

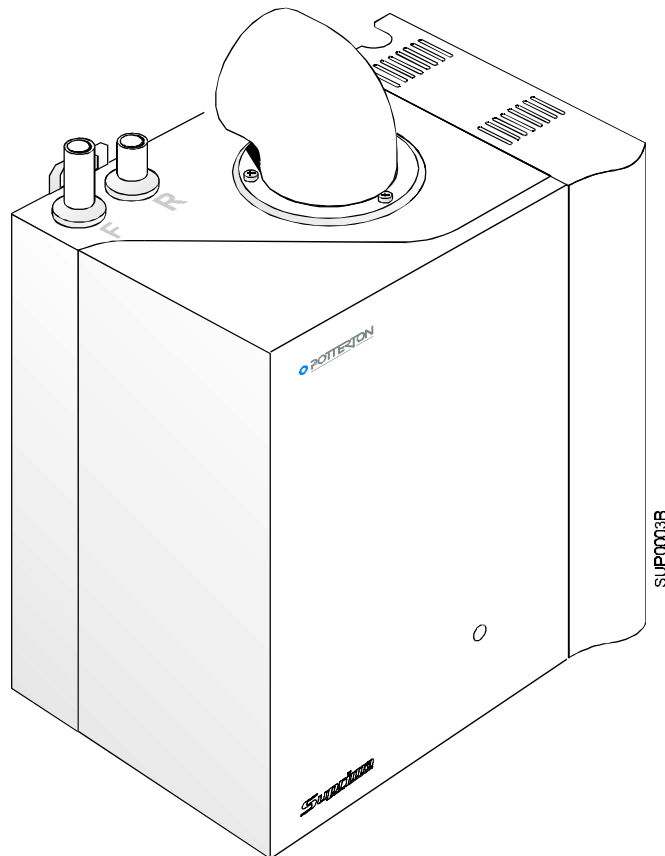


See inside cover for models covered by these instructions

## Installation & Service Instructions

### Suprema 30 - 80

#### Wall Mounted Fan Assisted Balanced Flue Gas Boilers



#### THE GAS SAFETY (INSTALLATION AND USE) REGULATIONS 1994. (as amended)

“ In your own interest, and that of safety, it is law that all gas appliances are installed by competent persons, in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution.”

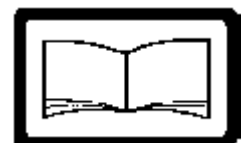
Installation must be in accordance with the Installation & Service Instructions and the rules in force.

#### LEAVE THESE INSTRUCTIONS WITH THE USER FOR USE ON FUTURE CALLS

**For Use With Natural Gas  
(G20) Only At 20mbar  
For Use in GB & IE**



**IMPORTANT**  
PLEASE READ THIS BOOK  
BEFORE INSTALLING,  
OPERATING OR SERVICING  
THIS BOILER.



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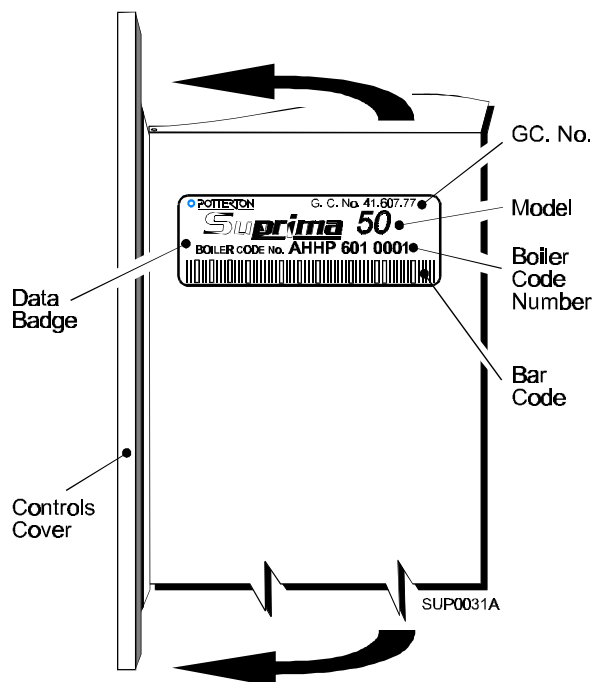
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The models covered by these instructions are:-

Suprema 30 - G.C. No. 41 607 75  
Suprema 40 - G.C. No. 41 607 76  
Suprema 50 - G.C. No. 41 607 77  
Suprema 60 - G.C. No. 41 607 78  
Suprema 70 - G.C. No. 41 607 79  
Suprema 80 - G.C. No. 41 607 80

The boiler model and serial number are given on the boiler data label which is located on the right hand side of the chassis and visible after opening the controls door.

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## Technical Data - Page 3

### Nominal Boiler Ratings

Boiler models	Output		Input		Burner setting pressure		Gas Rate		Injector Size
	kW	Btu/h	kW	Btu/h	mbar	in wg	m³/h	ft³/h	mm dia.
30	5.5	19 000	7.3	25 000	4.1	1.65	0.70	24.7	2.8
	8.8	30 000	11.0	37 500	9.3	3.70	1.05	37.1	
40	8.5	29 000	11.0	37 500	6.1	2.45	1.05	37.1	3.1
	11.7	40 000	14.7	50 000	11.2	4.50	1.40	49.3	
50	11.4	39 000	14.8	50 500	6.7	2.65	1.42	50.1	3.5
	14.7	50 000	18.3	62 500	10.3	4.10	1.75	61.8	
60	14.4	49 000	18.6	63 500	8.6	3.45	1.78	62.9	3.7
	17.6	60 000	22.0	75 000	12.2	4.90	2.10	74.2	
70	17.3	59 000	22.0	75 000	9.6	3.85	2.10	74.2	3.9
	20.5	70 000	25.6	87 500	13.4	5.35	2.45	86.4	
80	20.1	68 500	25.6	87 500	10.7	4.28	2.45	86.4	4.1
	23.4	80 000	29.3	100 000	13.9	5.56	2.80	98.7	

Maximum Working Head	30.5m (100 ft)
Minimum Working Head	150mm (6 in)
Gas Supply Pressure	20mbar
Gas Supply Connection	Rc. ½ (½ in BSP Female)
Maximum Flow Temperature	82°C
Flow/Return Connections	22 mm Copper
Water Content	1.6 litres (0.37 gal) - 30, 40, 50 & 60 Models 2.1 litres (0.46 gal) - 70 & 80 Model
Appliance Lift Weight	26.0 kg (57.3 lbs) - 30, 40, 50 & 60 Models 30.2 kg (66.6 lbs) - 70 & 80 Model
Appliance Weight Installed - Dry	32.0 kg (70.0 lbs) - 30, 40, 50 & 60 Models 35.4 kg (78.1 lbs) - 70 & 80 Model
Electricity Supply	230v ~ 50Hz Fused at 3A
Internal Fuse	Type 3.15AT
Power Consumption	80 watts (excluding pump)
Classifications	CAT 12H C12, C32 & C71 (C71 30 - 60 models only) IP20

#### SAFETY, PERFORMANCE & QUALITY

Suprima boilers have been assessed by a Government appointed Notified Body and shown to meet the 'Essential Requirements' of the European Gas Appliance Directive.

The Directive lays down requirements for the safety and efficiency of the appliance, together with its design, construction, and use of materials.

It also requires the production process to be covered by an approved and monitored system of quality assurance.

## Introduction - Page 4

### **Gas Safety (Installation & Use) Regulations 1994 (As Amended).**

This appliance must be installed and serviced by a competent person, in accordance with the above regulations.

In the UK 'Corgi' Registered Installers (including the regions of British Gas Plc) undertake to work to a safe and satisfactory standard.

Failure to install appliances correctly could lead to prosecution.

It is in your own interest, and that of safety, to ensure that the regulations are complied with.

Suprima boilers are fully automatically controlled, wall mounted, fan powered, balanced flue appliances using a cast iron heat exchanger and are available in outputs ranging from 5.5 - 23.4 kW (19,000 - 80,000 Btu/h)

The boilers are designed for use on fully pumped open vented or sealed water systems with an indirect hot water cylinder.

THEY MUST NOT BE CONNECTED TO A DIRECT CYLINDER.

The boilers are for use on Natural Gas (G20) only.

Samples of the Potterton Suprima gas boilers have been examined by British Gas Plc, a United Kingdom Notified Body. The range is certified to comply with the essential requirements of the Gas Appliance Directive 90/396/EEC, the Low Voltage Directive 72/23/EEC and shows compliance with the Electro Magnetic Compatibility Directive 89/336/EEC and are therefore permitted to carry the CE Mark.

### **Delivery & Kits Available**

The unit is delivered in two packages (1) the boiler with fittings and (2) the flue/terminal assembly. See pages 12 & 13 for flue options.

Various kits are available for the Suprima range of boilers, see pages 14 & 15.

## 1. Installation Requirements - Page 4

### **1.1 Health and Safety Information for the Installer and Service Engineer**

Under the Consumer Protection Act 1987 and Section 6 of the Health and Safety at Work Act 1974, we are required to provide information on substances hazardous to health.

Small quantities of adhesives and sealants used in the product are cured and present no known hazards.

The following substances are also present.

#### **Insulation and Seals**

**Material** - Man Made Mineral Fibre.

**Description** - Boards, Ropes, Gaskets.

**Known Hazards** - Some people can suffer reddening and itching of the skin. Fibre entry into the eye will cause foreign body irritation which can cause severe irritation to people wearing contact lenses. Irritation to respiratory tract.

**Precautions** - Dust goggles will protect eyes. People with a history of skin complaints may be particularly susceptible to irritation. High dust levels are only likely to arise following **harsh** abrasion. In general, normal handling and use will not present high risk, follow good hygiene practices, wash hands before, touching eyes, consuming food, drinking or using the toilet.

**First Aid** - Medical attention must be sought following eye contact or prolonged reddening of the skin.

### **1.2 Codes of Practice**

The boiler must be installed in accordance with: The Gas Safety (Installation and Use) Regulations 1994 (As Amended) and the current issue of:-

The Building Regulations, Building Standards (Scotland) Regulations, Local Building Regulations, Model and local Water Undertaking Bye-laws, IEE Wiring Regulations and Health & Safety Document No. 635 "The Electrician At Work Regulations 1989".

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### 1.3 Gas Supply

The meter and supply pipes must be capable of delivering this quantity of gas in addition to the demand from any other appliances in the house and must be governed at the meter.

The complete installation must be tested for gas soundness and purged as described in BS6891.

### 1.4 Electricity Supply

230V ~ 50Hz via a fused double pole switch with a contact separation of at least 3 mm in both poles adjacent to the boiler. Power consumption is approximately 150W. There must be only one common isolator for the boiler and its control system and it must provide complete electrical isolation.

Fuse the supply at 3 A. The minimum requirement for the power supply cable is that it should be a PVC sheathed cord at least 0.75 mm<sup>2</sup> (24 x 0.2 mm) (code designation HO5 VV-F or HO5 VVH2-F) as specified in table 16 of BS6500:1984.

All wiring external to the boiler shall comply with the latest IEE Wiring Regulations, and any local regulations which apply.

#### **WARNING: THIS APPLIANCE MUST BE EARTHED.**

In the event of an electrical fault after installation of the boiler, preliminary electrical systems checks must be carried out i.e. Earth Continuity, Short Circuit, Polarity and Resistance to Earth.

### 1.5 Location of Boiler

The boiler is not suitable for external installation unless it is suitably protected.

If the sealed system kit (Part No. 238027) is being used, this should be installed first. See instructions supplied with kit.

The boiler must be installed so that the flue terminal is exposed to the external air. It is important that the position of the terminal allows the free passage of air across it at all times.

The boiler must be mounted on a flat wall which is sufficiently robust to take the weight of the boiler.

The boiler is suitable for installation to a combustible wall e.g. wood cladding, provided that the flue duct is not closer than 25 mm to combustible material. A metal sleeve should be installed to surround the flue duct to provide a 25mm annular space. Further guidance is given in BS5440:1:1990, sub-clauses 3.3 and 4.2.5.

If the boiler is to be installed in a timber framed building it should be fitted in accordance with the British Gas publication- Part 19 - Building and Kitchen Work. If in doubt advice must be sought from Potterton Myson.

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

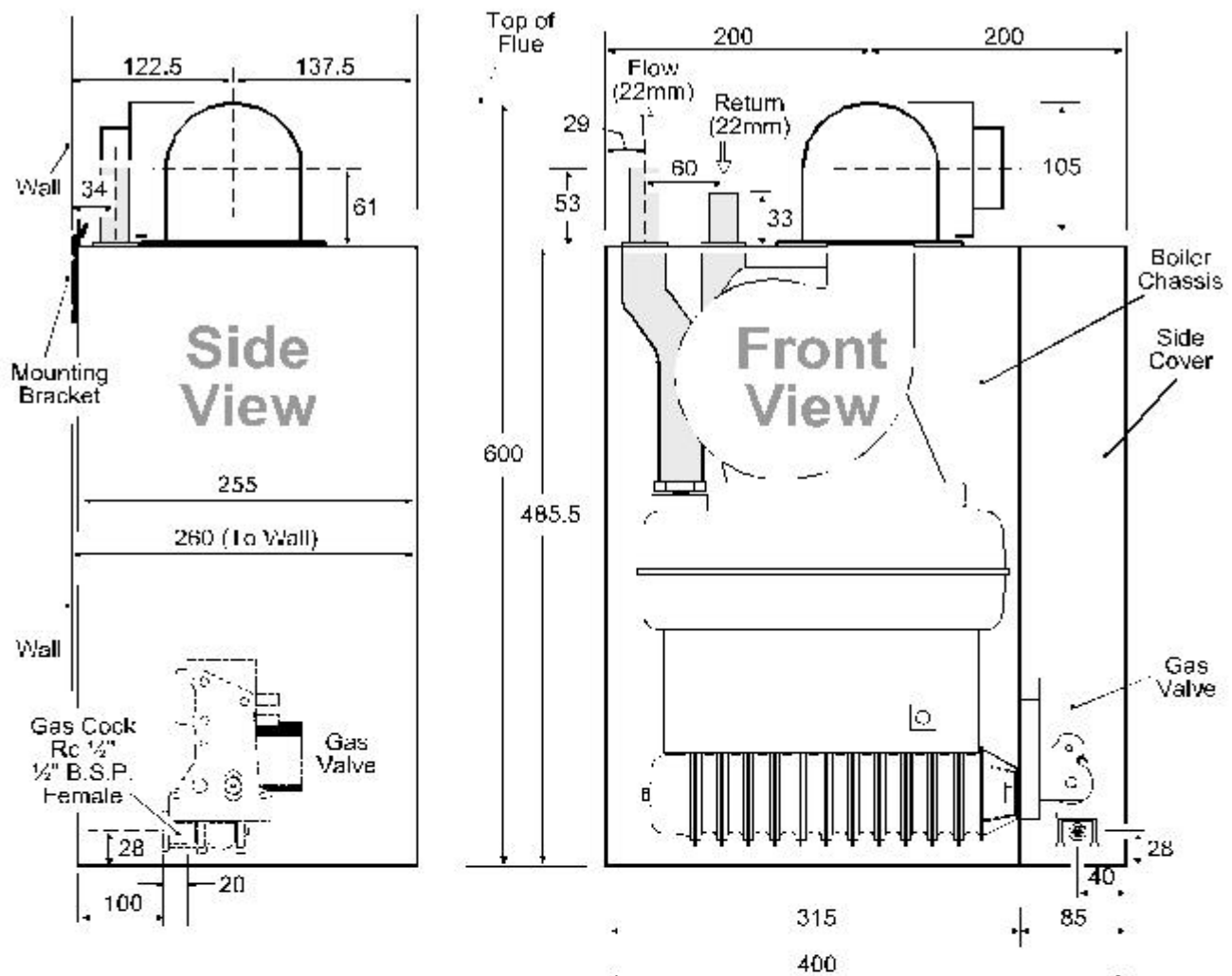
Where a room-sealed appliance is installed in a room containing a bath or shower, any electrical switch or appliance control, utilising mains electricity should be so situated that it cannot be touched by a person using the bath or shower.

Where the installation of the boiler will be in an unusual position, special procedures may be necessary and BS6798 and BS5546 give detailed guidance on this aspect.

A cupboard or compartment used to enclose the boiler must be designed and constructed specifically for this purpose. An existing cupboard or compartment may be used provided that it is modified for the purpose. Details of essential features of cupboard/compartment design including airing cupboard installations are given in BS6798 and BS5546 and should be complied with.

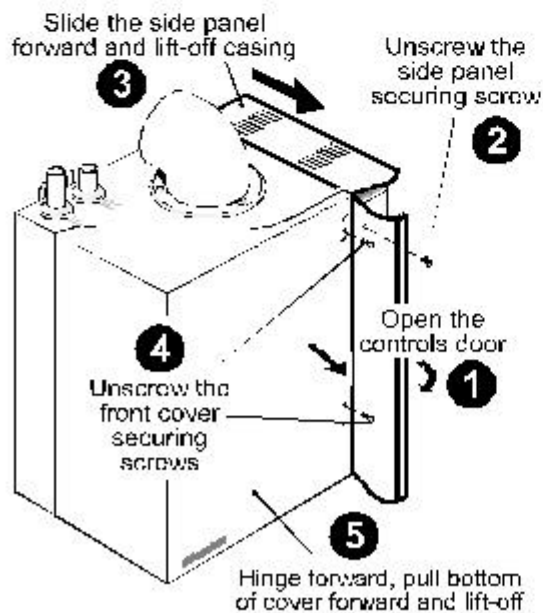
The boiler requires only the clearances shown on Page 6, after installation.

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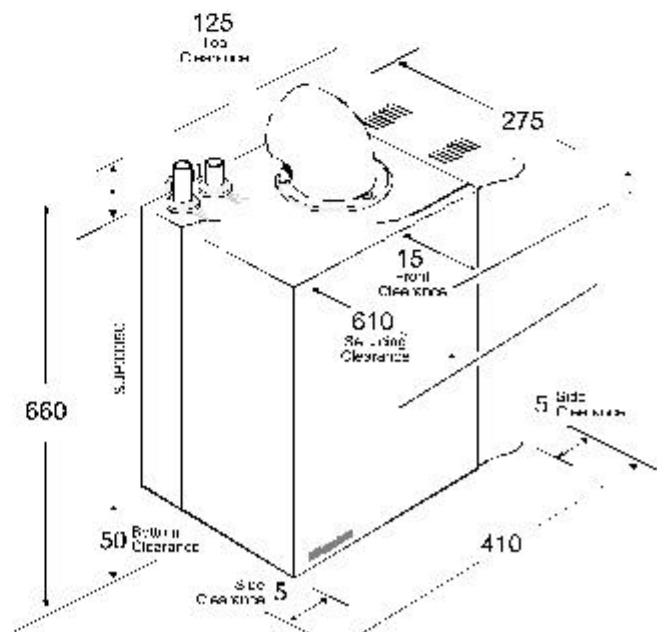


**Boiler Dimensions**

All Dimensions in mm



**Remove The Outer Case**



**Boiler Clearances**

### 1.6 Air Supply

The air requirements must meet BS 5440 Part 2.

The room in which the boiler is installed does not require a purpose provided air vent.

If the boiler is installed in a cupboard or compartment, permanent air vents are required in the cupboard or compartment, one at high level and one at low level, either direct to the outside air or to a room. Both high level and low level air vents must communicate with the same room or must be on the same wall to outside air. Both the high level and low level vent must each have a free area as stated below. The free area of each vent may be halved if the ventilation is provided directly from outside.

Models:	30: 99 cm <sup>2</sup>	40: 133 cm <sup>2</sup>	50: 169 cm <sup>2</sup>
	60: 198 cm <sup>2</sup>	70: 231 cm <sup>2</sup>	80: 264 cm <sup>2</sup>

If the boiler is installed in a cupboard or compartment with a door, allow at least 15 mm clearance between the front of the boiler and the door for air movement.

### 1.7 Flue Systems

#### Horizontal

The flue/terminal assembly supplied is suitable for a wall thickness of between 150mm and 400mm.

A flue/terminal assembly suitable for a wall thickness of up to 600mm is also available.

Both the flue/terminal assemblies are telescopic and the minimum lengths (150 mm/6 in) are achieved by cutting.

1m flue extensions are available. Under no circumstances should the total flue length exceed - 3.4m 30 - 70 models.  
- 2.4m 80 models.

#### Vertical

1. Twin Tube system.  
30 - 80 models.  
Maximum actual length 7m (7 extensions)  
Maximum equivalent resistance = 7m
2. Vertical Concentric system.  
30 - 70 models - Maximum actual length 3.4m, equivalent resistance = 3.4m.  
80 models - Maximum actual length 2.4m, equivalent resistance = 2.4m.

#### Vertex

The maximum primary flue length is 3.4m.

The maximum secondary flue length is:	30 model	5m
	40 model	5.5m
	50 & 60 models	6m

**Note:** The flue lengths quoted refer to straight lengths. For the effects of bends and offsets see Section 2.2 'Install the Flue' or the appropriate flue instructions.

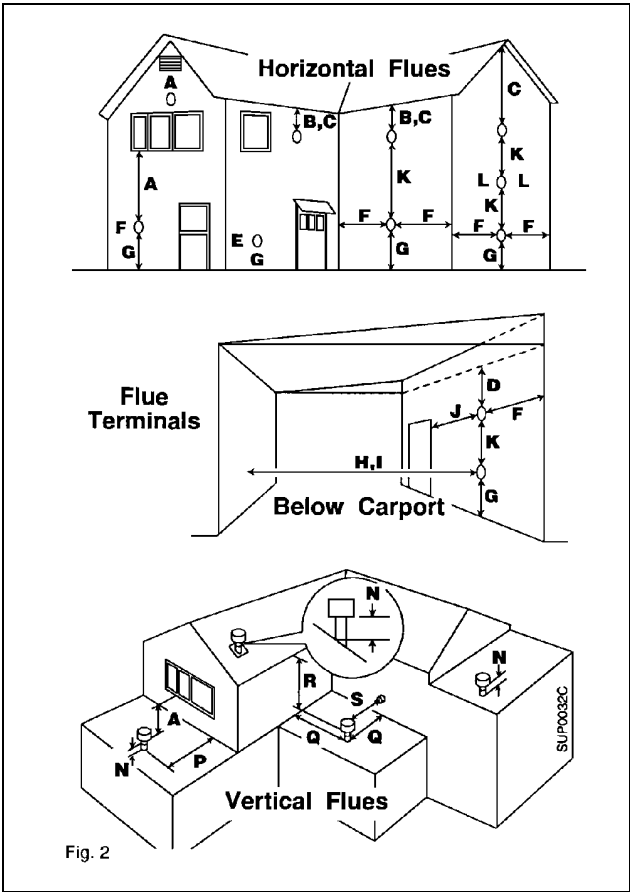
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1.8 Flue Terminal Location

If a horizontal flue is sited less than 2m above a balcony, above ground, or above a flat roof to which people have access, a suitable terminal guard must be fitted. This serves two purposes, to protect the terminal against damage or interference and to protect passers-by. A terminal guard is available (Sales Code: PTERMGUARDEF).

**Note:** Where a flue terminal is installed less than 1 metre from a plastic, or painted gutter, or 500mm from painted eaves, an aluminium shield 1 metre long, should be fitted to the underside of the gutter or painted surface. A suitable wall plate should be fitted to the painted wall surface of a mobile home.

**IMPORTANT:** It is absolutely ESSENTIAL, to ensure that products of combustion discharging from the terminal cannot re-enter the building, or any other adjacent building, through ventilators, windows, doors, natural air infiltration, or forced ventilation/air conditioning. If products of combustion are found to be re-entering any building, the appliance MUST be turned OFF IMMEDIATELY.



1.9 The System

The boiler must be used on Indirect Fully Pumped systems only, which may be sealed or open vented.

The system should be designed so that the maximum static head does not exceed 30.5m (100ft) and a minimum of 150mm (6in).

