

IDEAL SPRINT RAPIDE 90 NF

Wall Mounted, Fanned, Balanced Flue Combination Boiler.

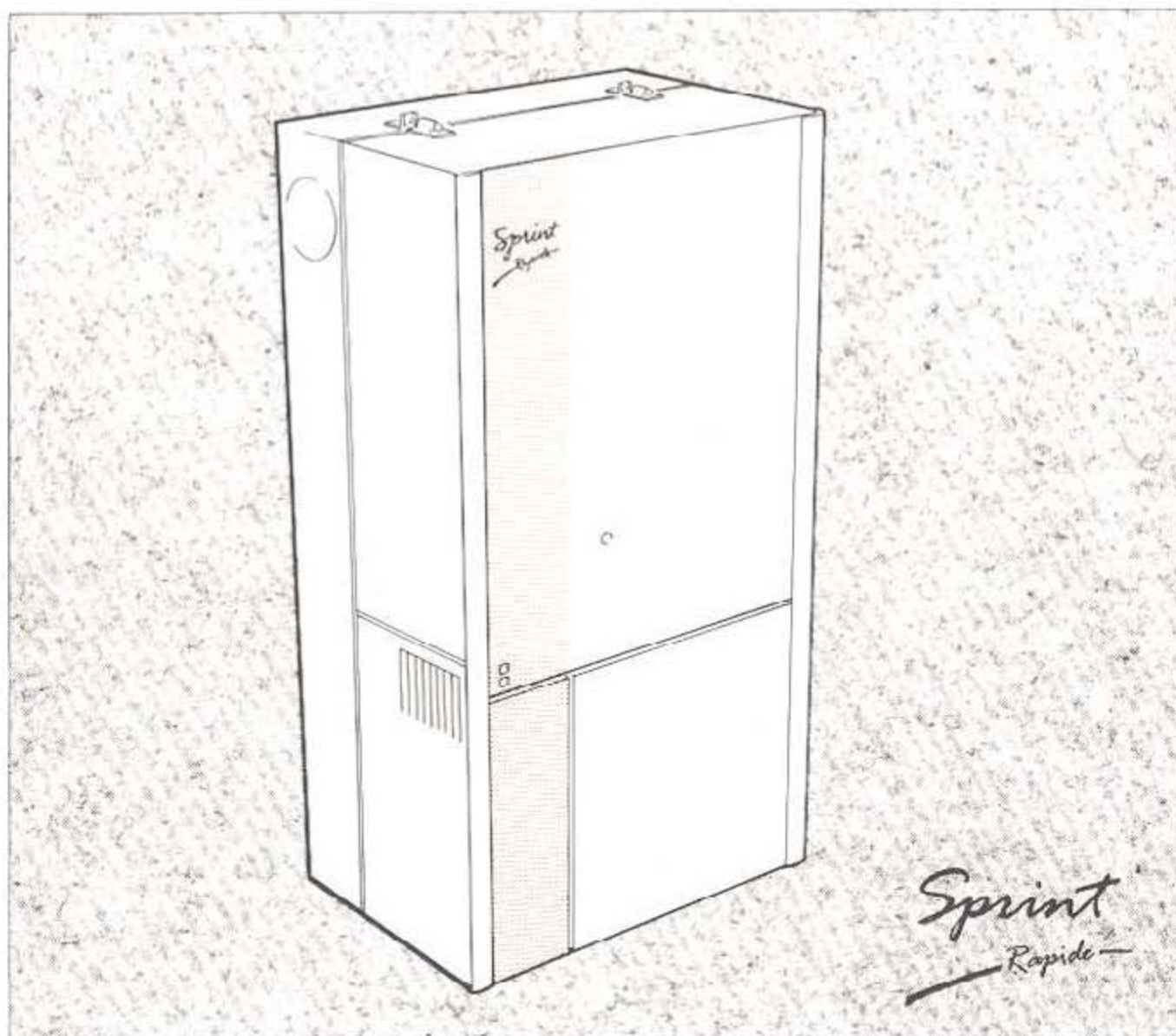
Installation & Servicing.

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.

Ideal Sprint Rapide
90 NF

G.C. Appliance No.
47 415 05

IMPORTANT: This appliance is for use with **NATURAL GAS ONLY.**



NOTE TO THE INSTALLER: Leave these instructions adjacent to the gas meter or with the user

Stelrad Ideal

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Table 1- GENERAL DATA.

Boiler Size		90 NF	
Main Burner		AEROMATIC AC 19/123 258	
Gas Control Valve		HONEYWELL VR 4700 N 4012	
Burner Injector		AEROMATIC 935 440	
Pilot Injector		S.I.T. 33	
Gas Supply Connection		Rc 1/2 (1/2 in. BSP/I)	
Inlet Connection	Domestic hot water	15 mm compression union	
Outlet Connection	Domestic hot water	15 mm compression union	
Flow Connection	Central heating	22 mm compression union	
Return Connection	Central heating	22 mm compression union	
Flue Terminal Diameter	mm (in.)	100 (4)	
MAXIMUM Working Pressure (sealed systems)	bar (psi)	2.65 (38.5)	
MAXIMUM Static Water Head	m (ft)	27.5 (90.0)	
MINIMUM Static Water Head (open water systems)	m (ft)	1.8 (6.0)	
MAXIMUM Domestic Hot Water Inlet Pressure	bar (psi)	10.0 (145.0)	
MINIMUM Domestic Hot Water Inlet Pressure	bar (psi)	0.65 (9.4)	
Electrical Supply		240 V ~ 50 Hz	
External Fuse Rating	(Internal Fuse Rating)	3 A (F2 A)	
Water Content	Central Heating	litre (gal)	2.9 (0.64)
	Domestic Hot Water	litre (gal)	0.55 (0.12)
Dry Weight	kg (lb)	54.5 (120)	
MAXIMUM Installation Weight	kg (lb)	42.0 (92.5)	
Boiler Casing Size	Height	mm (in.)	1000 (39)
	Width	mm (in.)	465 (18)
	Depth	mm (in.)	310 (12)

Table 2- PERFORMANCE DATA Central Heating.

Central Heating		Maximum	Minimum
Burner Setting Pressure (Hot)	mbar (in.w.g.)	7.8 (3.1)	1.5 (0.6)
Output	kW (Btu/h)	19.0 (65 000)	7.3 (25 000)
Input	kW (Btu/h)	24.1 (82 300)	10.3 (35 200)
Gas Consumption (Hot)	l/s (ft ³ /h)	0.62 (79.3)	0.27 (33.9)

Table 3- PERFORMANCE DATA Domestic Hot Water.

Domestic Hot Water		Maximum
Burner Setting Pressure (Hot)	mbar (in.w.g.)	14.5 (5.8)
Domestic Hot Water Output	kW (Btu/h)	26.4 (90 000)
Domestic Hot Water Input	kW (Btu/h)	33.8 (115 300)
Gas Consumption (Hot)	l/s (ft ³ /h)	0.87 (111.1)
Domestic Hot Water Flow Rate at 35°C Temp Rise	l/m (g.p.m.)	10.8 (2.4)

Note. Gas consumption is calculated using a calorific value of 39.7 MJ/m³ (1038 Btu/ft³)

GENERAL

INTRODUCTION

The **Ideal Sprint Rapide 90 NF** is a wall mounted, low water content, fanned, balanced flue combination boiler.

Central heating (C.H.) output is fully modulating between 7.3 kW (25 000 Btu/h) minimum and 19.0 kW (65 000 Btu/h) maximum. Instantaneous domestic hot water (D.H.W.) output is also fully modulating with a maximum of 26.4 kW (90 000 Btu/h).

The boiler is designed for use with fully pumped, sealed water systems, but can also be connected to open water systems if required. A system by-pass is required.

It is supplied, fully assembled, with a domestic hot water calorifier, diverter valve, circulating pump, pressure gauge, safety valve and expansion vessels for both central heating (C.H.) and domestic hot water (D.H.W.). Variable C.H. and D.H.W. temperature controls are fitted and the boiler also features a D.H.W. preheat facility which can be switched on or off as required.

An optional Programmer Kit is available if required.

The boiler casing is of white enamelled mild steel with a removable white and grey glass fascia. The controls compartment, below the boiler, has a white and grey enamelled mild steel lift-off cover. The boiler controls (and Programmer if fitted) can be readily accessed through the hinged door at the left hand side of the lift-off cover.

OPERATION

With no call for C.H. and the D.H.W. preheat switch OFF, the boiler fires only when D.H.W. is drawn off.

With the D.H.W. preheat switch ON the boiler will periodically fire for a few seconds without any D.H.W. draw-off in order to maintain the D.H.W. calorifier in a heated condition.

When there is a call for C.H. the heating system is supplied at the selected temperature until D.H.W. is drawn off. The full output from the boiler is then directed via the diverter valve to the calorifier to supply a maximum D.H.W. draw-off of 10.8 l/min (2.4 g.p.m) at 35° C temperature rise.

At the minimum D.H.W. draw off rate of approximately 3 l/min (0.7 g.p.m) the maximum temperature is limited to 65° C by the modulating gas control.

Refer also to 'Boiler Water Circuit Diagrams' (Page 5.).

Gas Safety (Installation and 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 Standard Codes of Practice:

Codes of Practice:

BS. 6891: 1988	Low pressure installation pipes.
BS. 6798	Installation of gas fired hot water boilers of rated input not exceeding 60 kW.
BS. 5449	Forced circulation hot water systems (small bore and microbore domestic central heating systems).
BS. 5546	Installation of gas hot water supplies for domestic purposes.

INTRODUCTION - GAS SUPPLY

BS. 5440:1 Flues (for gas appliances of rated input not exceeding 60 kW).

BS. 5440:2 Ventilation (for gas appliances of rated input not exceeding 60kW).

IMPORTANT. This appliance is tested and certificated by British Gas for safety and performance. It is, therefore, important that no external control devices, (e.g. flue dampers, economisers, etc.) are directly connected to this appliance unless covered by these 'Installation & Servicing Instructions' or 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 invalidate the British Gas Certification and the normal appliance warranty. It could also infringe the Gas Safety (Installation and Use) Regulations and the above Regulations or other statutory requirements.

Manufacturers notes must NOT be taken, in any way, as over-riding statutory obligations.

LOCATION OF BOILER

The boiler MUST be installed on a flat and vertical non-combustible wall capable of adequately supporting the weight of the boiler and any ancillary equipment.

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 Installation in Timber Frame Housing', reference DM2.

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

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.

Where a room sealed appliance is installed in a room containing a bath or shower then the appliance and any electrical control utilising mains electricity should be situated so 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 the 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 the installation MUST allow adequate space for servicing in front of the boiler and for air circulation around the boiler. The amount of side clearance will depend on the type of connections used.
2. This position MUST also permit the provision of a satisfactory flue termination.

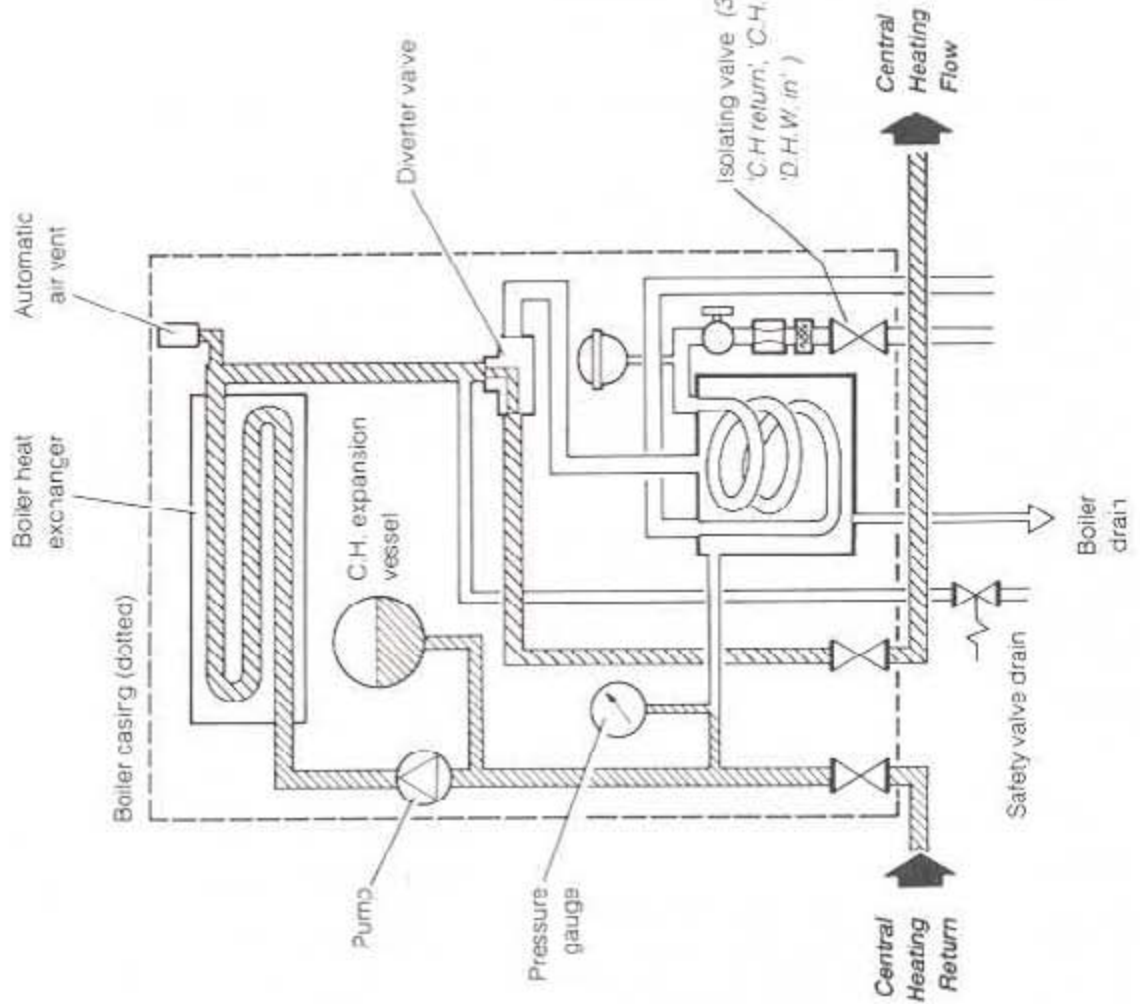
GAS SUPPLY

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

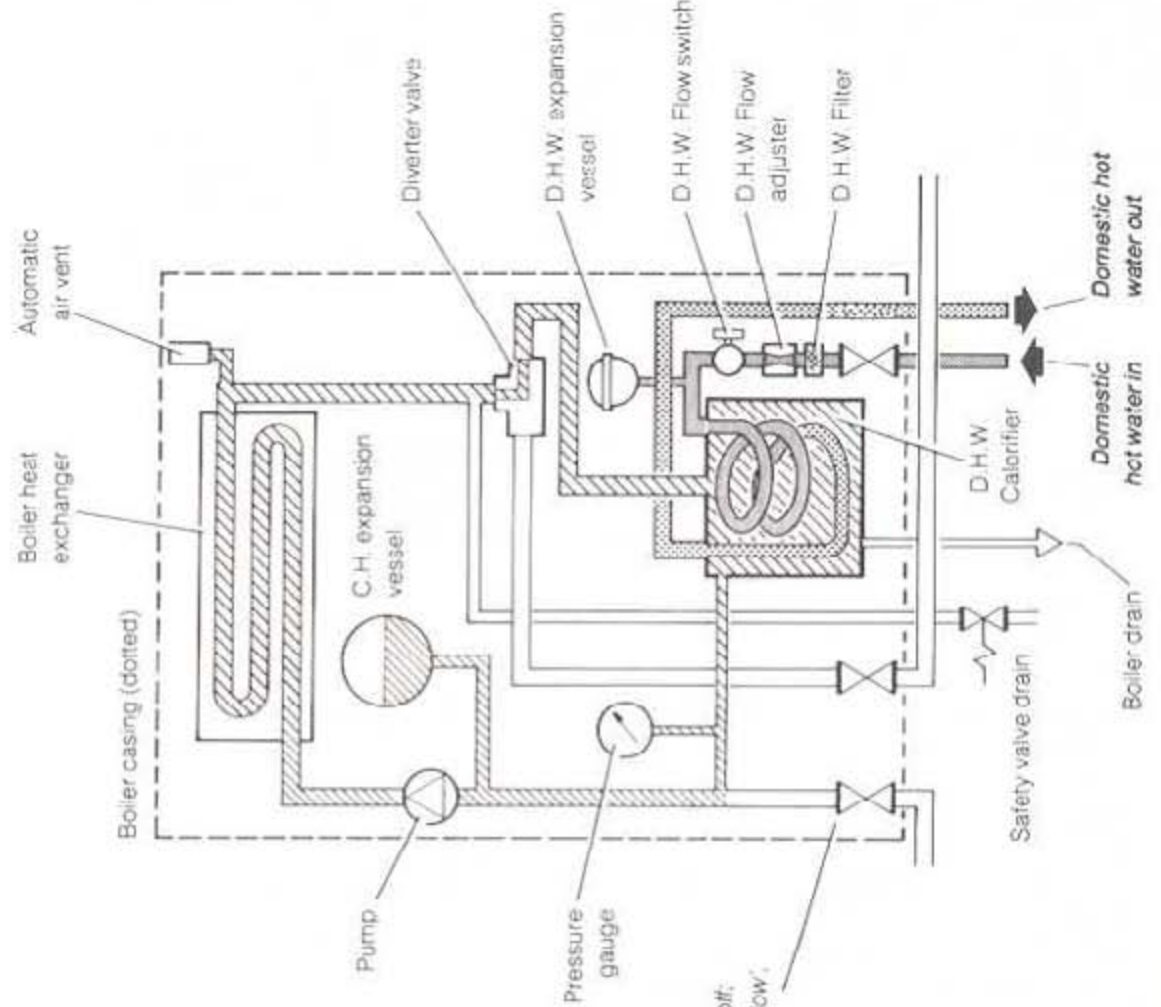
A gas meter can only be connected by the Local Gas Region or by a local Gas Region Contractor.

BOILER WATER CIRCUIT DIAGRAMS

Central Heating (C.H.) Water Circuit



Domestic Hot Water (D.H.W.) Circuit



GENERAL

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.

FLUE INSTALLATION

The flue must be installed in accordance with the recommendations 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 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 4 or in the Instructions for Vertical Flues.
4. Where the lowest part of the terminal is fitted less than 2 m (6.6 ft.) above a balcony, above ground or above a flat roof to which people have access then the terminal MUST be protected by a purpose designed guard.
Terminal guards are available from:
Quinnel, Barret & Quinnel Ltd., 884 Old Kent Road, London, SE 15 (Model 304)
and from,
Tower Flue Components Ltd., Vale Rise, Tonbridge, Kent, TN9 1TB (Model K1).
Ensure that the guard is fitted centrally over the terminal.
5. Where the terminal is fitted within 850 mm (34 in.) of a plastic or painted gutter or 450 mm (18 in.) of painted eaves then an aluminium shield at least 750 mm (30 in.) 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 NOT be closer than 25 mm (1 in.) to combustible material.
7. If the terminal is fitted less than 2 m (6 ft. 6 in.) above a balcony, above ground or above a flat roof, then the minimum spacing in Table 4., Nos 2, 3, 4, 5 and 6 would be 75 mm to allow the fitting of a terminal guard.
8. Where fitting of the terminal wall plate is essential, i.e. wall thicknesses over 610 mm (24 in.) or with an inaccurately cut hole, the minimum spacing in Table 4., Nos 2, 3, 4, 5 and 6 would be 60 mm to allow the plate to be fitted. Refer to Frames 12 or 23 of the Installation section.

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.

TERMINAL

The terminal assembly can be adapted to accommodate various wall thicknesses, refer to Frame 3 (Installation). Refer to Table 4 for details of allowable terminal positions.

AIR SUPPLY

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

FLUE INSTALLATION - WATER CIRCULATION SYSTEM

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 in Table 5 and are related to maximum rated heat input.
3. Both air vents MUST communicate with the same room or internal space, or MUST be on the same wall to outside air.
4. In siting the air vents care must be taken to avoid the freezing of pipework.

Table 4 - BALANCED FLUE TERMINAL POSITION

Terminal Position	Minimum Spacing
1. Directly below or adjacent to an operable window, air vent or any other ventilation opening.	300 mm (12 in.)
2. Below guttering, drain pipes or soil pipes	25 mm (1 in.)
3. Below eaves	25 mm (1 in.)
4. Below balconies or a car port roof.	25 mm (1 in.)
5. From vertical drain pipes or soil pipes	25 mm (1 in.)
6. From internal or external corners.	25 mm (1 in.)
7. Above adjacent ground, roof or balcony level.	300 mm (12 in.)
8. From a surface facing the terminal.	600 mm (24 in.)
9. From a terminal facing a terminal.	1200 mm (48 in.)
10. From an opening in a car port (eg. door or window) into dwelling	1200 mm (48 in.)
11. Vertically from a terminal on the same wall.	1500 mm (60 in.)
12. Horizontally from a terminal on the wall.	300 mm (12 in.)

Table 5 - AIR SUPPLY

Position of air vent	Air from room/ internal space	Air direct from outside
High level $\text{cm}^2 (\text{in.}^2)$	297 (46)	149 (23)
Low level $\text{cm}^2 (\text{in.}^2)$	297 (46)	149 (23)

WATER CIRCULATION SYSTEM

The boiler is designed for connection to sealed water central heating systems, but connection may be made to open water systems if required. The domestic hot water (D.H.W.) calorifier is incorporated within the boiler casing and only requires connection to the mains water supply.

IMPORTANT. Ensure that the mains water supply pressure is adequate to provide the required D.H.W. flow rate. Refer to Table 1 and 2 on page 3

The central heating system should be in accordance with the relevant recommendations given in BS. 6798 and, in addition, for smallbore and microbore systems; BS. 5449

GENERAL / INSTALLATION

The domestic hot water system should be in accordance with the relevant recommendations of BS: 5546.

Copper tubing to BS: 2871:1 is recommended for water carrying pipework and MUST be used for pipework carrying potable water.

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.

Draining taps should be at least 1/2 in. BSP nominal size and be in accordance with BS: 2879.

Maximum recommended system hydraulic losses are given in Table 6 below.

Table 6- WATER FLOW RATE & PRESSURE LOSS

Boiler Output	kW (Btu/h)	19.0 (65 000)
Water Flow Rate	l/min. (gal./h)	24.6 (325)
Temperature Differential		11° C (20° F)
Head Available for System	mbar (in.w.g.)	209 (84)

ELECTRICAL SUPPLY - UNPACKING

ELECTRICAL SUPPLY

Wiring external to the appliance MUST be in accordance with the current I.E.E. Wiring Regulations and any Local Regulations which apply.

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

The method of connection to the mains electricity supply MUST facilitate the complete electrical isolation of the boiler, preferably by the use of a fused 'three pin' plug and shuttered socket outlet, both complying with the requirements of BS: 1363. Alternatively, a fused double pole switch, having 3 mm (1/8 in.) contact separation in both poles and serving only the boiler, may be used. The point of connection to the mains should be readily accessible & adjacent to the boiler, except that for bathroom installations the point of connection to the mains MUST be situated outside of the bathroom.

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

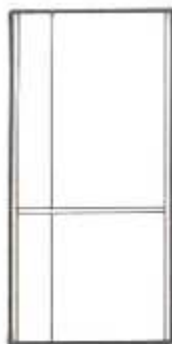
INSTALLATION

UNPACKING

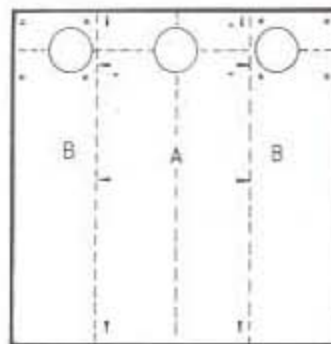
1 UNPACKING

The boiler is supplied fully assembled and ready for REAR flue installation in pack 'A' - together with a standard flue assembly for lengths up to 406 mm (16 in.), rear or side outlet, in pack 'B'. Unpack and check the contents.

PACK 'A' CONTENTS



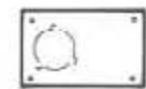
Complete boiler.



Wall mounting template.



Wall mounting plate.



Side outlet terminal mounting plate.

PACK 'A' HARDWARE PACK

-  No. 10 x 2 in. long screws, 14 off.
-  Wall plugs, 14 off.
-  M6 Wing nuts, 2 off.
-  Sealing discs, 2 off.
-  22 mm compression nuts and olives, 2 off.
-  15 mm compression nuts and olives, 2 off.
- 15 mm compression nut & olive (separate bag) for safety valve

PACK 'B' CONTENTS

Telescopic air Inlet/ products outlet assembly

Sliding collar

Locking collar

Rubber gasket (supplied in bag)

Terminal wall plate.



-  No. 8 x 6 in. long self tapper, 9 off.
-  Adhesive tape.
-  Duct cutting support rings, 2 off.
-  Washers, 3 off.

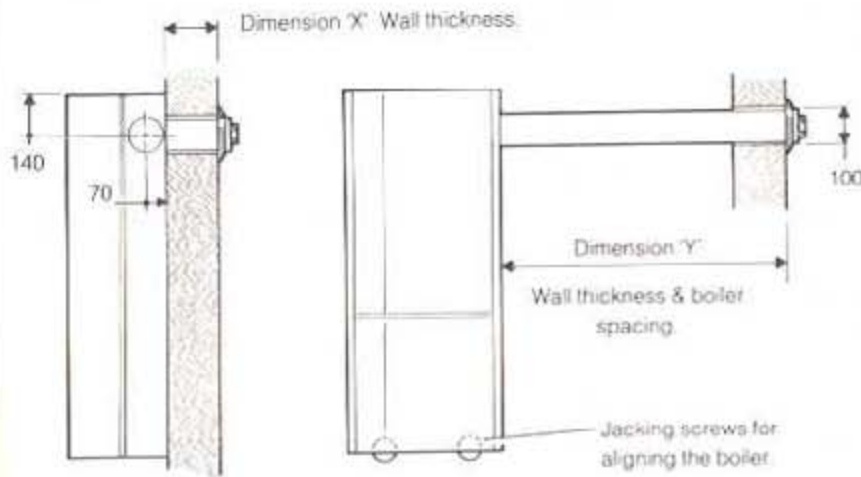
2 WALL MOUNTING AND FLUE LENGTH

IMPORTANT. The boiler **MUST** be installed in a vertical position.

All dimensions in mm (in).

REAR FLUE INSTALLATION

SIDE FLUE INSTALLATION



Flue Kits.

Pack B – supplied as standard.

Pack D - optional extension kit for side & rear flue outlet. Refer to Frame 26 (up to 3 lengths)

Flue length, Dimension 'X' or 'Y'	Flue packs required
114 to 216 mm (4 1/2 to 8 1/2 in.)	Pack B. (Cut down as in Frames 8 & 18)
216 to 406 mm (8 1/2 to 16 in.)	Pack B
406 to 1280 mm (16 to 50 3/8 in.)	Pack B (1 off) & Pack D (1 off)
1280 to 2140 mm (50 3/8 to 84 1/4 in.)	Pack B (1 off) & Pack D (2 off)
2140 to 3000 mm (84 1/4 to 118 1/8 in.)	Pack B (1 off) & Pack D (3 off)

3 BOILER DIMENSIONS AND CLEARANCES

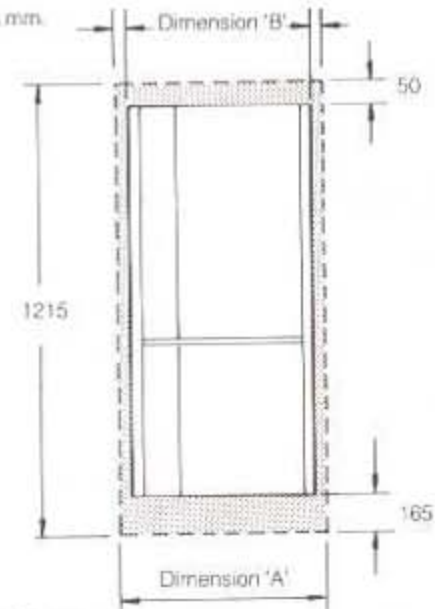
All dimensions in mm.

The following minimum clearances must be maintained for operation and servicing

Additional space will be required for installation, depending upon site conditions.

Dimension	Side Flue	Rear Flue
'A'	520 mm	495 mm
'B'	15 mm flue side 40 mm non flue side	15 mm both sides

In addition, a minimum clearance of 450 mm **MUST** be available at the front of the boiler for servicing, (side and rear flue installations)



All dimensions are from the outer casing.

Side and Rear Flue Installations.

1. Provided that the flue hole is cut accurately, e.g. with a core drill the flue can be installed from inside, but for flue lengths greater than the width/depth of the boiler then the space in which the boiler is to be installed must be at least equal to the flue length plus the length of the terminal grille (inside installation and up to 610 mm wall thickness only).
2. If a core boring tool is to be used from inside the building, the space in which the boiler is to be installed must be at least wide enough to accommodate the tool.

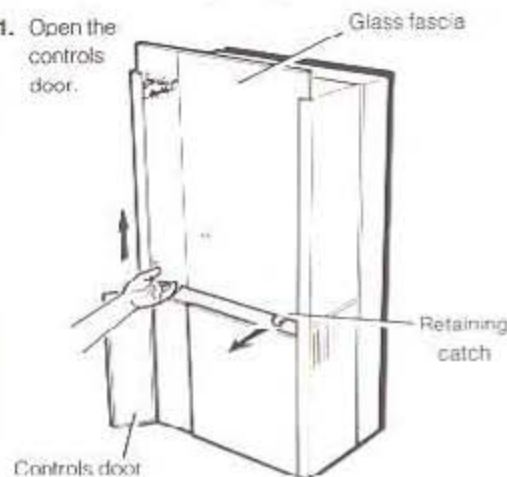
Side Flue Installations ONLY.

3. Once the boiler has been installed, the clearance on the non flue side may be reduced to 10 mm.

4 BOILER CASING REMOVAL

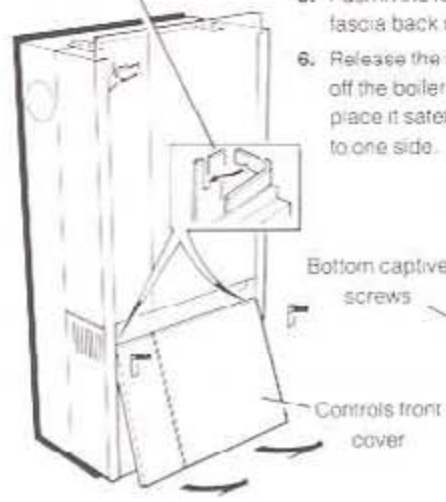
Take care not to damage the glass fascia panel.

1. Open the controls door.



2. Slide the glass fascia upwards and locate it in the 'pull-out' retaining catch.

Upper fixing lugs



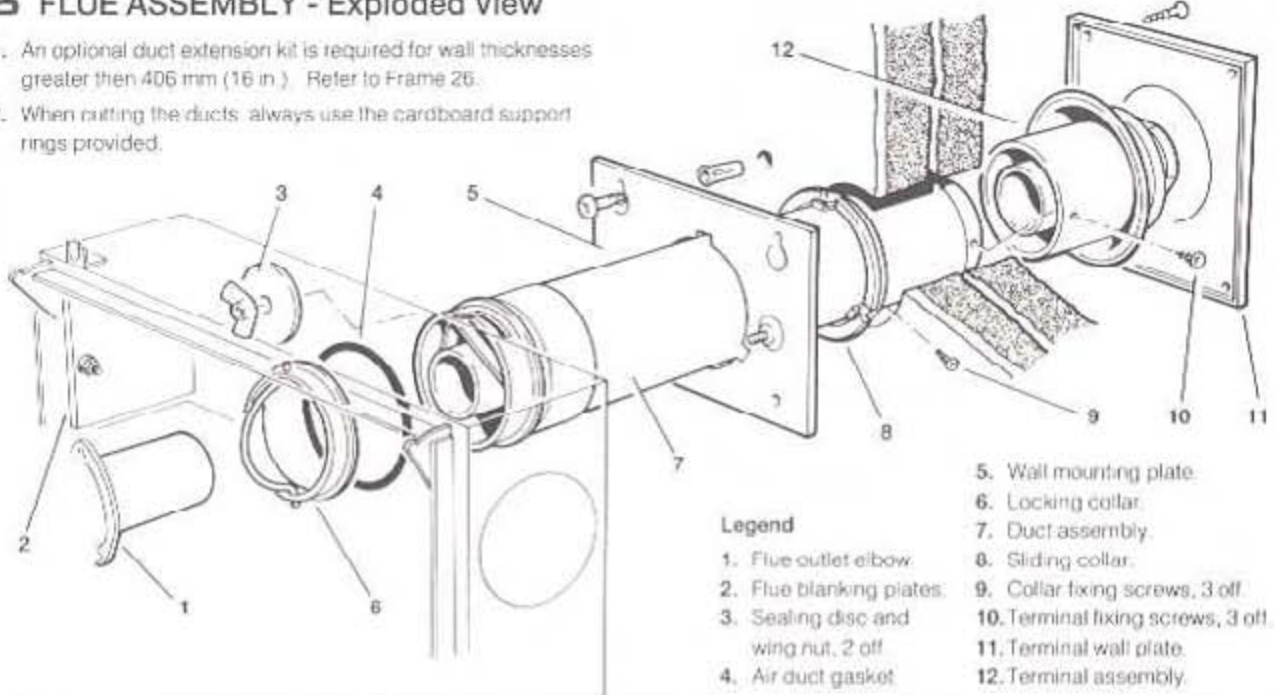
3. Remove the controls front cover by pulling forward at the bottom, then lifting to disengage from the upper fixing lugs.

