

# **BAXI SOLO**

## **ALL RS MODELS**

**WALL MOUNTED ROOM SEALED  
GAS FIRED CENTRAL HEATING BOILERS**

**INSTALLATION & SERVICING INSTRUCTIONS**

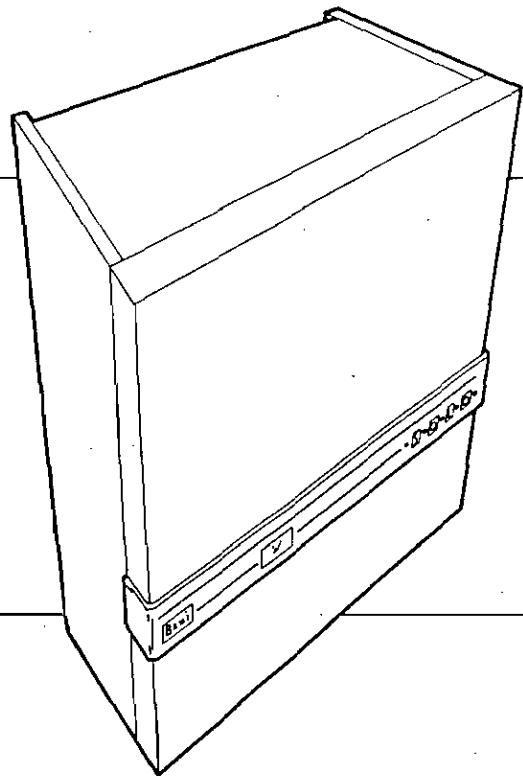
**BAXI SOLO** 60/4 RS - G.C. No 41 077 50

**BAXI SOLO** 50/4 RS - G.C. No 41 077 49

**BAXI SOLO** 40/4 RS - G.C. No 41 077 48

**BAXI SOLO** 30/4 RS - G.C. No 41 077 47

**BAXI SOLO** 20/4 RS - G.C. No 41 077 46



Please leave these Instructions with the User

  
**BAXI**  
HEATING

**Introduction**

**Technical Data**

**System Details**

**Site Requirement**

**Installation**

**Commissioning the Appliance**

**Fitting the Outer Case**

**Overheat Cut-Off Device**

**Annual Servicing**

**Changing Components**

**Fault Finding**

**Short Parts List**

PAGE 3

PAGE 4 - 6

PAGE 7 - 9

Water Circulating Systems  
Bypass Requirements  
Sealed Systems  
Low Head Installation  
Pipework  
System Controls

PAGE 10 - 12

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

PAGE 13 - 23

Fitting the Wall Mounting Plate  
Flue Preparation  
Fitting the Air Ducts  
Fitting the Boiler  
Fitting the Flue Duct  
Terminal Guard  
Fitting a Terminal Guard  
Water Connections  
Pipe Routes  
Fully Pumped System  
Sealed System  
Gravity Hot Water System  
Gas Connection  
Electrical Supply

PAGE 24 - 25

PAGE 26

PAGE 27

PAGE 28 - 30

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

PAGE 31 - 37

Piezo Igniter  
Solenoid Operator  
Thermocouple  
Pilot Viewing Window  
Spark Electrode  
Pilot Injector  
Thermostats  
Main Thermostat  
Overheat Thermostat  
Burner and Injector  
Gas Valve  
Insulation Panels

PAGE 38

PAGE 39

# INTRODUCTION

## Description

The Baxi Solo is a wall mounted room sealed central heating boiler with range rated outputs as shown in the table below.

| Model | HEAT OUTPUT            |                        |
|-------|------------------------|------------------------|
|       | Min                    | Max                    |
| 20/4  | 3.22kW (11,000 Btu/h)  | 5.86kW (20,000 Btu/h)  |
| 30/4  | 6.15kW (21,000 Btu/h)  | 8.79kW (30,000 Btu/h)  |
| 40/4  | 9.09kW (31,000 Btu/h)  | 11.72kW (40,000 Btu/h) |
| 50/4  | 12.00kW (41,000 Btu/h) | 14.70kW (50,000 Btu/h) |
| 60/4  | 14.95kW (51,000 Btu/h) | 17.58kW (60,000 Btu/h) |

Each appliance is preset at its **MAXIMUM** heat input rating and is designed for use on **NATURAL GAS** only. They are suitable for gravity domestic hot water with pumped central heating, fully pumped open vented central heating and domestic hot water and sealed systems.

The standard flue assembly supplied is suitable for wall thicknesses between 100mm (4in) and 356mm (14in). An optional flue extension kit is available for walls of 356mm (14in) and 610mm (24in) thickness. A pump housing kit is also available when it is desired to fit a central heating pump within the confines of the case.

The appliance data badge is fitted to the combustion box door, adjacent to the burner feed pipe.

## Installation

The installation must be carried out by a competent person and be in accordance with the relevant requirements of **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 6798:1987   | Selection & Installation of gas space heating.            |
| BS 5440 Part 1 | Flues.  |
| BS 5440 Part 2 | Air Supply.   |

## 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** could invalidate the appliance warranty and infringe the **GAS SAFETY (Installation and Use) REGULATIONS 1984**.

# TECHNICAL DATA

## 20/4 RS

|                   |       |        |        |
|-------------------|-------|--------|--------|
| <b>Heat Input</b> | Max   | Min    |        |
|                   | kW    | 7.51   | 4.24   |
|                   | Btu/h | 25,640 | 14,475 |

|                    |       |        |        |
|--------------------|-------|--------|--------|
| <b>Heat Output</b> | Max   | Min    |        |
|                    | kW    | 5.86   | 3.22   |
|                    | Btu/h | 20,000 | 11,000 |

|                        |       |            |           |
|------------------------|-------|------------|-----------|
| <b>Burner Pressure</b> | Max   | Min        |           |
|                        | mbar  | 15.2 ± 0.5 | 4.8 ± 0.5 |
|                        | in wg | 6.1 ± 0.2  | 1.9 ± 0.2 |

**Gas Connection** RC $\frac{1}{2}$  (1/2in BSPT)

**Electrical Supply** 240V~50Hz  
fused 3A

**Controls** on/off boiler thermostat  
with pilot/thermocouple  
cut out/overheat  
thermostat

**Connections** 2 x 22mm and 2 x 28mm  
tails for gravity

**Lifting Weight** 26.4 kg (58.2 lbs)

**Water Content** 1.73 litres (0.38 gals)

|                    |        |     |      |
|--------------------|--------|-----|------|
| <b>Static Head</b> | Max    | Min |      |
|                    | metres | 30  | 1    |
|                    | feet   | 100 | 3.25 |

**Low Head** Min 0.15m (6in)

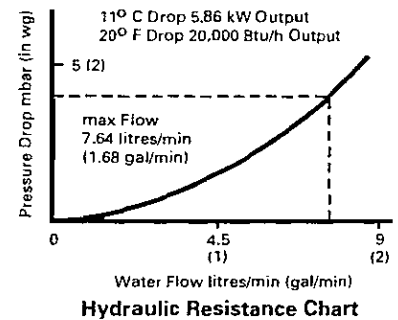
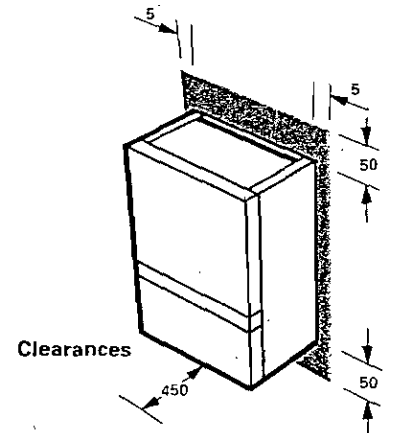
**System Design** gravity hot water fully  
pumped open vented  
and sealed systems

**Heat Exchanger** cast iron monobloc

**Gas Rate**  
(after 10 mins) 0.70m<sup>3</sup>/h (24.70ft<sup>3</sup>/h)

|                             |        |       |
|-----------------------------|--------|-------|
| <b>Outercase Dimensions</b> | Height | 600mm |
|                             | Width  | 350mm |
|                             | Depth  | 300mm |

|                                 |        |       |
|---------------------------------|--------|-------|
| <b>Flue Terminal Dimensions</b> | Height | 230mm |
|                                 | Width  | 230mm |
|                                 | Depth  | 143mm |



## 30/4 RS

|                   |       |        |        |
|-------------------|-------|--------|--------|
| <b>Heat Input</b> | Max   | Min    |        |
|                   | kW    | 11.27  | 8.01   |
|                   | Btu/h | 38,640 | 27,345 |

|                    |       |        |        |
|--------------------|-------|--------|--------|
| <b>Heat Output</b> | Max   | Min    |        |
|                    | kW    | 8.79   | 6.15   |
|                    | Btu/h | 30,000 | 21,000 |

|                        |       |            |           |
|------------------------|-------|------------|-----------|
| <b>Burner Pressure</b> | Max   | Min        |           |
|                        | mbar  | 15.6 ± 0.5 | 7.8 ± 0.5 |
|                        | in wg | 6.25 ± 0.2 | 3.1 ± 0.2 |

**Gas Connection** RC $\frac{1}{2}$  (1/2in BSPT)

**Electrical Supply** 240V~50Hz  
fused 3A

**Controls** on/off boiler thermostat  
with pilot/thermocouple  
cut out/overheat  
thermostat

**Connections** 2 x 22mm and 2 x 28mm  
tails for gravity

**Lifting Weight** 26.4 kg (58.2 lbs)

**Water Content** 1.73 litres (0.38 gals)

|                    |        |     |      |
|--------------------|--------|-----|------|
| <b>Static Head</b> | Max    | Min |      |
|                    | metres | 30  | 1    |
|                    | feet   | 100 | 3.25 |

**Low Head** Min 0.15m (6in)

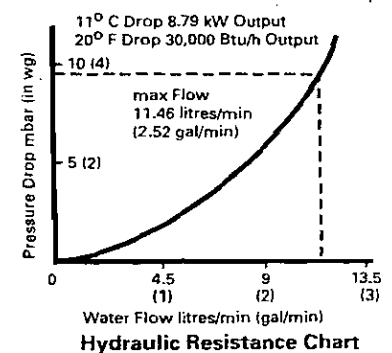
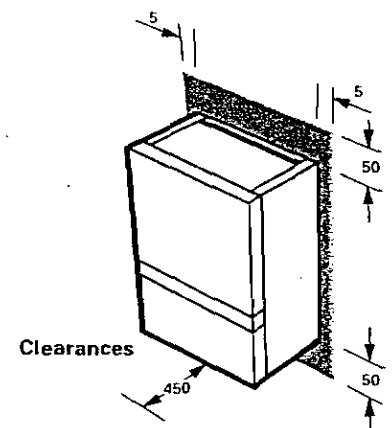
**System Design** gravity hot water fully  
pumped open vented  
and sealed systems

**Heat Exchanger** cast iron monobloc

**Gas Rate**  
(after 10 mins) 1.05m<sup>3</sup>/h (37.05ft<sup>3</sup>/h)

|                             |        |       |
|-----------------------------|--------|-------|
| <b>Outercase Dimensions</b> | Height | 600mm |
|                             | Width  | 350mm |
|                             | Depth  | 300mm |

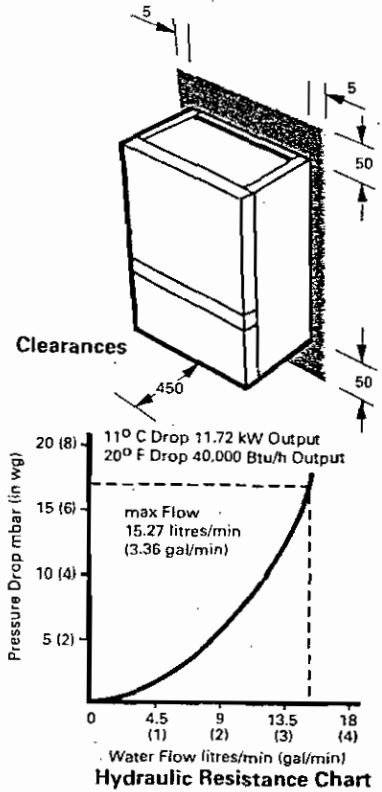
|                                 |        |       |
|---------------------------------|--------|-------|
| <b>Flue Terminal Dimensions</b> | Height | 230mm |
|                                 | Width  | 230mm |
|                                 | Depth  | 143mm |



## 40/4 RS

|                          |  |            |           |
|--------------------------|--|------------|-----------|
| <b>Heat Input</b>        | Max  | Min        |           |
|                          | kW   | 15.23      | 11.95     |
|                          | Btu/h  | 51,970     | 40,780    |
| <b>Heat Output</b>       | Max  | Min        |           |
|                          | kW   | 11.72      | 9.09      |
|                          | Btu/h  | 40,000     | 31,000    |
| <b>Burner Pressure</b>   | Max  | Min        |           |
|                          | mbar   | 15.4 ± 0.5 | 9.6 ± 0.5 |
|                          | in wg  | 6.2 ± 0.2  | 3.9 ± 0.2 |
| <b>Gas Connection</b>    | RC $\frac{1}{2}$ (1/2in BSPT)  |            |           |
| <b>Electrical Supply</b> | 240V~50Hz fused 3A   |            |           |
| <b>Controls</b>          | on/off boiler thermostat with pilot/thermocouple cut out/overheat thermostat |            |           |
| <b>Connections</b>       | 2 x 22mm and 2 x 28mm tails for gravity                                      |            |           |

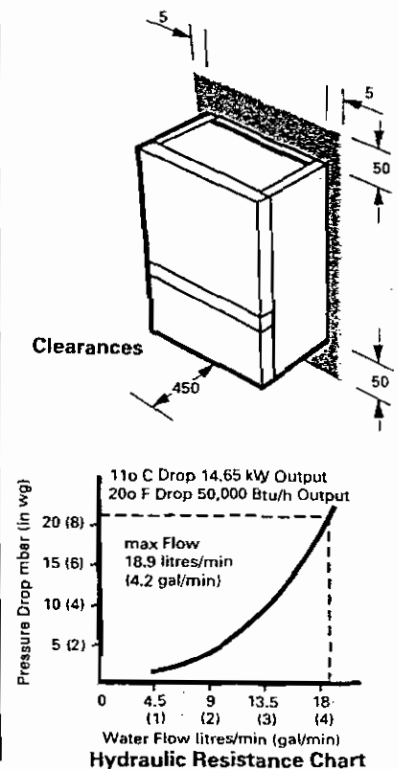
|                                 |   |       |      |
|---------------------------------|---|-------|------|
| <b>Lifting Weight</b>           | 29.0 kg (63.9 lbs)  |       |      |
| <b>Water Content</b>            | 1.85 litres (0.41 gals)                                       |       |      |
| <b>Static Head</b>              | Max   | Min   |      |
|                                 | metres  | 30    | 1    |
|                                 | feet  | 100   | 3.25 |
| <b>Low Head</b>                 | Min 0.20m (8in)   |       |      |
| <b>System Design</b>            | gravity hot water fully pumped open vented and sealed systems |       |      |
| <b>Heat Exchanger</b>           | cast iron monobloc  |       |      |
| <b>Gas Rate (after 10 mins)</b> | 1.42m <sup>3</sup> /h (50.07ft <sup>3</sup> /h)               |       |      |
|                                 |   |       |      |
| <b>Outercase Dimensions</b>     | Height  | 600mm |      |
|                                 | Width   | 400mm |      |
|                                 | Depth   | 300mm |      |
| <b>Flue Terminal Dimensions</b> | Height  | 230mm |      |
|                                 | Width   | 230mm |      |
|                                 | Depth   | 143mm |      |



## 50/4 RS

|                          |  |            |            |
|--------------------------|--|------------|------------|
| <b>Heat Input</b>        | Max  | Min        |            |
|                          | kW   | 19.10      | 16.00      |
|                          | Btu/h  | 65,000     | 54,600     |
| <b>Heat Output</b>       | Max  | Min        |            |
|                          | kW   | 14.70      | 12.00      |
|                          | Btu/h  | 50,000     | 41,000     |
| <b>Burner Pressure</b>   | Max  | Min        |            |
|                          | mbar   | 18.2 ± 0.5 | 12.9 ± 0.5 |
|                          | in wg  | 7.3 ± 0.2  | 5.2 ± 0.2  |
| <b>Gas Connection</b>    | RC $\frac{1}{2}$ (1/2in BSPT)  |            |            |
| <b>Electrical Supply</b> | 240V~50Hz fused 3A   |            |            |
| <b>Controls</b>          | on/off boiler thermostat with pilot/thermocouple cut out/overheat thermostat |            |            |
| <b>Connections</b>       | 2 x 22mm and 2 x 28mm tails for gravity                                      |            |            |

|                                 |   |       |      |
|---------------------------------|---|-------|------|
| <b>Lifting Weight</b>           | 32.1 kg (70.8 lbs)  |       |      |
| <b>Water Content</b>            | 2.4 litres (0.53 gals)  |       |      |
| <b>Static Head</b>              | Max   | Min   |      |
|                                 | metres  | 30    | 1    |
|                                 | feet  | 100   | 3.25 |
| <b>Low Head</b>                 | Min 0.15m (6in)   |       |      |
| <b>System Design</b>            | gravity hot water fully pumped open vented and sealed systems |       |      |
| <b>Heat Exchanger</b>           | cast iron monobloc  |       |      |
| <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   | 450mm |      |
|                                 | Depth   | 300mm |      |
| <b>Flue Terminal Dimensions</b> | Height  | 241mm |      |
|                                 | Width   | 307mm |      |
|                                 | Depth   | 143mm |      |



# 60/4 RS

| Heat Input | Max    | Min    |
|------------|--------|--------|
| kW         | 23.07  | 19.83  |
| Btu/h      | 78,740 | 67,640 |

| Heat Output | Max    | Min    |
|-------------|--------|--------|
| kW          | 17.58  | 14.95  |
| Btu/h       | 60,000 | 51,000 |

| Burner Pressure | Max        | Min        |
|-----------------|------------|------------|
| mbar            | 17.7 ± 0.5 | 13.1 ± 0.5 |
| in wg           | 7.1 ± 0.2  | 5.3 ± 0.2  |

**Gas Connection** RC 1/2 (1/2 in BSPT)

**Electrical Supply** 240V~50Hz  
fused 3A

**Controls** on/off boiler thermostat  
with pilot/thermocouple  
cut out/overheat  
thermostat

**Connections** 2 x 22mm and 2 x 28mm  
tails for gravity

**Lifting Weight** 35.5 kg (78.0 lbs)

**Water Content** 2.76 litres (0.61 gals)

| Static Head | Max | Min  |
|-------------|-----|------|
| metres      | 30  | 1    |
| feet        | 100 | 3.25 |

**Low Head** Min 0.15m (6in)

**System Design** gravity hot water fully  
pumped open vented  
and sealed systems

**Heat Exchanger** cast iron monobloc

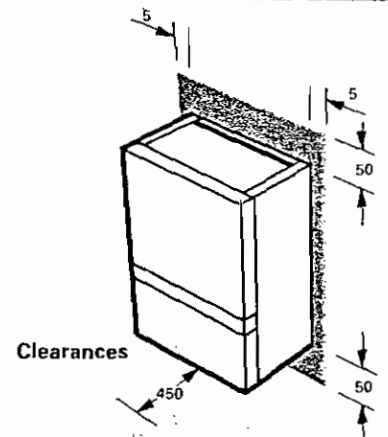
**Gas Rate**  
(after 10 mins) 2.15m<sup>3</sup>/h (75.86ft<sup>3</sup>/h)

**Outercase Dimensions**

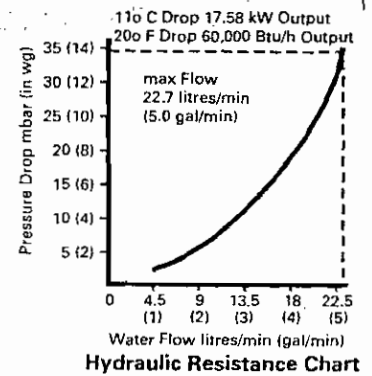
|        |       |
|--------|-------|
| Height | 600mm |
| Width  | 470mm |
| Depth  | 320mm |

**Flue Terminal Dimensions**

|        |       |
|--------|-------|
| Height | 241mm |
| Width  | 307mm |
| Depth  | 172mm |



**Clearances**



# SYSTEM DETAILS

## Water Circulating Systems

The appliance is suitable for use with fully pumped open vented systems (small bore and micro-bore), gravity domestic hot water with pumped central heating systems and sealed systems.