On all systems the pump live connection should be wired to the boiler terminal block, it will then be controlled by the pump over-run. This will ensure that the pump will continue to run after boiler shut down if the water temperature is high, thus preventing nuisance operation of the overheat thermostat.

POSITION		MIN. DISTANCE mm TO EDGE OF TERMINAL	
HORIZONTAL FLUES			
		Models	
		30 - 60	70 - 80
A	DIRECTLY BELOW AN OPENABLE WINDOW, AIR VENT, OR ANY OTHER VENTILATION OPENING	300	300
B	BELOW GUTTER, DRAIN/SOIL PIPE	25	25
C	BELOW EAVES	25	25
D	BELOW A BALCONY/CARPORT ROOF	25	25
E	FROM VERTICAL DRAIN PIPES AND SOIL PIPES	25	25
F	FROM INTERNAL OR EXTERNAL CORNERS	25	100
G	ABOVE ADJACENT GROUND OR BALCONY LEVEL	300	300
H	FROM A SURFACE FACING THE TERMINAL	600	600
I	FACING TERMINALS	1,200	1,200
J	FROM OPENING (DOOR/WINDOW IN CARPORT INTO DWELLING	1,200	1,200
K	VERTICALLY FROM A TERMINAL ON THE SAME WALL	1,500	1,500
L	HORIZONTALLY FROM A TERMINAL ON THE SAME WALL	300	300
VERTICAL FLUES			
N	ABOVE ROOF LEVEL (TO BASE OF TERMINAL)	300	300
P	FROM ADJACENT WALL TO FLUE	210	210
Q	FROM INTERNAL CORNER TO FLUE	230	230
R	BELOW EAVES OR BALCONY	600	600
S	FROM FACING TERMINAL	1,200	1,200

It is important that where electrically operated zone valves are used the boiler is wired so it does not cycle when the zone valves are closed. Also, systems fitted with controls that close both hot water and central heating circuits while the boiler is still hot, must be fitted with a by-pass circuit to dissipate the residual heat from within the boiler.

If a three port valve is used as shown in Fig. 3 a by-pass is not necessary since one circuit is always open.

Where a pair of two port valves are used, a by-pass is necessary. The total length of the by-pass circuit taken from the boiler connections should be greater than 4 metres of 22mm pipe. It should be fitted with a lockshield valve and be adjusted to maintain a minimum flow through the boiler of 4.5litres/min (1 gal/min).



## Installation Requirements - Page 9

Systems fitted with controls which allow the boiler to operate when both the hot water and central heating circuits are closed i.e. mechanically operated thermostatic control valves, must be fitted with a by-pass circuit of:-

1. A minimum length of bypass of 2m of 22mm dia. Pipe.
2. Maintaining a minimum water flow rate through the boiler of 9 litres/min (2 gal/min).

A suggested method of meeting these requirements by using a bathroom radiator fitted with two lockshield valves is shown in Fig. 3.

Additional system information can be found in the Control Systems, pipework and Wiring Guide.

Drain off taps should be fitted in the pipework close to the boiler and in the low points of the system.

**Note:** Although the system can be emptied using the drain off taps installed in the pipework around the system, to empty the boiler it is necessary to remove the drain off screw positioned on the heat exchanger.

### Sealed Systems

**Note:** If the sealed system kit (Part No. 238027) is *Not* being used the installation must comply with the following requirements.

#### Installation

The installation must comply with the requirements of BS 6798: 1987 and BS 5449: Pt 1. The British Gas publication "British Gas Specification for Domestic Wet Central Heating Systems" should also be consulted.

#### Pressure Relief Valve

A non-adjustable spring-loaded pressure relief valve, preset to operate at 3 bar (45 lbf/in<sup>2</sup>) shall be used. It must comply with BS 6759: Pt 1. and include a manual testing device. It shall be positioned in the flow pipe either horizontally or vertically upwards and close to the boiler. No shut-off valves are to be placed between the boiler and the safety valve. The valve should be installed with a discharge pipe which permits the safe discharge of steam and hot water such that no hazard to persons or damage to electrical components is caused.

#### Pressure Gauge

A pressure gauge incorporating a fill pressure indicator, covering the range 0 - 4 bar (60 lbf/in<sup>2</sup>) shall be fitted to the system. It should be connected to the system, preferably at the same point as the expansion vessel. Its location should be visible from the filling point.

#### Expansion Vessel

A diaphragm type expansion vessel to BS 4814: Pt 1. Shall be fitted close to the inlet side of the pump. The connecting pipework should not be less than 15mm. Pipework connecting the expansion vessel should not incorporate valves of any sort. Methods of supporting the vessel are supplied by the vessel manufacturer. The nitrogen or air charge pressure of the expansion vessel shall not be less than the hydrostatic head, (height of the top point of the system above the expansion vessel). To size the

Expansion vessel it is first necessary to calculate the volume of water in the system in litres. The following volumes may be used as a conservative guide to calculating the system volume.

Boiler Heat Exchanger:	2.1 litres
Small Bore Pipework:	1 litre per kW of system output
Micro Bore Pipework:	7 litres
Steel Panel Radiators:	8 litres per kW of system output
Low Water Capacity Radiators:	2 litres per kW of system output
Hot Water Cylinder:	2 litres

If the system is extended, the expansion vessel volume may have to be increased unless provision has been made for extension. Where a vessel of the calculated size is not available, the next available larger size should be used. The boiler flow temperature is controlled at approximately 82°C.

The vessel size can now be determined from the information in Table 1 where V = System volume in litres.

Vessel Charge Pressure (bar)	0.5	1.5
Initial System Pressure (bar)	1.0	1.0
Expansion Vessel Volume (litres)	V x 0.11	V x 0.087

Table 1.

cylinder fitted with an immersion calorifier suitable for operating at a gauge pressure of 0.3 bar (5 lbf/in<sup>2</sup>) in excess of safety valve setting. Single feed indirect cylinders are not suitable for sealed systems.

#### Method of Make-up

Provision shall be made for replacing water loss from the system either:-

- i) from a make-up vessel or tank mounted in a position higher than the top point of the system, and connected through a non-return valve to the system on the return side of the hot water cylinder or the return side of all heat emitters.
- or
- ii) where access to a make-up vessel would be difficult by using the mains top up method or a remote automatic pressurisation and make-up unit as shown in Figs. 5 & 6.

#### Mains Connection

There shall be no connection to the mains water supply or to the water storage tank which supplies domestic hot water even though a non-return valve, without the approval of the Local Water Authority.

#### Filling Point

The system shall be fitted with a filling point at low level which incorporates a stop valve to BS 1010 and a double check valve (approved by the National Water Council) to be fitted in this order from the system mains, see Fig. 5.

Fig 3

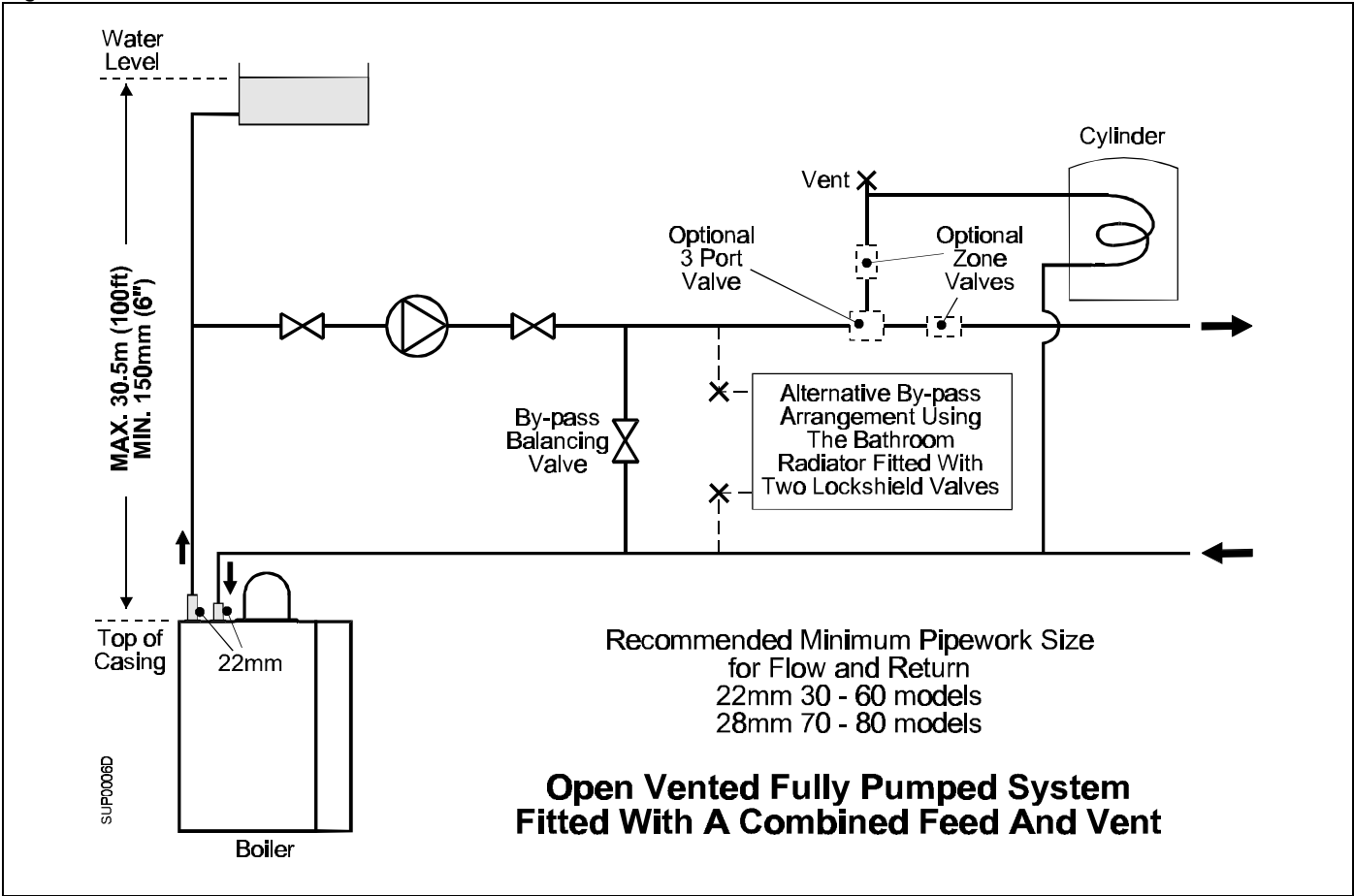
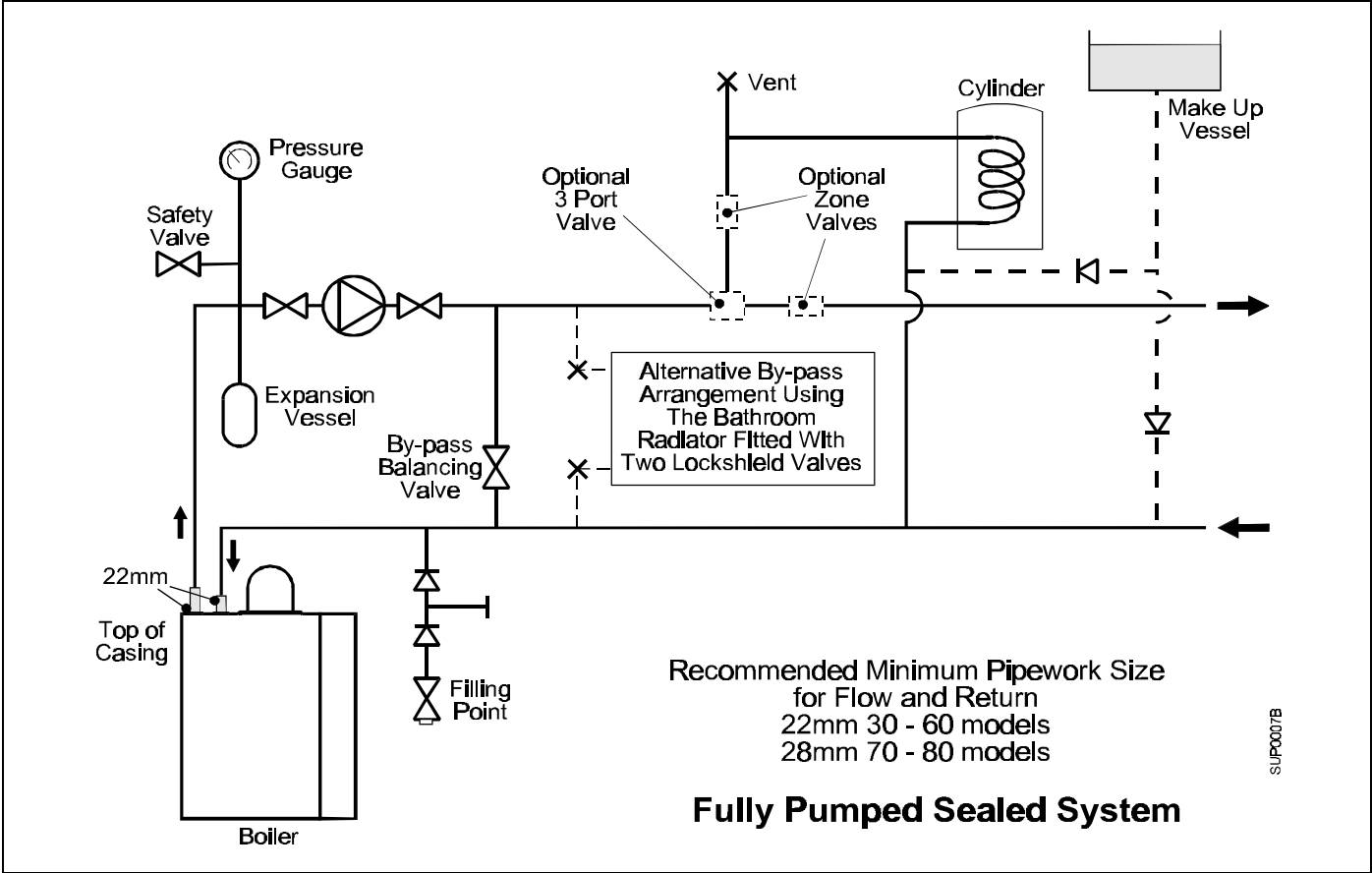
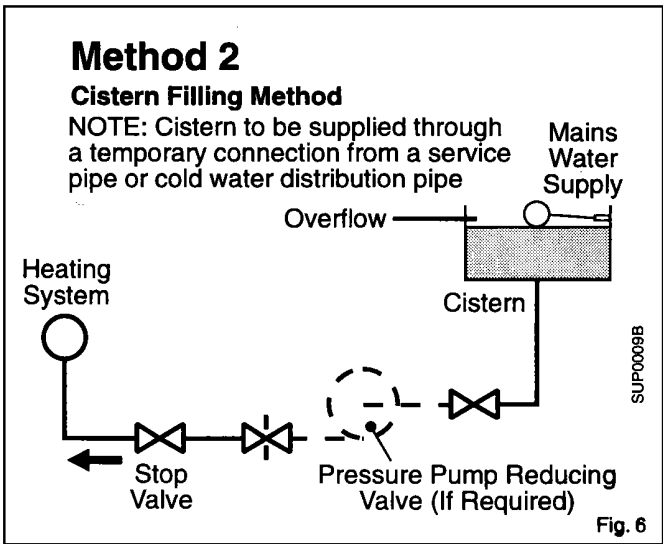
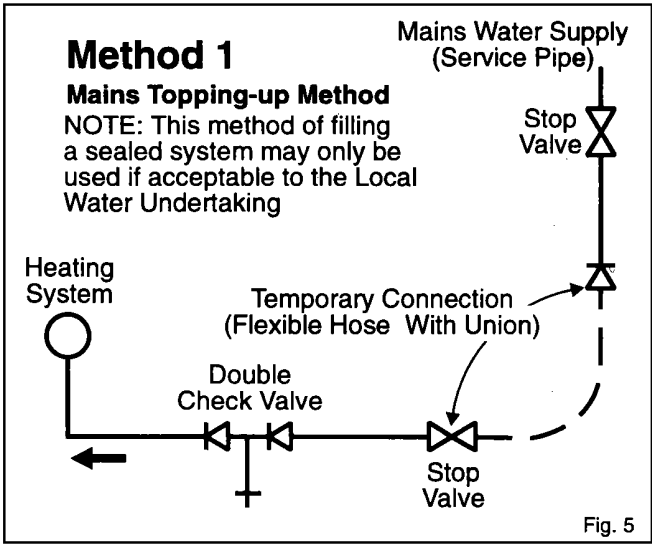


Fig 4

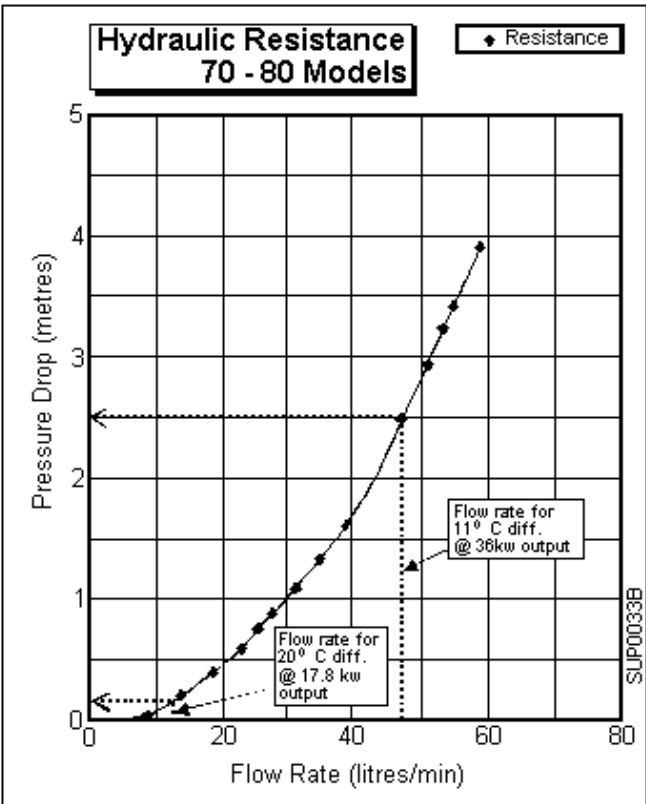
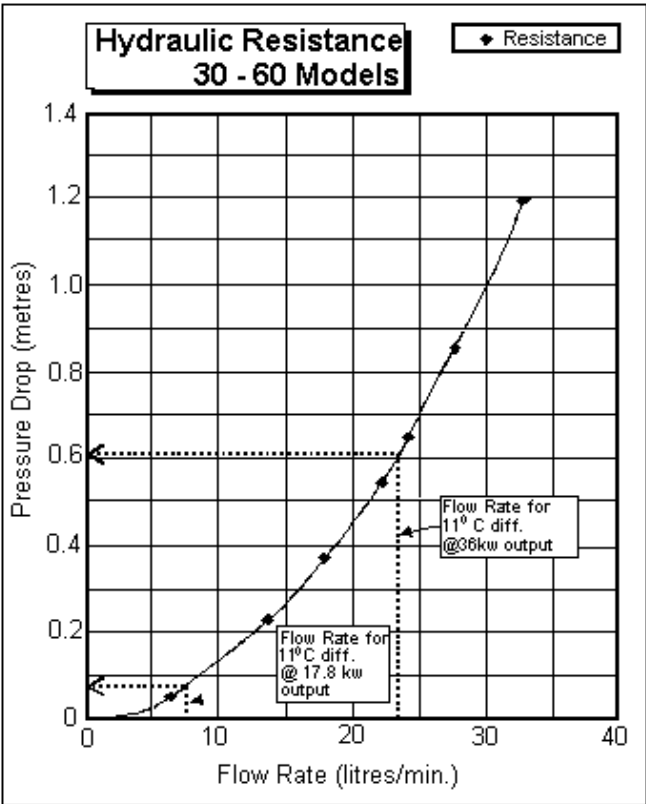




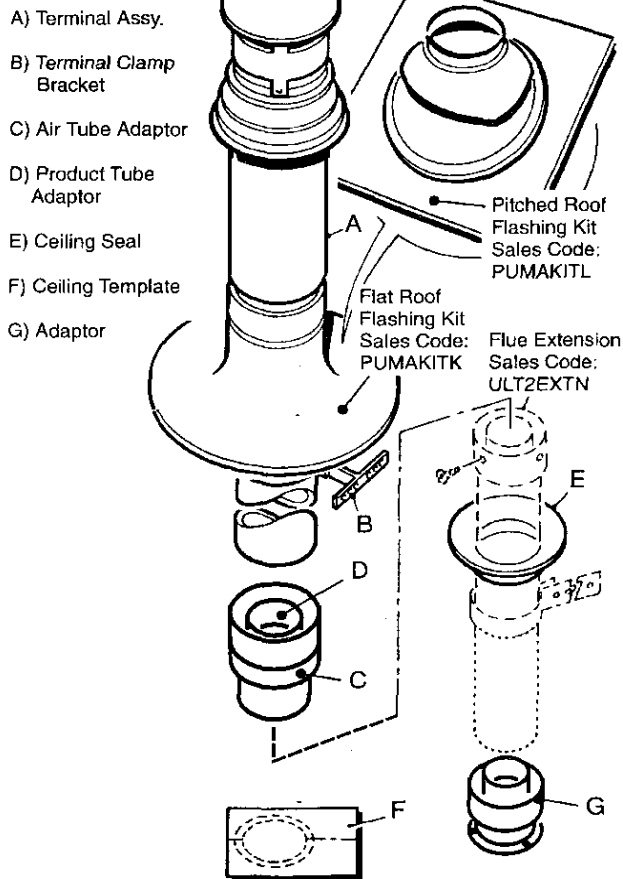
**Circulation Pump Selection**

The resistance through the heat exchanger when operating with a water flow rate producing an 11°C temperature rise at maximum boiler output are shown in the table. If other controls such as three position valves are used in the system, the resistance through them, quoted in their manufacturers literature must be taken into account. The pump may be fitted on either the flow or return and **MUST** be wired directly to the boiler terminal block. It must be fitted with two isolating valves which are positioned as close to the pump as possible. Closing of any valve must always leave the open vent unobstructed.