4. Release the bottom captive screws.
5. Push in the retaining catch and slide the glass fascia back down to its working position.
6. Release the top captive screws, lift the casing off the boiler & place it safely to one side.



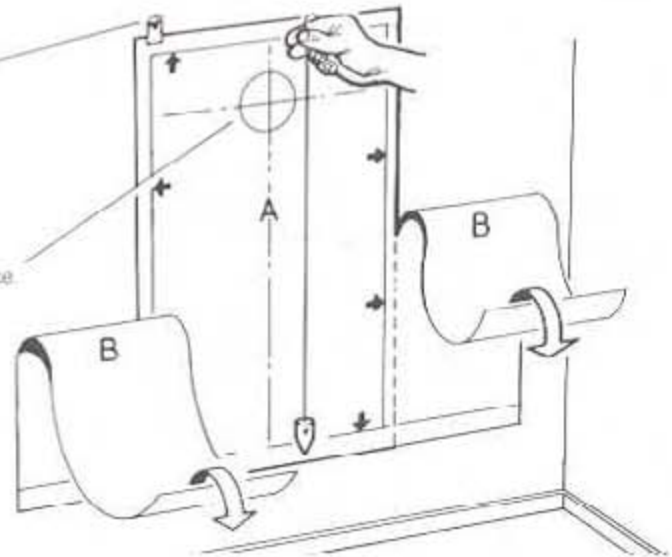
5 FLUE ASSEMBLY - Exploded View

1. An optional duct extension kit is required for wall thicknesses greater than 406 mm (16 in.). Refer to Frame 26.
2. When cutting the ducts, always use the cardboard support rings provided.



6 WALL MOUNTING TEMPLATE

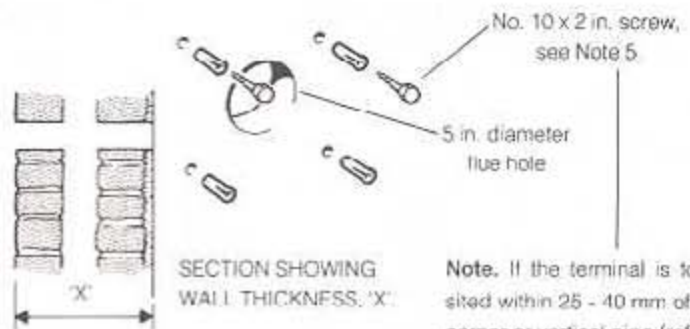
1. Discard both sections 'B' of the template.
2. Tape the template into the selected position.
3. Ensure squareness by hanging a plumb line as shown.
4. Mark onto the wall the 4 mounting plate screw positions and the lower fixing screw positions.
5. Mark onto the wall the position of the flue duct. **Note.** Mark the centre of the hole as well as the circumference.
6. Remove the template from the wall.



7 PREPARING THE WALL

IMPORTANT. Ensure that, during the cutting operation, masonry falling outside of the building does not cause damage or personal injury.

1. Cut the flue hole (preferably with a 5 in. core boring tool) ensuring that the hole is square to the wall. If the hole has been quite accurately cut with a drill, then making good the wall faces is not essential - as seals are provided at both ends of the flue. However, both wall faces immediately around the cut hole should be flat; make good if necessary. For less accurate holes make good to approximately 12.5 mm diameter at the two wall faces. If the flue hole is longer than 610 mm this must be done from the outside for the outer face, as access to outside is needed to fit the terminal plate anyway.
2. Measure and note the wall thickness 'X'.
3. Drill the 6 fixing holes with an 8 mm (5/16 in.) masonry drill and insert the 6 plastic plugs provided.
5. Locate two of the No. 10 x 2 in. screws provided in the wall mounting plate top fixing holes and screw home to within 6 mm (1/4 in.) of the wall surface.

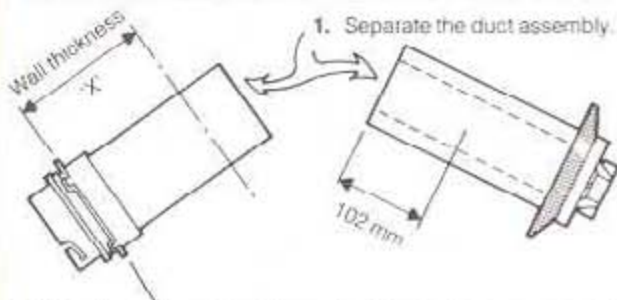


Note. Check all of the hole positions BEFORE drilling.

Note. If the terminal is to be sited within 25 - 40 mm of a corner or vertical pipe (refer to Table 4.) then the hole MUST be accurately cut and the rubber weather seal trimmed around the groove provided. The terminal wall plate need not be fitted.

8 CUTTING THE DUCT ASSEMBLY

WALL THICKNESSES OF 114 TO 216 mm ONLY.

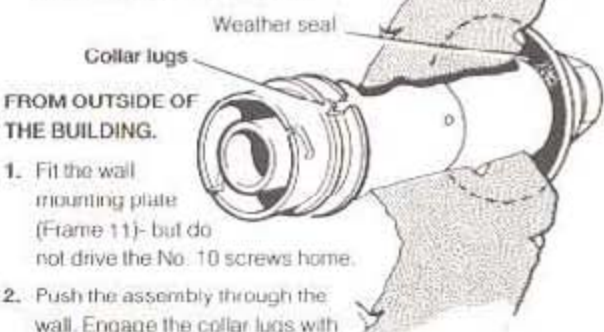


1. Separate the duct assembly.
2. Push the sliding collar to the end of the duct and measure off dimension 'X' (wall thickness).
3. Cut to length 'X', using the cardboard duct rings for support.
Note: Cut the inner flue tube 6mm (1/4 in.) longer than the outer air tube.
4. Always cut 102 mm (4 in.) off the terminal section.
5. Remove the cardboard support rings.
6. Re-assemble the terminal, aligning the seams.

10 FITTING THE FLUE ASSEMBLY

FROM EITHER THE INSIDE OR OUTSIDE OF THE BUILDING.

1. Push the assembly through the wall.
2. Locate the wall mounting plate over the flue assembly. Engage the flue duct collar lugs with the wall mounting plate slots & rotate the flue assembly to lock. Proceed to Frame 11.

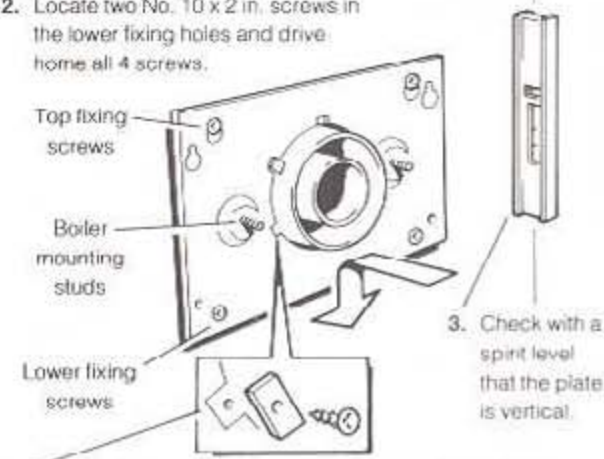


1. Fit the wall mounting plate (Frame 11) - but do not drive the No. 10 screws home.
2. Push the assembly through the wall. Engage the collar lugs with the wall mounting plate slots & rotate the flue assembly to lock.
3. Drive home the No. 10 wall mounting plate screws.

11 WALL MOUNTING PLATE

Flue is shown locked in position

1. Engage the plate on the top fixing screws.
2. Locate two No. 10 x 2 in. screws in the lower fixing holes and drive home all 4 screws.

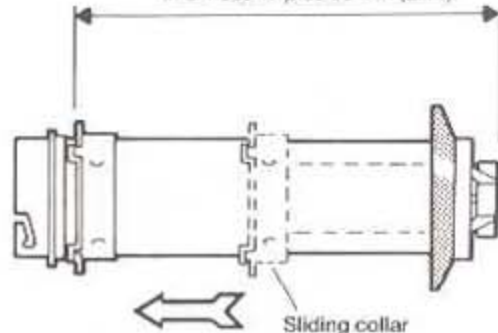


4. Align the holes in the sliding collar flange with the 3 cut-outs in the wall plate. Insert 3 of the self tappers and fit the rectangular washers provided to retain the assembly.

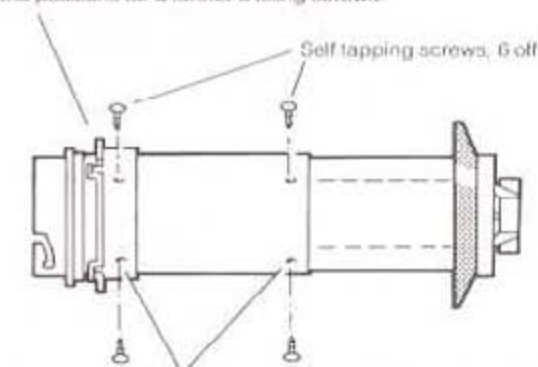
9 JOINING THE DUCT ASSEMBLY

WALL THICKNESSES UP TO 406 mm ONLY.

1. Push the sliding collar to the boiler end of the assembly.
2. Set the assembly to length, wall thickness 'X' plus 50 mm (2 in.).



3. Using the sliding collar as a template at the duct join, mark the positions of the 3 fixing screws.
Note: If the duct join is too close to the rubber weather seal to permit access for drilling, mark the hole positions at the mid-point of the duct.
4. Slide the collar back to the boiler end of the duct and mark the positions for a further 3 fixing screws.



5. Drill the 6 fixing holes using a 3.2 mm. drill. Insert the self tapping screws in order to fix the collar in position and lock the duct assembly. **DO NOT DRILL THE INNER FLUE DUCT.**
6. Seal the air start joint with the tape provided.

FOR WALL THICKNESSES ABOVE 406 mm, REFER TO FRAME 26 - FLUE EXTENSION DUCTS.

12 TERMINAL WALL PLATE

This plate allows the neat concealment and full compression of the rubber seal. Its use is not essential if the flue hole and flue ducts have been accurately cut and the outside wall face is flat, **except that this plate must be used on wall thickness over 610 mm (24 in.).**

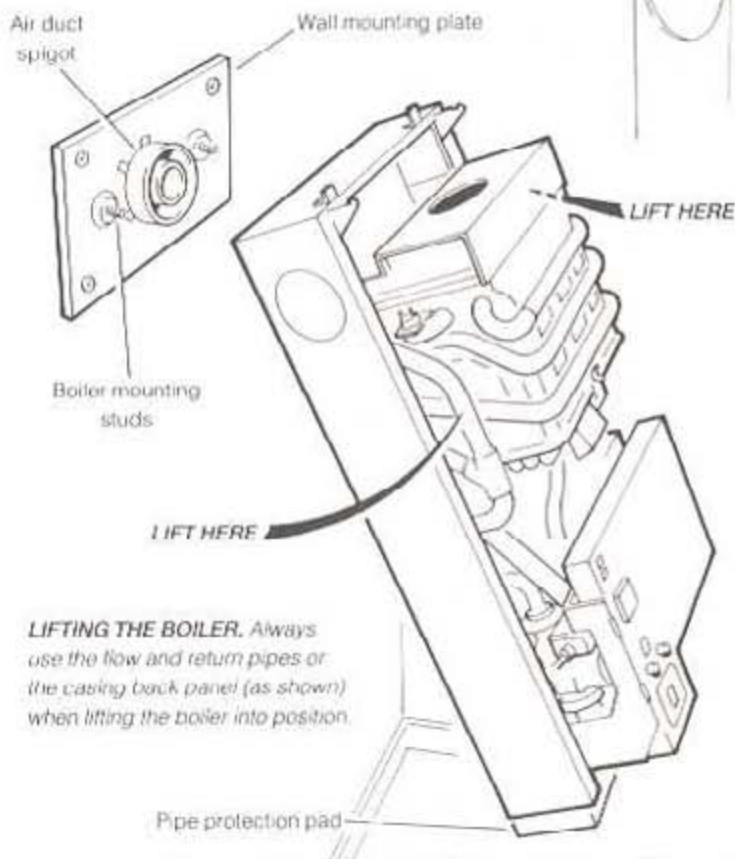
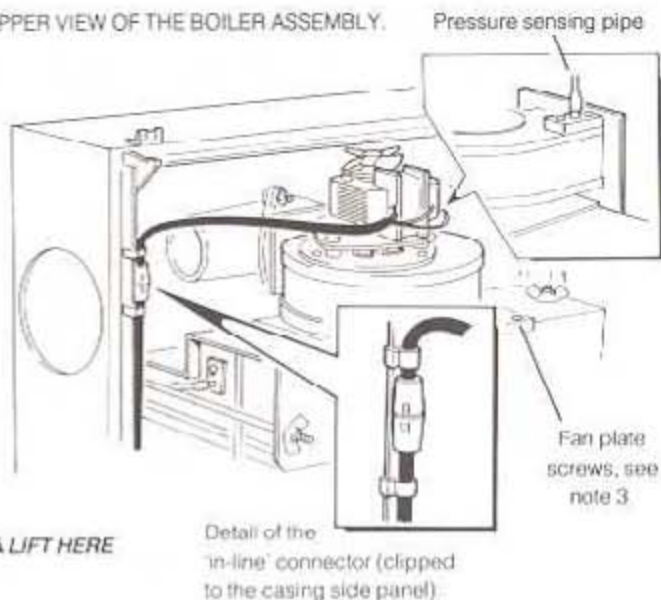
1. Position the terminal wall plate over the terminal.
2. Drill 4 fixing holes with an 8 mm (5/16 in.) masonry drill.
3. Insert the four plastic plugs provided.
4. Secure the plate with four of the No. 10 x 2 in. screws provided.

Note: If the terminal is less than 2 m (6.6 ft.) above ground level, an approved terminal guard should be fitted. Refer to Page 6.

13 MOUNTING THE BOILER

1. Unplug the fan electrical leads at the 'in-line' connector.
2. Disconnect the pressure sensing pipe.
3. Remove the four screws, each with 2 washers, securing the fan assembly to the top of the collector hood and remove the lead from the edge clip.
4. Lift off the fan assembly and place carefully to one side.
5. Remove the flue pipe connector from its transit position and discard it (for use with side flue installations only).

UPPER VIEW OF THE BOILER ASSEMBLY.



LIFTING THE BOILER. Always use the flow and return pipes or the casing back panel (as shown) when lifting the boiler into position.

Note. Always take care when handling the fan, to preserve the balance of the impeller.

Have ready to hand the sealing discs and wing nuts provided in the Hardware Pack, refer to Frame 1.

6. Lift the boiler onto the wall mounting plate as shown. The two studs fit into slots in the back panel and the air duct spigot enters the flue outlet hole in the back panel.

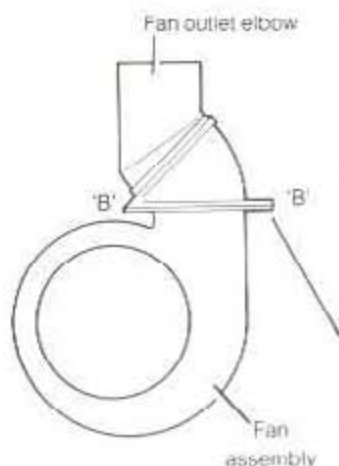
7. Fit a sealing disc over each stud and secure with a wing nut

Note. Before fully tightening the wing nuts, remove the pipe protection pad and check the boiler alignment using a spirit level, adjust as necessary with the jacking screws. Refer to Frame 2.

8. Locate two No. 10 x 2 in. screws in the boiler lower fixing holes provided on the jacking screws and secure to the wall

14 SEALING THE BOILER AND FLUE. RE-FITTING THE FAN

1. Stretch the rubber gasket over the air duct spigot.
2. Fit the locking collar as shown and rotate it to engage with the locking slots in the flue assembly.
3. Fold the locking handle as shown.
4. Slacken the two extended nuts at joint 'B-B' on the fan outlet elbow

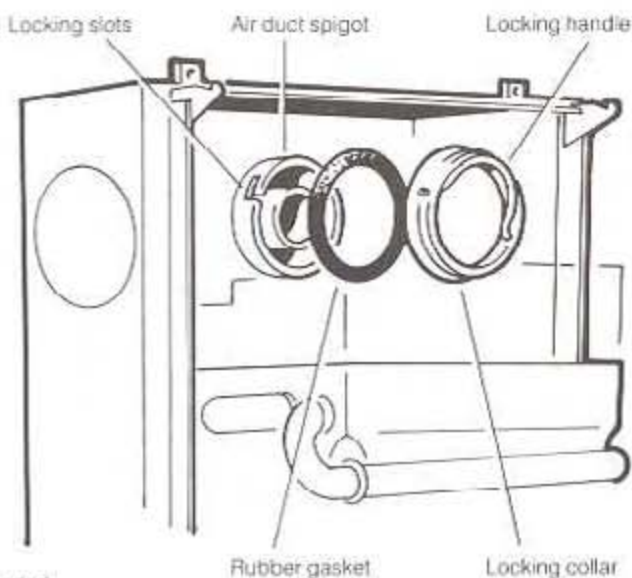


5. Refit the fan plate assembly- fully inserting the fan outlet spigot into the flue pipe.

6. Secure the fan assembly to the collector hood with the four screws previously removed.

7. Re-tighten the two extended nuts at joint 'B-B'

8. Reconnect the electrical leads, ensuring that the 'in-line' connector is clipped against the side panel.

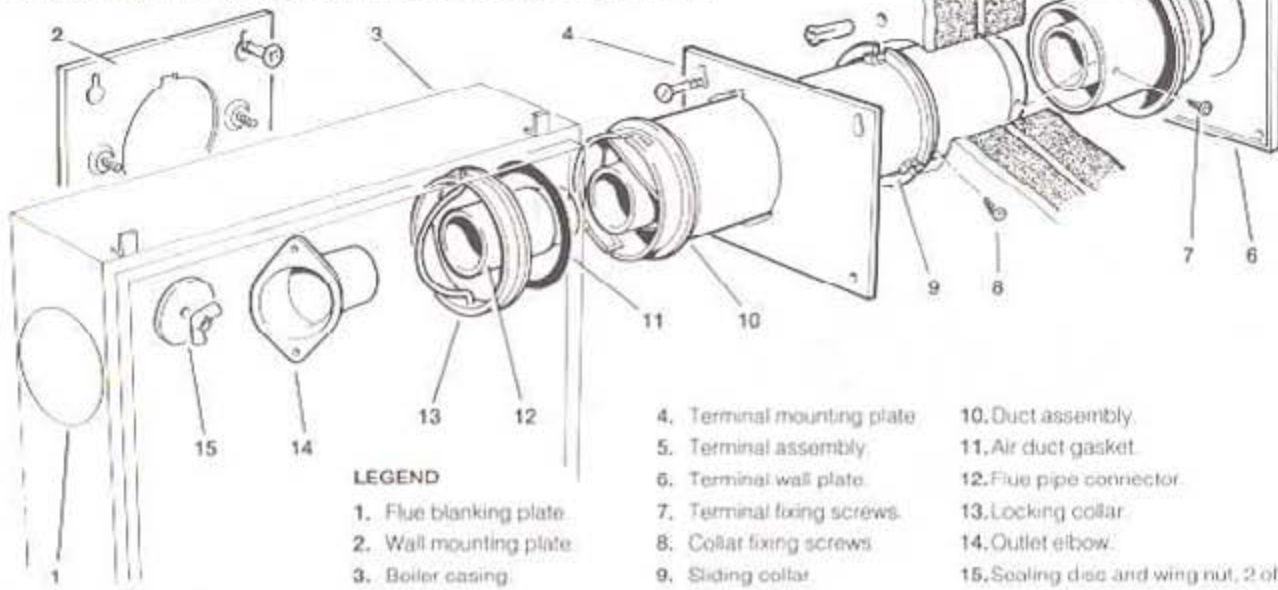


9. Re-connect the pressure sensing pipe.

REAR FLUE OUTLET ONLY

15 FLUE ASSEMBLY - Exploded View

1. An optional duct extension kit is required for lengths of dimension 'Y' (wall thickness plus boiler / wall spacing) greater than 406 mm (16 in.). Refer to Frame 2b.
2. When cutting the ducts, always use the cardboard support rings provided.

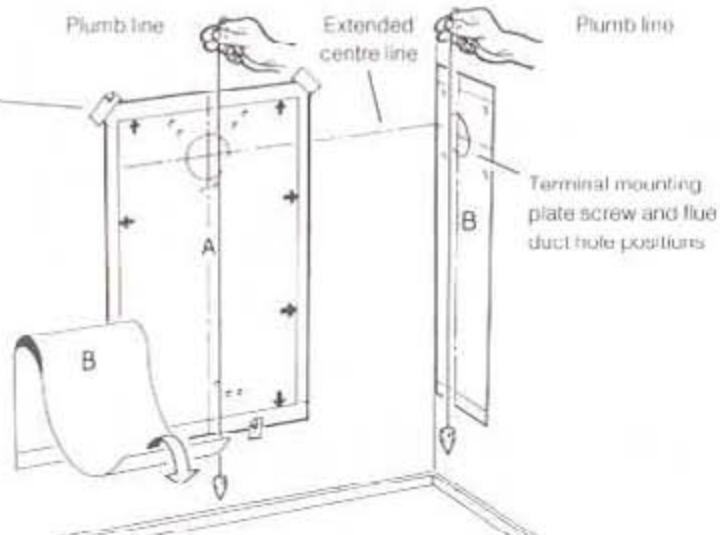


LEGEND

- | | | |
|------------------------|----------------------------|--------------------------------------|
| 1. Flue blanking plate | 4. Terminal mounting plate | 10. Duct assembly |
| 2. Wall mounting plate | 5. Terminal assembly | 11. Air duct gasket |
| 3. Boiler casing | 6. Terminal wall plate | 12. Flue pipe connector |
| | 7. Terminal fixing screws | 13. Locking collar |
| | 8. Collar fixing screws | 14. Outlet elbow |
| | 9. Sliding collar | 15. Sealing disc and wing nut, 2 off |

16 WALL MOUNTING TEMPLATE

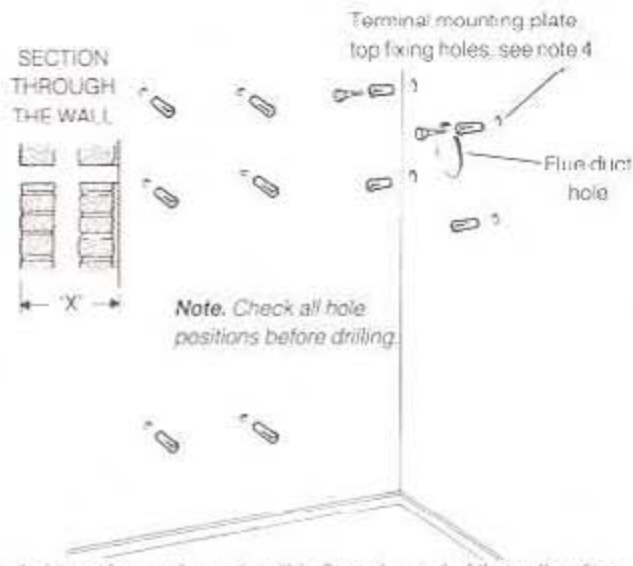
1. Separate the templates.
2. Tape both templates into the selected position locating template 'B' via an extended centre line as shown.
3. Ensure squareness by hanging a plumbline as shown.
4. Mark onto the wall the mounting plate screw positions and the two lower fixing screw positions.
5. Mark onto the wall the 4 terminal mounting plate screw positions.
6. Mark onto the wall the position of the flue duct hole.
Note. Mark the centre of the hole as well as the circumference.
7. Remove both templates from the wall.



17 PREPARING THE WALL

IMPORTANT. Ensure that, during the cutting operation, masonry falling outside of the building does not cause damage or, personal injury.

1. Cut the flue hole (preferably using a 5 in. core boring tool), ensuring that the hole is square to the wall. If the hole has been quite accurately cut with a drill then making good the wall faces is not essential - as seals are provided at both ends of the flue. However, both wall faces immediately around the cut hole should be flat, make good if necessary. For less accurate holes make good to approximately 125 mm diameter at the two wall faces. For holes longer than 610 mm this must be done from outside for the outer face - as access to outside is needed to fit the terminal wall plate anyway.
2. Measure the wall thickness 'X' and calculate dimension 'Y' (i.e. Boiler spacing plus 'X'). Refer to Frame 2.
3. Drill all 10 fixing holes with an 8 mm (5/16 in.) masonry drill and insert the plastic plugs provided.
4. Locate 2 No. 10 x 2 in. screws in the terminal mounting plate top fixing holes and screw home to within 6 mm (1/4 in.) of the wall surface.
Note. If the terminal is to be sited 25 to 40 mm from a corner or vertical pipe (refer to Table 4) the hole must be accurately cut and the rubber weather seal trimmed around the groove provided. The terminal wall plate need not be fitted.

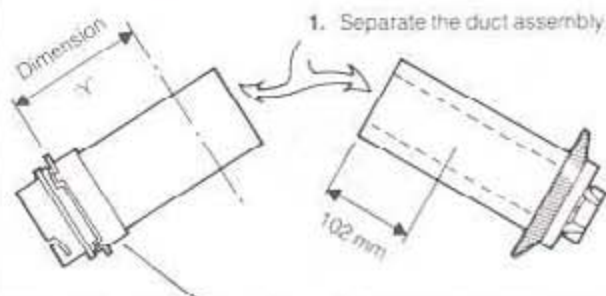


SIDE FLUE OUTLET ONLY

SIDE FLUE OUTLET ONLY

18 CUTTING THE DUCT ASSEMBLY

FLUE LENGTHS OF D114 TO 216mm ONLY.

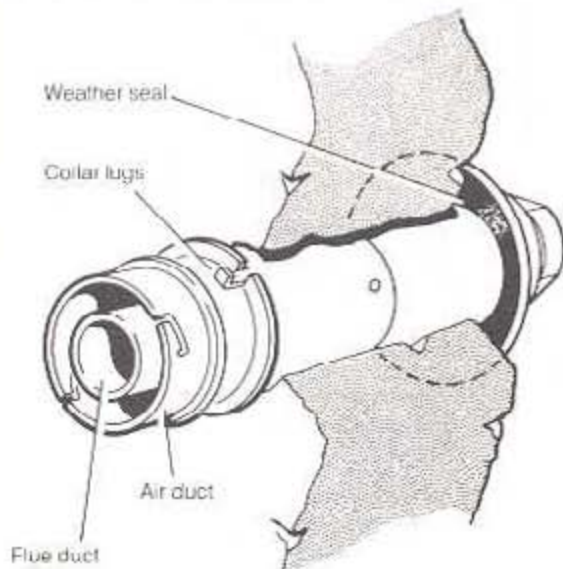


1. Separate the duct assembly.
2. Push the sliding collar to the end of the duct and measure off dimension 'Y' (wall thickness plus boiler spacing).
3. Cut to length 'Y', using the cardboard duct rings for support. **Note.** Cut the inner flue tube 6 mm (1/4 in.) longer than the outer air tubes.
4. Always cut 102 mm (4 in.) off the terminal section
5. Remove the cardboard support rings.
6. Re-assemble the terminal, aligning the seams.

20 FITTING THE FLUE ASSEMBLY

FROM EITHER THE INSIDE OR OUTSIDE OF THE BUILDING.

1. Push the flue duct assembly through the wall
2. Take the terminal mounting plate and stick the sealing tape provided to the reverse side of the plate. Locate the plate over the projecting flue duct assembly and engage the flue duct collar lugs with the terminal mounting plate slots. Rotate the flue assembly to lock. Continue the installation procedure from Note 2 of Frame 21



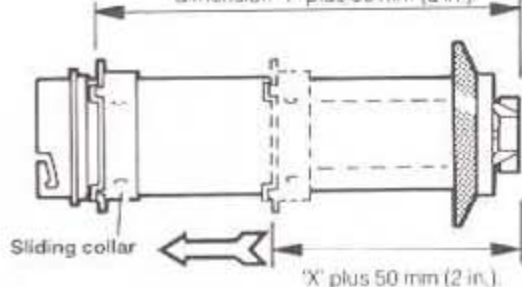
FROM OUTSIDE OF THE BUILDING ONLY.

1. Fit the terminal mounting plate as detailed in Notes 1 to 4 of Frame 21 - but do not drive the No. 10 x 2 in. fixing screws fully home until the flue duct assembly is engaged
2. From outside of the building, push the assembly through the wall. Engage the flue duct collar lugs with the terminal mounting plate slots and rotate the flue assembly to lock.
3. Drive home the No. 10 x 2 in. fixing screws.
5. Make good between the plate and the corner of the wall.
6. Align the holes in the sliding collar flange with the 3 slots in the terminal wall plate. Insert 3 of the self tapping screws and rectangular washers, provided, to retain the assembly. Refer to the detail in Frame 21.

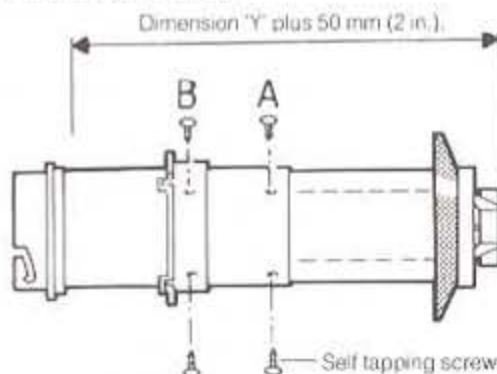
19 JOINING THE DUCT ASSEMBLY

FLUE LENGTHS UP TO 406 mm ONLY.

1. Push the sliding collar to the boiler end of the assembly.
2. Set the assembly to length, dimension 'Y' plus 50 mm (2 in.)



3. Using the sliding collar as a template at the duct joint, mark the positions of the 3 fixing screws (A) **Note.** If the duct joint is too close to the rubber weather seal to permit access for drilling, mark the hole positions at the mid-point of the duct.
4. Set the collar to the required position, i.e. dimension 'X' (wall thickness) plus 50 mm (2 in.) and mark the positions for a further 3 fixing screws (B)



5. Drill the 6 fixing holes using a 3.2 mm. drill. Insert the self tapping screws in order to fix the collar in position and lock the duct assembly. **DO NOT DRILL THE INNER FLUE DUCT.** **Note.** If the duct locking screws restrict the sliding collar then use the collar locking screws to lock the whole assembly.
6. Seal the air-duct joint with the tape provided.

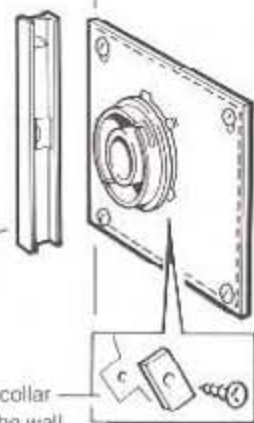
FOR FLUE LENGTHS ABOVE 406 mm, REFER TO FRAME 26-FLUE EXTENSION DUCTS

21 TERMINAL MOUNTING PLATE

1. Stick the sealing tape, provided, to the reverse side of the plate.
2. Engage the plate on the top two fixing screws.
3. Locate two No. 10 x 2 in. screws in the bottom fixing holes and drive home all four screws.

