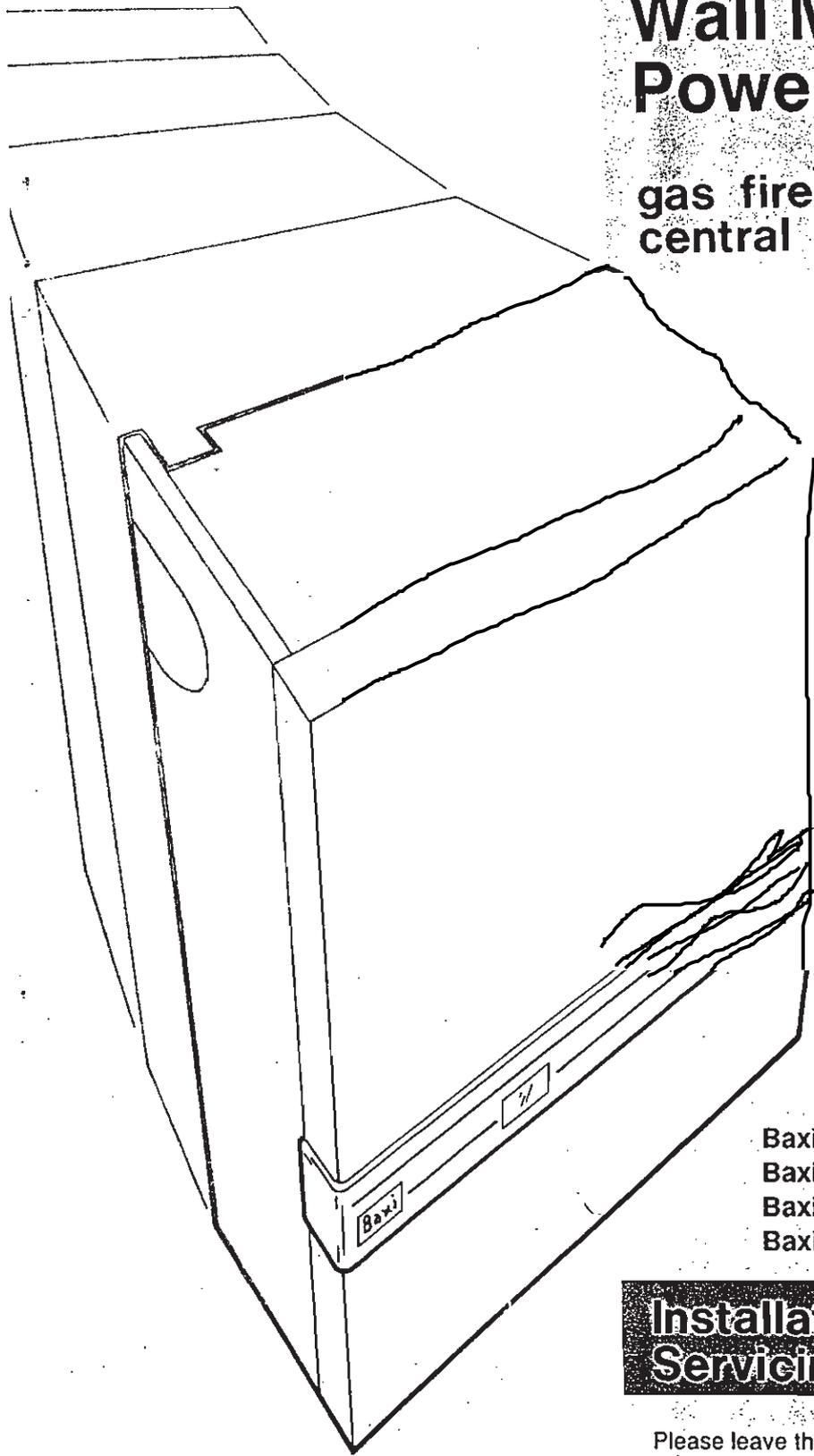


# Baxi Solo

## Wall Mounted Powered Flue

gas fired  
central heating boilers

Supplied by [freeboilermanuals.com](http://freeboilermanuals.com)



Model	G.C.Nº
Baxi Solo WM 30/4 PF	41 077 52
Baxi Solo WM 40/4 PF	41 077 53
Baxi Solo WM 50/4 PF	41 077 54
Baxi Solo WM 70/4 PF	41 077 55

### Installation and Servicing Instructions

Please leave these Instructions with the User.



Baxi heating is one of the leading manufacturers of domestic heating products in the U.K.

Our first priority is to give a high quality service to our customers. Quality is built into every Baxi product - products which fulfil the demands and needs of modern consumers, offering choice, efficiency and reliability.

To keep ahead of changing trends, we have made a commitment to develop new ideas using the latest technology - with the aim to continue making the products that customers want to buy.

Baxi is also the largest manufacturing partnership in the country. Everyone who works at the company has a commitment to quality because, as shareholders, we know that satisfied customers mean continued success.

We hope you get a satisfactory service from Baxi. If not, please let us know.

BS 5750 Company



BS 5258 BS 6332

Safety & Performance

# CONTENTS

Introduction

PAGE 4

Technical Data

PAGE 5-6

System Details

PAGE 7-9

Water Circulation Systems  
Pipework  
System Controls  
Low Head Installation  
Sealed Systems

Site Requirements

PAGE 10-12

Location  
Clearances  
Flue Position  
Flue Dimensions  
Ventilation of Compartments  
Gas Supply  
Electrical Supply

Installation

PAGE 13-32

Initial Preparation  
Rear Flue  
Flue Preparation  
Assembly of Flue  
Fitting the Back Plate  
Left or Right Flue  
Flue Preparation  
Assembly of Flue  
Fitting the Back Plate  
Terminal Guard  
Fitting a Terminal Guard  
Internal Fitting Kit  
Electrical Connections  
Fitting the Combustion Box  
Water Connections  
Pipe Routes  
Gas Connection

PAGE 33-34

Commissioning the Appliance

Fitting the Outer Case

Overheat Cut-Off Device

Annual Servicing

PAGE 35

PAGE 36

PAGE 37-39

Cleaning the Combustion Box  
Cleaning the Burner/Injector  
Cleaning the Pilot

Changing Components

PAGE 40-47

Pilot Injector  
Ignition Electrode  
Fan  
Pressure Switch  
Boiler Thermostat  
Control Board/Electrode Lead  
Overheat Thermostat  
Insulation Panel Door  
Burner and Injector  
Insulation Panel Combustion Box  
Gas Valve

Fault Finding

Short Parts List

PAGE 48-49

PAGE 50

# INTRODUCTION

## Description

The Baxi Solo is a gas fired room sealed fan assisted central heating boiler with range rated outputs as shown in the table below.

Model	Heat Output	
	Min	Max
30/4	6.15kW(21 000 Btu/h)	8.79kW(30 000 Btu/h)
40/4	9.08kW(31 000 Btu/h)	11.72kW(40 000 Btu/h)
50/4	12.02kW(41 000 Btu/h)	14.65kW(50 000 Btu/h)
70/4	15.00kW(51 000 Btu/h)	20.5kW(70 000 Btu/h)

Each appliance is preset at its MAXIMUM heat input rating and is designed for use on NATURAL GAS only.

All boilers are suitable for fully pumped open vented central heating and domestic hot water systems and sealed systems, or where additional control protection is required.

The standard flue is adjustable in length between 100mm (4in) and 610mm (24in) to the left or rear but the maximum length to the right is reduced to 533mm (21in) (70/4 only-483mm (19in)). Flue extension kits are available which increase these maximum dimensions to 2 metres (78<sup>3</sup>/<sub>4</sub>in) for left or rear and 1.92 metres (75<sup>9</sup>/<sub>16</sub>in) (70/4 only-1.873 metres (73<sup>3</sup>/<sub>4</sub>in)) for right.

**NOTE:** All above dimensions are taken from the respective faces of the outercase/backplate.

The appliance data badge is fitted to the combustion box door.

## Installation

The installation must be carried out by a competent person and be in accordance with the relevant requirements of the GAS SAFETY (Installation and Use) REGULATIONS 1984, the BUILDING REGULATIONS (Scotland)(Consolidation), the LOCAL BUILDING REGULATIONS, the CURRENT I.E.E. WIRING REGULATIONS and the bye laws of the LOCAL WATER UNDERTAKING. It should also be in accordance with the relevant BRITISH STANDARD CODES OF PRACTICE.

## B.S. Codes of Practice

### STANDARD SCOPE

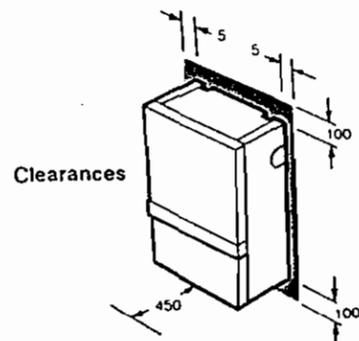
BS 6891:1988	Gas Installation.
BS 5546	Installation of hot water supplies for domestic purposes.
BS 5449 Part 1	Forced circulation hot water systems.
BS 6798	Installation of gas fired hot water boilers.
BS 5440 Part 1	Flues.
BS 5440 Part 2	Air Supply.

# TECHNICAL DATA

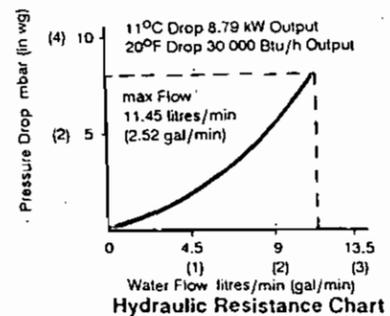
30/4 PF

<b>Heat Input</b>	Max	Min	
	kW	11.56	8.32
	Btu/h	39 500	28 400
<b>Heat Output</b>	Max	Min	
	kW	8.79	6.15
	Btu/h	30 000	21 000
<b>Burner Pressure</b>	Max	Min	
	mbar	15.8 ± 0.5	7.7 ± 0.5
	in wg	6.3 ± 0.2	3.1 ± 0.2
<b>Gas Connection</b>	RC <sup>1</sup> / <sub>2</sub> (1/2 in BSPT)		
<b>Electrical Supply</b>	240V~50Hz fused 3A - 32W		
<b>Internal Fuse</b>	F2A 250V to BS 4256 situated on control board (spare fuse also located on control board)		
<b>Controls</b>	on/off boiler thermostat / pump over-run with pilot and electronic flame sensing		

<b>Lifting Weight</b>	27.5 kg (60.6 lbs)		
<b>Water Content</b>	1.85 litres (0.407 gals)		
<b>Static Head</b>	Max	Min	
	metres	30	1
	feet	100	3.25
<b>Low Head</b>	Min 0.2m (8 in)		
<b>System Design</b>	fully pumped open vented and sealed systems.		
<b>Heat Exchanger</b>	cast iron monobloc		
<b>Connections</b>	2 x 22mm compression adaptors		
<b>Gas Rate (after 10 mins)</b>	1.08m <sup>3</sup> /h (38.05ft <sup>3</sup> /h)		
<b>Outercase Dimensions</b>	Height	600mm	
	Width	400mm	
	Depth	300mm	
<b>Flue Terminal Dimensions</b>	Diameter	100mm	
	Depth	65mm	



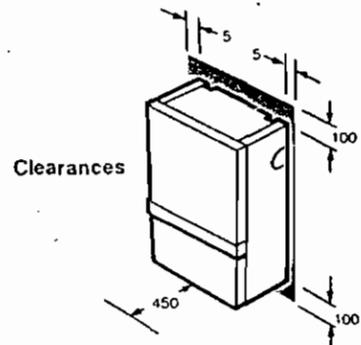
Clearances



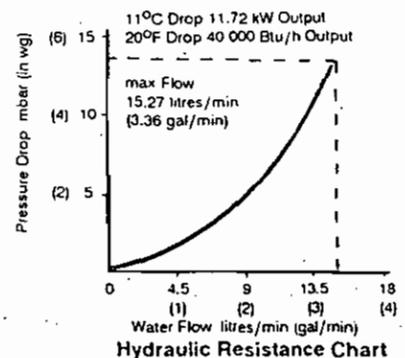
40/4 PF

<b>Heat Input</b>	Max	Min	
	kW	15	11.94
	Btu/h	51 200	40 700
<b>Heat Output</b>	Max	Min	
	kW	11.72	9.08
	Btu/h	40 000	31 000
<b>Burner Pressure</b>	Max	Min	
	mbar	16.6 ± 0.5	10.2 ± 0.5
	in wg	6.6 ± 0.2	4.1 ± 0.2
<b>Gas Connection</b>	RC <sup>1</sup> / <sub>2</sub> (1/2 in BSPT)		
<b>Electrical Supply</b>	240V~50Hz fused 3A - 32W		
<b>Internal Fuse</b>	F2A 250V to BS 4256 situated on control board (spare fuse also located on control board)		
<b>Controls</b>	on/off boiler thermostat / pump over-run with pilot and electronic flame sensing		

<b>Lifting Weight</b>	27.5 kg (60.6 lbs)		
<b>Water Content</b>	1.85 litres (0.407 gals)		
<b>Static Head</b>	Max	Min	
	metres	30	1
	feet	100	3.25
<b>Low Head</b>	Min 0.2m (8 in)		
<b>System Design</b>	fully pumped open vented and sealed systems.		
<b>Heat Exchanger</b>	cast iron monobloc		
<b>Connections</b>	2 x 22mm compression adaptors		
<b>Gas Rate (after 10 mins)</b>	1.40m <sup>3</sup> /h (49.33ft <sup>3</sup> /h)		
<b>Outercase Dimensions</b>	Height	600mm	
	Width	400mm	
	Depth	300mm	
<b>Flue Terminal Dimensions</b>	Diameter	100mm	
	Depth	65mm	



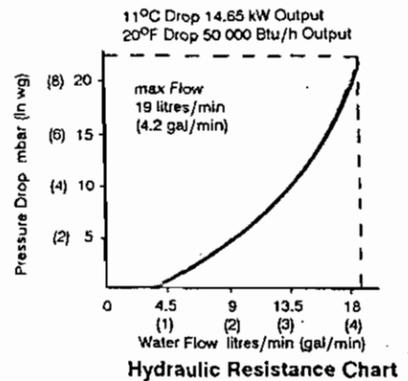
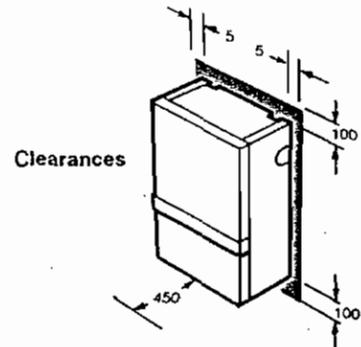
Clearances



## 50/4 PF

<b>Heat Input</b>	Max	Min	
	kW	19	16
	Btu/h	65 000	54 600
<b>Heat Output</b>	Max	Min	
	kW	14.65	12.02
	Btu/h	50 000	41 000
<b>Burner Pressure</b>	Max	Min	
	mbar	15.3 ± 0.5	10.7 ± 0.5
	in wg	6.1 ± 0.2	4.3 ± 0.2
<b>Gas Connection</b>	RC <sup>1</sup> / <sub>2</sub> (1/2 in BSPT)		
<b>Electrical Supply</b>	240V~50Hz fused 3A - 32W		
<b>Internal Fuse</b>	F2A 250V to BS 4256 situated on control board (spare fuse also located on control board)		
<b>Controls</b>	on/off boiler thermostat / pump over-run with pilot and electronic flame sensing		

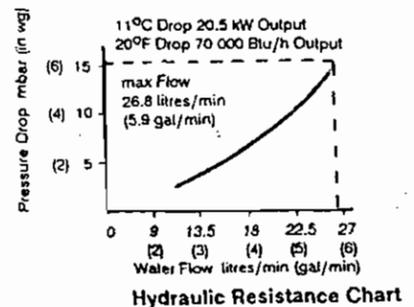
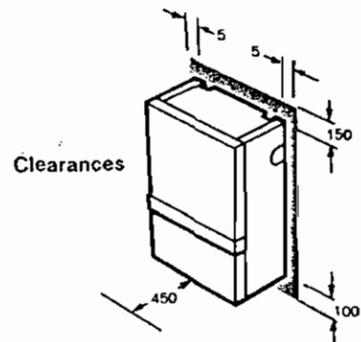
<b>Lifting Weight</b>	27.5 kg (60.6 lbs)		
<b>Water Content</b>	1.85 litres (0.407 gals)		
<b>Static Head</b>	Max	Min	
	metres	30	1
	feet	100	3.25
<b>Low Head</b>	Min 0.25m (10 in)		
<b>System Design</b>	fully pumped open vented and sealed systems.		
<b>Heat Exchanger</b>	cast iron monobloc		
<b>Connections</b>	2 x 22mm compression adaptors		
<b>Gas Rate (after 10 mins)</b>	1.77m <sup>3</sup> /h (62.55ft <sup>3</sup> /h)		
<b>Outercase Dimensions</b>	Height	600mm	
	Width	400mm	
	Depth	300mm	
<b>Flue Terminal Dimensions</b>	Diameter	100mm	
	Depth	65mm	



## 70/4 PF

<b>Heat Input</b>	Max	Min	
	kW	26.6	20.2
	Btu/h	90 900	68 900
<b>Heat Output</b>	Max	Min	
	kW	20.5	15
	Btu/h	70 000	51 000
<b>Burner Pressure</b>	Max	Min	
	mbar	13 ± 0.5	7 ± 0.5
	in wg	5.2 ± 0.2	2.8 ± 0.2
<b>Gas Connection</b>	RC <sup>1</sup> / <sub>2</sub> (1/2 in BSPT)		
<b>Electrical Supply</b>	240V~50Hz fused 3A - 32W		
<b>Internal Fuse</b>	F2A 250V to BS 4256 situated on control board (spare fuse also located on control board)		
<b>Controls</b>	on/off boiler thermostat / pump over-run with pilot and electronic flame sensing		

<b>Lifting Weight</b>	32.8 kg (72.3 lbs)		
<b>Water Content</b>	2.76 litres (0.61 gals)		
<b>Static Head</b>	Max	Min	
	metres	30	1
	feet	100	3.25
<b>Low Head</b>	Min 0.2m (8 in)		
<b>System Design</b>	fully pumped open vented and sealed systems.		
<b>Heat Exchanger</b>	cast iron monobloc		
<b>Connections</b>	2 x 28mm compression adaptors		
<b>Gas Rate (after 10 mins)</b>	2.48m <sup>3</sup> /h (87.57ft <sup>3</sup> /h)		
<b>Outercase Dimensions</b>	Height	600mm	
	Width	470mm	
	Depth	300mm	
<b>Flue Terminal Dimensions</b>	Diameter	100mm	
	Depth	65mm	

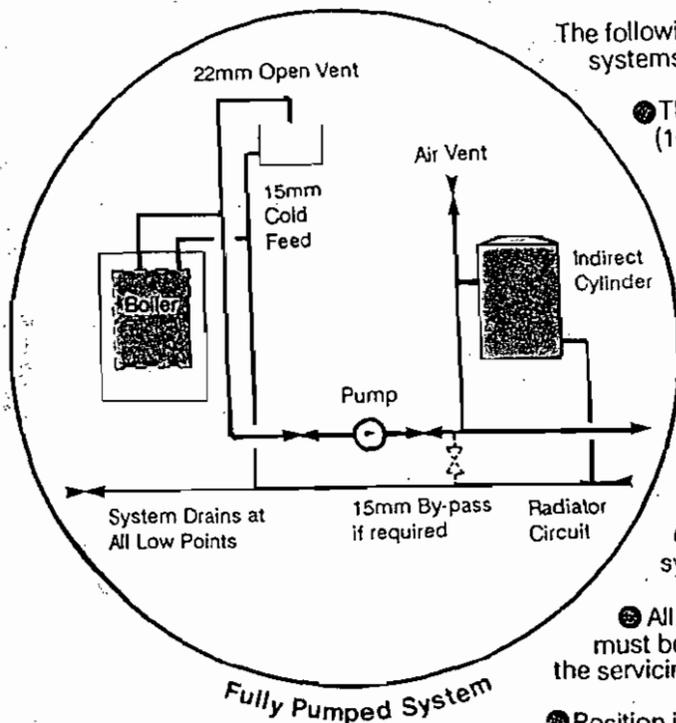


# SYSTEM DETAILS

## Water Circulation Systems

The appliance is suitable for use with open vent fully pumped systems, sealed systems and where additional control protection is required.

The following conditions should be observed on all systems:



① The static head must not exceed 30 m (100ft) of water.

② The boiler must not be used with a direct cylinder.

③ The boiler is fitted with a pump overrun thermostat and where the system design does not result in a permanent open circuit between boiler flow and return, a 15mm by-pass loop, fitted with a lockshield valve, must be incorporated to maintain a minimum flow rate through the boiler of 7 l/min (1.54 gal/min).

④ Drain cocks should be fitted to all system low points.

⑤ All gas and water pipes and electrical wiring must be installed in a way which would not restrict the servicing of the boiler.

⑥ Position isolating valves as close to circulating pump as possible.

⑦ System additives - where used, corrosion inhibitors and flushing agents/descalers should be suitable for all system metals. They should be acceptable to major users i.e. British Gas and Water Council approved. Non acidity or alkalinity is desirable.

## Pipework

The sizes of flow and return pipes from the boiler should be determined by normal methods, according to the requirements of the system.

It is recommended that the system is designed for an 11°C (20°F) drop in temperature across the system.

## System Controls

For optimum operating conditions, the heating system into which the boiler is installed should include a control system.

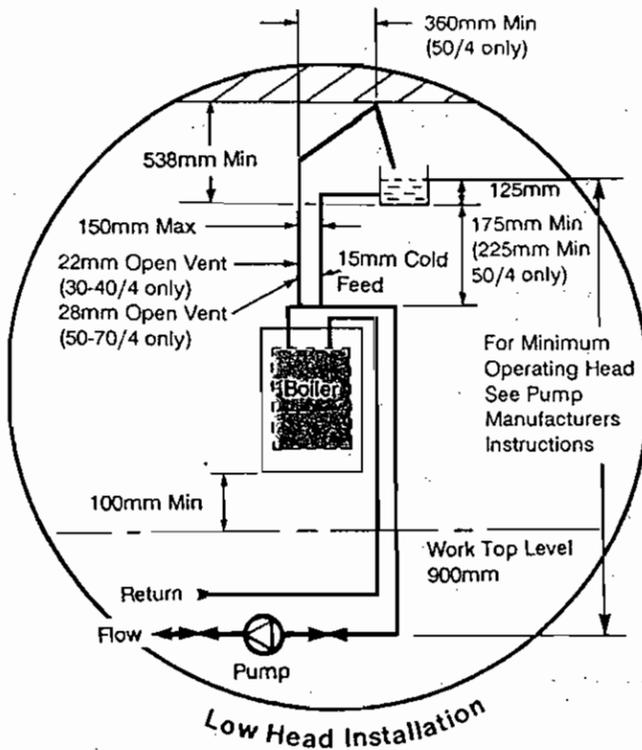
Such a system will comprise of timer control and a separate room or cylinder thermostat as appropriate.

The boiler should be controlled so that it operates on demand only.

Operation of the system under control of the boiler thermostat only, does not produce the best results.

Where necessary a frost thermostat should be fitted to protect the boiler and if necessary the system.

Reference should be made to the control equipment manufacturer's literature for information e.g. wiring diagrams, etc.



## Low Head Installation

A guide to a fully pumped low head installation is shown, subject to: The correct gas input and the pump being adjusted to give the design flow rate, (i.e. 11°C (20°F) Drop). It is important to ensure a route back to the boiler for the cold feed via the system, a bypass or 3 port valve control system would satisfy this requirement.

The diagram shows a method of installation where the static head between the boiler and feed/expansion tank is restricted e.g. between ceiling level and a kitchen work top.

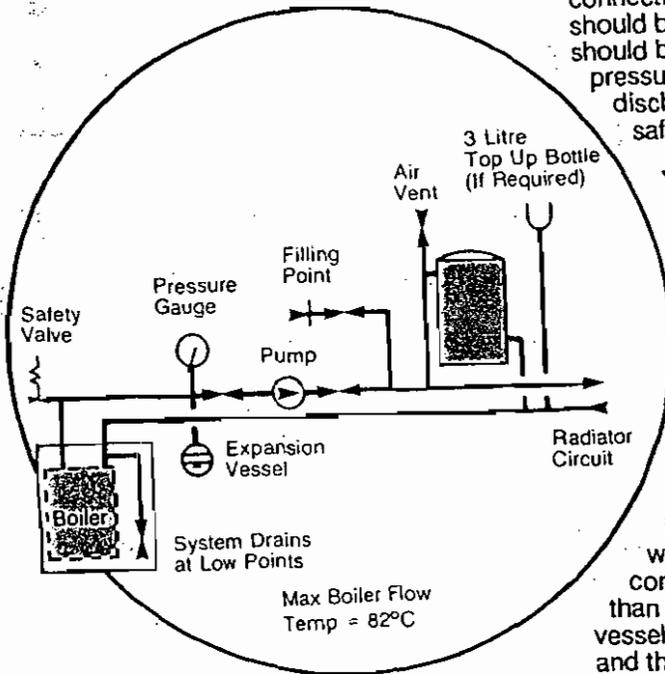
It is important that the open vent pipe is taken off the flow pipe in the manner illustrated i.e. by means of a tee in a horizontal section of the flow pipe.

An alternative approach would involve the use of the boiler, which is fitted with an overheat thermostat, in conjunction with a combined feed and vent arrangement.

## Sealed Systems

### SAFETY VALVE

A safety valve complying with the requirements of BS 6750 Part 1 must be fitted close to the boiler on the flow pipe by means of a horizontal or vertically upward connection with no intervening valve or restrictions and should be positioned to facilitate testing. The valve should be pre-set and non-adjustable to operate at a pressure of 3 bar (45 lbf/in<sup>2</sup>). It must be arranged to discharge any water or steam through a pipe to a safe outlet position.



### PRESSURE GAUGE

A pressure gauge of minimum range 0-4 bar (0-60 lbf/in<sup>2</sup>) with a fill pressure indicator must be fitted to the system, preferably at the same point as the expansion vessel in an easily visible position.

