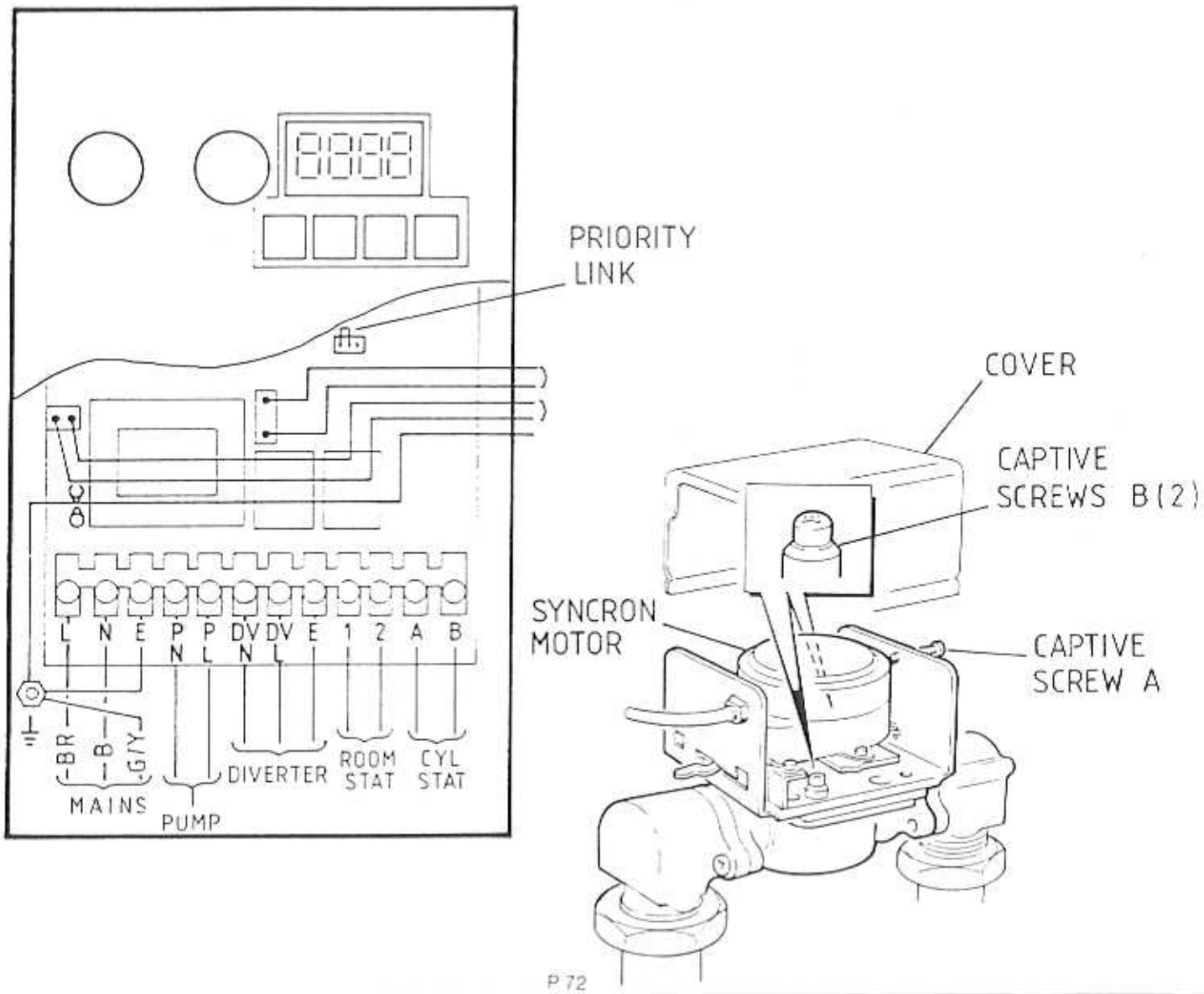
4. Release the captive screw (A) and lift off the valve cover.

5. SET THE VALVE 'MANUAL' LEVER TO OPEN.

6. Release the two captive screws (B), lift the actuator off the valve body and withdraw it from the boiler.

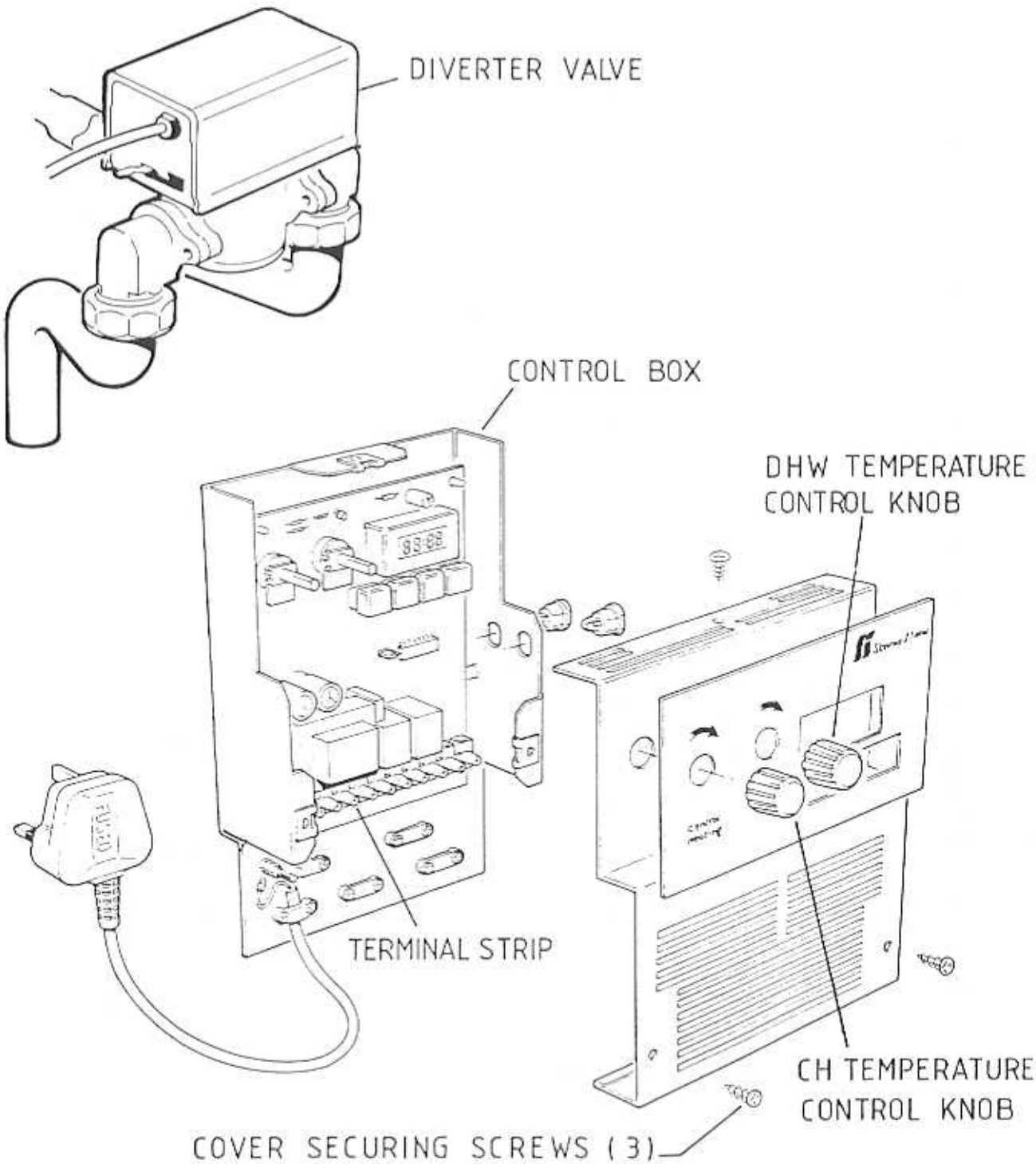
Note: At this stage, if required, the synchron motor only may be replaced - Refer to the Instructions supplied with the replacement motor.

7. Fit the new actuator, PRESET TO THE 'OPEN' POSITION, and re-assemble in reverse order.



22. DIVERTER VALVE (COMPLETE) REPLACEMENT

1. Drain down the system.
2. Remove the control box cover - Refer to Frame 23 (Installation).
3. Disconnect the valve electrical lead from the terminal strip in the control box - Refer to Frame 21.



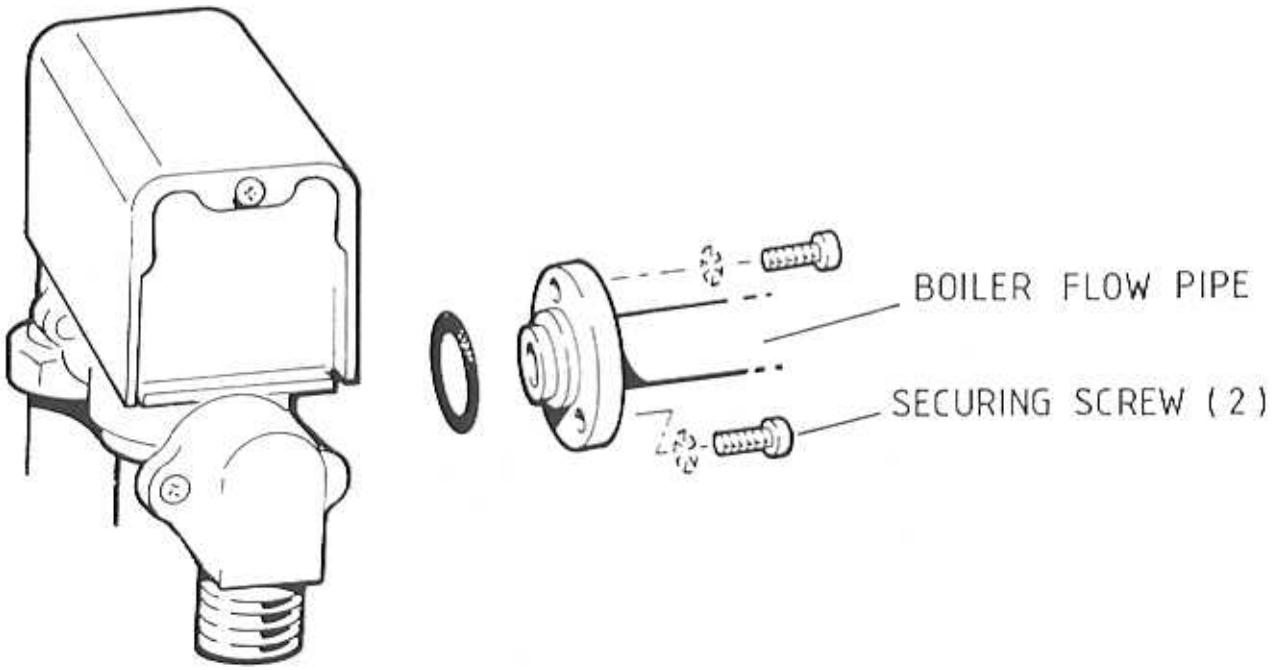
23. DIVERTER VALVE (COMPLETE) REPLACEMENT - Continued