The flue assembly is shown locked in position.

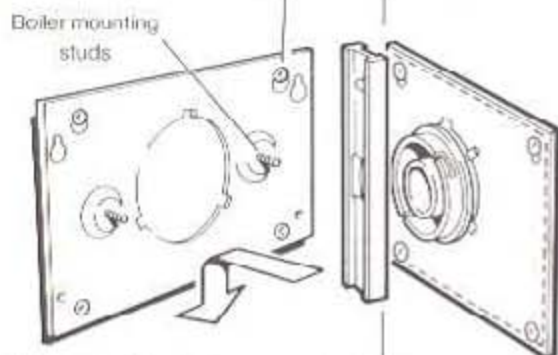
4. Check with a spirit level that the plate is vertical
5. Make good between the plate and the corner of the wall.



6. Align the holes in the sliding collar flange with the 3 cut outs in the wall plate. Insert 3 of the self tapping screws and rectangular washers, provided, to retain the flue assembly.

22 WALL MOUNTING PLATE

1. Locate two No. 10 x 2 in. screws in the wall mounting plate. Top fixing holes and screw home to within 6 mm (1/4 in.) of the wall surface.
2. Engage the plate on the screws.



3. Locate two No. 10 x 2 in. screws in the bottom fixing holes and drive home all four screws.
4. Check with a spirit level that the plate is vertical.

23 TERMINAL WALL PLATE

This plate allows the neat concealment and full compression of the rubber seal. Its use is not essential if the flue hole and flue ducts have been accurately cut and the outside wall face is flat, *except that this plate must be used on wall thickness over 610 mm (24 in.)*

1. Position the terminal wall plate over the terminal.
2. Drill 4 fixing holes with an 8 mm (5/16 in.) masonry drill.
3. Insert the four plastic plugs provided.
4. Secure the plate with four of the No. 10 x 2 in. screws provided.

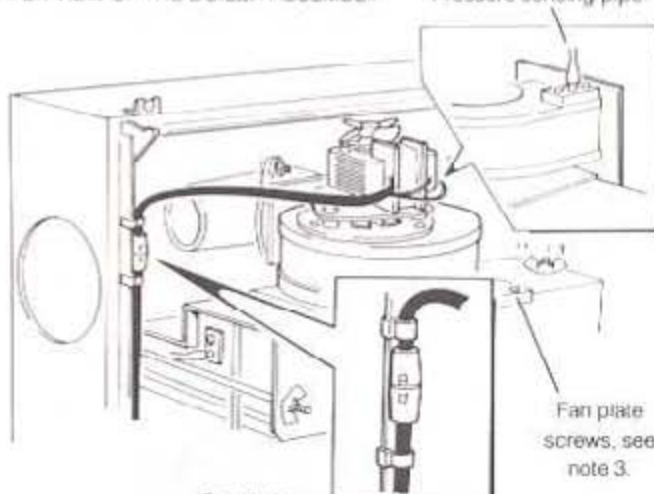
Note: If the terminal is less than 2 m (6.6 ft.) above ground level, an approved terminal guard should be fitted. Refer to Page 6.

24 MOUNTING THE BOILER

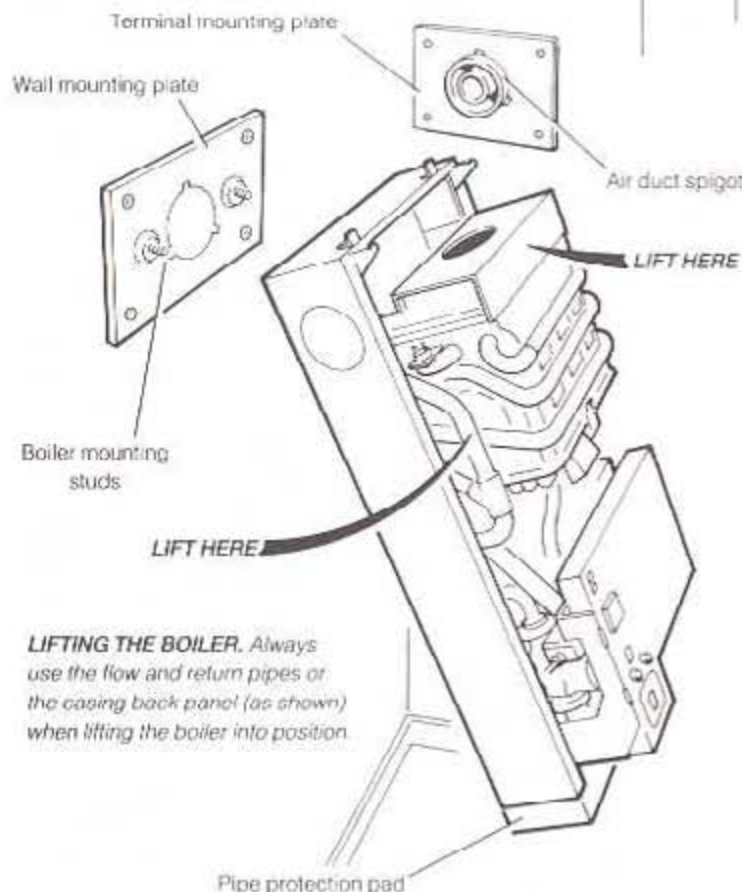
1. Unplug the fan electrical leads at the 'in-line' connector.
2. Disconnect the pressure sensing pipe.
3. Remove the four screws, each with 2 washers, securing the fan assembly to the top of the collector hood and remove the lead from the edge clip.
4. Lift off the fan assembly and place carefully to one side.
5. Remove the flue pipe connector from its transit position.
6. Transfer the flue blanking plate and disc from the appropriate side of the boiler to the rear position.

Note: Always take care when handling the fan, to preserve the balance of the impeller.

UPPER VIEW OF THE BOILER ASSEMBLY



Detail of the 'in-line' connector (clipped to the casing side panel).



LIFTING THE BOILER. Always use the flow and return pipes or the casing back panel (as shown) when lifting the boiler into position.

Have ready to hand the sealing discs and wing nuts provided in the Hardware Pack, refer to Frame 1.

7. Lift the boiler onto the wall mounting plate as shown. The two wall mounting plate studs fit into slots in the back panel.
8. Slide the boiler sideways into its intended position, centralising the studs in the slots and engaging the air duct spigot in the hole in the side panel.
9. Fit a sealing disc over each stud and secure with a wing nut.

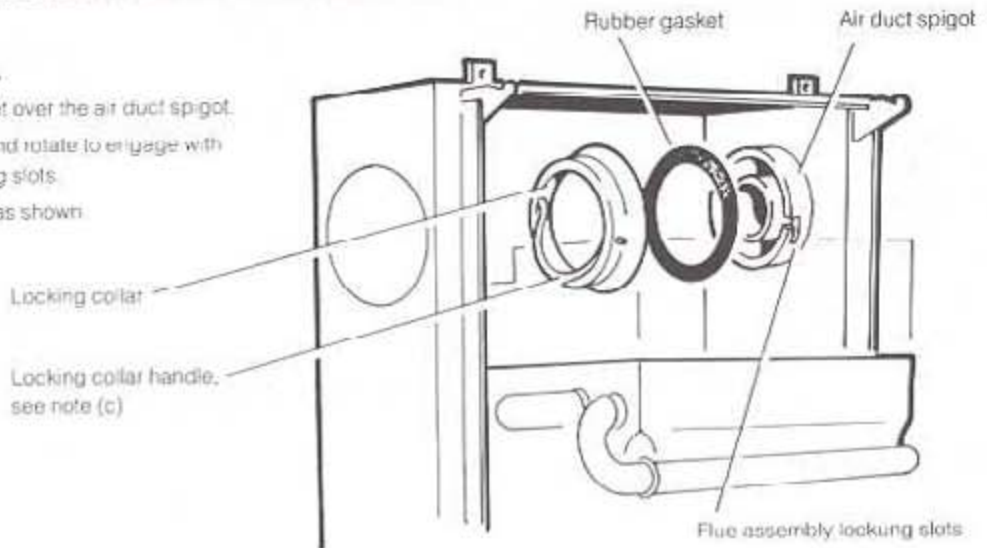
Note: Before fully tightening the wing nuts, remove the pipe protection pad and check the boiler alignment using a spirit level, adjust as necessary with the jacking screws. Refer to Frame 2.
8. Locate two No. 10 x 2 in. screws in the boiler lower fixing holes provided on the jacking screws and secure to the wall.

SIDE FLUE OUTLET ONLY

25 SEALING THE BOILER AND FLUE / REFITTING THE FAN ASSEMBLY

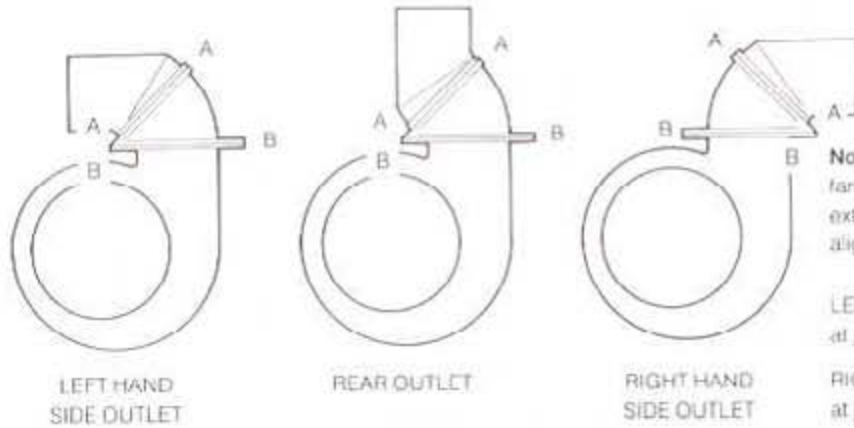
1. Sealing the Boiler and Flue.

- (a) Stretch the rubber gasket over the air duct spigot.
- (b) Fit the collar as shown and rotate to engage with the flue assembly locking slots.
- (c) Fold the locking handle as shown.



2. Fan Outlet Arrangement.

The fan outlet is supplied for rear outlet installation. Re-arrange the outlet elbow to suit either a left hand side or a right hand side outlet as shown below.



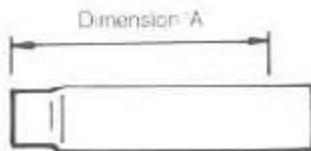
Note. When altering the arrangement of the fan outlet elbow, for either side, slacken the extended nuts at joint 'B - B' to help alignment when re-fitting the fan assembly.

LEFT HAND SIDE OUTLET: Disconnect at joint 'A - A' and rotate through 100°

RIGHT HAND SIDE OUTLET: Disconnect at joint 'A - A' and rotate through 180°.

3. Fan Assembly Refitting.

- (a) Cut the side outlet flue pipe connector to the required length, given in the Table below.



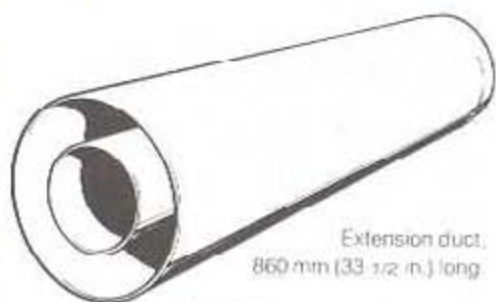
Dimension 'A'	
Left hand flue	Right hand flue
200 mm (8 in.)	145 mm (5 3/4 in.)

- (b) Fit the flue pipe connector onto the fan outlet elbow.
- (c) Refit the fan assembly onto the collector hood, fully engaging the flue pipe connector into the flue pipe. Secure the assembly with the four screws previously removed. Re-tighten the extended nuts at joint 'B - B' on the flue outlet elbow.
- (d) Reconnect the electrical lead, ensuring that the 'in-line' connector is clipped against the side panel.
- (e) Re-connect the pressure sensing pipe.

SIDE FLUE OUTLET ONLY

26 PACK 'D' CONTENTS AND GENERAL ARRANGEMENT OF THE FLUE DUCTS

PACK 'D' FLUE EXTENSION DUCT KIT CONTENTS. Unpack the Kit and check the contents.



Extension duct,
860 mm (33 1/2 in.) long.



Support bracket.



Length of
adhesive tape.



Wall plug

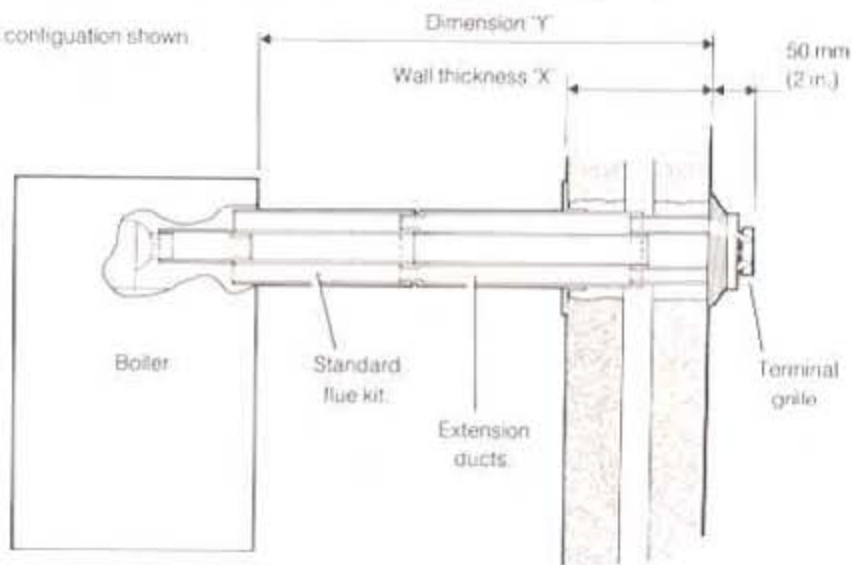


No. 8 x 1/4 in self
tapping screws, 4 off

FLUE LENGTHS UP TO 3 m. USE A MAXIMUM OF THREE KITS ONLY.

GENERAL ARRANGEMENT. Note. Side flue configuration shown

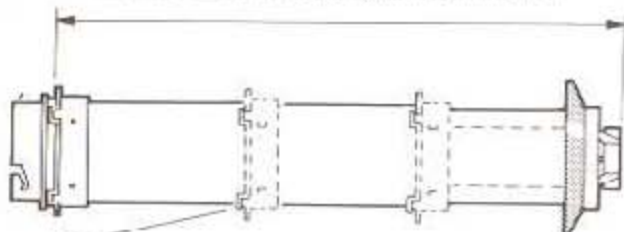
1. A MAXIMUM OF THREE KITS ONLY may be used together
2. Always cut the extension ducts at the plain ends only.
3. Ensure that there is at least a 25 mm (1 in.) overlap at each joint.
4. For flue lengths of less than 457 mm (18 in.), ensure that the collar is positioned on an air duct (outer).
5. Flue extensions of greater length than 1 m (39 in.) should be supported with the bracket provided
6. Tape all air duct connections.
7. Always align the seams when re-assembling the ducts.



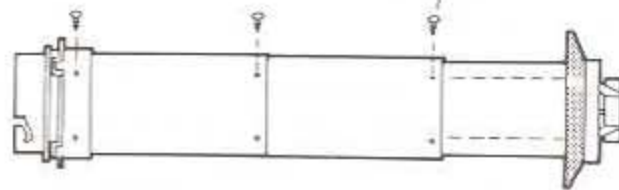
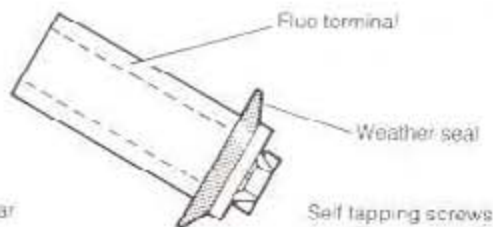
27 FITTING THE KIT

IMPORTANT. Read in conjunction with Frame 26

1. Separate the Flue duct assembly
2. Insert the appropriate extension duct(s) with the plain end(s) toward the terminal.
3. Re-assemble the terminal and the duct assemblies.
4. Push the sliding collar back to the boiler end of the duct, or to its intended position.
5. Set the assembly to length, i.e. Dimension 'X' (wall thickness) plus 50 mm (2 in.) or Dimension 'Y' (wall thickness and boiler spacing) plus 50 mm (2 in.)



6. Using the sliding collar as a template at the joints of any ducts mark the positions the fixing screws (3 screws for each joint)



7. Drill at the markings with a 3.2 mm. drill.
8. Lock the assembly in position with the self tapping screws provided
9. Drill through the holes of the collar into the air duct with a 3.2 mm. drill and lock the sliding collar into position with 3 of the self tapping screws provided.

Note. If the flue duct assembly locking screws restrict the sliding collar then use the collar locking screws to lock the whole assembly.

REAR & SIDE FLUE OUTLET

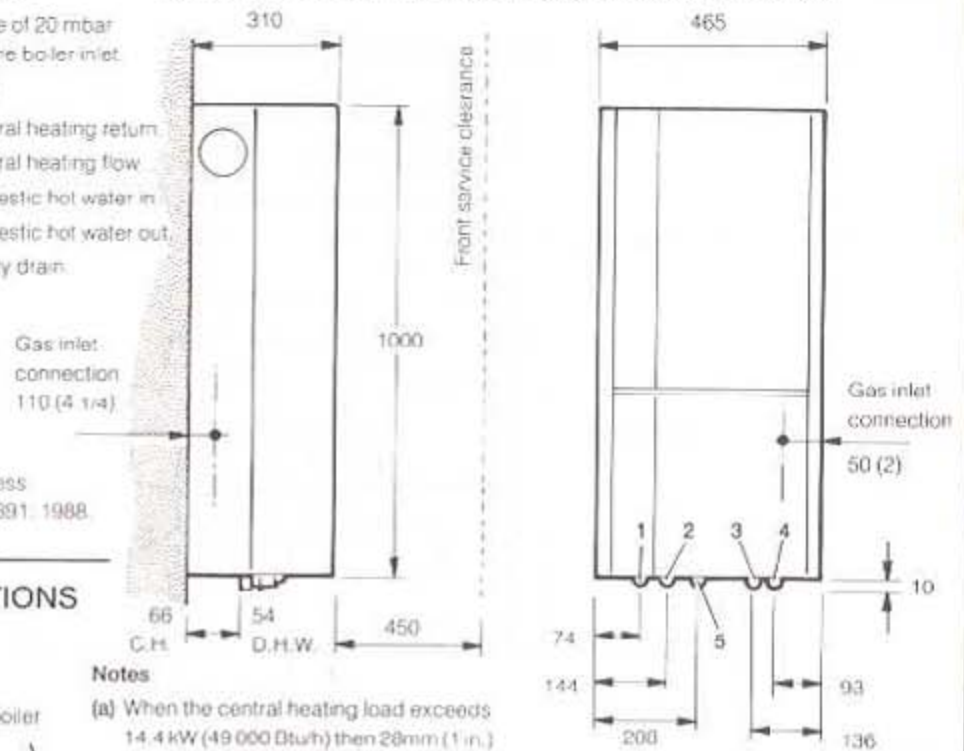
28 GAS CONNECTION.

1. A **MINIMUM** working gas pressure of 20 mbar (8 in. w.g.) **MUST** be available at the boiler inlet.
2. Extend a gas supply pipe **NOT LESS THAN 15 mm O.D.** to the boiler and connect to the gas service cock, situated as shown. Connection must be made from below the boiler. If the pipe run from the meter to the boiler is greater than 3 m (10 ft.) it is recommended that 22 mm O.D. pipe is used.
3. Test the gas installation for soundness & purge in accordance with BS. 6891. 1988. Refer to Frame 37.

Legend

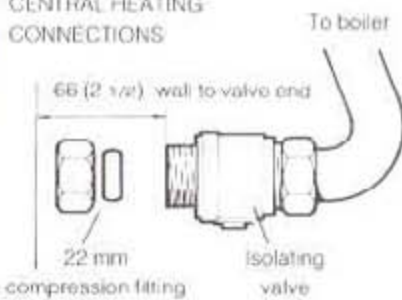
1. Central heating return.
2. Central heating flow.
3. Domestic hot water in.
4. Domestic hot water out.
5. Safety drain.

BOILER DIMENSIONS AND SERVICE CONNECTION REQUIREMENTS



**WATER CONNECTIONS
Central Heating.**

CENTRAL HEATING CONNECTIONS



Notes

- (a) When the central heating load exceeds 14.4 kW (49 000 Btu/h) then 28mm (1 in.) pipes should be used, both to and from the boiler, as soon as is practicable after the initial 22 mm connection shown.
- (b) For methods of filling refer to Frame 30.

IMPORTANT. Ensure that the central heating isolating valves are open.

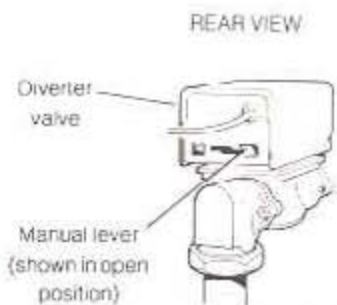
1. Connect the central heating flow and return pipes to the boiler as shown. **Note.** 22 mm compression nuts and olives are supplied in the Hardware Pack.
2. Fill and vent the system. Check for water soundness.
3. **Safety Valve Drain.** Connect a 15 mm O.D. copper pipe to the safety valve drain

using the compression nut and olive (provided in separate bag in the Hardware Pack) and route it to a position outside of the building such that any discharge of water or steam from the valve cannot create a hazard to the occupants or damage to electrical components & wiring.

4. Remove the control panel securing screw and swing the panel open.

IMPORTANT.

- A. Set the diverter valve manual lever to the OPEN position.

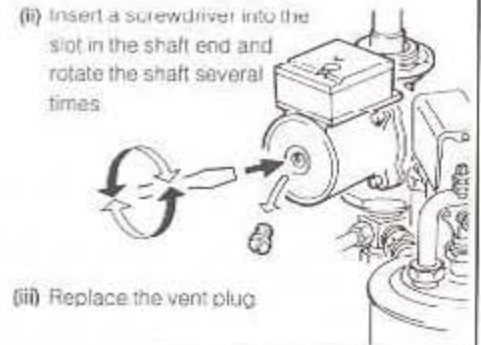


- B. The cap on the automatic air vent **MUST** be loose at all times. When filling there may be a slight water leak from the vent therefore electrical connections on the gas control valve should be protected.



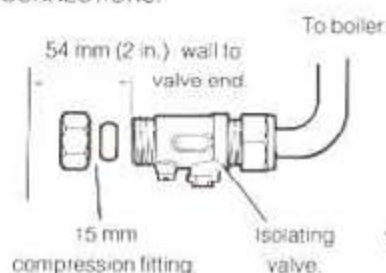
- C. Ensure that the pump is free to rotate.

- (i) Remove the vent plug
- (ii) Insert a screwdriver into the slot in the shaft end and rotate the shaft several times



WATER CONNECTIONS. Domestic Hot Water Supply.

DOMESTIC HOT WATER CONNECTIONS.



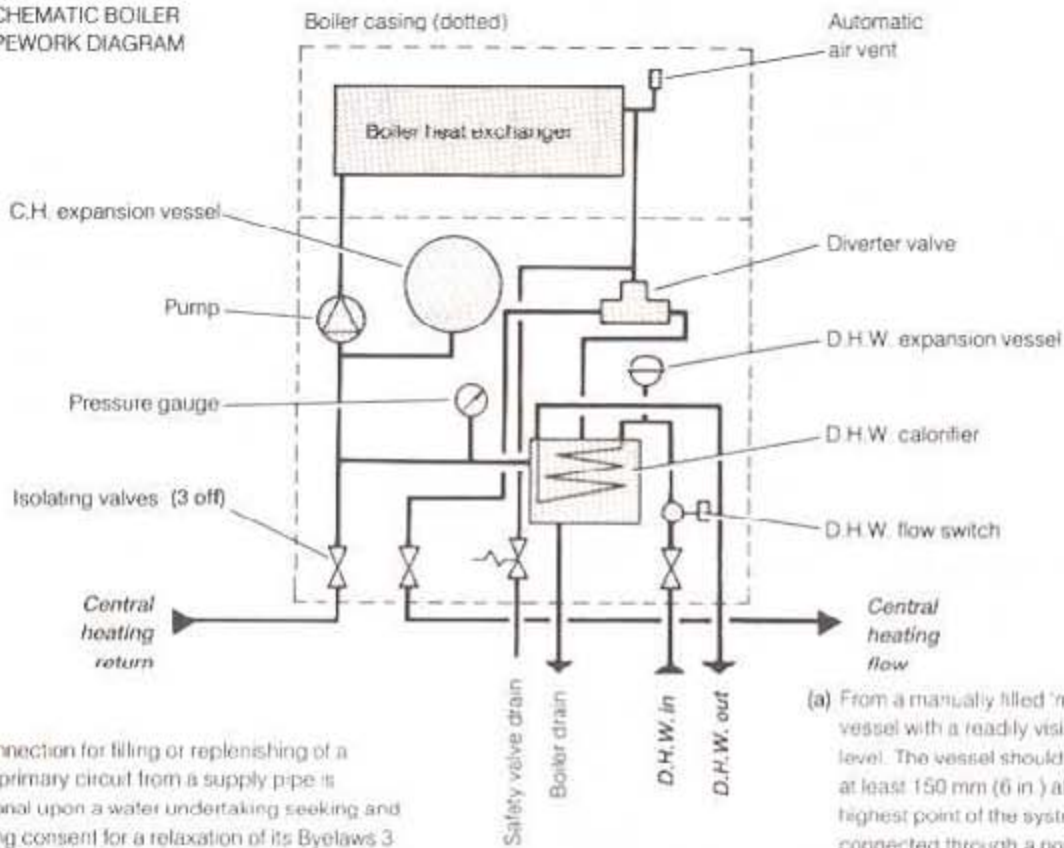
Notes.

- (a) The DHW supply pipe **MUST** be thoroughly flushed **BEFORE** connecting to the boiler.
- (b) The boiler incorporates a DHW filter, therefore no external device is necessary
- (c) It is recommended that a water softening device is fitted on the cold water inlet supply, particularly in hard water areas.
- (d) Ensure that the mains supply pressure is sufficient to provide the maximum delivery of domestic hot water (approx. 0.65 bar-minimum). In areas where the mains water pressure is known to be high (greater than 10 bar) it is recommended that a water governor is fitted on the cold inlet supply to the boiler.

1. Connect the hot and cold water supply pipes as shown. **Note.** 15 mm compression nuts and olives are supplied in the Hardware Pack.
2. Open the domestic hot water draw-off taps, clear air locks and check for water soundness.

29 SYSTEM REQUIREMENTS. Central Heating.

SCHMATIC BOILER PIPEWORK DIAGRAM



Notes.

- (a) Any connection for filling or replenishing of a sealed primary circuit from a supply pipe is conditional upon a water undertaking seeking and obtaining consent for a relaxation of its Byelaws 3 and 8 (1) from the Secretary of State.
- (b) The method of filling, re-filling, topping up or flushing sealed primary hot water circuits from the mains via a temporary hose connection is only allowed if acceptable to the Local Water Authority.
- (c) Antifreeze fluid, corrosion and scale inhibitor fluids suitable for use with boilers having copper heat exchangers may be used in the central heating system.

For further information contact;

Fernox Manufacturing Co. Ltd.,
 Britannic Works,
 Clavering, Essex, or
 Grace Service Chemicals,
 Grace Dearborn Ltd.,
 Widnes, Cheshire.

1. The installation must comply with the requirements of BS. 6891: 1988 and BS. 5449
2. The installation should be designed to work with flow temperatures of up to 82° C.
3. All components of the system must be suitable for a working pressure of 3 bar (45 psi) and temperature of 110° C. Extra care should be taken in making all connections so that the risk of leakage is minimised. The following components are incorporated within the appliance.
 - (a) Circulating pump.
 - (b) Safety valve; with a non-adjustable pre-set lift pressure of 3 bar (45 psi).
 - (c) Pressure gauge; covering a range of 0 to 6 bar.
 - (d) 8 litre expansion vessel, with an initial charge pressure of 0.75 bar.
 - (e) Domestic hot water (D.H.W.) mini expansion vessel.

For further details refer to BS. 5449:1 and British Gas Corporation publication 'Specifications for Domestic Central Heating and Hot Water'.

4. 'Make-up' water. Provision must be made for replacing water loss from the system either;

(a) From a manually filled 'make-up' vessel with a readily visible water level. The vessel should be mounted at least 150 mm (6 in.) above the highest point of the system and be connected through a non-return valve to the system, fitted at least 150 mm (6 in.) below the 'make-up' vessel on the return side of the radiators.

(b) Where access to a 'make-up' vessel would be difficult, by pre-pressurisation of the system. Refer to Frame 30 'Filling'. The maximum cold water capacity of the system should not exceed 127 litres if not pressurized. However, if the system is to be pressurized the efficiency of the expansion vessel will be reduced and a larger vessel (or smaller system volume) may be necessary. If the capacity of the vessel is not considered sufficient for this, or for any other reason, an additional vessel MUST be installed on the return to the boiler. Guidance on vessel sizing is given below and also in BS. 7074:1 and BS. 5449

Safety valve setting	bar	3.0	
Vessel charge pressure	bar	0.5 to 0.75	
System pre-charge pressure	bar	None	1.0
System volume	litres	Expansion vessel volume litres	
25		1.6	1.8
50		3.1	3.7
75		4.7	5.6
100		6.3	7.4
125		7.8	9.2
150		9.4	11.0
175		10.9	12.9
190		11.9	14.0
200		12.5	14.7
250		15.6	18.4
300		18.8	22.1
For other system volumes-			
multiply by the factor across.		0.063	0.074

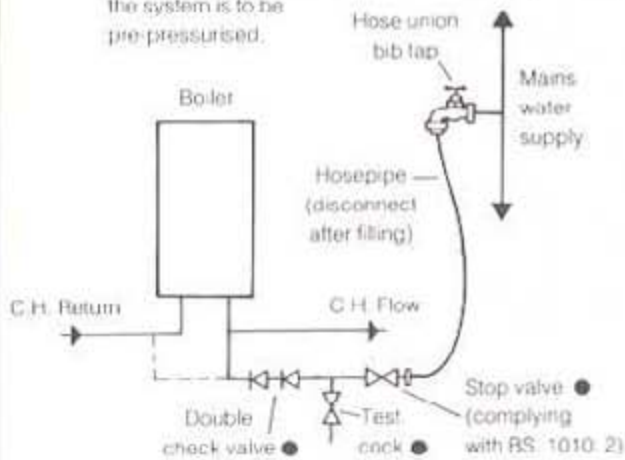
30 SYSTEM REQUIREMENTS. Central Heating & Domestic Hot Water.

Continued from Frame 31.

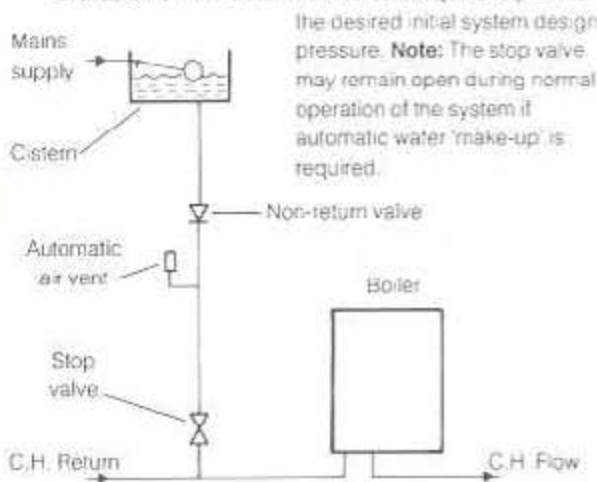
5. **Mains Connection.** There must be no direct connection to the mains water supply or to any water storage tank supplying domestic water, even through a non-return valve, without the approval of the Local Water Authority.

6. **Filling.** The system may be filled by one of the following methods:

- (a) Through a temporary hose connection from a 'draw off tap', supplied from a service pipe under mains pressure. Where the mains pressure is excessive, a pressure reducing valve must be used to facilitate filling.
- (i) Thoroughly flush out the whole system with cold water.
- (ii) Fill and vent the system until the pressure gauge registers 1.5 bar (21.5 psi), and examine for leaks.
- (iii) Check the operation of the safety valve by raising the water pressure until the valve lifts. This should occur within 0.3 bar (4.3 psi.) of the pre-set lift pressure.
- (iv) Release water from the system until the minimum system design pressure is reached. 1.0 bar (14.5 psi.) if the system is to be pre-pressured.