	Water Flow Rate	Boiler Resistance	
	l/min	mbar	m
30	11.5	17.5	0.18
40	15.2	36.1	0.37
50	19.2	44.9	0.46
60	22.9	59.5	0.61
70	26.7	80.9	0.83
80	30.5	105.3	1.08

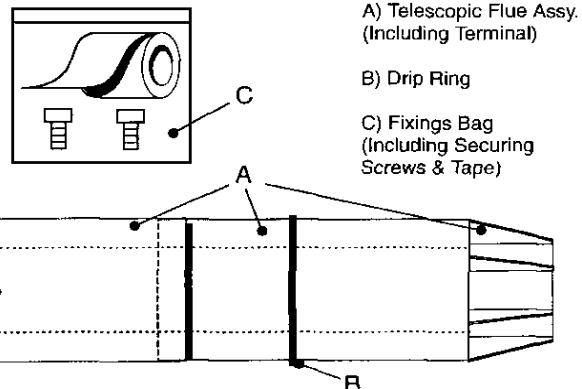


### Concentric Vertical Flue Kit: Sales Code: SUPKITD

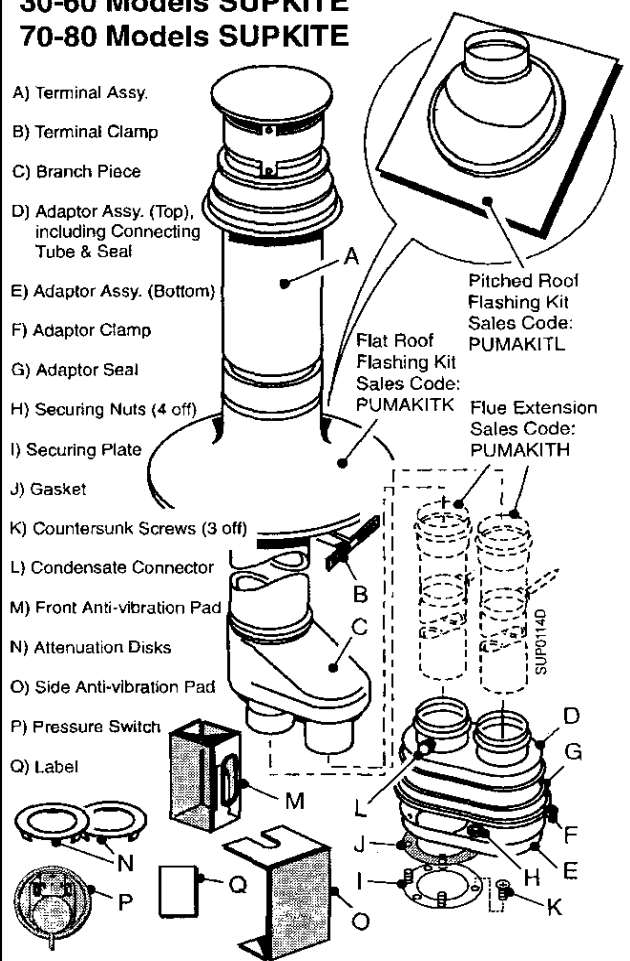


### Telescopic Horizontal Flue Kit: Sales Code: 1SUPFLUE (up to 300mm) Standard

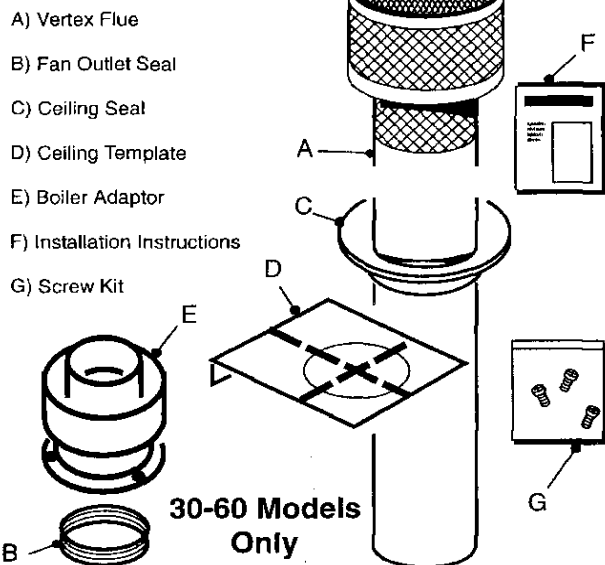
### Sales Code: 2SUPFLUE (up to 550mm) Alternative



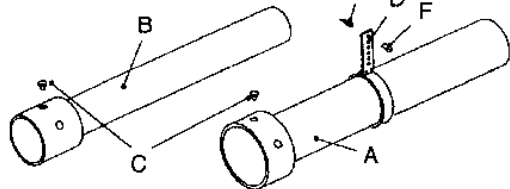
### Twin Tube Vertical Flue Kit Sales Codes: 30-60 Models SUPKITE 70-80 Models SUPKITE



### Vertex Flue System Sales Code: SUPKITG

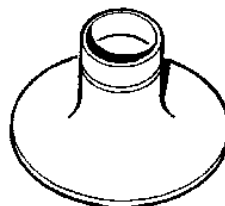


**1m Flue Extension Kit**  
Sales Code: **ULT2EXTN**

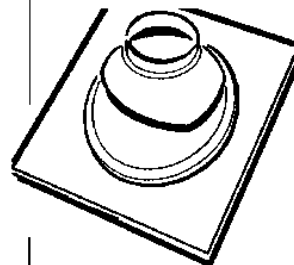


- A) Extension Air Tube (Outer)      D) Fixing Bracket  
B) Extension Flue Tube (Inner)      E) Woodscrews (2off)  
C) S/T Screws (6 off)                  F) Wall Plugs (2 off)

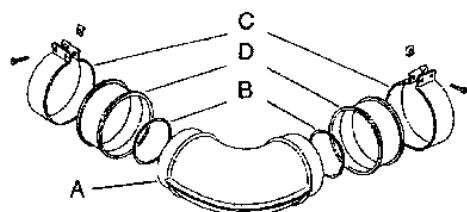
**Flat Roof Flashing**  
Sales Code: **PUMAKITK**



**Pitched Roof Flashing**  
Sales Code: **PUMAKITL**

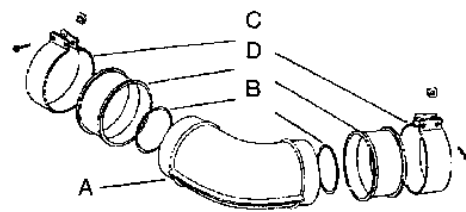


**90° In-Line Bend Kit**  
Sales Code: **PUMAKITB**



- A) 90° In-Line Elbow                      C) Air Tube Clamp  
    (Including Nuts/Screws)  
B) Product Tube 'O' Ring (2 off)      D) Air Tube Seal (2 off)

**135° In-Line Elbow Kit**  
Sales code: **PUMAKITC**



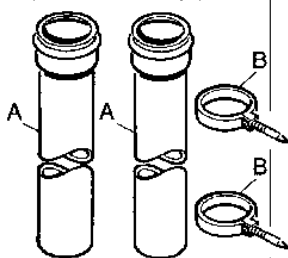
- A) 135° In-Line Elbow                      C) Air Tube Clamp  
    (Including Nuts/Screws)  
B) Product Tube 'O' Ring (2 off)      D) Air Tube Seal (2 off)

**Concentric Vertical Flue Kit Adaptor:**  
Sales Code: **SUPKITC**



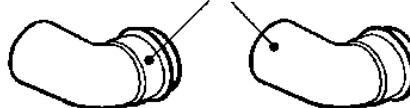
**1m Twin Tube Flue Extension Kit**  
Sales Code: **PUMAKITH**

- A) Extension Tubes (2 off)  
B) Fixing Brackets (Incl. Screws & Clips)



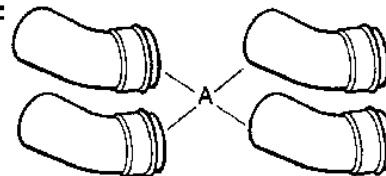
**Twin Tube 90° In-Line Bend Kit**  
Sales code: **PUMAKITI**

- A) 2 off - 90° In-Line Elbow

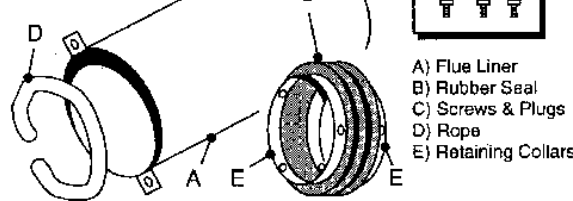


**Twin Tube 135° In-Line Bend Kit**  
Sales Code: **PUMAKITJ**

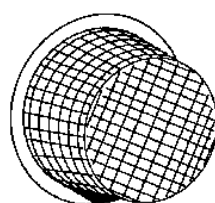
- A) 4 off - 135° In-Line Bend



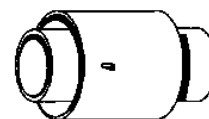
**Internal Fitment Kit**  
Sales Code: **SUPKITA**



**Terminal Guard**  
Sales Code: **PTERMGUARDEF**



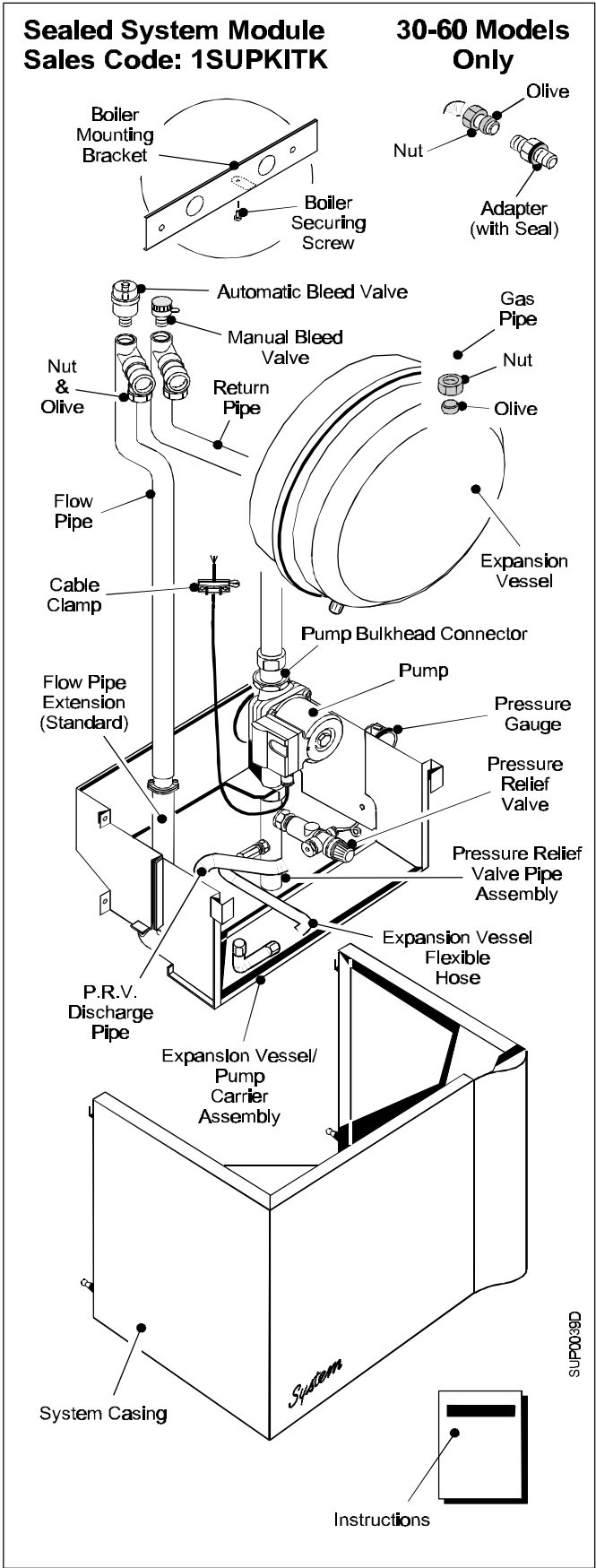
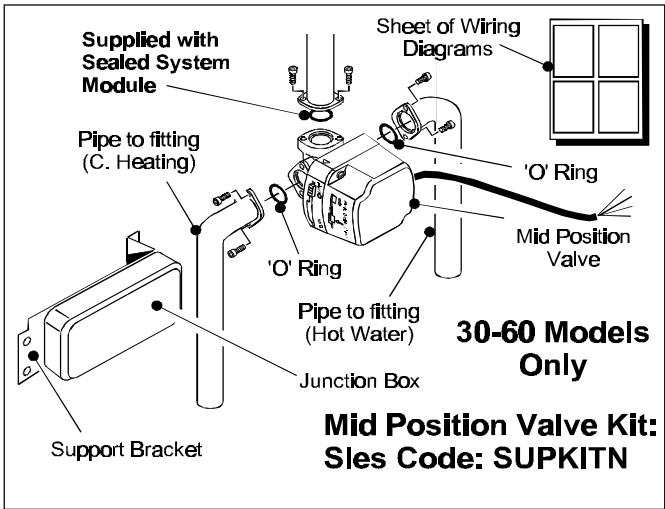
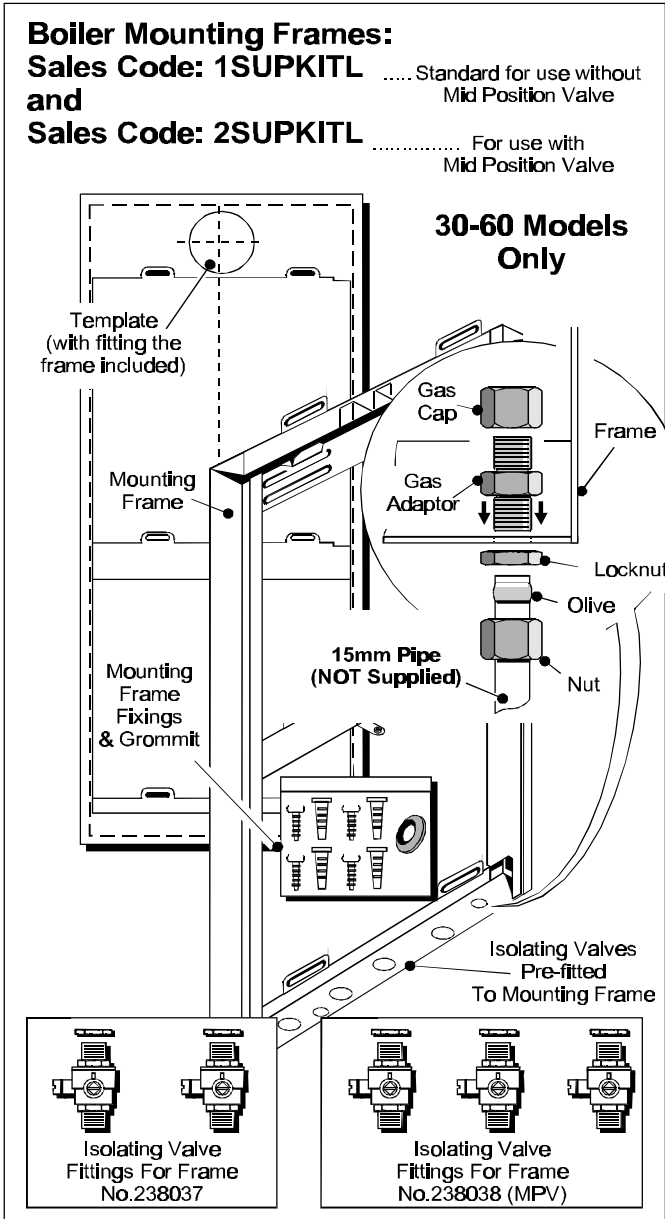
**Telescopic In-Line Bend Adaptor**  
Sales Code: **SUPKITR**

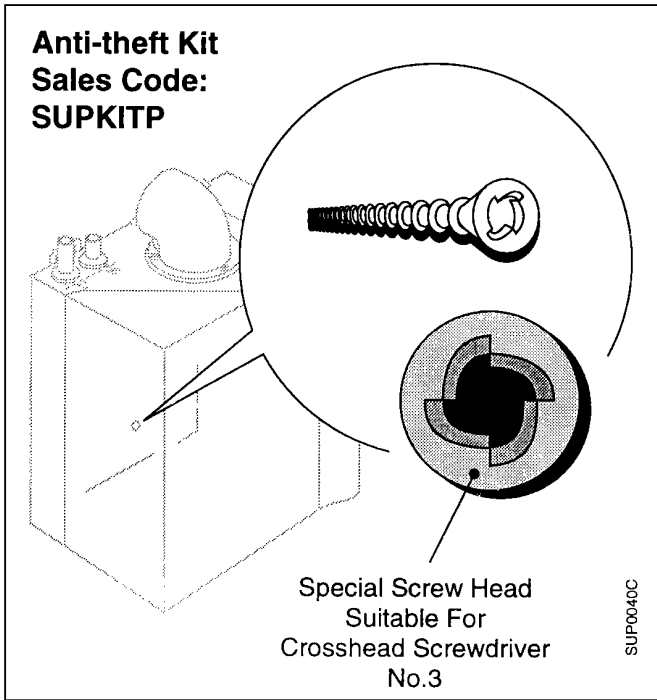
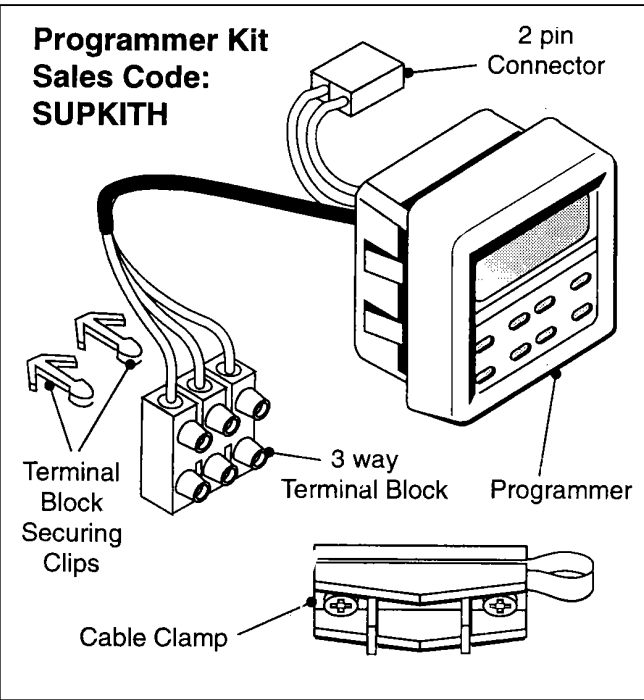
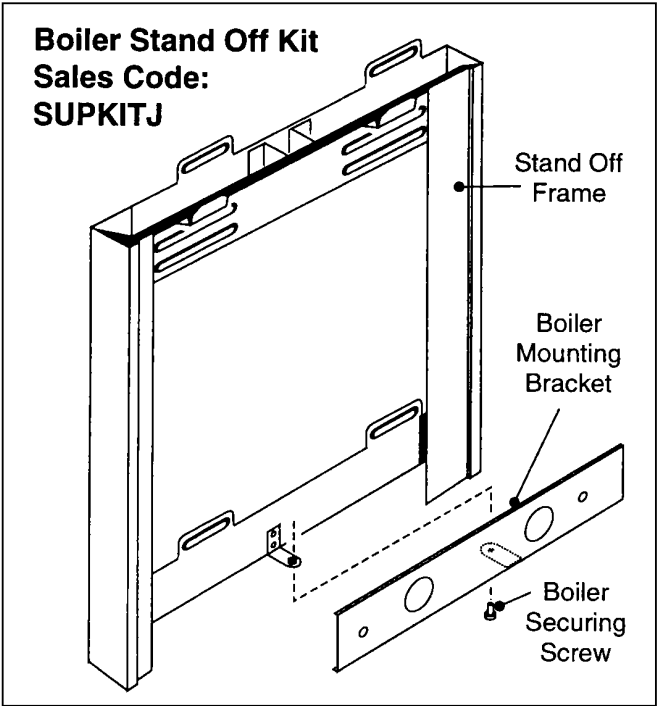
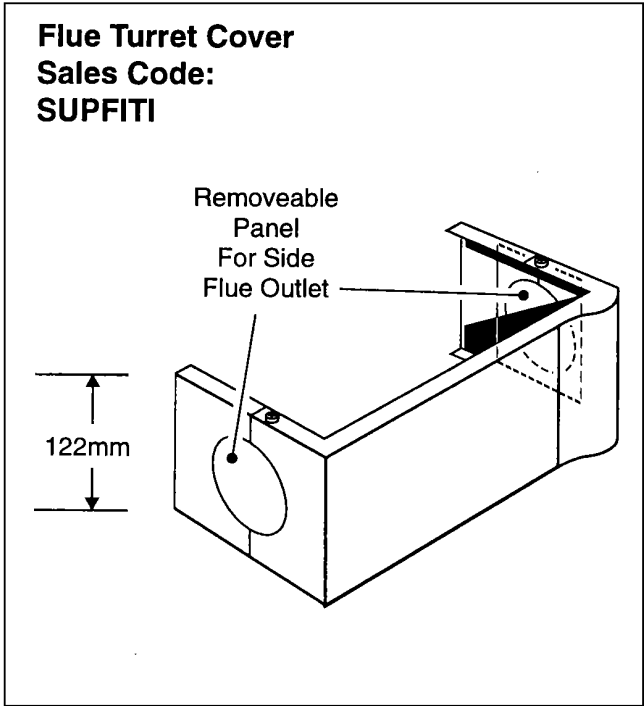


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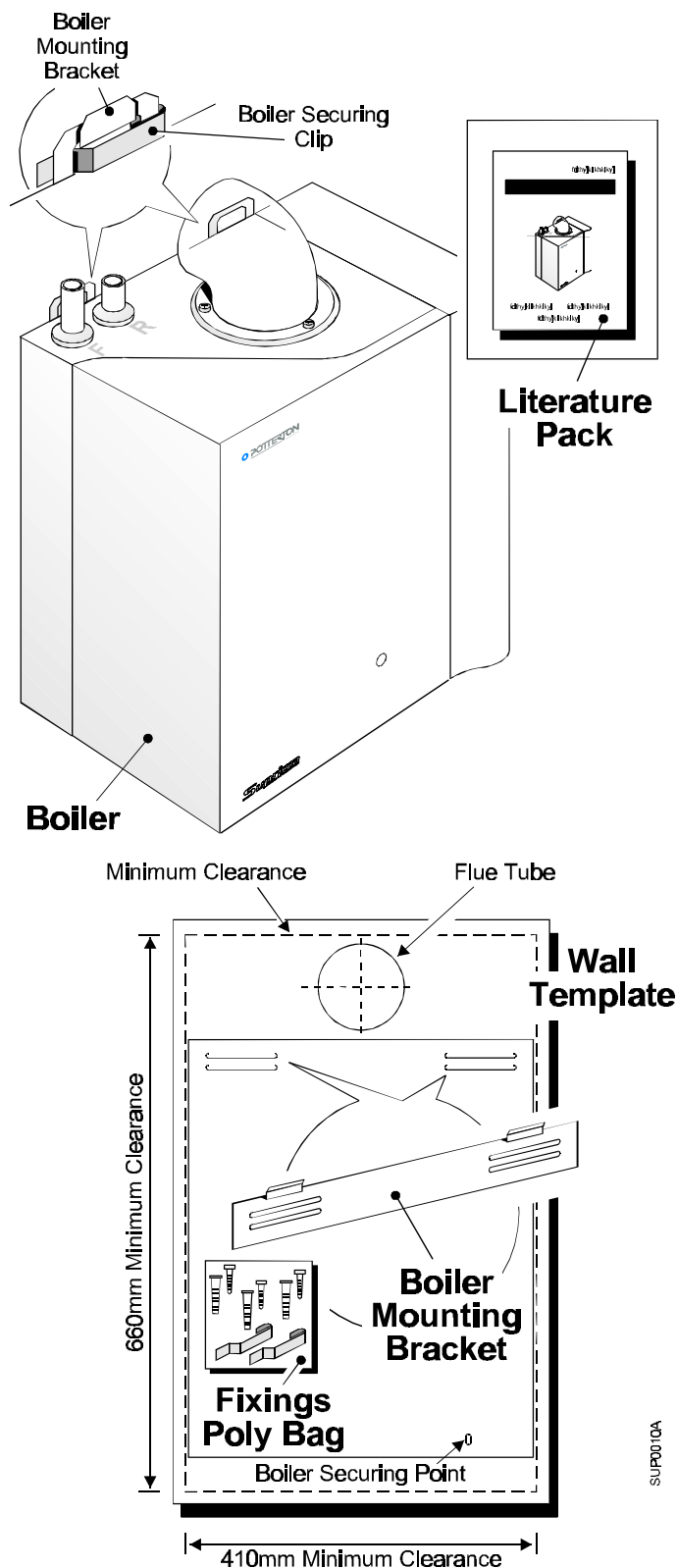
Installation instructions included as necessary with each kit.

Installation instructions included as necessary with each kit.





*Installation instructions included as necessary with each kit.*



### 2.1 Unpack & Prepare the Boiler

These instructions assume you have decided on where the boiler will be located and the type of flue system to be used.