### EXPANSION VESSEL

An expansion vessel complying with the requirements of BS 4814 must be fitted to the system by means of a connection close to the inlet side of the circulating pump in accordance with the manufacturers instructions, the connecting pipe being unrestricted and not less than 15mm (1/2 in) nominal size. The volume of the vessel should be suitable for the system water content and the nitrogen or air charge pressure should not be less than the system static head. Further details of sealed system design can be obtained from BS 5449: Part 1 and the British Gas publication entitled 'Specifications for Domestic Wet Central Heating Systems'.

### FILLING POINT

A filling point and an approved stop valve to BS 1010 must be fitted at low level and the method used for filling the system should be approved by the local water undertaking. For further details see BS 6798.

### MAKE-UP SYSTEM

A method of replacing water lost from the system should be provided either by means of a make up vessel of not more than 3 litres (5 pints) capacity, mounted above the highest point of the system, or by pre-pressurisation of the system.

### VENTING

A method of venting the system during filling and commissioning must be provided by fitting automatic air vents or by venting manually.

### HOT WATER STORAGE

The hot water storage vessel must be of the indirect coil type. All components used in the system must be suitable for operation at 110°C (230°F) and at the pressure allowed by the safety valve.

Method of determining minimum volume of expansion vessel for sealed systems using Baxi boilers

Vessel Charge Pressure (Bar)	Initial System Pressure (Bar)	Multiply Total Water Content Of System by (Litres)
0.5	0.5	0.067
	1.0	0.112
	1.5	0.207
	2.0	0.441
1.0	1.0	0.087
	1.5	0.152
	2.0	0.330
1.5	1.5	0.125
	2.0	0.265

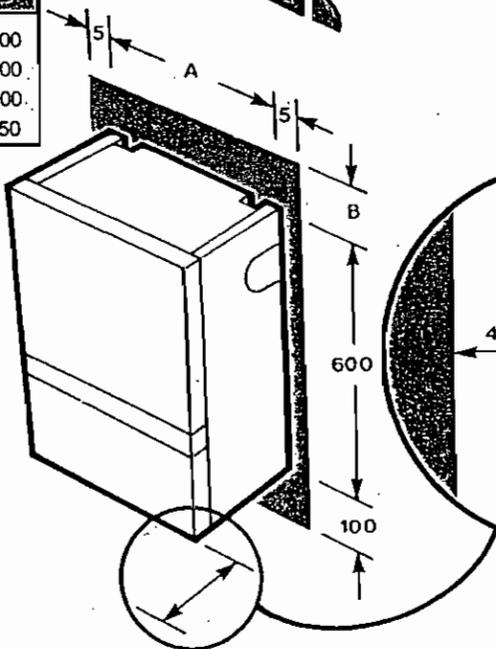
Example: System volume = 75 litres  
 Vessel charge pressure = 1.0 bar  
 Initial system pressure = 1.5 bar  
 Then:  $75 \times 0.152 = 11.4$  litres  
 Expansion Vessel Volume

**NOTE**  
 Where a vessel of the calculated size is not obtainable then the next available larger size should be used.

# SITE REQUIREMENTS



Model	A	B
30/4	400	100
40/4	400	100
50/4	400	100
70/4	470	150



## Location

The appliance may be fitted to any suitable wall with the flue passing through an outside wall and discharging to atmosphere in a position permitting satisfactory removal of combustion products and providing an adequate air supply. The appliance should be fitted within the building unless otherwise protected by a suitable enclosure i.e. garage or outhouse.

If the appliance is to be fitted into a building of timber frame construction then reference must be made to British Gas document DM2.

Recommendations for flues are given in BS 5440 Pt. 1.

## Clearances

A flat vertical area is required for the installation of the boiler measuring as shown in the table below for each model:

Model	Height mm (in)	Width mm (in)
30/4	800 (31 <sup>1</sup> / <sub>2</sub> )	410 (16 <sup>1</sup> / <sub>8</sub> )
40/4	800 (31 <sup>1</sup> / <sub>2</sub> )	410 (16 <sup>1</sup> / <sub>8</sub> )
50/4	800 (31 <sup>1</sup> / <sub>2</sub> )	410 (16 <sup>1</sup> / <sub>8</sub> )
70/4	850 (33 <sup>1</sup> / <sub>2</sub> )	480 (18 <sup>7</sup> / <sub>8</sub> )

These dimensions include the necessary clearances around the appliance for case removal, spanner access, air movement.

Additional clearances may be required for the passage of pipes around local obstructions such as joists running parallel to the front face of the appliance.

Installations flued to the left or right require extra clearances to the side of the installation equal to the length of the flue required including the terminal (i.e. flue length + 65mm (2<sup>1</sup>/<sub>2</sub>in)).

## Flue Position

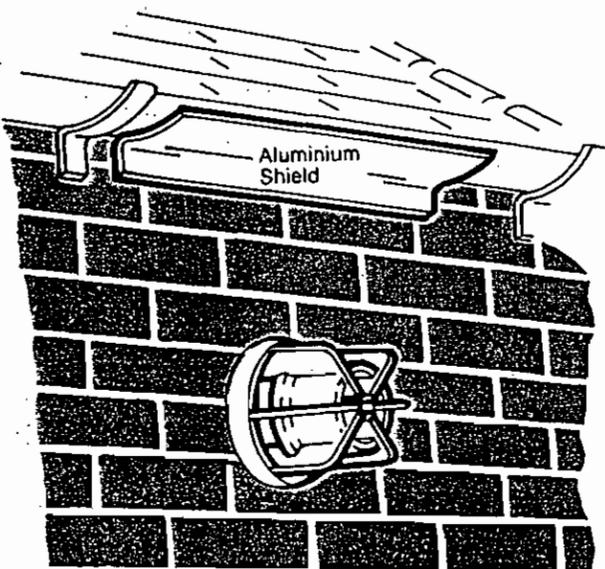
An internal fitting kit is provided with the appliance for installations where the flue terminal is inaccessible from the outside.

The following guide lines indicate the general requirements for siting balanced flue terminals.

If the terminal is fitted within 1 metre (39in) of a plastic gutter, within 500mm (19<sup>1</sup>/<sub>2</sub>in) of a painted eave or a painted gutter, an aluminium shield of at least 1 metre (39in) long should be fitted to the underside of the gutter or painted surface. An air space of 5mm (<sup>2</sup>/<sub>16</sub>in) should be left between shield and gutter.

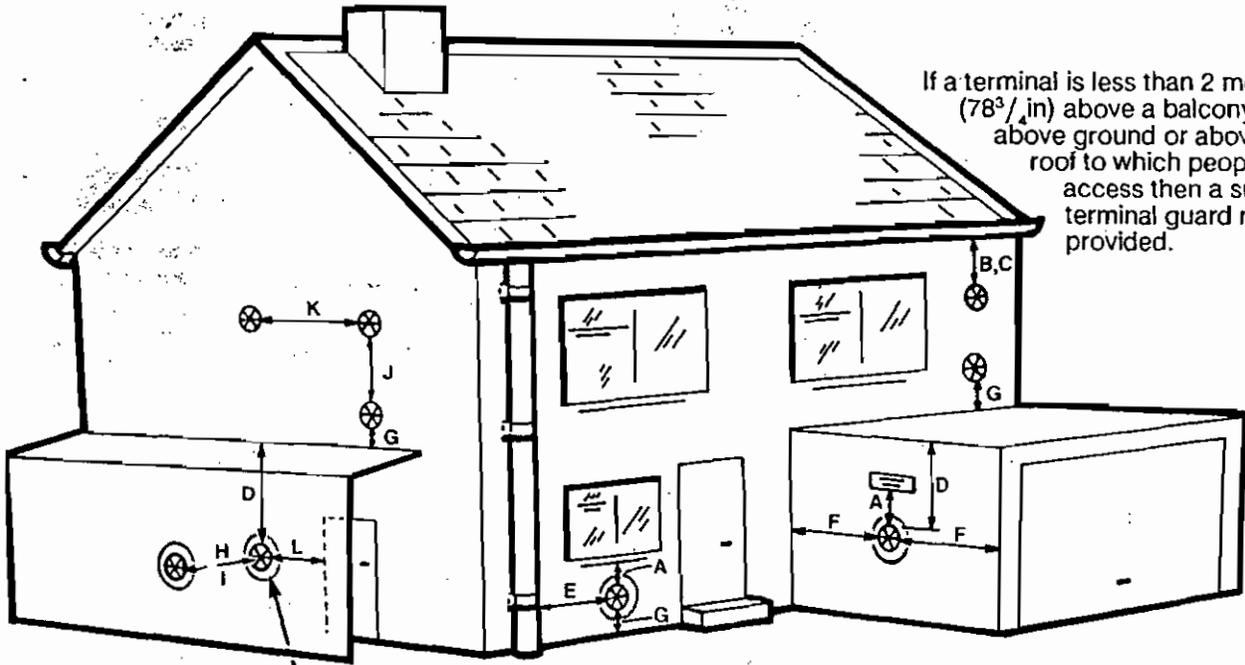
If the terminal discharges onto a pathway or passageway, check that combustion products will not cause a nuisance and that the terminal will not obstruct the passageway.

If the outer surface of an outside wall is of combustible material, it should be protected by fitting a non-combustible plate so that it extends not less than 50mm (2in) around the terminal.



**WARNING**

The addition of anything that may interfere with the normal operation of the appliance (e.g. FLUE DAMPERS, ECONOMISERS, etc.) without the express written permission of Baxi heating could invalidate the appliance warranty and infringe the GAS SAFETY (Installation and Use) REGULATIONS 1984.



If a terminal is less than 2 metres (78<sup>3</sup>/<sub>4</sub> in) above a balcony, above ground or above a flat roof to which people have access then a suitable terminal guard must be provided.

○ Likely positions requiring a flue terminal guard.

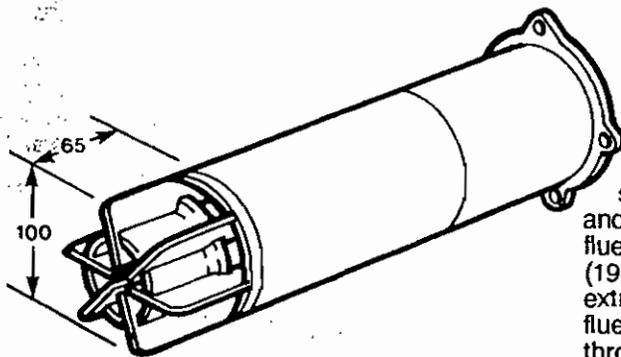
**NOTE REFER TO FLUE POSITION IN RELATION TO GUTTERS ETC. SEE PAGE 10.**

**Terminal Position with Minimum Distance (mm)**

A	Directly below an openable window or other opening, e.g. an air brick.	300
B	Below gutters.	25
C	Below eaves, soil pipes or drain pipes.	75
D	Below balconies or car port roof.	200
E	From vertical drain pipes and soil pipes.	75
F	From internal or external corners.	25
G	Above ground, roof or balcony level.	300
H	From a surface facing a terminal.	600
I	From a terminal facing a terminal.	1200
J	Vertically from a terminal on the same wall.	1500
K	Horizontally from a terminal on the same wall.	300
L	For an opening in a car port (e.g. door, window) into a dwelling.	1200

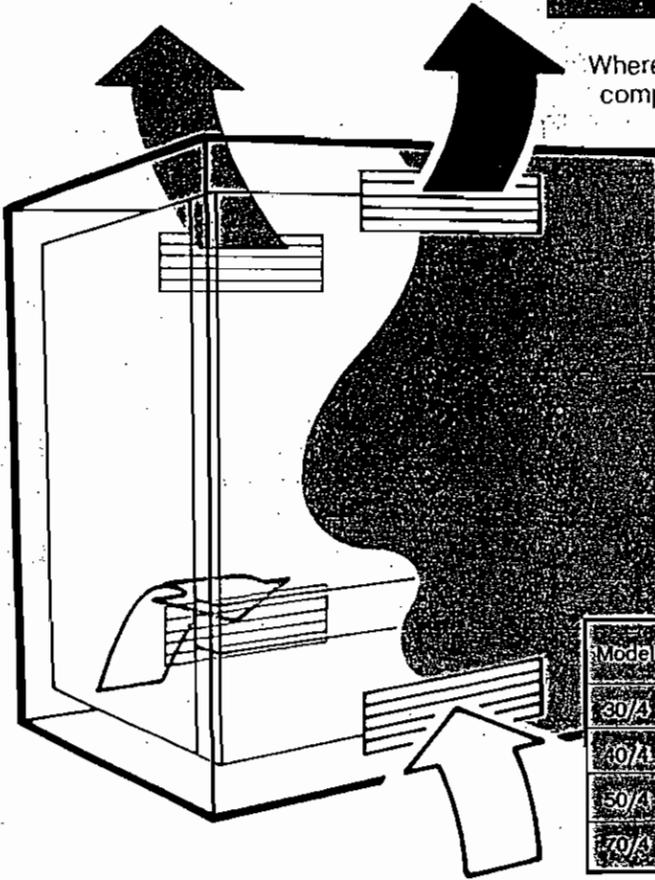


**Flue Dimensions**



The standard flue supplied with the appliance is suitable for use with flue lengths between 100mm and 610mm (4in and 24in). **NOTE:** Maximum flue when flued to the right is 533mm (21in) (70/4 only-483mm (19in)). A flue extension kit is available as an optional extra for installations requiring up to 2 metres (78<sup>3</sup>/<sub>4</sub> in) flue length. Where it is intended to pass the flue through a combustible wall or timber framed dwelling, reference should be made to British Gas publication DM2. If the flue is more than 1.8 metres (70<sup>7</sup>/<sub>8</sub> in) long, it is required that it is supported. **All above dimensions are taken from the respective faces of the outercase/backplate.**

## Ventilation of Compartments



Where the appliance is installed in a cupboard or compartment, air vents are required (for cooling purposes) in the cupboard or compartment at high and low level which may communicate with a room or direct to outside air.

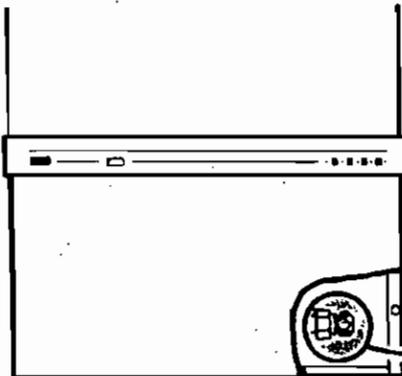
Detailed recommendations for air supply are given in BS 5440: Part 2.

An existing cupboard or compartment may be used, provided that it is modified for the purpose. Recommendations for air supplies and details of essential cupboard compartment design are given in BS 5440: Part 2.

**NOTE:** Both air vents must communicate with the same room or both be on the same wall to outside air.

Model	Position of Air Vent	Air from Room	Air direct from Outside
30/A	HIGH AND LOW LEVEL	104cm <sup>2</sup> (15.8in <sup>2</sup> ) FREE AREA	52cm <sup>2</sup> (7.9in <sup>2</sup> ) FREE AREA
40/A	HIGH AND LOW LEVEL	135cm <sup>2</sup> (20.48in <sup>2</sup> ) FREE AREA	67.5cm <sup>2</sup> (10.24in <sup>2</sup> ) FREE AREA
50/A	HIGH AND LOW LEVEL	171cm <sup>2</sup> (26in <sup>2</sup> ) FREE AREA	85.5cm <sup>2</sup> (13in <sup>2</sup> ) FREE AREA
70/A	HIGH AND LOW LEVEL	240cm <sup>2</sup> (36.4in <sup>2</sup> ) FREE AREA	120cm <sup>2</sup> (18.8in <sup>2</sup> ) FREE AREA

## Gas Supply



The gas installation should be in accordance with BS 6891:1988.

The connection of the appliance is RC  $\frac{1}{2}$  ( $\frac{1}{2}$  in BSPT internal) located at the bottom right hand side.

Ensure that the pipework from the meter to the appliance is of adequate size. Do not use pipes of a smaller diameter than the appliance gas connection.

## Electrical Supply

External wiring must be correctly earthed, polarised and in accordance with CURRENT I.E.E. WIRING REGULATIONS.

The mains supply required is 240V ~ 50Hz fused at 3A. **NOTE:** The method of connection to the electricity supply must facilitate complete electrical isolation of the appliance, preferably by the use of a fused three pin plug and unswitched shuttered socket outlet, both complying with the requirements of BS 1363.

Alternatively, connection may be made via a fused double-pole isolater with a contact separation of at least 3mm in all poles and serving the appliance and system controls only.

# INSTALLATION

## Initial Preparation

Unpack contents of carton. **NOTE: DO NOT** remove the packing piece between the pressure switch and the air box. Place the ready assembled outer case in a safe place until required.

Release the screw securing the 9 way plug assembly to the thermostat box located at the bottom left hand side of the combustion box.

Remove the plug assembly by squeezing in the two tabs and pulling out the plug.

Disconnect and remove the 2 pin plug from the fan electrical connection by squeezing the two locating tabs inwards and then pulling out.

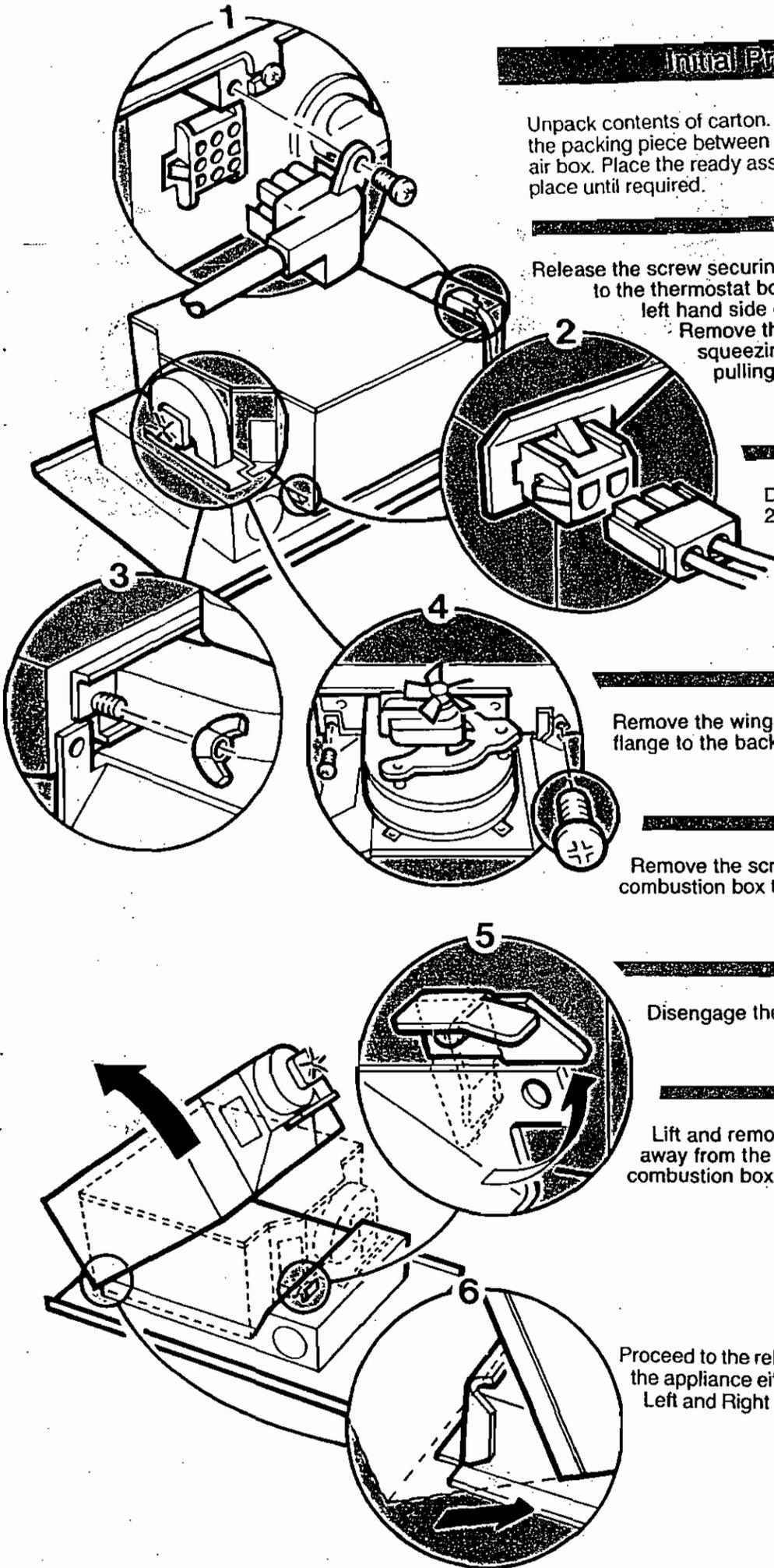
Remove the wing nuts connecting the fan flange to the back plate.

Remove the screws securing the combustion box to the air box.

Disengage the retaining latch.

Lift and remove the combustion box away from the back plate. Place the combustion box on its back.

Proceed to the relevant section for flueing the appliance either to the Rear or the Left and Right Hand Sides.

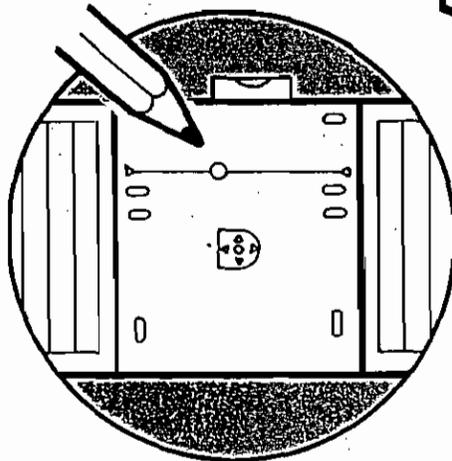


100  
(150-70/4 only)

## Rear Flue

Choose a suitable position for the boiler making necessary allowances for the minimum clearances required as shown in the table below.

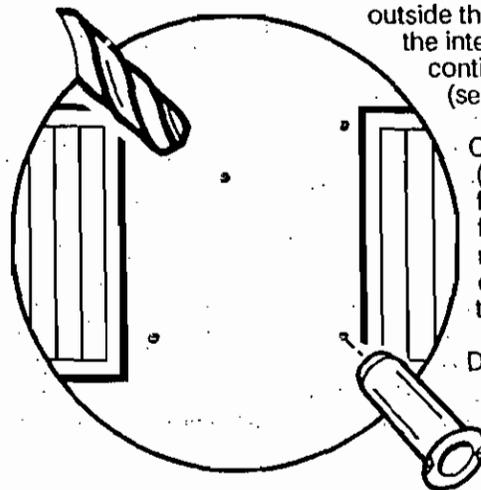
Model	Height A mm (in)	Width B mm (in)
30/4	800 (31 <sup>1</sup> / <sub>2</sub> )	410 (16 <sup>1</sup> / <sub>8</sub> )
40/4	800 (31 <sup>1</sup> / <sub>2</sub> )	410 (16 <sup>1</sup> / <sub>8</sub> )
50/4	800 (31 <sup>1</sup> / <sub>2</sub> )	410 (16 <sup>1</sup> / <sub>8</sub> )
70/4	850 (33 <sup>1</sup> / <sub>2</sub> )	480 (18 <sup>7</sup> / <sub>8</sub> )



Hold the wall template against the wall at the required boiler location. Ensure that the top of the template is level. If fitting the appliance between or adjacent to kitchen wall units, ensure that the bottom edge of the template is level with the lower edge of the units and is correctly spaced. **NOTE:** The template takes into account the necessary side clearances for installation.

Mark the positions of the flue hole centre and the four fixing holes. Where possible use the uppermost and lowest fixing hole positions, otherwise space the fixing holes as far apart as possible.

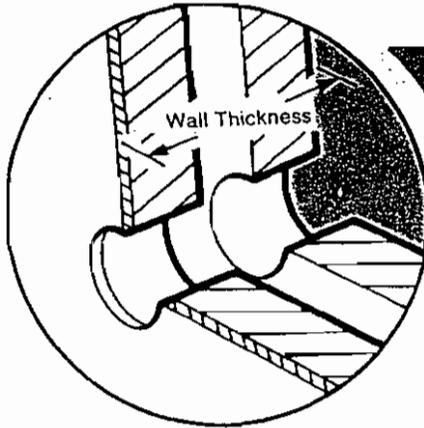
**NOTE:** If the flue terminal is inaccessible from outside the building, it is necessary to fix the internal fitting kit in position before continuing with the installation. (see pages 25,26).



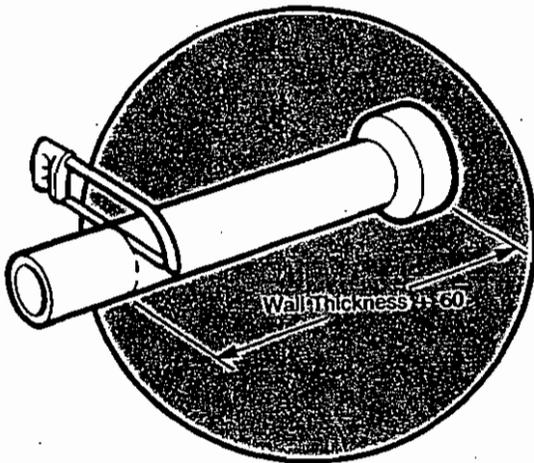
Cut a hole approximately 107mm (4<sup>1</sup>/<sub>4</sub> in) diameter in the masonry for the 100mm (4in) diameter flue duct. (Use of a core drill is recommended. When using a core drill, it is important to keep the drill level and square).

Drill the anchorage holes 63mm (2<sup>1</sup>/<sub>2</sub> in) deep to accept the wall plugs provided.

## Flue Preparation

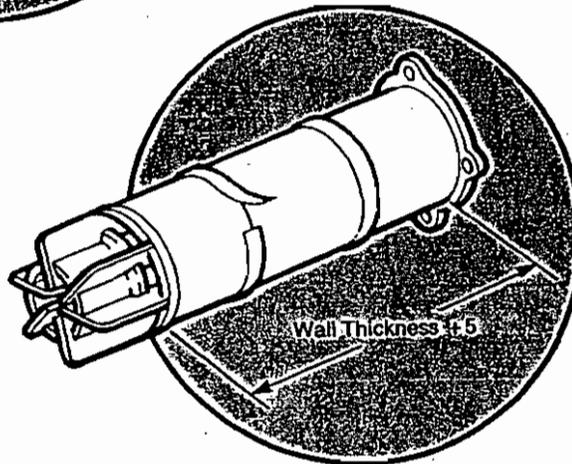


Measure the wall thickness and to this dimension add 60mm (2<sup>3</sup>/<sub>16</sub>in).