(b) Through a cistern, used for no other purposes, via a ball valve permanently connected directly to a service pipe and/or a cold water distributing pipe. The static head available from the cistern should be adequate to provide

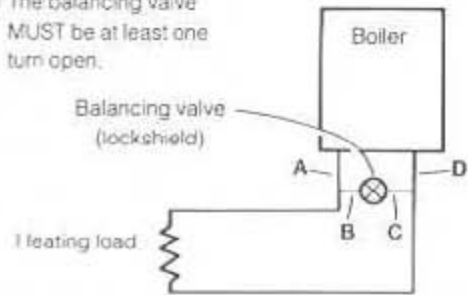


7. **Bypass.** The flow through the boiler MUST NOT fall below the values shown. A bypass MUST be fitted consisting of 22 mm (3/4 in.) pipe, positioned as far from boiler as possible and incorporating a balancing valve which CANNOT be adjusted by the Householder. For adjustment refer to Frame 40.

IMPORTANT. If ALL radiators are fitted with Thermostatic radiator valves then:

- (a) The total length of pipework (22 mm) A, B, C & D MUST NOT be less than 3 m. (10 ft)

(b) The balancing valve MUST be at least one turn open.

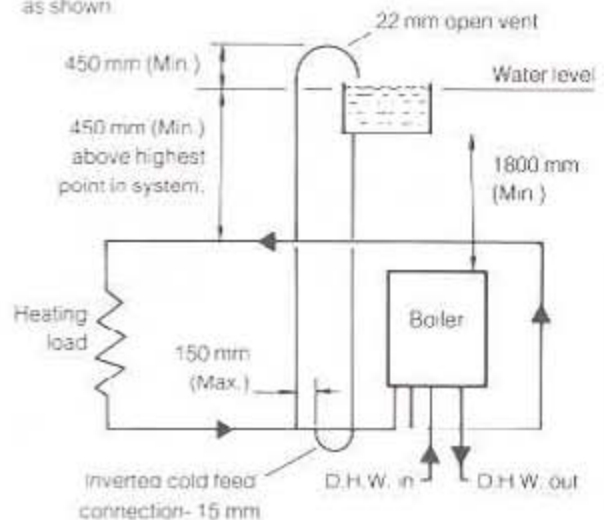


Boiler output	kW (Btu/h)	19.0 (65,000)
Water flow rate	l/min. (gal./h)	24.6 (325)
Temperature differential	°C (°F)	11 (20)
Head available for system	m bar (in. w.g.)	209 (84)

8. **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 a room thermostat controlling the temperature in a space served by radiators not fitted with such a valve. Such an arrangement will provide for a more efficient control of the environment and will also avoid the continuous running of the circulation pump during programmed heating 'ON' periods, saving electrical energy. It is therefore strongly recommended that, when thermostatic radiator valves are used, the space heating temperature control over a living/ dining area or a hallway having a heating requirement of at least 10% of the boiler output is achieved using a room thermostat, whilst other rooms are individually controlled by thermostatic radiator valves. However, if thermostatic radiator valves are fitted to all radiators then the bypass circuit MUST comply with the above requirements.

9. **Open Vented Systems.** The Ideal Sprint Rapide is designed for use with sealed systems, but can also be connected to open if systems if required.

Note. To comply with the relevant requirements of BS. 5449:1 and BS. 6798 the positions of the cold feed and vent must be as shown.



10. **Domestic Hot Water Requirements.** The Ideal Sprint Rapide is suitable for connection to most types of washing machine and dish washing appliances.

When connecting to suitable showers, i.e. those designed for modulating domestic hot water, ensure that:

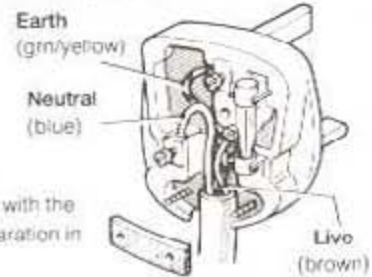
- The cold inlet to the boiler is fitted with an approved anti-vacuum or syphon non-return valve.
- Hot & cold water supplies to the shower are of equal pressure.

31 ELECTRICAL CONNECTIONS

WARNING. This appliance **MUST** be efficiently earthed.

A mains supply of 240 V ~ 50 Hz is required. All external controls & wiring **MUST** be suitable for mains voltage. Wiring should be in 3-core PVC insulating cable, **NOT LESS** than 0.75 mm² (24 x 0.2mm) and to BS. 6500 Table 16, and 70° C T rating.

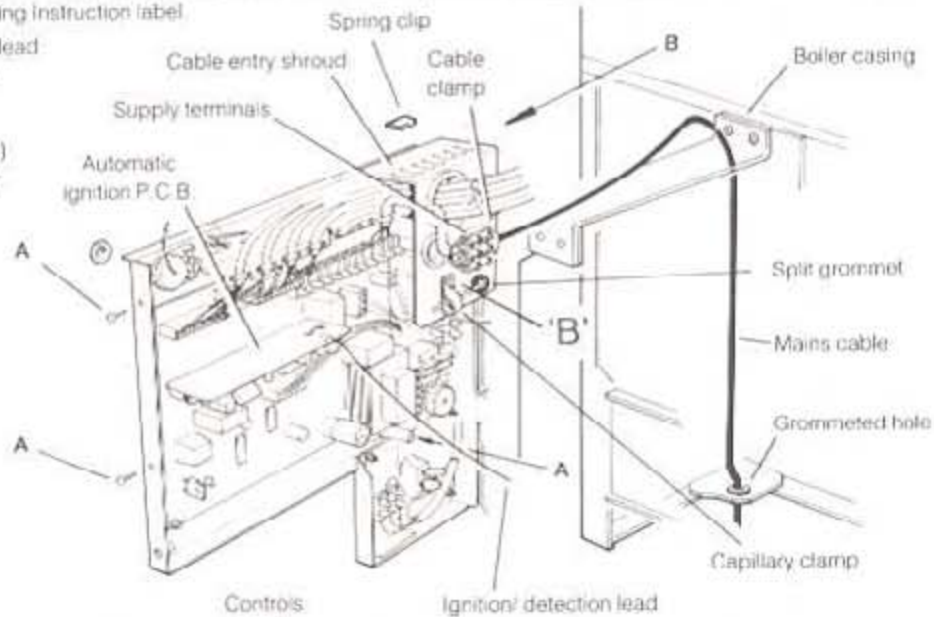
Wiring external to the boiler **MUST** be in accordance with the current I.E.E. Wiring Regulations and any Local Regulations. The supply connection may be made via a removable plug to a shuttered socket/ outlet, preferably adjacent to the boiler, and should such a plug be used for connection to the mains, it **MUST** be of the 3-pin type -wired as shown, fused at 3 A and comply with the requirements of BS. 1363. Alternatively, a fused double-pole switch having a 3 mm contact separation in both poles, serving only the boiler & system controls may be used.



32 INTERNAL WIRING

Flow, Pictorial and Schematic wiring diagrams are shown in Frames 35, 36 and 37. A wiring diagram is also included on the Lighting instruction label.

1. Disconnect the ignition/detection lead from the automatic ignition P.C.B.
2. Remove the spring clip.
3. Remove the 3 securing screws (A) and lift off the controls inner cover.
4. Route the mains lead as shown, passing it through the grommet at the bottom L.H. side.
5. Wire into the supply terminals marked 'L', 'N' and 'E'. Secure with the cable clamp.



INTERNAL VIEW OF THE CONTROLS PANEL (with the inner cover shown removed)

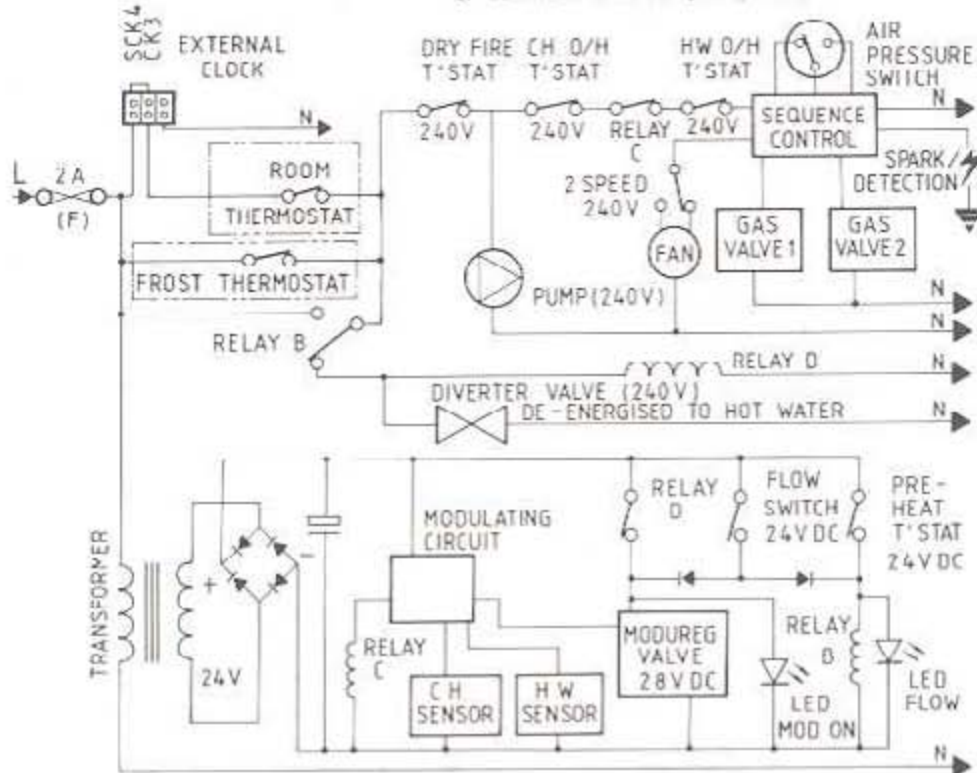
Notes.

(a) The mains lead connection **MUST** be made in such a way that, should the lead slip from the anchorage, the current carrying conductors become taut before the earthing conductor.

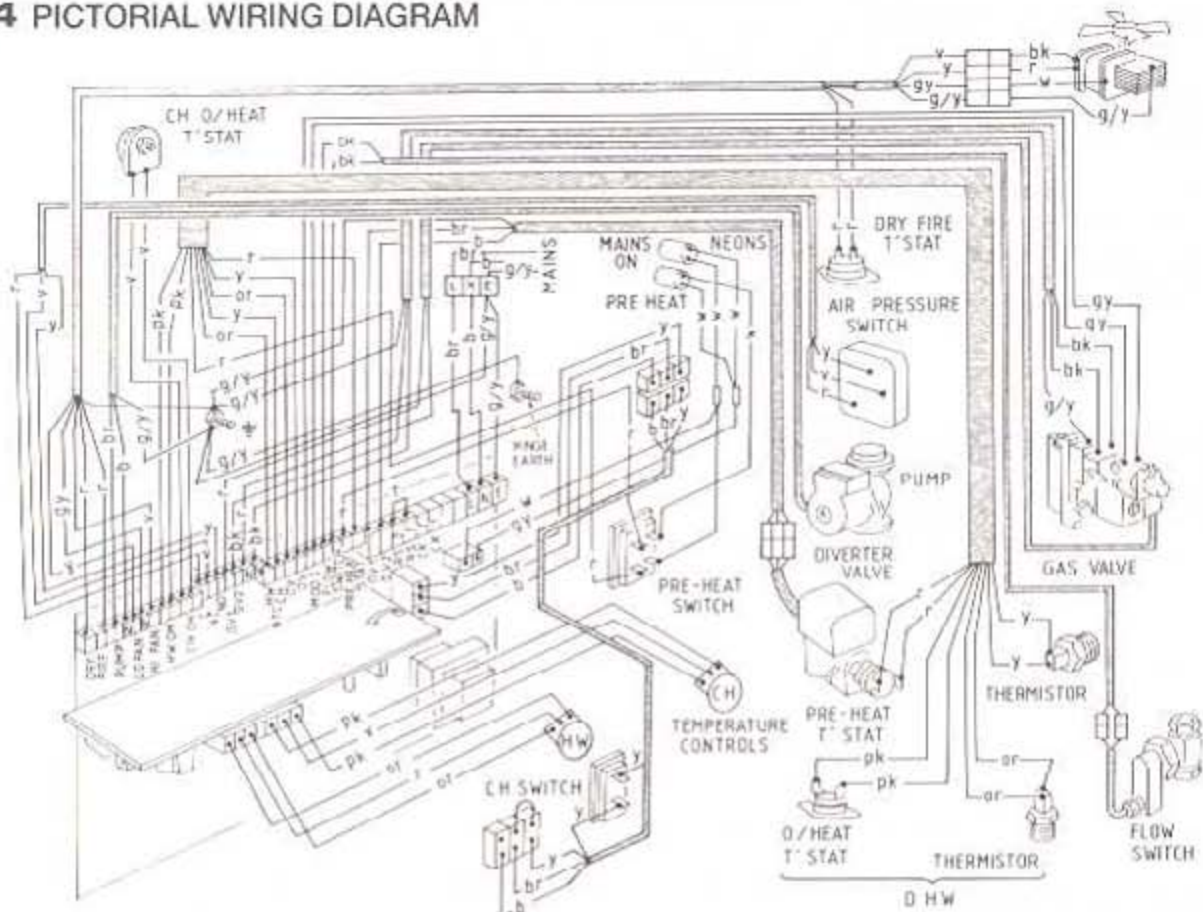
(b) The 'T' rating of the mains lead should be 70° C.

33 FLOW WIRING DIAGRAM

- Notes.** 1. The room and frost thermostats are not supplied.
2. Earths are not shown (except H.T.)

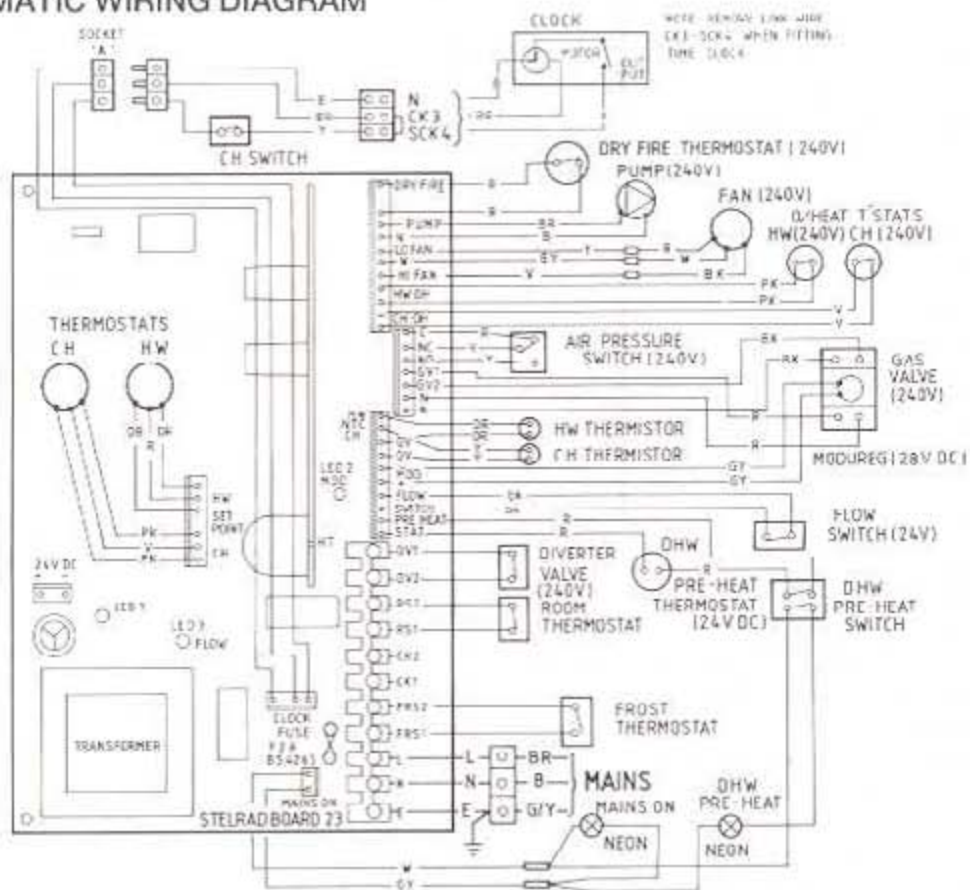


34 PICTORIAL WIRING DIAGRAM



LEGEND
 br brown r red or orange bk black v violet
 b blue w white pk pink y yellow gy grey g/y green/yellow

35 SCHEMATIC WIRING DIAGRAM



LEGEND
 br brown r red or orange bk black v violet
 b blue w white pk pink y yellow gy grey g/y green/yellow

36 EXTERNAL CONTROLS

External wiring MUST be in accordance with the current I.E.E. Wiring Regulations. Difficulty in wiring should not arise, providing the following directions are observed. Refer to Frame 35.

- 1. Room Thermostat.** Remove the link between terminals RS1 and RS2 and wire in the room thermostat. Reference should be made to the manufacturer's instructions.
- Controls that over-ride an ON/OFF control, e.g. a frost thermostat MUST be wired into the mains in parallel with the controls to be over-riden. Wire the frost thermostat into terminals FRS1 and FRS2.

- 3. Time Switch.**
 - (a) External.** Remove the link between terminals CK3 and SCK4; wire in the time switch. Ensure that the switched live from the timer is wired into SCK4.
 - (b) Optional Programmer Kit.** Refer to the 'Ideal Sprint Rapide Programmer Kit Installation Instructions'.

Note. Secure any leads with the cable clamps provided.

COMMISSIONING AND TESTING

37 COMMISSIONING AND TESTING

(a) Electrical Installation

- Checks to ensure the electrical safety should be carried out by a competent person.
- ALWAYS carry out the preliminary electrical system checks, i.e. earth continuity, polarity, resistance to earth and short circuit using a suitable test meter.

(b) Gas Installation

- 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 soundness test and purging air from the gas installation, open all windows and doors, extinguish naked lights and DO NOT SMOKE.
- Purge air from the gas installation by loosening the union on the gas service cock and purging until gas is smelled.
- Tighten the union and check for gas soundness.

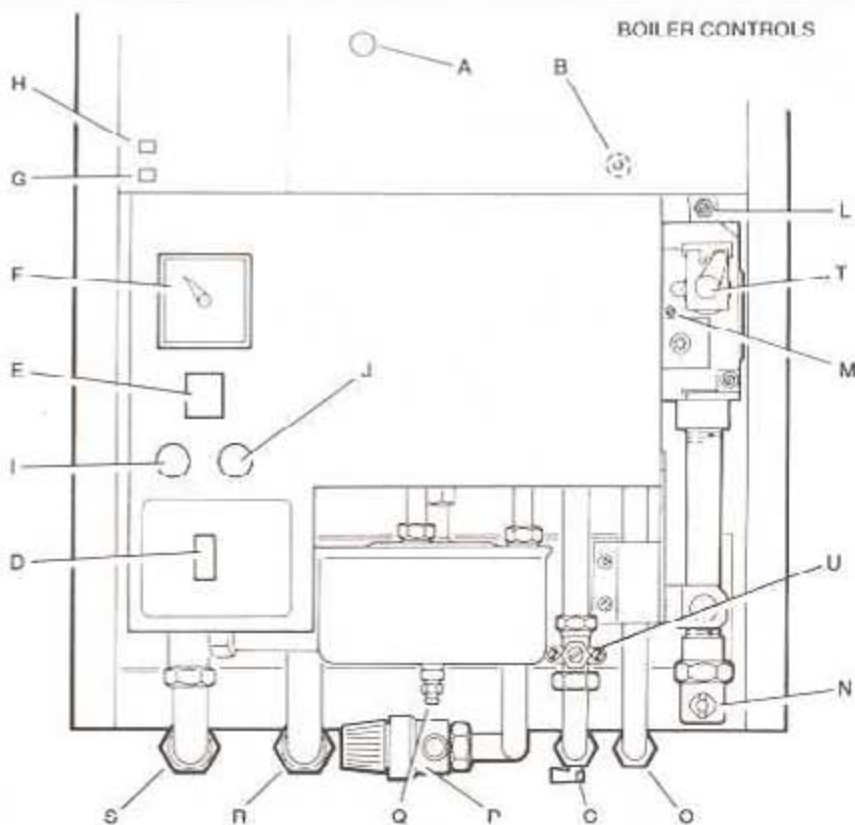
38 INITIAL LIGHTING

LEGEND

- A Sightglass
- B Overheat thermostat reset button
- C Domestic hot water inlet isolating valve
- D 'Central heating' switch
- E 'Domestic hot water preheat' switch
- F Central heating pressure gauge
- G 'Domestic hot water preheat' neon
- H 'Mains on' neon
- I Central heating temperature control
- J Domestic hot water temperature control
- L Burner pressure test nipple
- M Pilot pressure adjuster
- N Gas service cock
- O Domestic hot water outlet
- P Safety valve drain pipe connection
- Q Boiler drain point
- R Central heating flow isolating valve
- S Central heating return isolating valve
- T Modureg solenoid
- U D.H.W. flow adjuster

LIGHTING THE BOILER

- Check that the electricity supply is OFF
- Check that the gas service cock (N) is OPEN. Ensure that the 'Central heating' (D) and 'Domestic hot water preheat' (E) selector switches are OFF.
- Slacken the screw in the burner pressure test nipple (L) and connect a gas pressure gauge via a flexible tube.
- Switch the electricity supply ON and check that all external controls are calling for heat. The 'Mains on' neon (H) will glow.
- Set the 'Domestic hot water preheat' switch (E) to ON and the DHW preheat neon will glow. The pilot solenoid will open and the intermittent spark commence, continuing until the pilot is established.



The main burner will then light at the low rate, 1.5 mbar (0.6 in. w.g.).

- Check the appearance of the pilot flame, refer to Frame 15 of the 'Servicing' section. The pilot flame is factory set and no adjustment should be necessary.
- Test the pilot pipe connections for gas soundness using leak detection fluid.
- Refit the controls inner cover.
- Set the 'Domestic hot water preheat' switch to OFF and switch OFF the electricity supply.
- Fit the boiler casing. Refer to Frame 41.

39 INITIAL LIGHTING. *Continued from Frame 38.*

FITTING THE CASING. **WARNING.** The casing **MUST** be properly fitted for the boiler to operate correctly.

1. Lift the casing up to the boiler assembly and secure the top captive screws.

Bottom captive screws

2. Slide the glass fascia upwards and locate it in the 'pull-out' retaining catch.

3. Secure the bottom captive screws.

The casing **MUST** seat correctly and compress the sealing strip to make an air-tight joint. If the side clearance is limited, this may be checked by ensuring that the top and bottom edges of the casing are correctly located.

CENTRAL HEATING.

1. Check that the 'Central heating' (D) and the 'Domestic hot water pre-heat' (E) selector switches are OFF.
2. Check that all external controls are calling for heat and switch ON the electricity supply. The 'Mains on' neon (H) will glow.
3. Set the 'Central heating' switch to ON. Check that the pump and fan start and that the main burner cross-lights smoothly from the pilot flame.

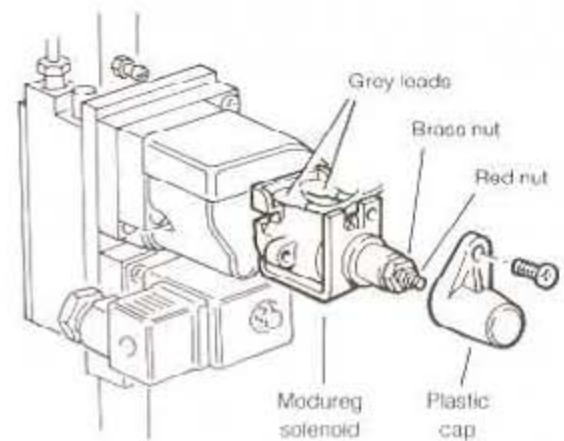
Note. The fan will start at maximum speed, reducing to slow speed when the pilot flame is established. The burner pressure should increase slowly to maximum setting.

4. Ensure that the pump selector switch is set to No. 3.

Pump
DETAIL OF PUMP SELECTOR SWITCH

5. Test for gas soundness around the boiler gas components using leak detection fluid.
6. The boiler central heating control is fully modulating, operating between burner pressures of 7.8 mbar (3.1 in.w.g.) ± 0.5 mbar (0.2 in.w.g.) MAX, and 1.5 mbar (0.6 in.w.g.) ± 0.5 mbar (0.2 in.w.g.) MIN. The maximum pressure is factory set.
7. Swing the control panel back to its working position and secure.
8. Operate the boiler for 10 minutes to stabilise the burner temperature.
9. Remove the plastic cap from the Modureg solenoid.

DETAIL OF GAS CONTROL VALVE



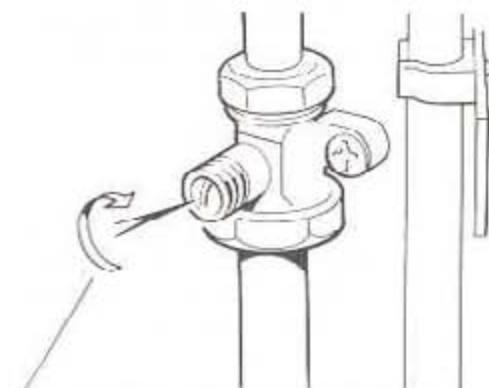
10. Switch OFF the mains electricity supply and disconnect one grey lead from the Modureg solenoid.
11. Switch ON the mains electricity supply. The burner pressure should reduce to the minimum setting of 1.5 mbar (0.6 in.w.g.) ± 0.5 mbar (0.2 in.w.g.). To adjust, turn the brass nut **CLOCKWISE** to **INCREASE** the pressure.
12. Switch OFF the mains electricity supply and reconnect the lead to the Modureg solenoid.
13. Switch ON the mains electricity supply. The burner pressure should increase to the maximum setting of 7.8 mbar (3.1 in.w.g.) ± 0.5 mbar (0.2 in.w.g.). This pressure is factory set and should require no adjustment. If adjustment is found to be necessary, refer to Frame 19 of the 'Servicing' section.

DOMESTIC HOT WATER (D.H.W.).

1. With the burner firing as above, fully open a D.H.W. tap. The pump should continue to run. The main burner pressure should increase to 14.5 mbar (5.8 in.w.g.) ± 0.5 mbar (0.2 in.w.g.) & the fan speed increase to maximum. The diverter valve should de-energise to circulate water to the boiler to the D.H.W. calorifier. The D.H.W. control is also fully modulating, operating between 14.5 mbar (5.8 in.w.g.) ± 0.5 mbar (0.2 in.w.g.) **MAXIMUM** and 1.5 mbar (0.6 in.w.g.) ± 0.5 mbar (0.2 in.w.g.) **MINIMUM**.
2. To adjust the maximum setting pressure, turn the red plastic screw **CLOCKWISE** to **INCREASE** the pressure using a 7 mm spanner - as detailed above. Replace the plastic cap. **ALWAYS adjust the minimum pressure BEFORE the maximum.**

DOMESTIC HOT WATER FLOWRATE SETTING.

1. Fully open all D.H.W. taps in turn and ensure that water flows freely from them.
2. Close all taps except the furthest one from the boiler and check that the boiler is firing at maximum rate.



3. Turn the D.H.W. flow adjuster **CLOCKWISE** to reduce the D.H.W. flowrate until a D.H.W. temperature of approximately 35°C rise is obtained at the tap. This corresponds to a flow rate of about 10.8 l/min (2.4 gpm).
4. Turn off the D.H.W. tap, and switch OFF the electricity supply.

40 GENERAL CHECKS.

Make the following checks for correct operation.

DOMESTIC HOT WATER (D.H.W.) MODE.

1. Set the 'Central heating' switch (D) to OFF.
2. Switch ON the electricity supply.
3. Set the 'Domestic hot water preheat' switch (E) to ON.
The pump should start, circulating water through the D.H.W. calorifier, and the burner should fire at minimum rate for about one minute - preheating the D.H.W. calorifier.
Note. If no D.H.W. is drawn off, the boiler will fire periodically for a short time to maintain the calorifier temperature.
4. If the preheat facility is not required, set the 'Domestic hot water preheat' switch (E) to OFF.
5. Fully open a D.H.W. tap; check that the pump starts and the main burner lights at maximum rate.
6. Reduce the D.H.W. draw-off rate to the minimum required to keep the boiler firing and check that the burner pressure decreases in response to D.H.W. temperature rise.
7. Close the D.H.W. tap and check that the main burner extinguishes and the pump stops.

CENTRAL HEATING (C.H.) AND DOMESTIC HOT WATER (D.H.W.) MODE.

1. Set the 'Central heating' switch (D) to ON. Check that the main burner fires at the maximum rate.
2. Fully open a D.H.W. and check that hot water is delivered.
3. Close the D.H.W. and turn off the 'Central heating' switch. Check that the main burner extinguishes and the pump stops.
4. Check the correct operation of the programmer, if fitted, and all other system controls. Operate each control separately and check that the main burner responds.
5. Remove the pressure gauge & tube. Refit the sealing screw in the pressure test nipple, ensuring that a gas tight seal is made.

WATER CIRCULATION SYSTEM.

1. With the system cold, check that the initial pressure is correct to the system design requirements.
For pre-pressurised systems this should be 1.0 bar (14.5 psi)
2. Set the RED fill-pressure indicator on the pressure gauge (F) to the initial system pressure. Refer to frame 30 'Filling'.
3. With the system hot examine all water connections for soundness. The system pressure will increase with temperature rise but should not exceed 2.5 bar (36.6 psi)

4. 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.
5. Re-fill and vent the system as described in 'Guide to System Requirements'. Clear all air locks and again check for water soundness.
6. Re-set the system initial pressure to the design requirement.
7. Balance the system and set the by pass.

BY PASS ADJUSTMENT. Refer also to frame 30.

Note. The flow through the boiler MUST NOT fall below the values shown in the Table in Frame 30.

With the boiler firing at full output and with one small radiator open, open the bypass until a temperature differential of 13°C is achieved across the boiler flow and return pipes.

FINALLY.

1. Re-fit the controls front cover in reverse order of removal (Frame 34)
2. Set the controls to the User's requirements.

Notes.

- (a) The design water output temperatures are as follows:

Central heating - 82° C Maximum

Domestic hot water - 65° C Maximum (at 3 l/min draw-off)

However, these can be set lower to 60° C (central heating) and 45° C (domestic hot water) via the 'Central heating' and 'Domestic hot water' temperature control knobs (I) and (J).

Refer to frame 38.

- (b) If an optional Programmer Kit is fitted, refer to the Programmer Kit Installation and the User's Instructions.

3. Check that the casing is seated correctly and compressing the sealing strip all around the casing.

WARNING: The boiler MUST NOT be operated with the casing removed.

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 to investigate.

41 HANDING OVER

After completing the installation and commissioning of the system, the Installer should hand over to the Householder by the following actions,

1. Hand the User's Instruction to the Householder and explain his/her responsibilities under the Gas Safety (Installation and Use) Regulations 1984.
2. Draw attention to the Lighting Instruction label affixed to the inside of the control compartment front cover.
3. Explain and demonstrate the lighting and shutting down procedures.
4. The operation of the boiler and the use and adjustment of ALL system controls should be fully explained to the Householder, to ensure the greatest possible fuel economy, consistent with the 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 building, in the event of the system remaining in-operative during frosty conditions.
5. Explain the function and the use of the boiler heating and domestic hot water controls.
6. Explain the function of the boiler over-heat thermostats.
7. Emphasise that if cut-out occurs, the boiler should be turned off and the local Heating Installer consulted.
7. Explain & demonstrate the function of time & temperature controls, radiator valves, etc. for the economic use of the system.
8. If an optional Programmer Kit is fitted, then draw attention to the Programmer Kit User's Instructions and hand them to the Householder.
9. **LOSS OF SYSTEM WATER PRESSURE.** Explain that the dial on the control panel indicates the central heating system pressure and that if the normal COLD pressure of the system, indicated by the red arrow on the dial, is seen to decrease over a period of time then a water leak is indicated. In this event the local Heating Installer should be consulted.
DO NOT FIRE THE BOILER IF THE PRESSURE HAS REDUCED TO ZERO FROM THE ORIGINAL SETTING.
10. Stress the importance of regular servicing by the Local Gas Region or by a qualified Heating Engineer & that a comprehensive service should be carried out AT LEAST ONCE A YEAR.