1. Carefully unpack the boiler.
2. Do not discard any packaging until all the items are accounted for.
3. Open the controls cover, remove the securing screw and washer, pull off the controls cover and put safely aside.
4. Remove two screws and washers, remove the white front case and put safely aside.
5. Place the mounting template in the proposed boiler position ensuring that it is level. Minimum clearances are accounted for on the template.
6. Mark the flue hole, remove the template and carefully cut the flue hole through the wall. See fig.8 for Side Flue.
7. Place the mounting template centrally over the hole (ensure the template is level) and mark out the two screw fixing hole positions.
8. Remove the template and drill the two holes using a 7mm drill.
9. Insert wall plugs and secure the mounting bracket to the wall using two No. 12 x 2" woodscrews.
10. Lift the boiler onto the mounting bracket, slide both boiler securing clips over the mounting bracket (this prevents the boiler from being accidentally lifted off the the mounting bracket), see fig.7.
11. The third screw provided is also to prevent the boiler from being lifted off the mounting bracket, once the boiler is mounted on the wall. This screw can be replaced by an anti-theft kit see note below.

**Note:** There is provision for an anti-theft securing point (sales code: SUPKITP) which may be used if required.

### 2.2 Install the Flue

**Maximum flue lengths are as follows:**

<b>30 - 70 Models</b>	<b>-</b>	<b>3.4M</b>
<b>80 Model</b>	<b>-</b>	<b>2.4M</b>

These instructions are for rear and side flue applications.

#### Rear Flue

1. Measure the wall thickness and add 66mm (or 106mm for installations using the System Boiler or Stand Off Kits).

#### Side Flue

1. Determine the X dimension (wall thickness + distance to boiler centreline).

#### For both Rear & Side Flues

2. Extend the telescopic flue to the required length, minimum 20mm overlap.
3. Drill through the pilot hole and secure with self tapping screw.

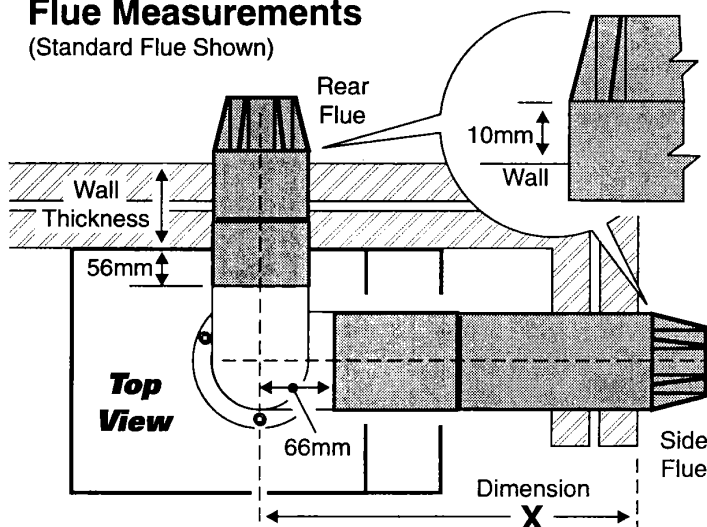


4. Wrap tape around the joint on the outer duct to seal the flue, slide drip ring into a position to coincide with the air gap in the wall (cavity wall).
5. Slide the flue through the hole until it stops on the pin.
6. The boiler is supplied with the flue elbow set to the rear. For side outlet slacken the screws and turn the elbow to the required position and re-tighten screws. Ensure that the seals are still correctly located.
7. Hang the boiler onto the mounting bracket. To square the boiler to the wall adjust the boiler alignment screws on the back panel of the boiler.
8. Slide the flue back until it engages in the elbow bayonet connection, twist anti-clockwise to lock.
9. Drill through pilot hole and lock flue in position with the self tapping screw provided.
10. Make good the wall around the flue, both outside and inside.

For extension kits refer to page 12 & 13. If a Horizontal Extension is required this MUST be combined with a Standard Flue as shown below in the Maximum Flue Length Guide.

## Flue Measurements

(Standard Flue Shown)



Rear Flue without Boiler Stand Off Kit
<b>Flue Length =</b> Wall Thickness + 66mm

Rear Flue with Boiler Stand Off and System kits
<b>Flue Length =</b> Wall Thickness + 106mm

Side Flue
<b>Flue Length =</b> Dimension X - 56mm

## If a in-line bend is required in the flue the following rules apply:

A 90° in-line bend is the equivalent to a 1m length of flue.

A 135° in-line bend is the equivalent to a ½m length of flue.

## The maximum equivalent flue resistance allowed when using bends is:

30-70 models	=	3.4m
80 model	=	2.4m

**Note:** For flue lengths less than the minimum telescopic length, the tubes can be cut to suit. Ensure that the same length is removed from the inner and outer tubes to maintain a 20mm overlap (minimum).

For further information see 'Combination Flues' Publication No. 559979 or 'Vetex Flues' Publication No. 560039.

## Maximum Flue Length Guide:

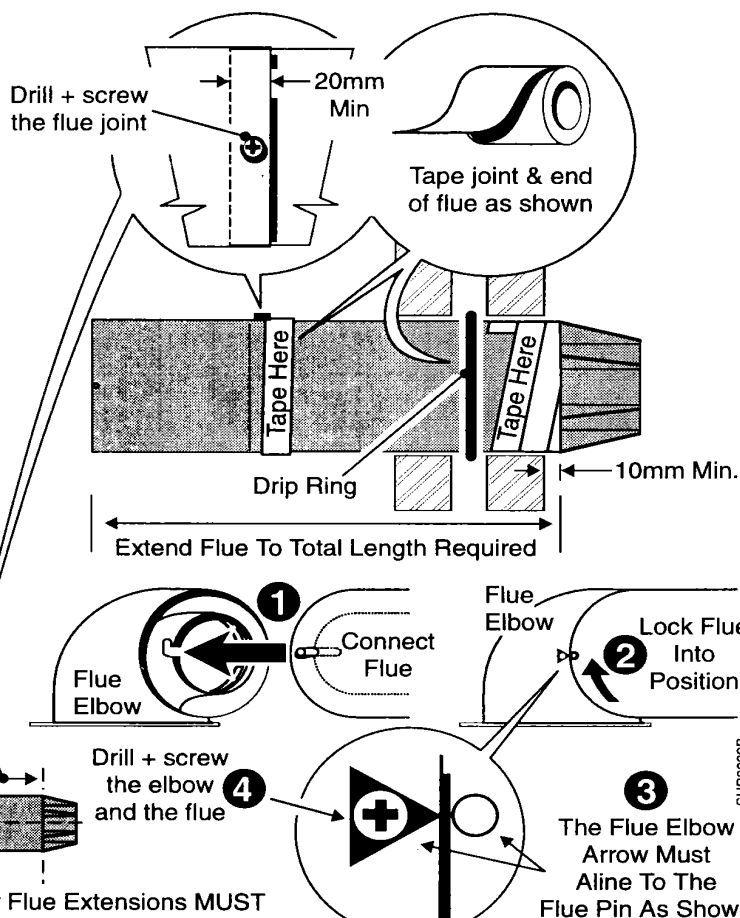
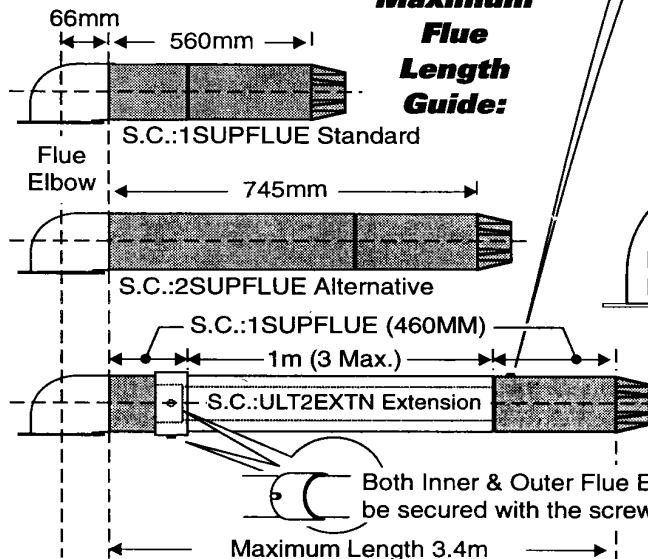


Fig. 8

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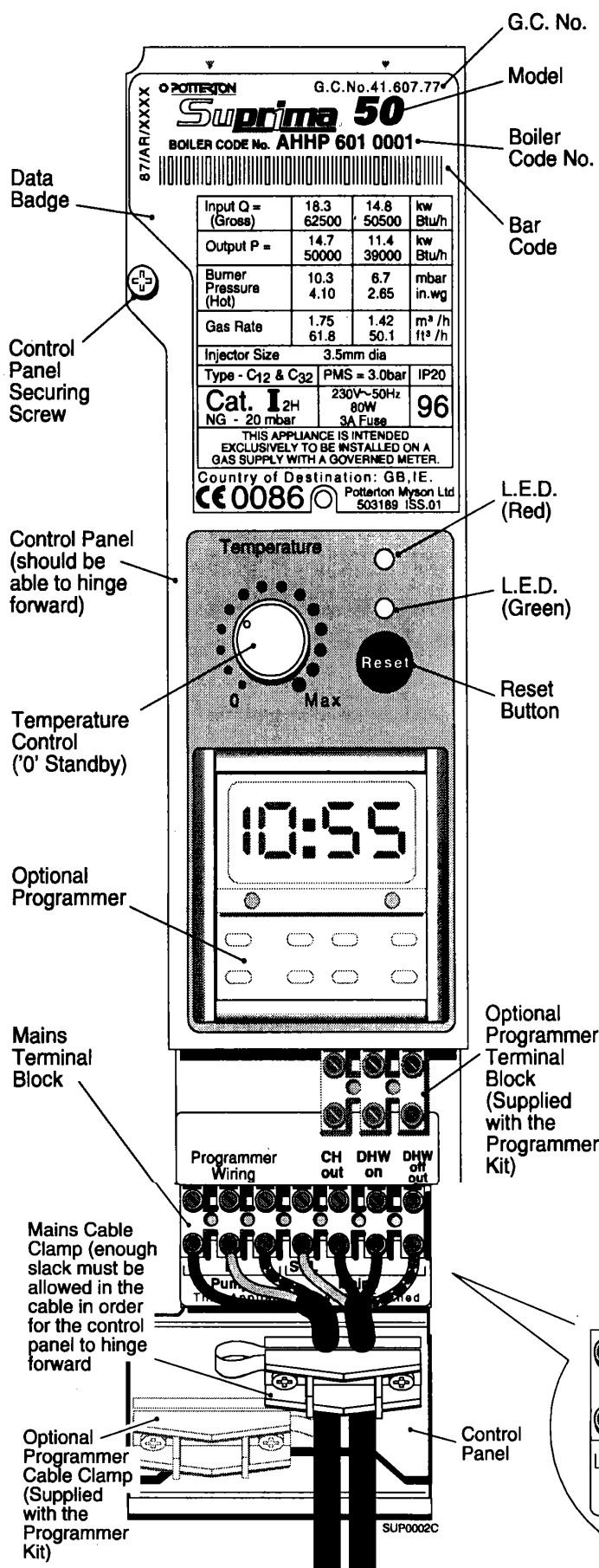


Fig. 9

## 2.3 Connect the Power S

- controls panel. Feed the cables up and over , through the clamp wires, brown to L and blue to N and  $\perp$ ).

### Note:

cable, ensure that the length of the earth wire is such, that if the power supply cable pulls wires become taut before the earth wire.

- ted through the hole in the base of the rear cover, through terminal connection.
- the terminal block and the cable clamp, then

Ensure sufficient slack is available to the cable clamps to allow the control panel to

panel.

section 2.4 performing steps 4 and 5 below.

Secure the controls assembly to the chassis using the screw previously removed.

Carry out preliminary electrical system checks i.e. Earth Continuity, Short Circuit, Polarity

### Frost Thermostat:

If a Frost Thermostat is to be fitted, the

external to the boiler.

The Frost Thermostat should be connected

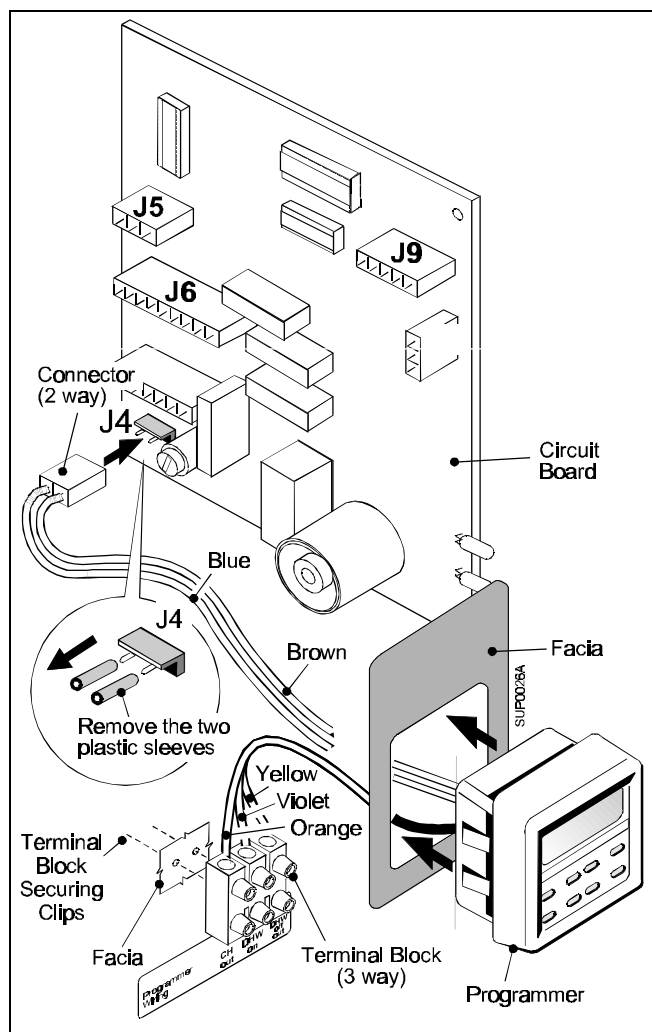
the supply cable to the boiler.

**Do not switch on the electricity supply at**

## 2.4 Install the Optional Programmer

Carefully remove the blanking panel from the fascia and

2. Remove the two plastic sleeves and connect the circuit board.
3. immediately below the programmer using the two screws provided.



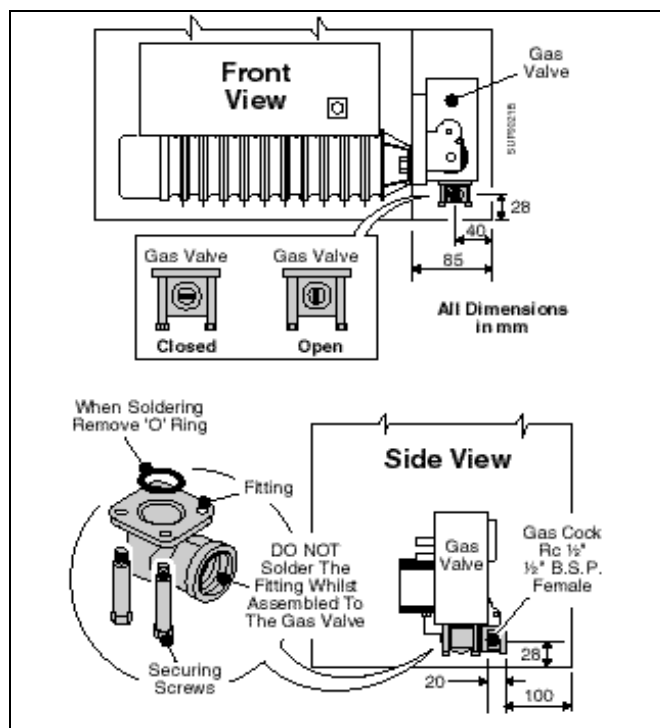
## 2.5 Connect the Gas Supply

supply using a suitable adaptor to the gas cock.

**Important:**

**assembled to the gas cock.**

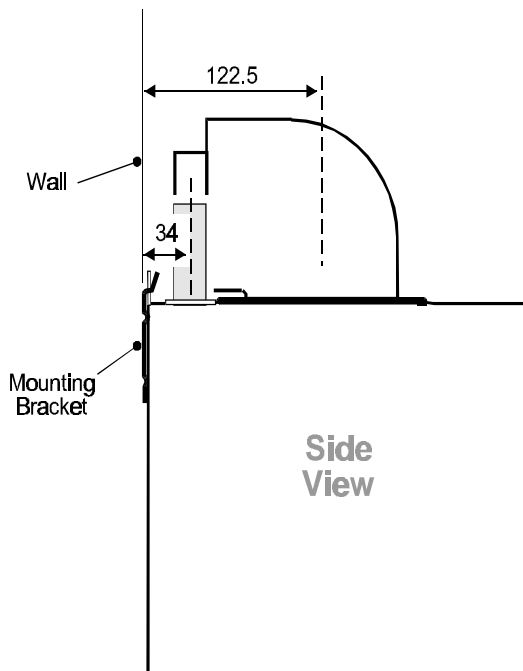
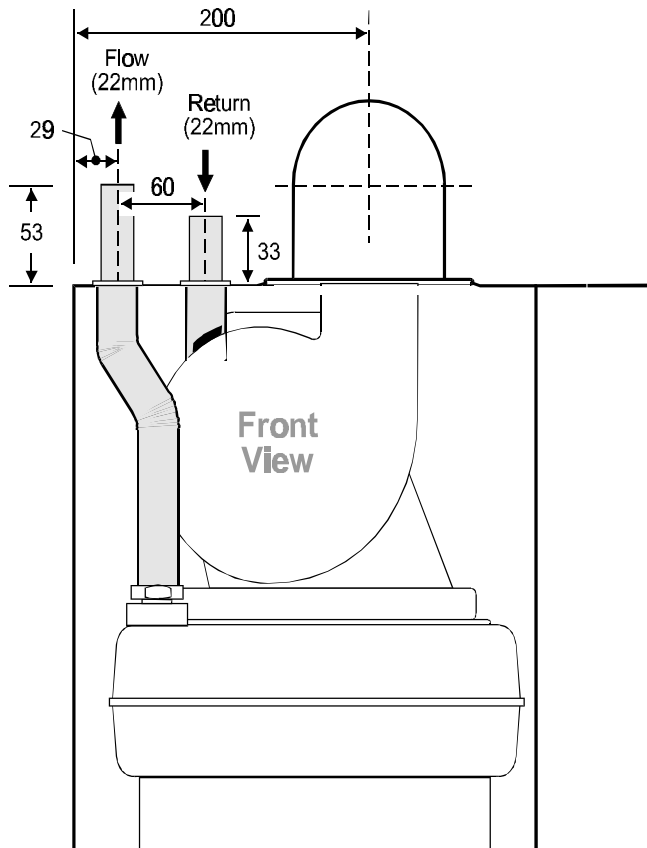
The pipe diameter required will depend on the boiler model supply pipe is selected in accordance with BS 6891 so that an adequate gas supply to the boiler is provided.



## 2.6 Connect the Water System

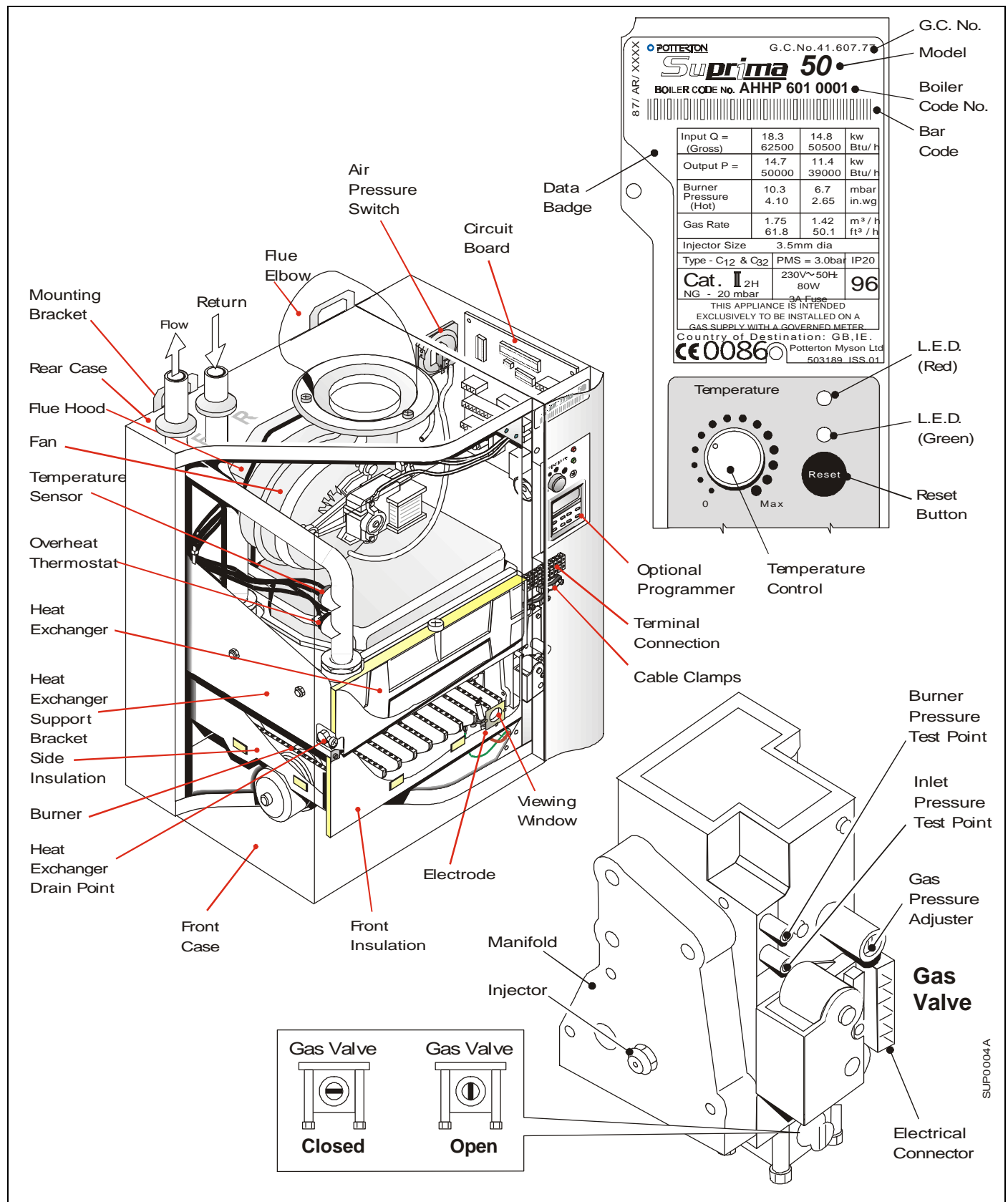
1. Connect system pipework to the boiler, compression fittings should be used.

**Note:** Drain off taps should be installed at the lowest points in the system.



SUP0027B

### 3. Commissioning - Page 21



#### Important

The commissioning and boiler adjustment must only be carried out by a suitably qualified personnel. Potterton Myson Ltd. Offer this service on a chargeable basis.

#### Important

When checking for gas soundness open all windows and doors in the room. Extinguish all naked lights, cigarettes, pipes, etc.

## 3.1 Commission the Boiler

**Open Vented Systems** - Remove the pump and flush the system thoroughly with cold water. Re-fit the pump. Fill and vent the system then check for leaks.

**Sealed Systems - Note:** The system can be filled using a sealed system filler pump with a break tank or by any other method approved by the Local Water Authority. Remove the pump and flush the system thoroughly with cold water. Re-fit the pump. Fill and vent the system until the pressure gauge registers 1.5 bar (21.5 lbf/in<sup>2</sup>) and check for leaks. Raise the pressure until the safety valve lifts, this should occur within  $\pm 0.3$  bar of the preset lift pressure of 3 bar. Release water to attain the correct cold fill pressure.

### All Systems

**Warning:** Before lighting the boiler, ensure that the outer white case has been correctly fitted and that the sealing strip fitted to the outer white case is forming a tight seal with the main boiler chassis. The controls cover is left off at this stage.