When the boiler is to be installed to an existing or new gravity domestic hot water and pumped central heating system, the following considerations should be given to the design of the gravity domestic hot water flow and return pipes.

The minimum circulating head should not be less than 1m (3ft) with a maximum horizontal run of 3m (10ft) when using 28mm pipes. Smaller pipe sizes and longer horizontal runs are acceptable with suitably increased circulating heads.

The system must be designed to prevent reverse circulation.

Pipes should be laid to maximum fall avoiding points of possible air lock.

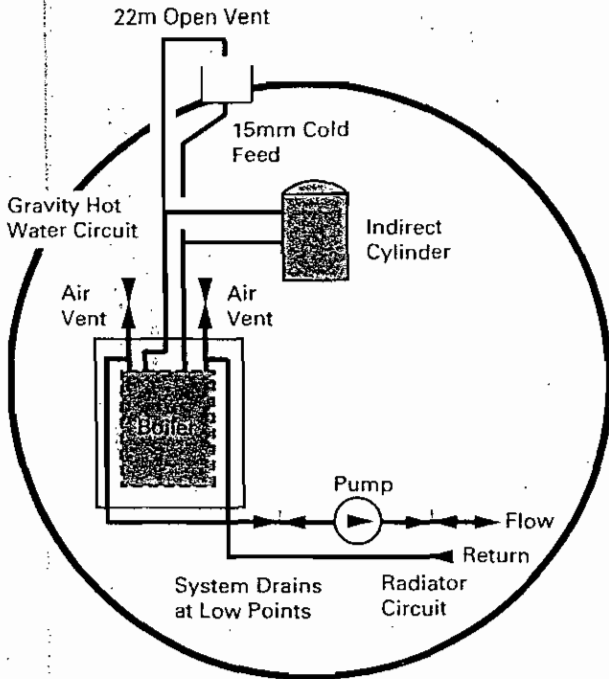
See page 23 for wiring of the boiler when installed with gravity hot water.

The following conditions should be observed on all types of system.

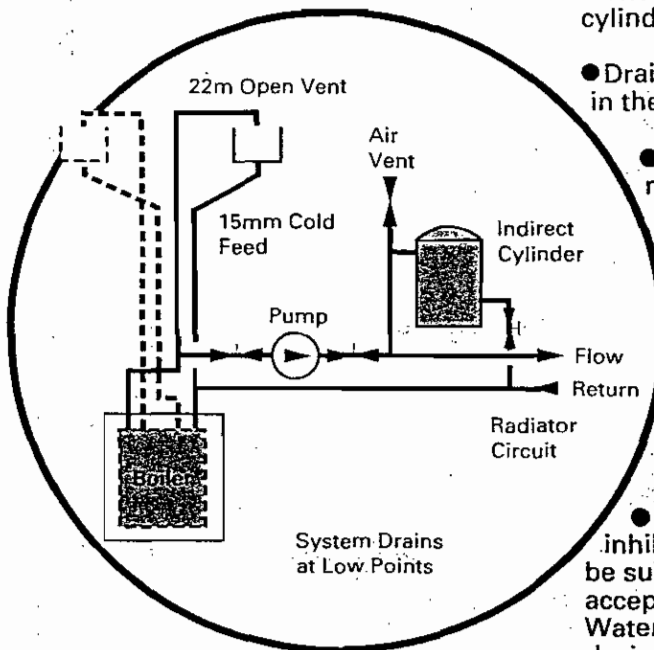
- The static head must not exceed 30m (100ft) of water.
- The boiler must only be used with an indirect cylinder.
- Drain points should be fitted to the lowest points in the system.
- All electrical wiring, gas and water pipes must be installed in a way which would not restrict the servicing of the boiler.
- Position isolating valves as close to the circulating pump as practicable.
- For fuel economy and best boiler performance, the system should be designed so that gravity circulation does not take place in the heating system when the pump is not running.
- 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.

### BYPASS REQUIREMENTS

The boiler is fitted with a pump overrun device which allows the removal of residual heat from the boiler. The system design must therefore, always provide an open circuit for water to circulate between the boiler flow and return.



Gravity Hot Water - Pump Heating



Fully Pumped System

## 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

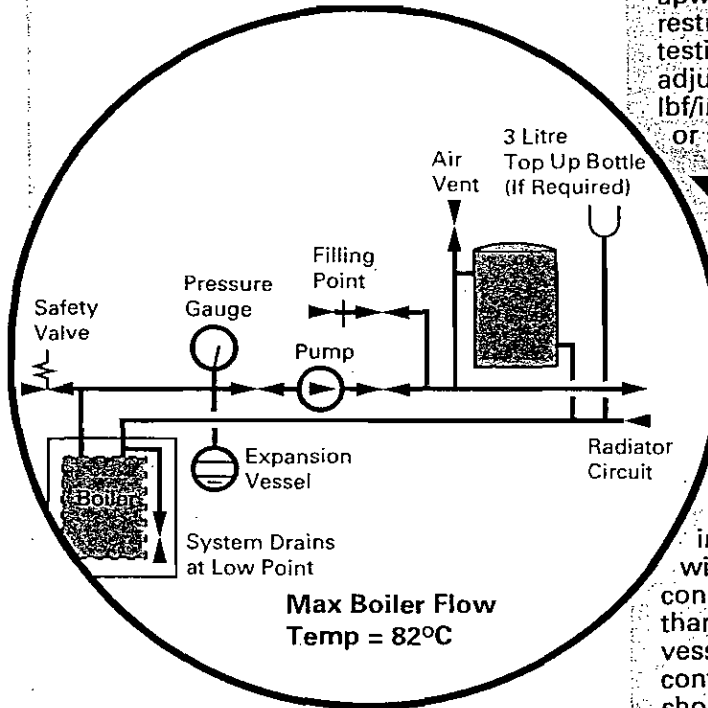
A method of replacing water lost from the system should be provided either by means of a make up vessel of not more than 3 litres (5 pints) capacity, mounted above the highest point of the system, or by pre-pressurisation of the system.

### 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 volume for sealed systems using Bar 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 0.152 x 75 = 11.4 litres  
 Expansion vessel volume

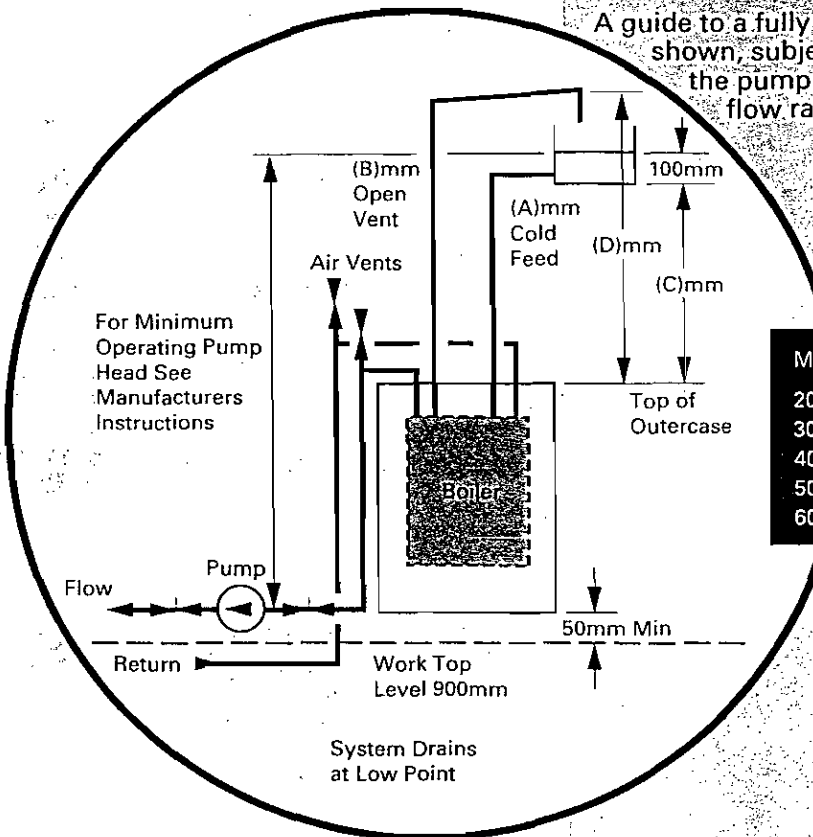
### NOTE

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



## 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).



| Model | A  | B  | C   | D   |
|-------|----|----|-----|-----|
| 20/4  | 15 | 22 | 150 | 750 |
| 30/4  | 15 | 22 | 150 | 750 |
| 40/4  | 15 | 22 | 200 | 800 |
| 50/4  | 22 | 28 | 150 | 750 |
| 60/4  | 22 | 28 | 150 | 750 |

## Pipework

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

An 11°C (20°F) drop across the system is recommended.

## System Controls

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

Such a system would normally comprise of timer control and 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.

Reference should be made to control equipment manufacturers literature for information e.g. wiring diagrams, etc.

# SITE REQUIREMENTS

## Location

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

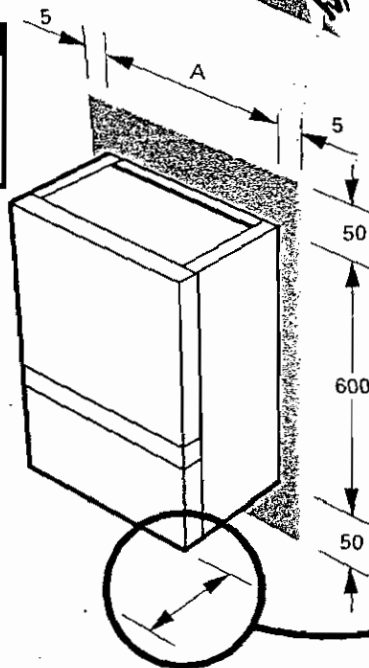
If the appliance is to be fitted in a house of timber frame construction, refer to British Gas document DM2.

Recommendations for flues are given in BS 5440 Pt1.

## Clearances

A flat vertical area is required for the appliance measuring as shown in the table below for each model.

| Model | A   |
|-------|-----|
| 20/4  | 350 |
| 30/4  | 350 |
| 40/4  | 400 |
| 50/4  | 450 |
| 60/4  | 470 |



| Model | Height<br>mm (in)                     | Width<br>mm (in)                       |
|-------|---------------------------------------|--|
| 20/4  | 700 (27 <sup>1</sup> / <sub>2</sub> ) | 360 (14 <sup>3</sup> / <sub>16</sub> ) |
| 30/4  | 700 (27 <sup>1</sup> / <sub>2</sub> ) | 360 (14 <sup>3</sup> / <sub>16</sub> ) |
| 40/4  | 700 (27 <sup>1</sup> / <sub>2</sub> ) | 410 (16 <sup>1</sup> / <sub>8</sub> )  |
| 50/4  | 700 (27 <sup>1</sup> / <sub>2</sub> ) | 460 (18 <sup>1</sup> / <sub>8</sub> )  |
| 60/4  | 700 (27 <sup>1</sup> / <sub>2</sub> ) | 480 (18 <sup>3</sup> / <sub>8</sub> )  |

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

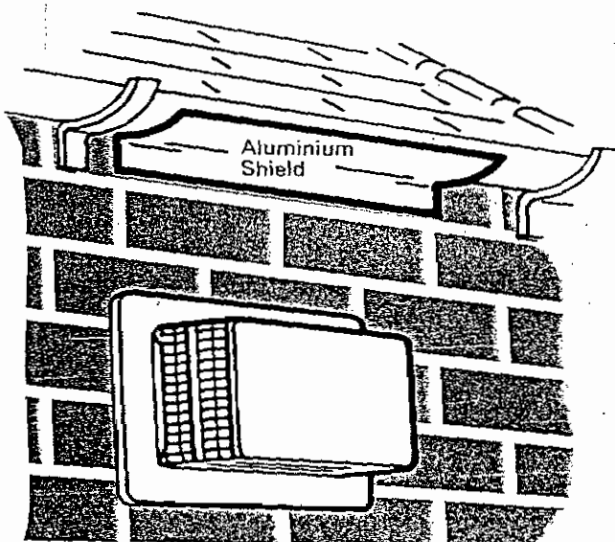
## Balanced Flue Position

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

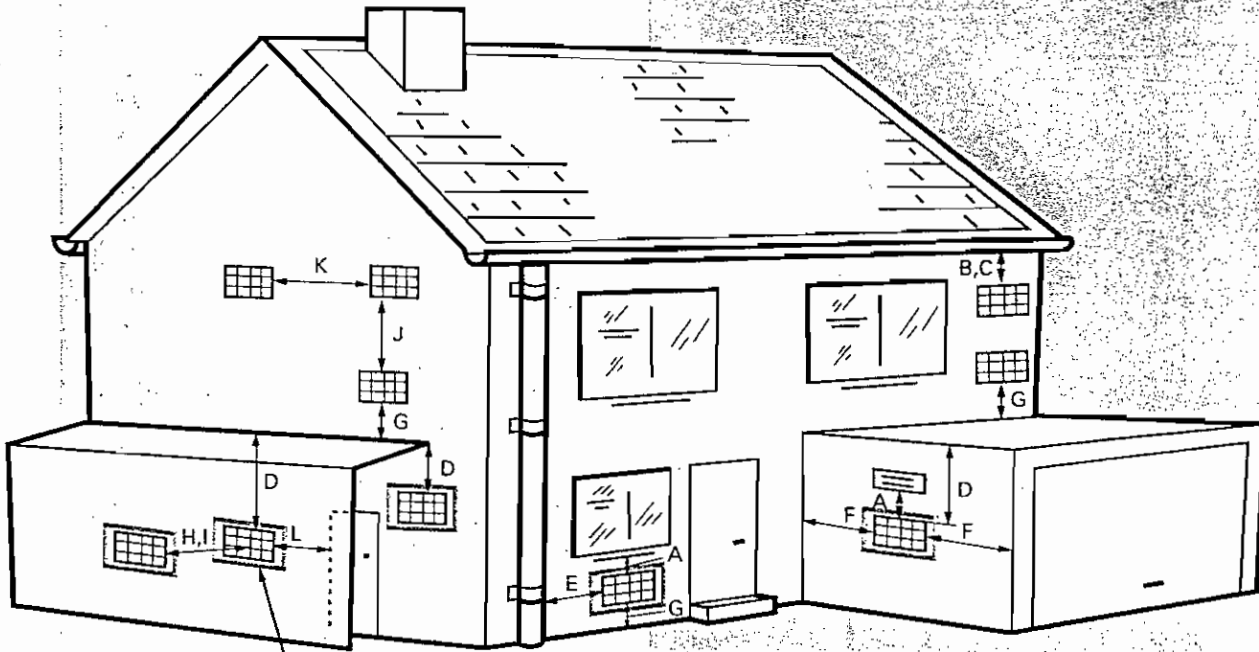
If the terminal is fitted within 1 metre (39in) of a plastic gutter, within 500mm (19<sup>1</sup>/<sub>2</sub> in) of a painted eave or a painted gutter, an aluminium shield of at least 1 metre (39in) long should be fitted to the underside of the gutter or painted surface. An air space of 5mm (<sup>3</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.



If a terminal is fitted less than 2 metres (78¾ in) above a balcony, above ground or above a flat roof to which people have access then a suitable terminal guard must be provided.

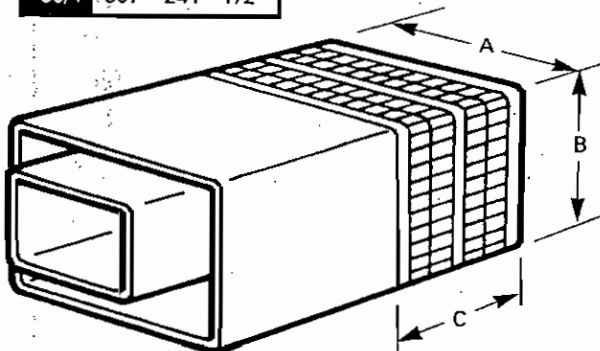


□ Likely positions requiring a flue terminal guard

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

|   |  |      |
|---|--|------|
| A | Directly below an openable window or other opening, e.g. an air brick. | 300  |
| B | Below gutters, soil pipes or drain pipes.                              | 300  |
| C | Below eaves.   | 300  |
| D | Below balconies or car port roofs.                                     | 600  |
| E | From vertical drain pipes and soil pipes.                              | 75   |
| F | From internal or external corners.                                     | 600  |
| G | Above ground, roof or balcony level.                                   | 300  |
| H | From a surface facing a terminal.                                      | 600  |
| I | From a terminal facing a terminal.                                     | 600  |
| 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 |

| Model | A   | B   | C   |
|-------|-----|-----|-----|
| 20/4  | 230 | 230 | 143 |
| 30/4  | 230 | 230 | 143 |
| 40/4  | 230 | 230 | 143 |
| 50/4  | 307 | 241 | 143 |
| 60/4  | 307 | 241 | 172 |



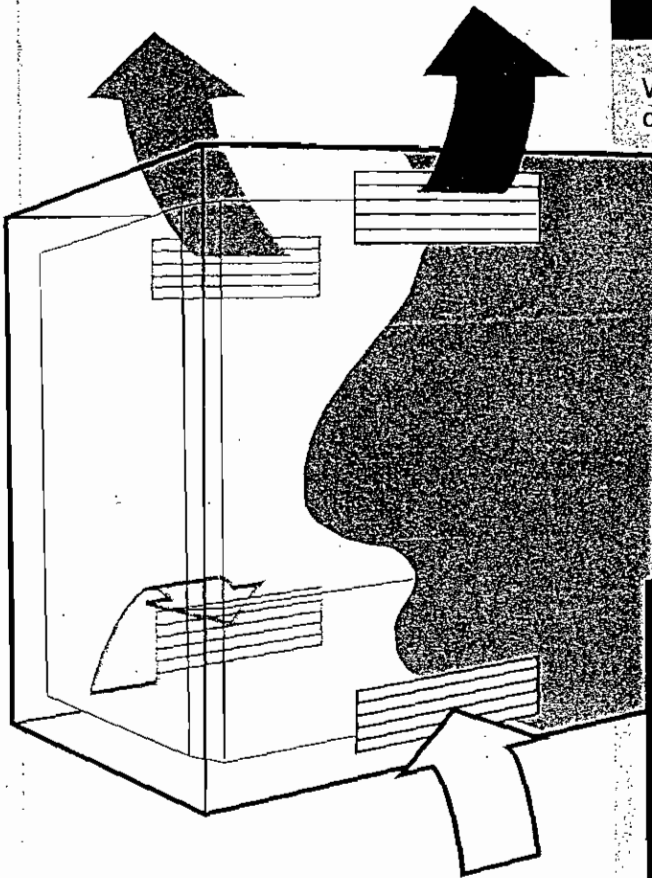
**Flue Dimensions**

Recommendations for flues are given in BS 5440:1.