SERVICING/SPARE AND REPLACEMENT PARTS.

Stelrad Group Ltd. do not accept any liability resulting from the use of unauthorised parts, or the repair and servicing of appliances not carried out in accordance with the Company's recommendations and specifications. A comprehensive service should be carried out at least once a year. The User is advised to make a contract with the local Gas Region or a qualified Heating Engineer.

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 that the flue terminal is unobstructed and that the flue system, including the inner cover, is sealed correctly.
- (f) 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 9 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 SERVICING.

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

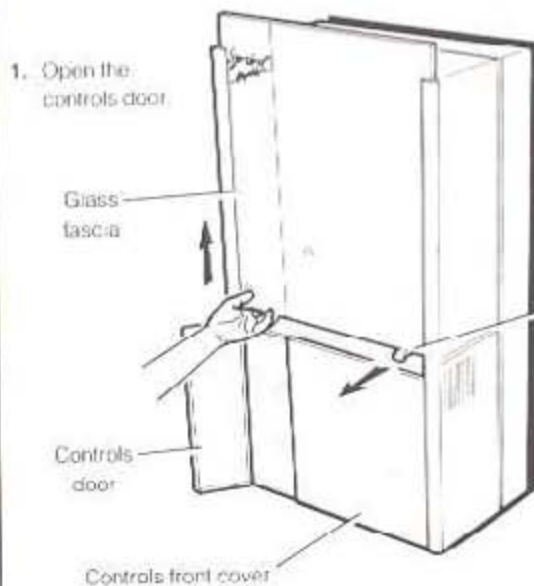
Note. In order to carry out either the servicing or replacement of components then the boiler casing must be removed. Refer to Frame 2.

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

Unless gas soundness is to be checked never light the boiler without the casing fitted.

2 BOILER CASING REMOVAL

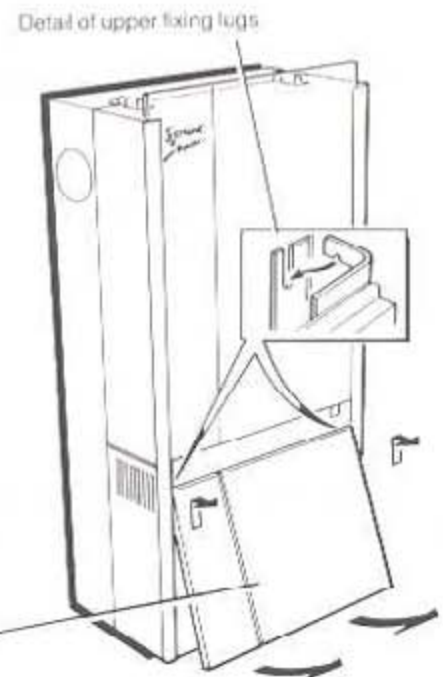
Take care not to damage the glass fascia panel.



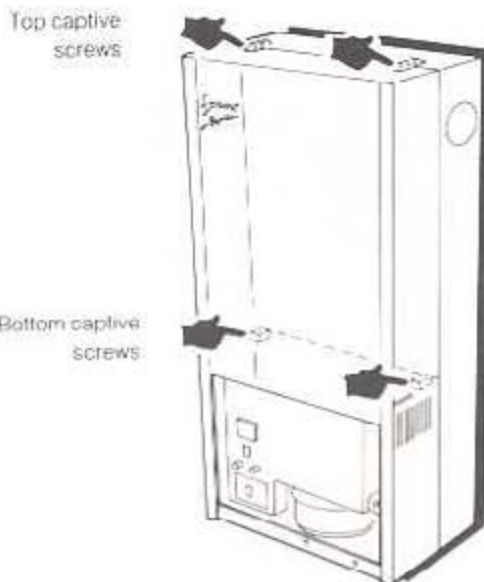
1. Open the controls door.

2. Slide the glass fascia upwards and locate it in the 'pull-out' retaining catch.

3. Remove the controls front cover by pulling forward at the bottom, then lifting to disengage from the upper fixing lugs.



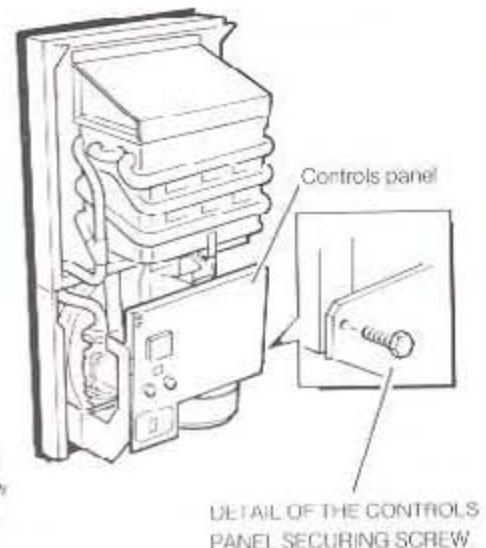
4. Release the bottom captive screws.



5. Push in the retaining catch and slide the glass fascia back into its working position.

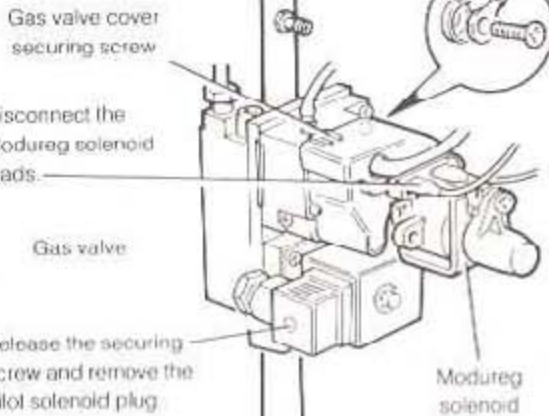
6. Release the top captive screws, lift the casing off the boiler and place it safely to one side.

7. Remove the controls panel securing screw and swing the panel open.

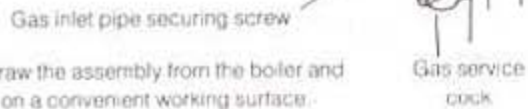


3 BURNER AND CONTROLS ASSEMBLY REMOVAL

1. Release the gas valve cover securing screw and slide the cover off.
2. Disconnect the operator leads & the earth lead
3. Disconnect the Modureg solenoid leads
4. Release the securing screw and remove the pilot solenoid plug
5. Disconnect the ignition/ detection lead from the P.C.B and disengage it from the retaining strap. Refer to Frame 34 of the 'Installation' section



6. Undo the gas service cock union nut.
7. Remove the gas inlet pipe securing screw.
8. Undo the gas manifold securing screw.
9. Support the assembly and remove the front support bracket wing nut.
10. Withdraw the assembly from the boiler and place on a convenient working surface.



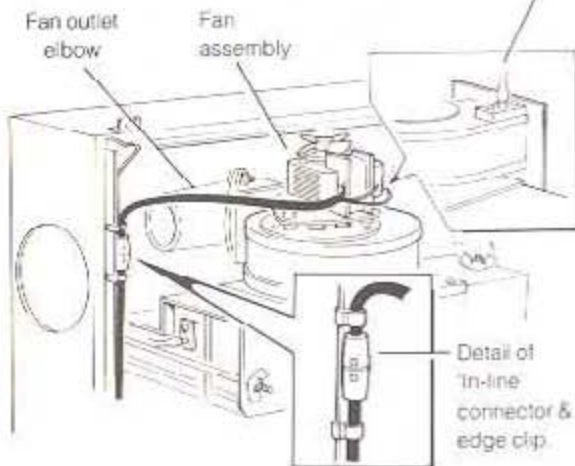
4 CLEANING THE BURNER ASSEMBLY

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.
Note. Brushes with metallic bristles **MUST NOT** be used.
2. Remove the main burner injector. Ensure that there is no blockage or damage and clean or renew as necessary.
3. Refit the injector using an approved jointing compound sparingly.

4. Inspect the pilot burner and ignition/ detection electrode, ensure that they are clean and in good condition. In particular check that:
 - (a) The pilot burner is clean and unobstructed
 - (b) The ignition/ detection electrode is clean & undamaged.
 - (c) The ignition/ detection lead is in good condition and securely connected
 - (d) The spark gap is correct.
 Refer to Frame 15
Clean or renew components as necessary

5 CLEANING THE FAN ASSEMBLY

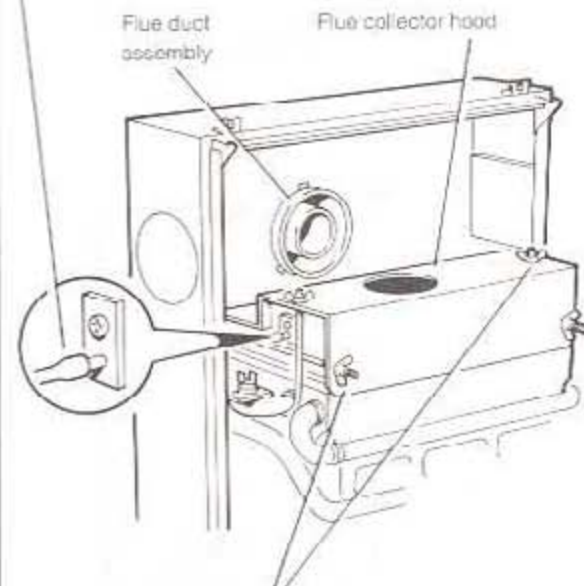
1. Unplug the fan electrical lead at the 'in-line' connector
2. Disconnect the pressure sensing pipe.



3. Remove the four screws, each with two washers, securing the fan assembly to the top of the collector hood and remove the lead from the edge clip.
4. Slide the fan assembly clear of the boiler - disengaging the fan outlet elbow from the flue
5. Check that the fan impeller runs freely. Clean with a soft brush or renew as necessary. **Note.** Always take care when handling the fan, due to the balance of the impeller
6. Ensure that the air inlet duct is unobstructed.

6 CLEANING THE FLUEWAYS

1. Disconnect the pressure switch sensing pipe.



2. Slacken the four wing nuts, disengage the tie rods and remove the flue collector hood
3. Place a plastic sheet or similar beneath the boiler. Using a suitable brush or clearing rod remove all loose deposits from the heat exchanger finned block and copper skirt, brushing from above and below.

7 CLEANING THE DOMESTIC HOT WATER (D.H.W.) FILTER

1. Close the D.H.W. inlet isolating valve
2. Open the lowest D.H.W. draw off tap. Drain any residual water into a receptacle via the D.H.W. drain screw.

3. Undo the unions shown & remove the D.H.W. inlet pipe

4. Withdraw the filter from its housing beneath the D.H.W. flow adjuster.

5. Clean the filter carefully.



9 GAS PRESSURE ADJUSTMENT

1. **Pilot.** Refer also to Frame 38 'Installation'

Light the boiler and check that the pilot flame envelops the ignition/detection electrode (refer to Frame 15). 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:

- (a) Turn the boiler OFF.
- (b) Turn the pilot pressure adjuster screw **CLOCKWISE** until fully **CLOSED**.
- (c) Turn the pilot pressure adjuster screw **ANTI-CLOCKWISE** four full turns to give maximum setting.
- (d) Re-light the boiler. If the flame length is still incorrect then replace the pilot injector. Refer to Frame 15.

2. **Main Burner.**

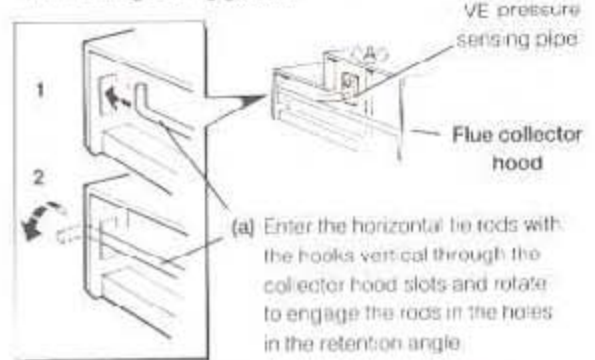
After any servicing the maximum and minimum burner setting pressures should be checked. Refer to the Data Plate on the front of the control panel. Any required adjustments should be made as described in Frame 39 'Installation'.

Finally, refit the controls compartment front cover.

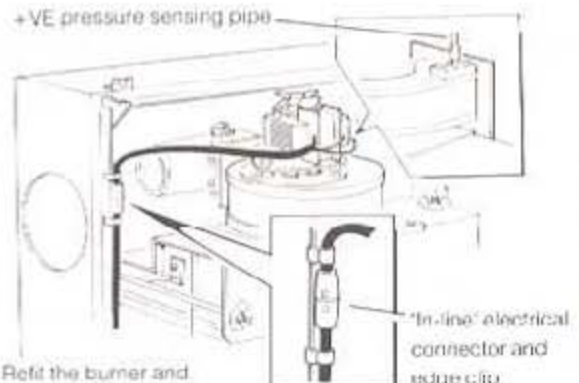
8 RE-ASSEMBLY

Re-assemble the boiler in the following order:

1. Refit the D.H.W. filter, using new sealing washers.
2. Refit the flue collector hood - mending any damaged or deteriorating sealing gaskets



3. RECONNECT THE -VE PRESSURE SENSING PIPE.
4. Refit the fan mounting plate assembly. Reconnect the -VE pressure sensing pipe, the 'in-line' electrical connector & fit the lead into the edge clip as shown.



5. Refit the burner and control's assembly.
6. Reconnect the gas service cock and electrical wiring.
7. Check the sightglass in the boiler casing. Clean or renew as necessary.
8. Secure the control's panel in its normal working position.
9. Refit the boiler casing.

IMPORTANT. When work is complete the casing must be correctly re-fitted - ensuring that a good seal is made. The boiler **MUST NOT** be operated if the casing is not fitted *led.* (except for gas soundness tests).

COMPONENT REPLACEMENT

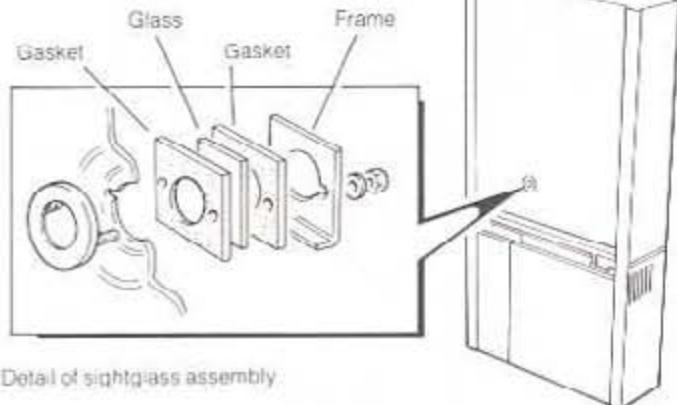
Note. To replace the components in Frames 10 to 43 it is necessary to remove the boiler casing. Refer to Frame 2.

IMPORTANT. When work is complete the casing **MUST** be correctly fitted.

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

10 SIGHTGLASS REPLACEMENT

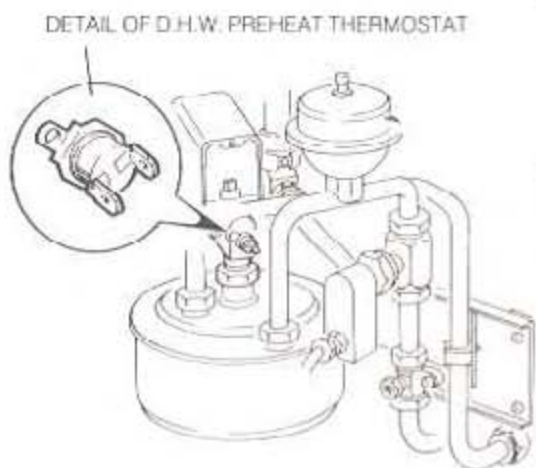
1. Remove the glass fascia panel from the casing
2. Unfasten the two nuts and washers and remove the sightglass assembly.
3. Fit the new sightglass and re-assemble as shown
4. Retighten the two nuts to ensure an airtight seal but **DO NOT** overtighten.
5. Refit the glass fascia panel.



Detail of sightglass assembly

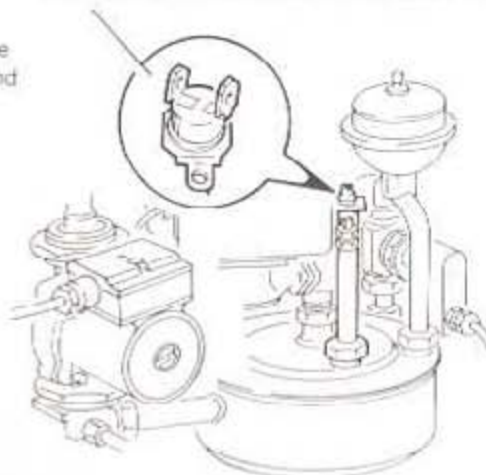
11 D.H.W. PRE-HEAT THERMOSTAT & D.H.W. OVERHEAT THERMOSTAT REPLACEMENT

1. D.H.W. **overheat thermostat only**: If access to the securing screws is difficult then remove the D.H.W. expansion vessel. Refer to Frame 31.



2. Remove the two screws securing the faulty thermostat and withdraw the thermostat
3. Pull off the two electrical leads from the thermostat.
4. Fit the new thermostat and re-assemble in reverse order (polarity is immaterial)

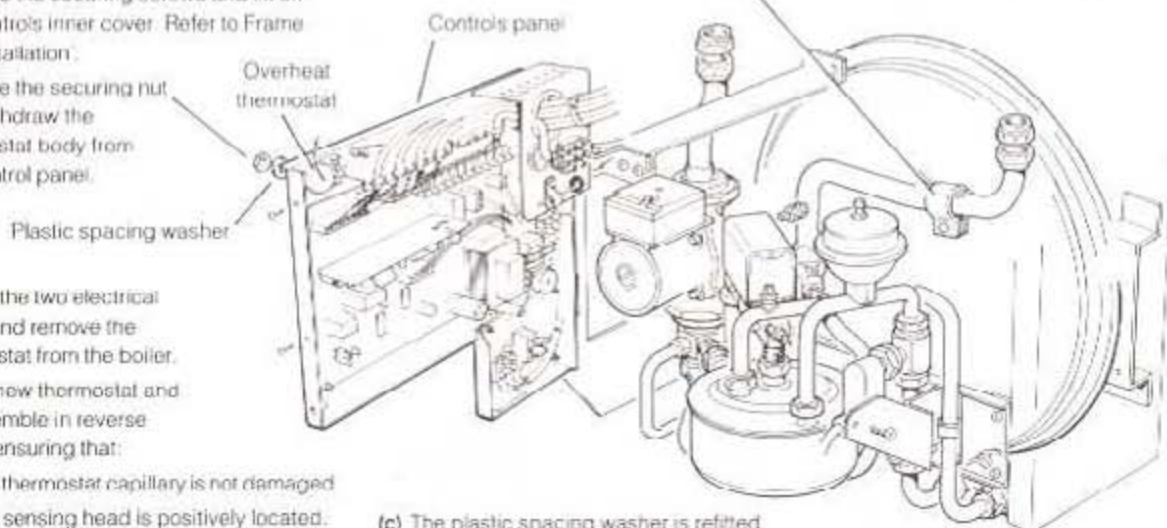
DETAIL OF D.H.W. OVERHEAT THERMOSTAT



12 C.H. OVERHEAT THERMOSTAT REPLACEMENT

1. Release the clip securing the thermostat 'pancake' sensing head and withdraw the head
2. Remove the securing screws and lift off the controls inner cover. Refer to Frame 32 'Installation'.
3. Remove the securing nut and withdraw the thermostat body from the control panel.

VIEW THE BOILER OVERHEAT THERMOSTAT **Note.** The controls panel inner cover is shown removed.

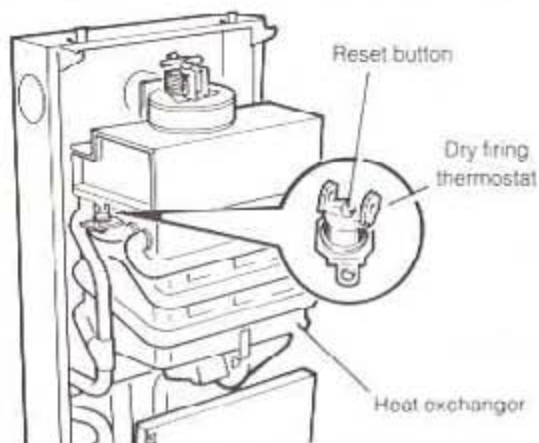


4. Pull off the two electrical leads and remove the thermostat from the boiler.
5. Fit the new thermostat and re-assemble in reverse order, ensuring that:
 - (a) The thermostat capillary is not damaged
 - (b) The sensing head is positively located.

(c) The plastic spacing washer is refitted

13 DRY FIRING THERMOSTAT REPLACEMENT

1. Remove the two securing screws.
2. Pull off the two electrical leads.
3. Fit the new thermostat and re-assemble in reverse order.



14 PILOT BURNER REPLACEMENT

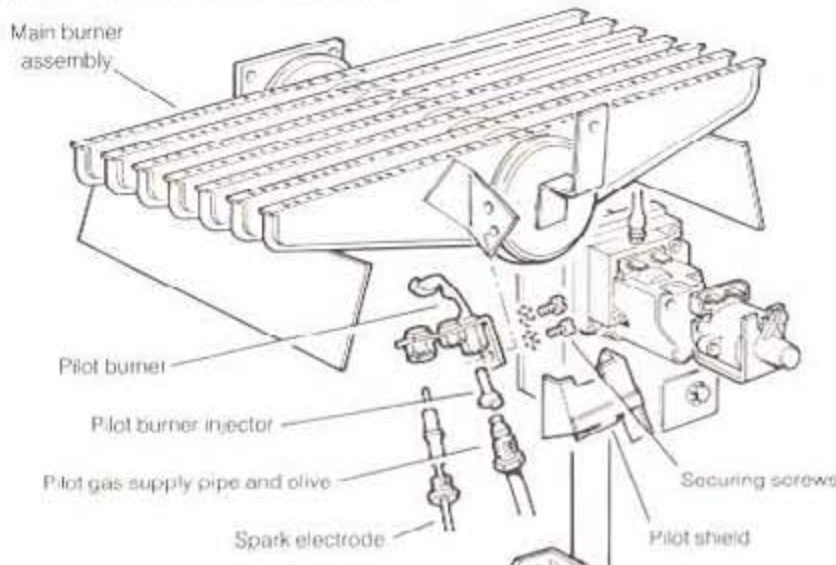
Please refer to Frame (15) for illustration of the following procedure.

1. Remove the burner and controls assembly. Refer to Frame 3.
2. 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 pipe as shown.
3. Undo the spark electrode retaining nut and withdraw the electrode.
4. Remove the two securing screws and withdraw the pilot assembly and shield.
5. Transfer the spark electrode to the new pilot burner.
6. Fit the new pilot burner assembly and re-assemble in reverse order, ensuring that:
 - (a) The injector is in position when re-fitting the pilot supply.
 - (b) A gas-tight joint is made. Refer to Frame 36 'Installation'.
 - (c) The spark gap is correctly set at 4 - 6 mm.

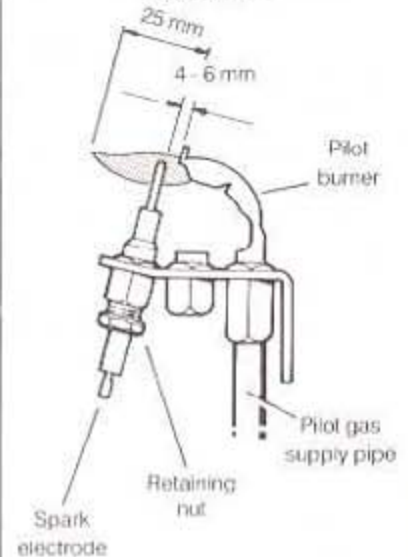
15 PILOT BURNER REPLACEMENT

Continued from Frame 14

DETAIL OF THE PILOT BURNER ASSEMBLY

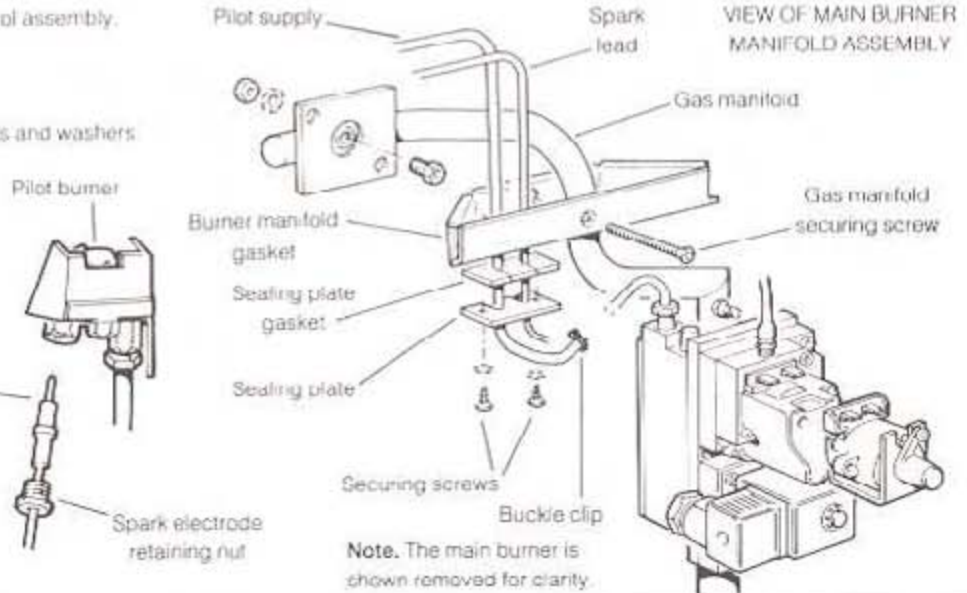


DETAIL OF THE PILOT IGNITION SPARK GAP



16 SPARK ELECTRODE AND LEAD ASSEMBLY REPLACEMENT

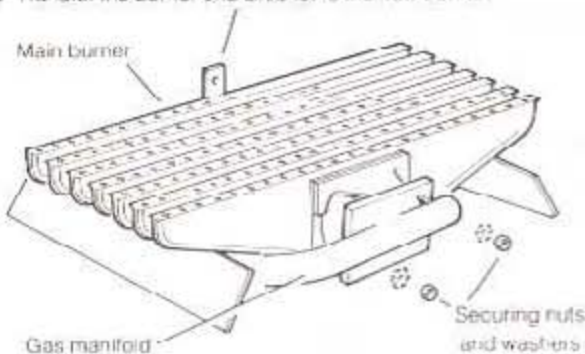
1. Remove the burner and control assembly. Refer to Frames 3
2. Remove the buckle clips
3. Undo the two securing screws and washers and remove the sealing plate.
4. Undo the spark electrode retaining nut and withdraw the electrode, complete with the integral spark lead.
5. Fit the new electrode and re-assemble in reverse order.
6. Check that the spark gap is correct (4 - 6 mm). Refer to Frame 15.



Note. The main burner is shown removed for clarity.

17 MAIN BURNER REPLACEMENT

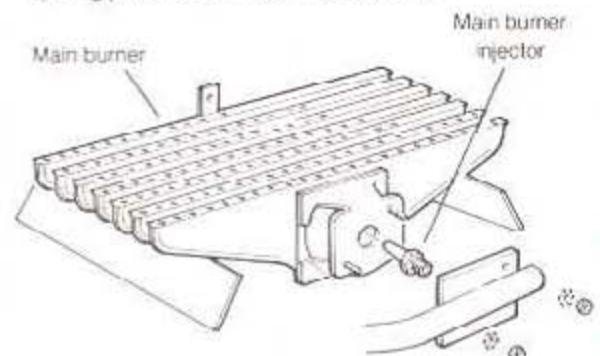
1. Remove the burner and controls assembly. Refer to Frame 3.
2. Remove the pilot burner assembly. Refer to Frame 15.
3. Remove the two nuts and washers securing the burner to the manifold and withdraw the burner.
4. Transfer the burner end bracket to the new burner.



5. Fit the new burner and re-assemble in reverse order. Do not damage the burner injector, screwed into the gas manifold.

18 MAIN BURNER INJECTOR REPLACEMENT

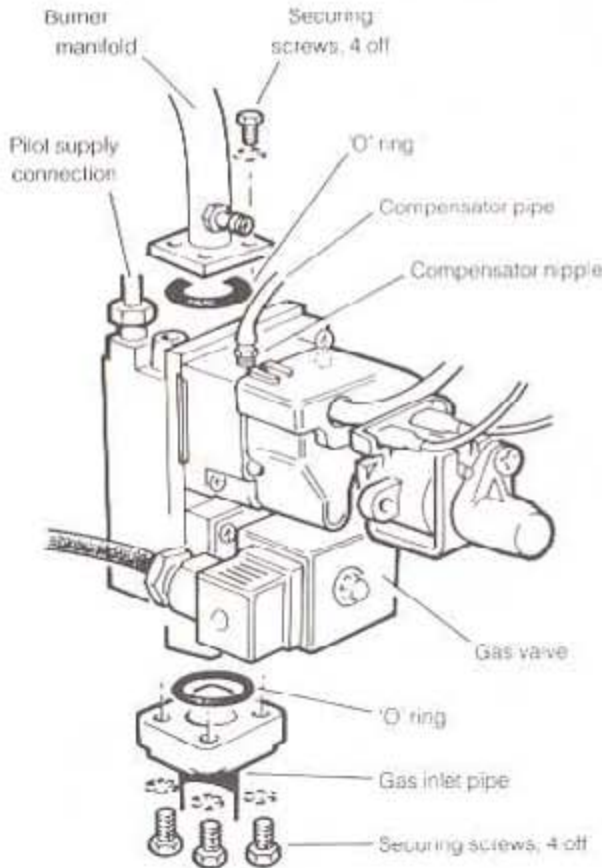
1. Remove the burner and controls assembly. Refer to Frame 3.
2. Unscrew the main burner injector from the manifold.
3. Fit the new injector using a suitable jointing compound sparingly and re-assemble in reverse order.



Note. The main burner is shown removed from the gas manifold for clarity.

19 GAS VALVE REPLACEMENT

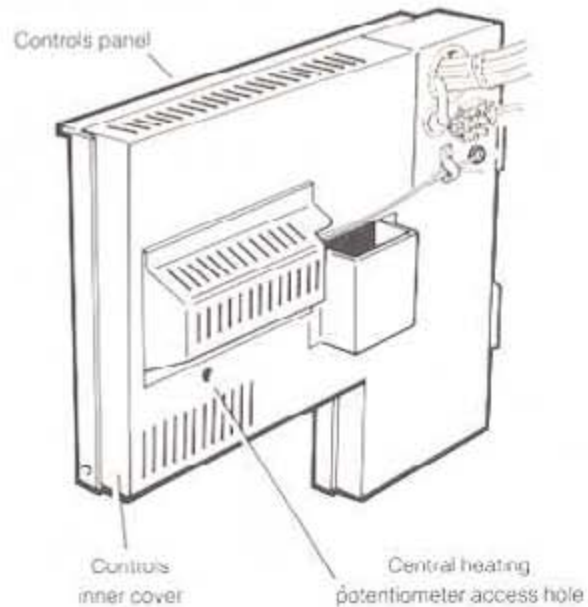
1. Remove the burner and controls assembly. Refer to Frame 3.
2. Undo the pilot supply connection.
3. Disconnect the pressure compensator pipe.
4. Remove the four securing screws and withdraw the valve from the burner gas manifold.
5. Transfer the gas inlet pipe to the new valve.
6. Transfer the compensator nipple to the new gas valve.
7. Fit the new gas valve ensuring that:
 - (a) The valve is fitted the right way round - an arrow engraved on the valve indicates the direction of flow.
 - (b) The sealing 'O' rings supplied with the valve are correctly fitted at the inlet and outlet flanges.



Note. After replacing the gas valve, the burner setting pressures should be checked as follows:

1. Minimum central heating (C.H.) and domestic hot water (D.H.W.) burner setting pressure, refer to Frame 39 (Installation) under the section headed 'Central Heating'.
2. Maximum domestic hot water (D.H.W.) burner setting pressure, refer to Frame 39 (Installation) under the section headed 'Domestic hot water'.
3. Maximum central heating (C.H.):
 - (a) Check that the 'Central heating' switch and the 'Domestic hot water pre-heat' switch are OFF.
 - (b) Check that the external controls are calling for heat, and switch ON the electricity supply. The 'Mains on' indicator neon will glow.
 - (c) Set the 'Central heating' switch to ON.
 - (d) To adjust the pressure, insert a screwdriver through the access hole provided in the controls inner cover and engage it in the potentiometer slot. Turn CLOCKWISE to INCREASE the pressure.