Take the flue duct and mark off wall thickness + 60mm (2<sup>3</sup>/<sub>16</sub>in) from the swaged end of the duct and cut to size. (Use the tape provided to give an accurate cutting guide by wrapping it around the flue duct with the edge marking the cutting line).

**WALL THICKNESS 280mm (11in) - 24in**



Take the telescopic air duct from its pack. Open the air duct out to the wall thickness and add 5mm (<sup>2</sup>/<sub>16</sub> in). Using the tape provided seal the joints of the three sections of the air duct, ensuring an overlap of at least 30mm (1<sup>3</sup>/<sub>16</sub> in) at each joint.

NOTE: The seams of all three sections must be in line.

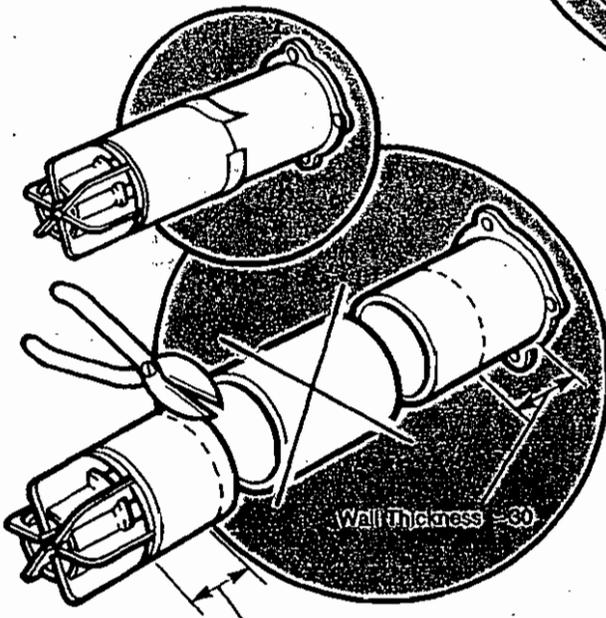
**WALL THICKNESS 100mm - 280mm (4in - 11in)**

If the wall thickness is less than 280mm (11 in), it will be necessary to cut the components of the air duct to the appropriate size. Dispose of the centre section, as this is not required.

Measure the wall thickness and subtract 30mm (1<sup>3</sup>/<sub>16</sub> in) from this dimension. Cut the remaining sections to this length, measuring from the positions indicated in the diagram.

Engage the sections, one inside the other, then open the assembly out to wall thickness + 5mm (<sup>2</sup>/<sub>16</sub> in). Tape the sections together using the tape provided, ensuring that the seal is good.

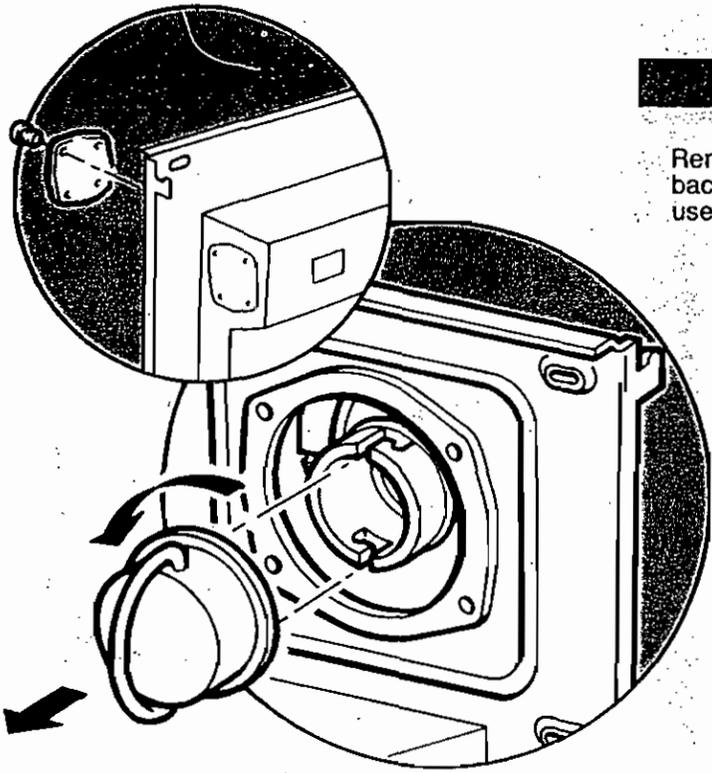
NOTE: The seams of both sections must be in line.



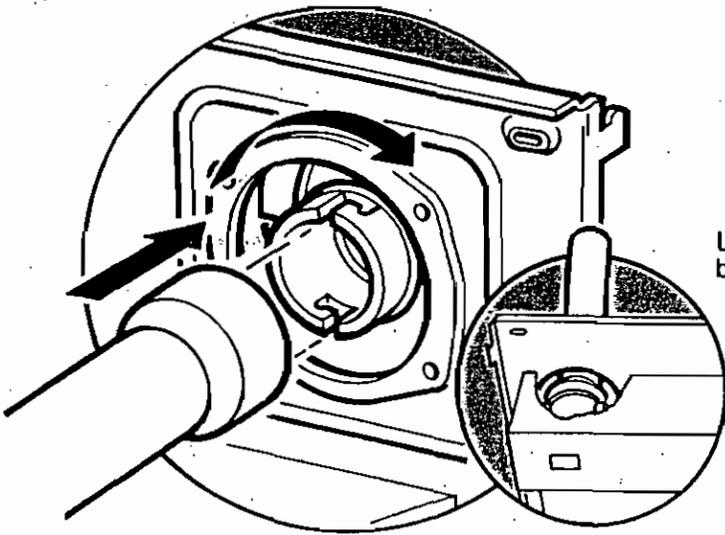
Wall Thickness + 30

## Assembly of Flue

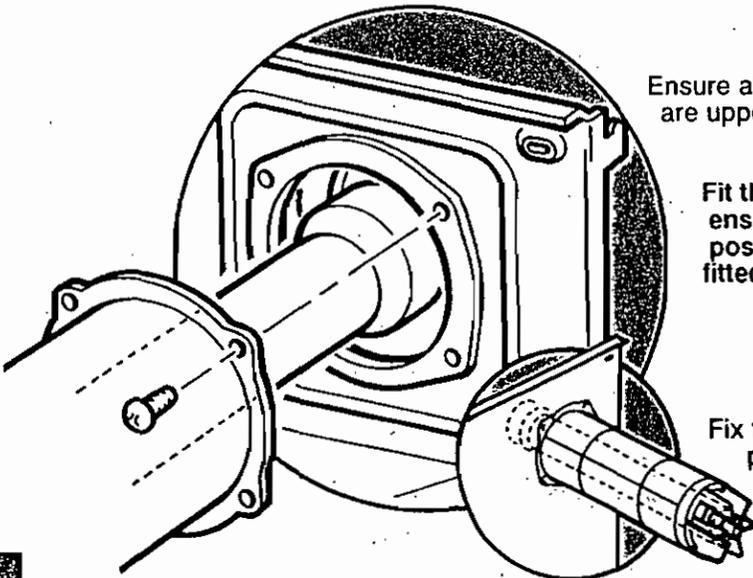
Remove the rear air box blanking plate from the back plate and put the screws to one side for later use.



Remove the blanking cap at the rear of the turret, by pushing and turning anti-clockwise to release the bayonet fitting.



Locate the swaged end of the flue duct over the bayonet fitting on the turret, taking care not to damage the 'O' ring. Lock the flue duct in place by pressing in and turning clockwise.



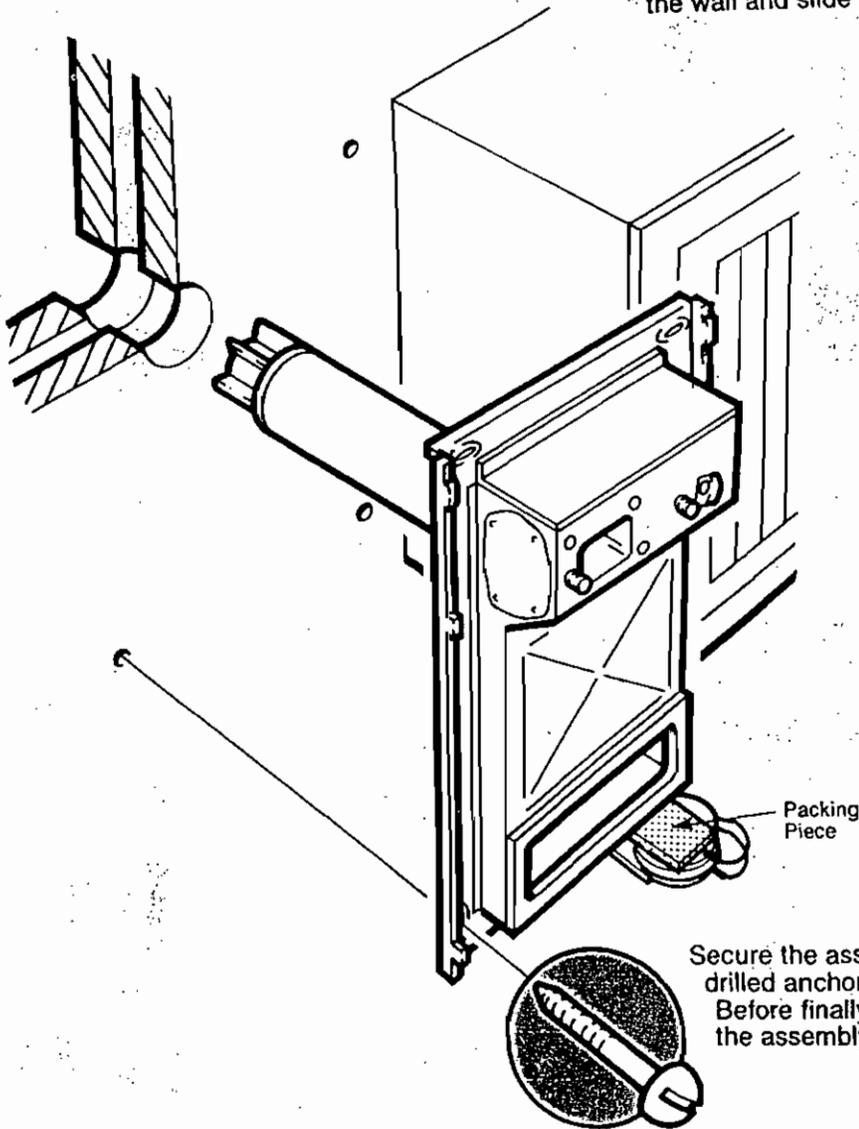
Ensure all seams of the air duct sections are uppermost.

Fit the air duct over the flue duct and ensure that the flue duct locates in position in the terminal (permanently fitted to the air duct).

Fix the air duct to the back of the back plate using the screws previously removed.

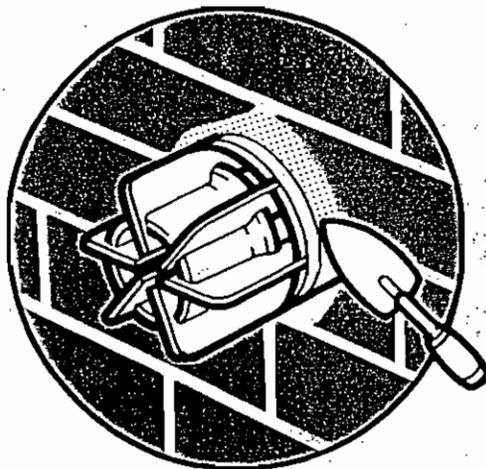
## Fitting the Back Plate

Engage the assembly into the hole previously cut in the wall and slide into place.

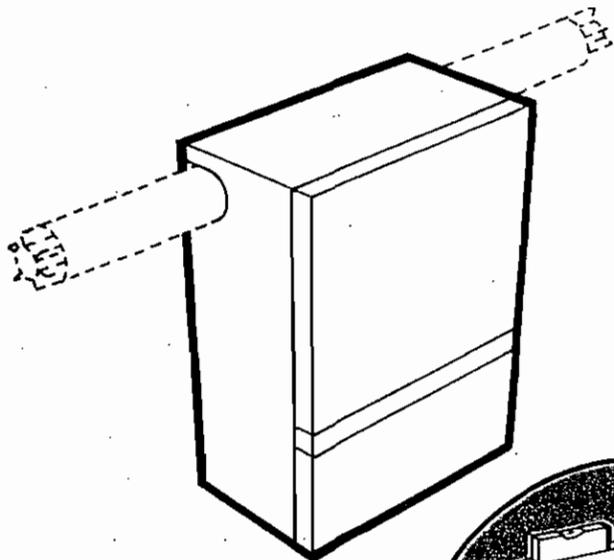


Secure the assembly to the wall at the previously drilled anchorage points with the screws provided. Before finally tightening the screws, check that the assembly is level.

NOTE: Remove the packing piece from between the pressure switch and air box.



Make good between the wall and the air duct outside the building.

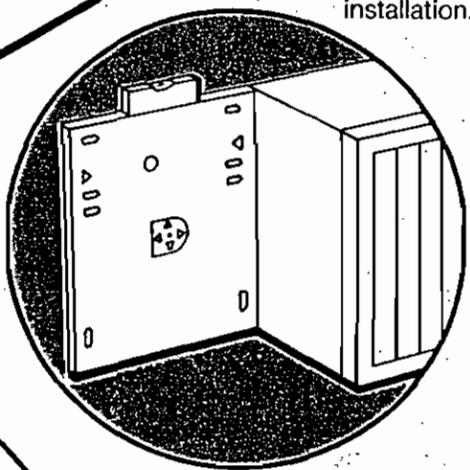


## Left or Right Flue

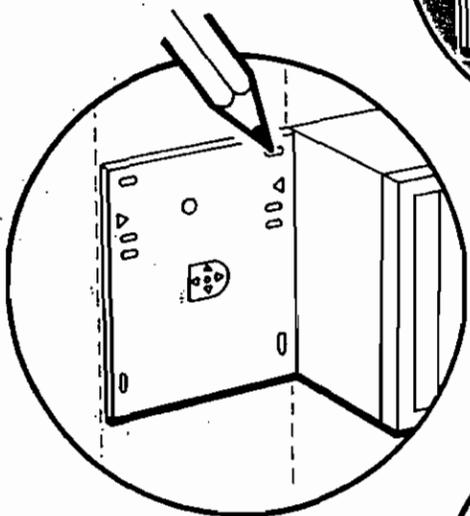
The procedure for fitting the appliance flued to the left or right hand side is the same. However the lengths to which the flue and air ducts are cut will vary accordingly.

- Left hand side maximum flue 610mm (24in)
- Right hand side maximum flue 533mm (21in)
- Right hand side maximum flue-70/4 only 483mm (19in)

Choose a suitable position for the boiler, making necessary allowances for the required clearances for installation.

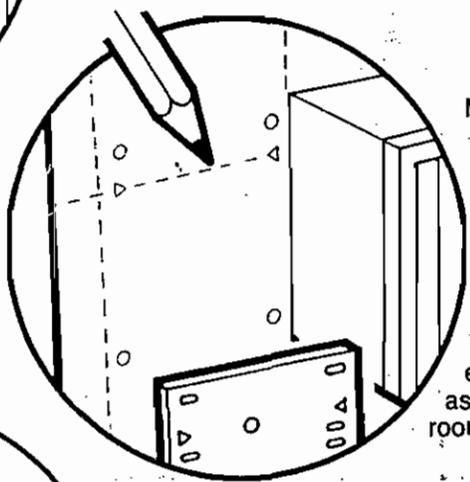


Hold the wall template against the wall at the required boiler location. Ensure that the top of the template is level. If fitting adjacent to kitchen wall units, ensure that the bottom edge of the template is level with the lower edge of the units and is correctly spaced.



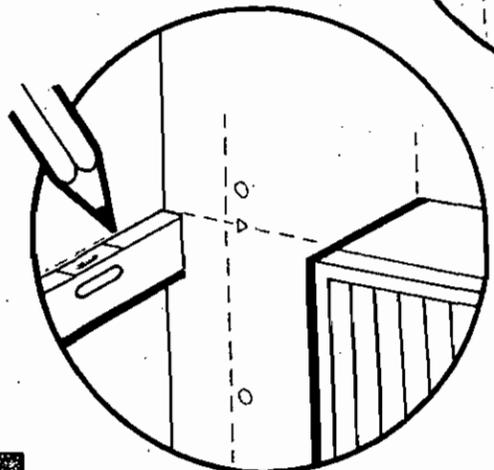
Mark vertical lines down the left and right edges of the template to represent the outer limits of the appliance and the minimum side clearances on the wall.

Mark the position of four fixing holes, ensuring that they are spaced as far apart as possible.

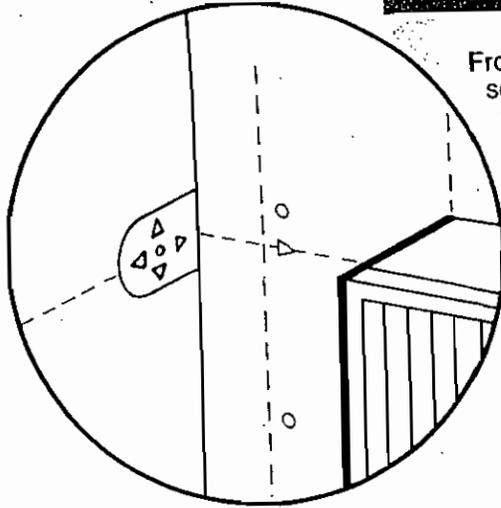


Mark the horizontal centre line for the flue assembly by marking the point at the inward pointing corner of the two triangular cut outs in the template.

Remove the template and draw a horizontal line between the two points, extending it to the left or right as required, to the corner of the room.

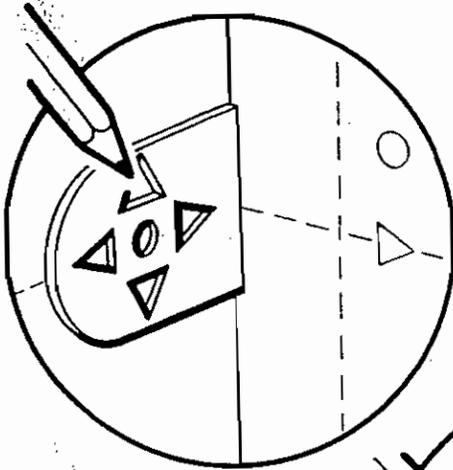


Extend the horizontal centre line around the corner for approximately 300mm (12in). Ensure that the line remains horizontal by checking with a spirit level.

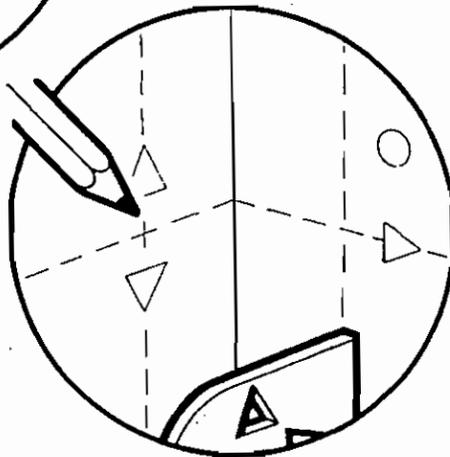


From the wall template remove the detachable section outlined and marked. Using this as a template, line up the horizontal triangular cut outs with the extended 300mm (12in) line and make sure that the flat of the template is butted up against the corner of the wall.

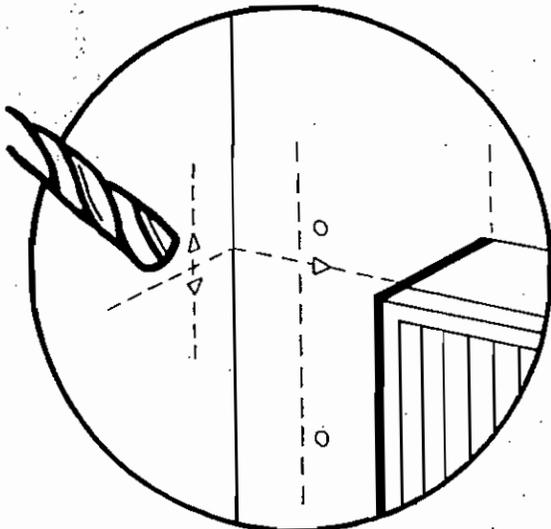
If the appliance mounting wall is out of true, use string or a straight edge to determine the true corner position and mark a vertical line to accommodate the flat edge of the template.



Holding the template firmly, mark the vertical centre line for the flue assembly by marking the point at the outer corners of the upper and lower cut outs.



Remove the template and draw a vertical line between the two marks. The intersection of the vertical and horizontal lines is the centre of the flue hole.

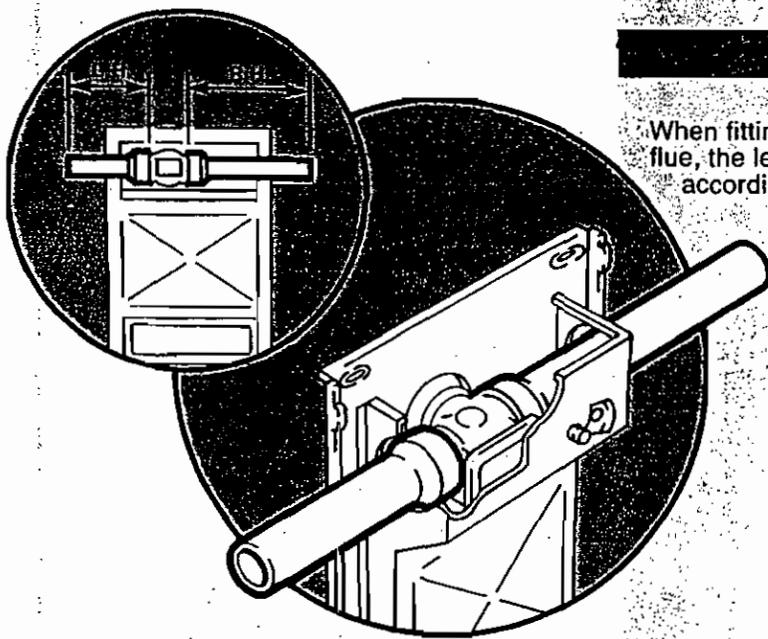


**NOTE:** If the flue terminal is inaccessible from outside the building, it is necessary to fix the internal fitting kit in position before continuing with the installation. (See pages 25, 26).

Cut a hole approximately 107mm (4 $\frac{1}{4}$ in) diameter in the masonry for the 100mm (4in) diameter flue duct. (Use of a core drill is recommended. When using a core drill, it is important to keep the drill level and square, particularly with the wall onto which the boiler is to be fitted.)

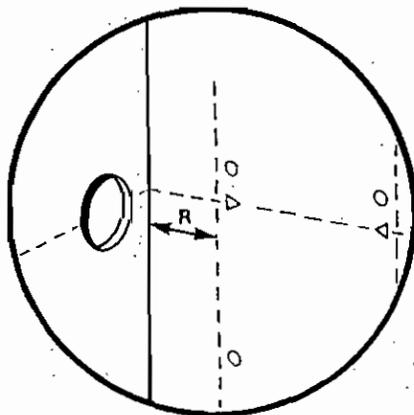
Drill the anchorage holes 63mm (2 $\frac{1}{2}$ in) deep to accept the wall plugs provided.

## Flue Preparation

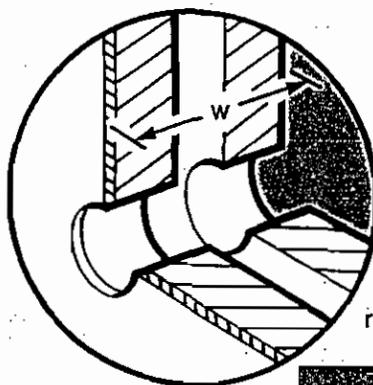


When fitting the appliance with a left or right hand flue, the length of the flue duct will differ accordingly. This is due to the off-set of the turret within the air box. Use the figures and formulae shown below to determine the correct length of flue duct.

### FOR BOTH LEFT AND RIGHT HAND FLUE



Measure the distance from the wall to the nearest line marked from the template. This will be known as distance R.



Measure the thickness of the wall from the inside. This will be known as distance W.

Add these two distances together, along with the figure from the table below for either left or right hand flueing.

### 30/40/50/4 ONLY

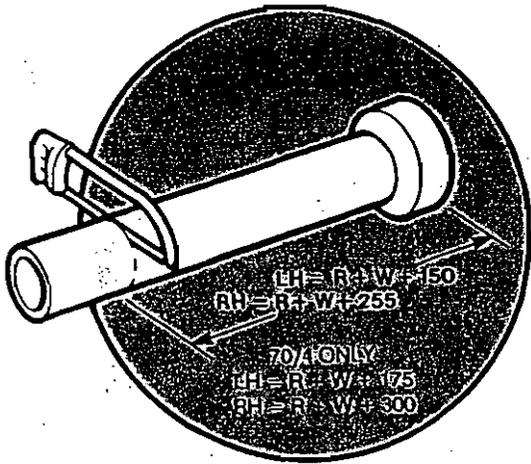
For Left Hand Flue Add 150mm (6in)  
Flue Duct Length =  $R + W + 150\text{mm}$  (6in)

For Right Hand Flue Add 255mm (10in)  
Flue Duct Length =  $R + W + 255\text{mm}$  (10in)

### 70/4 ONLY

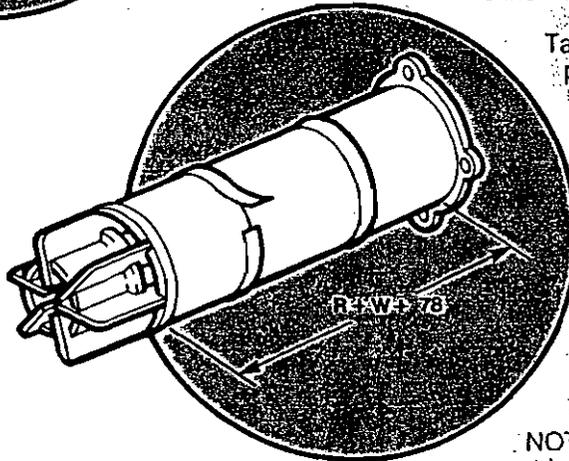
For Left Hand Flue Add 175mm ( $6\frac{7}{8}$ in)  
Flue Duct Length =  $R + W + 175\text{mm}$  ( $6\frac{7}{8}$ in)

For Right Hand Flue Add 300mm ( $11\frac{3}{4}$ in)  
Flue Duct Length =  $R + W + 300\text{mm}$  ( $11\frac{3}{4}$ in)



Mark off the appropriate length from the swaged end of the flue duct. Cut the duct to length and dispose of the unwanted length. (Use the tape provided to give an accurate cutting guide by wrapping it around the flue duct with the edge marking the cutting line).