The standard flue terminal supplied with the appliance is suitable for use with wall thickness between 100mm and 356mm (4in and 14in).

A flue terminal extension kit is available as an optional extra for wall thickness between 356mm and 610mm (14in and 24in) from the manufacturer. Quote appliance Model N° and G.C. N° when ordering.

## 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.

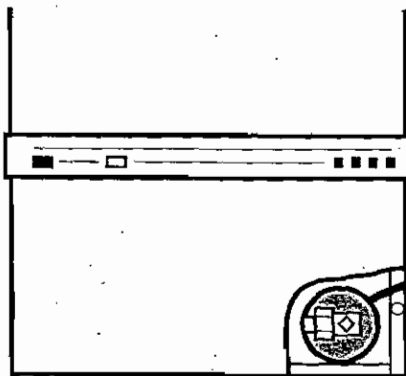
Detailed recommendations for air supply are given in BS 5440: Part 2.

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                                  |
|-------|----------------------|---|--|
| 20/4  | HIGH AND LOW LEVEL   | 67.59cm <sup>2</sup> FREE AREA (10.26in <sup>2</sup> )  | 33.80cm <sup>2</sup> FREE AREA (5.13in <sup>2</sup> )    |
| 30/4  | HIGH AND LOW LEVEL   | 101.43cm <sup>2</sup> FREE AREA (15.38in <sup>2</sup> ) | 50.72cm <sup>2</sup> FREE AREA (7.69in <sup>2</sup> )    |
| 40/4  | HIGH AND LOW LEVEL   | 137.07cm <sup>2</sup> FREE AREA (20.78in <sup>2</sup> ) | 68.54cm <sup>2</sup> FREE AREA (10.39in <sup>2</sup> )   |
| 50/4  | HIGH AND LOW LEVEL   | 175cm <sup>2</sup> FREE AREA (27in <sup>2</sup> )       | 87.5cm <sup>2</sup> FREE AREA (13.5in <sup>2</sup> )     |
| 60/4  | HIGH AND LOW LEVEL   | 207.63cm <sup>2</sup> FREE AREA (31.5in <sup>2</sup> )  | 103.82cm <sup>2</sup> FREE AREA (15.75 in <sup>2</sup> ) |

## Gas Supply



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

The connection on the appliance is RC<sup>1</sup>/<sub>2</sub> (<sup>1</sup>/<sub>2</sub> in BSPT internal) located at the bottom right hand side of the appliance.

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

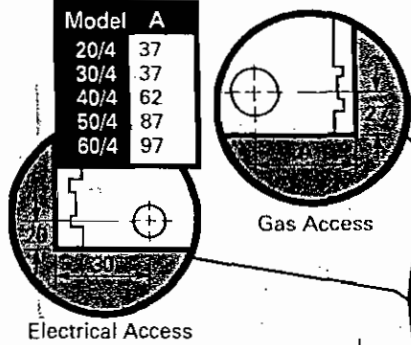
External wiring must be correctly earthed, polarized and in accordance with CURRENT I.E.E. WIRING REGULATIONS.

The mains supply 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 isolator with a contact separation of a least 3mm in all poles and serving the appliance and system controls only.

# INSTALLATION

| Model | A  |
|-------|----|
| 20/4  | 37 |
| 30/4  | 37 |
| 40/4  | 62 |
| 50/4  | 87 |
| 60/4  | 97 |



## Fitting the Wall Mounting Plate

Unpack wall mounting plate and hardware pack from the outer case carton.

The plate is same height and width as the boiler.

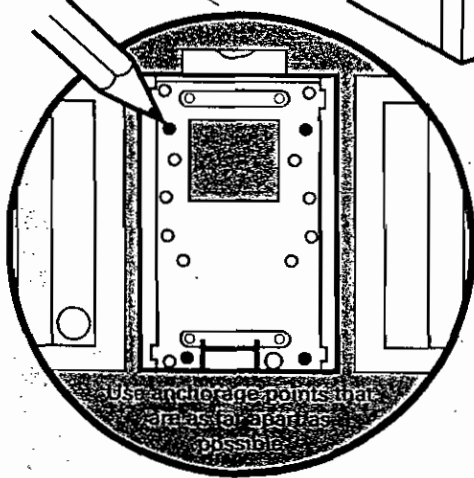
Two holes are provided on the plate to allow gas and electrical supplies to be brought directly into the boiler from the wall. The grommet provided must be used when the electrical cable is routed through the wall mounting plate.

Choose a flat vertical area to position the boiler making necessary allowances for required minimum clearances. If fitting between wall cupboards ensure for each model that the minimum available width is as shown in the table below.

| Model | Width B<br>mm (in)                     |
|-------|--|
| 20/4  | 360 (14 <sup>1</sup> / <sub>16</sub> ) |
| 30/4  | 360 (14 <sup>1</sup> / <sub>16</sub> ) |
| 40/4  | 410 (16 <sup>1</sup> / <sub>8</sub> )  |
| 50/4  | 460 (18 <sup>1</sup> / <sub>8</sub> )  |
| 60/4  | 480 (18 <sup>3</sup> / <sub>8</sub> )  |

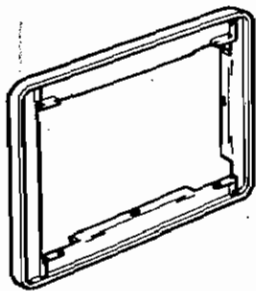
Offer plate to wall surface, level and using as a template, mark out flue opening and four good anchorage points. Mark gas and electrical supply access holes if required.

Cut out hole for flue. Drill anchorage holes 7mm (<sup>9</sup>/<sub>32</sub> in) diameter by 63mm (2<sup>1</sup>/<sub>2</sub> in) deep to accept wall plugs.

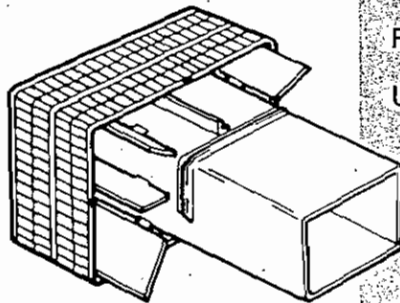


Secure plate to wall using 63mm (2<sup>1</sup>/<sub>2</sub> in) screws.

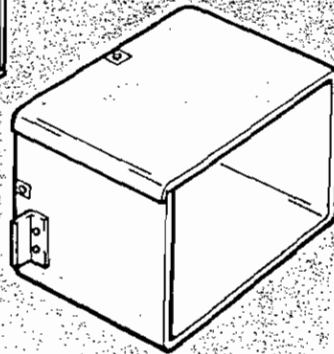
Make good internal masonry up to edges of flue cut-out in the plate.



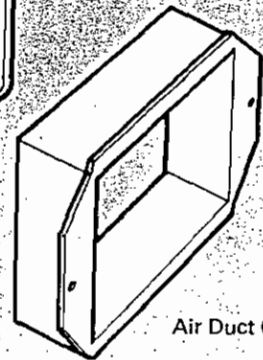
Flue Trim



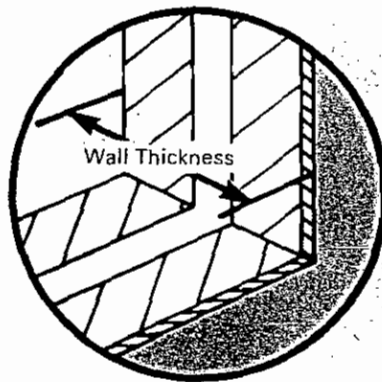
Flue Duct A



Air Duct B



Air Duct C



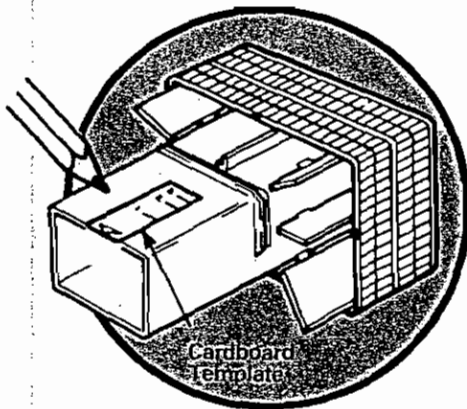
Wall Thickness

## Preparation

Remove flue carton from outer case.

Unpack flue duct, flue trim, air duct assemblies.

Measure overall wall thickness. If this is between 280mm (11in) and 355mm (14in), use flue as supplied without alteration.

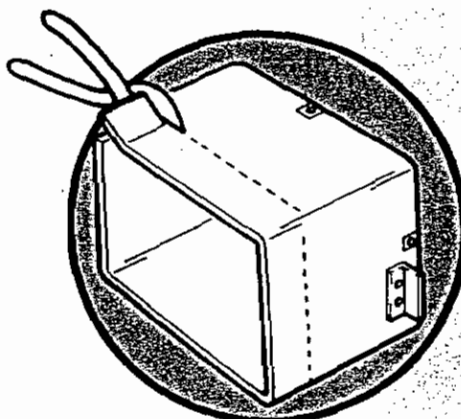


Cardboard Template

For wall thickness between 102mm (4in) and 280mm (11in), air duct B and flue duct A are required to be shortened.

Using the cardboard template supplied, place it with arrow at end of both ducts. Mark accordingly to table below.

| Mark | Wall Thickness                  |
|------|---------------------------------|
| 1    | 203mm - 280mm<br>(8in) - (11in) |
| 2    | 127mm - 203mm<br>(5in) - (8in)  |
| 3    | 102mm - 127mm<br>(4in) - (5in)  |



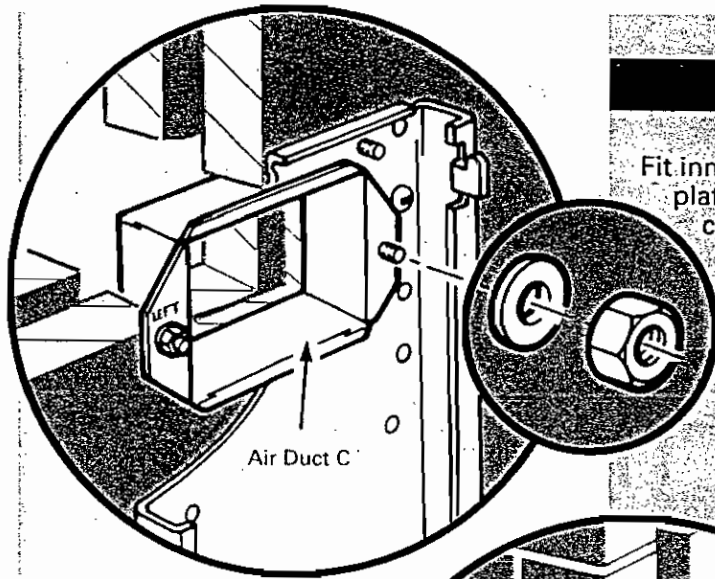
Using tin snips, cut around ducts at appropriate mark.



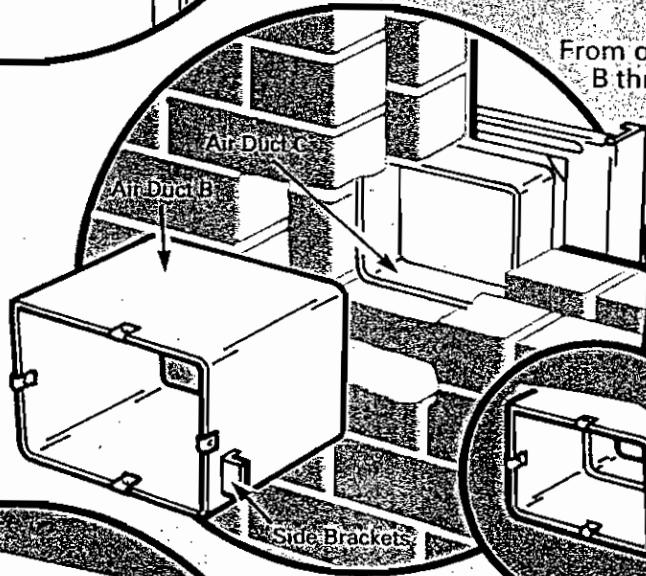
## Fitting the Air Ducts

Fit inner air duct C through cut-out on mounting plate. Locate on two studs. Ensure duct is correct way up by putting flange marked LEFT to left hand side.

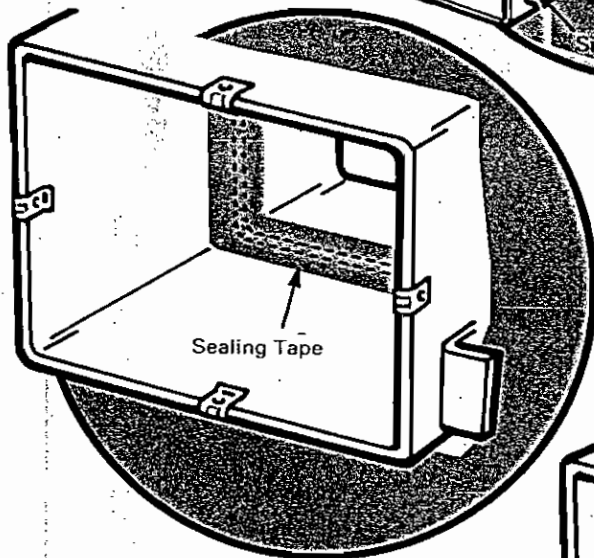
Secure with two nuts and washers.



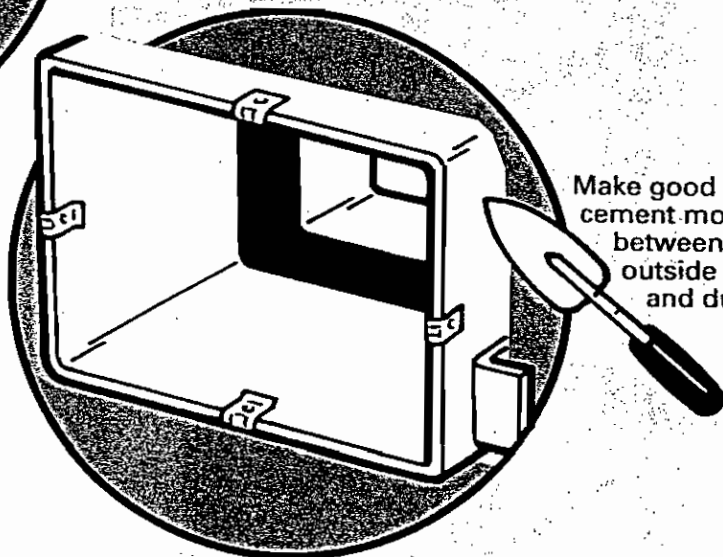
From outside building, pass air duct B through wall opening. The two side brackets should be positioned at the bottom.



Slide duct over air duct C until side brackets contact wall surface.

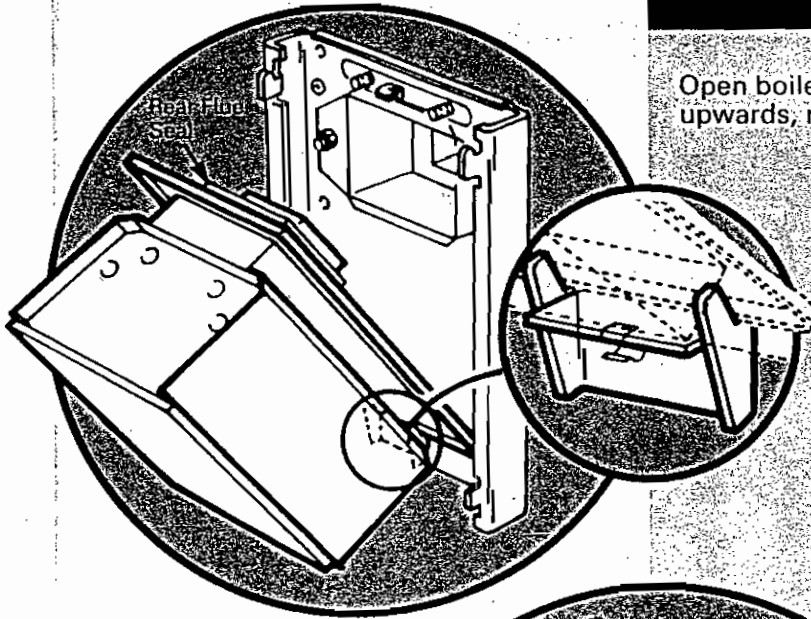


Ensure air duct B is horizontal and square to wall face. Using sealing tape supplied make good the joint on inside of the two ducts.

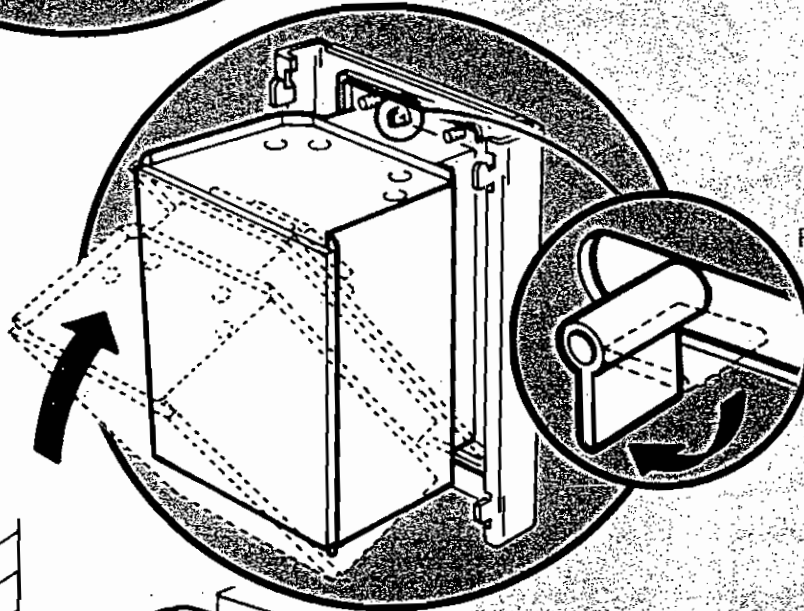


## Fitting the Boiler

Open boiler carton. Remove carton by lifting upwards, remove two cardboard side pieces.

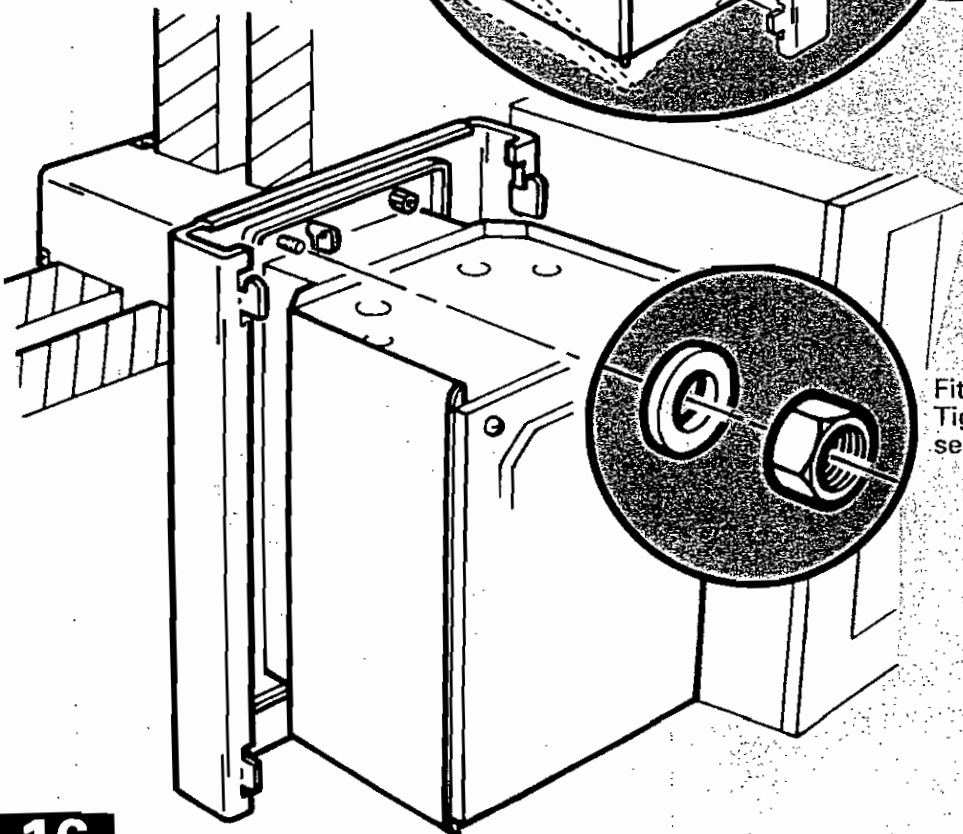


Lift boiler and engage the back bottom edge into hook bracket on mounting plate.