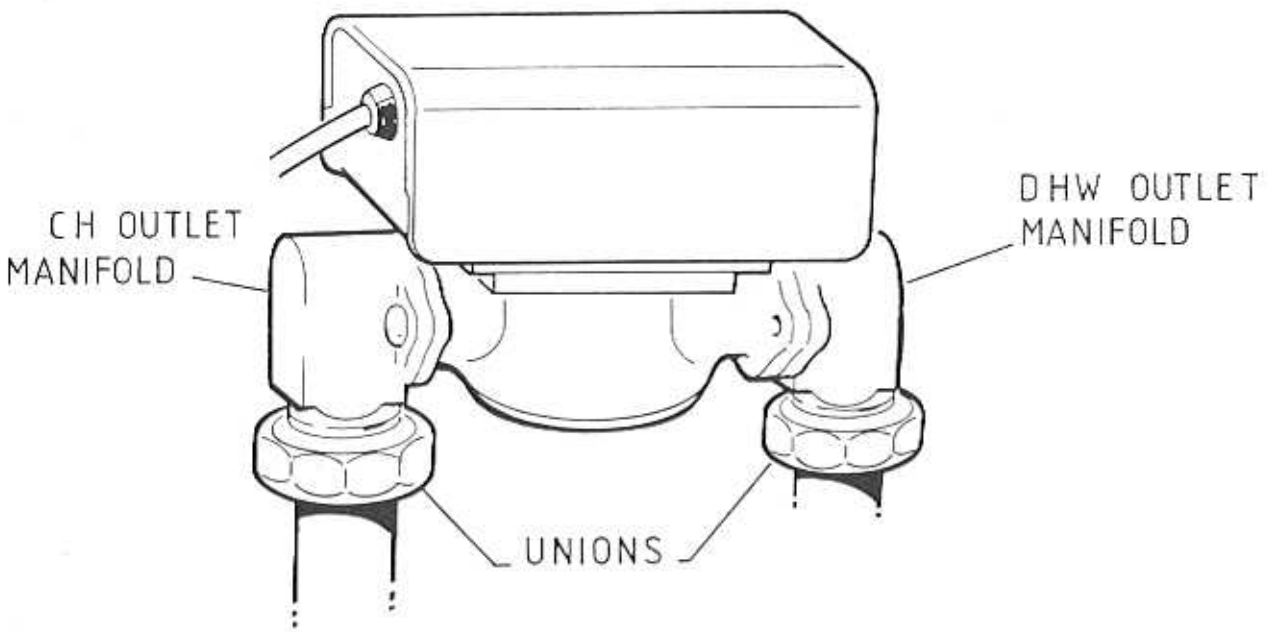
4. Remove the boiler flow pipe securing screws.

5. Undo the CH and DHW outlet manifold unions and withdraw the diverter valve from the boiler.

6. Transfer the inlet and outlet manifolds to the new valve, fitting the new 'O' rings provided. Renew also the 'O' ring on the CH flow pipe.

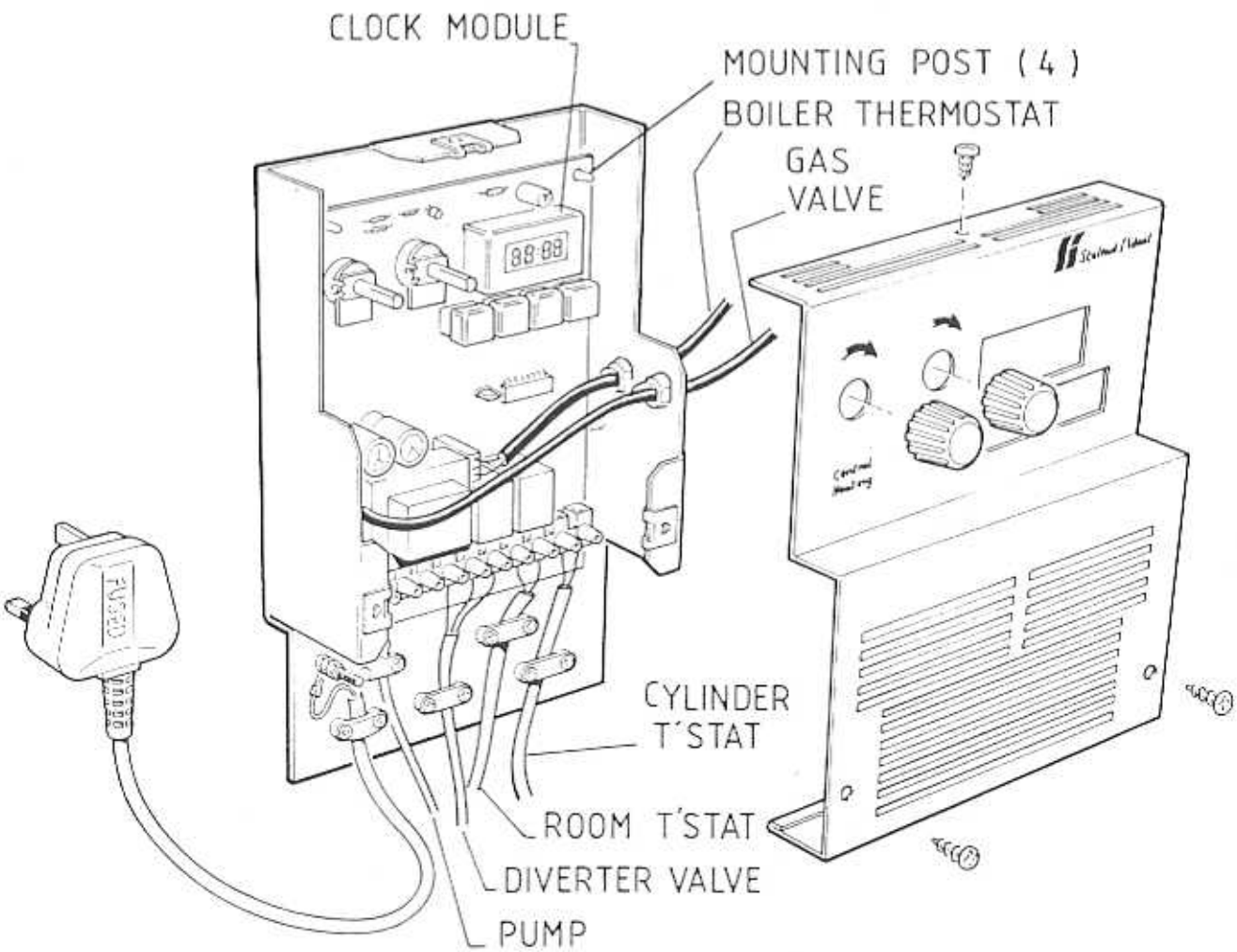
7. Fit the new valve, complete with new sealing washers, and re-assemble in reverse order.





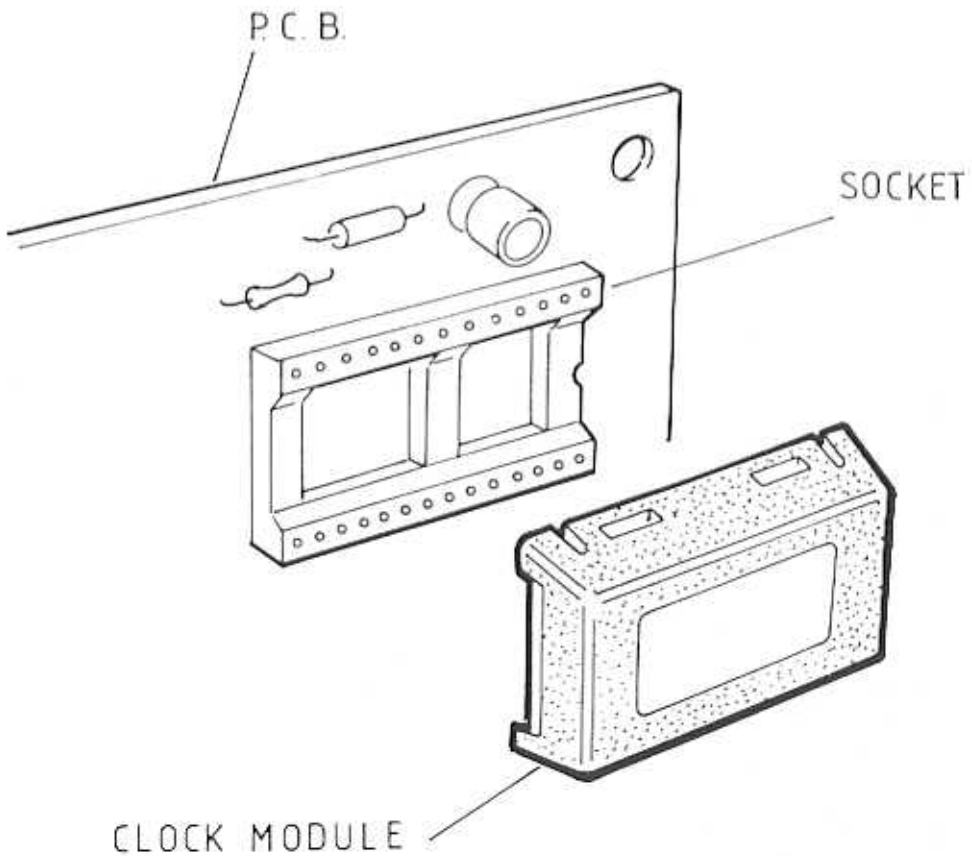
24. PCB REPLACEMENT

1. Remove the control box cover - Refer to Frame 23 (Installation).
2. Disconnect all wiring from the PCB.
3. Disengage the PCB from the mounting posts and withdraw it from the control box.
4. Transfer the clock module to the new P.C.B. - Refer to Frame 24A
5. Fit the new P.C.B. and re-assemble in reverse order.



24A CLOCK MODULE REPLACEMENT

1. Remove control box cover - Refer to Frame 23 (Installation)
2. Pull the clock module out of it's socket.
3. Fit the new module ensuring ;
   (a) It is the right way up, i.e. with the seven prongs at the top as shown.
   (b) It is correctly aligned in the socket.