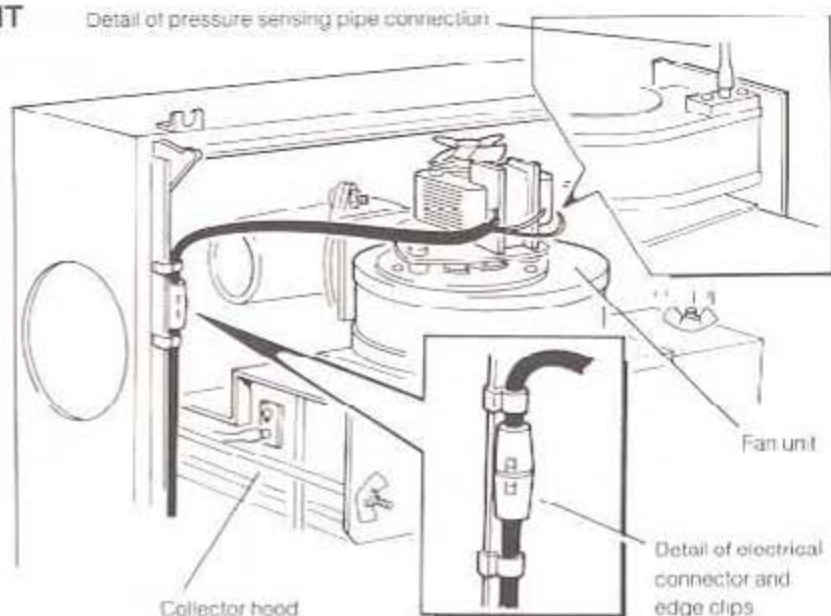
REAR VIEW OF THE BOILER CONTROLS PANEL



20 FAN UNIT REPLACEMENT

1. Unplug the fan electrical lead at the 'in-line' connector.
2. Disconnect the pressure sensing pipe.
3. Remove the four screws, each with two washers, securing the fan assembly to the top of the collector hood.
4. Remove the electrical lead from the edge clip.
5. Slide the fan assembly clear of the boiler, disengaging the fan outlet elbow from the flue.
6. Transfer the pressure sensing pipe connector to the new fan.
7. Fit the new fan in reverse order.

Note. Always take care when handling the fan in order to preserve the balance of the impeller.



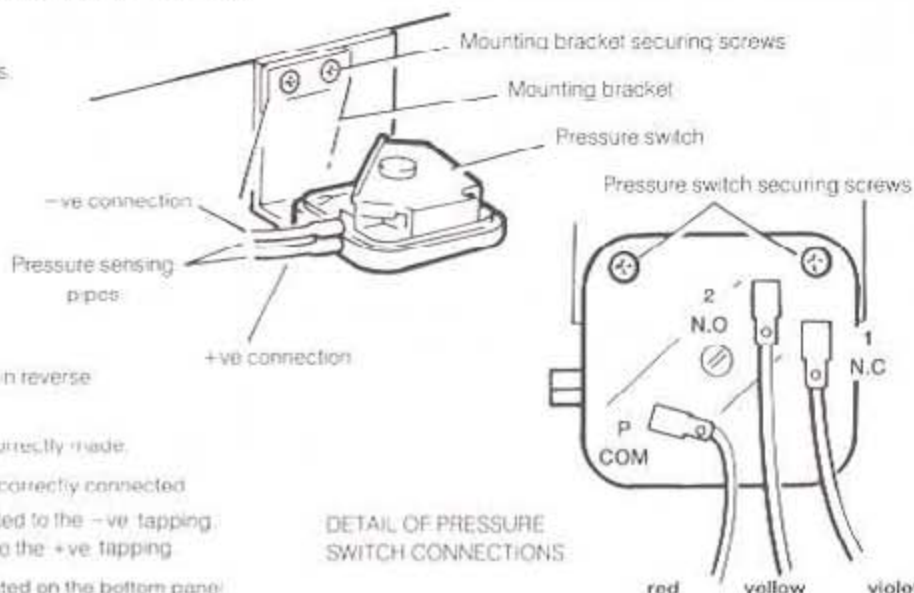
21 PRESSURE SWITCH REPLACEMENT

1. Lift off the pressure switch cover.
2. Disconnect the three electrical leads.
3. Pull off the pressure sensing pipes.

4. Remove the mounting bracket securing screws and withdraw the complete switch and bracket.
5. Remove the pressure switch securing screws and transfer the bracket to the new switch.
6. Fit the new switch and re-assemble in reverse order, ensuring that:
 - (a) The electrical connections are correctly made.
 - (b) The pressure sensing pipes are correctly connected.

The L.H. pipe should be connected to the -ve tapping on the switch and the R.H. pipe to the +ve tapping.

Note: A '-ve +ve' label is located on the bottom panel.



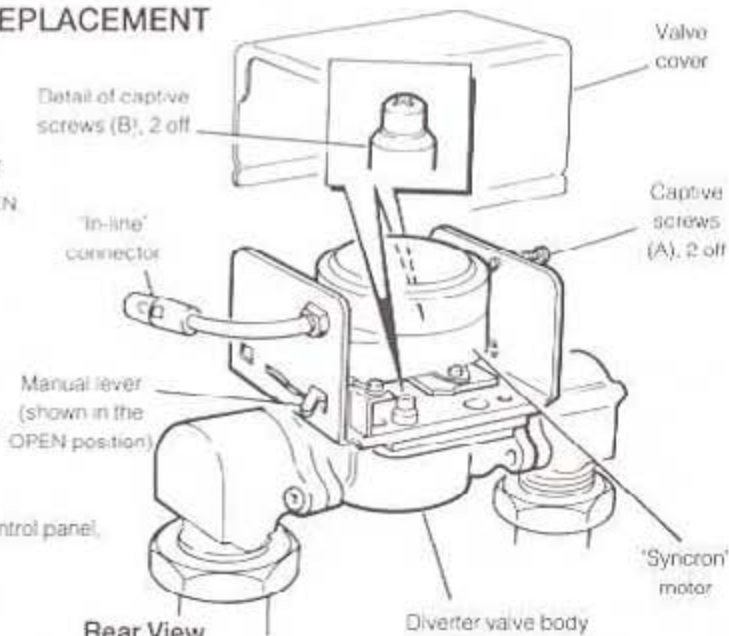
DETAIL OF PRESSURE SWITCH CONNECTIONS

22 DIVERTER VALVE ACTUATOR REPLACEMENT

1. Remove the three securing screws and lift off the controls inner cover. Refer to Frame 34 'Installation'.
2. Unplug the diverter valve lead at the 'in-line' connector.
3. Release the captive screw (A) and lift off the valve cover.
4. SET THE MANUALLY OPERATED VALVE LEVER TO OPEN.
5. Release the two captive screws (B) and lift the actuator off the valve body. If access to the screws is difficult then remove the pressure switch (Frame 21).

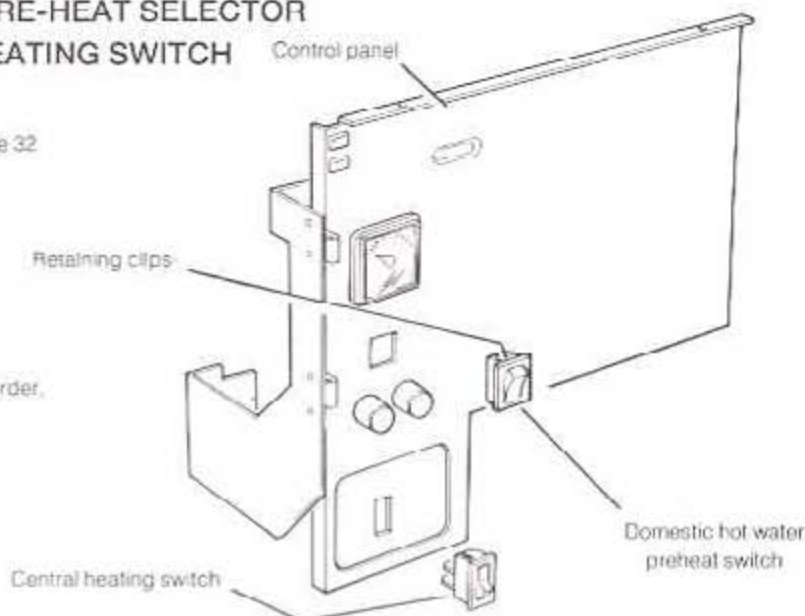
Note: At this stage, if required, the 'Synchron' motor may be replaced. Refer to the instructions supplied with the replacement motor.

6. Fit the new actuator, PRESET TO THE OPEN POSITION.
7. Disconnect the valve lead from the P.C.B. (refer to Frames 33,34 & 35 Installation) and discard the lead.
8. Connect the lead of the new actuator directly into the control panel.
9. Secure the lead to the wiring harness using the cable straps provided.
10. Re-assemble in reverse order.



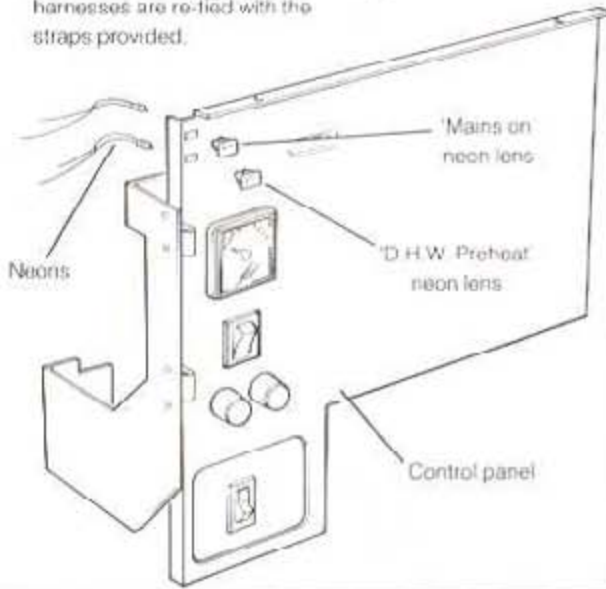
23 DOMESTIC HOT WATER PRE-HEAT SELECTOR SWITCH AND CENTRAL HEATING SWITCH REPLACEMENT

1. Remove the controls inner cover. Refer to Frame 32 'Installation'.
2. Pull the electrical leads off the terminals of the defective switch.
3. Compress the retaining clips and prise the switch out through the front of the control panel.
4. Fit the new switch and re-assemble in reverse order, (polarity immaterial).



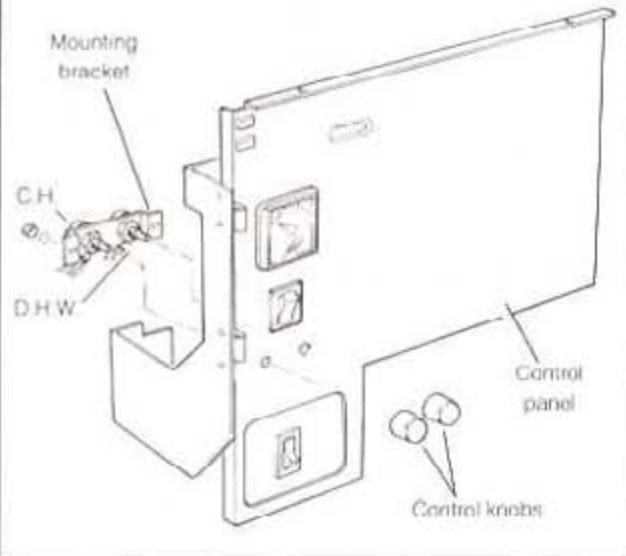
24 INDICATOR NEON REPLACEMENT

1. Remove the controls inner cover. Refer to Frame 32 'Installation'.
2. Disconnect the electrical lead from the L.H. side of the mains supply terminal block.
3. Release the pressure gauge capillary clamp.
4. Remove the 2 screws and slide the cable entry shroud back.
5. Release the wires from the harness and disconnect the neon leads from the P.C.B. and from the 'D.H.W. preheat' switch.
6. Disengage the two neons from the lenses and withdraw the complete harness from the control panel.
7. Fit the new neon harness and re-assemble in reverse order, ensuring that each neon is fitted in its correct lens (refer to Frame 34 'Installation') and the wiring harnesses are re-tied with the straps provided.



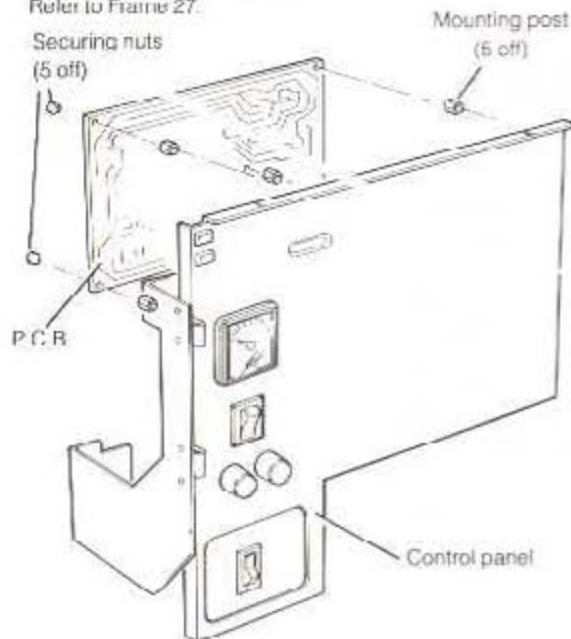
25 C.H. AND D.H.W. POTENTIOMETER REPLACEMENT

1. Remove the controls inner cover. Refer to Frame 32 'Installation'.
2. Unplug the potentiometer lead from the P.C.B. (refer to Frames 33, 34 and 35 - 'Installation') and release the wires from the harness.
3. Remove the control knobs.
4. Remove the securing nuts and withdraw the potentiometers and mounting bracket assembly.
5. Fit the new potentiometer and mounting bracket assembly.
6. Re-assemble in reverse order, ensuring that the wiring harnesses are re-tied with the straps provided.



26 P.C.B. / TRANSFORMER REPLACEMENT

1. Remove the controls inner cover. Refer to Frame 32 'Installation'.
2. Disconnect all electrical wiring from the PCB. Refer to Frames 33, 34, 35 'Installation' and Frame 47 'Exploded Views'.
3. Remove the securing nuts from the four mounting posts, and lift off the P.C.B. / Transformer.
4. Transfer the automatic ignition P.C.B. to the new board. Refer to Frame 27.

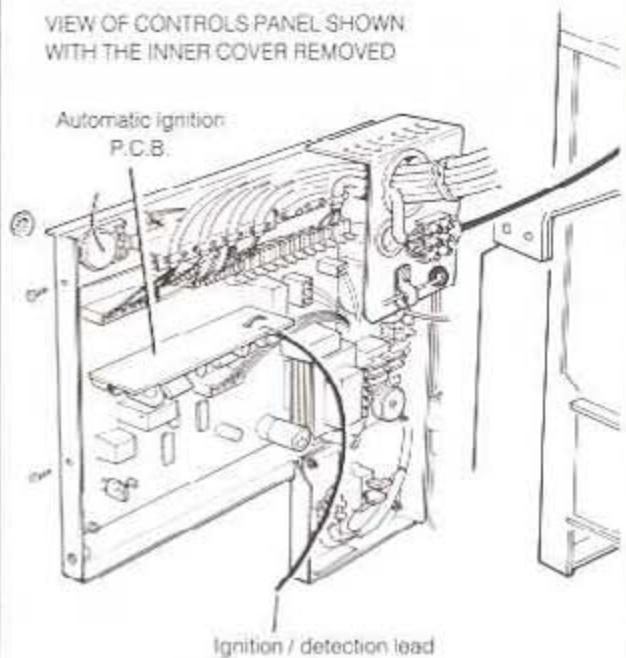


5. Fit the new PCB and re-assemble in reverse order. **Note.** Check the maximum C.H. burner setting pressure. Refer to Frame 19.

27 AUTOMATIC IGNITION P.C.B. REPLACEMENT

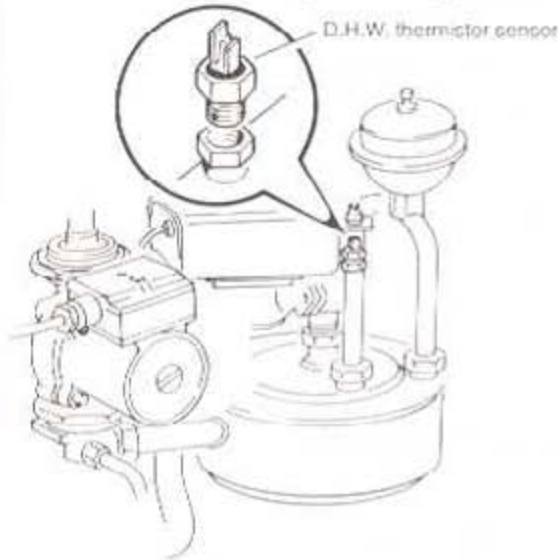
1. Disconnect the ignition / detection lead from the automatic ignition P.C.B.
2. Remove the controls inner cover. Refer to Frame 32 'Installation'.
3. Unplug the automatic ignition P.C.B. from the larger P.C.B.
4. Fit the new P.C.B. and re-assemble in reverse order.

VIEW OF CONTROLS PANEL SHOWN WITH THE INNER COVER REMOVED



28 D.H.W. THERMISTOR SENSOR REPLACEMENT

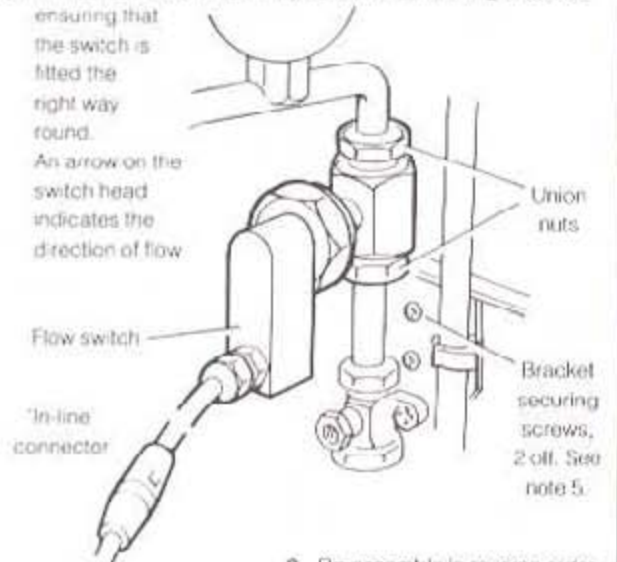
1. Close the D.H.W. inlet isolating valve.
2. Open the lowest D.H.W. draw-off tap.
3. Drain any residual water into a receptacle via the D.H.W. drain screw. Refer to Frame 30.
4. Pull the electrical lead off the thermistor sensor.
5. Unscrew the sensor from the pipe, applying an appropriate counter force on the boss to prevent damage.



6. Fit the new sensor, using a suitable jointing compound complying with BS 5292 (e.g. Permatbond A 129), and re-assemble in reverse order.

29 D.H.W. FLOW SWITCH REPLACEMENT

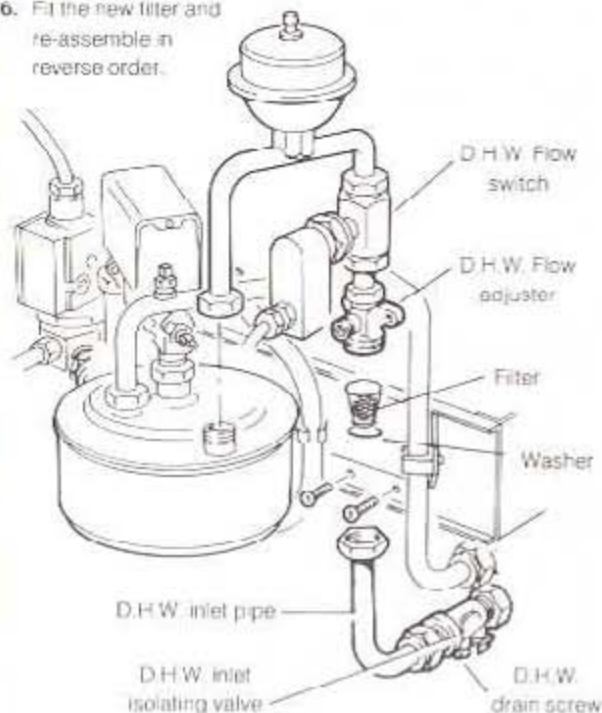
1. Disconnect the flow switch lead at the 'in-line' connectors.
2. Close the D.H.W. isolating valve.
3. Open the lowest D.H.W. draw-off tap
4. Drain any residual water into a receptacle via the D.H.W. drain screw. Refer to Frame 30.
5. Remove the 2 securing screws and withdraw the control panel support bracket.
6. Undo the union nuts shown. Withdraw the switch & inlet pipe.
7. Transfer the inlet pipe to the new flow switch.
8. Fit the new flow switch complete with new sealing washers, ensuring that the switch is fitted the right way round. An arrow on the switch head indicates the direction of flow.



9. Re-assemble in reverse order.

30 D.H.W. FILTER REPLACEMENT

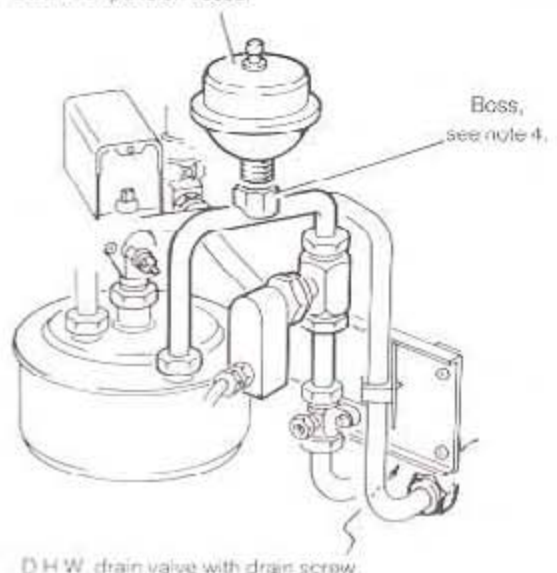
1. Close the D.H.W. inlet isolating valve.
2. Open the lowest D.H.W. draw-off tap.
3. Drain any residual water into a receptacle via the D.H.W. drain screw.
4. Undo the unions shown and remove the D.H.W. inlet pipe.
5. Withdraw the filter from its housing beneath the D.H.W. flow adjuster.
6. Fit the new filter and re-assemble in reverse order.



31 D.H.W. EXPANSION VESSEL REPLACEMENT

1. Close the D.H.W. inlet isolating valve.
2. Open the lowest D.H.W. draw-off tap.
3. Drain any residual water into a receptacle via the D.H.W. drain screw.
4. Unscrew the expansion vessel from the pipe, applying an appropriate counterforce on the boss to prevent damage.
5. Fit the new vessel complete with new sealing washer and re-assemble in reverse order.

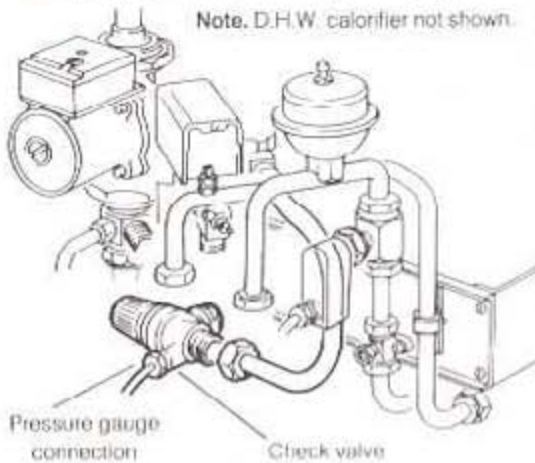
D.H.W. Expansion vessel



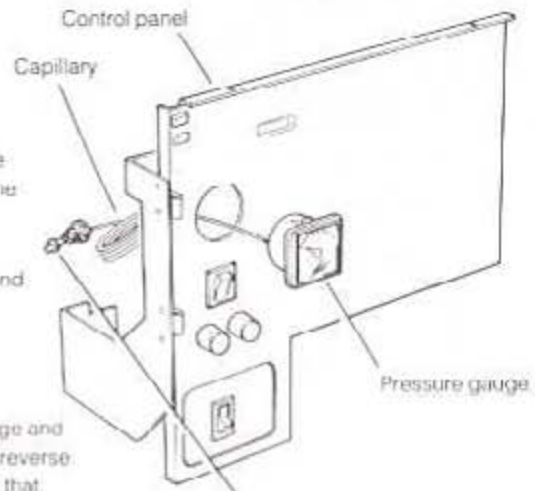
32 PRESSURE GAUGE REPLACEMENT

DETAIL OF THE BOILER CONTROL PANEL

1. Remove the controls inner cover. Refer to Frame 32 'Installation'
2. Release the pressure gauge capillary clamp and withdraw the capillary from the entry, through the split grommet.



3. Disconnect the pressure gauge capillary from the safety valve.
4. Compress the retaining lugs and withdraw the gauge through the front of the control panel.
5. Fit the new gauge and re-assemble in reverse order, ensuring that:



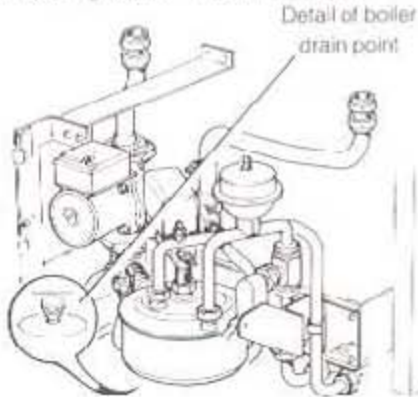
- (a) The capillary is carefully and neatly routed, as previously;
- (b) The sealing 'O' ring is correctly fitted;
- (c) The gauge is correctly orientated within the control panel.

33 DRAINING THE BOILER

IMPORTANT: IN ORDER TO REPLACE THE COMPONENTS IN FRAMES 34 TO 43 IT IS NECESSARY TO DRAIN THE BOILER.

1. Close the boiler isolating valves. Refer to Frame 44.

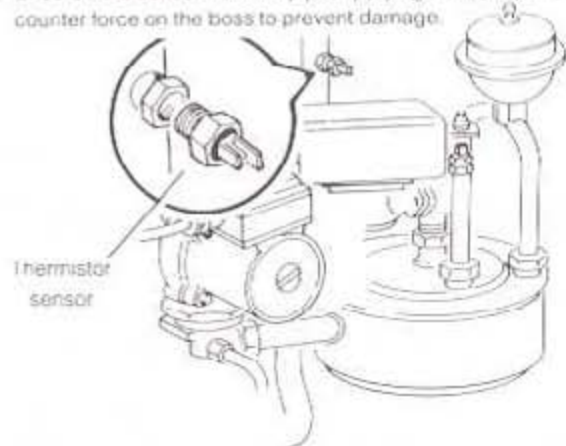
2. Open the boiler drain point. There may be a slight water leakage therefore any gas or electrical components and the floor should be protected with water proof sheets or similar.



3. To refill the boiler refer to Frame 30 'Installation'.

34 C.H. THERMISTOR REPLACEMENT

1. Drain the boiler. Refer to Frame 33
2. Pull the electrical lead off the thermistor sensor.
3. Unscrew the sensor from the pipe, applying an appropriate counter force on the boss to prevent damage.

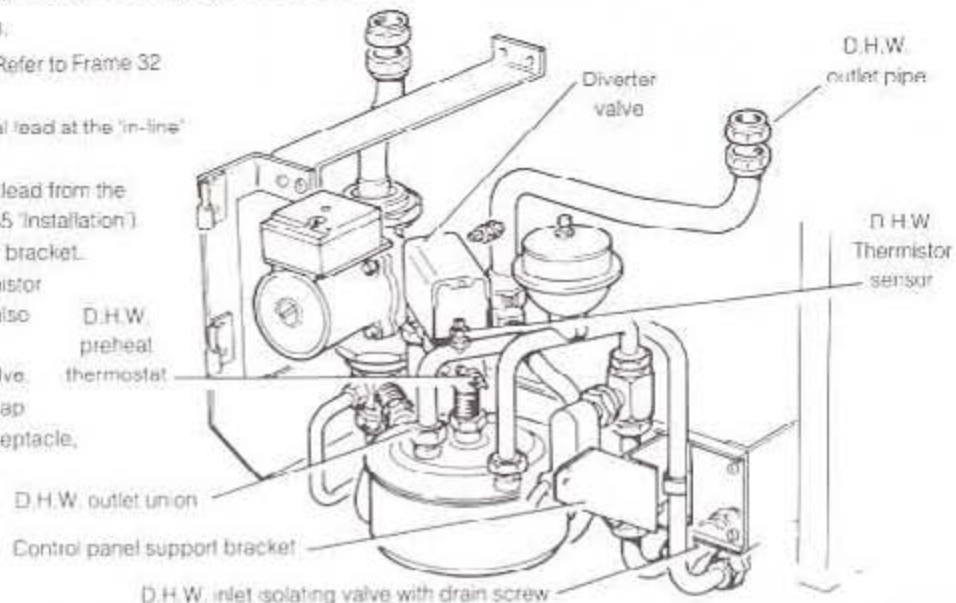


4. Fit the new sensor using an appropriate jointing compound and re-assemble in reverse order.

35 DIVERTER VALVE (COMPLETE) REPLACEMENT

DETAIL OF BOILER INTERNAL PIPEWORK

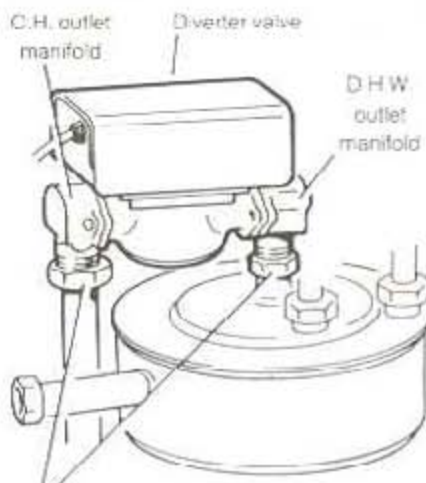
1. Drain the boiler. Refer to Frame 33.
2. Remove the controls inner cover. Refer to Frame 32 'Installation'
3. Unplug the diverter valve electrical lead at the 'in-line' connector, if fitted.
4. Disconnect and discard the valve lead from the P.C.R. (refer to Frames 33, 34 & 35 'Installation')
5. Remove the control panel support bracket.
6. Pull the leads off the D.H.W. thermistor sensor, overheat thermostat and also the D.H.W. preheat thermostat.
7. Close the D.H.W. inlet isolating valve.
8. Open the lowest D.H.W. draw-off tap
9. Drain any residual water into a receptacle, via the D.H.W. drain screw.
10. Undo the 2 unions on the D.H.W. outlet pipe, unclip the pipe and lift it aside.



Continued in Frame 36.

36 DIVERTER VALVE (COMPLETE) REPLACEMENT

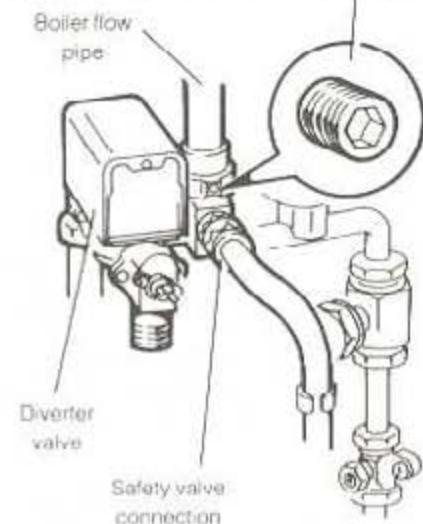
11. Disconnect the safety valve pipe from the inlet manifold.



Unions, see note 13

12. Slacken the socket screw, using a 2.5 mm Allen key.
13. Undo the C.H. and the D.H.W. outlet manifold unions and withdraw the valve from the boiler.
14. Transfer the inlet and outlet manifolds to the new valve, fitting the new 'O' rings provided. Also renew the 'O' ring on the boiler flow pipe.
15. Fit the new valve, complete with the new sealing washers, and connect the electrical lead directly into the control panel.
16. Secure the lead to the wiring harness using the cable straps provided.