Rotate boiler back to mounting plate to engage two studs and latch.

Turn latch to hold boiler in position.

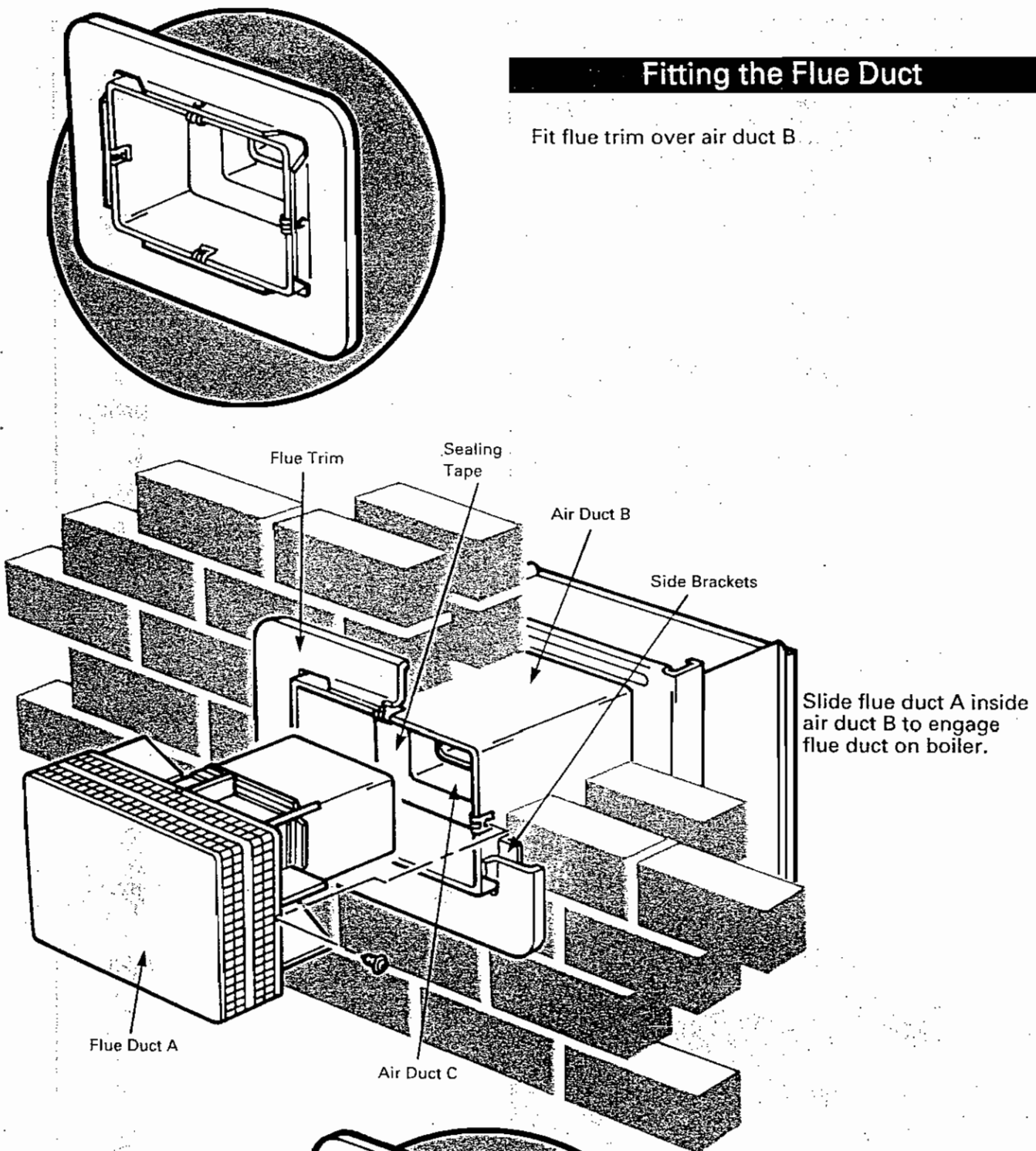


Fit the two nuts and washers. Tighten to compress rear flue seal.

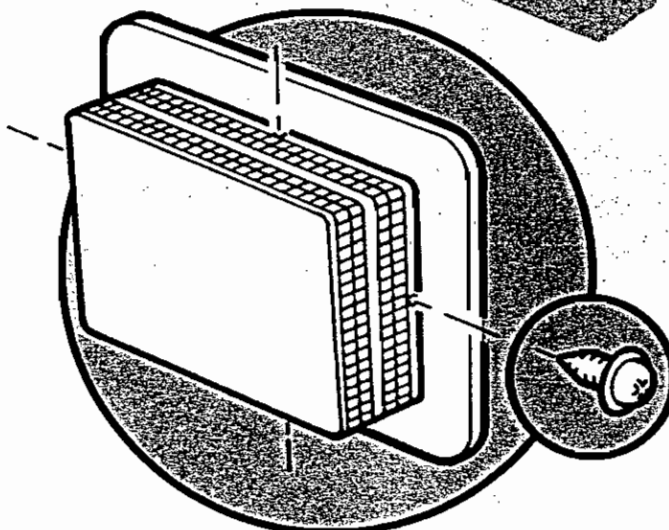


## Fitting the Flue Duct

Fit flue trim over air duct B.



Slide flue duct A inside air duct B to engage flue duct on boiler.



Secure flue duct A, flue trim to air duct B with four screws.

## Terminal Guard

When codes of practice dictate the use of terminal guards, they can be obtained from most plumbers and builders merchants nationwide.

When ordering a terminal guard, quote the appliance model number.

The guard manufacturers listed below can be contacted for terminal sizes and guard model numbers.

Quinnell, Barrett & Quinnell,  
884 Old Kent Road,  
London, SE15 1NL

Tel: 071 639 1357.

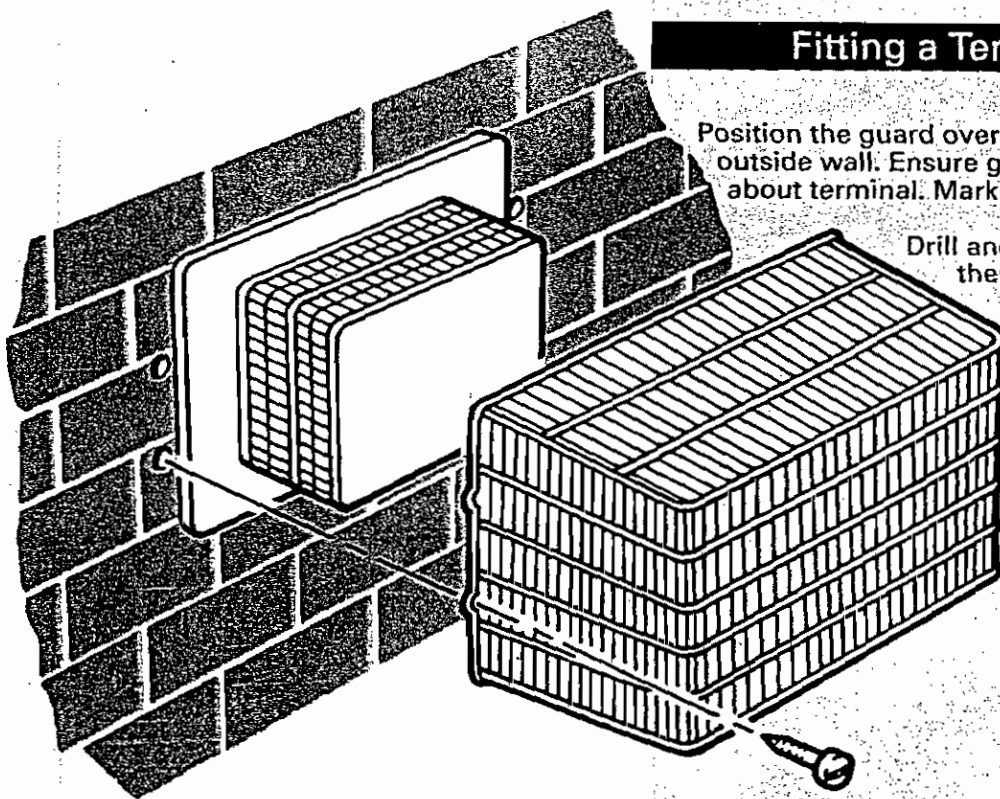
Tower Flue Components Ltd.,  
Tower House,  
Vale Rise,  
Tonbridge,  
Kent.

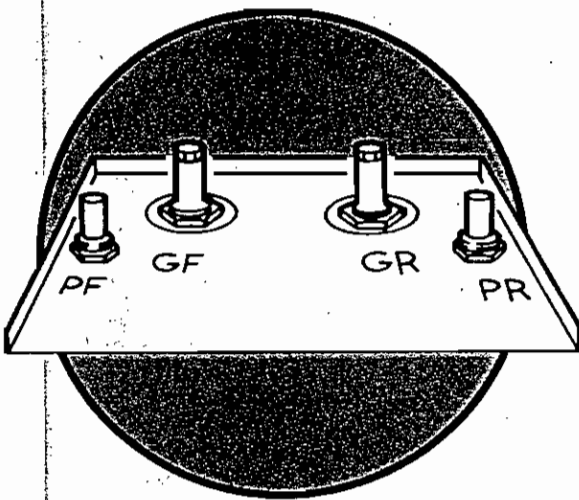
Tel: 0732 351555

## 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.





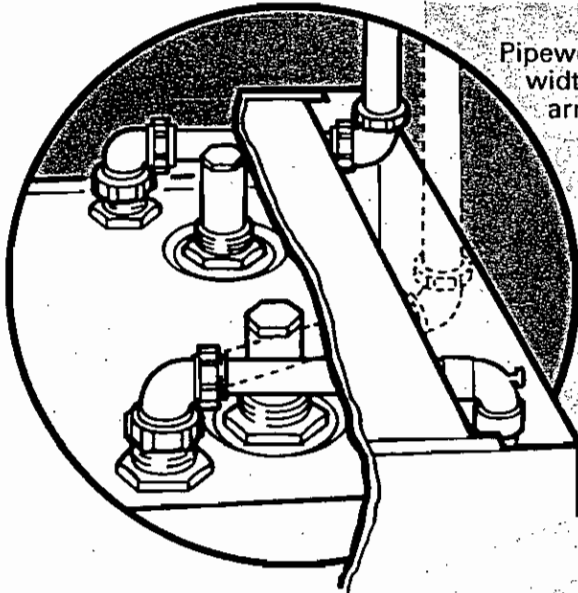
## Water Connections

The boiler has 4 connection tails to accept capillary or compression fittings:-

- 22mm tail marked PF for Pumped Flow.
- 22mm tail marked PR for Pumped Return.
- 28mm tail marked GF for Gravity Flow.
- 28mm tail marked GR for Gravity Return.

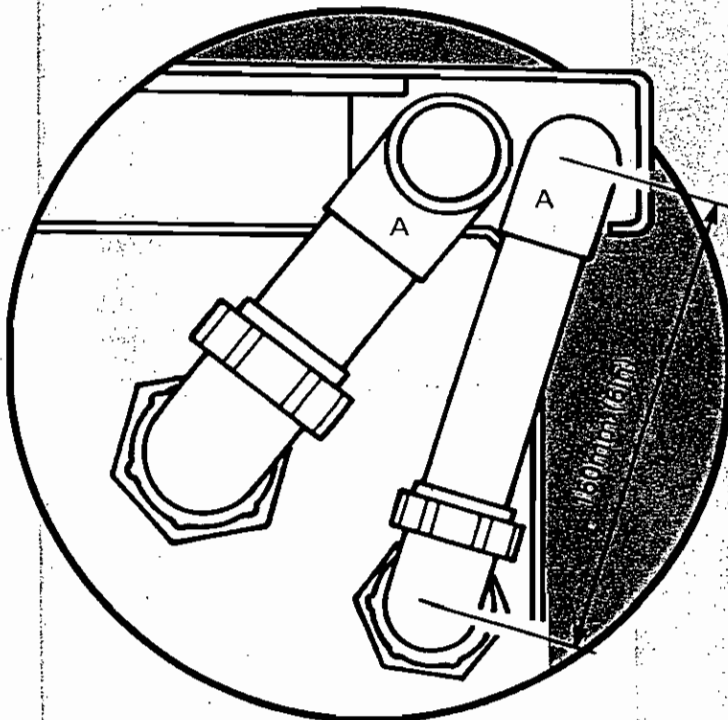
The boiler is supplied ready for fully pumped and sealed systems. The two gravity connections are sealed off.

## Pipe Routes

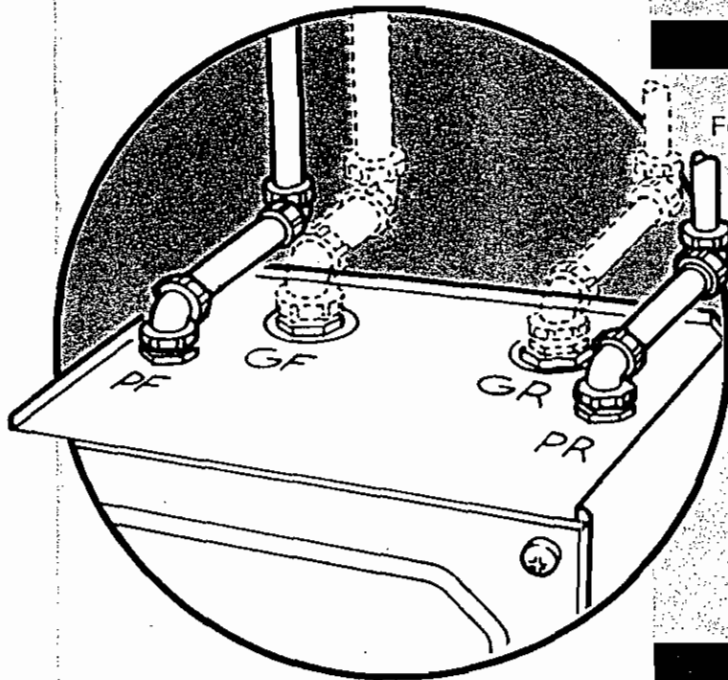


Pipework can be routed to any position across width of casing through rear cut-outs and arranged to clear any obstructions.

Pipes may also be routed to drop down within outer case. Spaces are available at both sides.



Dimensions are given to enable a pipe to be routed downwards on right hand side. It is recommended that fittings 'A' are of copper capillary type.

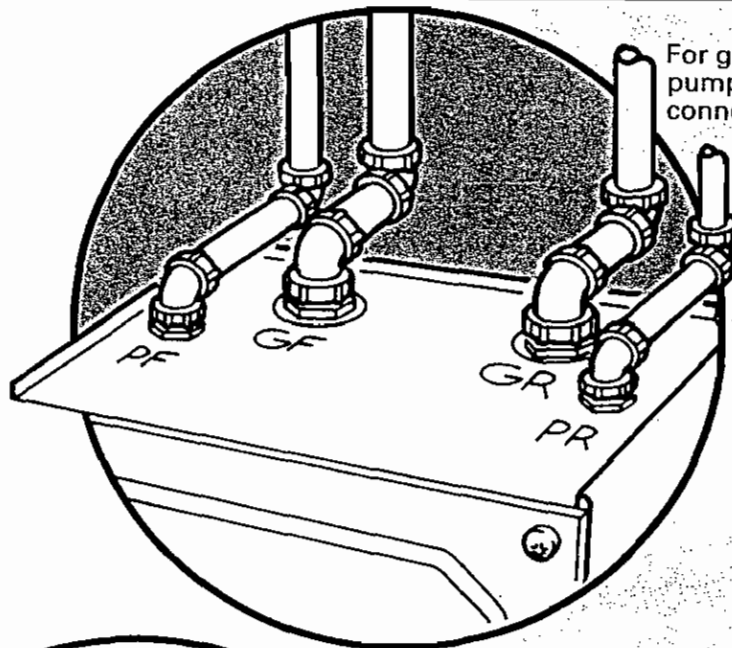


### Fully Pumped System

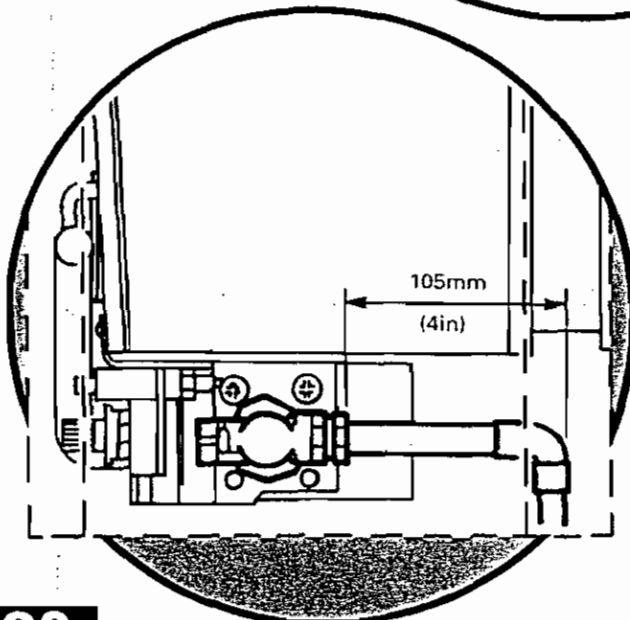
For fully pumped system, connect to tails marked PF and PR. Gravity flow connection GF could be used as an open vent and GR as the cold feed.

### Sealed System

For sealed system, connect to tails marked PF and PR.



For gravity domestic hot water and pumped central heating system, connect pumped circuit to connections marked PF and PR. Gravity hot water circuit to connections marked GF and GR, after removing blanking plugs. (See page 23 when wiring for gravity system.)



### Gas Connection

Gas connection is made on the union gas service tap (female 1/2 in B.S.P. thread). Dimension shown will ensure that gas pipe does not interfere with outer case or any downward routed pipes.