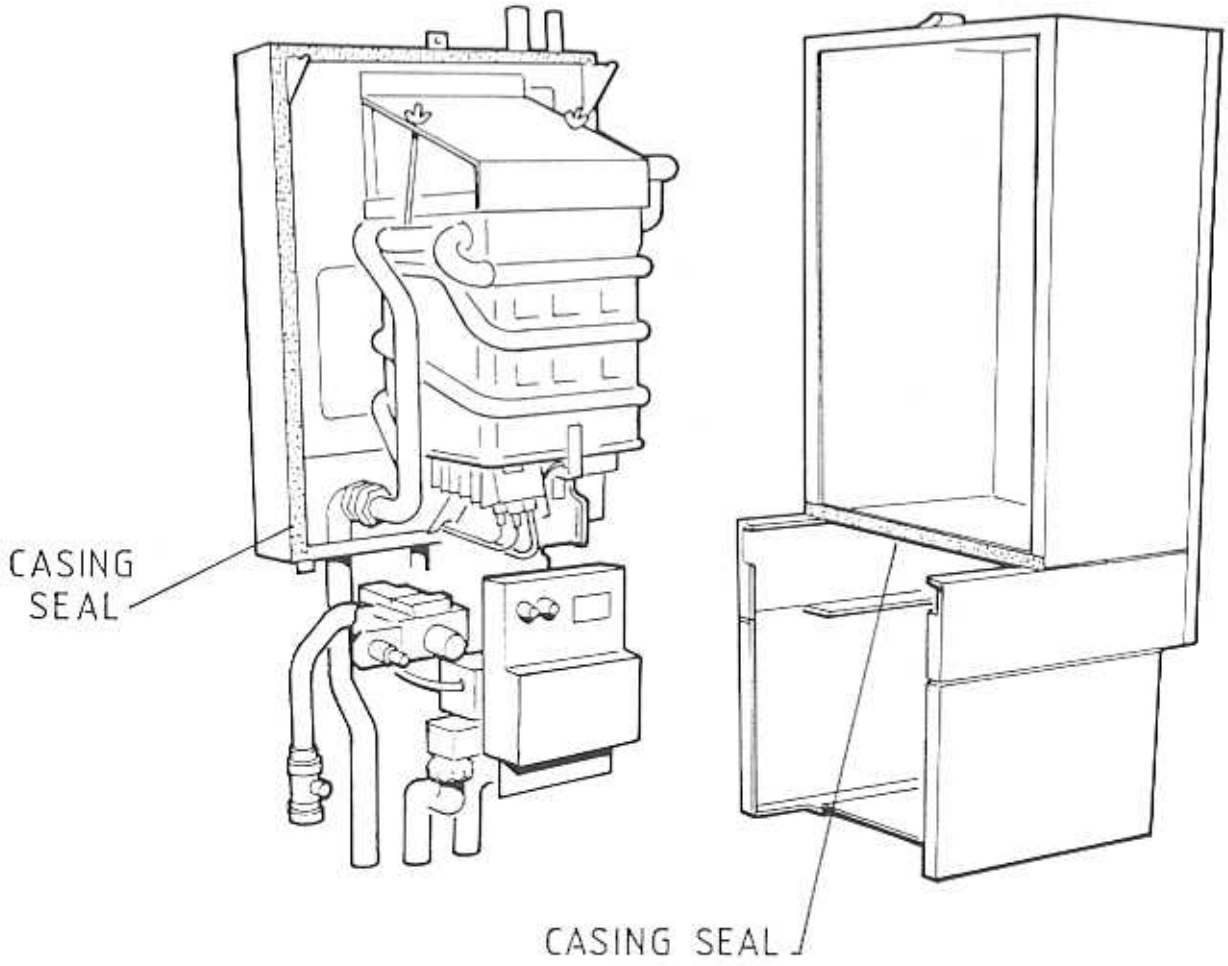


25. CASING SEAL REPLACMENT

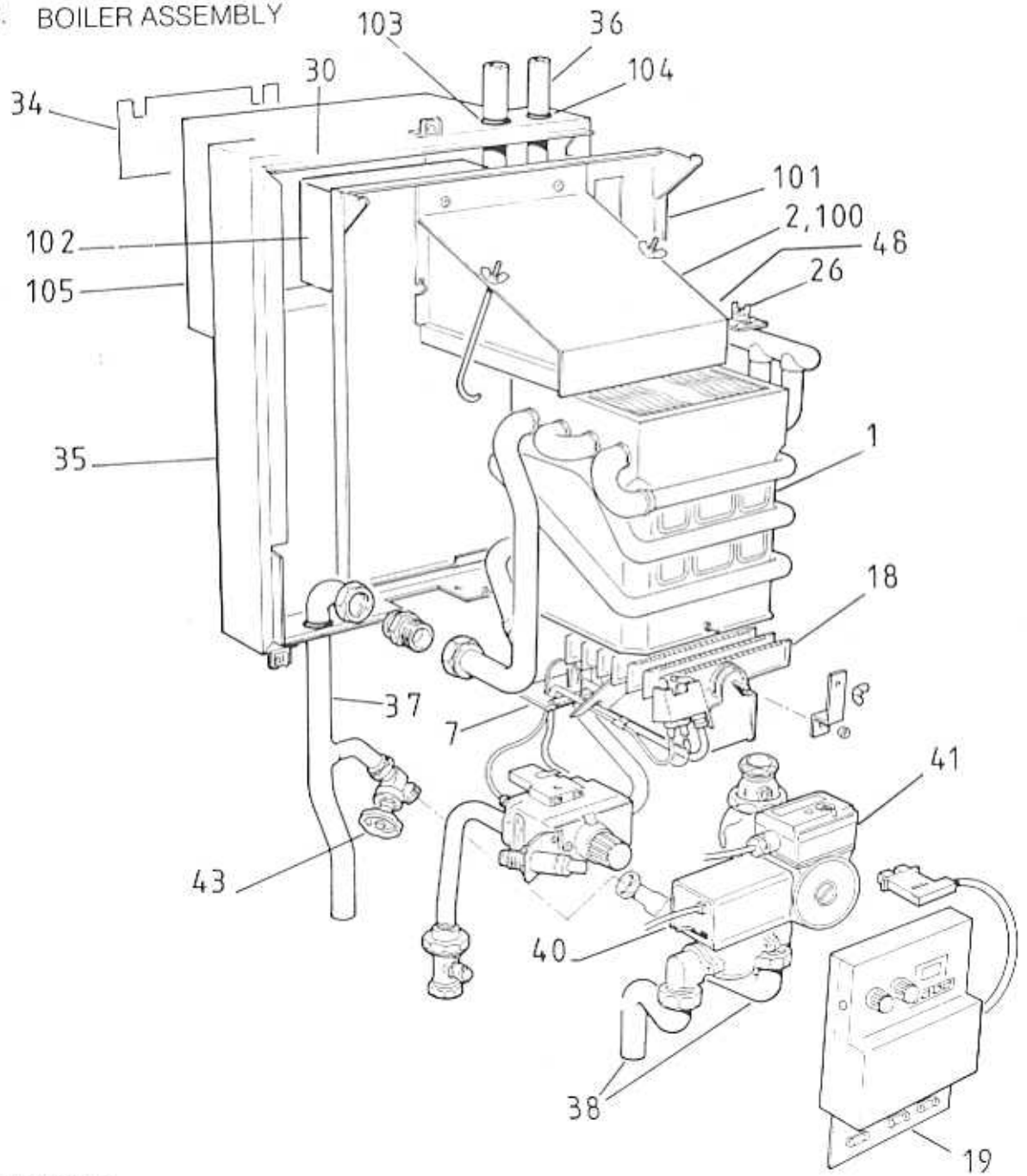
1. Remove the old seals and scrape off any traces of old adhesive.

2 Peel the backing tape off the new sealing strip and apply as shown. Avoid stretching the strip and ensure a good bond by pressing down firmly.

3. Re-assemble in reverse order.
   Note: Ensure that the casing is correctly sealed - compressing the sealing strip to make an airtight joint. If side clearances are limited, then this can be checked by ensuring that top and bottom edges of the casing are located.



26. BOILER ASSEMBLY

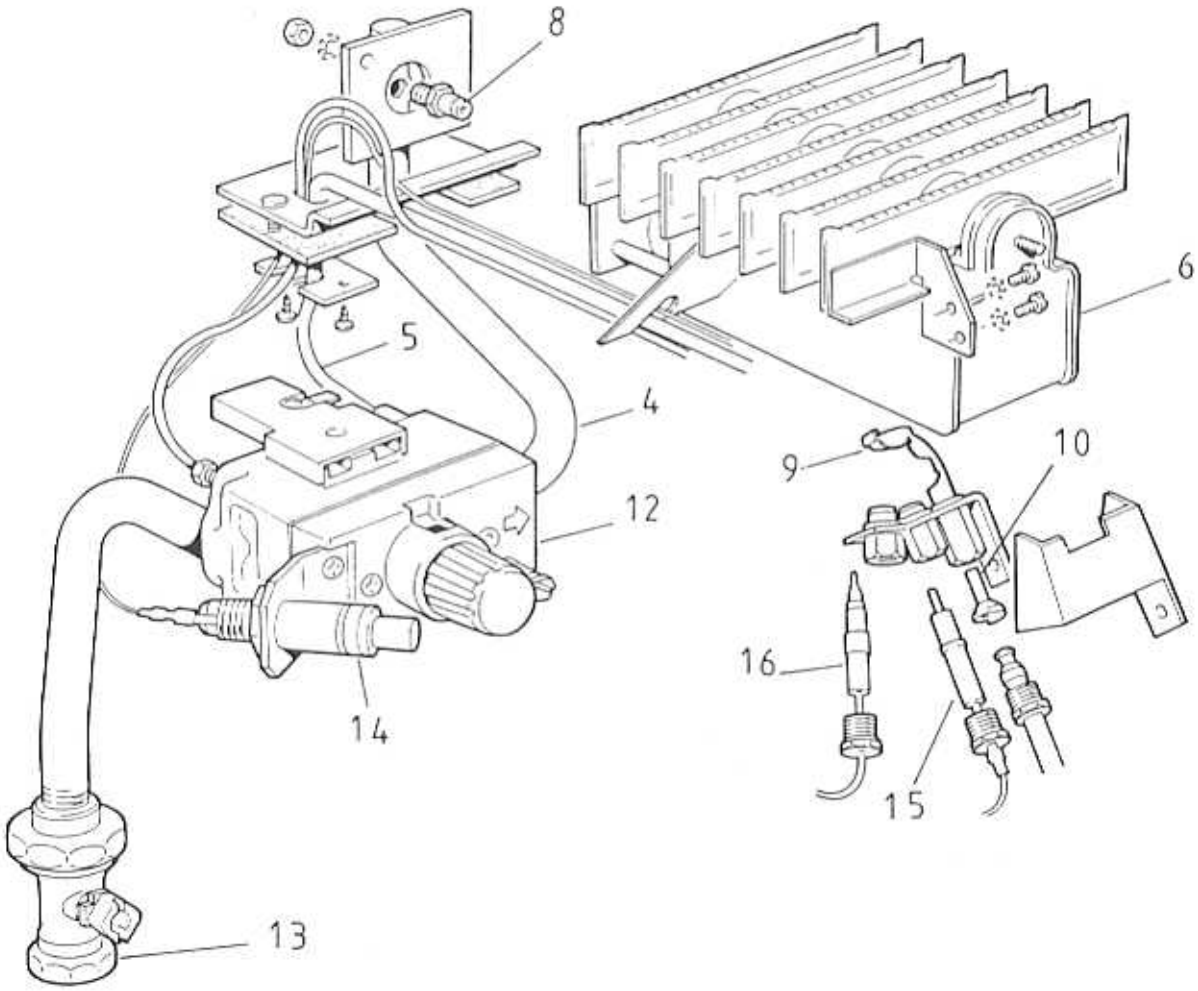


LEGEND

1. Heat exchanger
2 Collector hood (includes item 100)
7 Burner mounting gasket
18 Burner & controls assembly
19 Control box