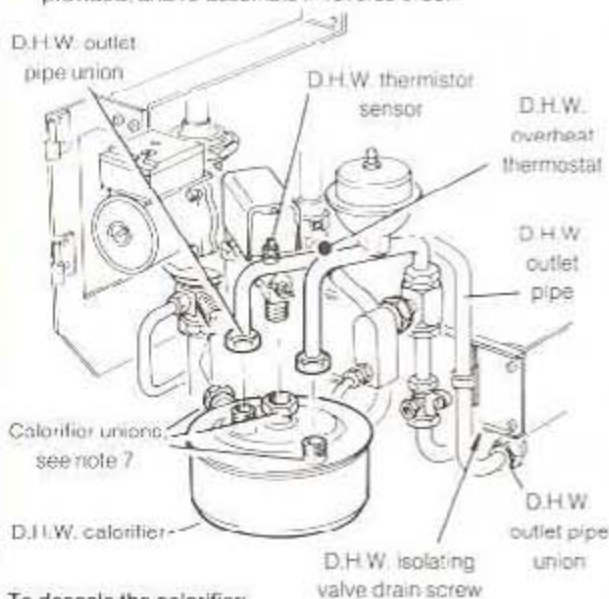
Continued from Frame 35. Socket screw



17. Re-assemble in reverse order.

37 D.H.W. CALORIFIER REPLACEMENT

1. Drain the boiler. Refer to Frame 34.
2. Close the D.H.W. inlet isolating valve.
3. Open the lowest D.H.W. draw-off tap.
4. Drain any residual water into a receptacle via the D.H.W. drain screw.
5. Pull the leads off the D.H.W. thermistor sensor and overheat thermostat.
6. Undo the unions on the D.H.W. outlet pipe. Unclip the pipe and lift it aside.
7. Undo the three remaining calorifier unions and withdraw the calorifier from the boiler.
8. Fit the new calorifier, complete with the new sealing washers provided, and re-assemble in reverse order.



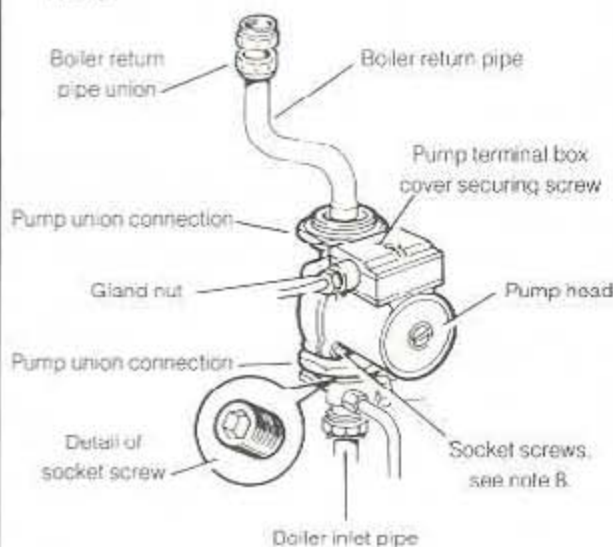
To descale the calorifier:

- (a) Remove the calorifier from the boiler as described above.
- (b) Descale the domestic hot water coil, using a proprietary descaling agent.
- (c) Rinse thoroughly with clean water.
- (d) Re-assemble in reverse order.

WARNING: The agents are highly corrosive and ingestion or contact with skin, eyes and clothing **MUST** be avoided. Protective clothing should be worn and the descaling operation conducted out of doors or in a well ventilated area.

38 PUMP REPLACEMENT

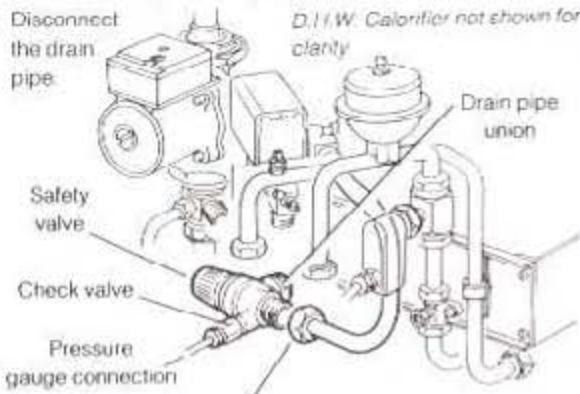
1. Drain the boiler. Refer to Frame 33.
2. Remove the pump terminal box cover and disconnect the electrical leads. **Note:** A hole in the control panel support bracket permits access to the cover securing screw.
3. Unscrew the gland nut and withdraw the cable from the terminal box.
4. Undo the boiler return pipe union.
5. Slacken the socket screw, using a 2.5 mm Allen key.
6. Withdraw the pump, complete with inlet pipe and boiler return pipe, by rotating it to the left and lifting.
7. Undo the pump union connections and, using the new sealing gaskets provided, transfer the inlet pipe and the boiler return pipe to the new pump.
8. Remove the four socket screws and rotate the head of the new pump through 90° in order to position the wiring box at the top.



9. Fit the new pump and reassemble in reverse order, ensuring that:
 - (a) The new sealing washer provided is fitted to the boiler return pipe connection.
 - (b) The electrical connections are correctly re-made. Refer to the diagram inside the terminal box cover.
 - (c) The pump selector switch cover is correctly fitted and that the switch is set at position '3'.

39 SAFETY VALVE REPLACEMENT

1. Drain the boiler. Refer to Frame 33.
2. Disconnect the pressure gauge capillary.
3. Disconnect the drain pipe. *D.H.W. Calorifier not shown for clarity*
4. Undo the safety valve union & withdraw the valve from the boiler.
5. Transfer the check valve to the new safety valve, using a suitable jointing compound.
6. Fit the new valve and re-assemble in reverse order.



40 AUTOMATIC AIR VENT REPLACEMENT

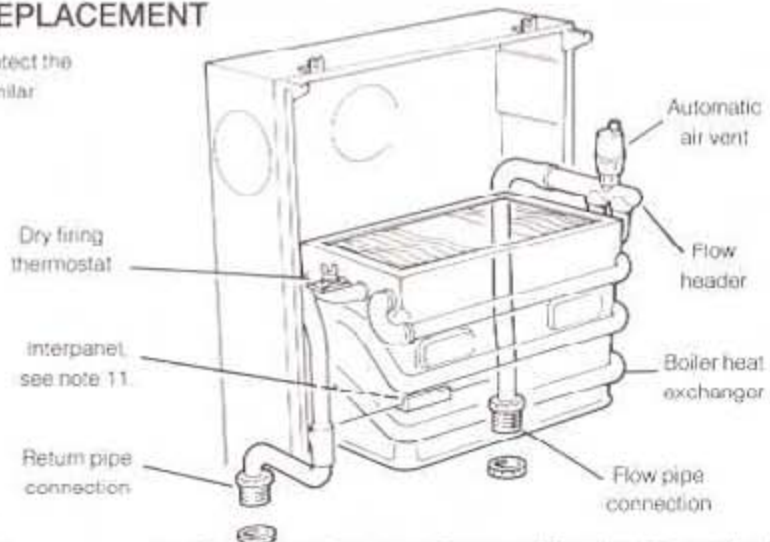
1. Drain the boiler. Refer to Frame 33.
 2. Unscrew the automatic air vent from the boiler flow header applying an appropriate counter force to the boss in order to prevent damage.
 3. Fit the new air vent, using the 'O' ring provided, and re-assemble in reverse order.
- IMPORTANT.** Ensure that the vent cap is loose



41 BOILER 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 boiler. Refer to Frame 33.
2. Remove the fan assembly. Refer to Frame 20.
3. Remove the burner and controls assembly. Refer to Frame 3.
4. Remove the flue collector hood. Refer to Frame 5.
5. Remove the dry firing thermostat, refer to Frame 13, and transfer it to the new heat exchanger.
6. Remove the automatic air vent, refer to Frame 40, and transfer it to the new heat exchanger.
7. Slacken the boiler flow pipe socket screw at the diverter valve inlet manifold. Refer to Frame 36.
8. Slacken the pump socket screw. Refer to Frame 38.
9. Undo the boiler flow and return pipe connections. Swing the pipes aside.
10. Support the heat exchanger and remove the locknuts.



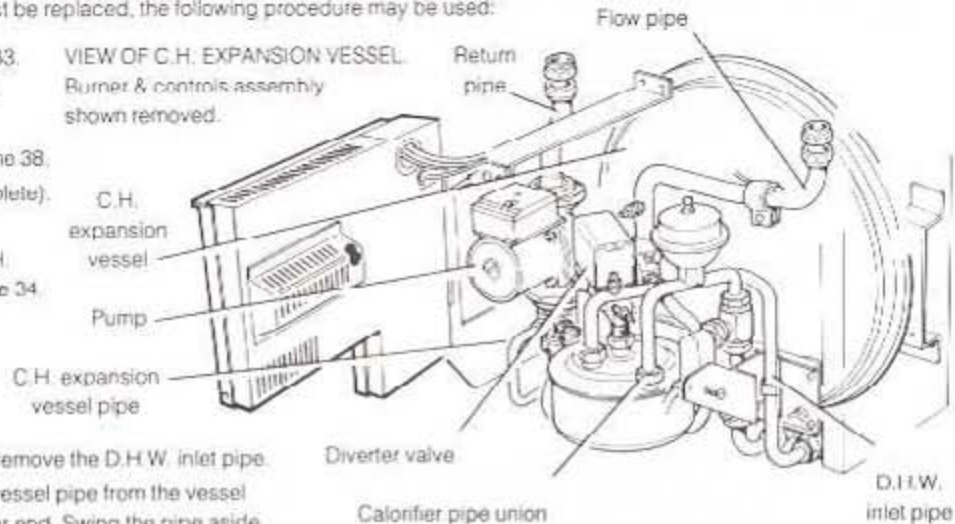
11. Lift the heat exchanger to disengage it from the interpanel and bottom panel. Withdraw it from the boiler.
12. Fit the new heat exchanger and re-assemble in reverse order.

42 C.H. EXPANSION VESSEL REPLACEMENT

In the unlikely event of the failure of the C.H. expansion vessel it is recommended that a new vessel is fitted exterior to the boiler. It should be positioned on the return pipe & as close to the boiler as possible. However, if the vessel must be replaced, the following procedure may be used:

1. Drain the boiler. Refer to Frame 33.
2. Remove the burner and controls assembly. Refer to Frame 3.
3. Remove the pump. Refer to Frame 38.
4. Remove the diverter valve (complete). Refer to Frames 35 & 36.
5. Disconnect the lead from the C.H. thermistor sensor. Refer to Frame 34.
6. Undo the union and remove the C.H. flow pipe.
7. Remove the D.H.W. flow switch. Refer to Frame 29.
8. Undo the calorifier pipe union & remove the D.H.W. inlet pipe.
9. Disconnect the C.H. expansion vessel pipe from the vessel and slacken the union at the other end. Swing the pipe aside.
10. Lift and draw the vessel forward to remove it from the boiler.

VIEW OF C.H. EXPANSION VESSEL.
Burner & controls assembly shown removed.



11. Fit the new vessel and re-assemble in reverse order.

43 CASING SEAL REPLACEMENT

There are two seals - one on the manifold of the burner assembly (refer to Frame 46 'Burner and Controls Assembly - Exploded View') and one on the boiler casing (shown opposite).

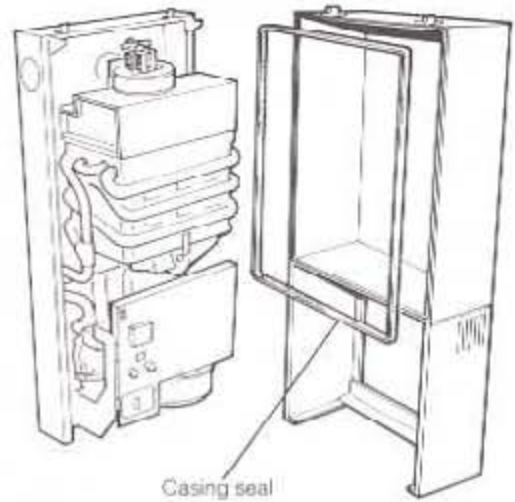
Burner seal.

1. Remove the burner assembly as detailed in Frame 3.
2. Remove the old seal and scrape off any traces of old adhesive
3. Peel the backing tape off the new sealing strip and apply, avoid stretching the strip and ensure a good bond by pressing down firmly.

Casing seal.

1. Remove the old seal from the casing groove and press in the new seal
2. Re-assemble in reverse order

Note. Ensure that the casing is correctly seated and compressing the sealing strip to make an airtight joint. If the side clearances are limited, then this can be checked by ensuring that the top and bottom edges of the casing are correctly located.

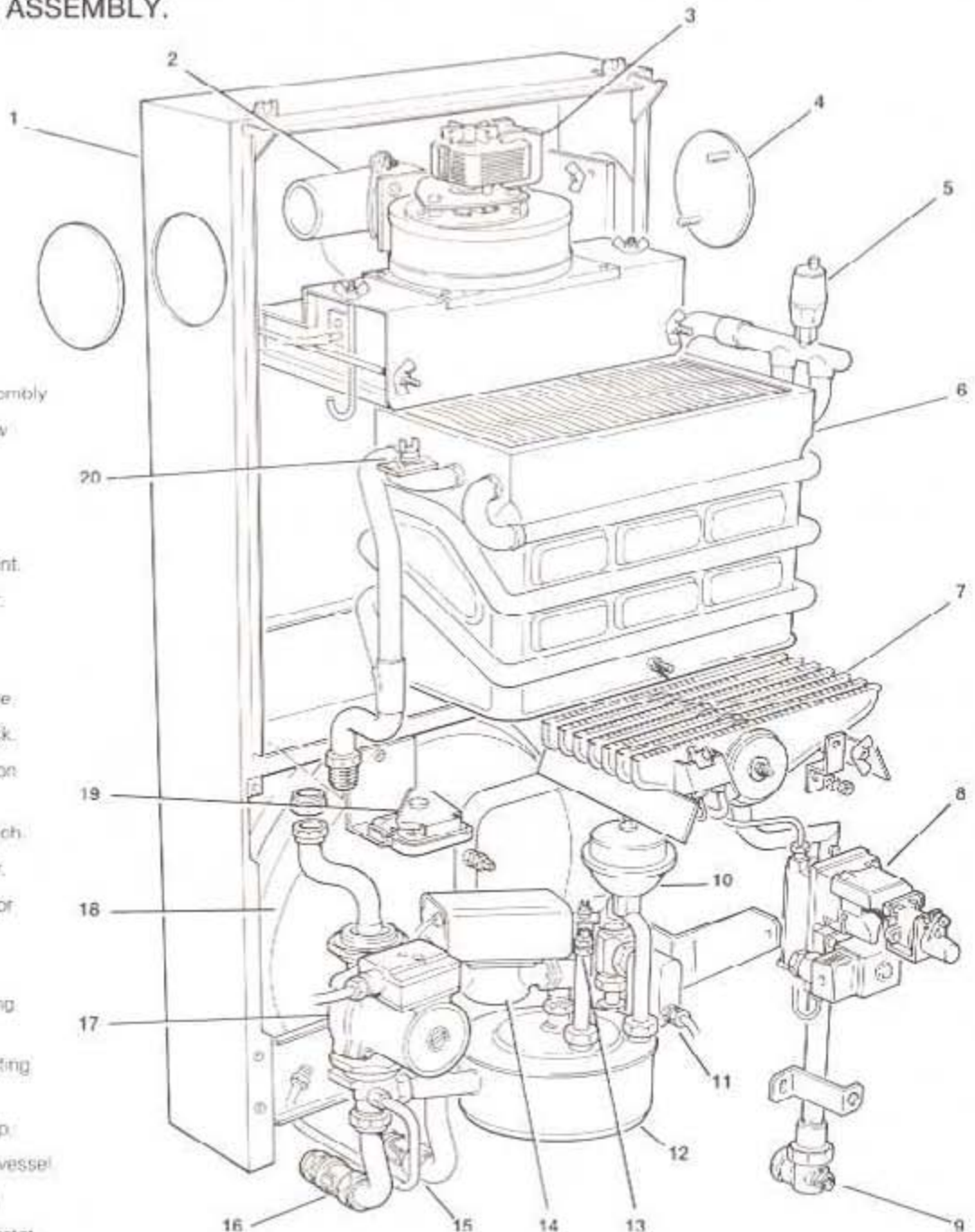


EXPLODED VIEWS

44 BOILER ASSEMBLY.

LEGEND

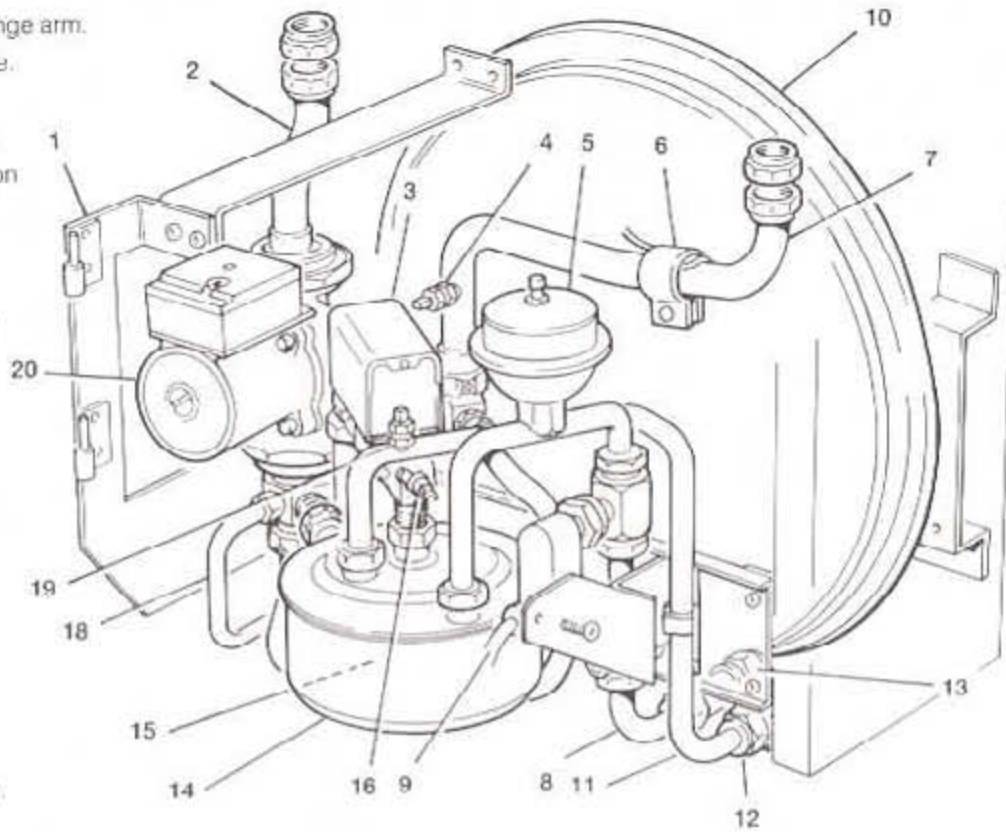
1. Back panel assembly
2. Flue outlet elbow
3. Fan assembly.
4. Side flue outlet blanking plate.
5. Automatic air vent.
6. Heat exchanger.
7. Main burner assembly.
8. Gas control valve.
9. Gas service cock.
10. D.H.W. expansion vessel
11. D.H.W. flow switch.
12. D.H.W. calorifier.
13. D.H.W. thermistor sensor.
14. Divertor valve.
15. C.H. flow isolating valve.
16. C.H. return isolating valve.
17. Circulating pump.
18. C.H. expansion vessel
19. Pressure switch.
20. Dry firing thermostat.



45 BOILER PIPEWORK.

LEGEND

- 1. Control panel hinge arm.
- 2. Boiler return pipe.
- 3. Diverter valve
- 4. C.H. thermistor.
- 5. D.H.W. expansion vessel.
- 6. C.H. overheat thermostat.
- 7. Boiler flow pipe.
- 8. D.H.W. inlet pipe
- 9. D.H.W. flow switch.
- 10. C.H. expansion vessel.
- 11. D.H.W. outlet pipe.
- 12. D.H.W. outlet
- 13. D.H.W. inlet isolating valve.
- 14. D.H.W. calorifier.
- 15. Safety valve (behind D.H.W. calorifier).
- 16. D.H.W. Preheat thermostat.

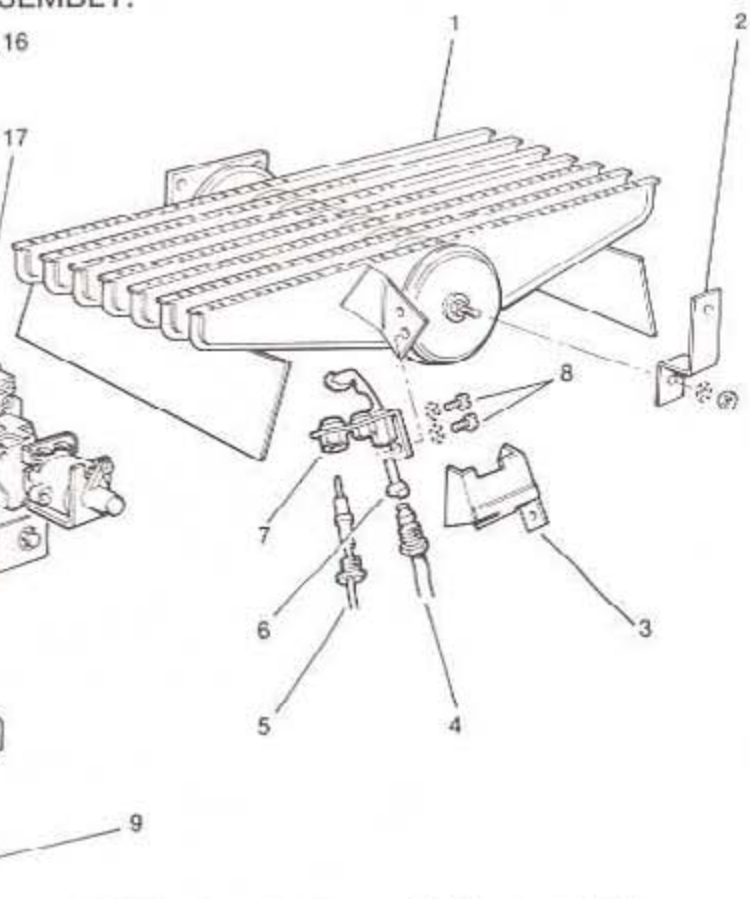


- 18. Expansion vessel pipe.
- 19. D.H.W. thermistor.
- 20. Circulating pump.

46 BURNER AND CONTROLS ASSEMBLY.

LEGEND

- 1. Main burner.
- 2. Burner support bracket.
- 3. Pilot shield.
- 4. Pilot supply pipe.
- 5. Ignition / detection electrode.
- 6. Pilot injector.
- 7. Pilot burner.
- 8. Securing screws.
- 9. Gas service cock.
- 10. Gas inlet support bracket.
- 11. Gas control valve electrical plug.
- 12. Gas control valve.
- 13. Pipe sealing plate and gasket.

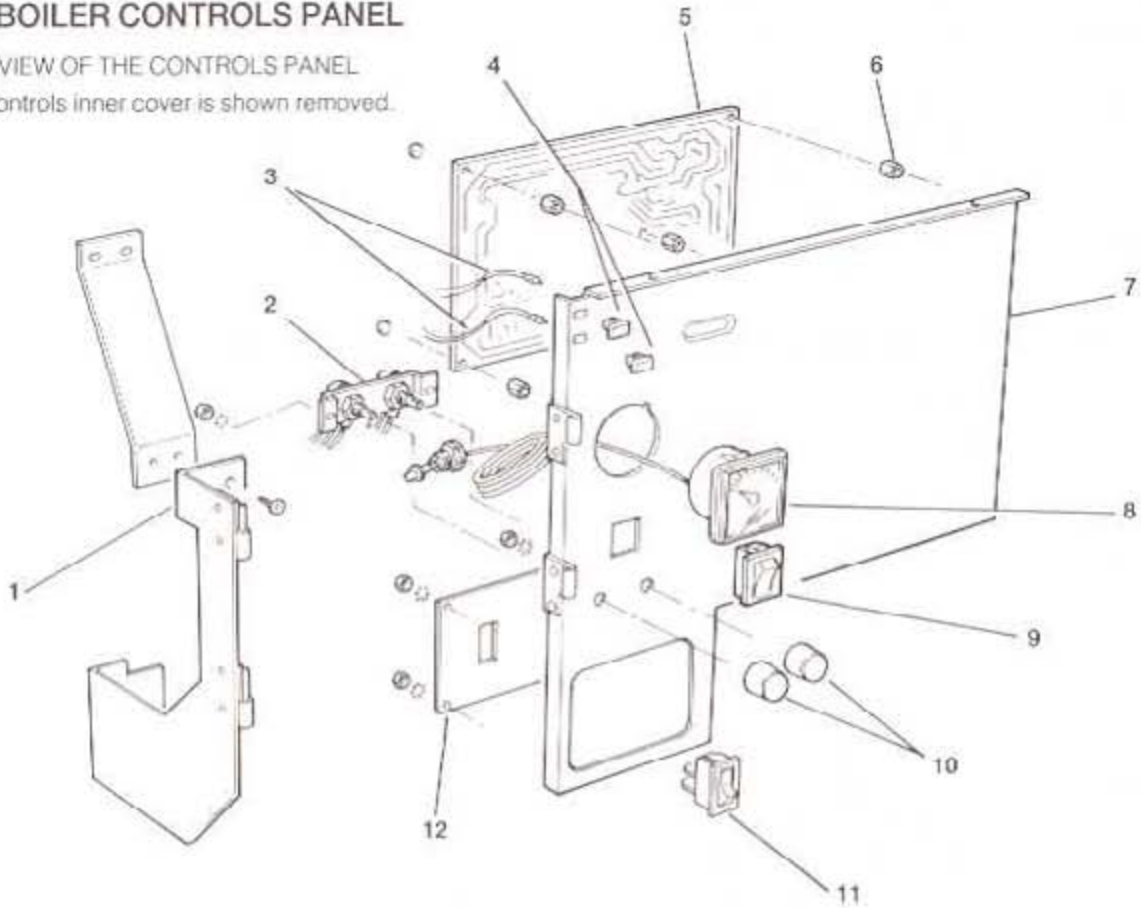


- 14. Casing / burner seal.
- 15. Main burner injector.
- 16. Burner manifold.
- 17. Compensator pipe.

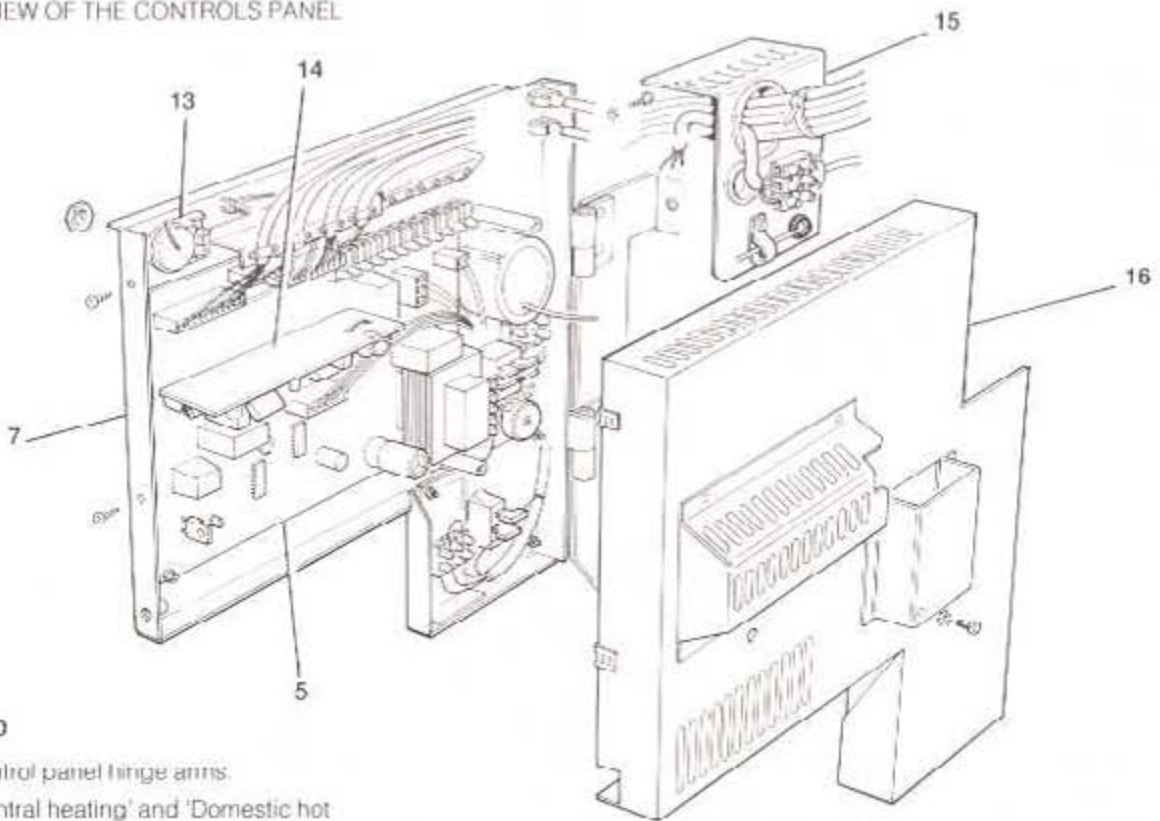
47 BOILER CONTROLS PANEL

FRONT VIEW OF THE CONTROLS PANEL

Note. Controls inner cover is shown removed.



REAR VIEW OF THE CONTROLS PANEL



LEGEND

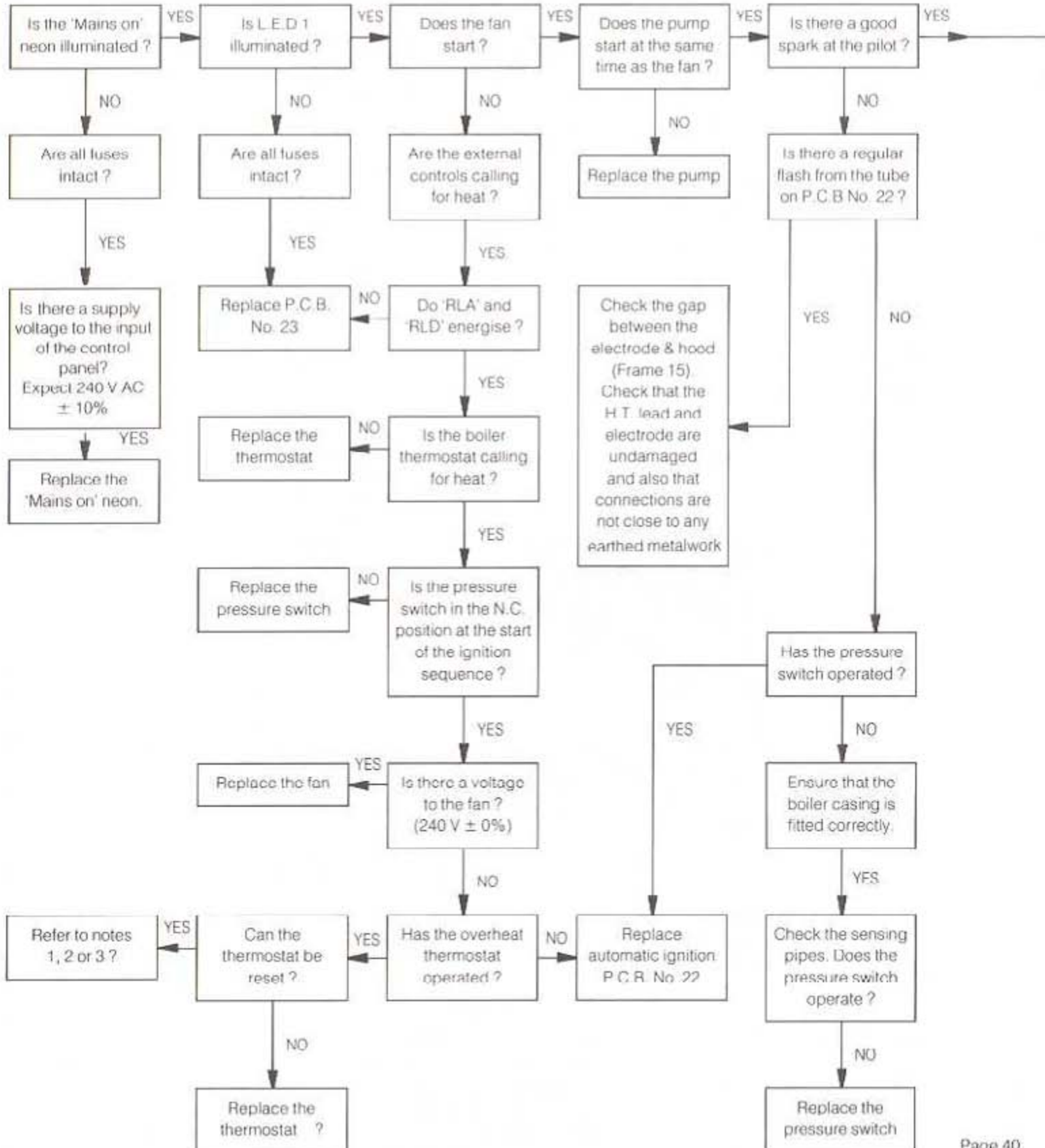
- | | | |
|---|--|--|
| 1. Control panel hinge arms. | 8. Pressure gauge | 13. Overheat thermostat. |
| 2. 'Central heating' and 'Domestic hot water' potentiometer assembly. | 9. 'Domestic hot water preheat' switch. | 14. Ignition printed circuit board (No. 22). |
| 3. 'Mains on' and 'Preheat' indicator neons | 10. 'Central heating' and 'Domestic hot water control knobs. | 15. Cable entry shroud. |
| 4. 'Mains on' and 'Preheat' indicator lenses. | 11. 'Central heating' switch. | 16. Controls inner cover. |
| 5. Printed circuit board (No. 23). | 12. Switch plate. | |
| 6. Printed circuit board supports. | | |
| 7. Controls panel. | | |

Before attempting to rectify any electrical fault, ALWAYS carry out the preliminary electrical system checks using a suitable test meter. Detailed instructions on the replacement of faulty parts are contained within the 'Servicing' section of this publication.