Preliminary electrical system checks. These checks must be carried out before attempting to light the boiler.

They are:- Earth Continuity, Short Circuit, Polarity & Resistance to Earth.

- 1) The whole of the gas installation must be checked for soundness and purged in accordance with BS 6891.
- 2) Set the boiler temperature control knob to 'O' Standby.
- 3) Turn the boiler gas service cock to the 'On' position and that the main gas supply is turned 'On'.
- 4) Make sure that the system is full of water and that the pump and radiator isolating valves are open. Vent air from the system.
- 5) Ensure that the main electricity supply is 'On'.
- 6) Check that the time control, if fitted, is in an 'On' position and that the room and cylinder thermostat, where fitted are set to high temperatures.

*First time lighting:*

- 7) Set the temperature control knob to its maximum setting.

The boiler will attempt to light, if the boiler does not light within 3 attempts (due to air in the system) the boiler controls will go to 'Lockout' and the upper Red LED on the control panel will go to a rapid flashing mode. To re-start the lighting sequence press the reset button on the control panel. There will be a short delay before the lighting sequence starts.

When the boiler burner flame has established and the burner lights the lower Green LED on the user control panel will be on continuously.

LED Indicators		
Status	Green LED	Red LED
Mains ON Only	OFF	ON
Ext. Call for Heat (Boiler set to <i>STNDBY</i> Temp. Control set to 'O' Off)	FLASHING 2 Per Sec.	ON
Ext. Call for Heat ( <i>STNDBY</i> switch to ON, Temp. Control set to Max.)	FLASHING 2 Per Sec.	OFF
Ignition (i.e. Gas and Sparks ON)	FLASHING 16 Per Sec.	OFF
FLAME Detected	ON	OFF
Boiler Temperature Control Satisfied	FLASHING 2 Per Sec.	ON

- 8) With the main burner running, check for gas soundness using leak detection fluid.
- 9) Allow the system to reach maximum working temperature and examine for water leaks. Set the temperature control to 'Standby' and drain the system whilst still hot.
- 10) Re-fill and vent the system making a final check for leaks.

On sealed systems adjust to the correct cold fill pressure. Set the pressure gauge pointer to the system design pressure.

If a by-pass circuit is fitted the by-pass valve should be adjusted with the boiler operating under minimum load conditions to maintain sufficient water flow through the boiler to ensure that the overheat thermostat does not operate under normal conditions.

### If the boiler fails to operate

Check the LED indicator fault modes below and refer to fault finding guide and boiler wiring diagram.

LED Indicators Fault Modes		
Status	Green LED	Red LED
<b>Blocking</b> - Mains Frequency incorrect or Air Switch <b>Fault</b> >1 min. or <b>Reset</b> button held in to force a restart	ON	FLASHING 2 Per Sec.
<b>Earth Fault</b> or <b>Mains Reversal</b>	FLASHING 2 Per Sec.	FLASHING 2 Per Sec.
<b>Lockout</b>	OFF	FLASHING 2 Per Sec.

### 3.2 Final Adjustments

- 1) Use a pressure gauge to check the inlet and burner pressures. See the Data Badge for figures.
- 2) Turn the boiler on and allow to run for 10 minutes.
- 3) Check that the inlet pressure is 20mbar.
- 4) Check that the burner pressure is in accordance with the information on the boiler data badge.
- 5) If burner pressure adjustment is required turn the pressure adjusting screw anti - clockwise to increase pressure or clockwise to decrease.
- 6) Check at the gas meter that the gas rate is correct.
- 7) Shut down the boiler, remove the pressure gauges, re- fit the screws and check for gas soundness.
- 8) Stick the self adhesive arrow (from the literature pack) onto the data badge to indicate the appropriate burner setting pressure
- 9) Re-fit the controls cover and secure with the screw previously removed.

#### Control Thermostat

At its minimum and maximum settings, the thermostat should control the water flow temperature at approximately 57°C - 82°C.

Set the temperature control knob to 'O' Standby and check that the main burner shuts down.

#### Overheat Thermostat

The overheat thermostat is pre-set and no adjustment is possible. It will require manual re-setting if an overheat condition occurs (the LED will go to flashing Red).

The re-set button is located on the controls assembly.

#### Other Boiler Controls

No further setting or checking is necessary as all boiler mounted controls are designed so that if a fault should occur they will fail safe.

#### External Controls

Check that any other external controls connected in the system, such as clocks or thermostats, control the boiler as required.

### 3.3 Instruct the User

On completion of the installation, the installer should demonstrate the operation of the boiler and its associated controls. Also hand over all the instructions.

### 3.4 Advise the User

1. If a timer is fitted, set the time and programme the required settings. For a wall mounted programmer, see separate programmer instructions. For the Suprima timer, see the timer Instructions for Use fitted to the controls cover door.
2. Hand the Instructions for Use, these Installation & Service Instructions (and the programmer instructions) to the User and instruct in the safe operation of the boiler and controls.
3. Advise the User of the precautions necessary to prevent damage to the system and to the building in the event of the system remaining inoperative during frost conditions.
4. Advise the User that for continued efficient and safe operation of the boiler it is important that adequate servicing is carried out at least once a year by a Potterton Myson Service Engineer or a C.O.R.G.I. Registered Installer.
5. Leave a permanent card attached to the boiler giving:
  - a. Name and address of installer.
  - b. Date of installation.
  - c. A wiring diagram of the external control circuit.

## 4. To Service the Boiler & Component Replacement - Page 24

To ensure continued efficient operation of the appliance, it is recommended that it is  
Checked and cleaned as necessary at regular intervals.

The frequency of servicing will depend upon the particular installation conditions and usage  
but in general once per year should be adequate.

It is the law that any service work must be carried out by a competent person who is C.O.R.G.I. Registered.

Before servicing, fire the appliance and check that the flames are blue.  
Yellow flame and excessive lifting indicate poor combustion.

### **WARNING**

**Before commencing work turn the temperature control knob to 'O' Off  
And allow the appliance to cool, isolate the electricity supply.**

**If the gas valve is to be removed turn off the gas supply at the appliance service cock.**

### **IMPORTANT**

**Always test for gas soundness after completing any servicing of gas carrying  
Components and carry out functional checks of controls.**

### **IMPORTANT**

**Ensure that the outer white case is correctly fitted and that the  
sealing strip fitted to the door is forming a tight seal with the boiler casing.**

### **Notes on Cleaning Boiler Components**

#### **Heat Exchanger**

Place a sheet of paper under the heat exchanger then using a flat blade tool (Part No. 907736), scrape the flueway fin surfaces in a downward movement. This will ensure that most of the deposits will be collected on the paper.

#### **Burner**

Brush the burner top and check that the flame ports are clear. Any blockage may be removed with a fine wire brush. Turn the burner upside down and tap gently to remove any debris (Protect the electrode).

#### **Electrode**

If the electrode requires cleaning wipe the surface using a solvent.

#### **Main Injector**

Omit this operation if the gas rate is correct, otherwise clean by blowing through. Do NOT clear the injector with a pin or wire.

#### **Fan Assembly**

Examine the fan impellor and carefully clean if necessary.

#### **Flue**

Inspect the flue terminal and flue/air tube for blockage and integrity, rectify if necessary.

### **4.1 General Access**

**Warning:** Before starting work, open the controls cover and set the temperature control knob to 'O' Off. Isolate the electricity supply and if a gas carrying component is to be removed, isolate the gas supply at the appliance service cock. Allow the boiler to cool.

**Important:** Always test for gas soundness after completing any exchange of gas carrying components and carry out a functional check of the controls.

***Re-assemble all parts in reverse order.***

1. Remove the securing screw and slide off the controls cover. Put safely aside.
-



## To Service the Boiler & Component Replacement - Page 25

To complete sections 4.3.3 to 4.3.11 perform the following:-

2. Remove the two screws securing the outer white case to the chassis. Hinge forward, pull bottom of cover forward and lift off. Put safely aside.
3. Remove the screw securing the combustion chamber front to the heat exchanger and remove the panel.

### 4.2 To Service the Boiler

1. Note how it fits and disconnect the tube from the front of the fan housing.
2. Disconnect the 3 wires from the fan motor.
3. Remove the two screws securing the fan to the flue hood. Carefully pull the fan down and away from the flue hood.
4. Remove the flue hood.
5. Disconnect the electrode and earth wire.
6. Undo the fixing screw, hold the burner at the right hand side and pull forward to disconnect from the box.

If necessary, remove the injector as follows:-

7. Undo the two screws securing the side and rear insulation assembly on the front of the chassis. Pull the assembly forward and away from the boiler.
8. Remove the burner bracket (three screws) to give access to the injector.
9. Use a new sealing washer when re-fitting the injector.

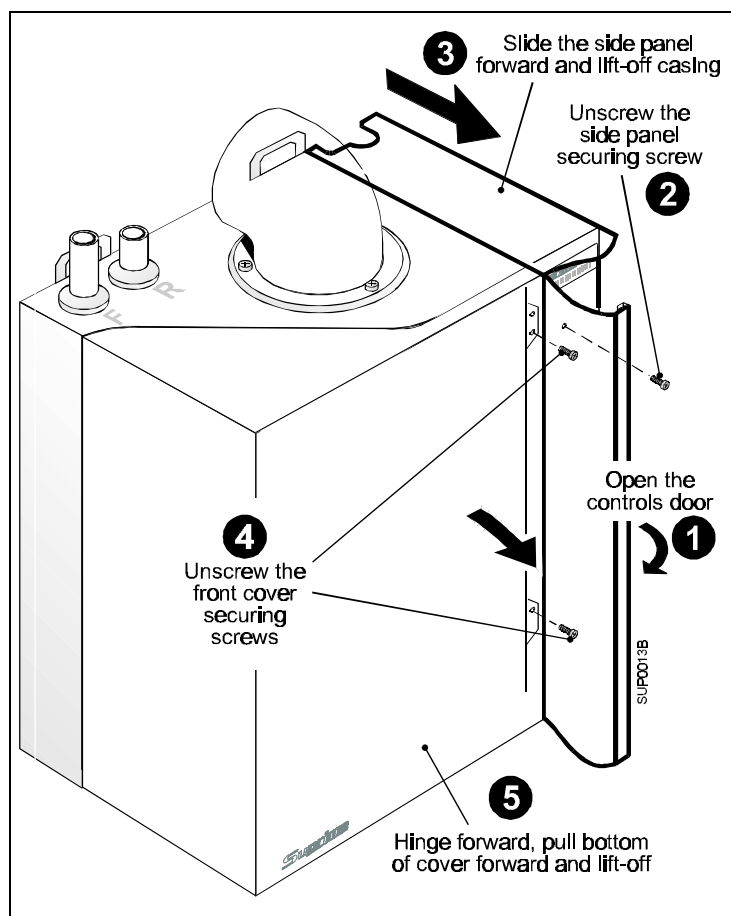
The heat exchanger, burner and fan can now be inspected. If deposits have formed on these items and on ancillary components clean as detailed in the notes at the start of this section.

The boiler can be re-assembled in reverse order. Ensure that any electrical connections are in place and that any damaged seals or insulation are replaced before re-fitting the controls cover.

Check the gas pressure, refer to Section 3 'Commissioning'.

### Other Components

No other servicing is required on any other boiler component.



### 4.3 Component Replacement (see over page)

#### Warning

Before attempting to remove any component from the appliance first disconnect the mains electricity supply by removing the plug from the wall socket or by switching off the appliance at the external isolating switch.

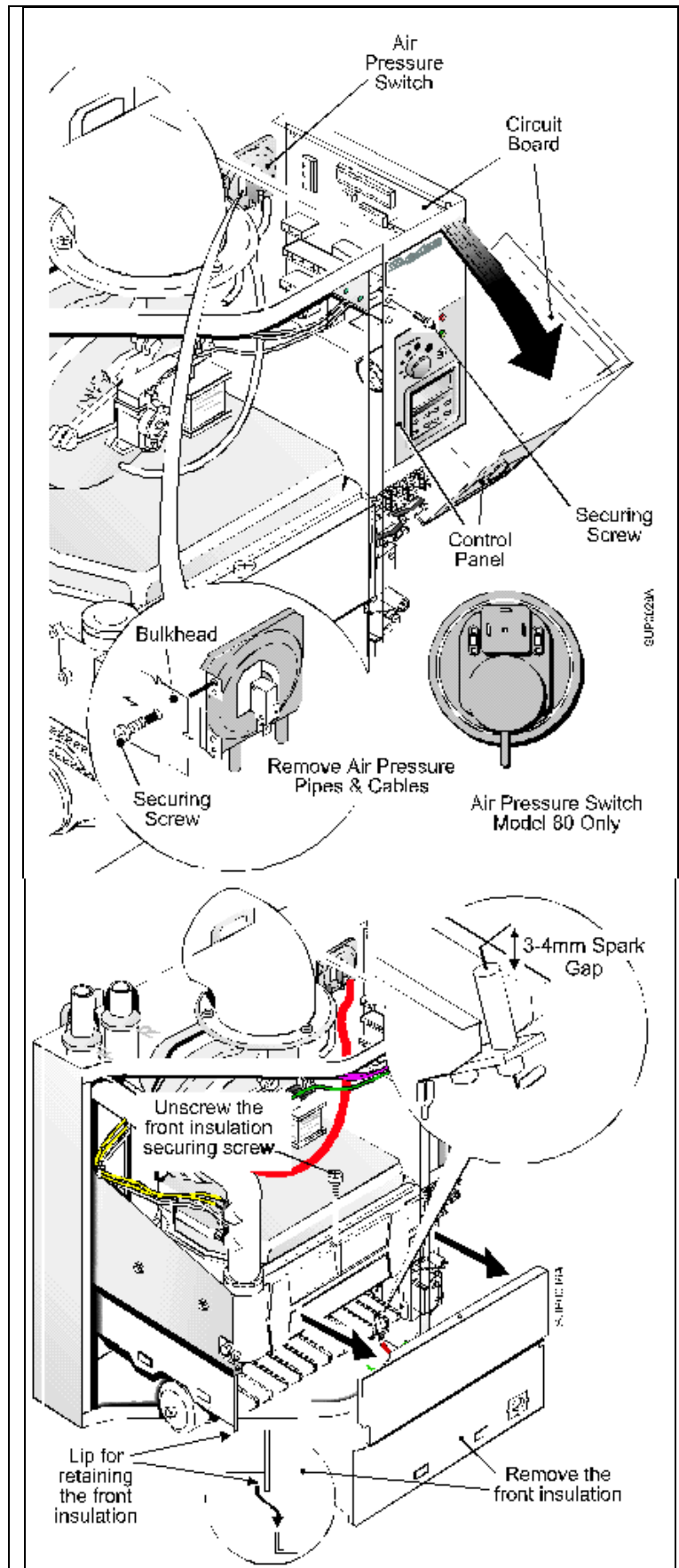
#### Notes

The 'O' (off) position on the boiler temperature control will leave parts of the boiler Live.

If the appliance gas valve is to be removed it will be necessary to isolate the gas supply at the appliance isolating valve.

#### Important

After removal or replacement of any gas carrying component a test for gas soundness must be made and functional check of the controls carried out.



### 4.3.1 Electronic Control Board

Gain General Access - See 4.1

1. Remove the securing screw and allow the control panel to pivot forwards.
2. Disconnect all connectors and wires, unscrew the four securing screws and remove the board.
3. On re-assembly refer to the wiring diagram when re-connecting wires and connectors.

### 4.3.2 Air Pressure Switch

Gain General Access - See 4.1

1. Remove the securing screw and allow the control panel to pivot forwards.
2. Note the wire connections and disconnect the wires to the air pressure switch.
3. Remove the screw (access through the fan compartment) securing the air pressure switch to the chassis.
4. Re-assemble in reverse order, ensure that the Normally Closed (N.C) terminal is shrouded.

### 4.3.3 Electrode

Gain General Access - See 4.1

1. Pull the electrode lead off the electrode, remove the securing screw and remove the electrode.
2. On re-assembly check the gap between the electrode tip and the burner face. It should be 3 - 4mm. If required adjustment can be made by careful use of pliers.

### 4.3.4 Burner

Gain General Access - See 4.1

1. Disconnect the electrode lead and earth wire.
2. Undo the fixing screw, hold the burner at the right hand side and pull forwards to disconnect from the air box.
3. Unscrew the electrode and transfer to the new burner.
4. Re-assemble in reverse order, on re-assembly hook the rear of the locating bracket (1) in place before locating the front (2).

### 4.3.5 Injector

Gain General Access - See 4.1

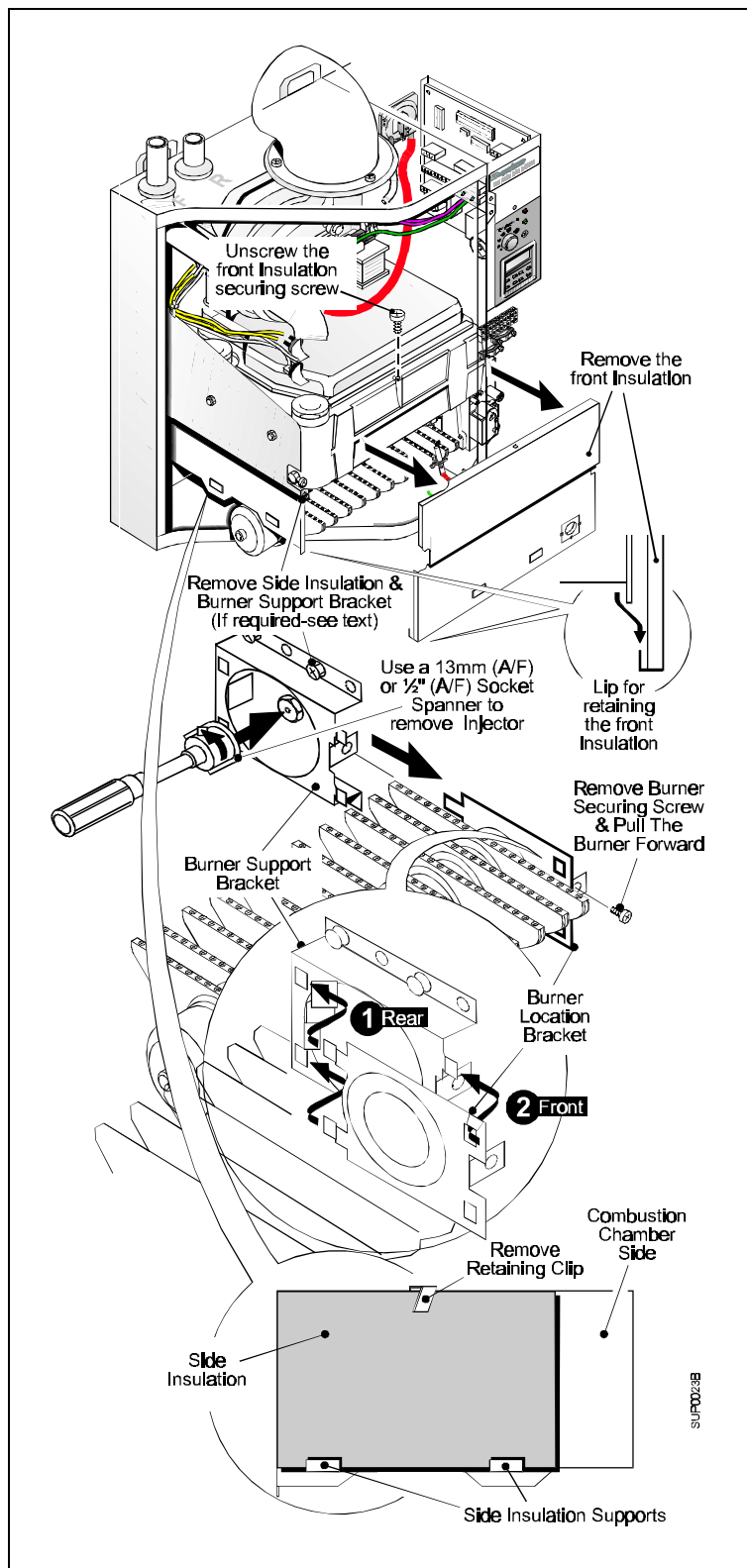
1. Remove the burner - See 4.3.4.
2. Use a 13mm (A/F) or ½" (A/F) socket spanner to remove the injector.
3. Unscrew the injector, use a new sealing washer on re-assembly.

***If using a flat spanner to remove the injector  
See the next section (4.3.6.)***

### 4.3.6 Combustion Chamber Insulation

Gain General Access - See 4.1

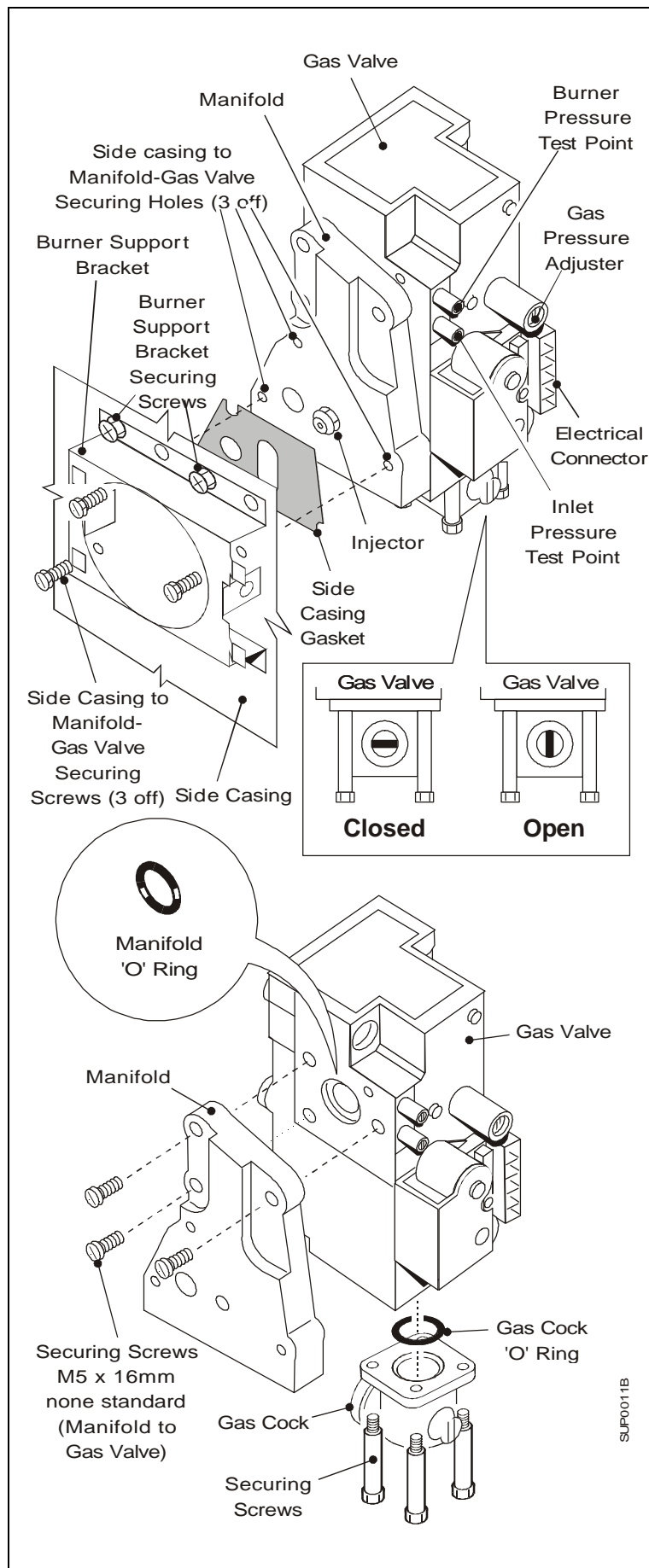
1. The front insulation is accessible as the front is already off.
2. Remove the burner - See 4.3.4.
3. Remove the two screws securing the side and rear insulation assembly to the front of the chassis.
4. Pull the assembly forwards and away from the boiler. Replace insulation pieces as required, replace any securing clip if damaged.
5. Re-assemble in reverse order.