26 Boiler thermostat
30 Sealing strip
32 Terminal grille assembly
34 Wall mounting plate
35 Back panel
36 Flow pipe with open vent and cold feed pipe
37 Return pipe
38 DHW flow pipe
38 CH flow pipe
40 Diverter valve
41 Pump
43 Bypass valve
48 Boiler overheat thermostat (if fitted)
100 Collector hood gasket
101 Inter panel
102 Flue duct
103 Open vent pipe entry
104 Cold feed pipe entry
105 Air duct

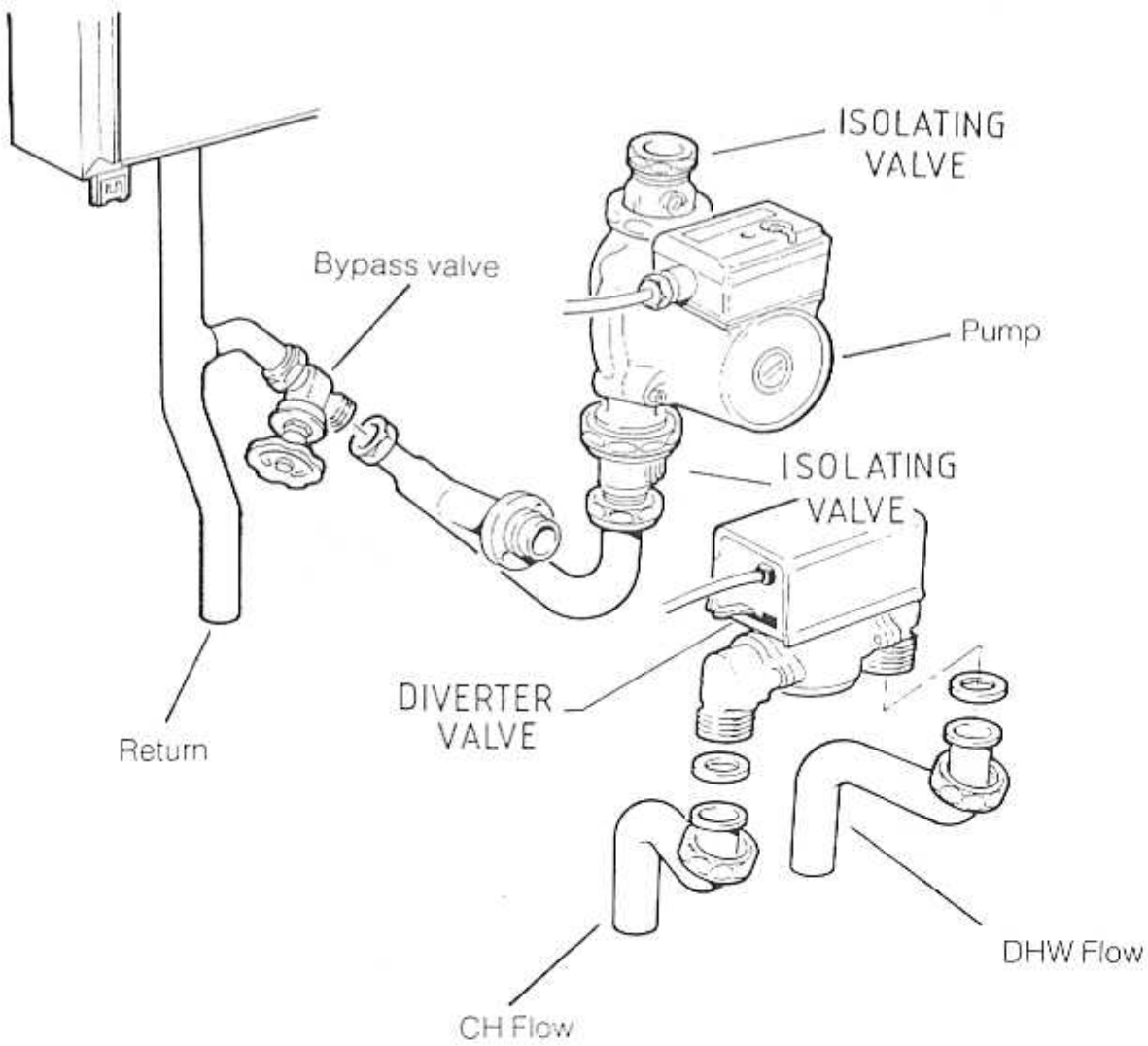
27. BURNER AND CONTROLS ASSEMBLY



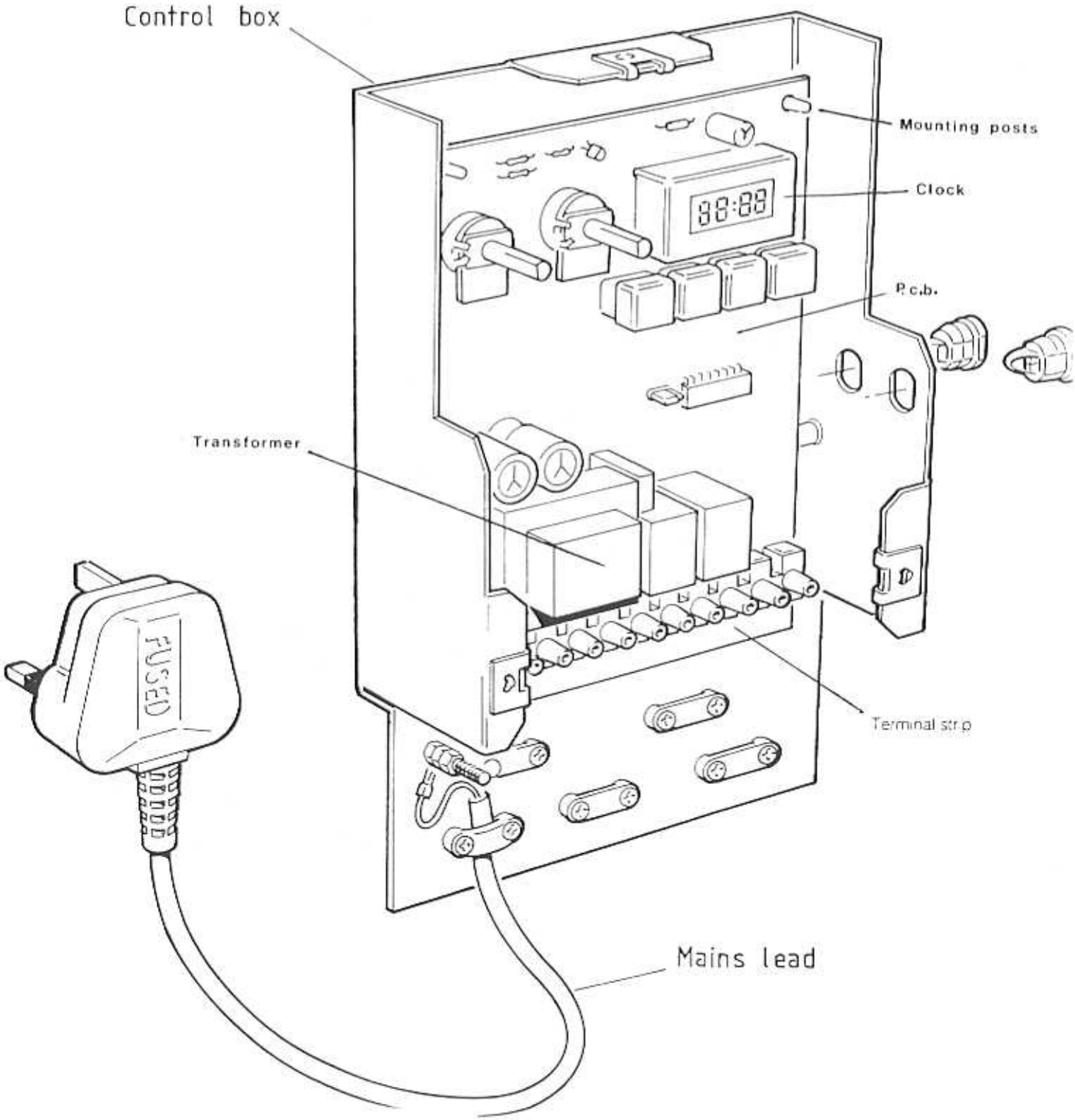
Legend

4	Burner manifold	12	Main gas valve
5	Pilot pipe	13	Gas service cock
6	Main burner	14	Piezo unit
8	Main burner injector	15	Spark electrode
9	Pilot burner	16	Thermocouple
10	Pilot injector		

28. PIPEWORK


ISOLATING VALVE
Bypass valve
Pump
ISOLATING VALVE
DIVERTER VALVE
Return
DHW Flow
CH Flow