**KEY**

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

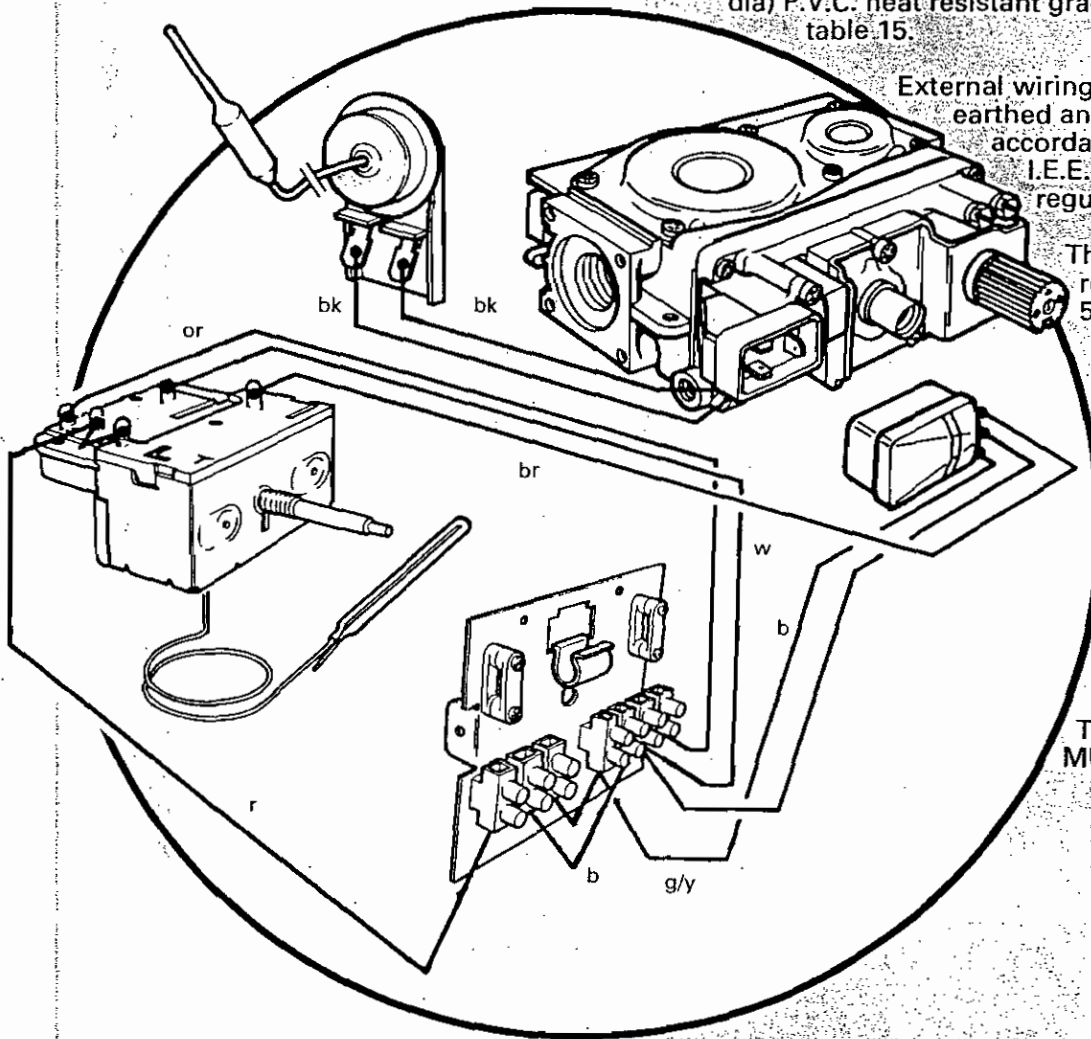
## Electrical Supply

### FOR FULLY PUMPED AND SEALED SYSTEMS

The recommended cable for connection to the appliance terminal-strip is 0.75mm<sup>2</sup> (24 x 0.2mm dia) P.V.C. heat resistant grade to BS 6141 table 15.

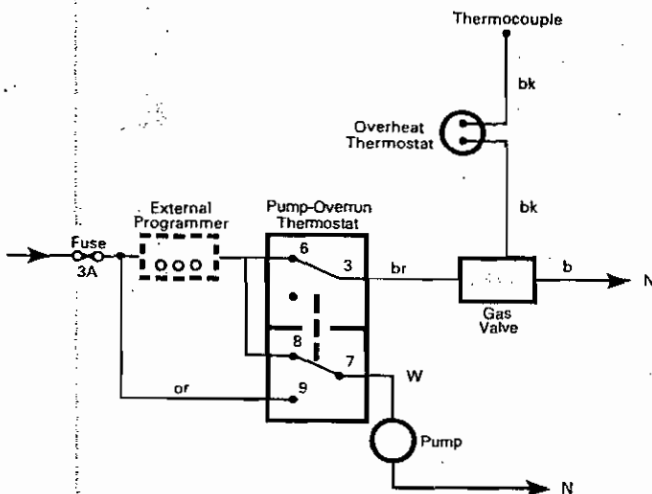
External wiring must be correctly earthed and polarised and in accordance with current I.E.E. wiring regulations.

The mains supply required is 240V ~ 50Hz fused at 3A.



**WARNING**

**THIS APPLIANCE  
MUST BE EARTHED.**

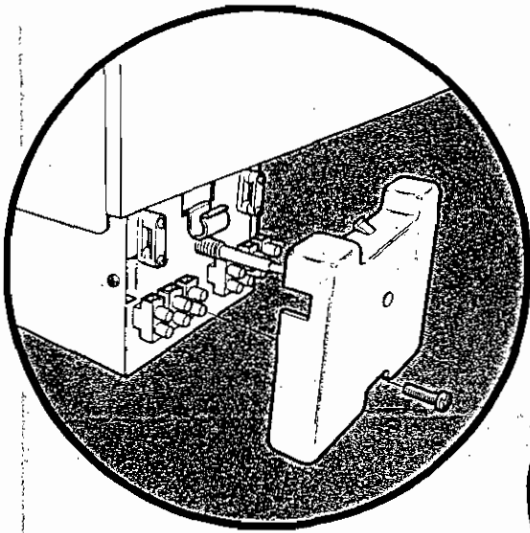


**NOTE:**

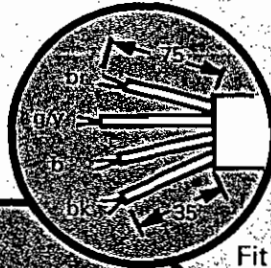
a) For existing installations and sites where only 3 core wiring is available see page 23.

b) The method of connection to the electricity supply must facilitate complete electrical isolation of the appliance.

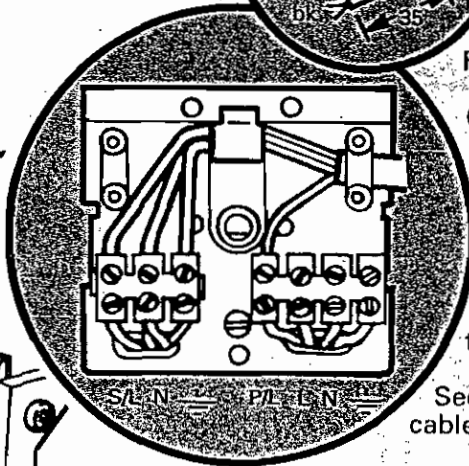




Remove the securing screw and electrical cover fastened to the thermostat box.



Bare back the input cable to the dimensions shown.



Fit the electrical input cable as follows.

Connect the switched live to the terminal marked S/L.

Connect the permanent live to the terminal marked P/L.

Connect the supply neutral to the terminal marked N and the supply earth to the terminal marked  $\frac{1}{=}$ .

Secure the cable in place with the right hand cable clamp.

Fit the pump outlet as follows:

Connect the pump earth to the terminal marked  $\frac{1}{=}$ .

Connect the pump neutral to the terminal marked N.

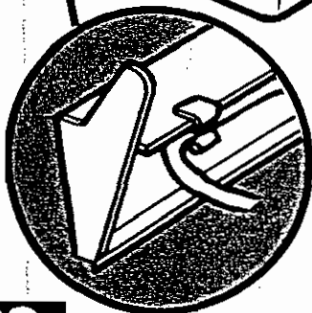
Connect the pump live to the terminal marked L.

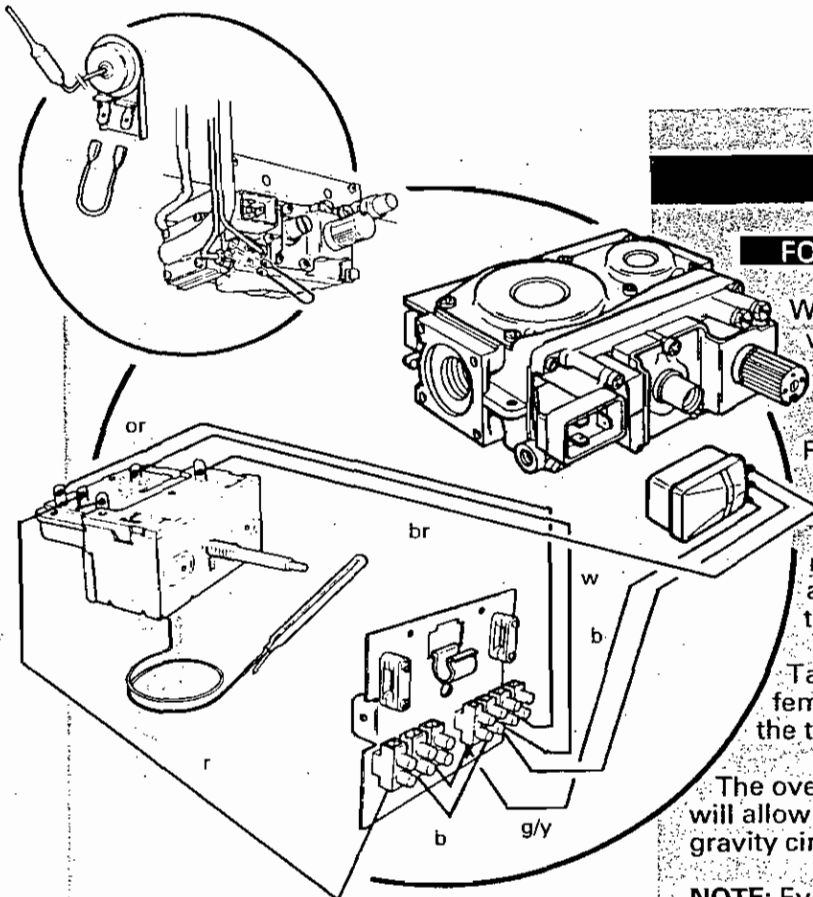
Secure the cable in place with the left hand cable clamp.

Replace the electrical cover and securing screw.

To avoid contact with hot surfaces, lay the input cable through the clip fitted on hook bracket.

In the event of an electrical fault after installation of the appliance, preliminary electrical system checks should be carried out:- earth continuity, polarity and resistance to earth.





**FOR GRAVITY D.H.W. AND PUMPED C. H.**

When the boiler is to be used on a system with gravity D.H.W. it is necessary to disconnect the overheat thermostat, in the following manner:-

Remove the two black wires from their two terminals on the valve.

Using the black wire supplied in kit with male spade terminals on each end, loop across the wires from the overheat thermostat.

Take the blue wire supplied in kit with female spade terminals and connect across the two terminals on the valve.

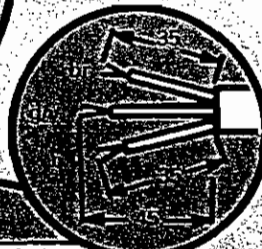
The overheat thermostat is now by-passed and will allow the appliance to perform satisfactorily on gravity circulation.

**NOTE:** Even though the overheat thermostat is not operational, it must not be removed from the pocket in the heat exchanger.

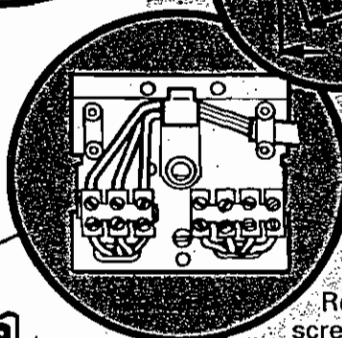
The recommended cable for connection to the appliance terminal strip is 0.75mm<sup>2</sup> (24 x 0.2mm) P.V.C. heat resistant grade to BS 6141 Table 14.

**WARNING:** This appliance must be earthed.

Remove securing screw and electrical cover that are fastened to thermostat box.



Bare back input cable to dimensions shown.

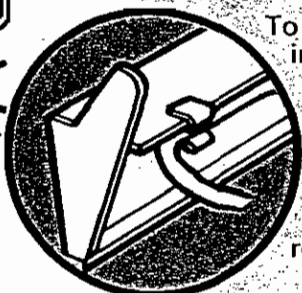


Fit input cable to terminal block on left passing through clip and grip provided.

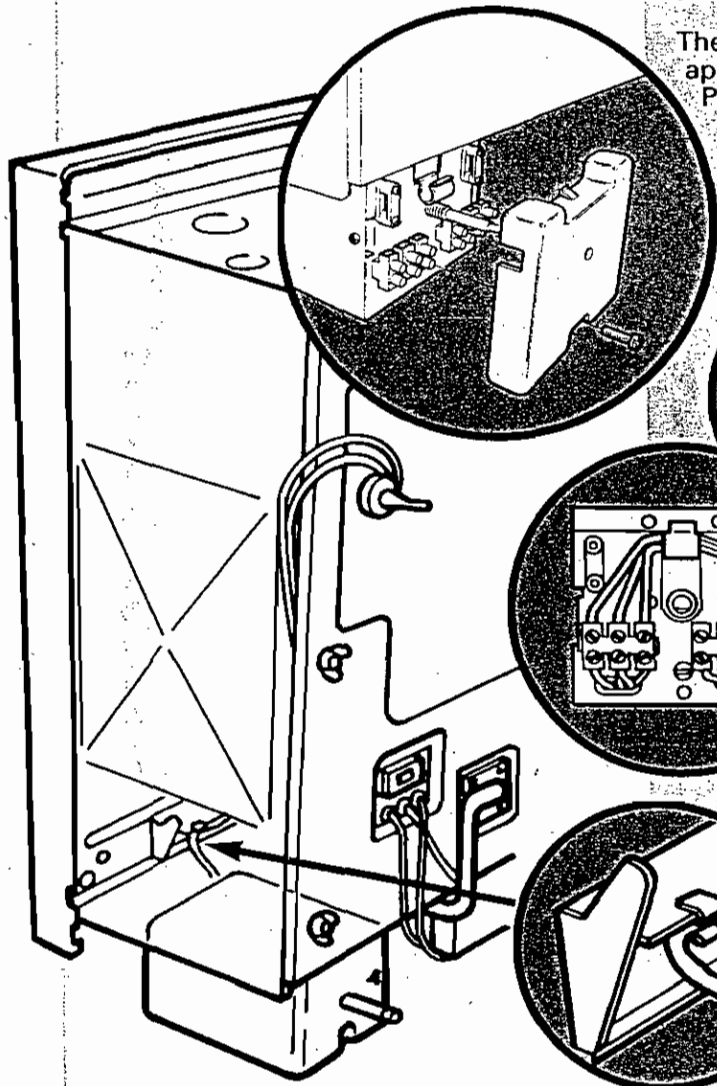
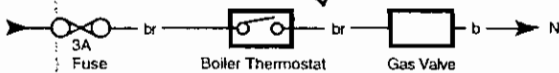
The pump should be wired to the junction box or programmer.

Replace electrical cover and securing screw.

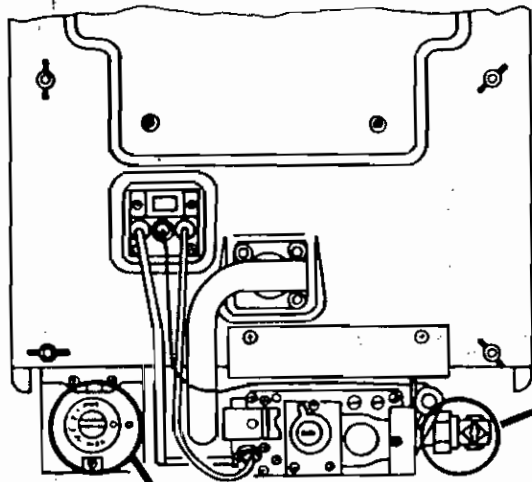
To avoid contact with hot surfaces, lay the input cable through clip fitted on hook bracket.



In the event of an electrical fault after installation of the appliance, preliminary electrical system checks should be carried:- earth continuity, polarity and resistance to earth.



# COMMISSIONING THE APPLIANCE



Flush the whole system with water, vent radiators, check for water leaks.

Purge air from supply pipe at gas service tap (BS 6891:1988).

Turn gas service tap anticlockwise to ON position. Check for gas soundness up to gas valve.

Ensure that all external controls, e.g. room thermostat, timer, etc. are calling for heat.

Fit thermostat control knob (packed with the contents in plastic bag).

Turn anticlockwise to OFF position, marked O.

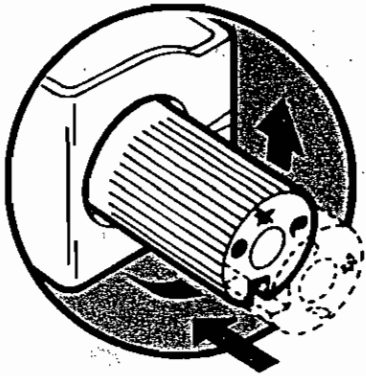
Remove burner pressure test point screw. Connect pressure gauge.


Press in and turn three position gas control knob anticlockwise to position marked \* for pilot.

Press gas control knob fully inwards and hold. Press in igniter button and release. Repeat until pilot ignites. Continue to hold in gas control knob for approximately 10 seconds and then release. Pilot should stay alight.

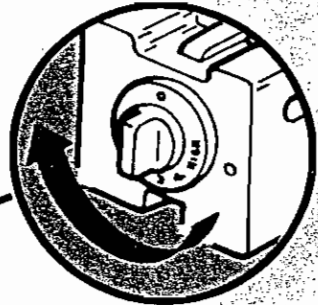
If pilot fails to remain alight, repeat from start of paragraph above.



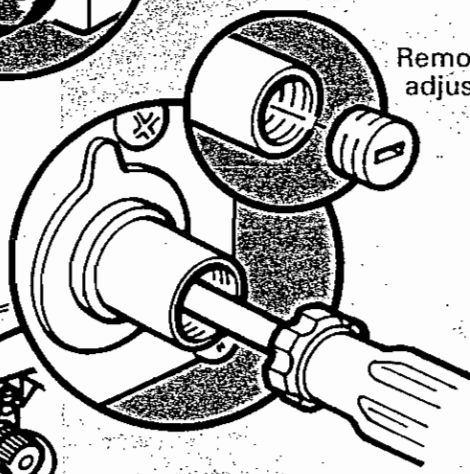


Press in and turn gas control knob fully anticlockwise to ON position marked 

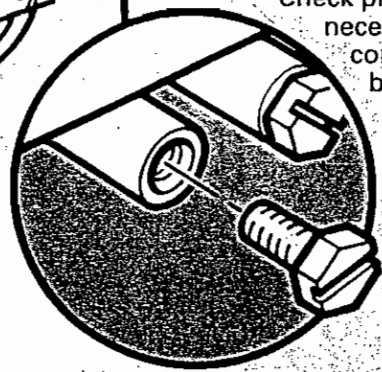
Turn on main electricity supply.



Light main burner by turning thermostat knob to high setting (fully clockwise).



Remove cover screw to adjust governor.



Check pressure after 10 minutes. Adjust if necessary to the relevant figures for the corresponding model shown in the chart below.