### 4.3.7 Gas Valve

Gain General Access - See 4.1

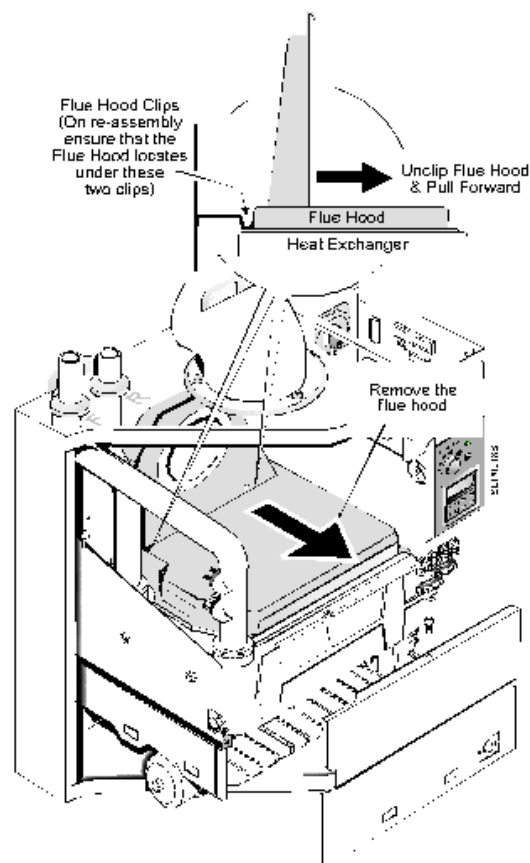
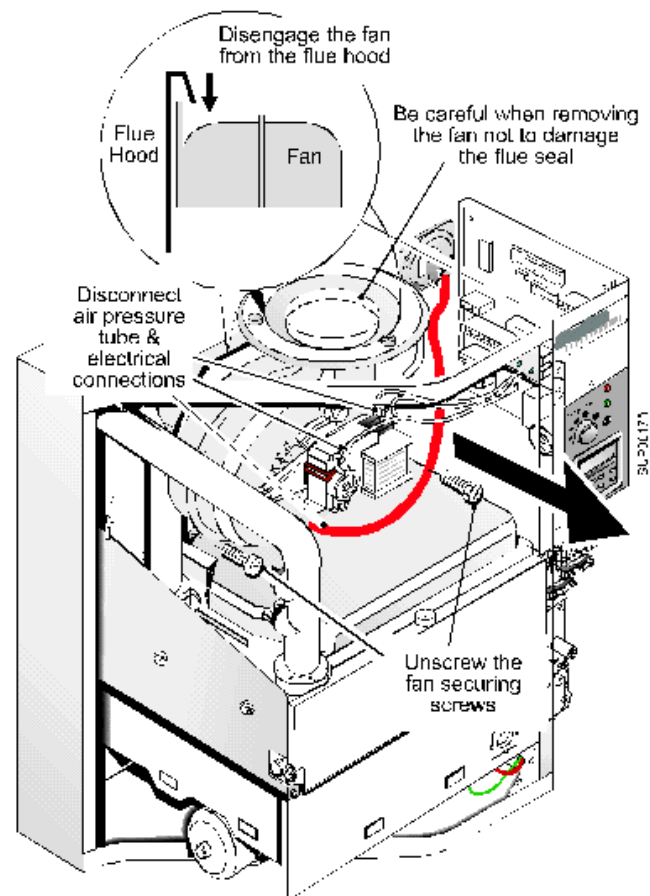
1. Pull off the electrical connector at the valve.
2. Remove the gas cock by unscrewing the four long hexagonal head screws from the base of the valve.
3. Remove the burner - See 4.3.4.
4. Remove the screw securing the controls assembly to the top of the valve.
5. Remove the two screws securing the side and rear insulation assembly to the front of the chassis and remove assembly.
6. Remove the three screws securing the gas valve manifold assembly to the chassis and remove the complete assembly.
7. Remove the three M5 x 16mm screws securing the gas manifold to the gas valve.
8. Use a new 'O' ring and refit the manifold to the new gas valve.
9. Re-assemble in reverse order, use a new side panel gasket and 'O' ring in the gas cock.



### 4.3.8 Fan & Flue Hood

Gain General Access - See 4.1

1. Disconnect the tube from the front of the fan housing - note how it fits.
2. Disconnect the three wires from the fan motor.
3. Remove the two screws securing the fan to the flue hood.
4. Carefully pull the fan down and away from the boiler.
5. *Flue Hood:* On re-assembly ensure that the flue hood locates under the two brackets at the rear of the chassis. Check the seal and replace if damaged.
6. *Fan:* On re-assembly ensure that the rubber seal around the fan opening is located correctly into the base of the flue elbow.
7. Re-assemble in reverse order.



#### 4.3.9 Temperature Sensor

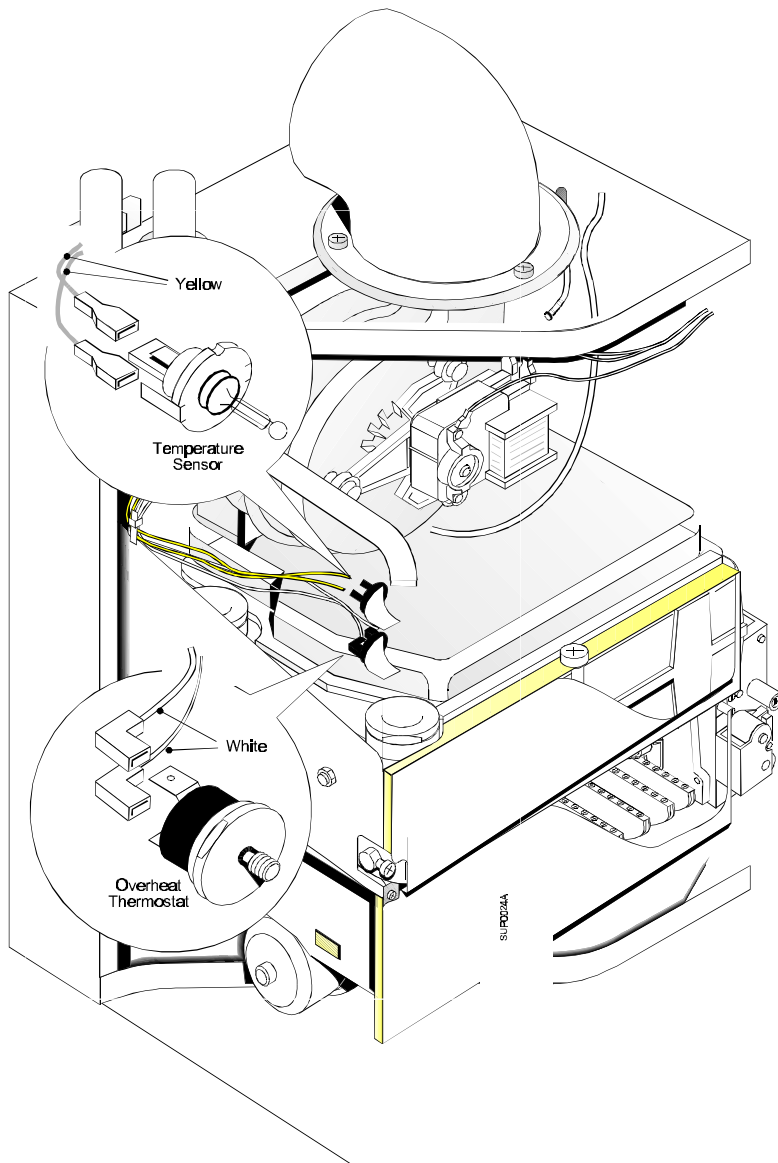
Gain General Access - See 4.1

1. Disconnect the wires from the sensor.
2. Depress the clips on the outside of the sensor and pull it clear of the pipe.
3. Re-assemble in reverse order, use fresh conducting paste.

#### 4.3.10 Overheat Thermostat

Gain General Access - See 4.1

1. Disconnect the wires from the thermostat.
2. Unscrew the thermostat.
3. Re-assemble in reverse order.





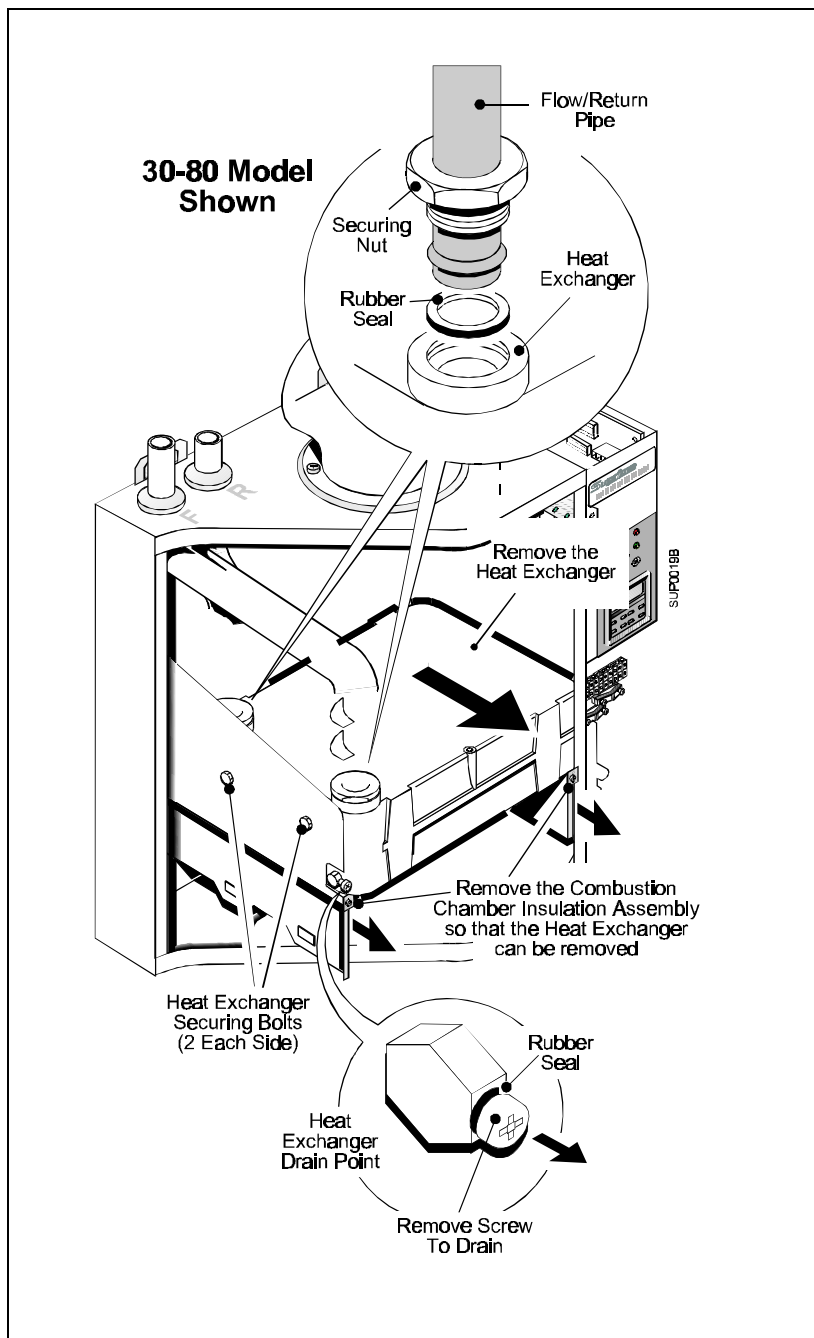
### 4.3.11 Heat Exchanger

#### Warning:

For Sealed Systems relieve system pressure through pressure relief valve before draining.

Gain General Access - See 4.1.

1. Drain the system at its lowest point.
2. Remove the fan and flue hood - See 4.8
3. Remove the burner - See 4.3.4.
4. Hold a suitable container under the left hand side of the heat exchanger and unscrew the drain screw. Drain the heat exchanger.
5. Remove the screws securing the combustion chamber insulation assembly to the chassis and withdraw it.
6. Release both the flow and return nuts at the top of the heat exchanger.
7. Support the heat exchanger, remove the four bolts (Two each side) and carefully remove the heat exchanger.
8. Replace rubber seals in flow and return ports, feed the new heat exchanger into position ensuring the pipe connections are correctly located.
9. Secure the heat exchanger with the four fixing screws and tighten the two sealing nuts.
10. Re-assemble in reverse order.



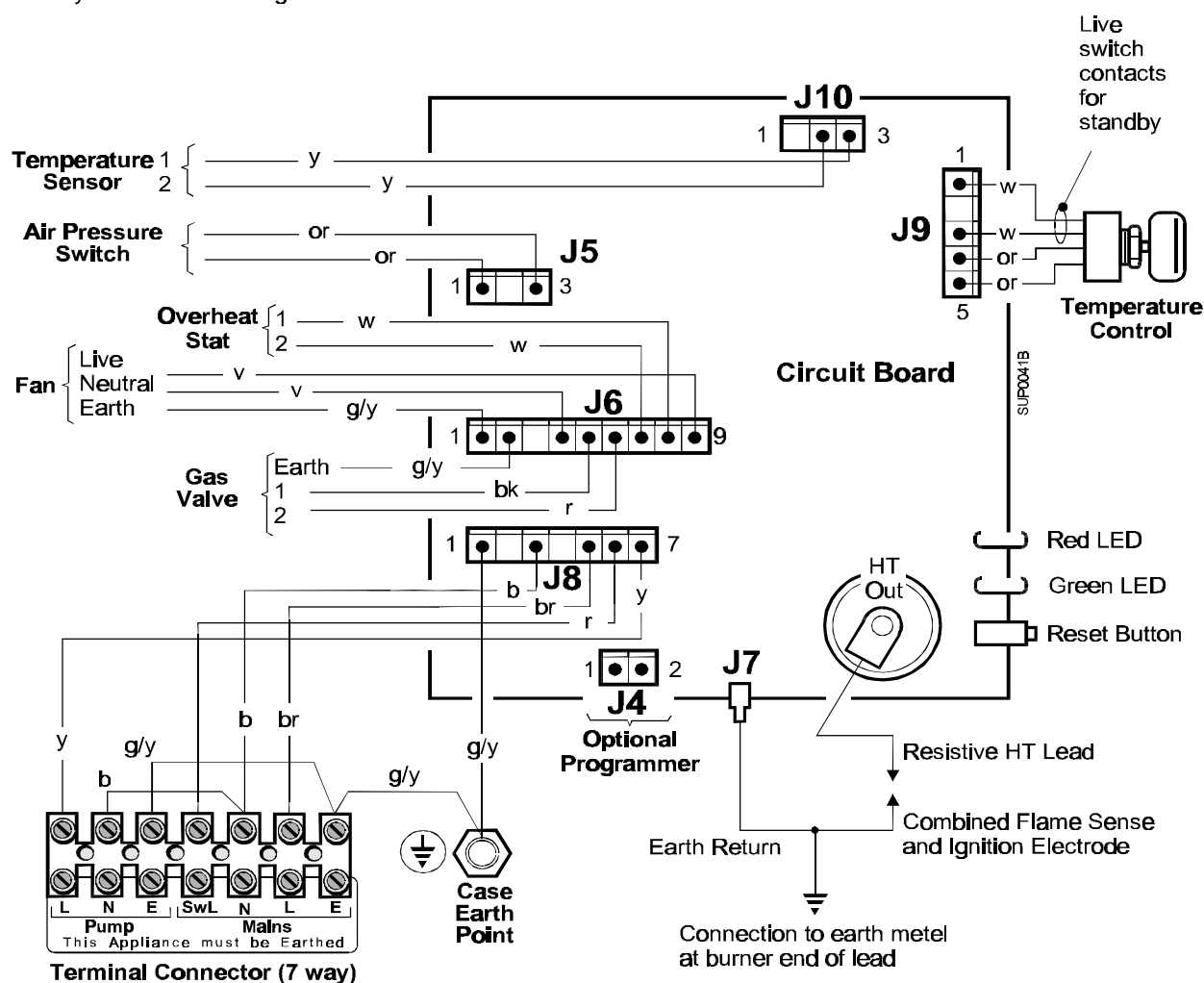
## 5. Functional Wiring Diagram - Page 32

### Boiler Lighting Sequence

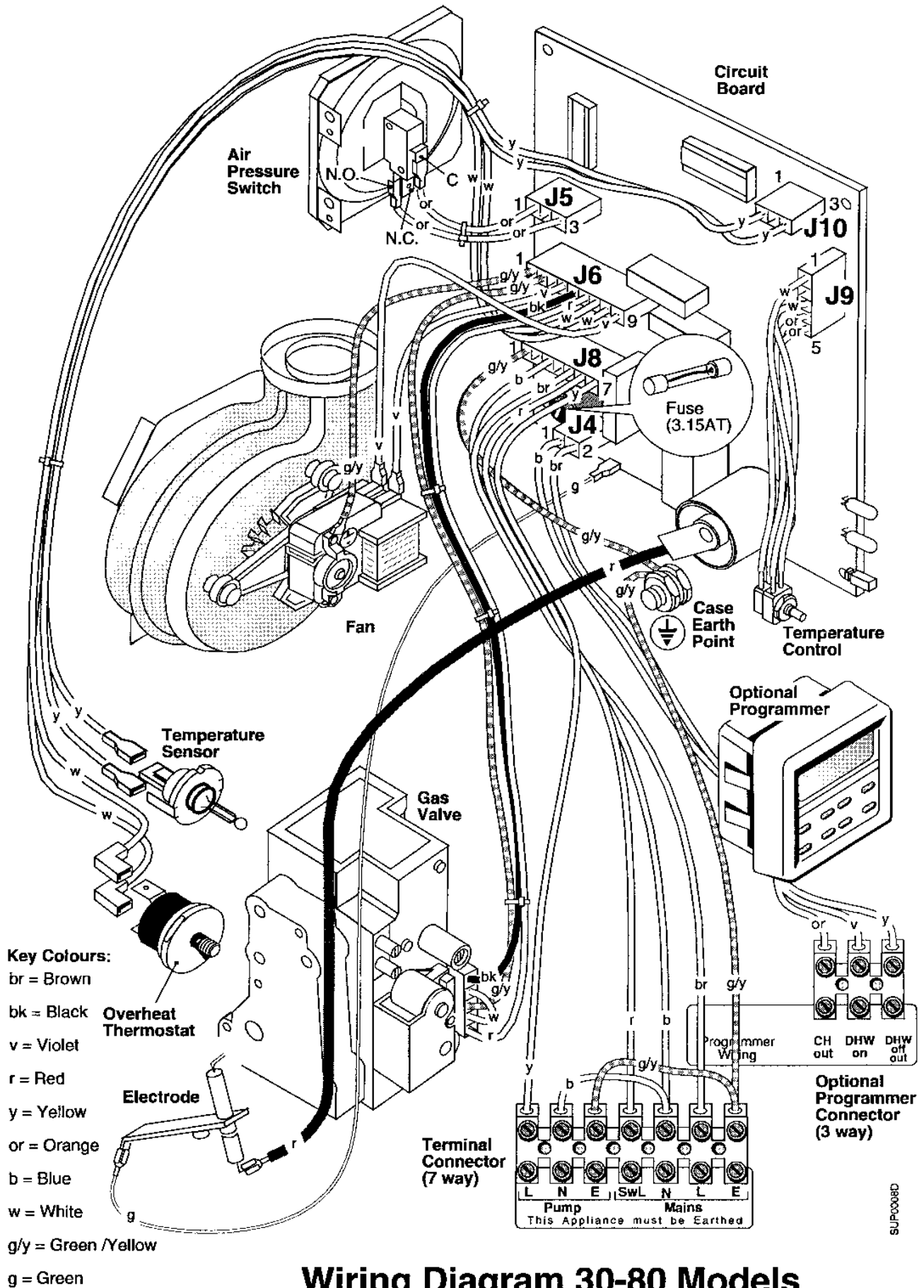
1. Supply external voltage to boiler terminal connections L and N, 230 volts, 50 HZ.
2. Supply external voltage to boiler terminal connection, switch line SW 230 volts, 50 HZ.
3. Pump live from boiler energised, diverter/zone valves operate in accordance with system demand.
4. Boiler control checks, air pressure switch for "No Air Condition" (red light "On", green light "Flashing").
5. If "No Air" the control switches on the fan.
6. After ten seconds air pressure switch proves fan is on.
7. Gas valves open and ignition for 3 seconds (green light flashes rapidly).
8. Boiler firing (green light "On" only).
9. If the flame is not detected at this time, the boiler will turn off.
10. The above sequence will repeat for a further two ignition attempts before going to lockout (indicated by the red light flashing).
11. Pressing the reset button will re-start boiler at No. 1.
12. The control will continue to run the pump for several minutes after any firing of the boiler.
13. The control will run the pump automatically for a few minutes every twenty four hours to maintain the free running of the pump.
14. The standby position on the thermostat control knob will prevent the boiler firing but will permit operation of the pump for sequences 12 and 13.