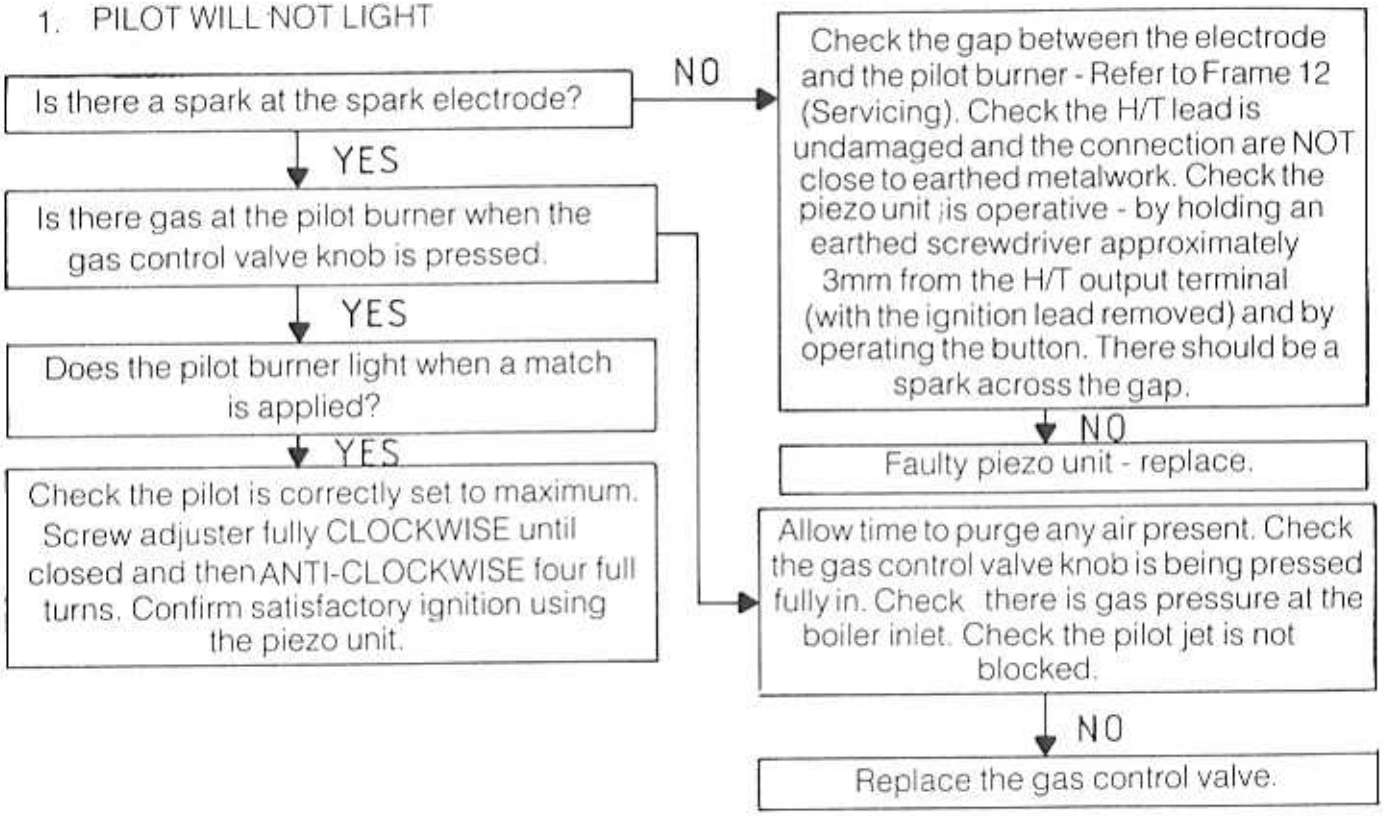
29. BOILER CONTROL BOX



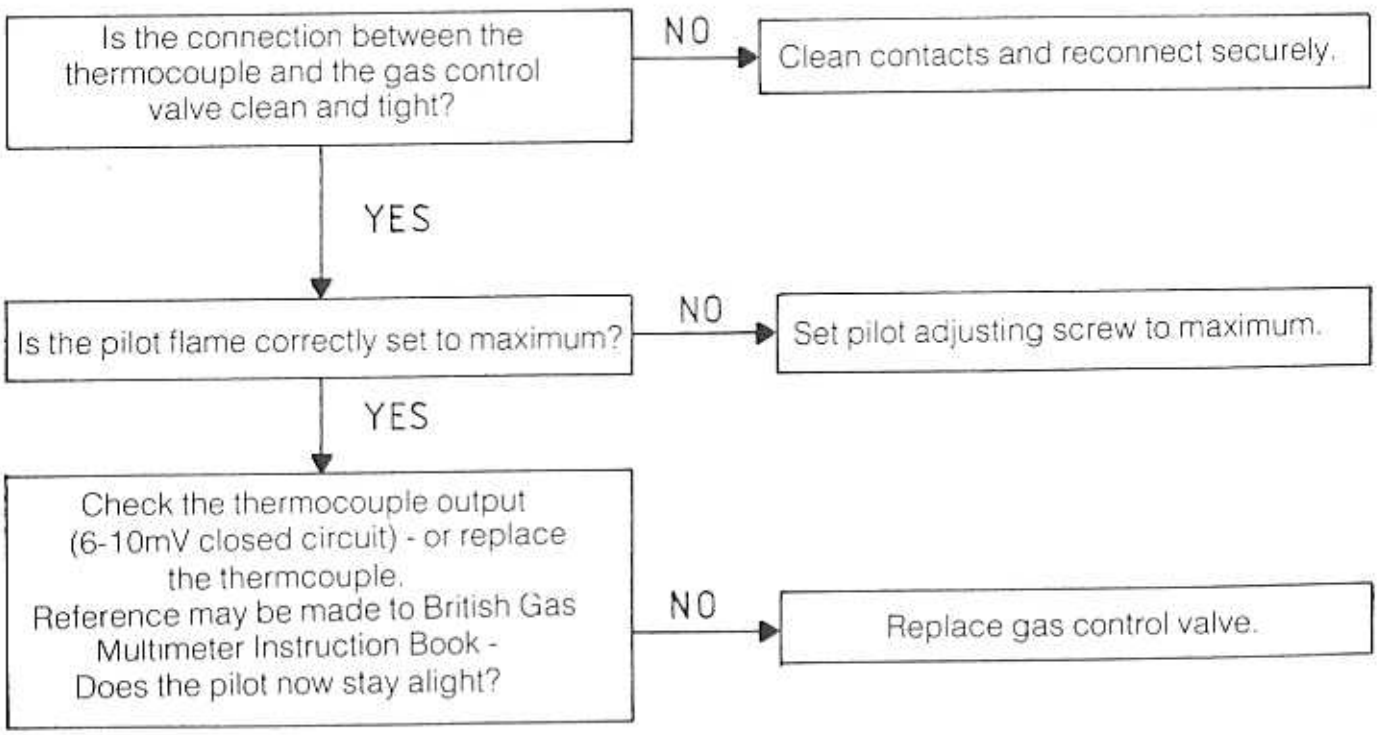
Before attempting any electrical fault finding, ALWAYS carry out preliminary electrical system checks using a suitable test meter.

Detailed instructions on the replacement of faulty components are contained in the 'Servicing' section of this publication.