The air duct is to be set to the same length for either left or right hand installation.

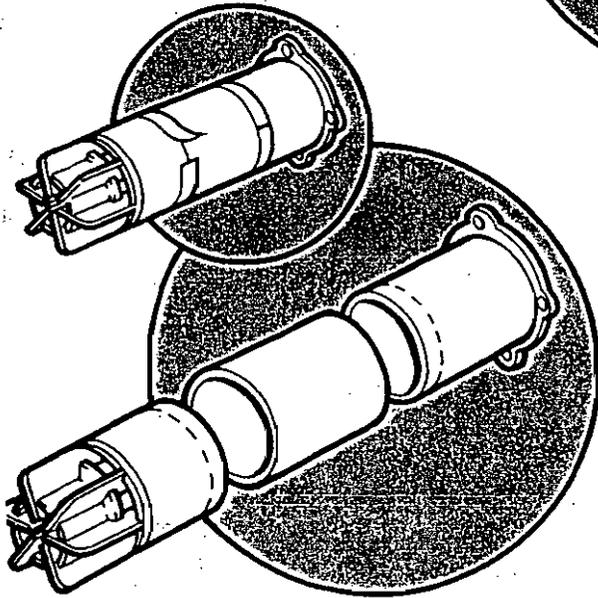


Take the telescopic air duct from its pack. Open the air duct out to the length  $R + W$  previously measured and add 78mm ( $3\frac{1}{16}$  in) to this length.

i.e.  $R + W + 78\text{mm}$  ( $3\frac{1}{16}$  in) = total air duct length.

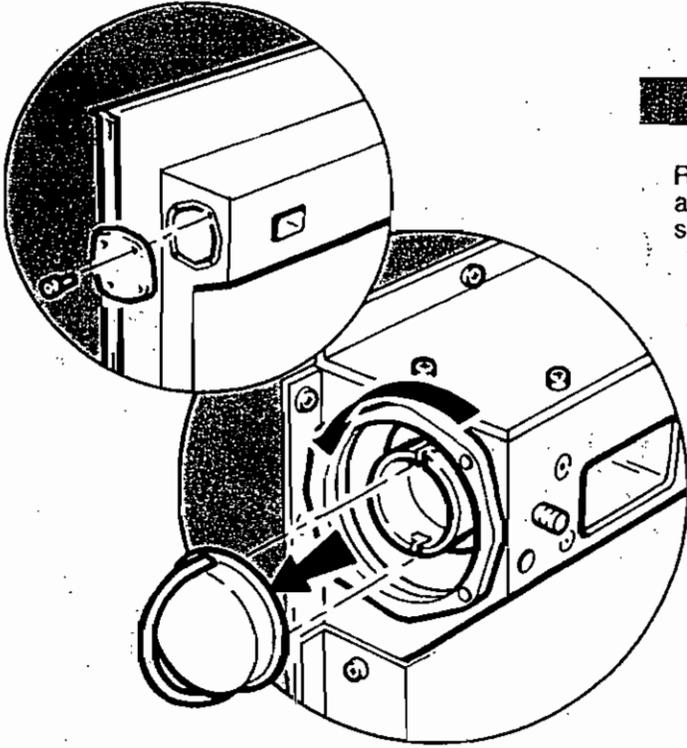
Using the tape provided seal the joints of the three sections of the air duct, ensuring an overlap of at least 30mm ( $1\frac{3}{16}$  in) at each joint.

NOTE: The seams of all three sections must be in line.



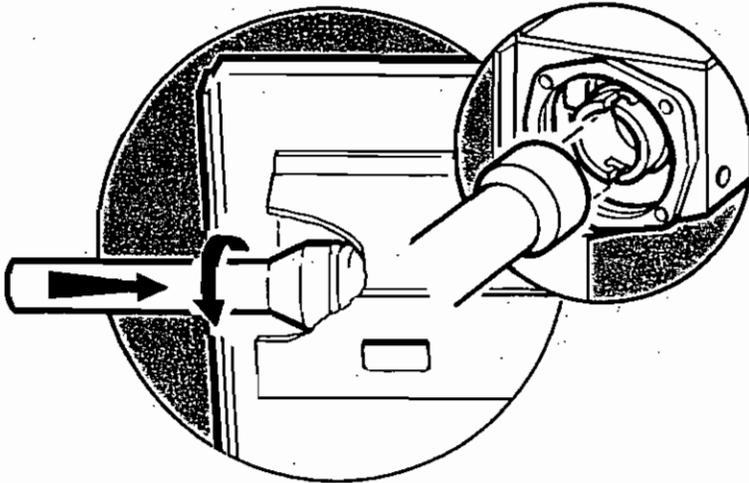
If the wall thickness (W) plus the distance from the wall to the side of the boiler case (R) is less than 202mm (8in), it will be necessary to cut the three components of the air duct to make up the appropriate size  $R + W + 78$ .

## Assembly of Flue

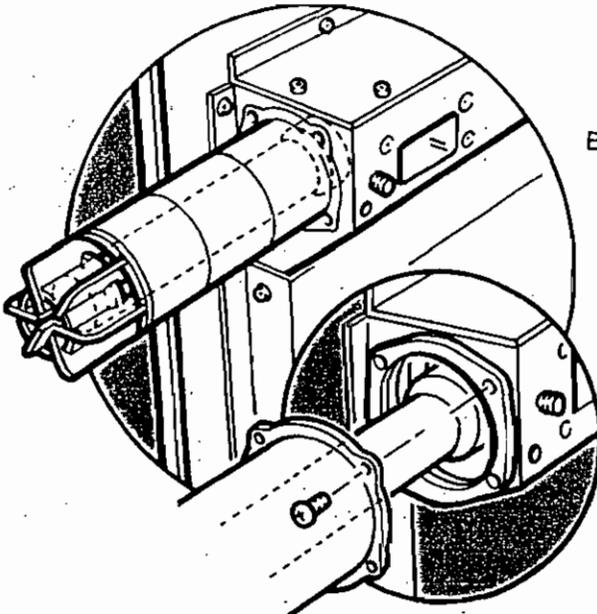


Remove the left or right hand air box blanking plate as appropriate from the back plate and put the screws to one side for later use.

Remove the blanking cap from either the left or right hand side of the turret as required by pushing in and turning anti-clockwise to release the bayonet fitting.



Locate the swaged end of the flue duct over the bayonet fitting on the turret, taking care not to damage the 'O' ring. Lock the flue in place by pressing in and turning clockwise.

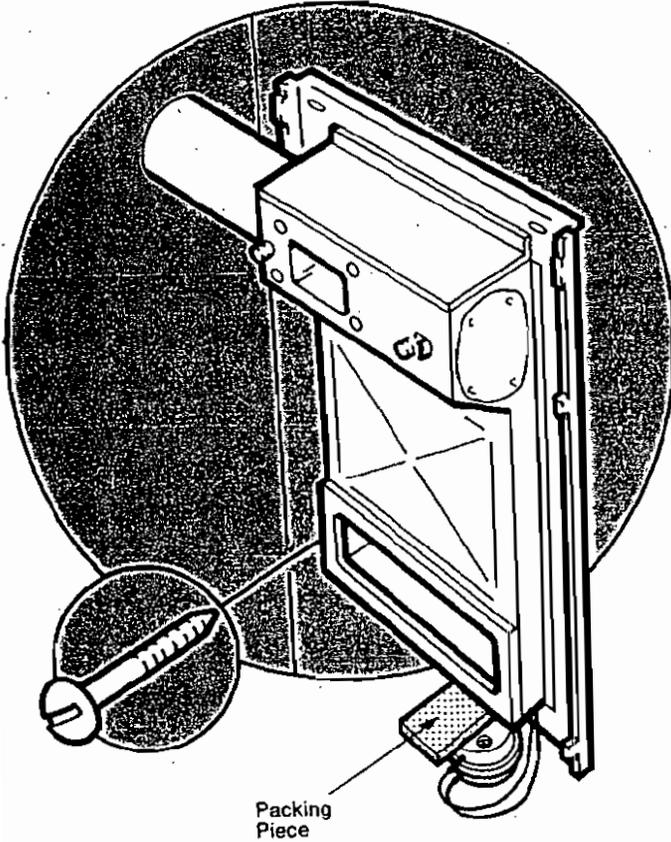


Ensure all seams of the air duct sections are uppermost.

Fit the air duct over the flue duct and ensure that the flue duct locates in position in the terminal (permanently fitted to the air duct).

Fit the air duct to the back plate in the required position, using the screws previously removed.

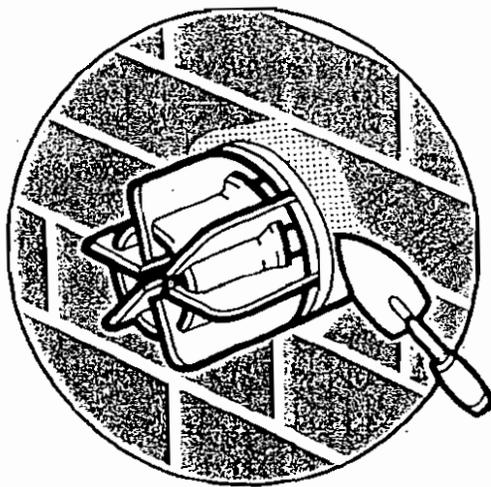
## Fitting the Back Plate



Engage the assembly into the hole previously cut in the wall and slide into place.

Secure the assembly to the wall at the previously drilled anchorage points with the screws provided. Before finally tightening the screws, check that the assembly is level.

NOTE: Remove the packing piece from between the pressure switch and air box.



Make good between the wall and the air duct outside and inside the building.

## Terminal Guard

When codes of practice dictate the use of terminal guards, they can be obtained from:

### in the SOUTH

Tower Flue Components Ltd.,  
Tower House,  
Vale Rise,  
Tonbridge,  
Kent.  
Tel: 0732 351555.

### in the NORTH

Myco Engineering Ltd.,  
236 Lockwood Road,  
Lockwood,  
Huddersfield HD1 3TG.  
Tel: 0484 547916.

### NATIONWIDE from

Quinnell, Barrett & Quinnell,  
884 Old Kent Road,  
London, SE15 1NL.  
Tel: 01 639 1357.

When ordering a terminal guard, quote the appliance model number and the respective model number of guard required.

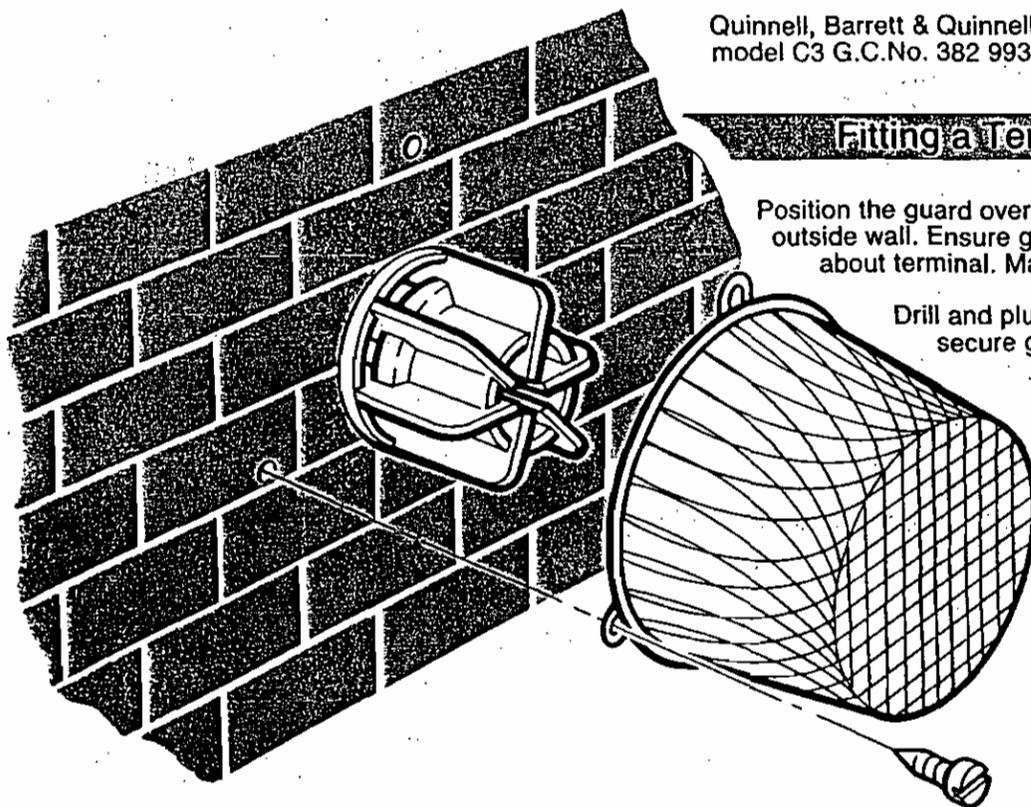
Tower Flue/Myco Engineering. Quote terminal guard model C G.C.No.393 545.

Quinnell, Barrett & Quinnell: Quote terminal guard model C3 G.C.No. 382 993.

## Fitting a Terminal Guard

Position the guard over the terminal on the outside wall. Ensure guard is equally spaced about terminal. Mark fixing positions.

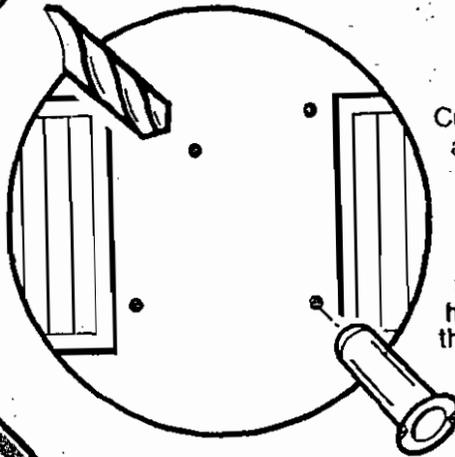
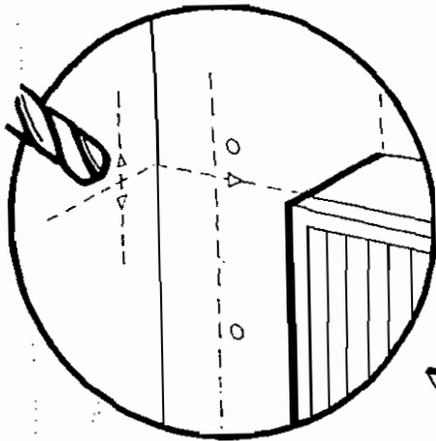
Drill and plug fixing positions then secure guard to wall.



## Internal Fitting Kit

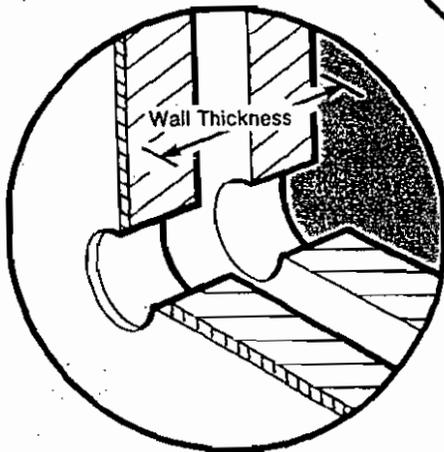
The internal fitting kit provided with the appliance is suitable for walls between 100mm (4in) and 280mm (11in) in thickness.

### TO INSTALL THE KIT

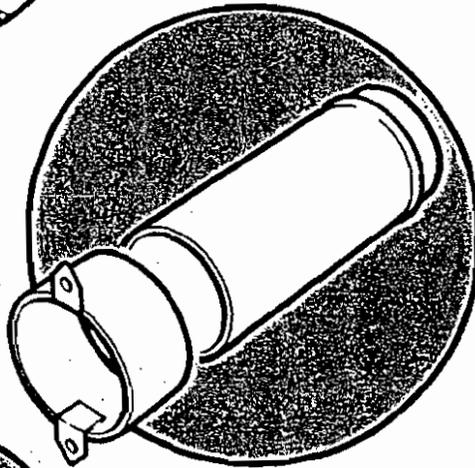


Cut a hole in the masonry approximately 117mm (4 $\frac{5}{8}$ in) diameter for the internal fitting kit.

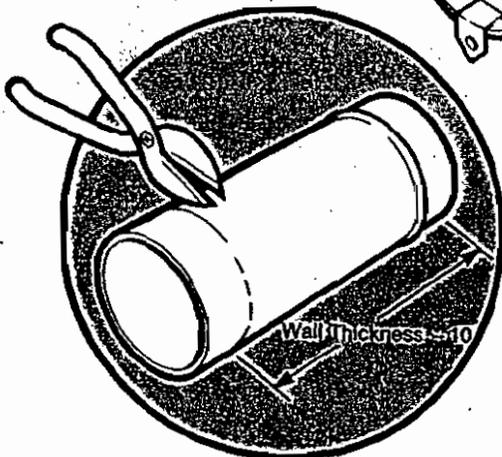
The use of a core drill is recommended. NOTE: When using a core drill, it is important to keep the drill square. Drill the anchorage holes 63mm (2 $\frac{1}{2}$ in) deep to accept the wall plugs provided.



Measure the wall thickness and from this dimension subtract 10mm ( $\frac{3}{8}$ in).



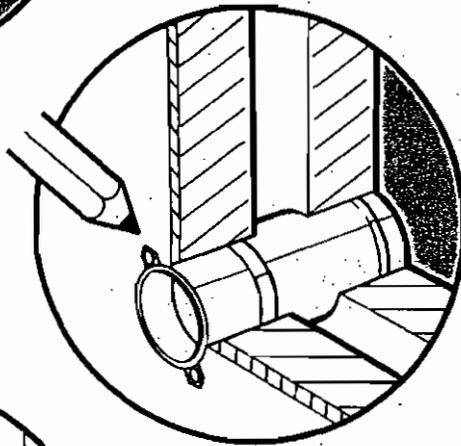
Remove the wall liner from its packing and remove the end piece.



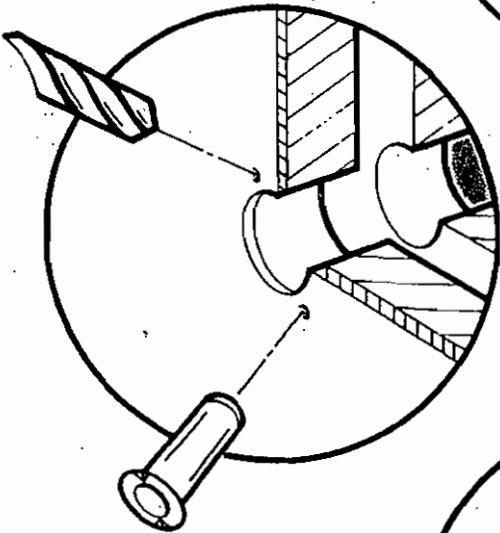
Mark off the dimension, wall thickness - 10mm ( $\frac{3}{8}$ in), measuring from the beaded end of the duct and cut off the remaining length of the duct. Ensure that the cut is square and reasonably straight.



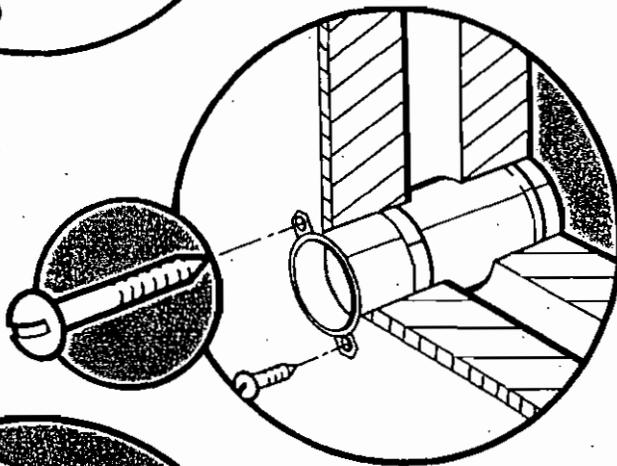
Refit the end piece to the liner and open out to the thickness of the wall. Seal the two pieces together using the tape provided with the kit.



Slide the assembled wall liner into the hole in the wall until the tags stop against the inner wall with the seam of the liner uppermost. Mark the positions of the holes in the tags on the wall and withdraw the duct.



Drill and plug the wall in these positions.



Re-insert the duct and secure it to the wall using the screws provided.



Make good between the edge of the liner and the outside wall with cement mortar or a similar substance, by reaching through the liner and pressing the mortar between liner and the outside brick work. Make good between the liner and the inside wall. Apply soap solution to the 'O' ring inside the liner.

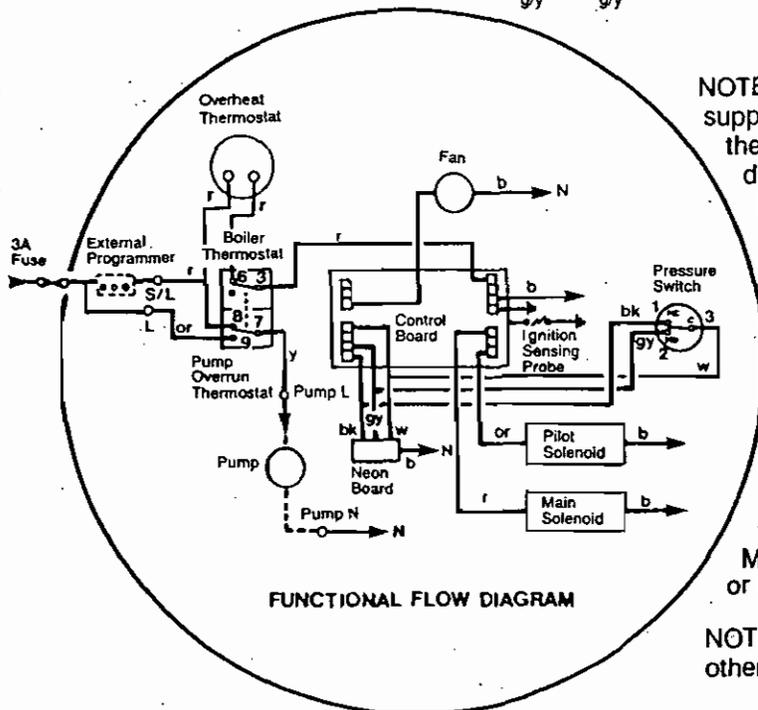
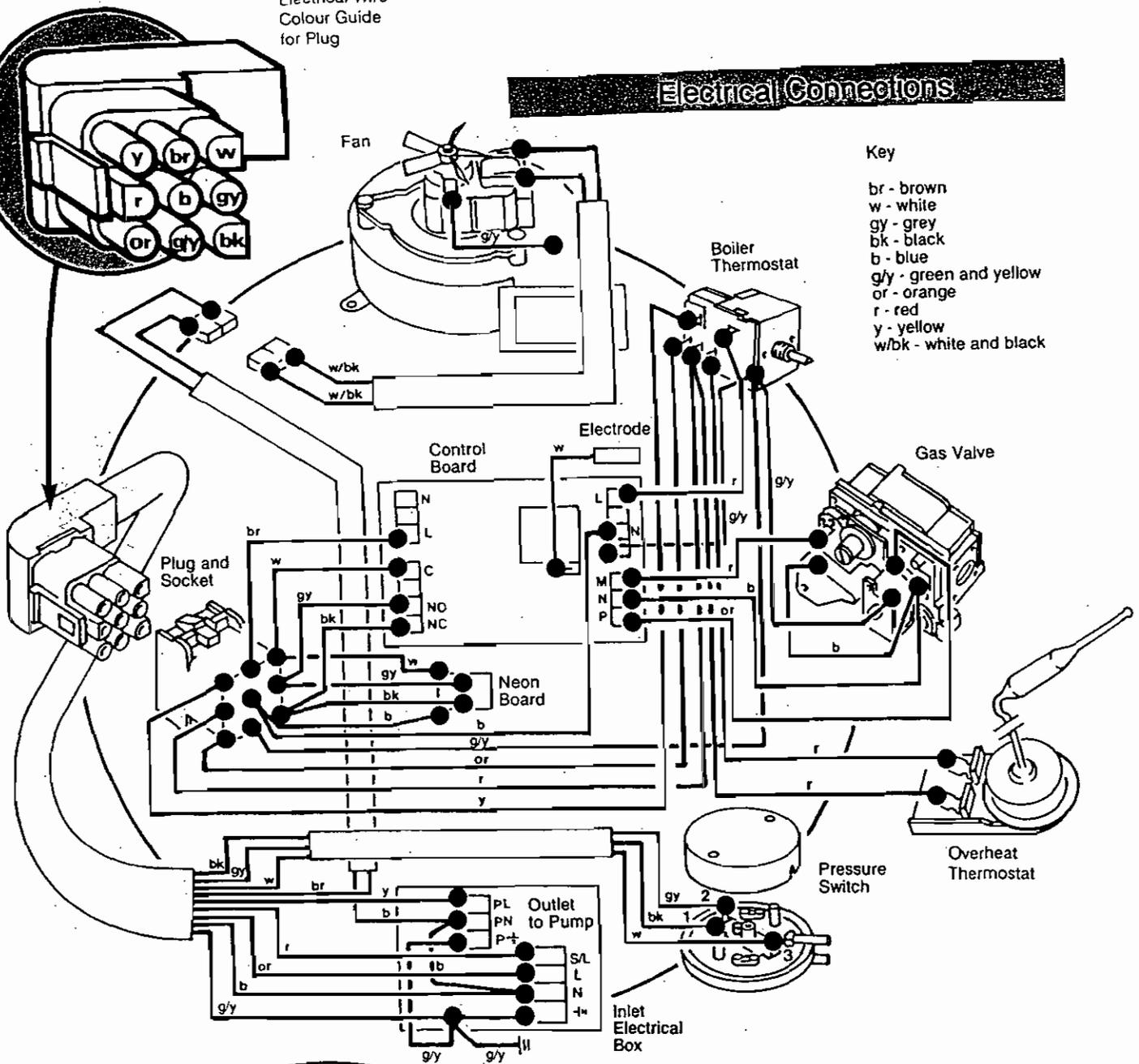
The rest of the installation may now proceed as described.