### Key Colours:

br = Brown	o = Orange
bk = Black	b = Blue
v = Violet	w = White
r = Red	g/y = Green /Yellow
y = Yellow	g = Green

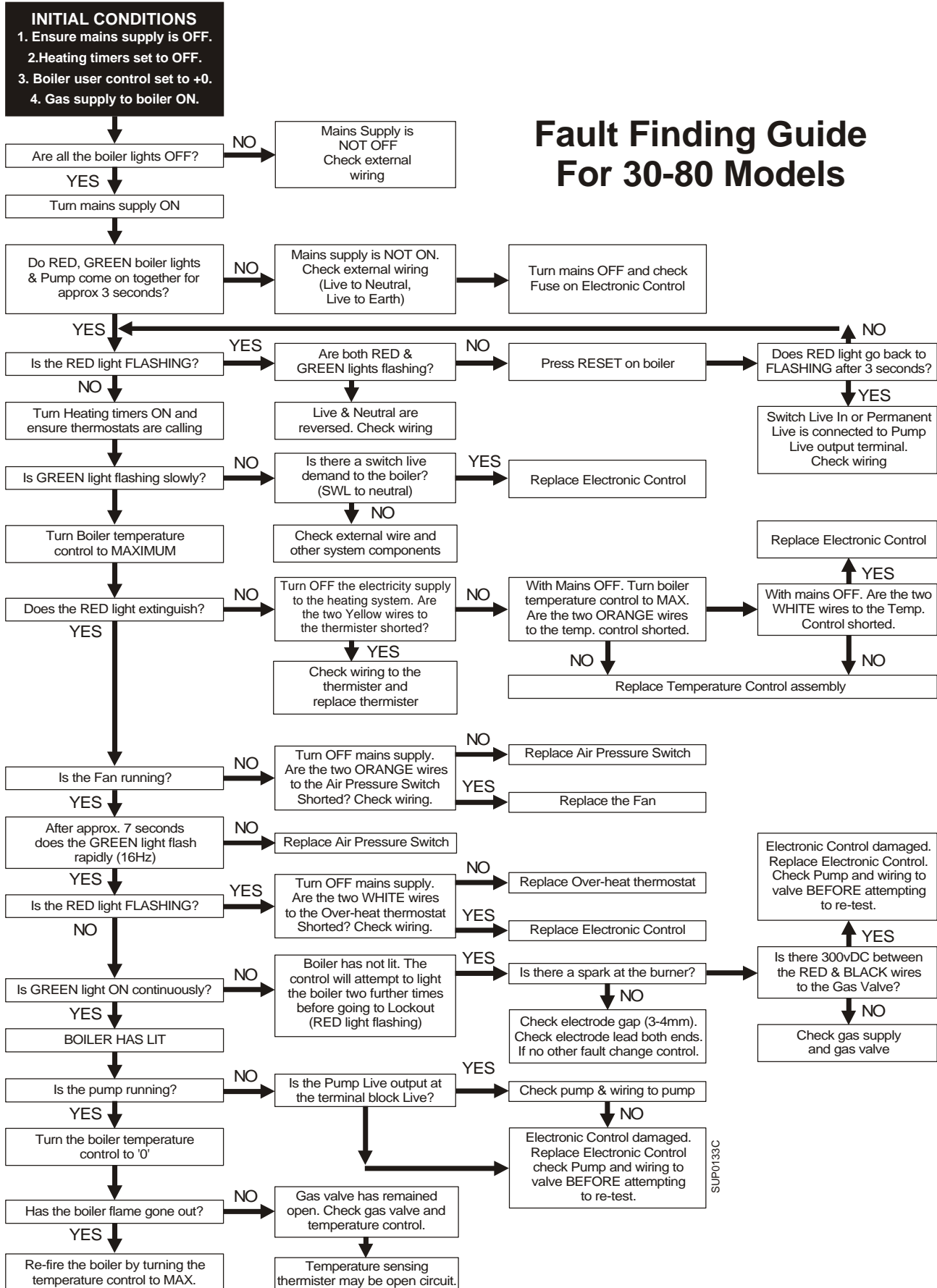




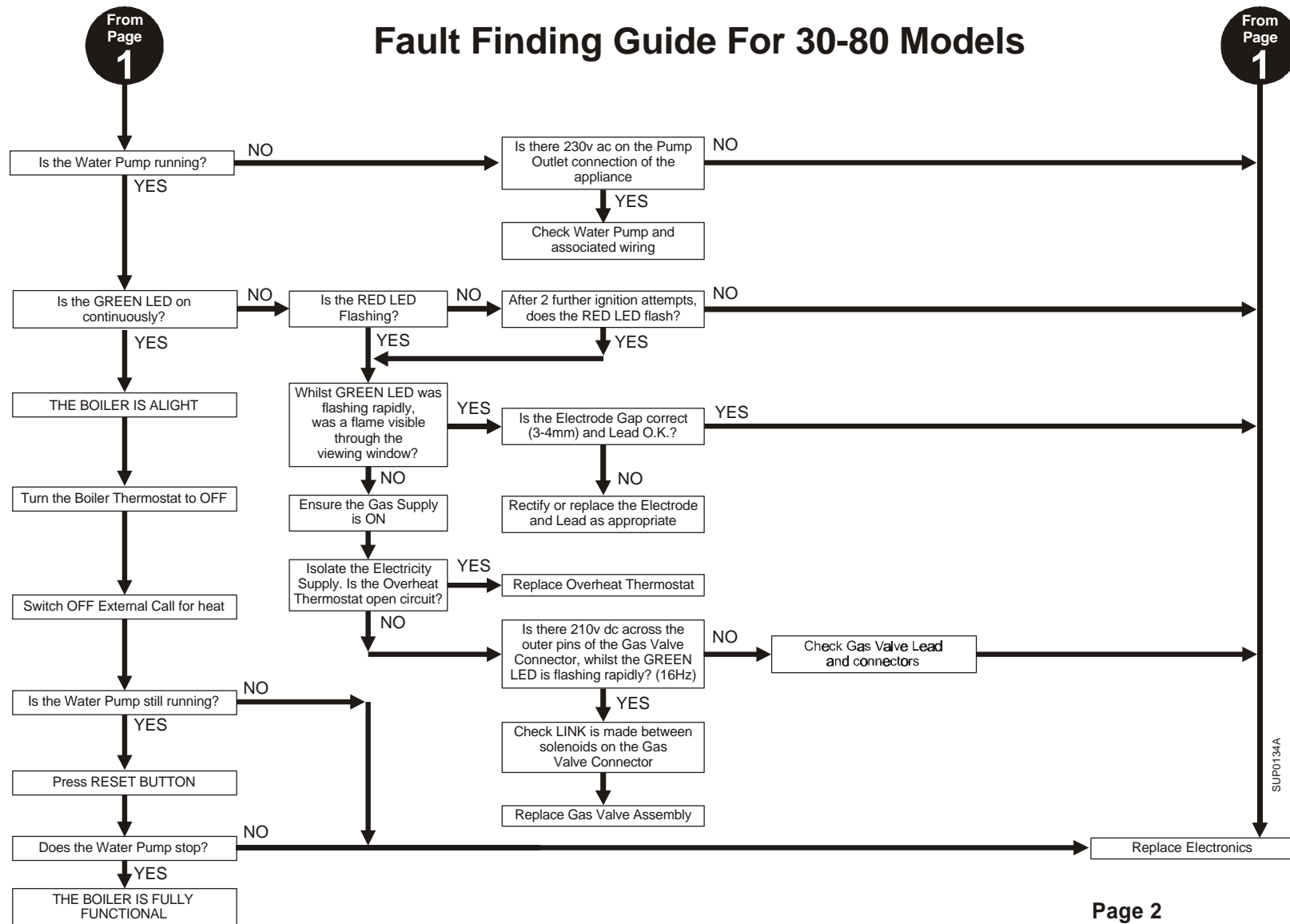


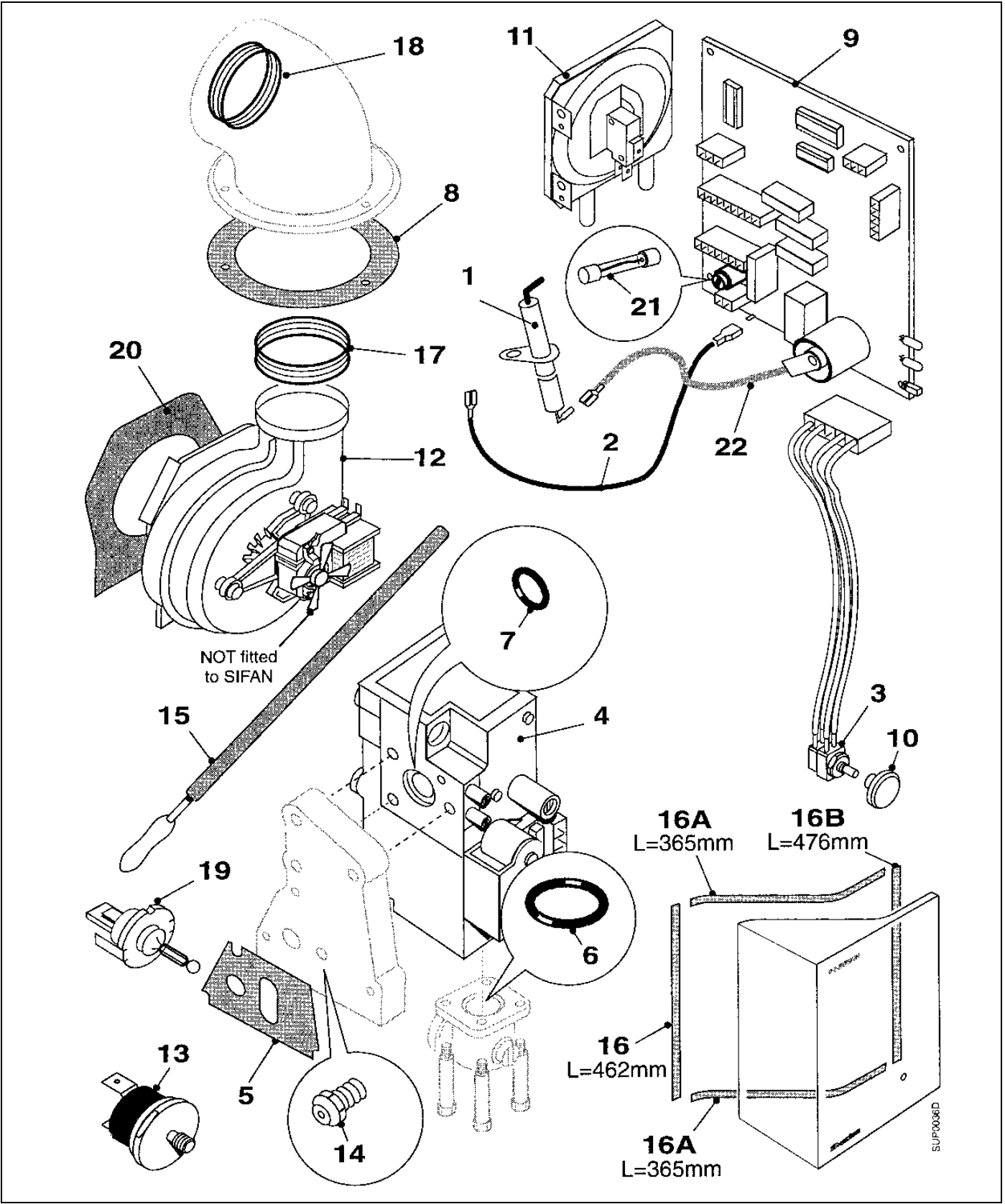
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# Fault Finding Guide For 30-80 Models



SUP0133C





## Short List Spare Parts - Page 37

Drg. Ref.	G.C. No.	Description	Qty.	Part No.
1	114 982	Electrode	1	8407754
2	114 860	Earth Lead	1	8238268
3	114 863	Temperature Control	1	8933012
4	173 132	Gas Control Valve Kit	1	8402550
5	114 832	Manifold Gasket - Case/Manifold	1	8238225
6	114 962	Manifold 'O' Rings - Gas Cock	1	8401648
7	114 963	- Manifold	1	8401656
8	114 945	Flue Elbow Seal	1	8238146
9	114 954	Circuit Board (Issue 04)	1	8407750
10	114 864	Thermostat Knob	1	8238172
11	173 155	Pressure Switch Honeywell	1	8642227
	173 156	Huba	1	8642228
12	114 804	Fan Assembly - 30 to 60	1	8409588
	114 805	- 70 to 80	1	8409589
	E01966	Fan Assembly - 30 to 60	1	8409595
	E01967	- 70 to 80	1	8409596
13	173 130	Overheat Thermostat	1	8404517
14	173 133	Injector - Main Burner 30	1	8411021
	173 134	40	1	8411022
	173 135	50	1	8411023
	173 136	60	1	8411024
	173 137	70	1	8411025
	173 138	80	1	8411026
15	337 862	Flue Scraper	1	907736
16	114 873	Front Panel Seal - Type 1	1	8650691
16a	114 874	Front Panel Seal - Type 2	2	8650692
16b	114 875	Front Panel Seal - Type 3	1	8650693
17	114 948	Fan Outlet Seal	1	8238147
18	114 949	Flue Tube/Elbow Seal	1	8238148
19	114 776	Temperature Sensor	1	8404516
20	114 810	Fan Gasket - 30 to 60	1	8238163
	114 811	- 70 to 80	1	8238165
21	114 983	Fuse (Type: 3.15AT)	1	8160038
22	114 858	Electrode Lead	1	8407753

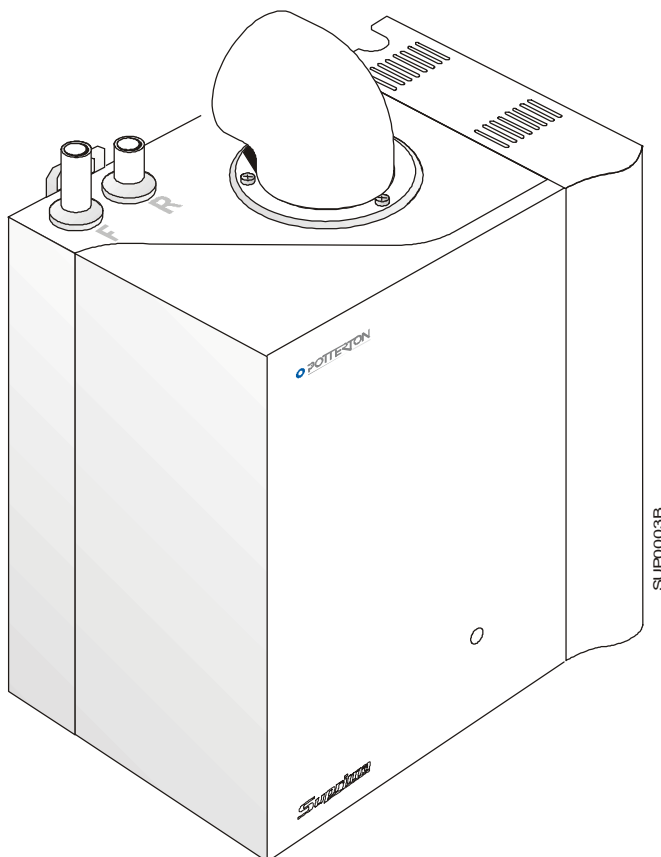
Back page



## Installation & Service Instructions

### Suprema 100

#### Wall Mounted Fan Assisted Balanced Flue Gas Boilers



#### **THE GAS SAFETY (INSTALLATION AND USE) REGULATIONS 1994 (as amended).**

“ In your own interest, and that of safety, it is law that all gas appliances are installed by competent persons, in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution.”

Installation must be in accordance with the Installation & Service Instructions and the rules in force.

#### **LEAVE THESE INSTRUCTIONS WITH THE USER FOR USE ON FUTURE CALLS**

**For Use With Natural Gas  
(G20) Only At 20mbar  
For Use in GB & IE**



**IMPORTANT**  
PLEASE READ THIS BOOK  
BEFORE INSTALLING,  
OPERATING OR SERVICING  
THIS BOILER.

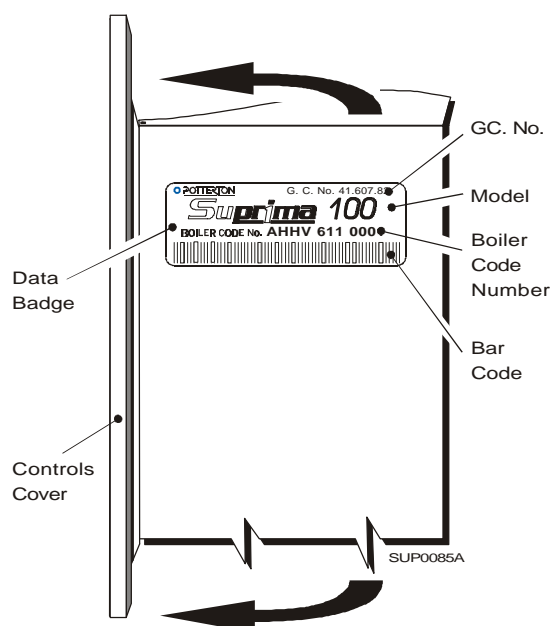


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The models covered by these instructions are:-

Suprema 100 - G.C. No.41 607 82

The boiler model and serial number are given on the boiler data label which is located on the right hand side of the chassis and visible after opening the controls door.



Nominal Boiler Ratings

Boiler Models	Output		Input		Burner Setting pressure		Gas Rate		Injector Size mm dia
	kW	Btu/h	kW	Btu/h	mbar	in wg	m <sup>3</sup> /h	ft <sup>3</sup> /h	
100	28.72	98,000	35.9	122,500	13.6	5.54	3.42	120.9	3.2

Maximum Working Head Minimum Working Head	30.5 m (100 ft) 150 mm (6 in)
Gas Supply Pressure Gas Supply Connection	20 mbar Rc. ½( ½in BSP Female)
Maximum Flow Temperature Flow/Return Connections Water Content	82°C 22 mm Copper 2.1 litres (0.46 gal)
Appliance Lift Weight  Appliance Weight Installed - Dry	34.6 kg (76.3 lbs) 100 Model  39.7 kg (87.5 lbs) 100 Model
Electricity Supply Internal Fuse Power Consumption	230v ~ 50Hz Fused at 3A Type 3.15AT 80 Watts (excluding pump)
Classifications	CAT 1 <sub>2</sub> H C12 & C32 IP20

**SAFETY, PERFORMANCE & QUALITY**

Suprema boilers have been assessed by a Government appointed Notified Body and shown to meet the 'Essential Requirements' of the European Gas Appliance Directive.

The Directive lays down requirements for the safety and efficiency of the appliance, together with its design, construction, and use of materials.

It also requires the production process to be covered by an approved and monitored system of quality assurance.



### Gas Safety (Installation & Use) Regulations 1994 (As Amended).

This appliance must be installed and serviced by a competent person, in accordance with the above regulations.

In the UK 'Corgi' Registered Installers (including the regions of British Gas Plc) undertake to work to a safe and satisfactory standard.

Failure to install appliances correctly could lead to prosecution.

It is in your own interest, and that of safety, to ensure that the regulations are complied with.

Suprima boilers are fully automatically controlled, wall mounted, fan powered, balanced flue appliances using a cast iron heat exchanger.

The boilers are designed for use on fully pumped open vented or sealed water systems with an indirect hot water cylinder.

THEY MUST NOT BE CONNECTED TO A DIRECT CYLINDER.

The boilers are for use on Natural Gas (G20) only.

Samples of the Potterton Suprima gas boilers have been examined by British Gas Plc, a United Kingdom Notified Body. The range is certified to comply with the essential requirements of the Gas Appliance Directive 90/396/EEC, the Low Voltage Directive 72/23/EEC and shows compliance with the Electro Magnetic Compatibility Directive 89/336/EEC and are therefore permitted to carry the CE Mark.

### Delivery & Kits Available

The unit is delivered in two packages (1) the boiler with fittings and (2) the flue/terminal assembly. See page 12 for flue options.

Various kits are available for the Suprima 100, see page 13.

## 1. Installation Requirements - Page 4

### 1.1 Health and Safety Information for the Installer and Service Engineer

Under the Consumer Protection Act 1987 and Section 6 of the Health and Safety at Work Act 1974, we are required to provide information on substances hazardous to health.

Small quantities of adhesives and sealants used in the product are cured and present no known hazards.

The following substances are also present.

#### Insulation and Seals

**Material** - Man Made Mineral Fibre.

**Description** - Boards, Ropes, Gaskets.

**Known Hazards** - Some people can suffer reddening and itching of the skin. Fibre entry into the eye will cause foreign body irritation which can cause severe irritation to people wearing contact lenses. Irritation to respiratory tract.

**Precautions** - Dust goggles will protect eyes. People with a history of skin complaints may be particularly susceptible to irritation. High dust levels are only likely to arise following **harsh** abrasion. In general, normal handling and use will not present high risk, follow good hygiene practices, wash hands before, touching eyes, consuming food, drinking or using the toilet.

**First Aid** - Medical attention must be sought following eye contact or prolonged reddening of the skin.

### 1.2 Codes of Practice

The boiler must be installed in accordance with: The Gas Safety (Installation and Use) Regulations 1994 (As Amended) and the current issue of:-

The Building Regulations, Building Standards (Scotland) Regulations, Local Building Regulations, Model and local Water Undertaking Bye-laws, IEE Wiring Regulations and Health & Safety Document No. 635 "The Electrician At Work Regulations 1989".

---

### 1.3 Gas Supply

The meter and supply pipes must be capable of delivering this quantity of gas in addition to the demand from any other appliances in the house and must be governed at the meter.

The complete installation must be tested for gas soundness and purged as described in BS6891.

### 1.4 Electricity Supply

230V ~ 50Hz via a fused double pole switch with a contact separation of at least 3 mm in both poles adjacent to the boiler. Power consumption is approximately 150W. There must be only one common isolator for the boiler and its control system and it must provide complete electrical isolation.

Fuse the supply at 3 A. The minimum requirement for the power supply cable is that it should be a PVC sheathed cord at least 0.75 mm<sup>2</sup> (24 x 0.2 mm) (code designation HO5 VV-F or HO5 VVH2-F) as specified in table 16 of BS6500:1984.

All wiring external to the boiler shall comply with the latest IEE Wiring Regulations, and any local regulations which apply.

#### **WARNING: THIS APPLIANCE MUST BE EARTHED.**

In the event of an electrical fault after installation of the boiler, preliminary electrical systems checks must be carried out i.e. Earth Continuity, Short Circuit, Polarity and Resistance to Earth.

### 1.5 Location of Boiler

The boiler is not suitable for external installation unless it is suitably protected.

The boiler must be installed so that the flue terminal is exposed to the external air. It is important that the position of the terminal allows the free passage of air across it at all times.

The boiler must be mounted on a flat wall which is sufficiently robust to take the weight of the boiler.

The boiler is suitable for installation to a combustible wall e.g. wood cladding, provided that the flue duct is not closer than 25 mm to combustible material. A metal sleeve should be installed to surround the flue duct to provide a 25mm annular space. Further guidance is given in BS5440:1:1990, sub-clauses 3.3 and 4.2.5.

If the boiler is to be installed in a timber framed building it should be fitted in accordance with the British Gas publication- Part 19 - Building and Kitchen Work. If in doubt advice must be sought from Potterton Myson.

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

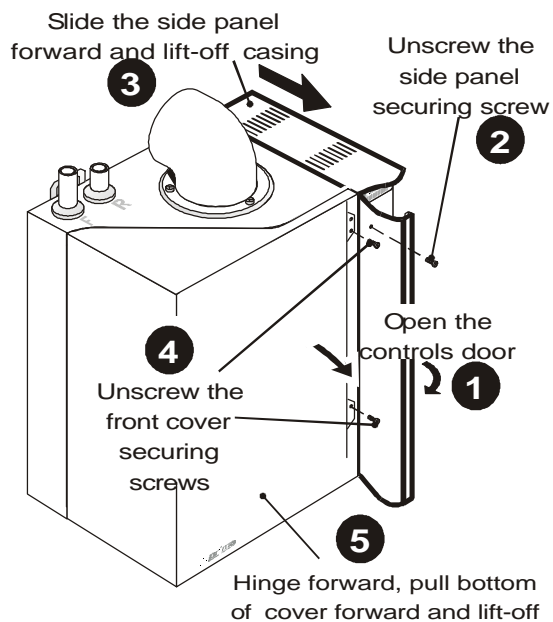
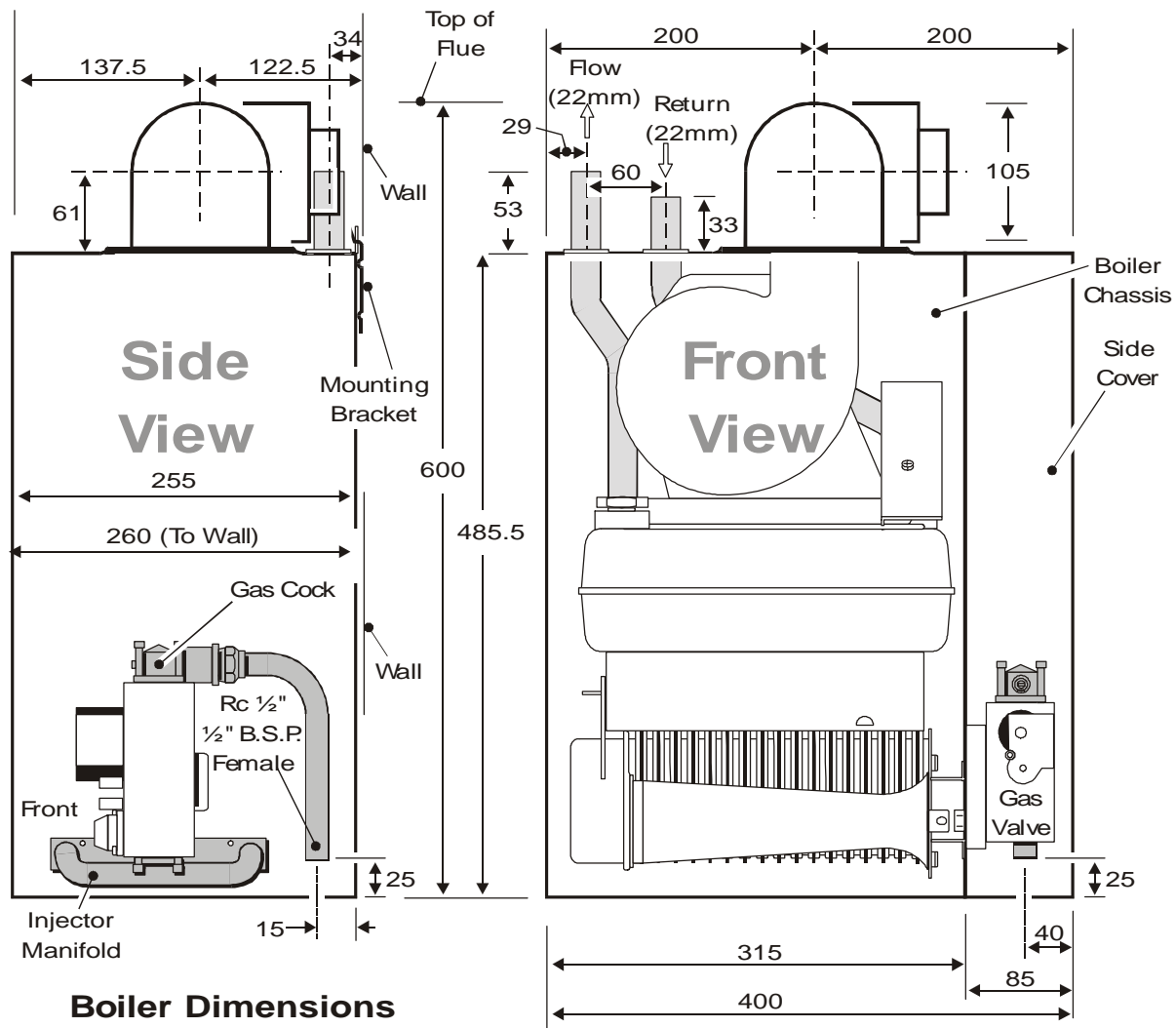
Where a room-sealed appliance is installed in a room containing a bath or shower, any electrical switch or appliance control, utilising mains electricity should be so situated that it cannot be touched by a person using the bath or shower.