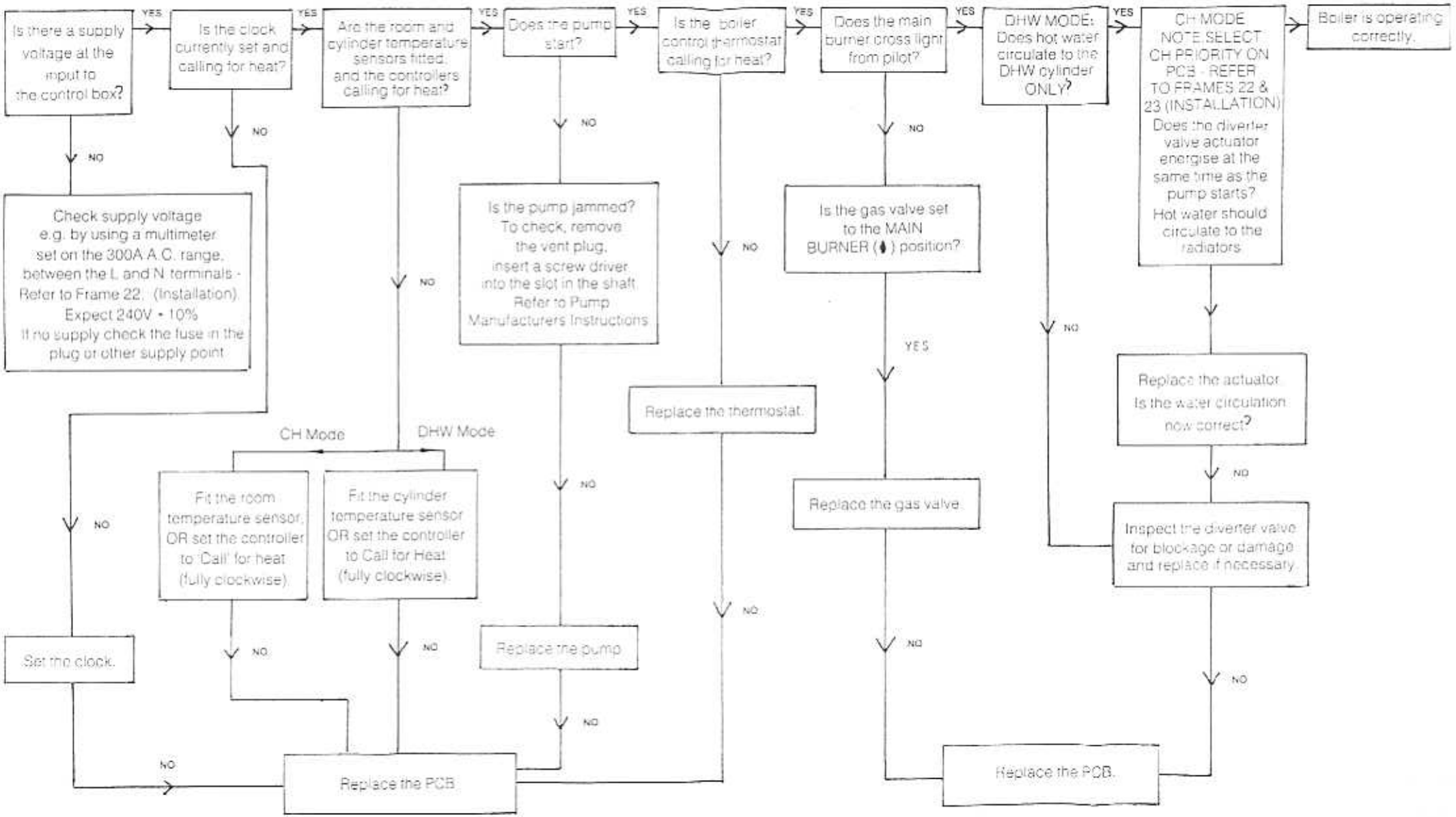
1. PILOT WILL NOT LIGHT



2. PILOT WILL NOT STAY LIT WHEN THE GAS CONTROL VALVE BUTTON IS RELEASED

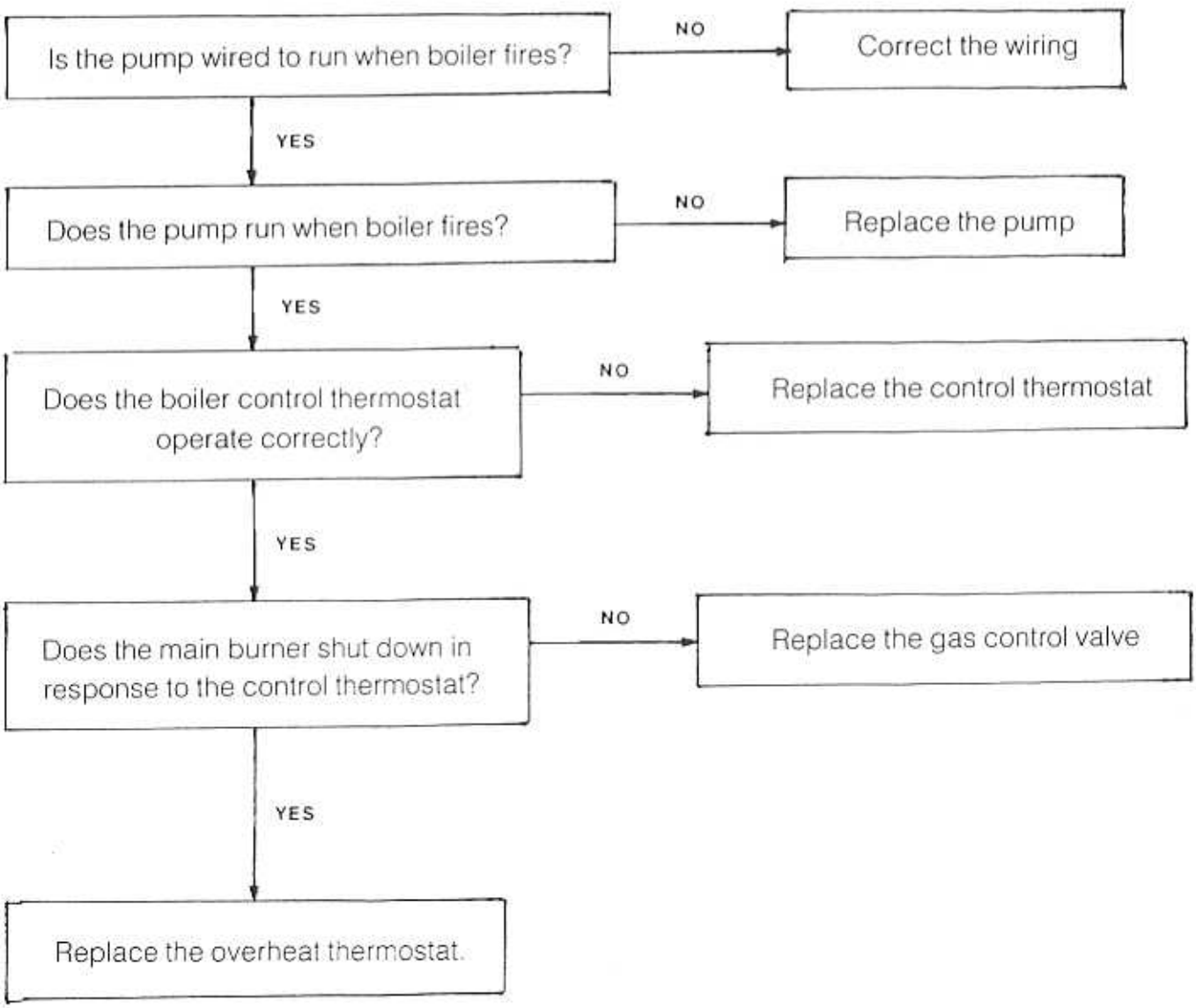


3. PILOT LIT BUT BOILER DOES NOT START - Start from cold



4. MAIN BURNER IS SHUT DOWN BY THE OVER-HEAT THERMOSTAT

☆ SEALED SYSTEMS ONLY ☆



The following list comprises parts commonly required as replacements due to damage, expendability, or such that their failure, or absence, is likely to affect safety or performance. This List is extracted from the British Gas List of Parts, which contains all available spare parts.

Details of the British Gas Lists are held by Gas Regions, STELRAD Distributors and by Merchants.

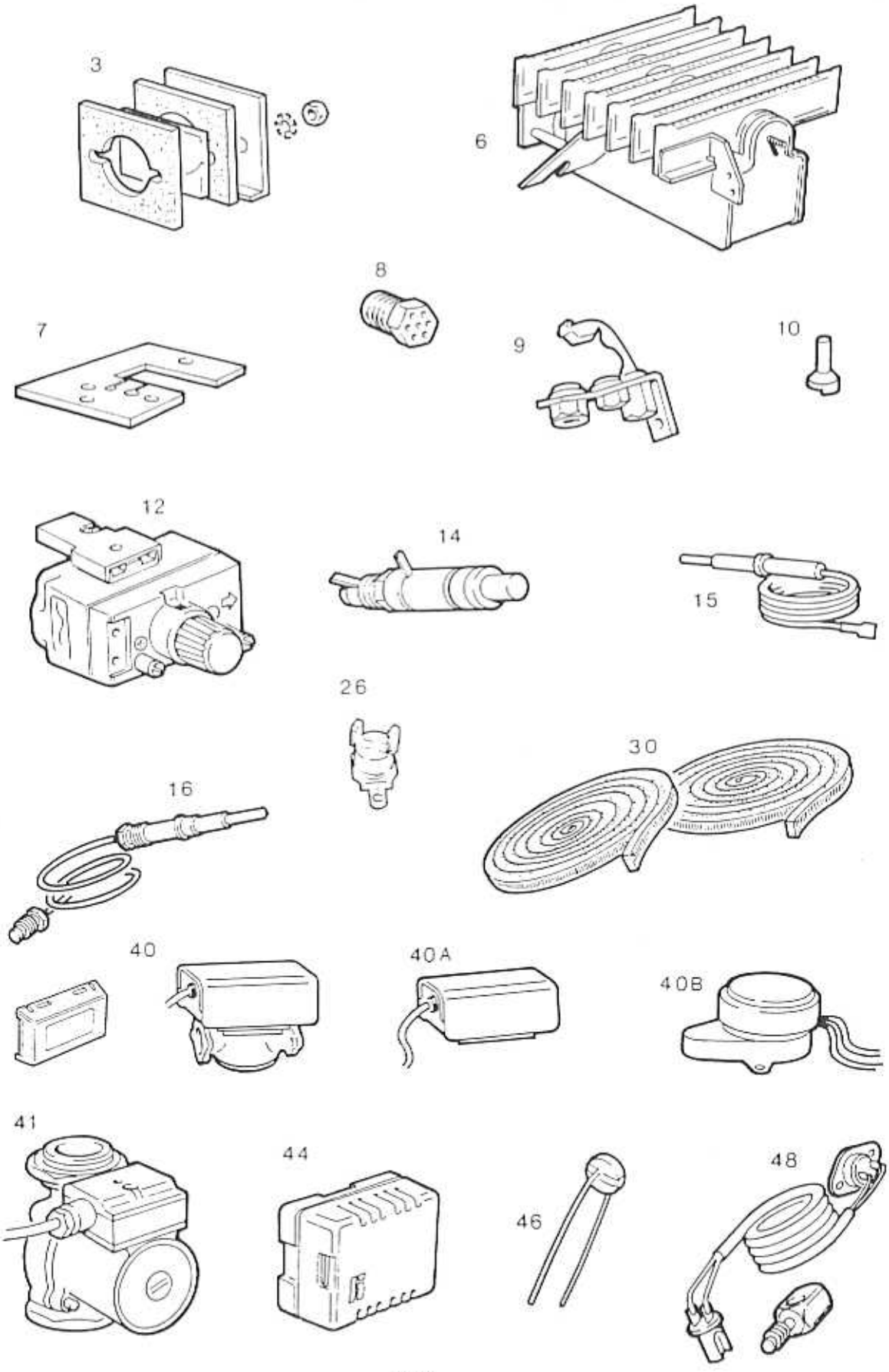
IDEAL COMPACT EXTRA GAS BOILER

When ordering spares, please quote:

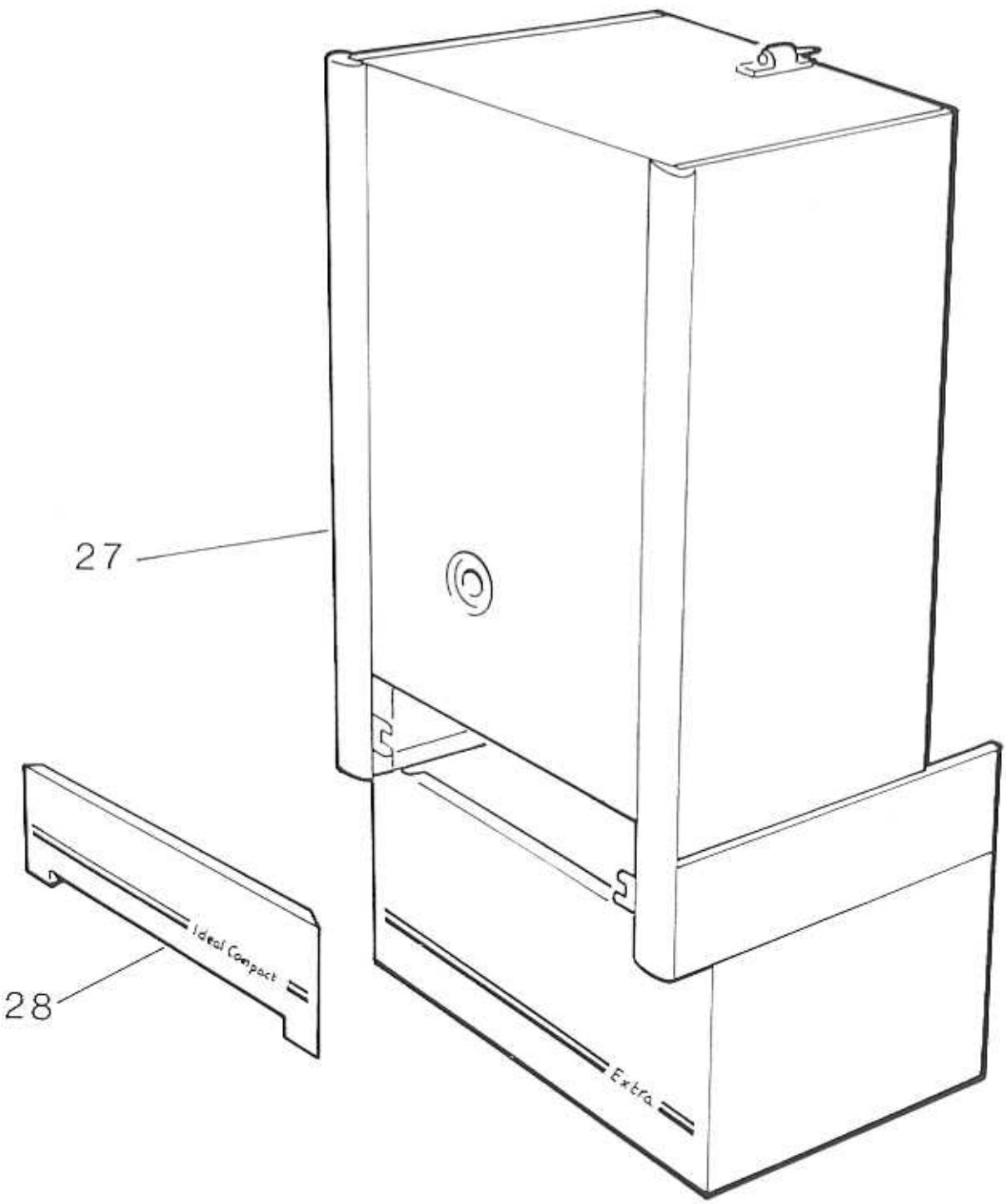
1. Boiler Model
2. Appliance G.C. Number
3. Description
4. Maker's Part Number
5. Quantity