Turn boiler thermostat knob to the OFF position marked O. Refit burner pressure test point screw and governor cover screw. Turn boiler thermostat knob to required setting. Make final check for gas soundness of all gas carrying joints on boiler.

| Model |              | Input |        | Setting Pressure |            |
|-------|--------------|-------|--------|------------------|------------|
|       |              | kW    | Btu/h  | mbar             | in wg      |
| 20/4  | Maximum      | 7.51  | 25,640 | 15.2 ± 0.5       | 6.1 ± 0.2  |
|       | Intermediate | 5.71  | 19,483 | 8.8 ± 0.5        | 3.5 ± 0.2  |
|       | Minimum      | 4.24  | 14,475 | 4.8 ± 0.5        | 1.9 ± 0.2  |
| 30/4  | Maximum      | 11.27 | 38,460 | 15.6 ± 0.5       | 6.25 ± 0.2 |
|       | Intermediate | 9.47  | 32,300 | 11.0 ± 0.5       | 4.4 ± 0.2  |
|       | Minimum      | 8.01  | 27,345 | 7.8 ± 0.5        | 3.1 ± 0.2  |
| 40/4  | Maximum      | 15.23 | 51,970 | 15.4 ± 0.5       | 6.2 ± 0.2  |
|       | Intermediate | 13.41 | 45,750 | 12.0 ± 0.5       | 4.8 ± 0.2  |
|       | Minimum      | 11.95 | 40,780 | 9.6 ± 0.5        | 3.9 ± 0.2  |
| 50/4  | Maximum      | 19.10 | 65,000 | 18.2 ± 0.5       | 7.3 ± 0.2  |
|       | Intermediate | 17.30 | 59,200 | 15.6 ± 0.5       | 6.2 ± 0.2  |
|       | Minimum      | 16.00 | 54,600 | 12.9 ± 0.5       | 5.2 ± 0.2  |
| 60/4  | Maximum      | 23.07 | 78,740 | 17.7 ± 0.5       | 7.1 ± 0.2  |
|       | Intermediate | 21.27 | 75,560 | 14.8 ± 0.5       | 5.9 ± 0.2  |
|       | Minimum      | 19.83 | 67,640 | 13.1 ± 0.5       | 5.3 ± 0.2  |

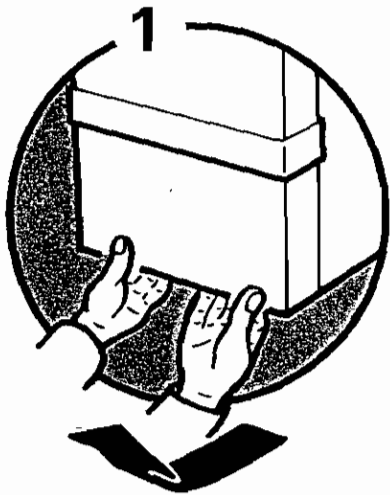
Check operation of flame failure device. Turn gas control knob to pilot position marked \*, main burner will go out. Turn gas control knob to OFF position marked O, control knob cannot be returned to pilot position until ignition restart interlock device in gas valve has disengaged. This takes 60 seconds approximately. Pilot must not be relit for 3 minutes after shut down.

The system should be flushed again when hot and then refilled. Vent radiators, check for water leaks.

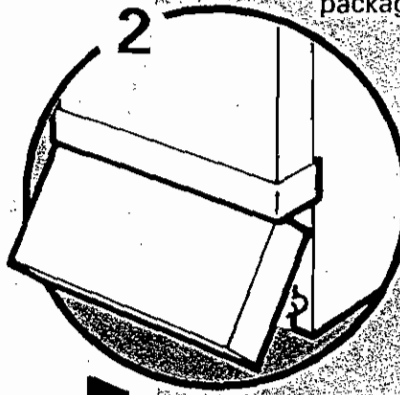
Set pointer on data label to input setting.

Set timer, room thermostat, cylinder thermostat to customer's requirements.

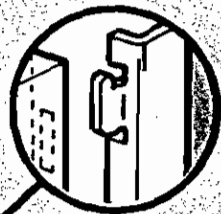
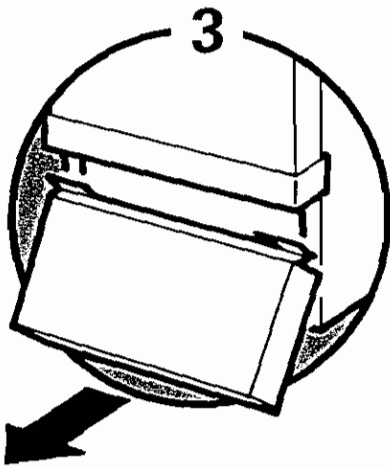
# FITTING THE OUTER CASE



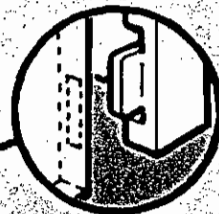
Remove ready assembled outer case from packaging.



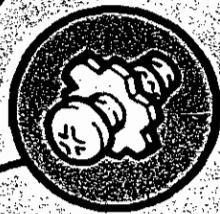
Remove lower door panel following the sequence of diagrams.



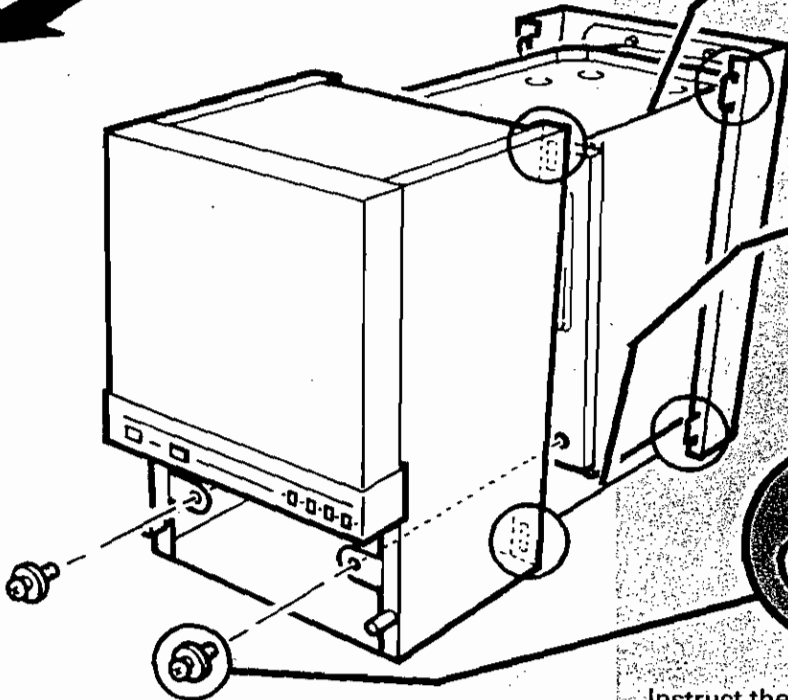
Offer the outer case up to the hooks on the wall mounting plate.



Locate on lower tabs.



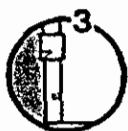
Secure the outer case using the two screw/washer assemblies that are supplied.



Instruct the user in the operation of the boiler. Hand over both the Users and Installation Instructions.



Replace the lower door panel.

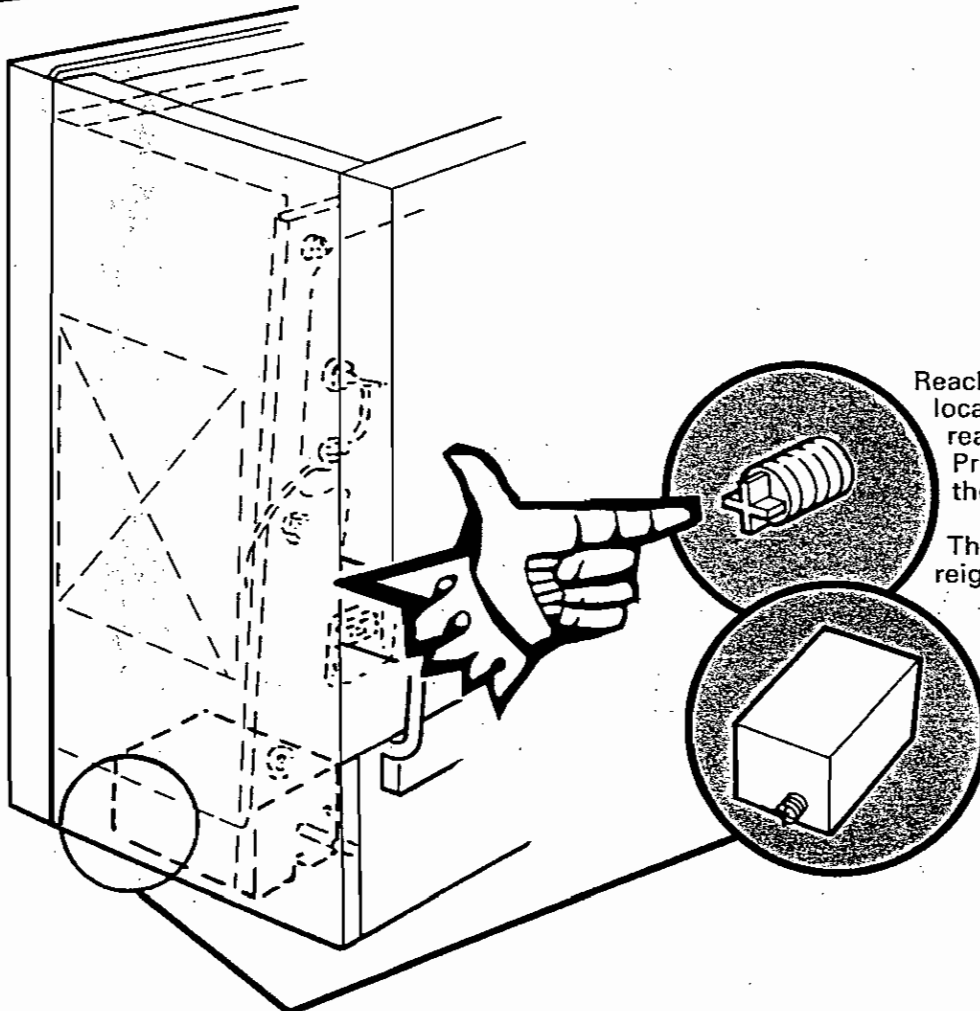
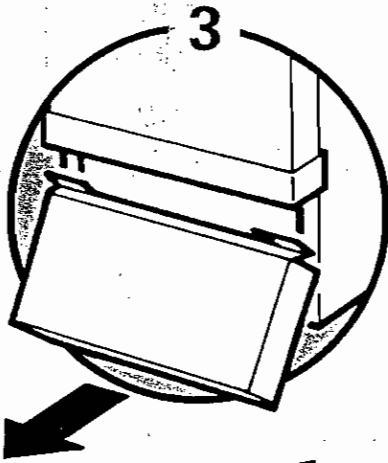
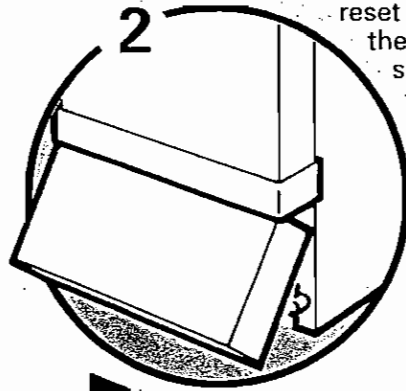
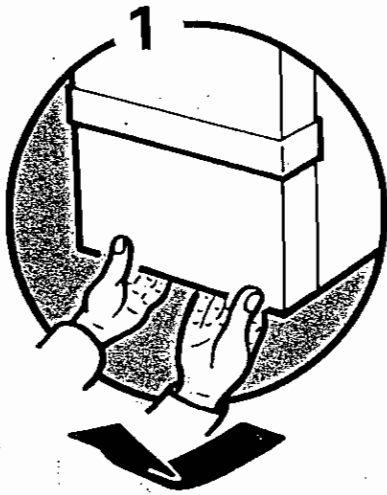


# OVERHEAT CUT-OFF DEVICE

## 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.

Allow the boiler to cool if hot. Remove the lower door panel by following the sequence of diagrams.



Reach into the outer case and locate the reset button at the rear of the control box. Press the button to reset the overheat thermostat.

The boiler must be reignited manually.

# ANNUAL SERVICING

For economy and safety reasons, it is important to service the appliance regularly. **ISOLATE THE ELECTRICAL SUPPLY TO THE BOILER.**

Remove lower door panel following the sequence of diagrams.

To remove the outer case from the boiler, take out two screw/washer assemblies. Pull bottom of the outer case forward and lift to clear lower tabs and hooks on mounting plate. Draw outer case forward and clear of the boiler.

1 Turn off gas supply at the service tap and disconnect the union.

2 Disconnect the electrical plug on the gas valve by pulling forward. Remove wire from clip at front of gas valve.

3 Disconnect the two wires from the overheat thermostat at the spade connections on the valve. Not applicable when boiler fitted on gravity D.H.W.

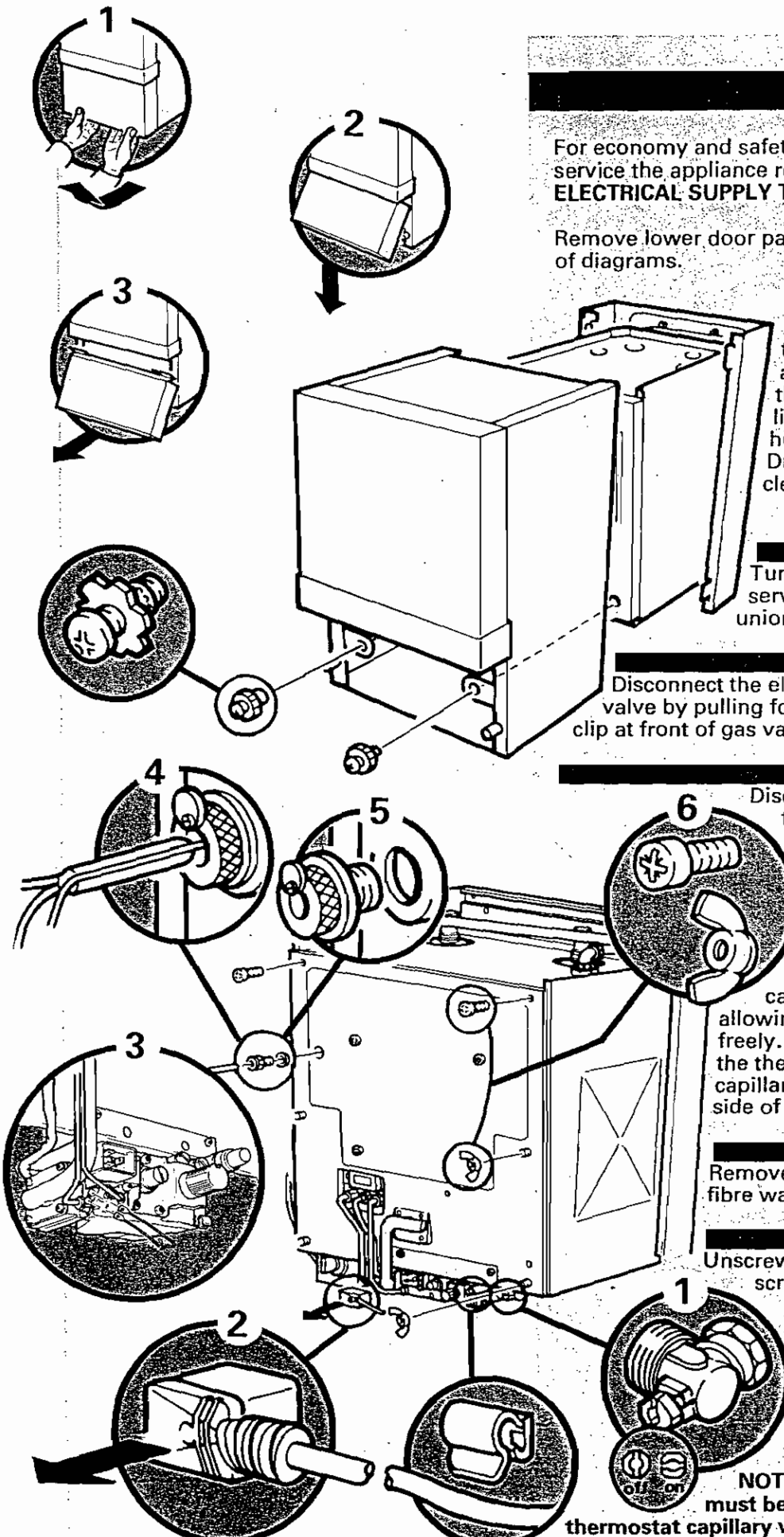
4 Loosen the screw on the capillary retaining washer, allowing the washer to move freely. Remove both phials from the thermostat pocket. Release the capillaries from the clips on the side of the combustion box.

5 Remove brass sealing plug with fibre washer.

6 Unscrew the four wing nuts and two screws.

1 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 Burner/Injector

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

Remove burner by undoing three securing nuts on burner feed pipe flange.

Undo injector and remove from feed pipe. Clean carefully and replace ensuring copper washer is in position.

Check rope seal around the door and replace if necessary.

Reassemble burner to door and feed pipe

## Cleaning the Pilot

Undo securing nuts on ends of supply pipe and remove. Carefully remove pilot injector, examine and clean the injector.

Reassemble pilot in reverse order. Ensure injector is hooked over olive before tightening up.

Pilot Supply Pipe  
at Gas Valve



## Cleaning the Combustion Box

Lift up and withdraw baffle.

Side insulation panels and rear insulation panel should be removed to avoid brush damage.

To remove side panel, remove one screw per panel.

Slide front end of panel down and away from location.

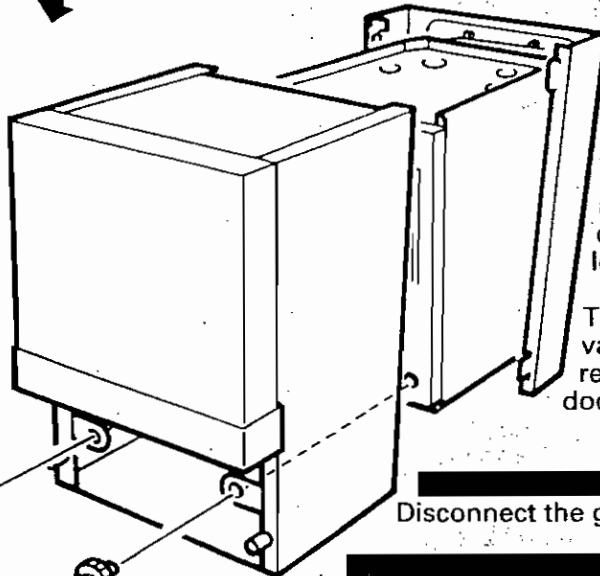
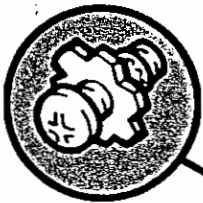
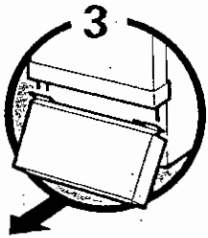
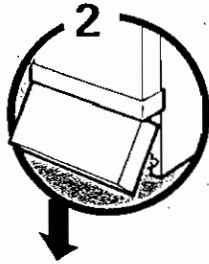
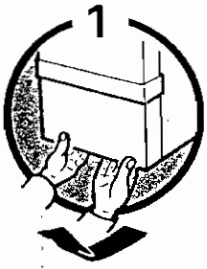
Pull forward to release rear location tab to allow removal of panel.

Undo two securing screws and washers on rear panel. Slide panel downwards to clear heat exchanger and tilt bottom edge forward to remove.

Lay sheet of paper in combustion box to catch debris whilst cleaning. The heat exchanger can now be easily cleaned thoroughly. Remove any obstructions from flue outlet and air inlet. Remove paper, dirt, debris from bottom of combustion box.

Reassemble all components in reverse order. Check burner setting pressure and gas rate. Re-commission the boiler before use, checking for gas soundness and ensuring all controls are working correctly.

# CHANGING COMPONENTS



When changing components ensure that electrical and gas supplies are isolated.