Electrical Wire  
Colour Guide  
for Plug

## Electrical Connections

Key

br - brown  
w - white  
gy - grey  
bk - black  
b - blue  
g/y - green and yellow  
or - orange  
r - red  
y - yellow  
w/bk - white and black



**NOTE:** The method of connection to the electricity supply **MUST** facilitate complete electrical isolation of the appliance. Connection may be made via a fused double pole isolator with a contact separation of at least 3mm ( $\frac{1}{8}$ in) in all poles and serving the appliance and system controls only. All cables should be routed to avoid hot surfaces.

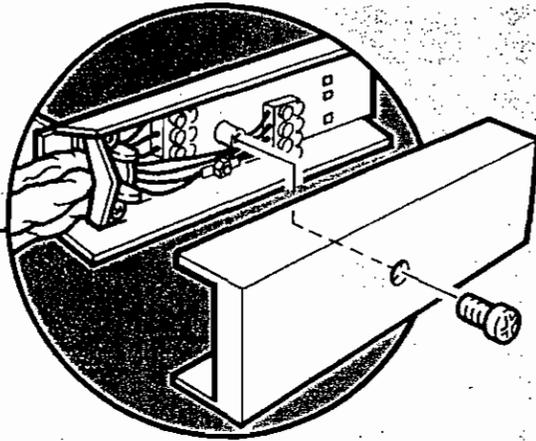
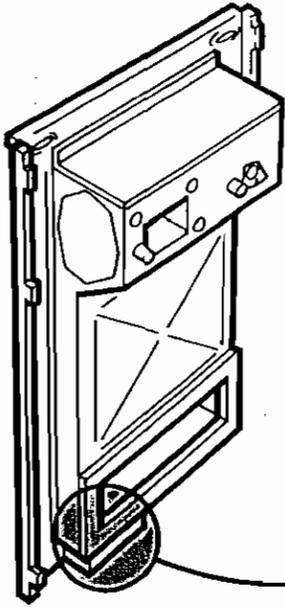
### WARNING

**THIS APPLIANCE MUST BE EARTHED.** 4 core input cable for connection to the appliance **MUST** be not less than 0.75mm<sup>2</sup> (24 x 0.2mm) PVC grade to BS 6500 table 15 or 16. External controls and the appliance **MUST** be supplied via the same plug and socket or isolator.

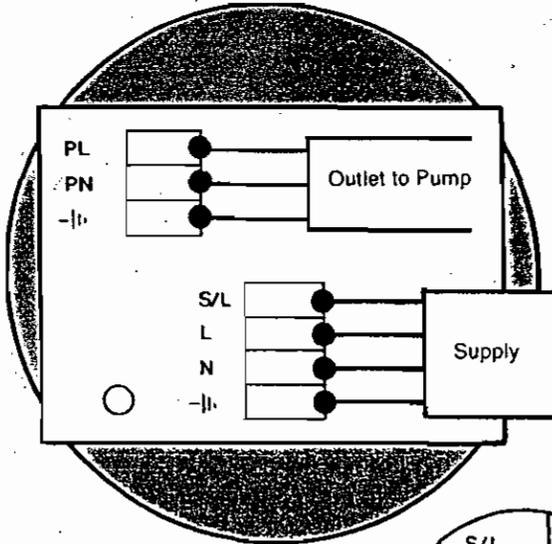
**NOTE:** Polarity of the appliance must be correct otherwise the appliance will not operate correctly.



**to connect the electrical wiring to the boiler.**



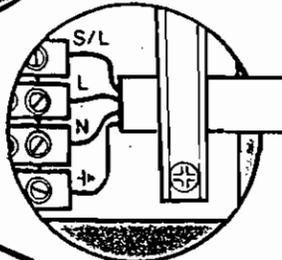
Remove the cover to the inlet terminal box situated at the bottom of the back plate, by unscrewing the central screw.



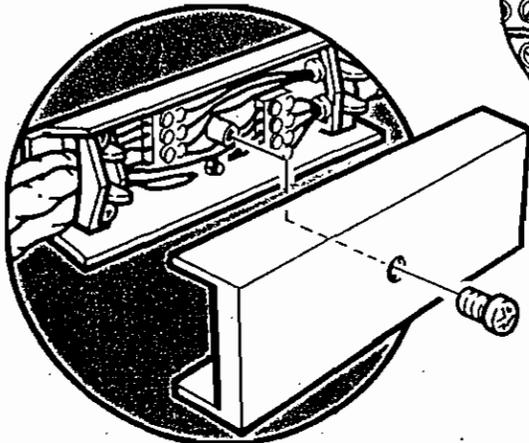
Fit supply and pump output cables to the terminal strips fixed to the terminal box, making sure that the appropriate cable clamp is used to hold the cable firmly. The switch live **MUST** be connected to the terminal marked S/L. The permanent live supply **MUST** be connected to the terminal marked L. The pump **MUST** be connected to the terminals marked PL, PN and -|⊕.

Ensure that adequate lengths of cable are used to allow for subsequent access and servicing.

Lay the cable neatly and clip to the wall where necessary. Ensure that the lengths of the supply conductors are such that current carrying wires become taut before earth wires if the cable should slip out of the cable clamp.



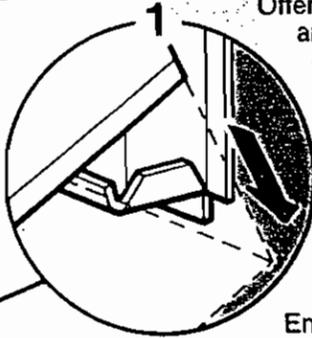
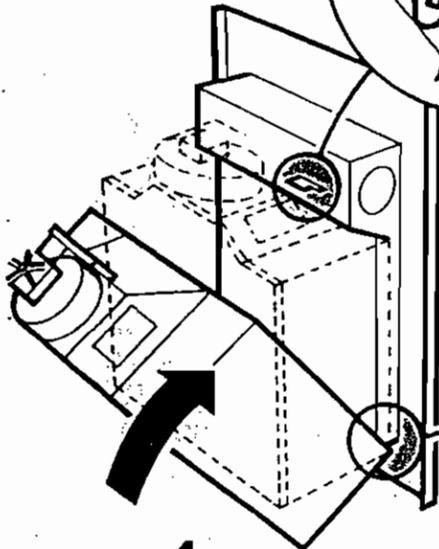
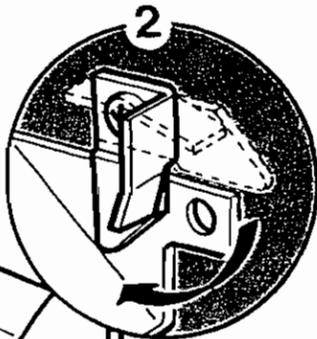
Make sure that the appropriate cable clamp is used to hold the cable firmly.



Replace the plastic cover on the supply terminal box ensuring that the insulation flaps are inside the cover. Tighten the centre screw.

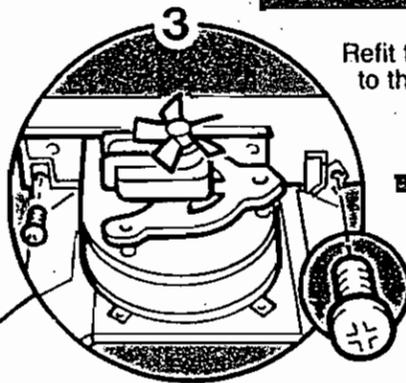
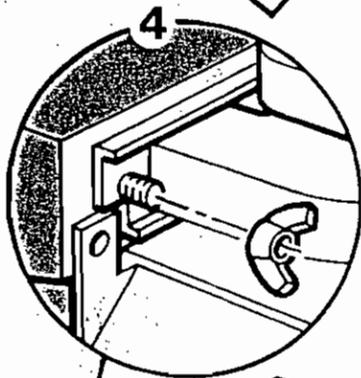
In the event of an electrical fault, preliminary electrical system checks should be carried out e.g. earth continuity, polarity, resistance to earth etc. If necessary refer to the fault finding section.

## Fitting the Combustion Box



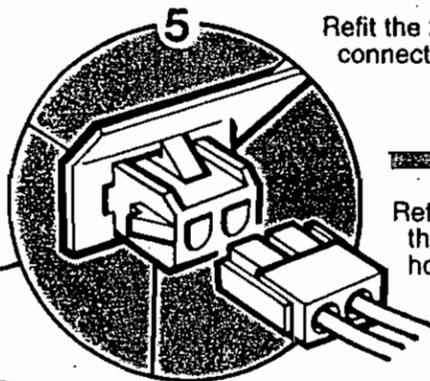
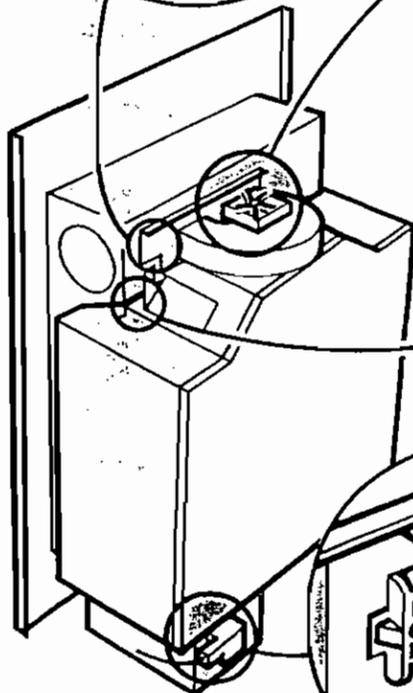
Offer up the combustion box to the back plate and locate the rear bottom edge of the combustion box at the self location fixing. Drop the combustion box into the channel at the back plate and swing backwards against the top of the back plate.

Engage the retaining latch.

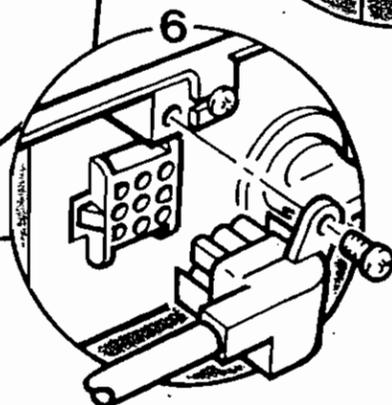


Refit the screws, to hold the combustion box to the back plate and tighten.

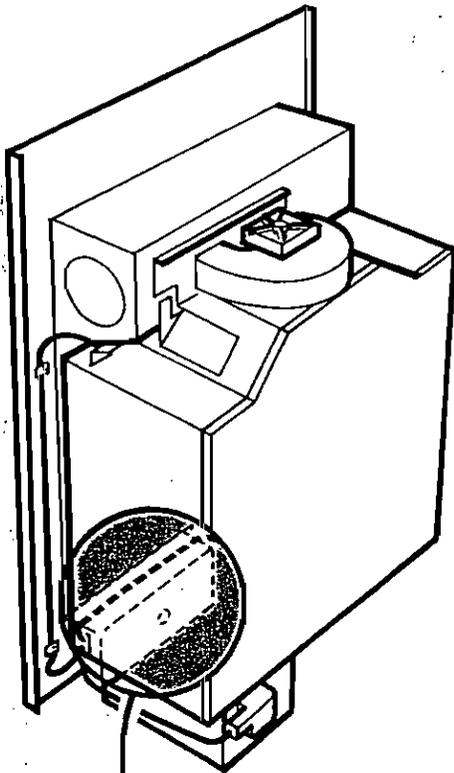
Locate the fan flange on the two studs and secure in place with the wing nuts previously removed.



Refit the 2 pin plug to the fan electrical connection and push firmly home.



Refit the 9 pin plug to the thermostat box, pushing firmly home. Secure with the screw.



### CONNECTION AFTER FITTING COMBUSTION BOX

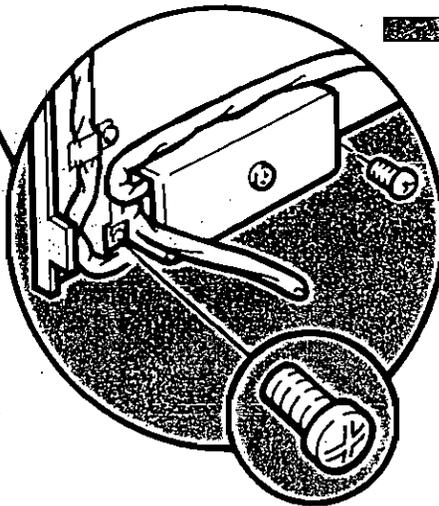
In some cases it may be desirable to connect the electricity supply after the assembly of the combustion box to the back plate. In this instance proceed as follows:

NOTE: The method of connection to the electricity supply MUST facilitate complete electrical isolation of the appliance. Connection may be made via a fused double pole isolator with a contact separation of at least 3mm ( $\frac{1}{8}$ in) in all poles and serving the appliance and system controls only.

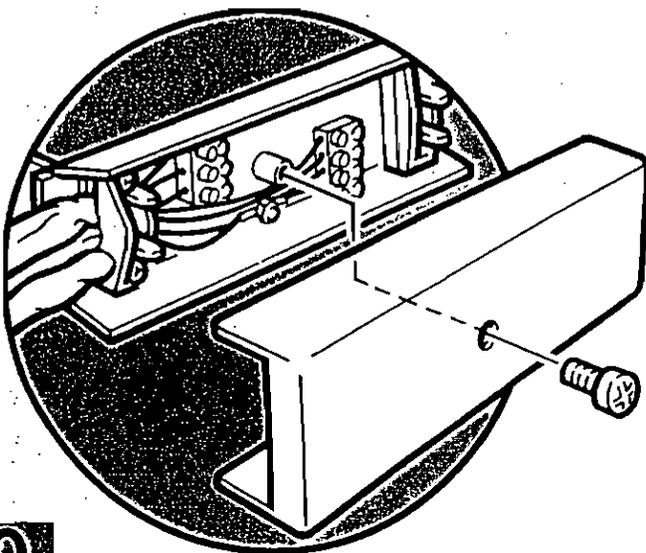
### WARNING

THIS APPLIANCE MUST BE EARTHED. 4 core input cable for connection to the appliance MUST be not less than  $0.75\text{mm}^2$  (24 x 0.2mm) PVC grade to BS 6500 table 15 or 16. External controls and the appliance MUST be supplied via the same plug and socket or isolator.

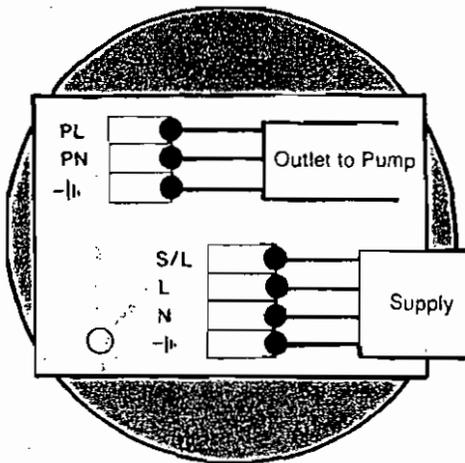
### To connect the electrical wiring to the boiler



Remove the supply terminal box from the base of the back plate by unscrewing the two screws set at  $30^\circ$ , accessible from the front of the installation.



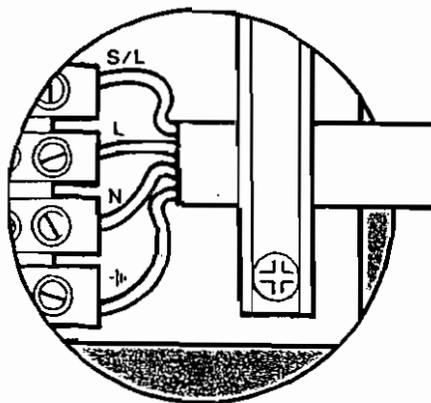
Remove the screw fixing the cover to the inlet terminal box and free the cover.



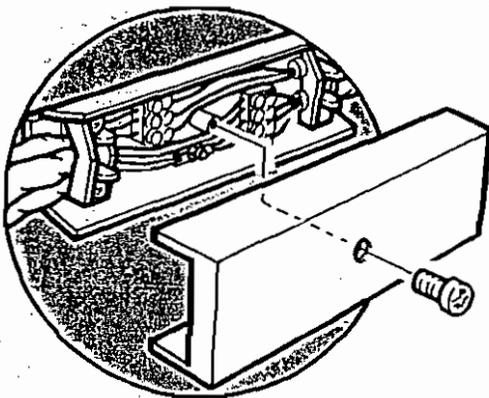
Fit supply and pump output cables to the terminal strips fixed to the terminal box. The switched live **MUST** be connected to the terminal marked S/L. The permanent live supply **MUST** be connected to the terminal marked L. The pump **MUST** be connected to the terminals marked PL, PN and -|⊥.

Ensuring that adequate lengths of cable are used to allow for subsequent access and servicing.

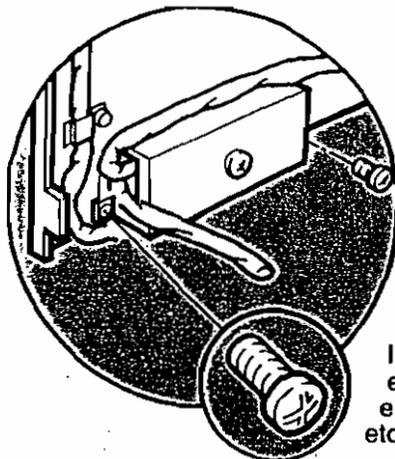
Lay the cable neatly and clip to the wall where necessary. Ensure that the lengths of the supply conductors are such that current carrying wires become taut before earth wires if the cable should slip out of the plastic clamp.



Make sure that the appropriate cable clamp is used to hold the cable firmly.

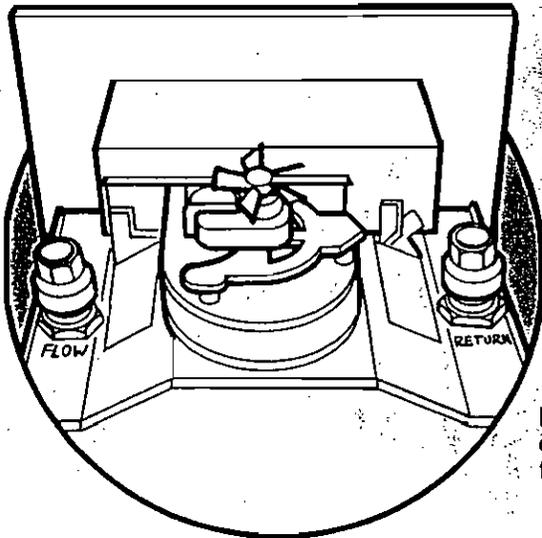


Replace the plastic cover on the inlet terminal box, ensuring that the insulation flaps are inside the cover. Tighten the centre screw.



Refit the supply terminal box to the back plate using the screws previously removed.

In the event of an electrical fault, preliminary electrical system checks should be carried out e.g. earth continuity, polarity, resistance to earth etc. If necessary, refer to the fault finding section.



## Water Connections

The boiler has two top water connections, one marked FLOW, the other marked RETURN. Both connections are supplied with special extended compression nuts and standard 22mm olives for connection to 22mm copper pipe (70/4 - 28mm olives for connection to 28mm copper pipe).

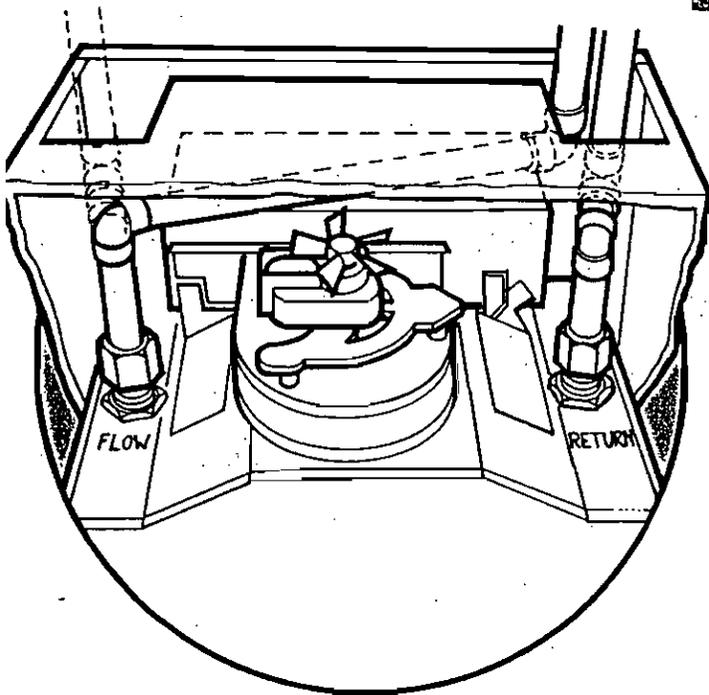
Remove the plastic caps from the water connections before fitting the pipework.

It is essential that the flow and return pipes are correctly connected to the appropriately marked fittings.

## Pipe Routes

Ensure that any pipework is routed so as to leave the boiler via the spaces at the rear of the outer case, either at the top or the bottom. Pipes may be dropped down within the outer case in the spaces between the back plate and the combustion box.

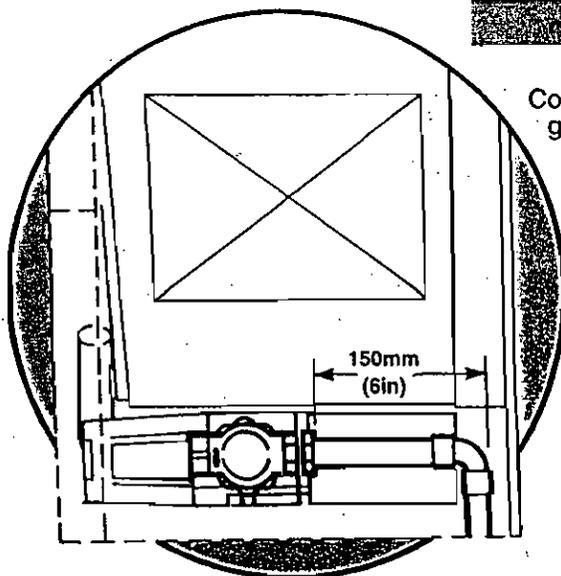
**NOTE:** It is important that the pipework does not interfere with the correct fitting of the outer case. The clearance marks on the back panel should be considered when deciding on pipe routes to prevent the pipes from fouling the outer case.



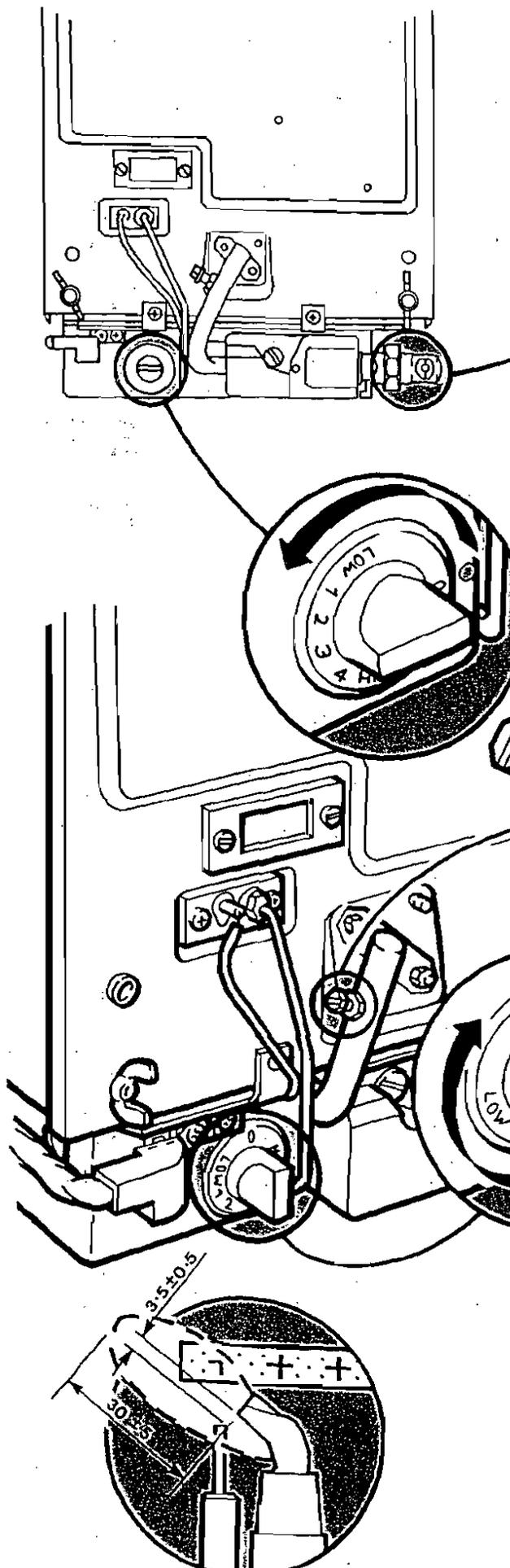
## Gas Connection

Connection to the gas supply is made at the union gas service cock, RC $\frac{1}{2}$  ( $\frac{1}{2}$ in BSPT female).

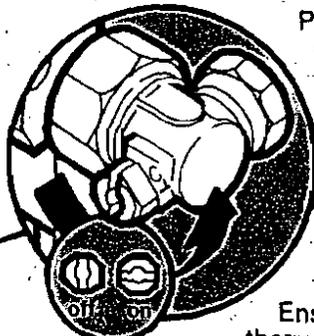
Remove the plastic cap from the inlet on the gas service cock before making the connection.



# COMMISSIONING THE APPLIANCE



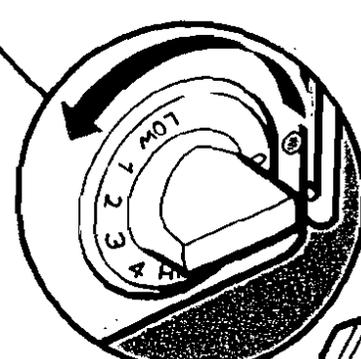
Flush the whole system with cold water and vent the radiators. Check for water leaks.



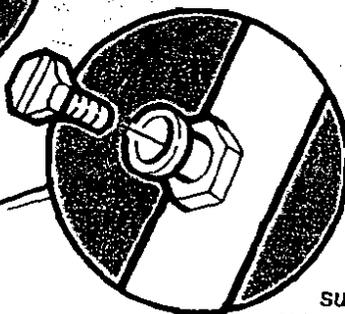
Purge any air from the supply pipe at the gas service cock (BS6891:1988).