Key No.	G.C. Part No.	Description	No. off	Maker's Part No.
3	319 493	Sight glass assembly comprising sight glass and frame two sight glass gaskets, two M4 Hex nuts and two M4 shakeproof washers	1	160079333
6	382 492	Main burner FURIGAS Type R No. 118 500 047	1	189736066
8	389 500	Main burner injector BRAY Cat. 103 Size 900	1	189736061
7	341 452	Burner mounting gasket	1	189736074
9	319 349	Pilot burner SIT 014 019 with injector	1	589740085
10	392 935	Pilot burner injector SIT 0977 113 0 27mm	1	589038742
12	381 749	3/8in BSP Gas Control SIT Composit 0680 009 240V	1	586031900
14	395 705	Piezo Unit VERNITRON No 60080	1	589830086
15	308 175	Spark electrode & HT lead assembly SIT 0 007 213 with 600 mm lg lead	1	586030088
16	392 934	Thermocouple SIT 0290 150 600mm lg	1	576030051
26	392 921	Thermostat Elmwood 2455R 8214	1	589730056
41	308 204	Pump - GRUNDFOS UPS 15-50 with 2 sealing gaskets	1	589734030
40	366 670	Diverter Valve - HONEYWELL	1	199220427
40A	397 661	Diverter valve actuator - HONEYWELL	1	160065745
40 B	397 662	Actuator motor - HONEYWELL	1	160065746
27	319 476	Boiler casing assembly - white stove enamel, with sight glass assembly, bottom sealing strip, foil insulation and three fixing screws with retaining washers	1	189734031
		Clock module - T E K PT53 -2M		
28	308 203	Controls compartment door with Lighting Instruction label	1	189734091
30	319 125	Sealing Pack - comprising four sealing strips	1	189744033
46	308 218	Room/cylinder temperature sensor	2	589730097
44	308 205	Room/cylinder temperature sensor box	2	589730093
48	308 208	Overheat thermostat - THERMODISC (Sealed systems only) with ECO leads and SIT interrupter 0994012	1	589731513

1. SMALL PARTS



2 BOILER CASING - Exploded View



THIS SYMBOL IS YOUR ASSURANCE OF QUALITY

These appliances are designed for use with Natural Gas only. They have been tested and conform with the provisions of BS. 6332 & BS. 5258.

Products bearing this Kitemark are made to a safety and performance standard under a stringent scheme of supervision and control monitored by the British Standards Institute.

STELRAD GROUP pursues a policy of continuing improvement in design and performance of its products. The right is therefore reserved to vary specification without notice.

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A SUBSIDIARY OF METAL BOX p.l.c.

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Stelrad Ideal

January, 1989

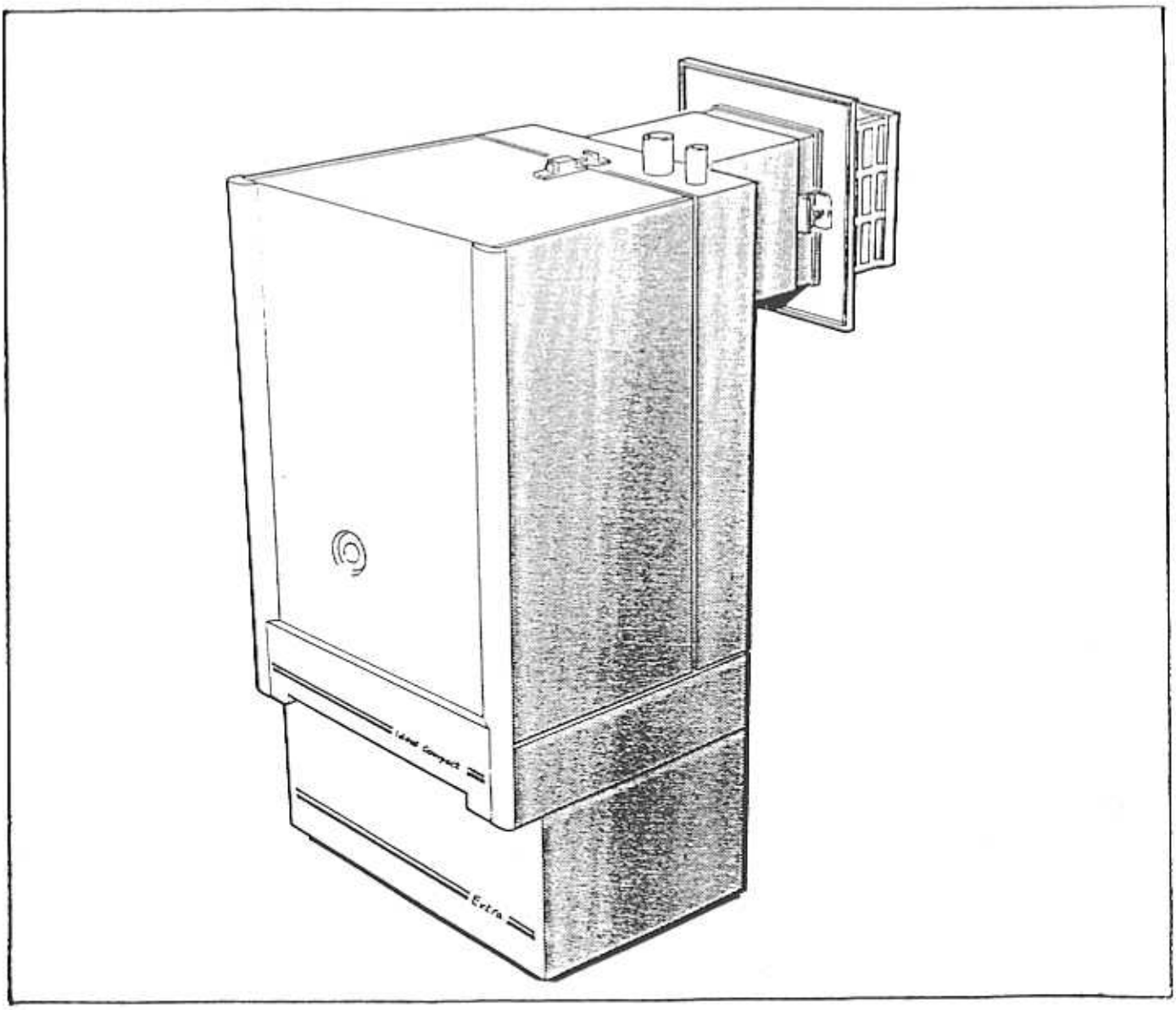
IDEAL COMPACT EXTRA

Wall mounted, Balanced Flue Gas Boiler.

User's Instructions.

CAUTION : To avoid the possibility of injury during the operation or cleaning of this appliance, care should be taken when handling edges of sheet steel components.

G.C. Appliance No. 41 421 52



Stelrad Ideal

The Gas Safety [Installation & Use] Regulations: 1984 inpose certain statutory obligations on gas users. Further information may be obtained on application to the Gas Region.
It is law that all gas appliances are installed by competent persons e.g. CORGI [identified by ⚙] in accordance with the above regulations.
Failure to install appliances correctly could lead to prosecution. It is in your own interest, and that of safety, to ensure that the law is complied with.

ELECTRICAL SUPPLY.
The boiler is supplied with a pre-wired mains cable complete with a three pin plug, but if another mains plug has to be connected for any reason it MUST be a 3-pin type, wired as shown in Fig.1, and fused at 3A.

The appliance MUST be efficiently earthed.

As the colour of the wires in the mains lead of the appliance may not correspond with the coloured markings identifying the 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 symbol ⏚ or coloured GREEN or 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.

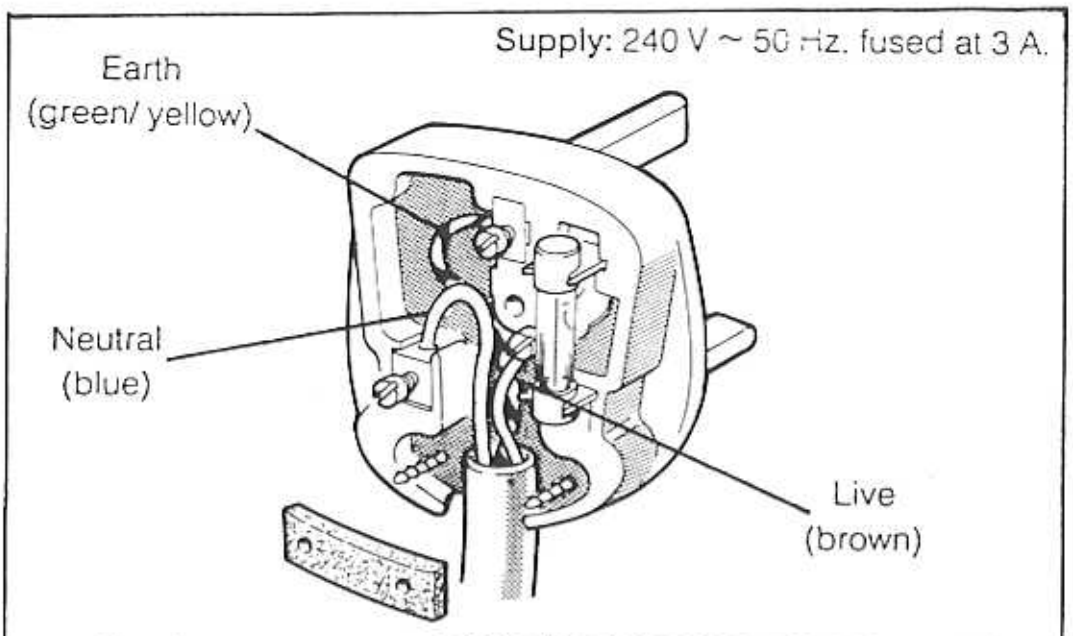


Fig. 1 THREE-PIN PLUG (TO BS. 1363)

MINIMUM CLEARANCES

The minimum clearances given in Table 1 MUST be complied with in order to maintain the safe running of the boiler, and to facilitate servicing.

Table 1

Above	mm	100
the boiler	in	4
At each side	mm	10
of the boiler	in	3/8
Underneath	mm	100
the boiler	in	4

In addition, a MINIMUM clearance of 450mm [18in.] MUST be available at the front of the boiler for servicing.

IMPORTANT: THIS APPLIANCE MUST NOT BE OPERATED WITHOUT THE CASING CORRECTLY FITTED.

NOTES:

[a] If the boiler is installed in a compartment then the compartment MUST NOT be used for storage purposes.

[b] The ventilation provided for the boiler during installation MUST NOT be blocked and a check should be made periodically that the ventilation areas are free from any obstruction.

[c] If it is known or suspected that a fault exists on the boiler it MUST NOT be used until the fault has been correct by a competent person.
It is essential that the instructions in this booklet are strictly followed for safe and economic operation of the boiler.

TO LIGHT THE BOILER , Refer to Fig. 2.

1. Check that the electricity supply to the boiler is OFF.
2. Pull off the controls compartment door.
3. Push in the gas control knob [B] and turn it CLOCKWISE to the OFF [•] position.
4. Turn the gas control knob [B] ANTICLOCKWISE to the PILOT [✳] position.
5. Push in and retain fully depressed the gas control knob [B]. Press and release the ignition button [C] repeatedly until the pilot flame can be seen through the sightglass [A]. When the pilot has lit continue to press in the gas control knob [B] for a further 15 seconds.
6. Should the pilot go out at this or any other stage, push in the gas control knob [B] and turn it CLOCKWISE to the OFF [•] position. Wait for three minutes and then repeat instructions 4 & 5 above but wait longer than 15 seconds before releasing the gas control knob.
7. Switch ON the electricity supply to the boiler and check that the room cylinder temperature controllers [D] and [E] are calling for heat, i.e. are turned fully CLOCKWISE.
8. Set the clock [F], Refer to instructions - SETTING THE CLOCK.
9. Turn the gas control knob [B] ANTICLOCKWISE to the MAIN BURNER [♦] position, and the boiler will light.
10. Refit the controls compartment door.