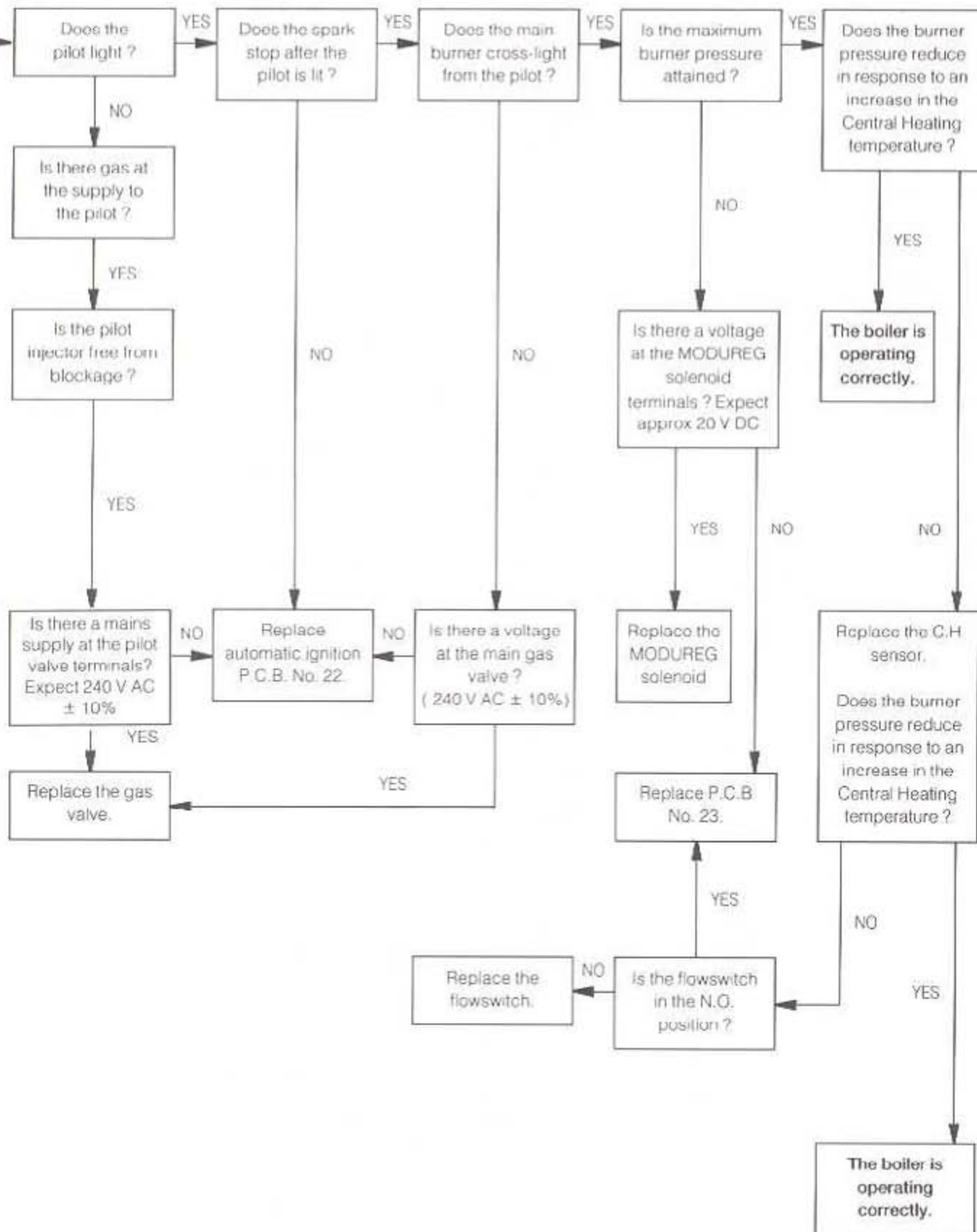
- Notes:
1. Frisure that the boiler and system is full of water, free from air locks and that the pump is running.
 2. Press the overheat thermostat reset button (on the controls panel) and continue with the fault finding procedure. Replace the thermostat if it operates before the normal working temperature is reached.
 3. Remove the boiler casing, press the dry firing thermostat reset button (refer to Frame 13) and continue with the fault finding procedure. Replace the thermostat if it operates before the normal working temperature is reached.

IMPORTANT. DO NOT attempt to electrically by-pass the pressure switch for any reason as this could result in serious damage to the fan.

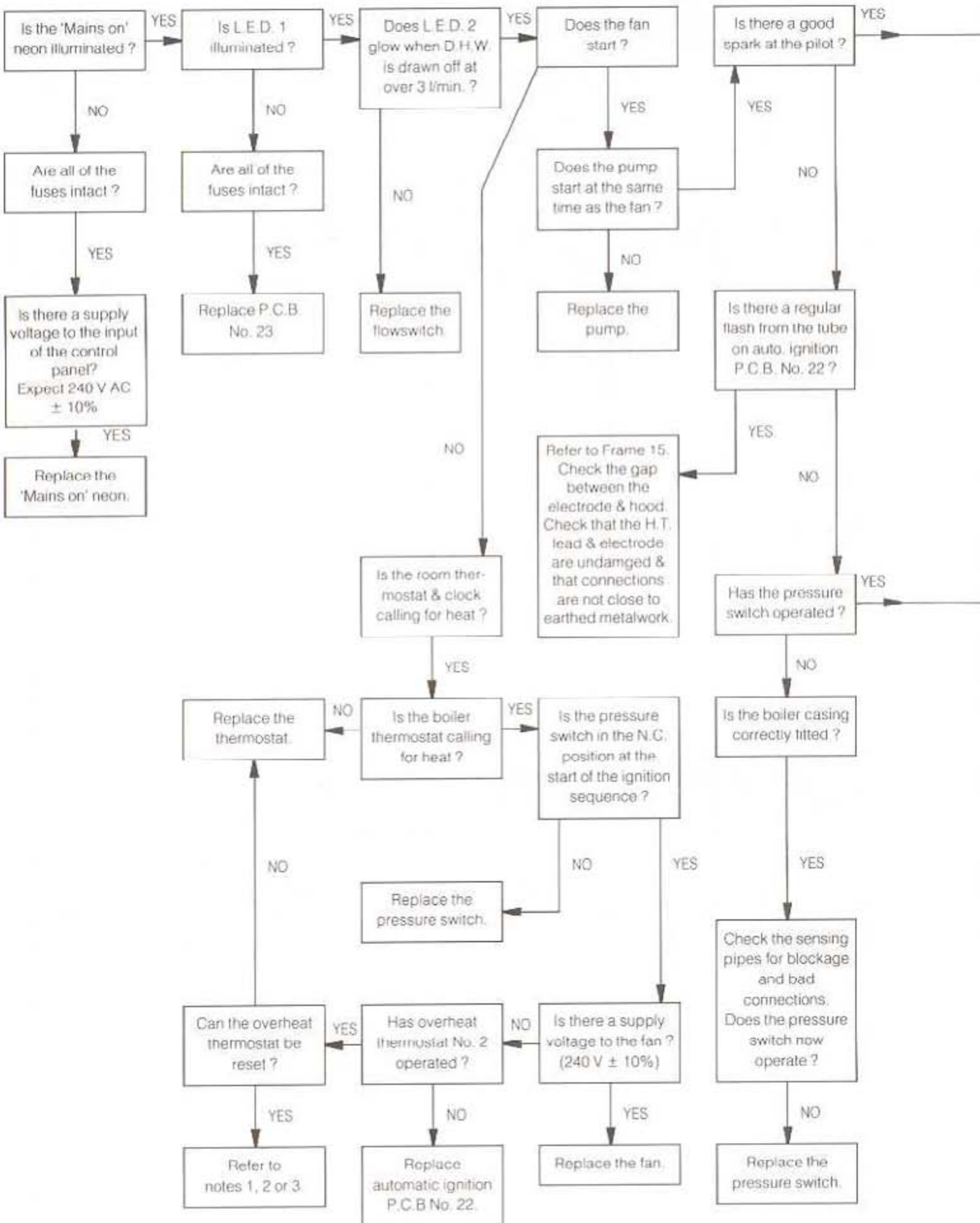
48 CENTRAL HEATING MODE. Start from cold and ensure that all H.W. taps remain off.

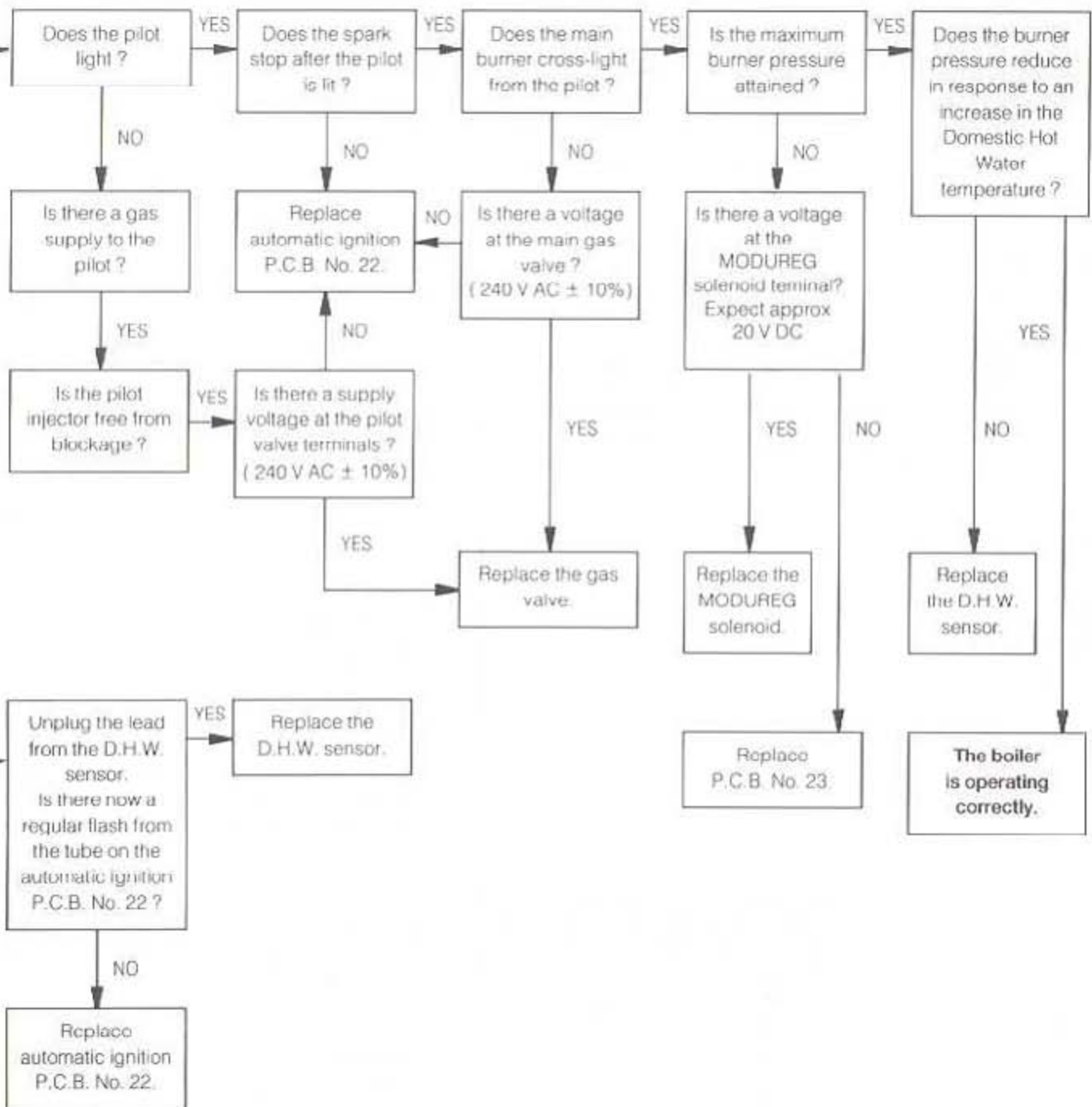


QUICK GUIDE			
CENTRAL HEATING MODE. All hot water taps off.		HOT WATER MODE. Room stat. & clock off - H.W. taps on.	
Mains neon	ON	Mains neon	ON
L.E.D. 1	ON	L.E.D. 1	ON
L.E.D. 2	ON	L.E.D. 2	ON
L.E.D. 3	OFF	L.E.D. 3	ON
PRE-HEAT MODE Hot water & central heating off.			
Mains neon	ON	Mains neon	ON
L.E.D. 1	ON	L.E.D. 1	ON
L.E.D. 2	OFF	L.E.D. 2	OFF
L.E.D. 3	ON	L.E.D. 3	ON

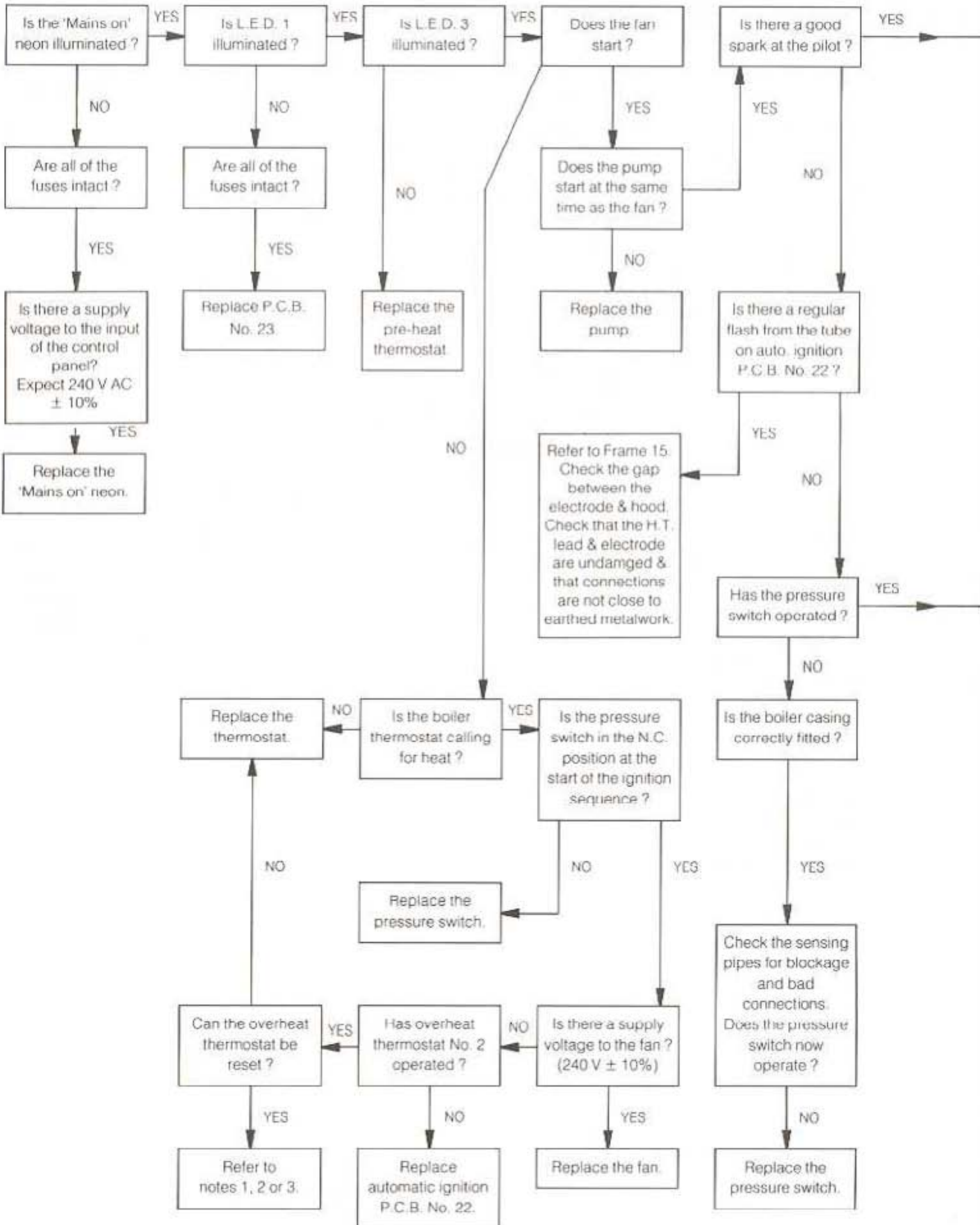


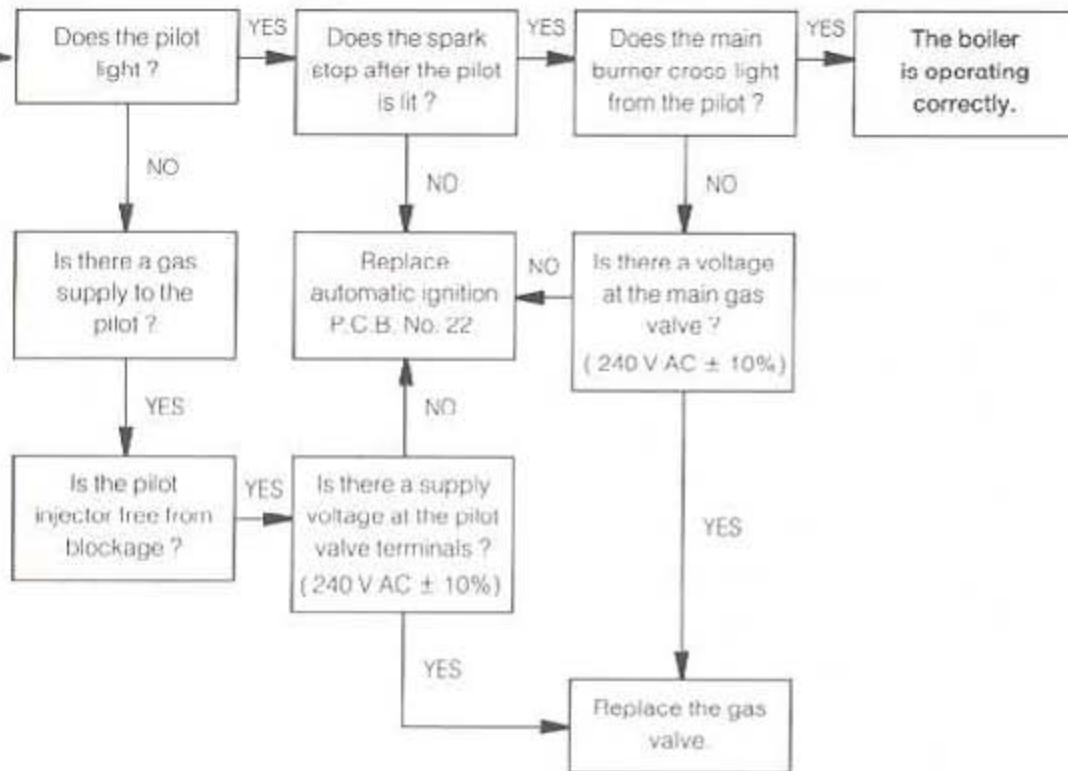
49 DOMESTIC HOT WATER MODE. Start from cold, turn the room thermostat & clock off.





50 PRE-HEAT MODE. Start from cold. Turn the room thermostat and clock off. Ensure that all hot water taps are off and that the Pre-heat switch is on.





Replace automatic ignition P.C.B. No. 22

The following list comprises parts commonly required as replacement components due to damage, expendability, or such that their failure or absence is likely to affect safety or performance.

The 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.

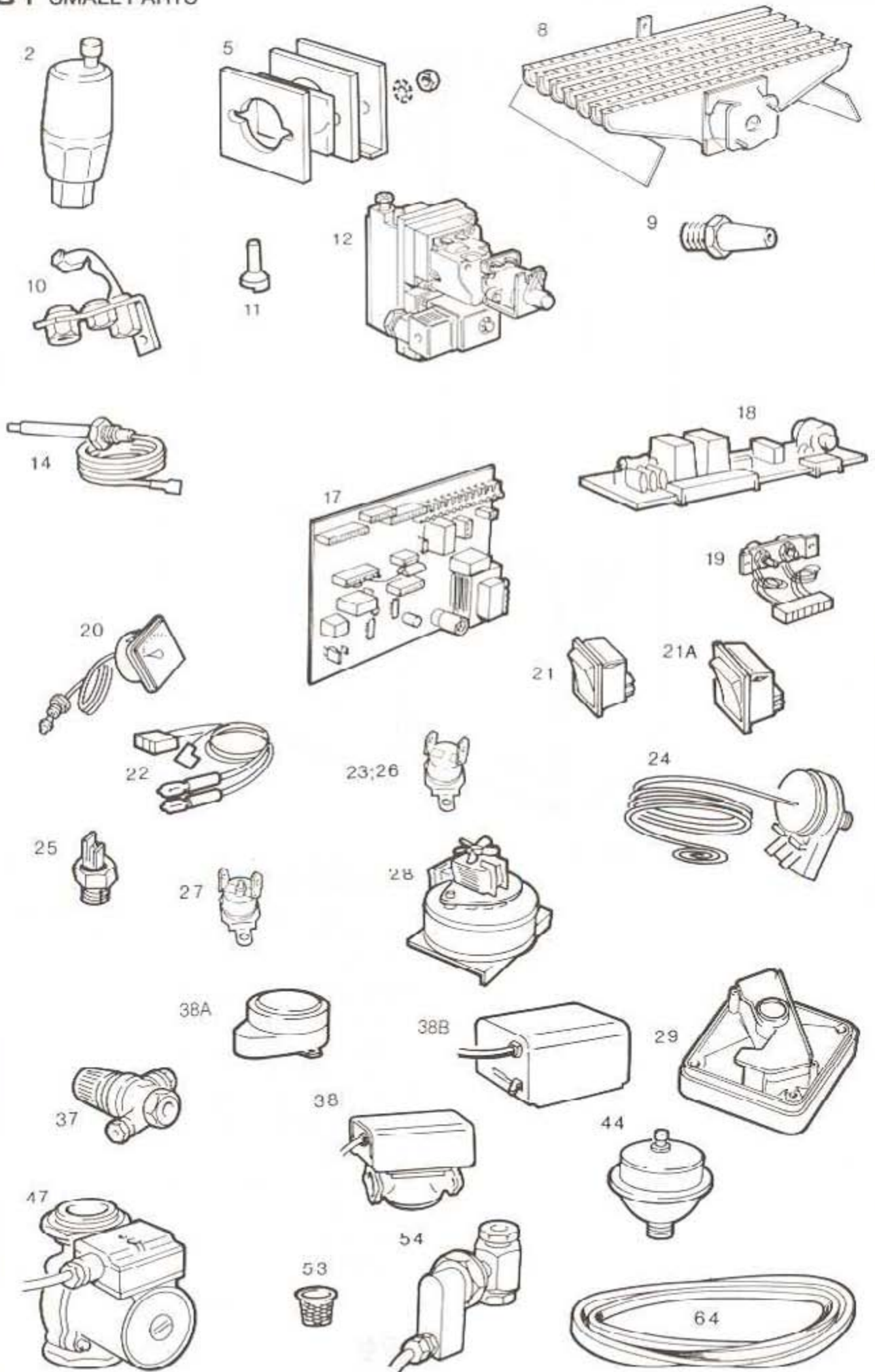
Ideal Sprint Rapide 90 NF Combination Gas Boiler.

When ordering spares please quote:

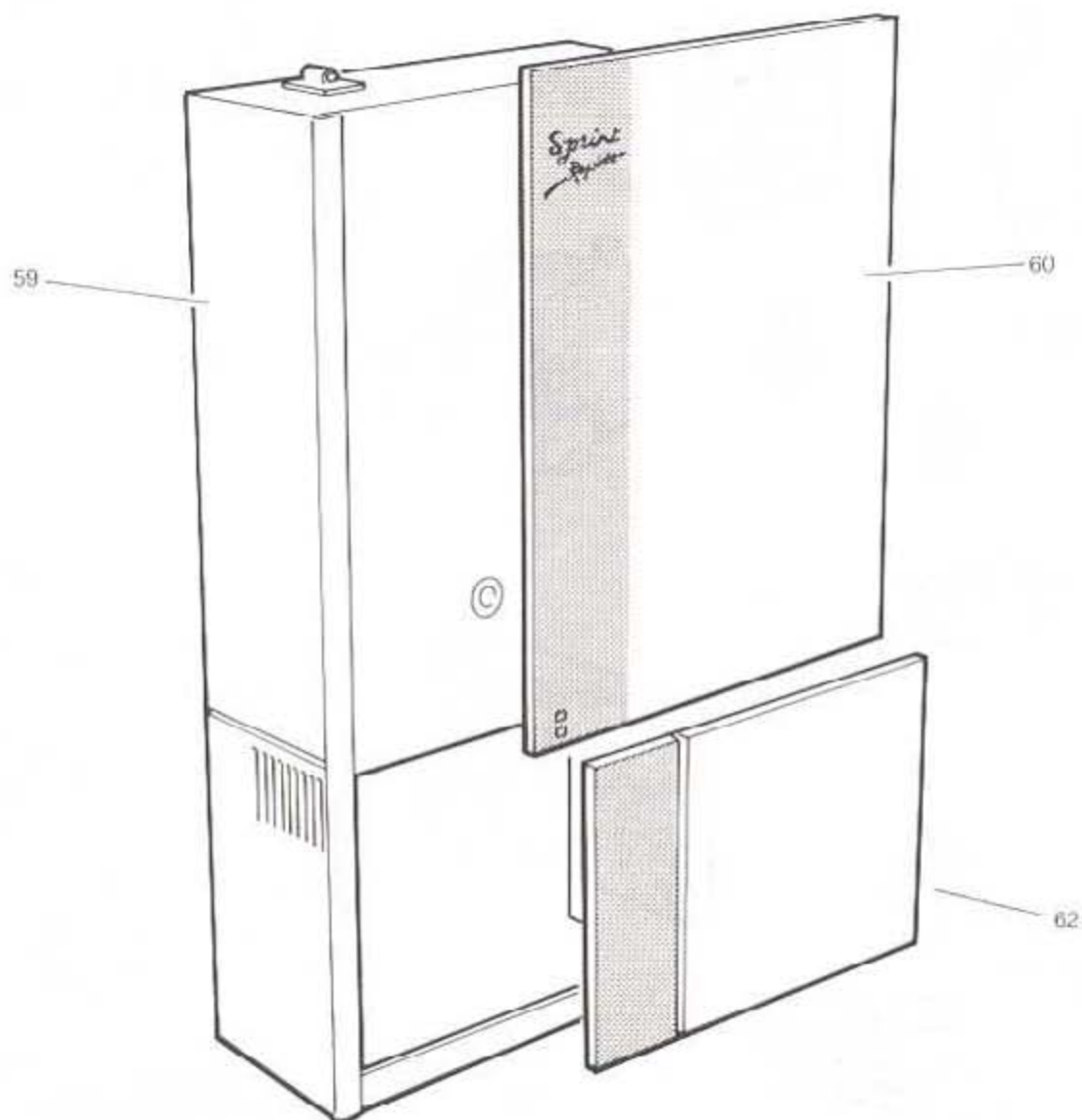
1. Boiler Model
2. Appliance G.C. Number
3. Description
4. Maker's Part Number
5. Quantity

Key No.	G.C. Part No.	Description	No. Off	Makers Part No.
2	386 830	Automatic air vent, CALEFFI 5031	1	199 224 305
5	319 493	Sight glass kit	1	160 079 333
8	386 834	Main burner, AEROMATIC AC 19 / 123 258	1	199 256 065
9	382 941	Main burner injector, AEROMATIC 935 440	1	129 026 060
10	308 035	Pilot burner, S.I.T. HPB 0 140 020	1	589 930 084
11	386 673	Pilot injector, S.I.T. 0 977 142	1	589 930 083
12	386 801	Gas control valve, HONEYWELL VR 4700 N 4012	1	586 231 910
14	386 833	Ignit./detection electrode S.I.T. 0 007 with integral lead.	1	589 255 088
17	374 041	Printed circuit board, BOARD No. 23	1	589 220 201
18	374 042	Printed circuit board, BOARD No. 22	1	589 220 203
19	374 038	Potentiometer assembly (C.H. and D.H.W.)	1	589 220 205
20	374 044	Pressure gauge, ALTECNIC (with 'O' ring)	1	589 220 207
21	386 802	'Central heating' switch, ARROW HART Cygnet Series No. 100 0 11 E (A)	1	589 220 209
21 A	386 803	'Domestic hot water preheat' switch ARROW HART Cygnet Series No. 200 0 11 E (A)	1	589 220 210
22	374 009	Neon indicator assembly, REDILEAD	2	589 220 212
23	386 850	D.H.W. overheat thermostat, ELMWOOD 2455 R 98 608	1	589 220 216
24	386 852	Overheat thermostat, RANCO LM7 P 5032	1	589 255 074
25	374 067	Temperature sensors (C.H. and D.H.W.), NTC Thermistor	2	589 220 221
26	386 851	D.H.W. preheat thermostat, ELMWOOD 2455 R 98 609	1	589 220 225
27	386 804	Dry fire thermostat, ELMWOOD 2455 RMT 247 B 2035	1	160 013 843
28	386 842	Fan assembly, SIFAN FFB 0 224 003	1	589 255 012
29	386 808	Pressure switch, DUNGS LGW 3 A 1	1	589 255 025
37	374 045	Safety valve, CALEFFI 3141	1	199 220 425
38	386 670	Diverter valve, HONEYWELL V 4044 C 1536	1	199 220 427
38 A	397 661	Diverter valve actuator, HONEYWELL	1	160 065 745
38 B	386 670	Diverter valve actuator motor, HONEYWELL	1	160 065 746
44	341 950	D.H.W. expansion vessel, WMP	1	589 220 046
47	374 065	Pump, GRUNDFOS UPS 15-6U (with gaskets)	1	589 250 031
53	374 046	D.H.W. filter	1	199 220 451
54	374 047	D.H.W. flow switch, HONSBURG Fluvatest UM 15 MA	1	199 220 450
59	374 029	Boiler casing assembly, white stove enamel with dimple foil insulation, 4 securing screws and retaining washers, and including Key No.5	1	199 250 098
60	374 030	Glass-fascia	1	199 250 098
62	374 032	Controls compartment lift off cover, stove enamel with name badges and Lighting Instructions label	1	199 250 099
64	374 062	Casing seal pack	1	199 254 033

51 SMALL PARTS



52 BOILER CASING ASSEMBLY



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

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