Turn the gas service cock anti-clockwise to the ON position and check for gas soundness up to the gas valve.

Ensure that all external thermostats are calling for heat and that any timer control is in the OFF position, isolating the electrical supply.

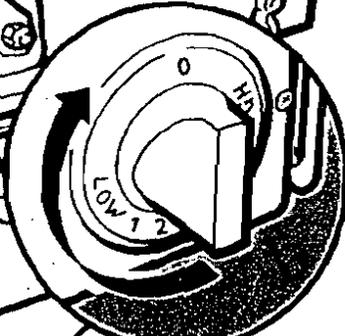


Turn the boiler thermostat control knob fully anti-clockwise to the OFF position marked O.



Remove the burner pressure test point screw on the burner feed pipe and connect up a pressure gauge.

Ensure that the electricity supply is turned ON and set any external controls to the ON position.



Turn the boiler thermostat knob clockwise to the HIGH position.

The fan will start running and after a purge period of approximately 5 seconds, the ignition spark will commence. (NOTE: This may increase up to 1 minute in extremely cold weather.)

The sparking will continue until the pilot light is established and then the main burner will light from the pilot flame.

Check that both the main burner and the pilot are alight by observing through the viewing window.

Should this sequence not occur, then refer to the fault finding section of the document.

NOTE: The pilot rate for this appliance is factory set, sealed and therefore non-adjustable.

From the table below, check that the main burner pressure is correct after the appliance has been running for 10 minutes.

Check for gas soundness with main burner alight with leak detection fluid.

If necessary, adjustment to main burner pressure may be made by removing the cover screw to adjust the governor.

To increase the burner pressure, turn the adjustment screw clockwise and anti-clockwise to decrease.

Turn the boiler thermostat to the OFF position marked O. Refit the governor cover screw and the burner pressure test point screw. Turn the boiler thermostat knob to the required setting.

The boiler and pump should be run until the system is hot. Check for water leaks, then flush the system with all manual and automatic valves open. Upon refilling, check the system again for leaks. When all the air has been removed from the water circuit, the pump and radiators should be balanced to achieve the design temperature drop across the system.

Where a bypass loop is fitted, this should be adjusted to allow a minimum flow rate of 7 l/min (1.54 gal/min) through the boiler when any system controls (e.g. zone valves or thermostatic radiator valves) are closed, thereby preventing the boiler flow temperature exceeding a maximum value of 90°C (198°F).

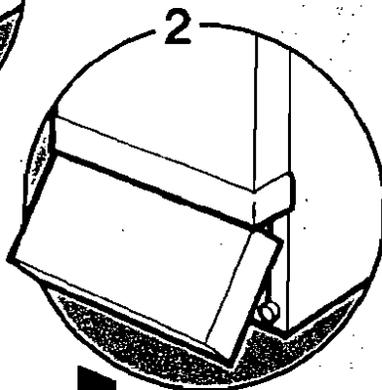
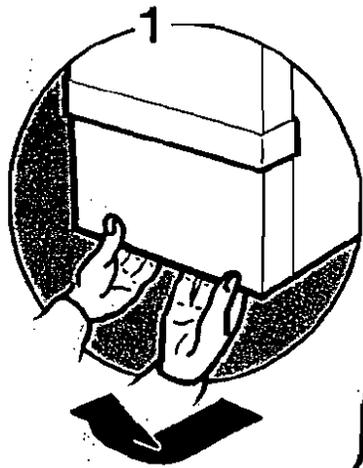
Make a final check for gas soundness and set the pointer on the data label to indicate the relevant rate setting. Set any timer control, room thermostats etc. to the customer's specific requirements.

If the boiler is not to be used for a long period of time, drain the system at the lowest points and then drain the heat exchanger casting at the integral drainage point.

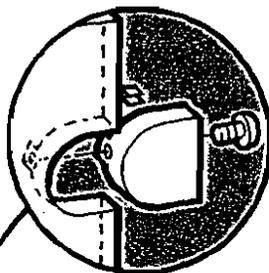
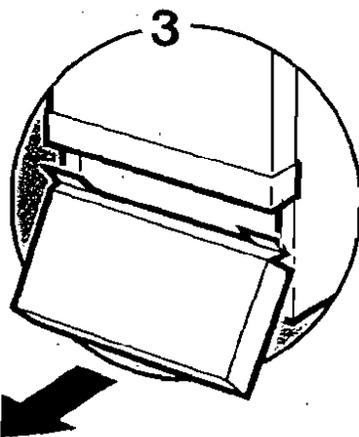
It is recommended that a label be affixed to the appliance to draw attention to the fact that the system has been drained.

Model		INPUT		SETTING PRESSURE	
		KW	Btu/h	mbar	in.wg
30/A	Maximum	11.56	39 500	15.8 ± 0.5	6.3 ± 0.2
	Intermediate	9.96	34 000	11.0 ± 0.5	4.4 ± 0.2
	Minimum	8.32	28 400	7.7 ± 0.5	3.1 ± 0.2
40/A	Maximum	15.0	51 200	16.6 ± 0.5	6.6 ± 0.2
	Intermediate	13.51	46 100	13.1 ± 0.5	5.2 ± 0.2
	Minimum	11.94	40 700	10.2 ± 0.5	4.1 ± 0.2
50/A	Maximum	19.0	65 000	15.3 ± 0.5	6.1 ± 0.2
	Intermediate	17.5	59 700	12.9 ± 0.5	5.2 ± 0.2
	Minimum	16.0	54 600	10.7 ± 0.5	4.3 ± 0.2
70/A	Maximum	26.6	90 900	13.0 ± 0.5	5.2 ± 0.2
	Intermediate	23.7	80 900	10.0 ± 0.5	4.0 ± 0.2
	Minimum	20.2	68 900	7.0 ± 0.5	2.8 ± 0.2

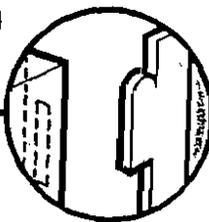
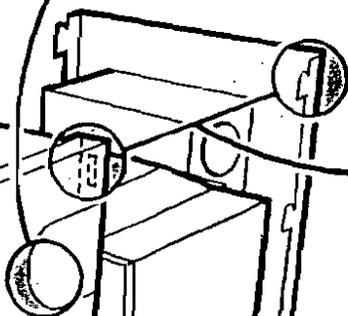
# FITTING THE OUTER CASE



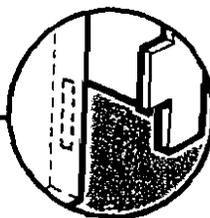
Remove the lower door panel from the ready assembled outer case by following the sequence of diagrams.



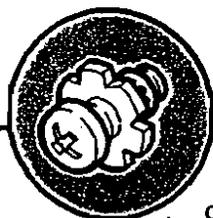
If the appliance is flued to the left or to the right, remove the relevant infill panel by removing the retaining clips and fixing screw.



Offer the outer case up to the hooks on the back plate.



Locate lower tabs on the back plate to the slots in the outer case on both sides.



Using the two screw/washer assemblies supplied, secure the outer case to the combustion box.

Instruct the user in the operation of the boiler controls and hand over both the User's and Installation Instructions to the user giving advice on the necessity of regular servicing.

Replace the lower front door panel.

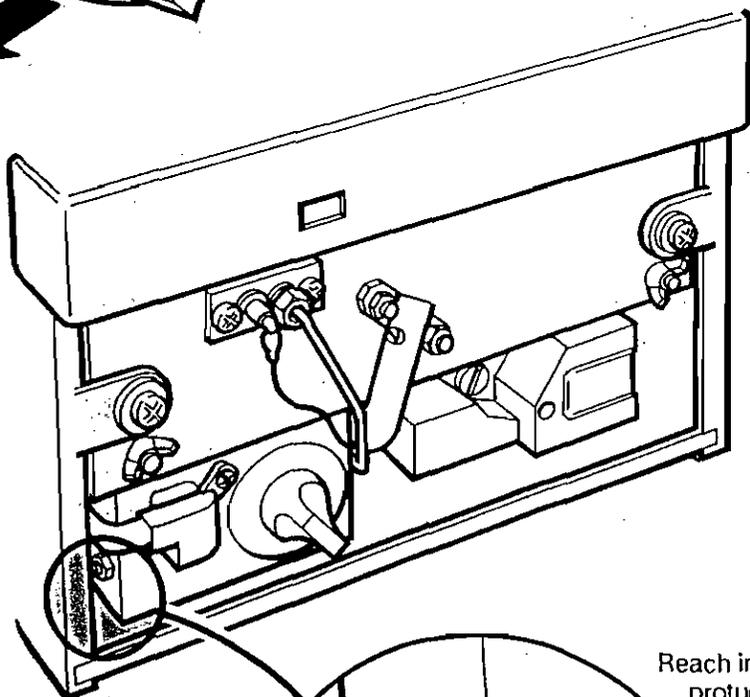
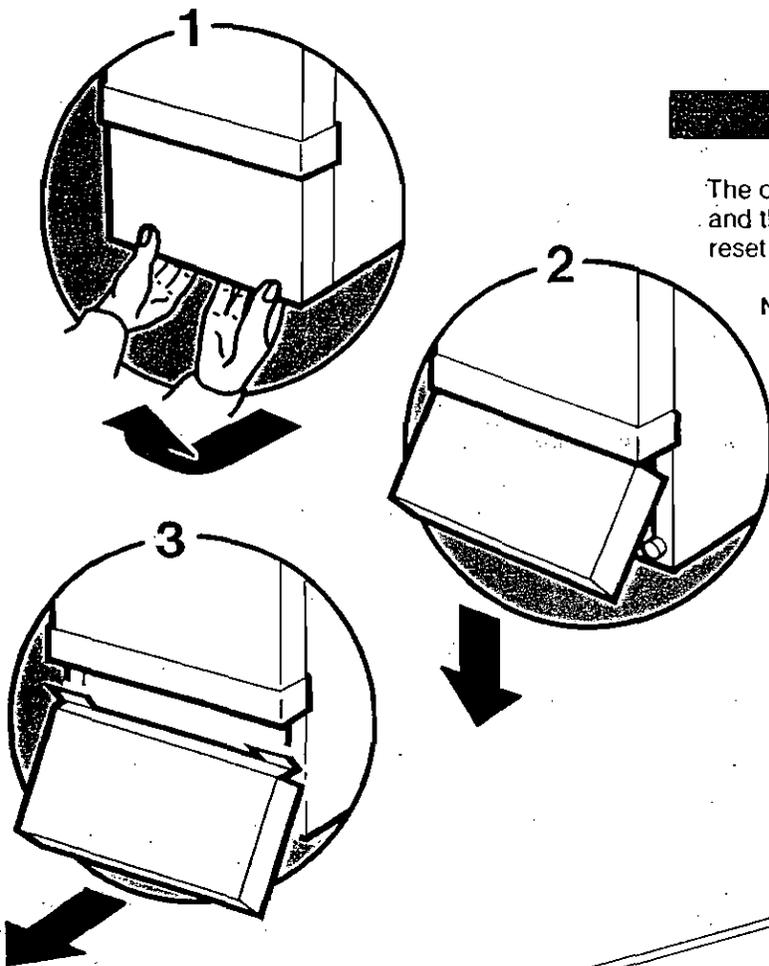
# OVERHEAT CUT-OFF DEVICE

## Operation

The overheat cut-off device is of the manual reset type and therefore it is important that the user knows how to reset the control should it ever cut out.

**NOTE:** Any interruption to the electrical supply to the boiler may cause the overheat thermostat to drop out.

Remove the lower door panel by following the sequence of diagrams.



Reach into the outer case and press the reset button protruding from the left hand side of the control box.

The boiler will commence sparking and fire up automatically. No adjustment to the gas controls or main thermostat are required.

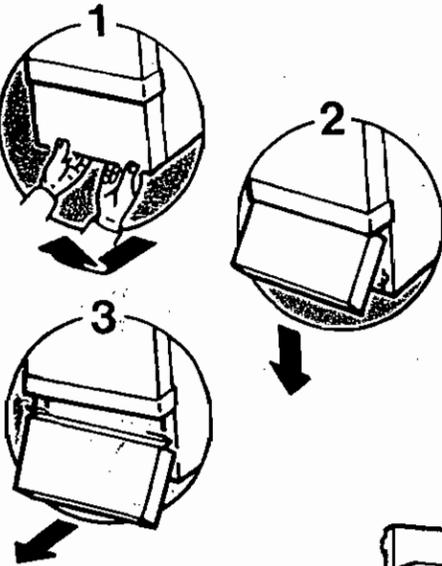
**NOTE:** If the overheat thermostat drops out repeatedly, refer to the fault finding chart situated inside the outer case.

# ANNUAL SERVICING

For economy and safety reasons, it is important to service the appliance regularly.

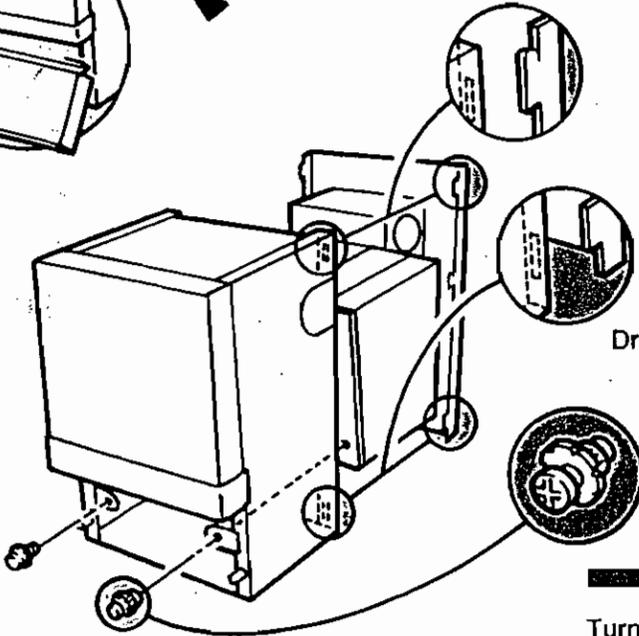
Isolate the electricity supply to the boiler.

Remove the lower door panel by following the sequence of diagrams.

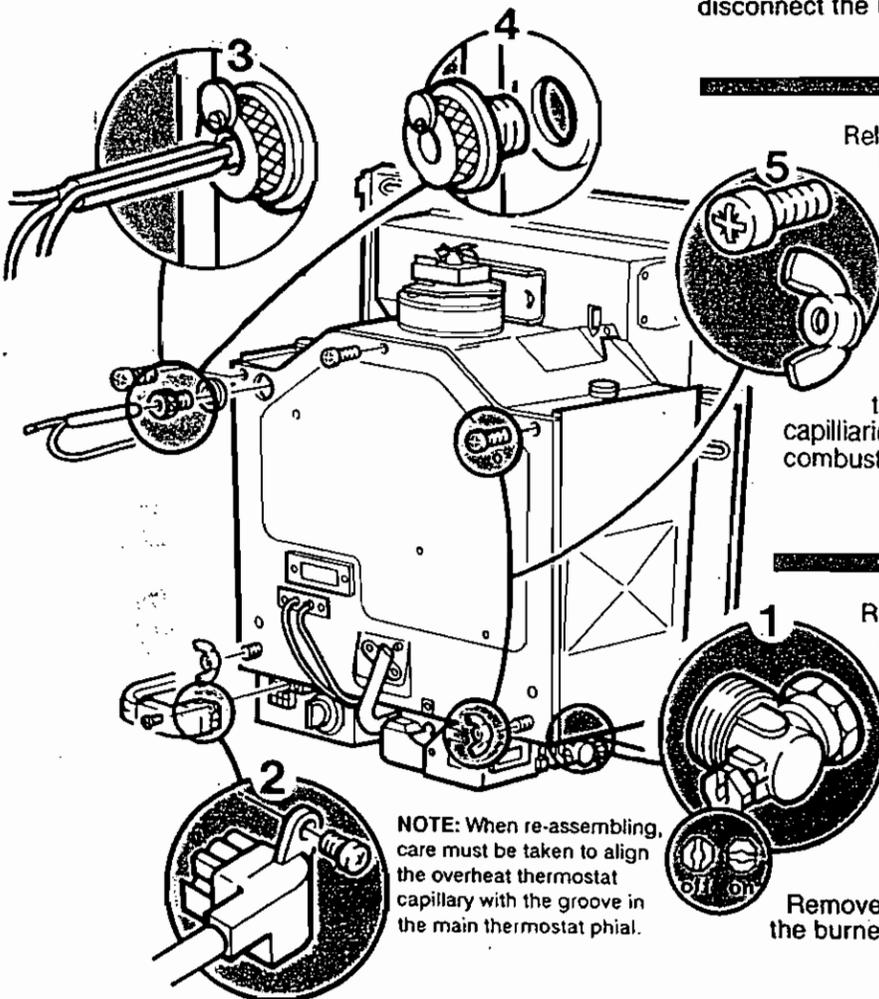


Remove the outer case from the boiler by unscrewing the two screw/washer assemblies and lift the case to clear the two hooks and tabs on the back plate.

Draw the outer case clear of the boiler.



Turn off the gas supply at the service cock and disconnect the union.



Release the screw holding the 9 pin plug. Remove the plug from the thermostat control box by squeezing in the two tabs and pulling.

Loosen screw on the capillary retaining washer, allowing washer to move freely. Remove phials from the thermostat pocket and release the capillaries from the clips on the side of the combustion box.

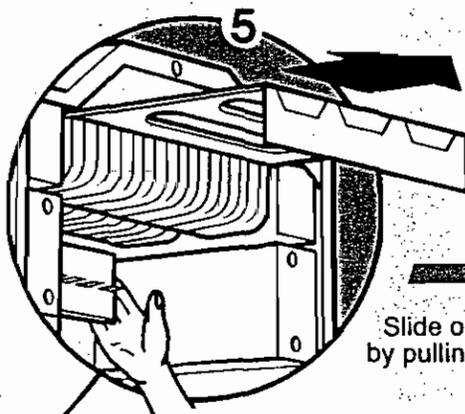
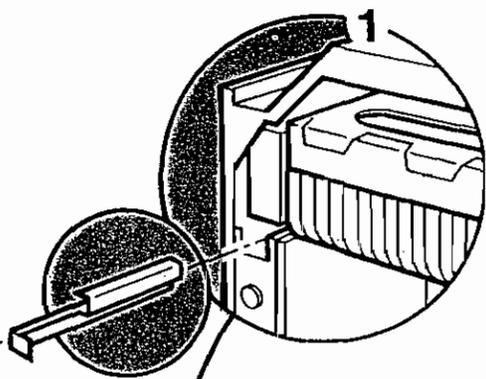
Remove the knurled brass sealing plug and fibre washer from the thermostat pocket.

Unscrew the two wing nuts and three screws.

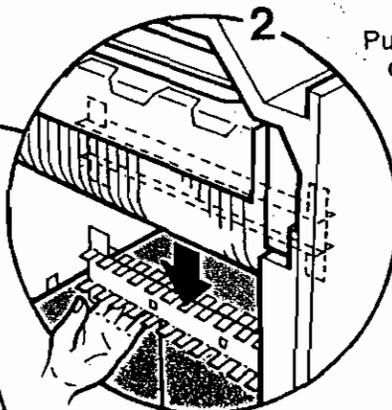
Remove the controls door complete with the burner.

**NOTE:** When re-assembling, care must be taken to align the overheat thermostat capillary with the groove in the main thermostat phial.

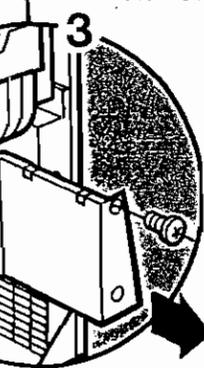
## Cleaning the Combustion Box



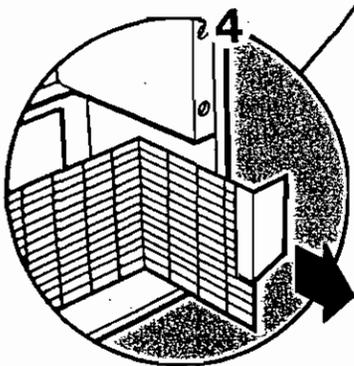
Slide out the two baffle supports by pulling them forward.



Pull the two centre baffles downwards from the heat exchanger and remove.



Remove the air inlet mesh and brush clean.



Whilst holding the rear baffle, pull the top baffle forward to remove then pull the rear baffle downwards from behind the heat exchanger and remove. Examine rear baffle and replace if necessary.

The heat exchanger casting may now be brushed thoroughly with a stiff bristled brush. Lay a piece of paper in the bottom of the combustion box to catch all the debris whilst cleaning. Clean all the fins. Remove the piece of paper with all the dirt and debris from the combustion box.

Reassemble the baffles, air inlet mesh and insulation panel carrier in the reverse order.

## Cleaning the Burner/Injector

Remove the burner by releasing the three securing nuts on the burner feed pipe flange.

Lightly brush any dirt and debris from the top of the burner blades and ensure that the ports are free from obstruction.

Release and remove the injector from the burner feed pipe. Examine and clean carefully, then replace ensuring that the copper washer is in position. Tighten the injector fully.

At this point, check the rope seal around the door and ensure that it is in good order. Replace if necessary.

Reassemble the burner to the controls door and burner feed pipe.

## Cleaning the Pilot

Undo the securing nuts at each end of the supply pipe and remove. Carefully remove the pilot injector, examine and clean it.

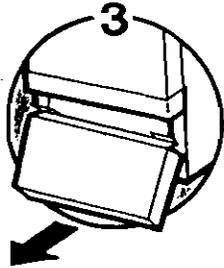
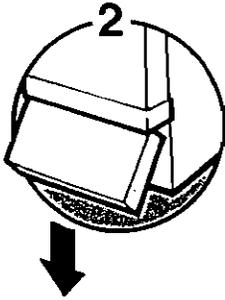
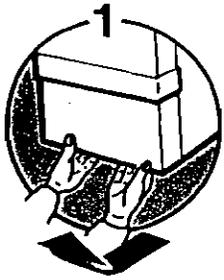
Reassemble pilot in the reverse order.

Replace door and all components in reverse order, checking that the seal is good.

Re-commission the boiler before use, checking for gas soundness and ensuring all controls are working correctly.

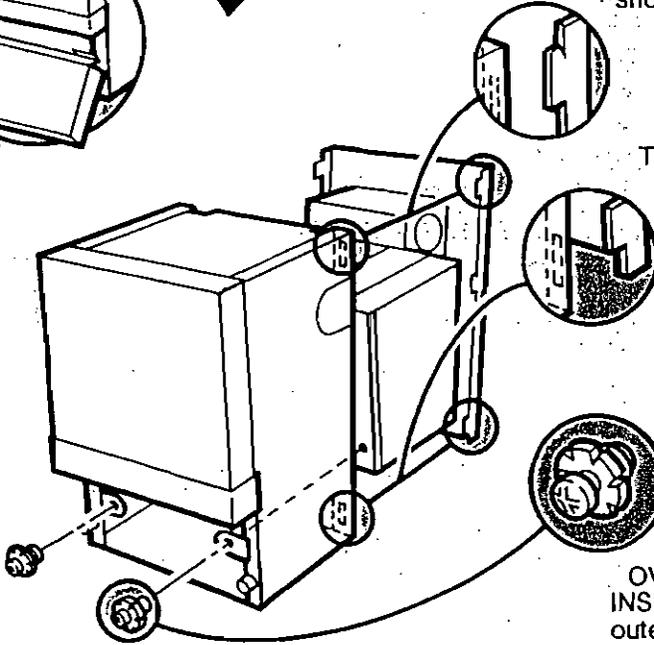
Pilot Supply Pipe  
at Gas Valve

# CHANGING COMPONENTS



When changing components ensure that the gas and electricity supplies are isolated before the work is started.

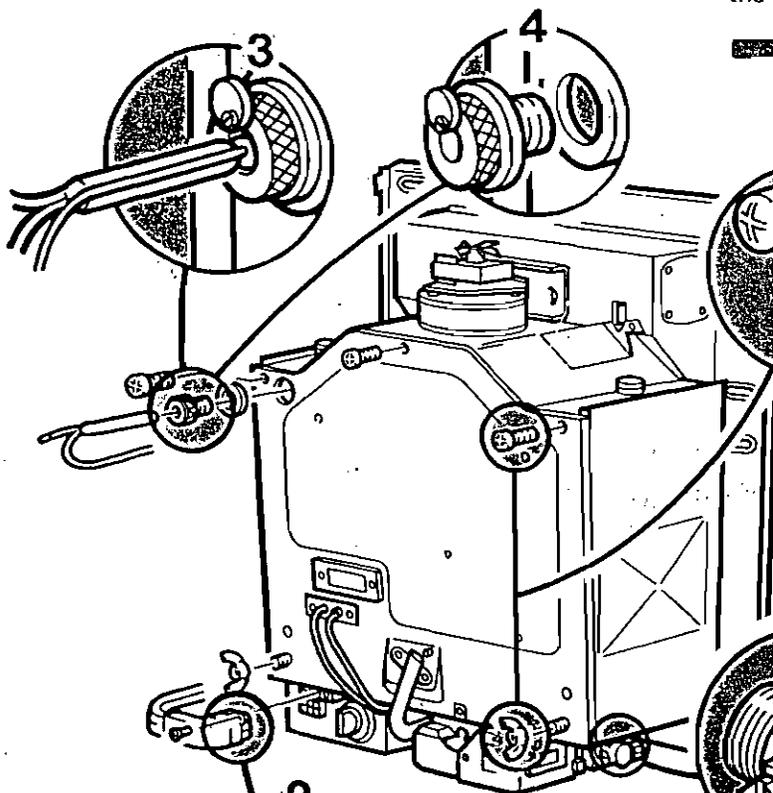
To change the PILOT INJECTOR and IGNITION ELECTRODE, remove the outer case door panel as shown.



To change the FAN and PRESSURE SWITCH, remove the outer case door panel and then remove the outer case from the boiler by unscrewing the two screw/washer assemblies.

Lift the case to clear the two hooks and tabs on the back plate. Draw the outer case clear of the boiler.

To change the BOILER THERMOSTAT, CONTROL BOARD, ELECTRODE LEAD, OVERHEAT THERMOSTAT, BURNER and INJECTOR, INSULATION PANELS and GAS VALVE, remove the outer case door panel and the outer case, then remove the controls door by



Disconnect the gas union.