OPERATION

1. WINTER CONDITIONS

Set the room and cylinder temperature controllers [D] and [E] to the required temperatures. The boiler will supply domestic hot water until satisfied, and then will supply the central heating.

2. SUMMER CONDITIONS.

Set the room temperature controller (D) to minimum, i.e. fully ANTICLOCKWISE, and the cylinder controller (E) to the required temperature. The boiler will supply Domestic Hot Water ONLY (as long as the room temperature is greater than approximately 5°C).

TO SHUT DOWN THE BOILER

1. FOR SHORT PERIODS

Turn the gas control knob (B) CLOCKWISE to the PILOT(*) position.

When heating and/or hot water are again required, return the knob to its original MAIN BURNER (♦) position.

2. FOR LONGER PERIODS

(a) Push in the gas control knob [B] and turn it CLOCKWISE to the OFF [●] position to extinguish the pilot burner.

(b) Switch the electricity supply to OFF.

Note: On restoration of the electricity supply it will be necessary to re-set the clock.

WARNING: If no frost protection is provided and frost is likely during a short absence from home leave the heating controls at a reduced temperature setting.

For longer periods, the entire system should be drained, including the domestic hot water supply.

BOILER OVERHEAT THERMOSTAT (Fitted for sealed systems ONLY)

If the boiler is fitted with a safety cut-out thermostat, the stat will extinguish the main burner and pilot in the event of overheating. Should this occur, allow the boiler to cool and then relight as detailed under 'To Light the Boiler'. If the cut- out condition still persists then turn OFF the boiler and consult your Local Heating Installer.

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CONTROL OF WATER TEMPERATURE

1. The boiler thermostat automatically switches the main burner OFF and ON to maintain the preset temperature.

2. The pilot burner remains alight continuously to give re-ignition to the main burner.

TO RELIGHT THE BOILER

Repeat the procedure 1 to 10 detailed in 'To Light the Boiler'.

ESCAPE OF GAS

Should a gas leak be suspected contact your Local Gas Region without delay.

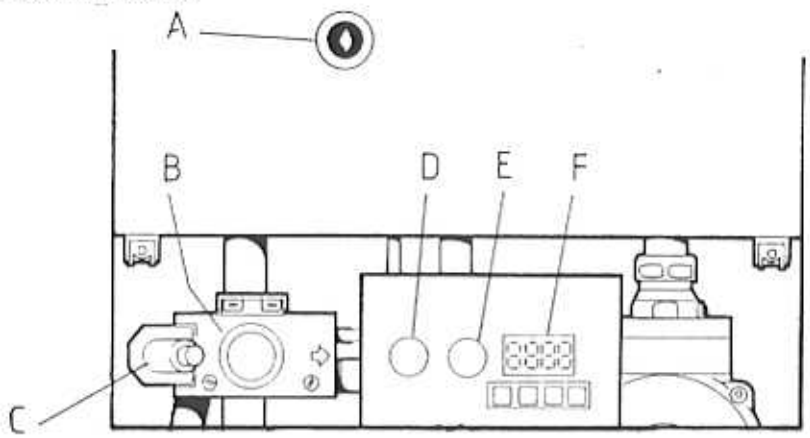
CLEANING

For normal cleaning simply dust with a dry cloth.
To remove stubborn marks and stains wipe with a damp cloth and finish off with a dry cloth.
Do NOT use abrasive cleaning materials.

MAINTENANCE

The appliance should be SERVICED AT LEAST ONCE A YEAR by a qualified Heating Engineer or your Local Gas Region.

BOILER CONTROLS



LEGEND

A Sight glass

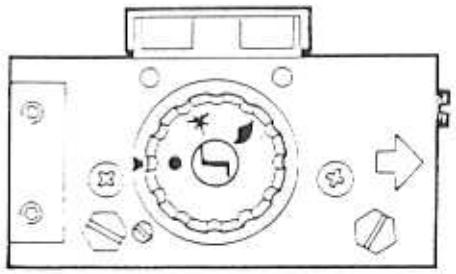
B Gas control knob

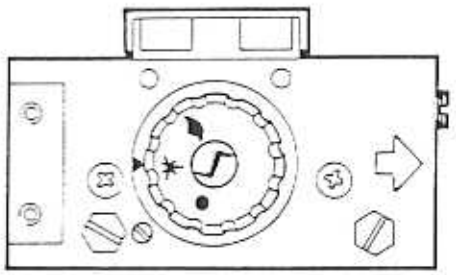
C Piezo ignition button

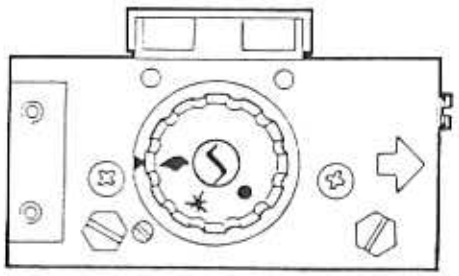
D Room temperature controller

E Cylinder temperature controller

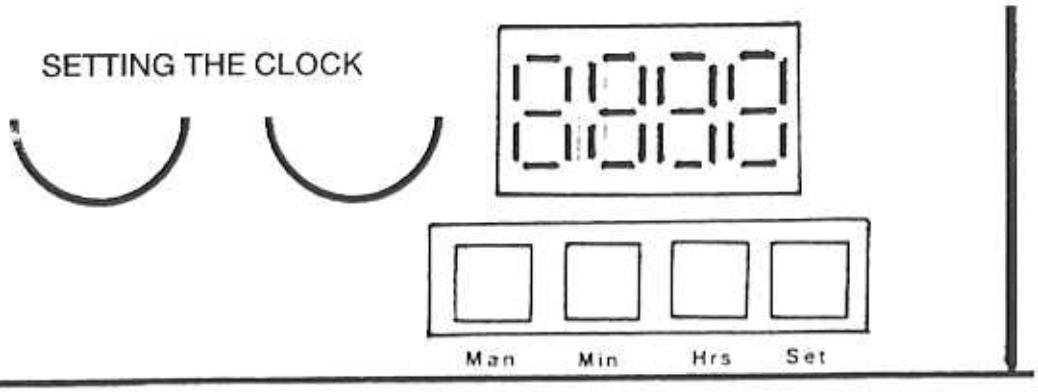
F Clock







SETTING THE CLOCK



1. ACTIVATION

   Press SET and MAN together - the colon will flash on and off.

2. SETTING TIME

   (a) Press SET, colon stops flashing 'T' appears

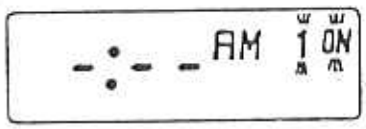
   (b) Press HRS and set hours to correct time, then press MIN and set minutes to correct time.

   N.B. When buttons are pressed for more than 2 seconds, figures advance rapidly.

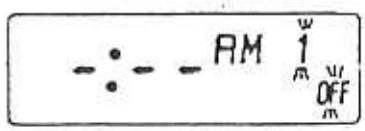
3. SETTING PROGRAMMES

   (a) Programme 1

   i. To programme switch-on time, press SET. Display appears as illustrated with '1 ON' flashing. Set required Switch-On time by pressing HRS and MIN buttons as described in 2(b).

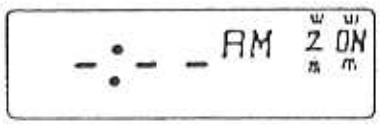


   ii. To programme Switch-Off time press SET. Display appears as illustrated with '1 OFF' flashing. Set required Switch-Off time by pressing HRS and MIN buttons as described above.



SETTING THE CLOCK - Continued

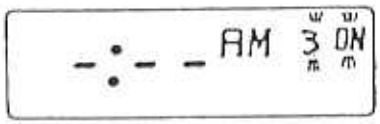
(b) Programmes 2 and 3



i. Press SET.

Display appears with '2 ON' flashing

ii. Programme On and Off times as described for setting in Programme 1.



iii. Press SET again and display appears with '3 ON' flashing

Note: To omit Programme 3 press SET twice

iv. Programme On and Off times as described for setting in Programme 1.

v. Finally press SET again, this will return the time to its normal operating mode and the correct time will be displayed with the colon flashing.

4 TO REVIEW SETTING

Press SET button. Each time the button is pressed the display shows the next stage of the programmed sequence. The part of the display which is flashing shows the stage of the programme displayed, e.g. 1 ON flashing means the first ON time is shown. Continue pressing SET button to return to normal operating mode.

5. MANUAL OVERRIDE

To switch on the appliance when the display is in Off mode, press MAN - the 'ON' on the display will flash to show the switch is not in its programmed position. To return to 'Off' press the MAN button again.

6. SUSPEND

To suspend previously set On and Off times, press SET button until the setting to be suspended is reached. Press MAN button, an 'X' will appear on the display to show this setting has been suspended. Press MAN again to cancel suspend. Return display to normal operation by pressing SET until this is reached.

SETTING THE CLOCK - Continued

7. CLEAR

To clear all programmes, press SET and MAN buttons together.

The switch may then be reset as shown in 1 & 2.

8. REMEMBER

(a) When programming, you must fully complete the sequence by repeatedly pressing the SET button until the colon between hours and minutes flashed indicating that the unit is in the normal operating mode. this applied even if you are only using 1 (or 2) ON/OFF programmes.

(b) Normal Operation

The flashing colon shows that the switch is in normal operating condition and will always display the correct time (unless you have set it incorrectly).

'ON' shows that it has switched on at a programme setting.

(c) Manual Override

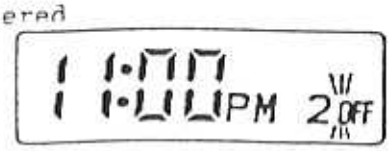
The 'OFF' is flashing to indicate that a previous programme has been overridden and the switch is now Off. It will revert to its normal programmed operation at the next setting.

(d) Suspend

The 'X' shows that a programme instruction has been suspended.

(e) Setting or Review

If the colon between hours and minutes is stationary you are in the programming condition. After pressing SET, the '2OFF' flashing on the display indicates that the second Off time is being shown and may be altered if required.



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THIS SYMBOL IS YOUR ASSURANCE OF QUALITY

These appliances are designed for use with Natural Gas only. They have been tested and conform with the provisions of BS. 6332 & BS. 5258.

Products bearing this Kitemark are made to a safety and performance standard under a stringent scheme of supervision and control monitored by the British Standards Institute

STELRAD GROUP pursues a policy of continuing improvement in design and performance of its products. The right is therefore, reserved to vary specification without notice.

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