To change piezo igniter, solenoid operator, thermocouple, remove outer case door panel as shown.

To change pilot viewing window, spark electrode, pilot injector and thermostats, remove outer case door panel. Remove outer case from boiler by taking out two screw/washer assemblies. Lift and draw outer case forward to clear location hooks and tabs.

To change burner, injector, gas valve and insulation panels, remove outer case and controls door.

1  
Disconnect the gas union.

2  
Disconnect the electrical plug and cable on the gas valve. Pull clip at front of gas valve forward and ease wire from clip.

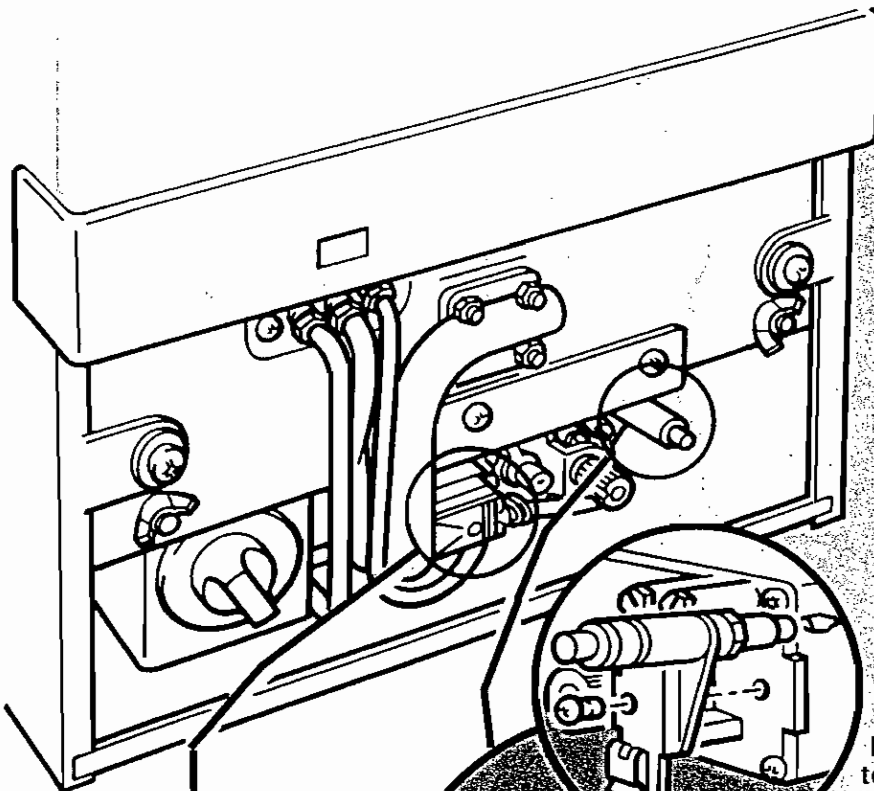
3  
Disconnect the two wires from the overheat thermostat at the spade connections on the valve. Not applicable to boilers converted for use on gravity D.H.W. systems.

4  
Loosen the screw on the capillary retaining washer, allowing the washer to move freely. Remove both phials from the thermostat pocket.

5  
Remove brass sealing plug with fibre washer.

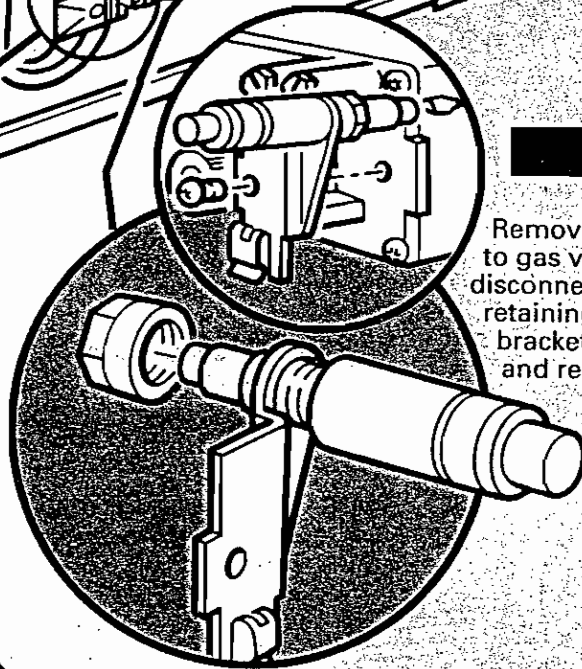
6  
Unscrew the four wing nuts and two screws.

NOTE: In the unlikely event of the heat exchanger casting or the heat exchanger baffle needing replacement, these items may be ordered directly from BAXI, stating the Model N° and the Serial N° of the appliance.



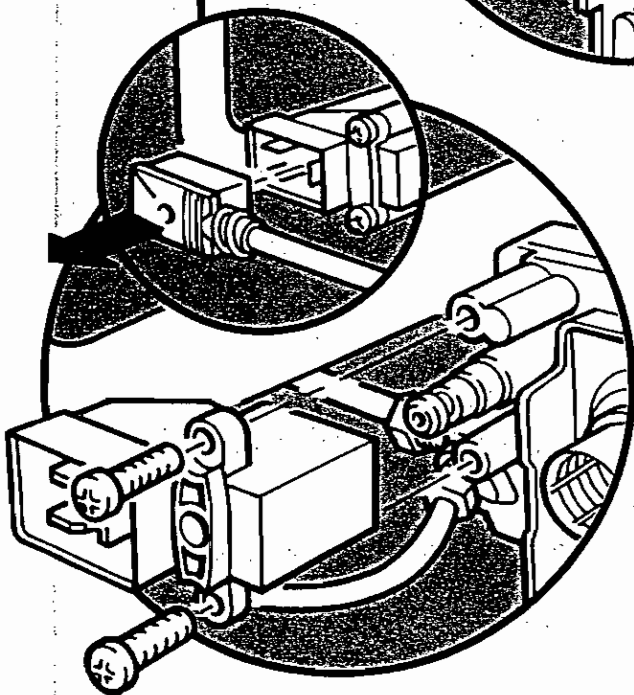
### Piezo Igniter

Remove screw securing piezo unit to gas valve. Withdraw and disconnect electrode lead. Remove retaining nut holding piezo igniter to bracket. Exchange igniter for new and reassemble.

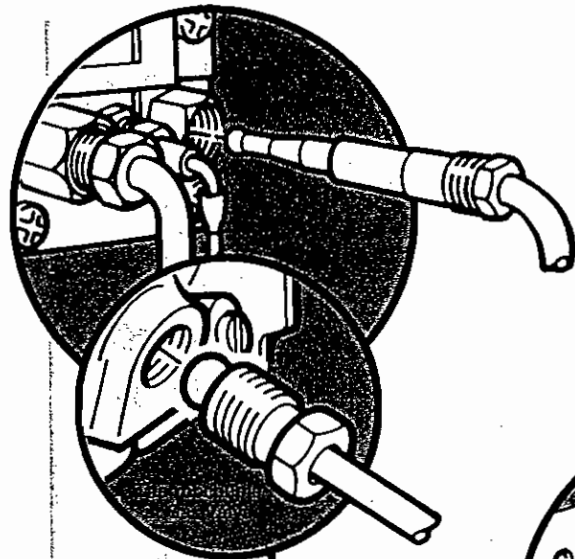


### Solenoid Operator

Ensure electrical supply is isolated. Remove electrical plug by pulling forward. Remove solenoid operator by unscrewing fixing screws. Exchange solenoid for new and reassemble.



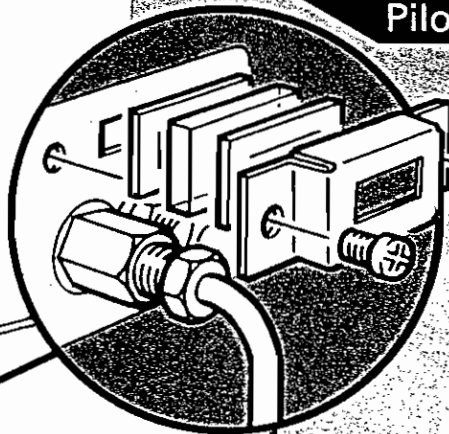




## Thermocouple

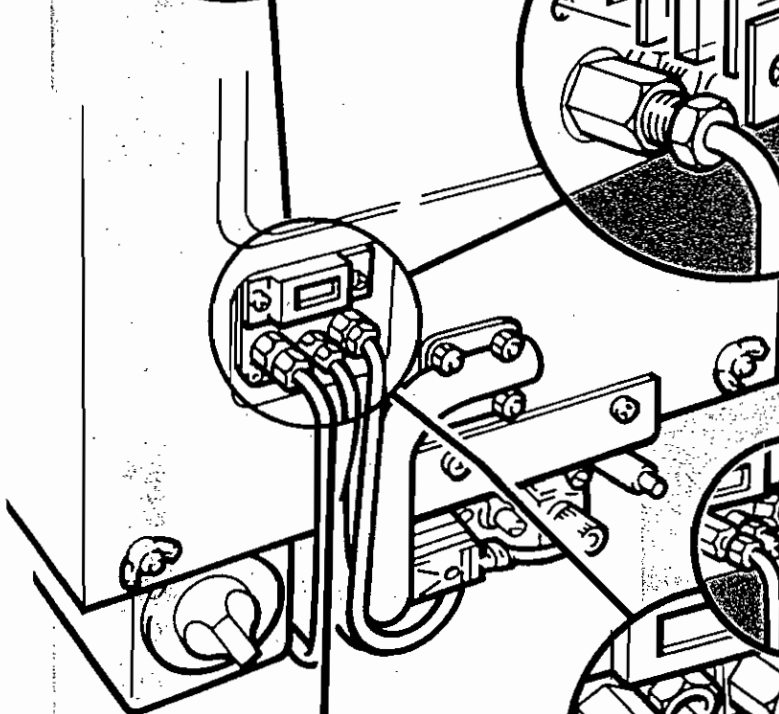
Release nuts holding thermocouple in place. Bend new thermocouple to required shape, fit in place and tighten retaining nuts.

**Caution:** Do not overtighten nuts.

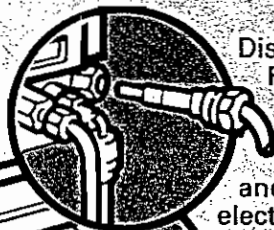


## Pilot Viewing Window

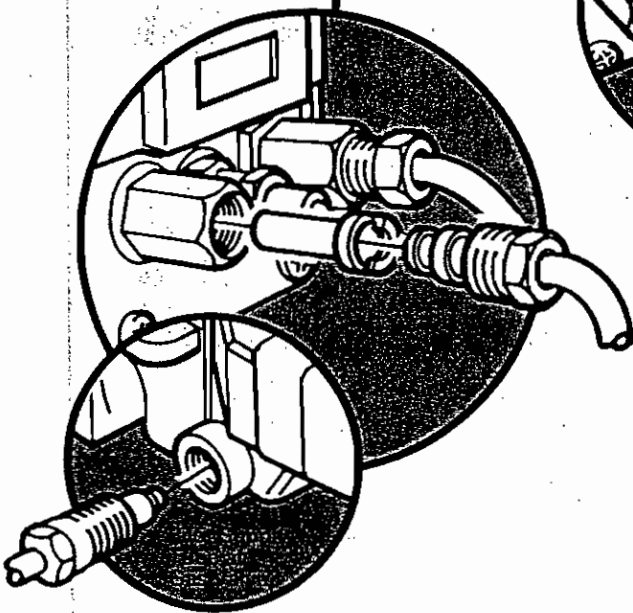
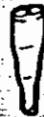
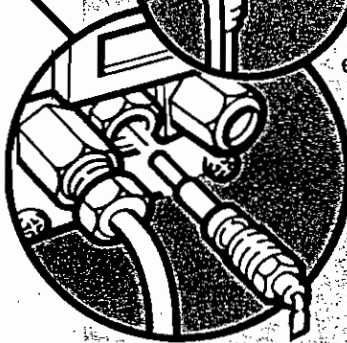
Remove screws holding window assembly in place. Discard old assembly. Fit new assembly, ensure gaskets are in correct position as shown.



## Spark Electrode



Disconnect lead at electrode. Release nut holding thermocouple to pilot bracket, free thermocouple. Release nut on electrode and remove. Refit new electrode, ensuring end connector is pointing vertically down. Do not overtighten nut. Reassemble thermocouple.



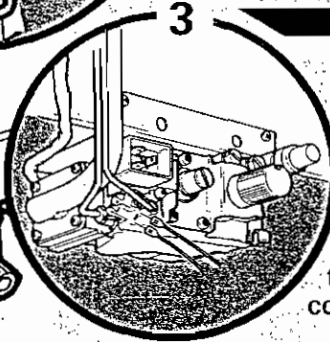
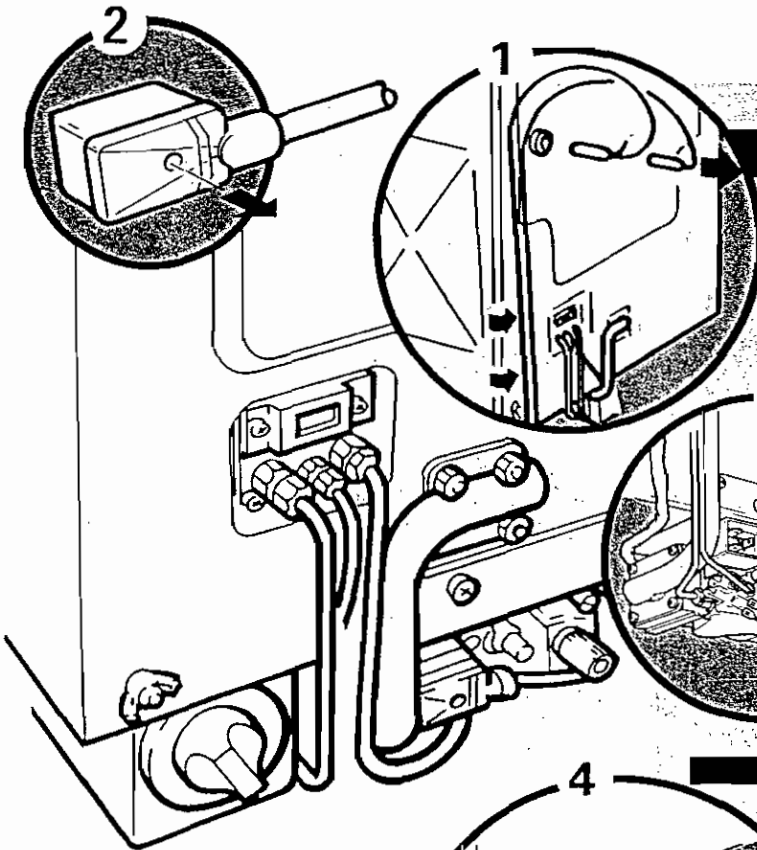
## Pilot Injector

Disconnect nuts on pilot supply tube and remove. Extract injector. Fit new injector and reassemble. Ensure injector is hooked over olive before tightening up.

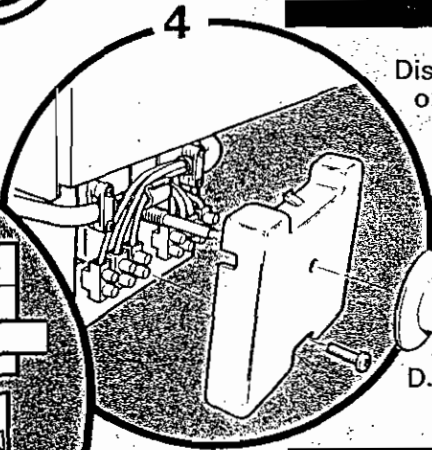
## Thermostats

**CHECK ELECTRICAL SUPPLY IS ISOLATED.**

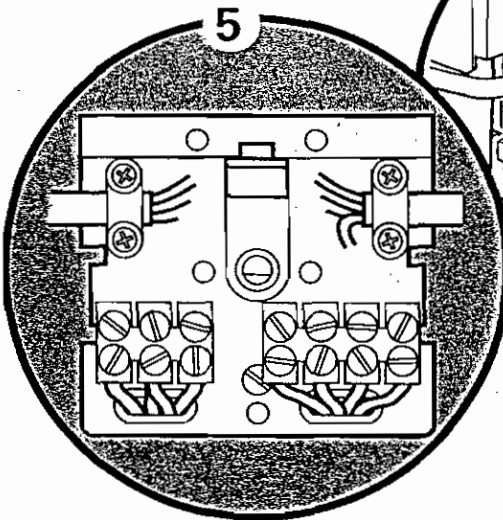
To change either the main thermostat or  
overheat thermostat proceed as follows:



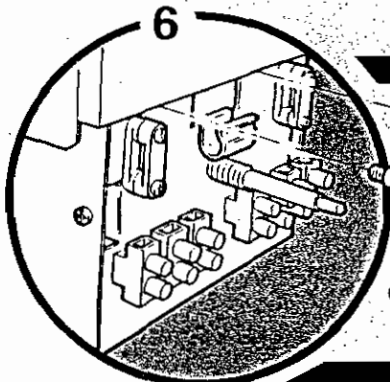
Loosen the screw on the  
capillary retaining washer,  
allowing the washer to move  
freely. Withdraw both  
thermostat phials from the  
thermostat pocket. Free the  
capillaries from the clips on  
the left hand side of the  
combustion box.



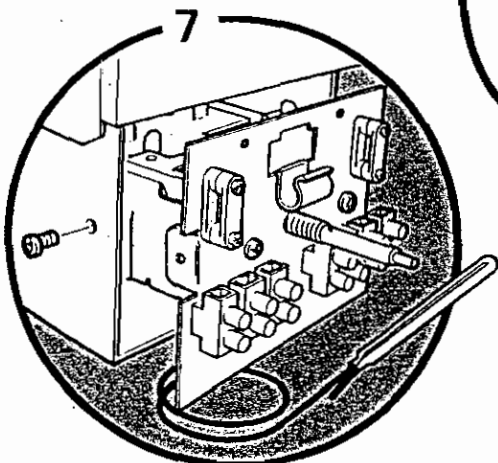
Disconnect the electrical plug and cable  
on the gas valve.



Disconnect the overheat thermostat  
leads from the control valve  
spade connections. Not  
applicable where the boiler has  
been converted for use with gravity  
D.H.W.

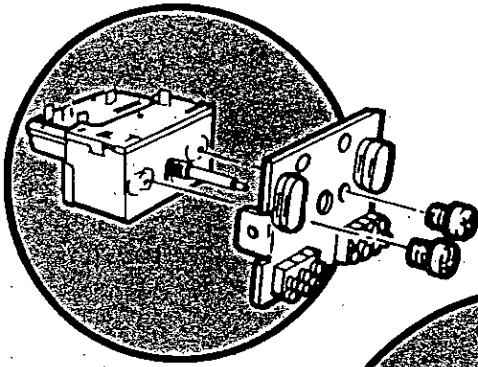


Carefully pull off the thermostat knob. Release the  
screw securing the electrical box cover, remove  
cover.



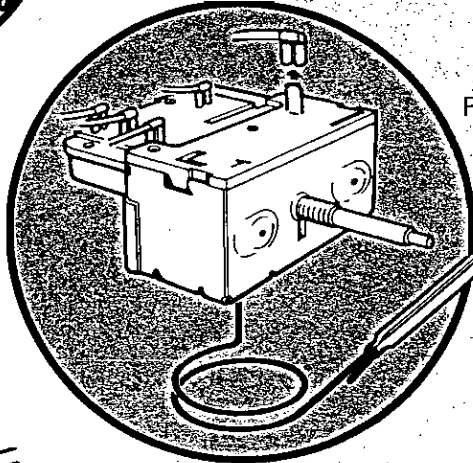
Unfasten the screws holding the thermostat to its  
bracket on the boiler combustion box. The  
thermostat box is now free of the boiler.