Release the screw holding the 9 pin plug. Remove the plug from the thermostat control box by squeezing in the two tabs and pulling.

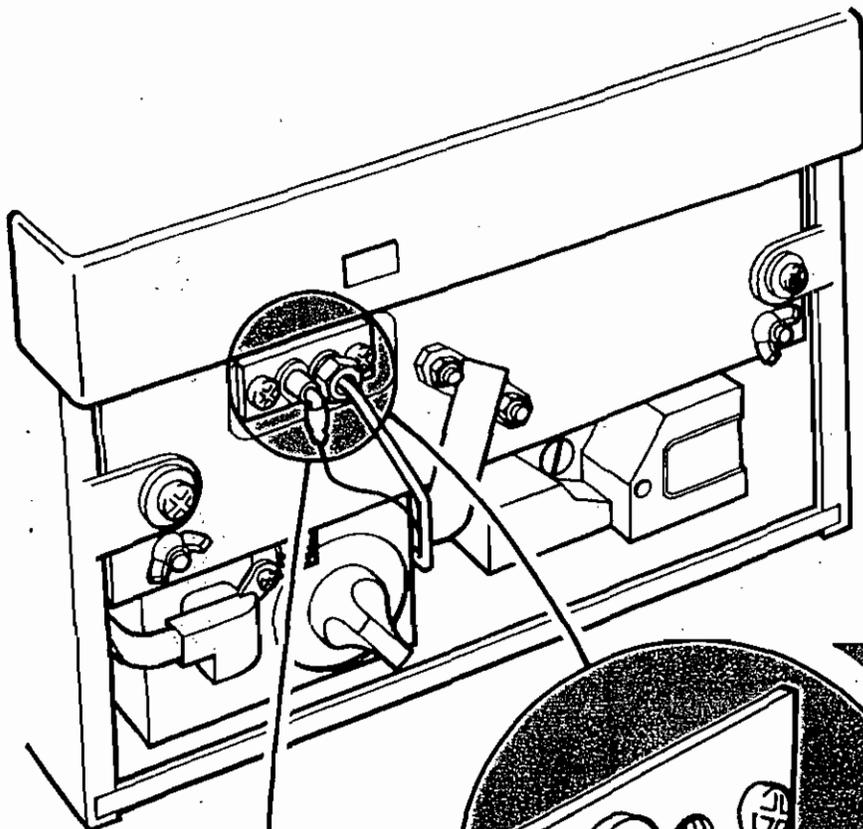
Loosen screw on the capillary retaining washer, allowing washer to move freely. Remove the phials from the thermostat pocket. Release capillaries from clips on the side of the combustion box and remove both phials.

Remove the knurled brass sealing plug and fibre washer from the thermostat pocket.

Unscrew the two wing nuts and three screws.

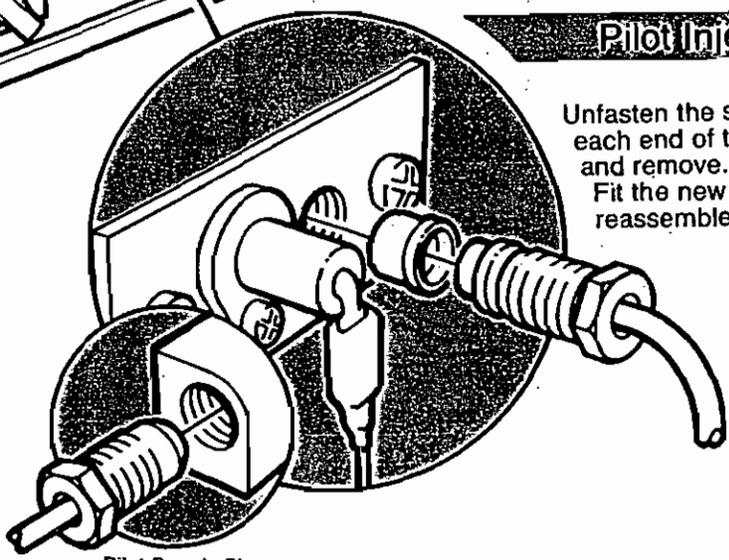
Remove the controls door complete with the burner.

NOTE: When re-assembling, care must be taken to align the overheat thermostat capillary with the groove in the main thermostat phial.



### Pilot Injector

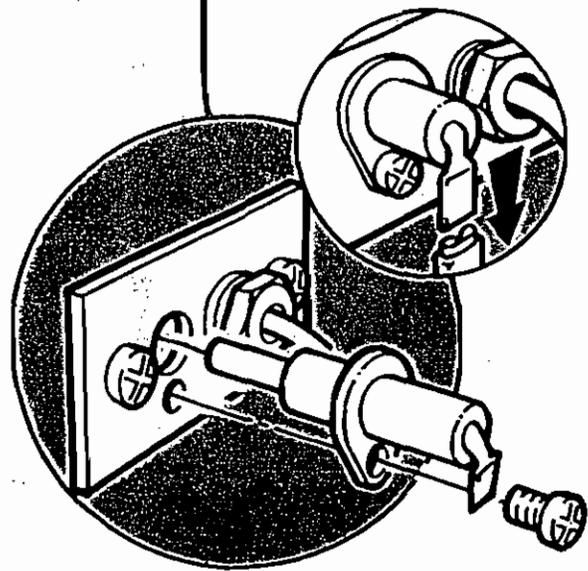
Unfasten the securing nuts at each end of the pilot supply pipe and remove. Remove the injector. Fit the new injector and reassemble in the reverse order.



Pilot Supply Pipe at Gas Valve

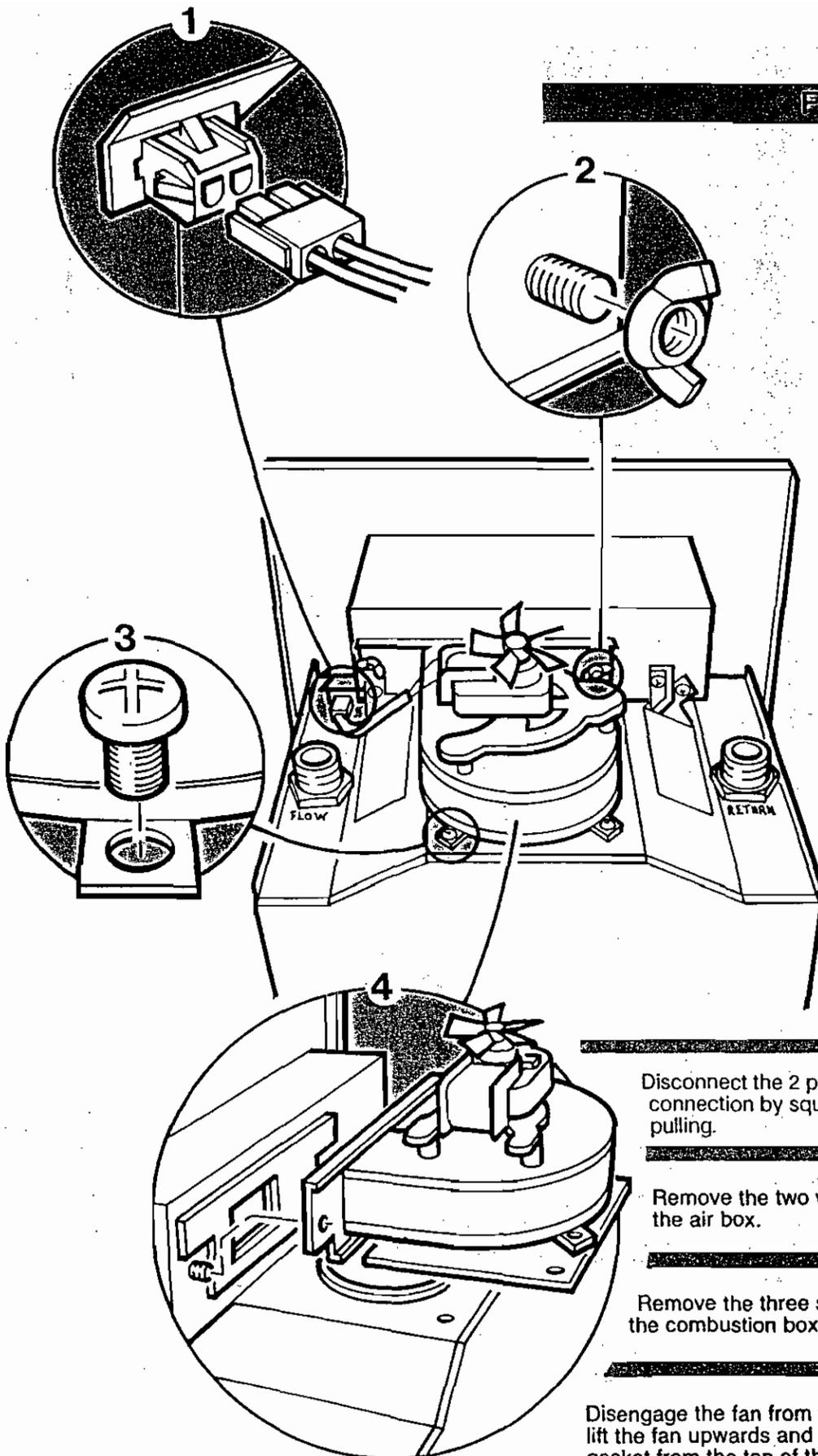
### Ignition Electrode

Disconnect the spark electrode lead at the electrode.



Remove the fixing screw holding the electrode to the bracket. Remove the electrode. Replace the new electrode in the reverse order, ensuring that the sleeving is pushed over the end of the electrode.

## Fan



Disconnect the 2 pin plug from the electrical connection by squeezing in the two tabs and pulling.

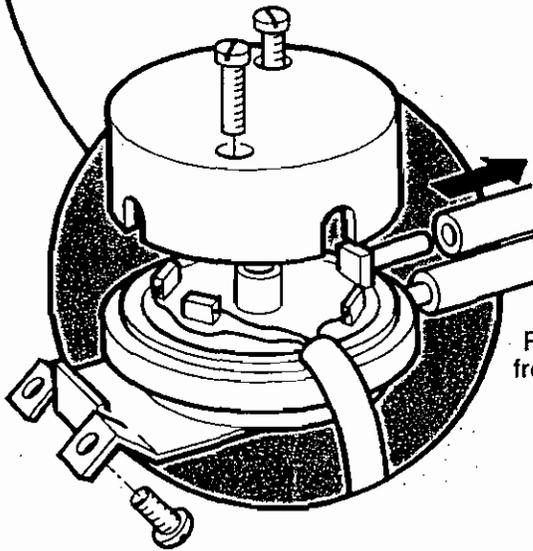
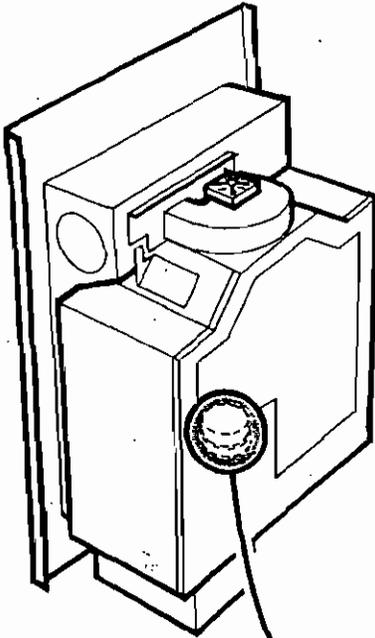
Remove the two wing nuts securing the fan to the air box.

Remove the three screws securing the fan to the combustion box.

Disengage the fan from the two studs and carefully lift the fan upwards and forwards. Remove the old gasket from the top of the combustion box and replace with a new gasket.

Fit the new fan in the reverse order, taking particular care with the joint between fan and air box.

## Pressure Switch



Disconnect the tubes from the pressure switch by simply pulling them off.

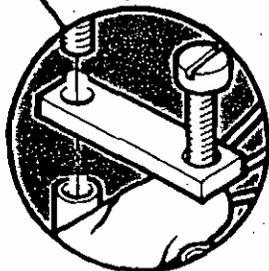
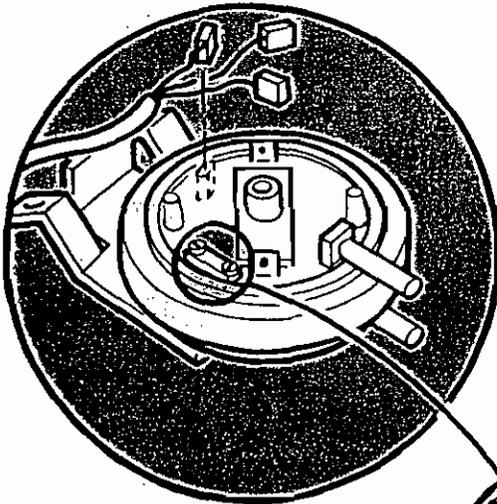
Remove the screws set at 30° holding the switch mounting bracket to the back plate.

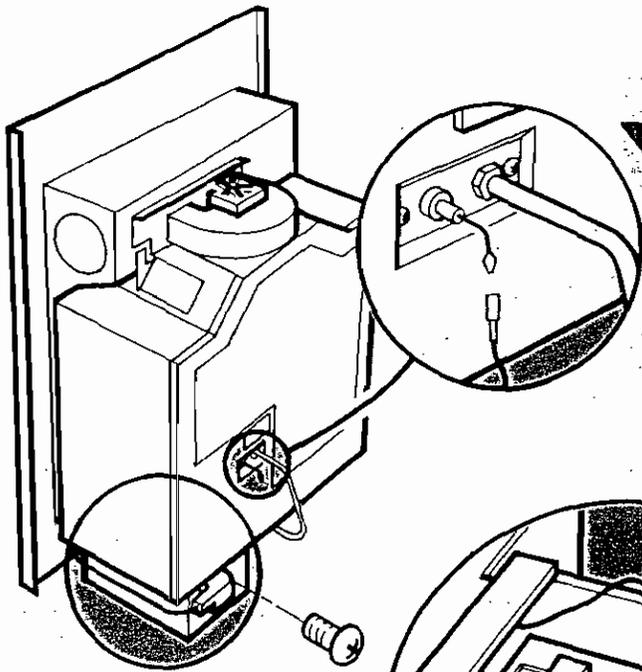
Remove the cover fixing screws and cover from the switch.

Take note of the electrical terminal positions and remove the terminals from the switch.

Release the cable clamp and free the switch.

Fit the new switch and reassemble in reverse order, ensuring that the tubes are connected correctly i.e. black to the top connection, red to the bottom. Reconnect terminals correctly. (See wiring diagram).



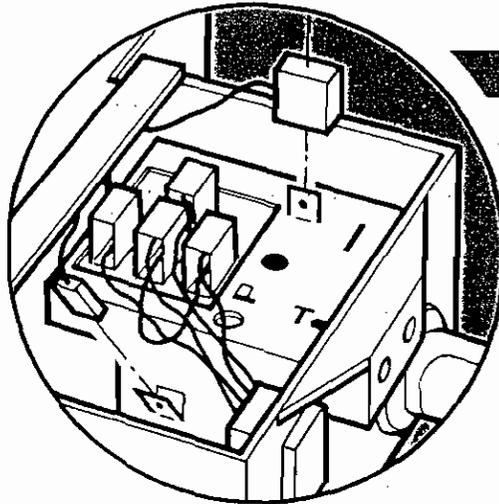


To change the BOILER THERMOSTAT and CONTROL BOARD/ELECTRODE LEAD.

Disconnect the electrode lead from the electrode.

Release the screw from the front of the control box. Ease the box backwards and then downwards to free it.

### Boiler Thermostat



Disconnect the electrical connections to the thermostat, taking note of the position of each terminal.

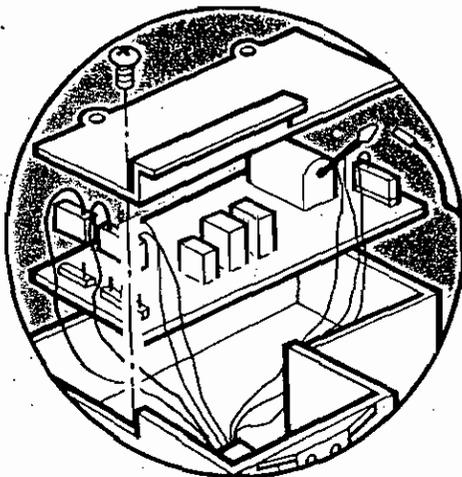
Remove the control knob, then free the locknut that holds the thermostat in position.

The thermostat may now be removed from the control box.

Fit the new thermostat and reassemble in reverse order, ensuring the wiring is correct. See wiring diagram.

### Control Board/Electrode Lead

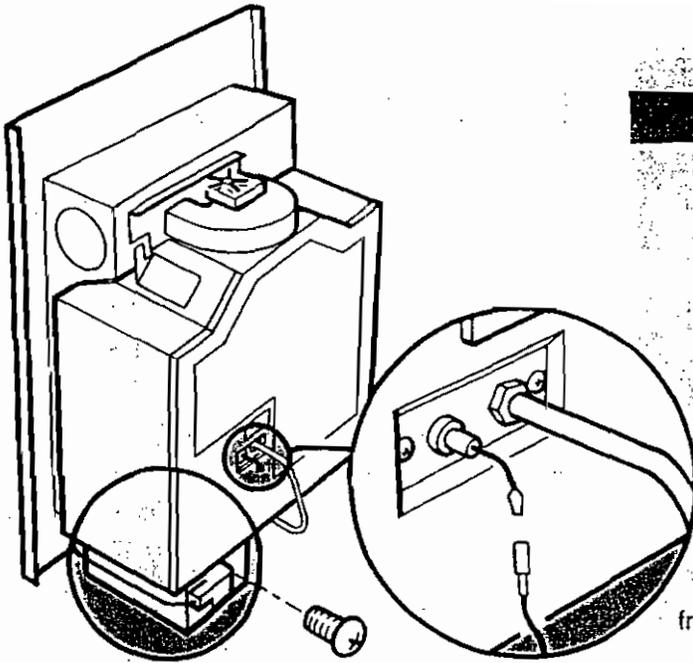
Remove the control box cover by unscrewing the five screws holding it in place. Disconnect the electrode lead from the spark generator on the control board.



At this stage if required, control board may be changed. Disconnect the electrical connections to the board taking note of the position of each terminal. Ease the board from the bottom of the control box by squeezing in the tabs on the supports from the underside of the control box.

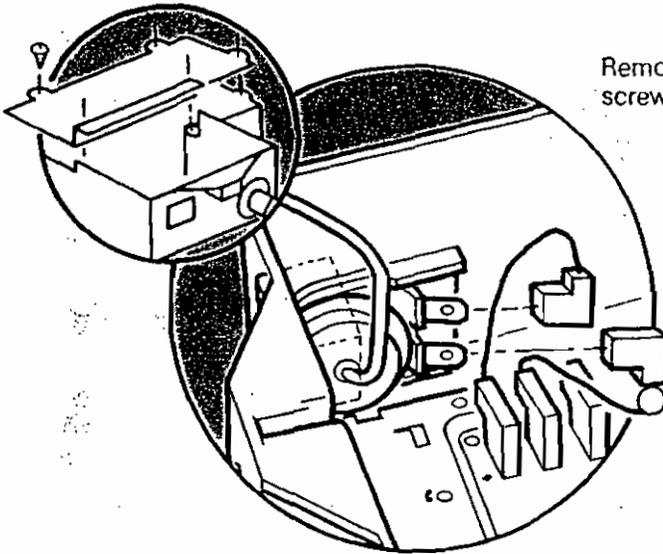
Fit the new board and supports, the new electrode lead and reassemble in the reverse order.

## Overheat Thermostat



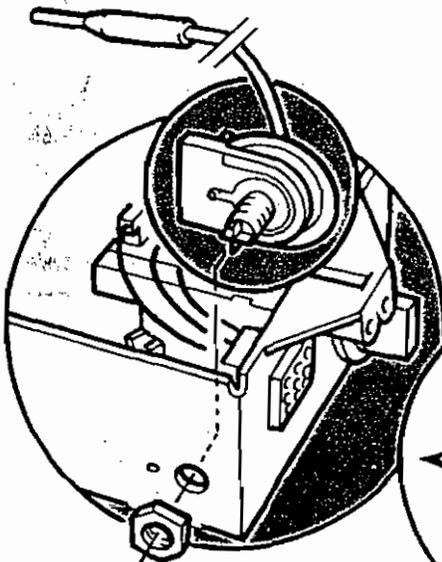
Disconnect the electrode lead from the electrode.

Release the screw from the front of the control box. Ease the box backwards and then downwards to free it.



Remove the control box cover by unscrewing the five screws holding it in place.

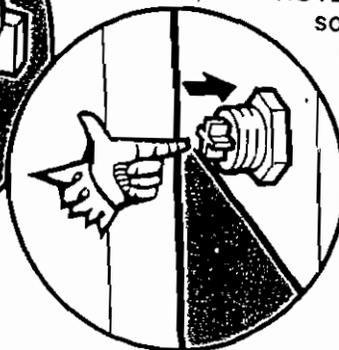
Disconnect the two electrical connectors from the terminals on the overheat thermostat.



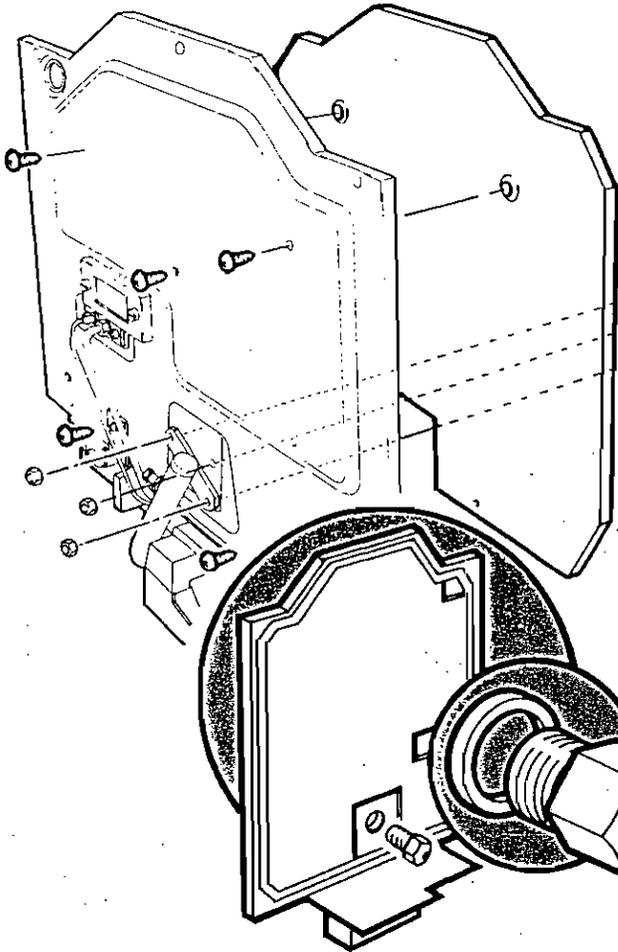
Remove the locknut holding the overheat thermostat in place and withdraw from the controls box.

Fit the new overheat thermostat and reassemble in reverse order, taking care to align the overheat thermostat capillary in the groove in the main thermostat phial.

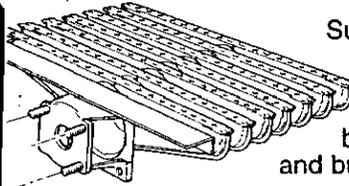
**NOTE:** The overheat thermostat capillary is somewhat longer than necessary. Excess length should be tidied up by making a neat coil. Contact with the side of the combustion box must be avoided.



Any interruption to the electrical supply to the boiler may cause the overheat thermostat to operate. If this occurs then the thermostat must be reset by pressing in the button as shown.



### Insulation Panel Door



Support the combustion box door and unfasten the three nuts securing the burner in place. Ease the burner away from the door and burner feed pipe flange.

Release the insulation panel by removing the screws fixing it to the combustion box door.

Fit the new component in the reverse order.

### Burner and Injector

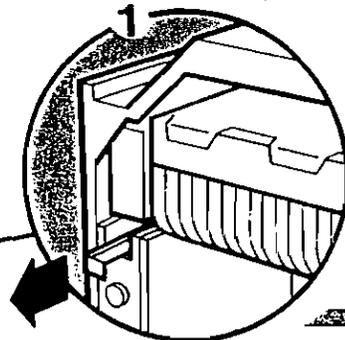
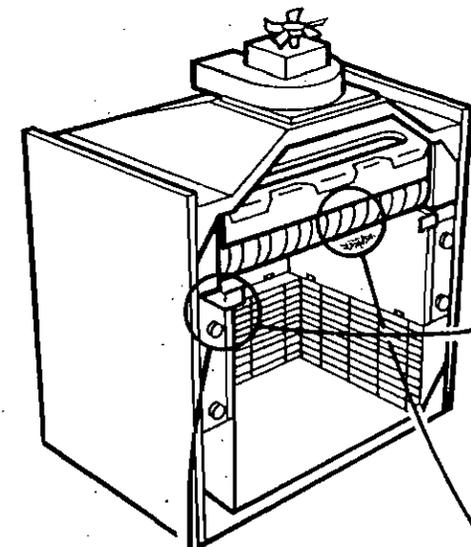
Support the combustion box door and unfasten the three nuts securing the burner in place. Ease the burner away from the door and burner feed pipe flange.

At this stage the injector may be changed if required.

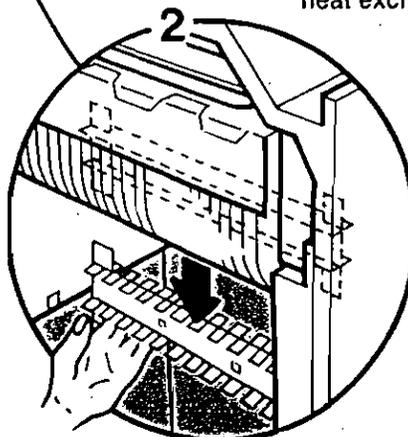
Release and remove the injector from the burner feed pipe flange. Fit the new injector making sure that the copper washer is in place and tighten up.

Fit the new burner and reassemble in reverse order.