Remove the rear part of the thermostat box by  
removing the screws at the side.



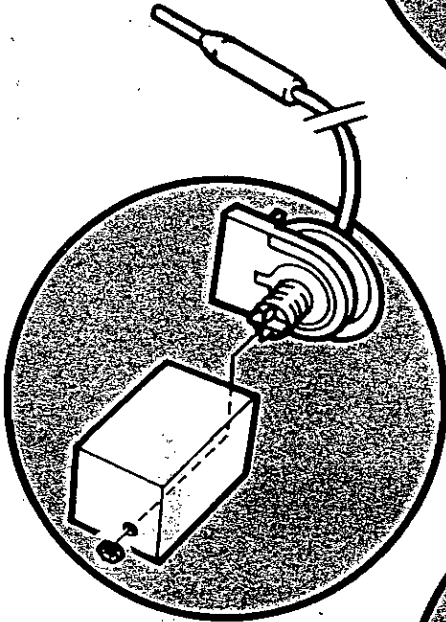
## Main Thermostat

Release the screws securing the main boiler thermostat to the mounting plate.



Pull off the spade connectors from the rear of the thermostat, taking note of their orientation.

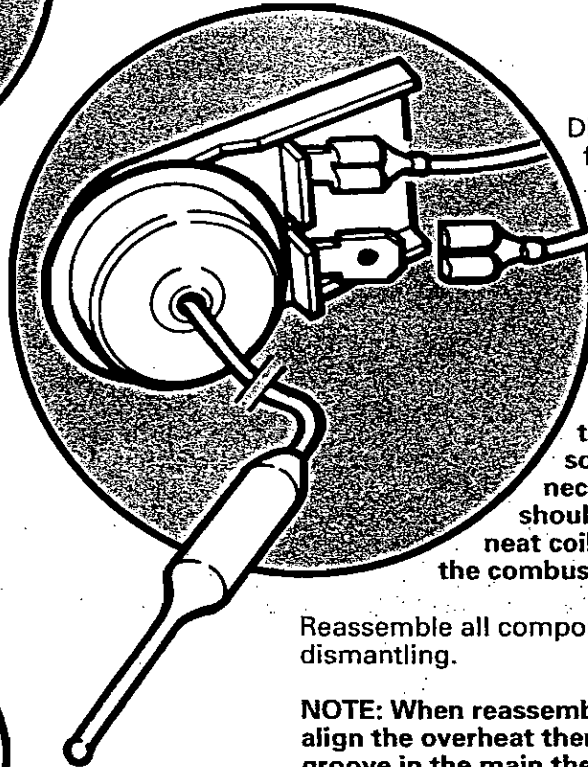
Fit the new thermostat to the mounting plate and reconnect the spade connectors to the appropriate terminals.



## Overheat Thermostat

**NOTE:** On boilers converted for use with gravity D.H.W., the overheat thermostat will have been rendered inoperable and will never need changing.

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



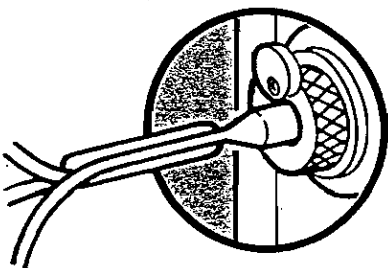
Disconnect the two wires from the overheat thermostat and refit them to the new component.

Fix the new overheat thermostat in position in the control box and lock in place with the locknut.

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

Reassemble all components in the reverse order to dismantling.

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



## Burner and Injector

Remove nuts fixing burner to control door and burner feed pipe. Remove burner.

At this stage if required, injector may be changed.

Unscrew injector from burner pipe. Fit new injector ensuring copper washer is in position.

Fit new burner and reassemble in reverse order.

## Gas Valve

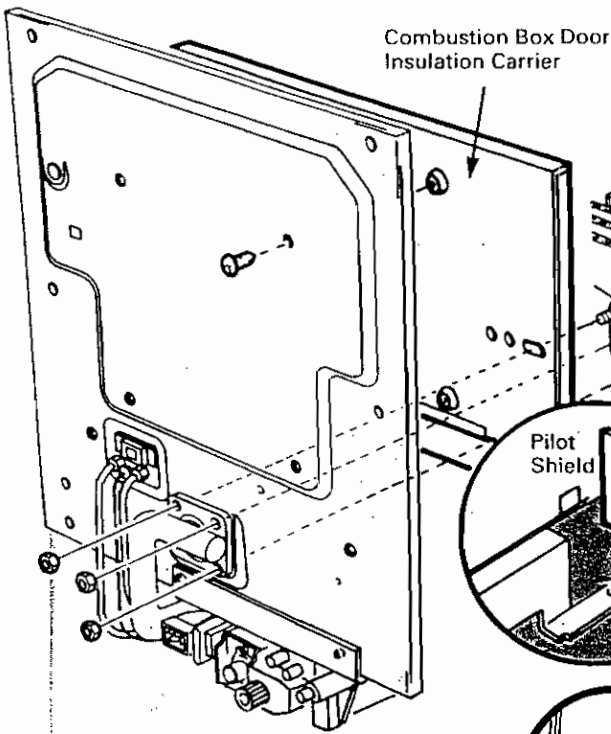
Unscrew and remove piezo igniter assembly. Release fixing nuts on pilot feed pipe and thermocouple at gas valve.

**NOTE:** On boilers operating on fully pumped or sealed systems it will be necessary to disconnect the two black wires from the overheat thermostat.

Remove screws holding burner feed pipe to gas valve. Remove screws on gas valve inlet support bracket. Remove gas valve.

Fit new gas valve and reassemble using the "O" ring from the original valve, if however the "O" ring has become damaged or worn, please quote Manufacturers Part No 112082 for replacement.

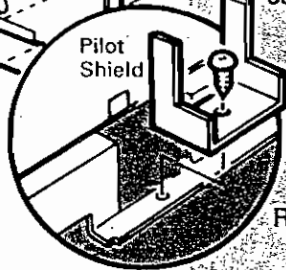




## Insulation Panels

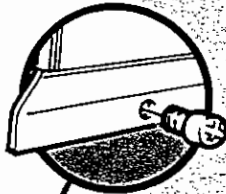
To remove combustion box door insulation, remove burner by undoing three securing nuts on burner feed pipe flange.

Remove four screws holding insulation carrier assembly in place.

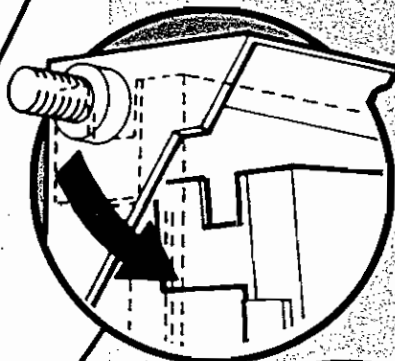


Remove pilot shield by releasing screw holding it in place. Fit pilot shield to new insulation carrier assembly.

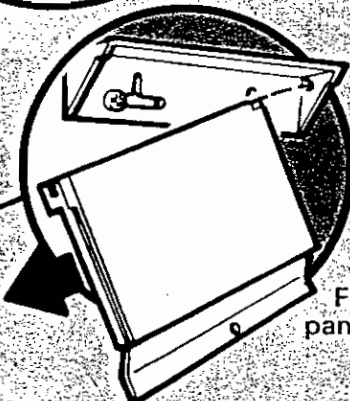
Reassemble components in reverse order.



To remove side insulation panels, remove fixing screws.

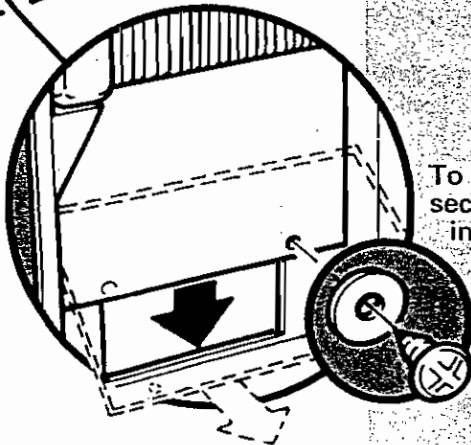


Ease front end of panel down and away from location.



Pull forward to release rear location tab to allow removal of panel.

Fit new side insulation panel in reverse order.



To remove rear insulation panel, unfasten two securing screws and washers. Slide rear insulation panel downwards and tilt bottom edge forward to remove. Fit new rear insulation panel.

# FAULT FINDING

## Gas Leak

### SYMPTOM

Gas leak at joint on valve body on soap solution test.

### POSSIBLE CAUSES

Loose screws at joints or fittings - defective "O" ring - damaged valve casting at joint - defective burner feed pipe.

## Burner

### SYMPTOM

Pilot on but burner will not ignite.

Pilot established and main burner will ignite but system liable to nuisance shut-down.

Main burner will not shut down in response to external controls.

Main burner pressure incorrect.

### POSSIBLE CAUSES

External controls or boiler thermostat not calling for heat - blown fuse - defective power supply or external controls - governor stuck in closed position - solenoid open circuited (test for continuity at solenoid terminals) - main injector blocked - **gas valve control knob not in correct position.**

Dirty or loose thermocouple connections - defective thermocouple - defective flame safety magnet - **incorrect or faulty wiring.**

Short circuit in external controls or wiring - defective solenoid - faulty boiler thermostat.

Governor screw requires adjustment - (after adjustment recheck pressure).

## Overheat Thermostat

### SYMPTOM

Overheat cut-off device operates repeatedly.

Overheat thermostat reset but boiler cannot be reignited.

### POSSIBLE CAUSES

System temperature higher than design temperature - main thermostat faulty - overheat thermostat faulty - central heating pump not functioning correctly.

Thermocouple damaged - connections between thermocouple and overheat thermostat faulty or poor - overheat thermostat faulty.

## Pilot

### SYMPTOM

Pilot will not light.

Pilot established when gas control knob released but pilot flame does not fully envelop the thermocouple.

Pilot gas lights but goes out when gas control knob is released.

Main burner will ignite but flame is immediately extinguished.

### POSSIBLE CAUSES

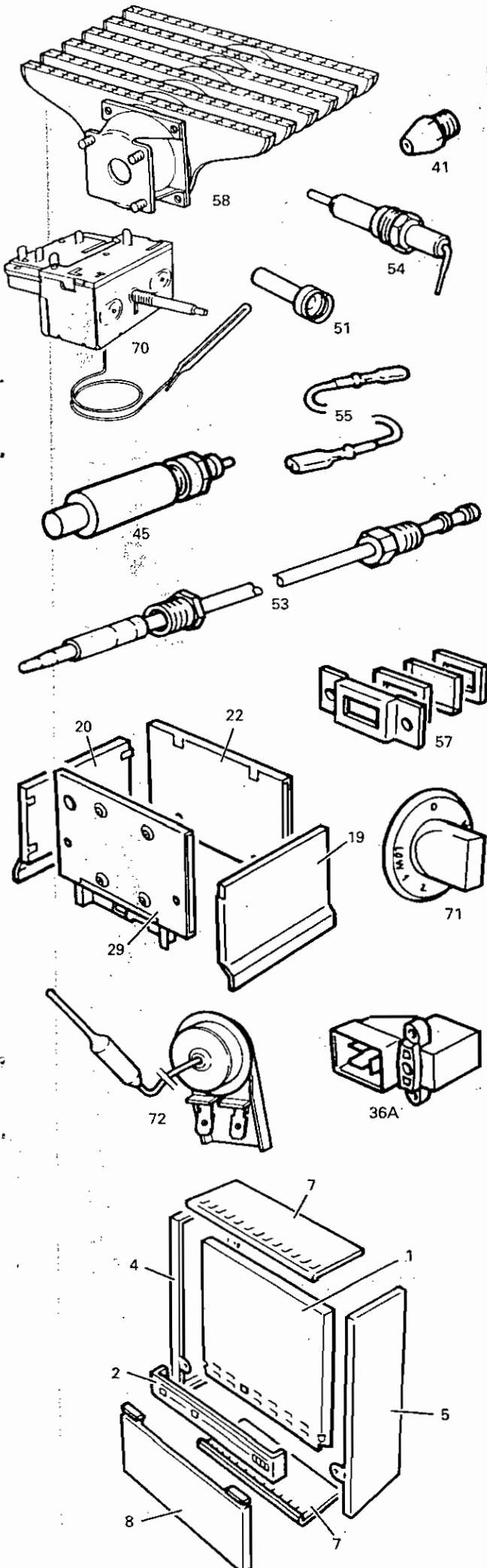
Main gas tap off - ignition restart interlock is still engaged - gas control knob not fully depressed - pilot feed not purged of air - pilot feed blocked - pilot injector blocked - electrode lead ignitor faulty - **gas valve control knob not in correct position.**

Incorrect or faulty pilot injector fitted - pilot injector partially blocked.

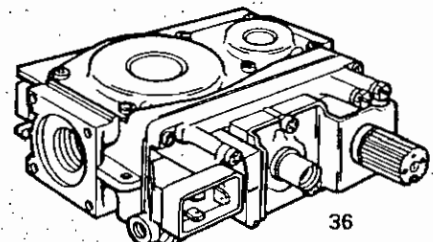
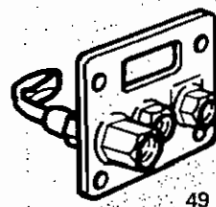
Gas control knob released too soon - dirty or loose thermocouple - defective thermocouple flame failure safety magnet - overheat cut-off device activated.

Incorrect pilot injector for type of gas - gas supply too small or restricted - adverse wind conditions - incorrectly fitted terminal.

# SHORT PARTS LIST



| Key N° | Description              | Model      | G.C. N° | Manuf'rs Part N° |
|--------|--------------------------|------------|---------|------------------|
| 1      | Panel Front              | 20/4-30/4  | 364 641 | 225306           |
|        |                          | 40/4       | 364 700 | 225314           |
|        |                          | 50/4       | 364 754 | 225319           |
|        |                          | 60/4       | 364 775 | 225324           |
| 2      | Trim Facia Assy          | 20/4-30/4  | 364 686 | 225859           |
|        |                          | 40/4       | 364 701 | 225860           |
|        |                          | 50/4       | 364 755 | 225861           |
|        |                          | 60/4       | 364 816 | 225862           |
| 4      | Panel Side Assy LH       | All models | 364 643 | 225302           |
| 5      | Panel Side Assy RH       | All models | 364 644 | 225304           |
| 7      | Panel Top & Bottom       | 20/4-30/4  | 364 646 | 224137           |
|        |                          | 40/4       | 364 584 | 224139           |
|        |                          | 50/4       | 364 756 | 224140           |
|        |                          | 60/4       | 364 817 | 225866           |
| 8      | Panel Door Lower Assy    | 20/4-30/4  | 364 647 | 225863           |
|        |                          | 40/4       | 364 702 | 225864           |
|        |                          | 50/4       | 364 757 | 225865           |
|        |                          | 60/4       | 364 817 | 225866           |
| 19     | Insulation Side Assy RH  | All models | 364 655 | 226527           |
| 20     | Insulation Side Assy LH  | 20/4-30/4  | 364 656 | 226529           |
|        |                          | 40/4-50/4  | 364 706 | 226528           |
|        |                          | 60/4       | 364 706 | 226528           |
| 22     | Insulation Rear Assy     | 20/4-30/4  | 364 658 | 226537           |
|        |                          | 40/4       | 364 712 | 226532           |
|        |                          | 50/4       | 364 762 | 226535           |
|        |                          | 60/4       | 364 821 | 226534           |
|        |                          | 60/4       | 364 821 | 226534           |
| 29     | Insulation Door Assy     | 20/4-30/4  | 364 661 | 226533           |
|        |                          | 40/4       | 364 712 | 226532           |
|        |                          | 50/4       | 364 764 | 226531           |
|        |                          | 60/4       | 364 824 | 226530           |
|        |                          | 60/4       | 364 824 | 226530           |
| 36     | Valve Control SIT        | All models | 381 627 | 225533           |
| 36A    | Solenoid                 | All models | 364 835 | 226669           |
| 41     | Injector Boiler          | 20/4       | 386 637 | 225820           |
|        |                          | 30/4       | 386 628 | 225821           |
|        |                          | 40/4       | 386 625 | 225822           |
|        |                          | 50/4       | 386 632 | 225823           |
|        |                          | 60/4       | 386 638 | 225824           |
| 45     | Kit Piezo Igniter        | All models | 364 684 | 226113           |
| 49     | Burner Pilot             | All models | 386 626 | 223981           |
| 51     | Injector Pilot           | All models | 392 935 | 225492           |
| 53     | Thermocouple             | All models | 386 635 | 225496           |
| 54     | Electrode Pilot Ignition | All models | 386 627 | 225498           |
| 55     | Lead Electrode           | All models | 364 745 | 225826           |
| 57     | Kit Window Viewing       | All models | 364 719 | 226114           |
| 58     | Burner Boiler            | 20/4-30/4  | 364 575 | 223906           |
|        |                          | 40/4       | 364 576 | 225831           |
|        |                          | 50/4-60/4  | 364 577 | 225832           |
| 70     | Thermostat Boiler        | All models | 397 874 | 227786           |
| 71     | Knob Thermostat          | All models | 364 685 | 226821           |
| 72     | Thermostat Overheat      | All models | 397 875 | 227799           |



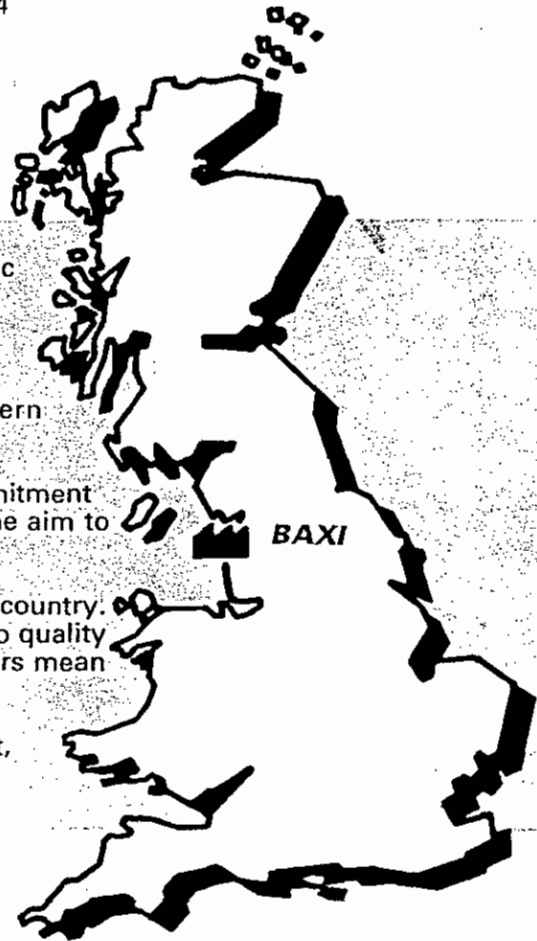
Baxi is one of the leading manufacturers of domestic heating products in the U.K.

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

BAXI manufacture a comprehensive range of products for the domestic heating market

**Gas Central Heating Boilers**  
(Wall, Floor and Fireside models).

**Independent Gas Fires.**

**Renewal Firefronts.**

**Gas Wall Heaters.**

**Solid Fuel Fires**

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



Brownedge Road Bamber Bridge Preston Lancashire PR5 6SN  
Main Switchboard 0772 695555, Order Office 0772 695454.  
Literature Office 0772 695500, Technical Enquiries 0772 695504