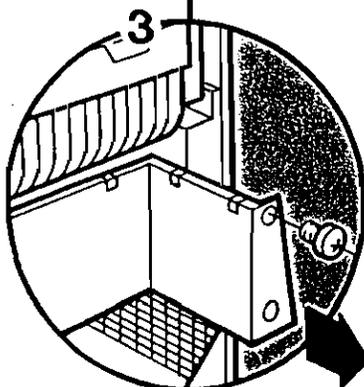
### Insulation Panel Combustion Box



Slide out the two baffle supports, by pulling them forward.



Pull the two centre baffles downwards from the heat exchanger and remove.



Remove the four screws securing the insulation panel carrier in place and withdraw the carrier. Fit the new component in the reverse order.

NOTE: It is not possible to change the insulation panels individually.

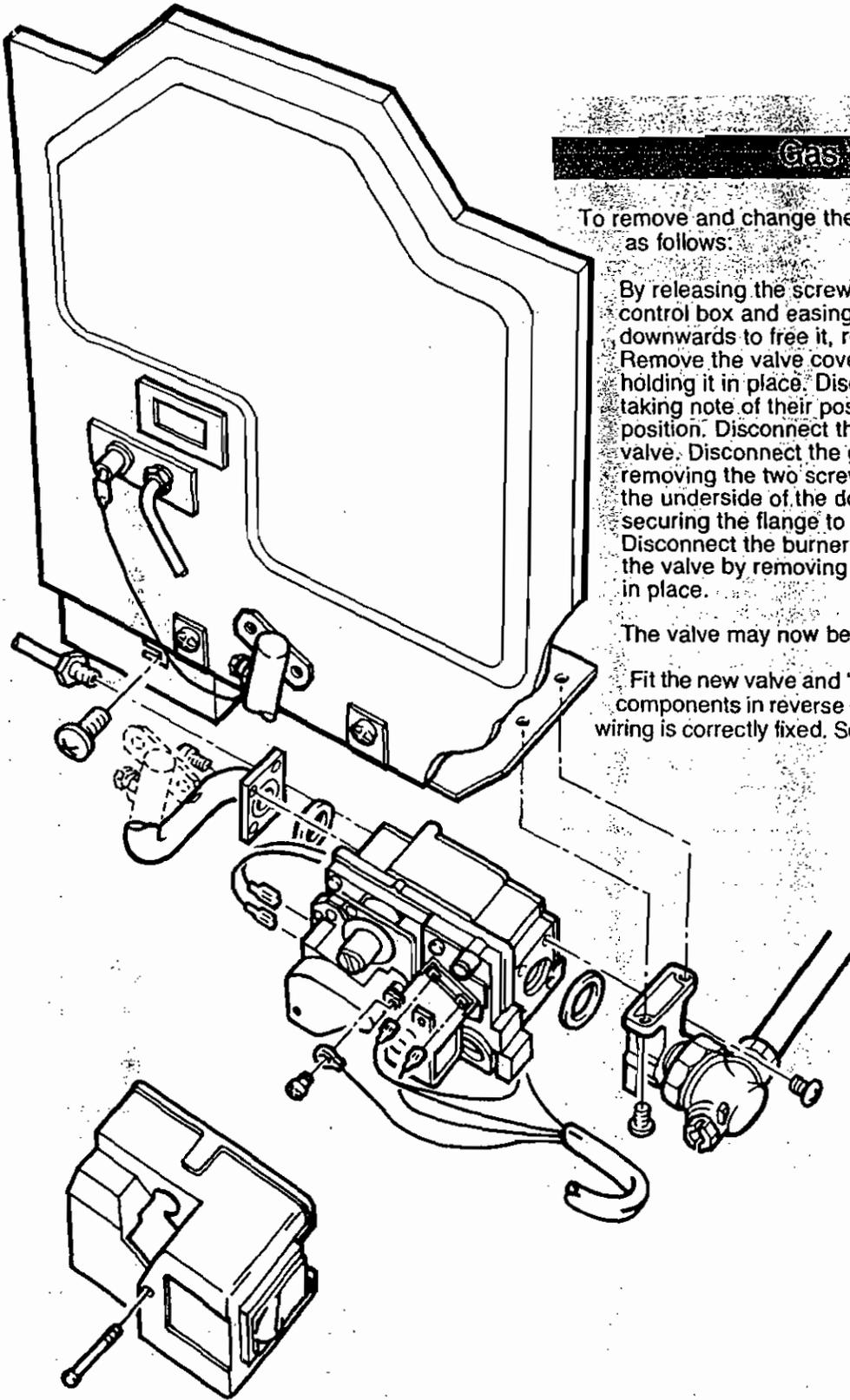
## Gas Valve

To remove and change the gas valve, proceed as follows:

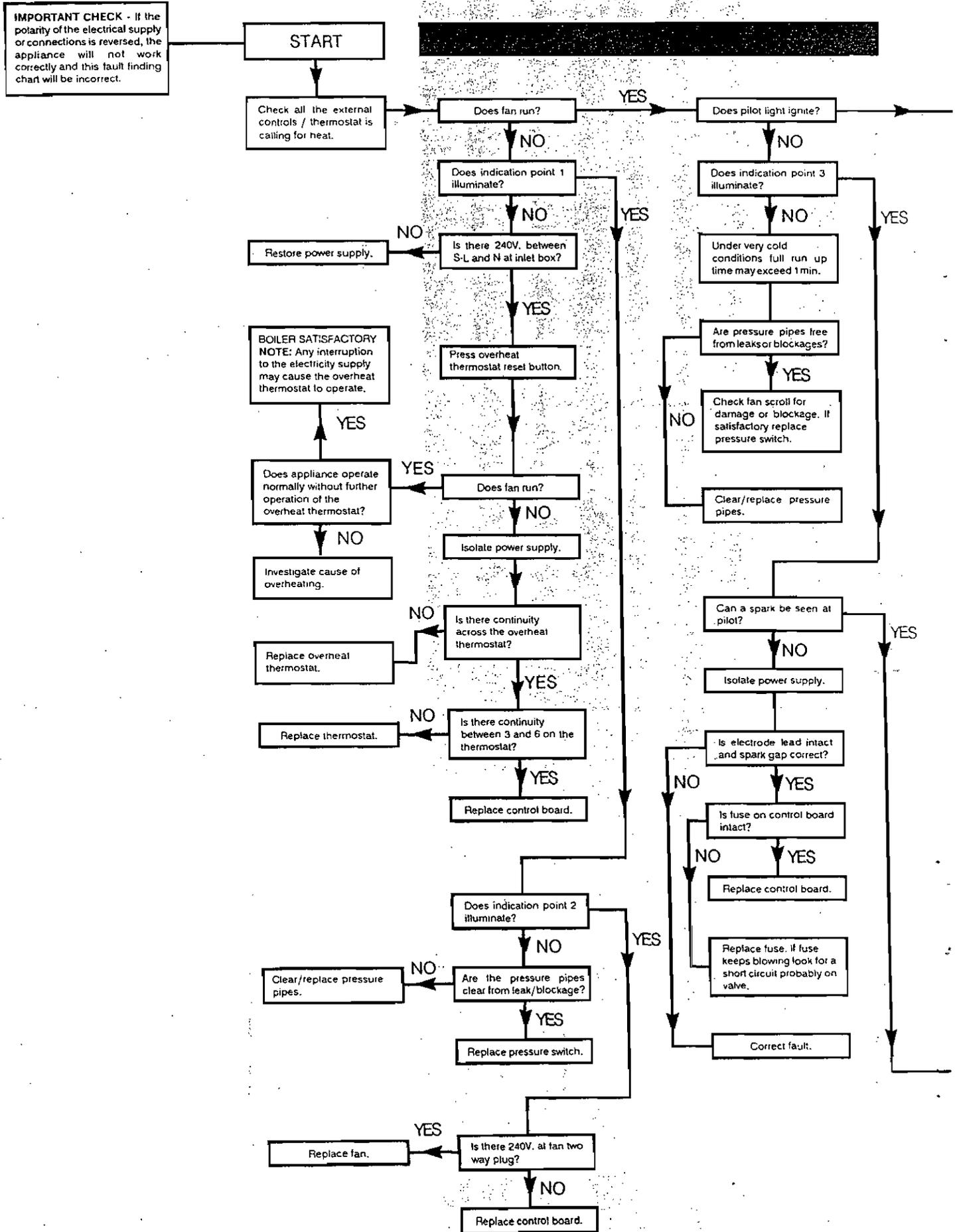
By releasing the screw from the front of the control box and easing it backwards and downwards to free it, remove the control box. Remove the valve cover by releasing the screw holding it in place. Disconnect the electrical tags, taking note of their positions and the earth position. Disconnect the pilot feed pipe at the valve. Disconnect the gas cock inlet flange by removing the two screws securing the flange to the underside of the door and the four screws securing the flange to the body of the valve. Disconnect the burner feed pipe from the body of the valve by removing the four screws fixing it in place.

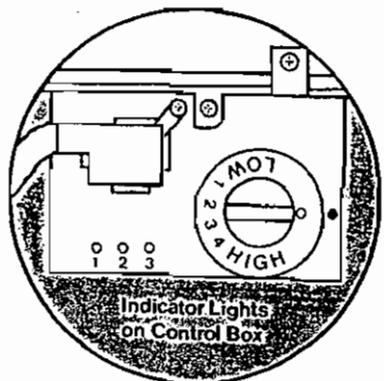
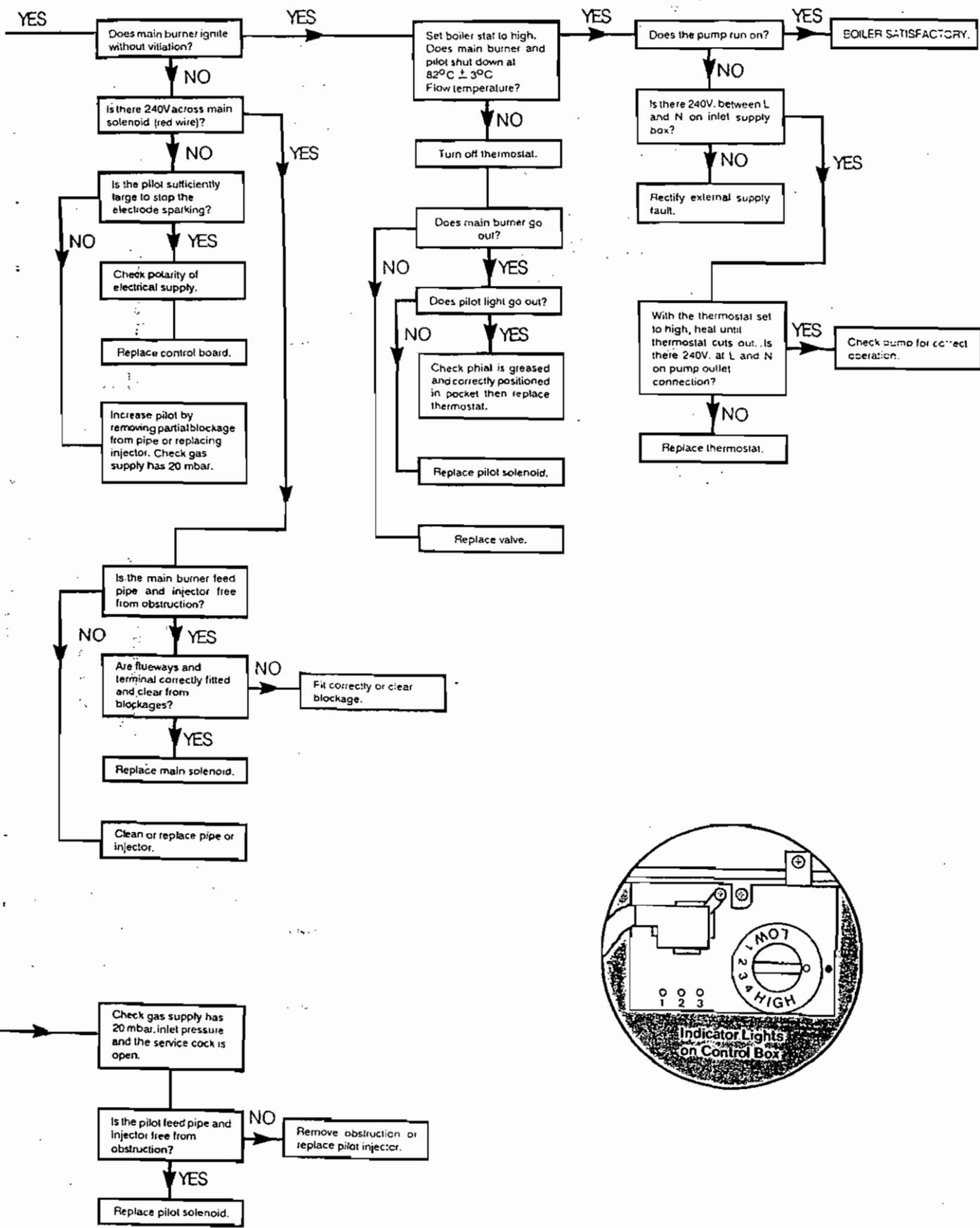
The valve may now be removed.

Fit the new valve and 'O' rings. Reassemble all components in reverse order, ensuring that all wiring is correctly fixed. See wiring diagram.

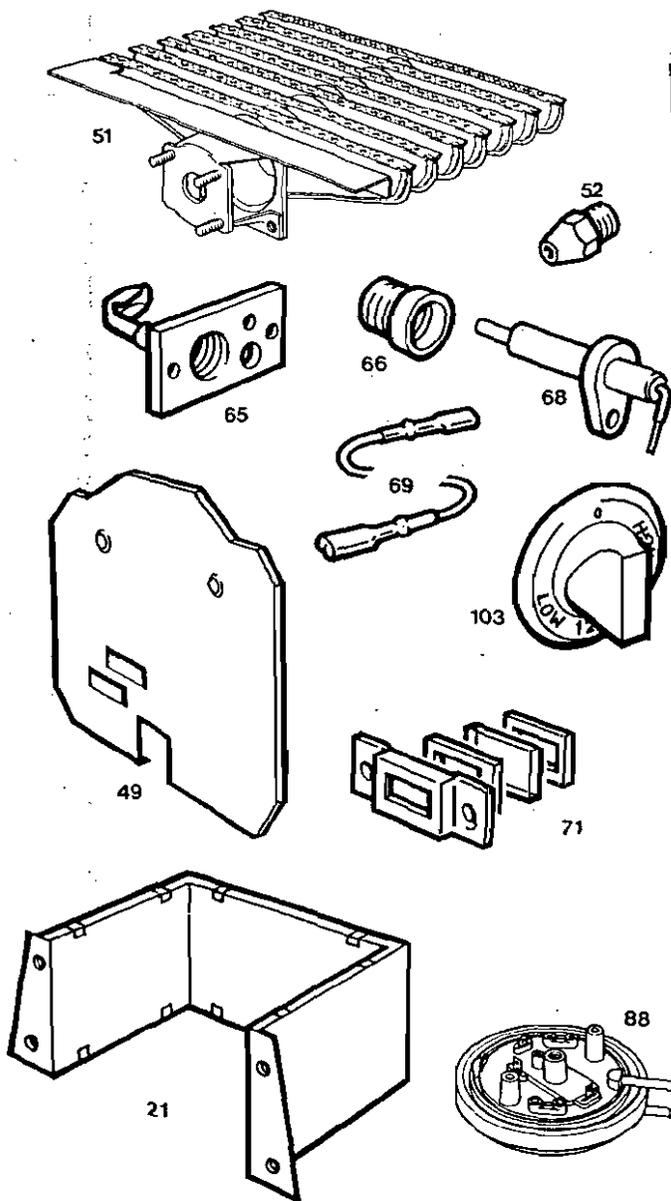


# FAULT FINDING

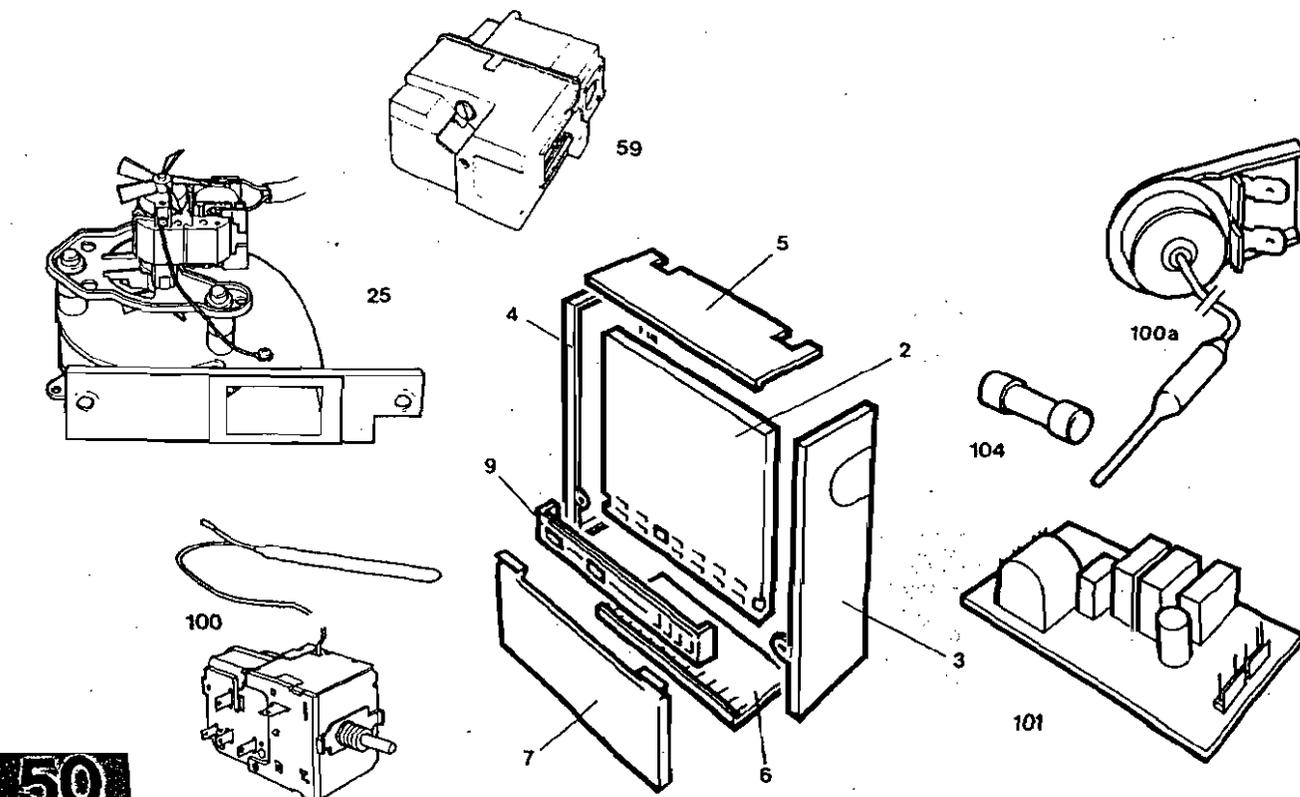


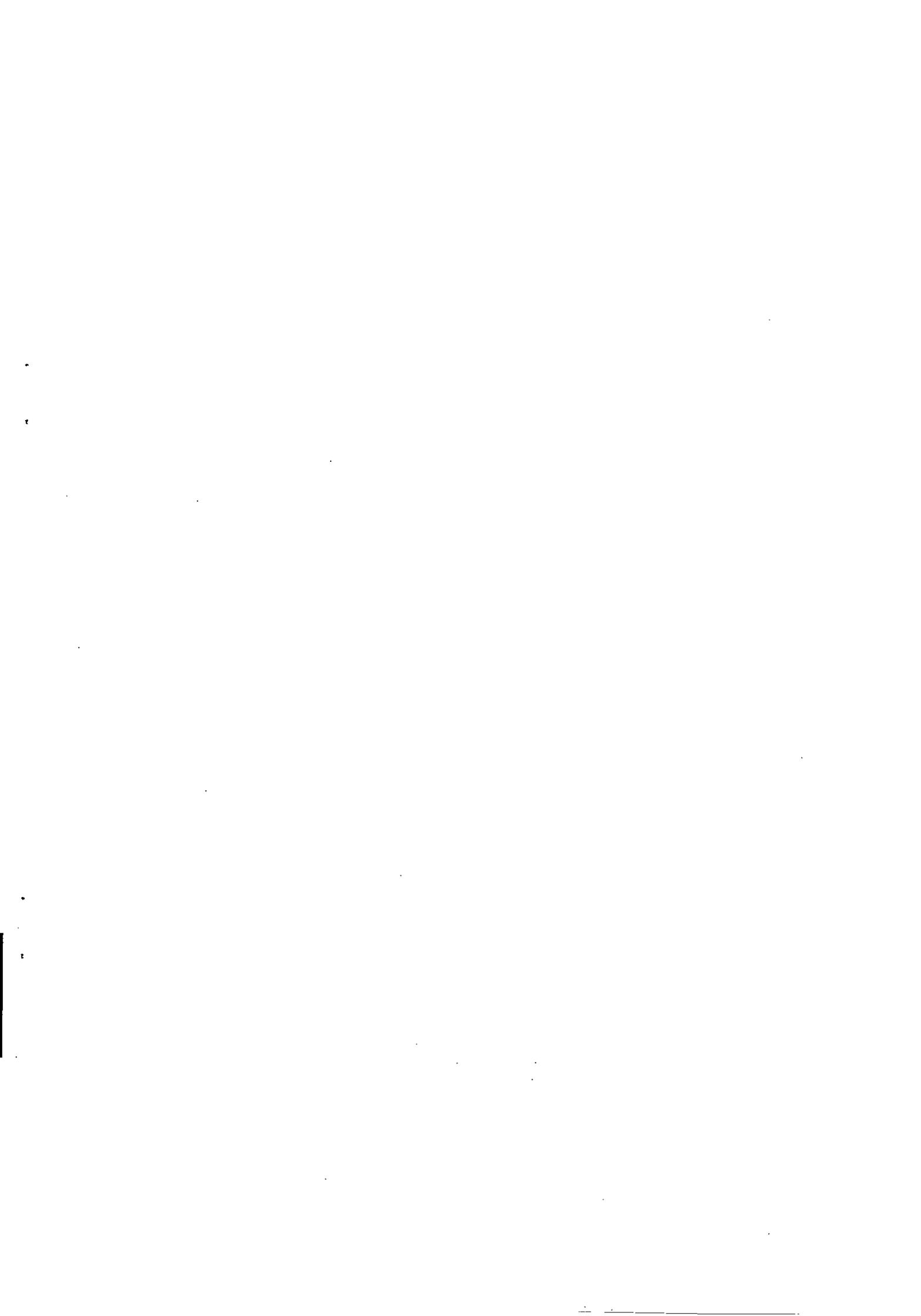


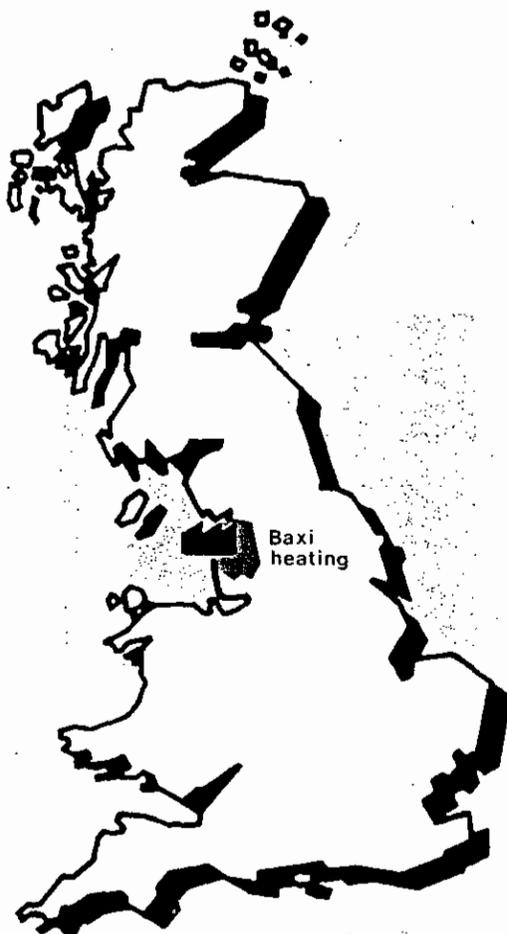
# SHORT PARTS LIST



Part No	Description	Model	Part No	Quantity
2	Panel Front Assy	30-40-50/4	364 580	225314
		70/4	364 775	226773
3	Panel Side RH Assy	All models	364 581	225293
4	Panel Side LH Assy	All models	364 582	225291
5	Panel Top	30-40-50/4	364 583	225298
		70/4	364 777	225402
6	Panel Bottom	30-40-50/4	364 584	224139
		70/4	364 782	224138
7	Panel Door Lower Assy	30-40-50/4	364 585	226272
		70/4	364 778	226273
9	Trim Facia	30-40-50/4	364 587	225519
		70/4	364 779	225520
21	Carrier Insulation Assy	30-40-50/4	364 696	226744
		70/4	364 809	226742
25	Fan Assy	30-40-50/4	364 599	227040
		70/4	364 789	227161
49	Carrier Insulation Door Assy	30-40-50/4	364 619	226743
		70/4	364 799	226741
51	Burner	30/4	382 929	226259
		40/4	382 930	225963
		50/4	382 931	225964
		70/4	382 932	225965
52	Injector	30/4	386 630	225935
		40/4	386 631	225936
		50/4	386 629	225937
		70/4	386 639	226094
59	Valve Control Honeywell	All models	386 620	225959
65	Burner Pilot	All models	364 625	225938
66	Injector Pilot	All models	386 624	226074
68	Electrode	All models	364 726	225934
69	Lead Electrode	All models	364 627	225966
71	Kit Sight Window	30-40-50/4	364 719	226114
		70/4	364 016	100017
88	Switch Pressure	All models	364 639	226060
100	Thermostat Ranco	All models	386 621	225650
100a	Overheat Thermostat	All models	386 763	224117
101	Sequence Controller	All models	364 738	225120
103	Knob Thermostat	All models	364 685	226821
104	Fuse 2 Amp 250V	All models	364 687	226070







Baxi heating manufacture a comprehensive range of products for the domestic heating market:

- Gas Central Heating Boilers (Wall, Floor and Fireside models).
- Independent Gas Fires.
- Gas Heaters.
- Solid Fuel Fires.

If you require information on any of these products, please write to the Sales Department at the address below.

**Baxi heating, Bamber Bridge, Preston, PR5 6SN, Lancashire**  
**Telephone: (0772) 36201 Telex: 677168 Fax: (0772) 315998**