Where the installation of the boiler will be in an unusual position, special procedures may be necessary and BS6798 and BS5546 give detailed guidance on this aspect.

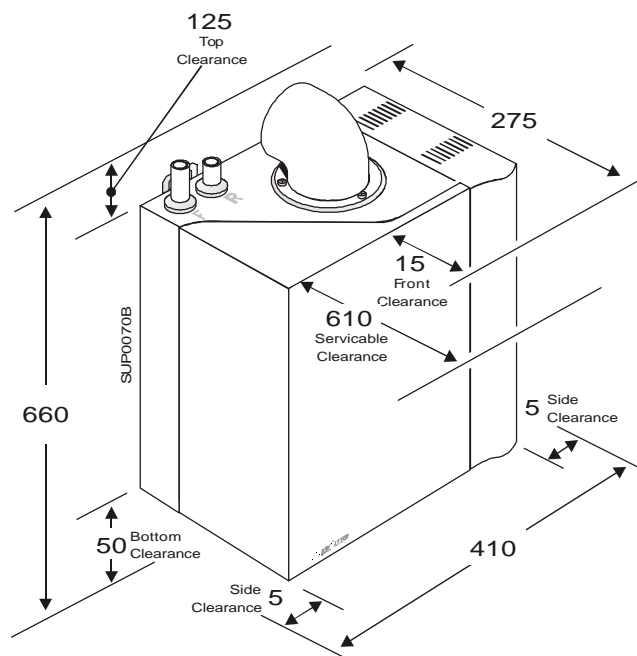
A cupboard or compartment used to enclose the boiler must be designed and constructed specifically for this purpose. An existing cupboard or compartment may be used provided that it is modified for the purpose. Details of essential features of cupboard/compartment design including airing cupboard installations are given in BS6798 and BS5546 and should be complied with.

The boiler requires only the clearances shown on Page 6, after installation.

---



**Remove The Outer Case**



**Boiler Clearances**

## 1.6 Air Supply

The air requirements must meet BS 5440 Part 2.

The room in which the boiler is installed does not require a purpose provided air vent.

If the boiler is installed in a cupboard or compartment, permanent air vents are required in the cupboard or compartment, one at high level and one at low level, either direct to the outside air or to a room. Both high level and low level air vents must communicate with the same room or must be on the same wall to outside air. Both the high level and low level vent must each have a free area as stated below. The free area of each vent may be halved if the ventilation is provided directly from outside.

Free Area - 323 cm<sup>2</sup>

If the boiler is installed in a cupboard or compartment with a door, allow at least 15 mm clearance between the front of the boiler and the door for air movement.

## 1.7 Flue Systems

### Horizontal

The flue/terminal assembly supplied is suitable for a wall thickness of between 150mm and 400mm.

A flue/terminal assembly suitable for a wall thickness of up to 600mm is also available.

Both the flue/terminal assemblies are telescopic and the minimum lengths (150mm/6in) are achieved by cutting with an overlap of 20mm.

Under no circumstances should the total flue length exceed 680mm (no bends allowed).

### Vertical

Vertical Concentric system.

Maximum actual length 1.4m, no bends allowed.

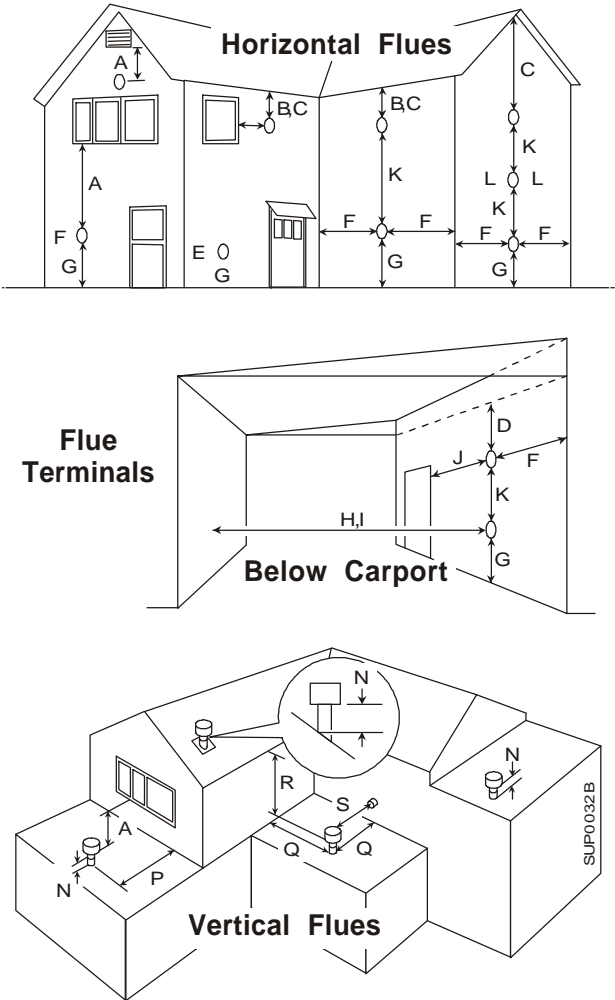
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1.8 Flue Terminal Location

If a horizontal flue is sited less than 2m above a balcony, above ground, or above a flat roof to which people have access, a suitable terminal guard must be fitted. This serves two purposes, to protect the terminal against damage or interference and to protect passers-by. A terminal guard is available (Sales Code: PTERMGUARDEF).

**Note:** Where a flue terminal is installed less than 1 metre from a plastic, or painted gutter, or 500mm from painted eaves, an aluminium shield 1 metre long, should be fitted to the underside of the gutter or painted surface. A suitable wall plate should be fitted to the painted wall surface of a mobile home.

**IMPORTANT:** It is absolutely ESSENTIAL, to ensure that products of combustion discharging from the terminal cannot re-enter the building, or any other adjacent building, through ventilators, windows, doors, natural air infiltration, or forced ventilation/air conditioning. If products of combustion are found to be re-entering any building, the appliance MUST be turned OFF IMMEDIATELY.



POSITION	MIN. DISTANCE mm TO EDGE OF TERMINAL
HORIZONTAL FLUES	
A DIRECTLY BELOW AN OPENABLE WINDOW, AIR VENT, OR ANY OTHER VENTILATION OPENING	300
B BELOW GUTTER, DRAIN/SOIL PIPE	25
C BELOW EAVES	25
D BELOW A BALCONY/CARPORT ROOF	25
E FROM VERTICAL DRAIN PIPES AND SOIL PIPES	25
F FROM INTERNAL OR EXTERNAL CORNERS	100
G ABOVE ADJACENT GROUND OR BALCONY LEVEL	300
H FROM A SURFACE FACING THE TERMINAL	600
I FACING TERMINALS	1,200
J FROM OPENING (DOOR/WINDOW) IN CARPORT INTO DWELLING	1,200
K VERTICALLY FROM A TERMINAL ON THE SAME WALL	1,500
L HORIZONTALLY FROM A TERMINAL ON THE SAME WALL	300
N ABOVE ROOF LEVEL (TO BASE OF TERMINAL)	300
P FROM ADJACENT WALL TO FLUE	210
Q FROM INTERNAL CORNER TO FLUE	230
R BELOW EAVES OR BALCONY	600
S FROM FACING TERMINAL	1,200

1.9 The System

The boiler must be used on Indirect Fully Pumped systems only, which may be sealed or open vented.

The system should be designed so that the maximum static head does not exceed 30.5m (100ft) and a minimum of 150mm (6in).

On all systems the pump live connection should be wired to the boiler terminal block, it will then be controlled by the pump over-run. This will ensure that the pump will continue to run after boiler shut down if the water temperature is high, thus preventing nuisance operation of the overheat thermostat.

It is important that where electrically operated zone valves are used the boiler is wired so it does not cycle when the zone valves are closed. Also, systems fitted with controls that close both hot water and central heating circuits while the boiler is still hot, must be fitted with a by-pass circuit to dissipate the residual heat from within the boiler.

If a three port valve is used as shown in Fig. 3 a by-pass is not necessary since one circuit is always open.

Where a pair of two port valves are used, a by-pass is necessary. The total length of the by-pass circuit taken from the boiler connections should be greater than 4 metres of 22mm pipe. It should be fitted with a lockshield valve and be adjusted to maintain a minimum flow through the boiler of 4.5litres/min (1 gal/min).

Systems fitted with controls which allow the boiler to operate when both the hot water and central heating circuits are closed i.e. mechanically operated thermostatic control valves, must be fitted with a by-pass circuit of:-

1. A minimum length of bypass of 2m of 22mm dia. pipe.
2. Maintaining a minimum water flow rate through the boiler of 9 litres/min (2 gal/min).

A suggested method of meeting these requirements by using a bathroom radiator fitted with two lockshield valves is shown in Fig. 3.

Additional system information can be found in the Control Systems, pipework and Wiring Guide.

Drain off taps should be fitted in the pipework close to the boiler and in the low points of the system.

**Note:** Although the system can be emptied using the drain off taps installed in the pipework around the system, to empty the boiler it is necessary to remove the drain off screw positioned on the heat exchanger.

## Sealed Systems

### Installation

The installation must comply with the requirements of BS 6798: 1987 and BS 5449: Pt 1. The British Gas publication "British Gas Specification for Domestic Wet Central Heating Systems" should also be consulted.

### Pressure Relief Valve

A non-adjustable spring-loaded pressure relief valve, preset to operate at 3 bar (45 lbf/in<sup>2</sup>) shall be used. It must comply with BS 6759: Pt 1. and include a manual testing device. It shall be positioned in the flow pipe either horizontally or vertically upwards and close to the boiler. No shut-off valves are to be placed between the boiler and the safety valve. The valve should be installed with a discharge pipe which permits the safe discharge of steam and hot water such that no hazard to persons or damage to electrical components is caused.

### Pressure Gauge

A pressure gauge incorporating a fill pressure indicator, covering the range 0 - 4 bar (60 lbf/in<sup>2</sup>) shall be fitted to the system. It should be connected to the system, preferably at the same point as the expansion vessel. Its location should be visible from the filling point.

### Expansion Vessel

A diaphragm type expansion vessel to BS 4814: Pt 1. shall be fitted close to the inlet side of the pump. The connecting pipework should not be less than 15mm. Pipework connecting the expansion vessel should not incorporate valves of any sort. Methods of supporting the vessel are supplied by the vessel manufacturer. The nitrogen or air charge pressure of the expansion vessel shall not be less than the hydrostatic head, (height of the top point of the system above the expansion vessel). To size the expansion

vessel it is first necessary to calculate the volume of water in the system in litres. The following volumes may be used as a conservative guide to calculating the system volume.

Boiler Heat Exchanger:	2.1 litres
Small Bore Pipework:	1 litre per kW of system output
Micro Bore Pipework:	7 litres
Steel Panel Radiators:	8 litres per kW of system output
Low Water Capacity Radiators:	2 litres per kW of system output
Hot Water Cylinder:	2 litres

If the system is extended, the expansion vessel volume may have to be increased unless provision has been made for extension. Where a vessel of the calculated size is not available, the next available larger size should be used. The boiler flow temperature is controlled at approximately 82°C.

The vessel size can now be determined from the information in Table 1 where V = System volume in litres.

<b>Vessel Charge Pressure (bar)</b>	<b>0.5</b>	<b>1.5</b>
<b>Initial System Pressure (bar)</b>	<b>1.0</b>	<b>1.0</b>
<b>Expansion Vessel Volume (litres)</b>	<b>V x 0.11</b>	<b>V x 0.087</b>

Table 1.

### Cylinder

The hot water cylinder must be an indirect coil type or a direct cylinder fitted with an immersion calorifier suitable for operating at a gauge pressure of 0.3 bar (5 lbf/in<sup>2</sup>) in excess of safety valve setting. Single feed indirect cylinders are not suitable for sealed systems.

### Method of Make-up

Provision shall be made for replacing water loss from the system either:-

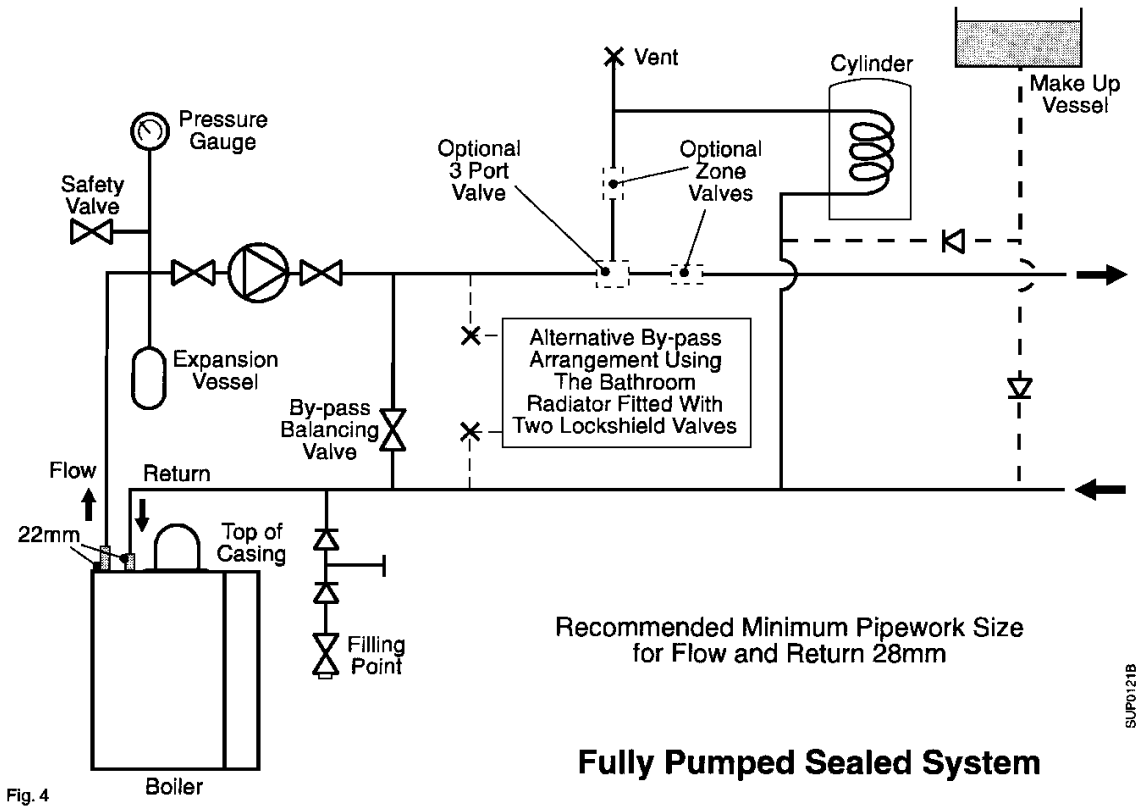
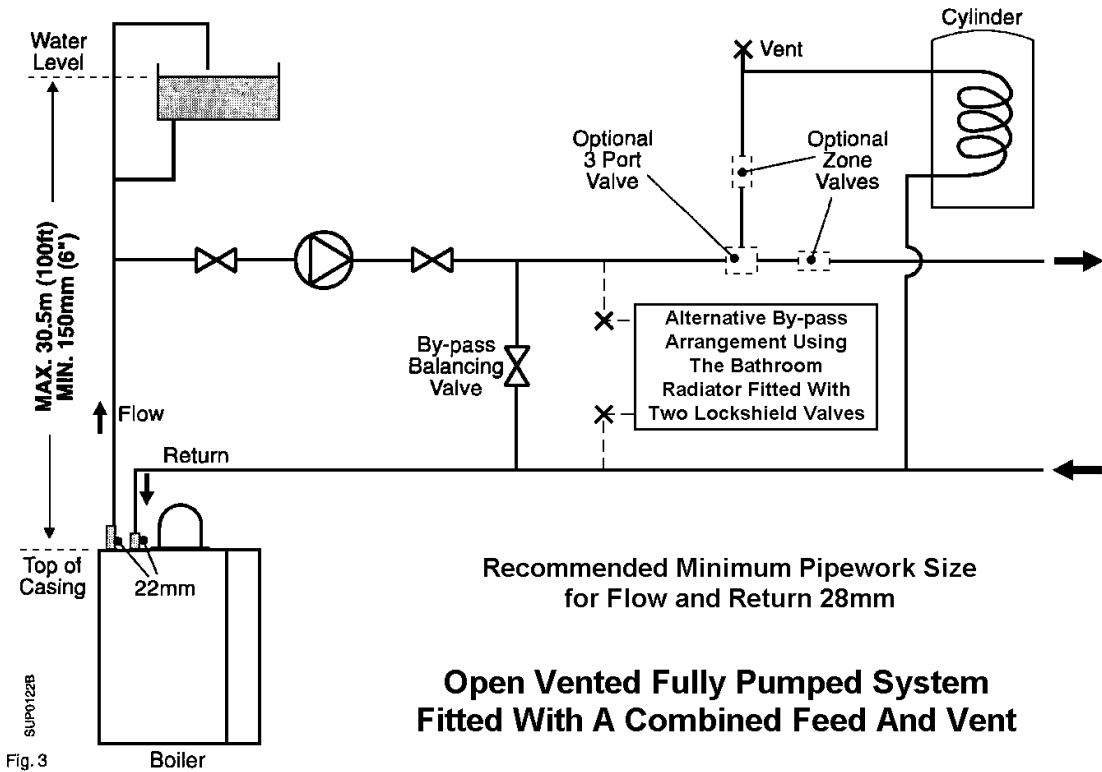
- i) from a make-up vessel or tank mounted in a position higher than the top point of the system, and connected through a non-return valve to the system on the return side of the hot water cylinder or the return side of all heat emitters.
- or
- ii) where access to a make-up vessel would be difficult by using the mains top up method or a remote automatic pressurisation and make-up unit as shown in Figs. 5 & 6.

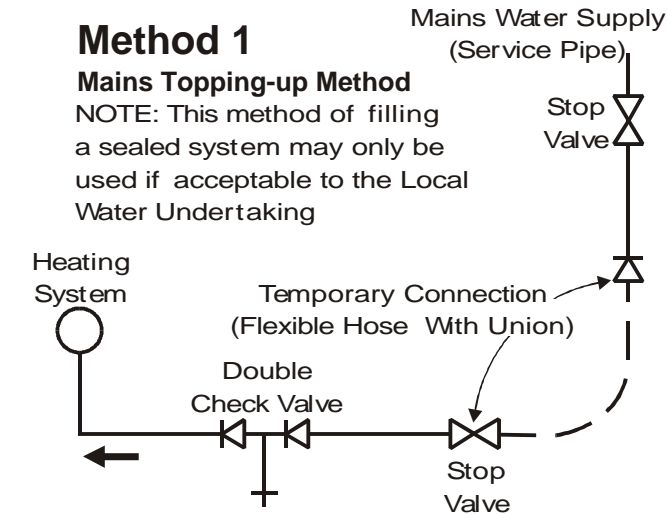
### Mains Connection

There shall be no connection to the mains water supply or to the water storage tank which supplies domestic hot water even though a non-return valve, without the approval of the Local Water Authority.

### Filling Point

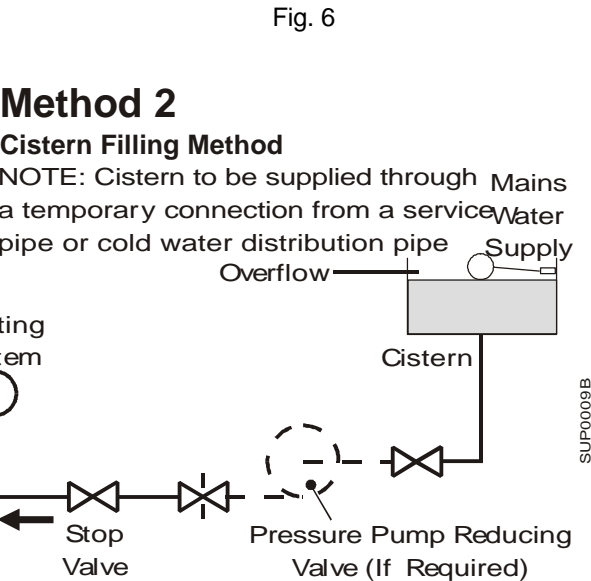
The system shall be fitted with a filling point at low level which incorporates a stop valve to BS 1010 and a double check valve (approved by the National Water Council) to be fitted in this order from the system mains, see Fig. 5.



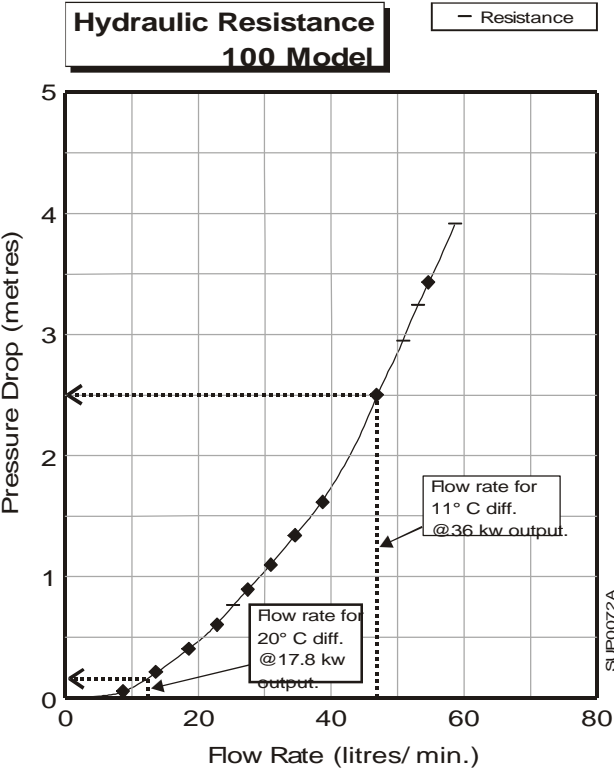


**Circulation Pump Selection**

The resistance through the heat exchanger when operating with a water flow rate producing an 11°C temperature rise at maximum boiler output are shown in the table. If other controls such as three position valves are used in the system, the resistance through them, quoted in their manufacturers literature must be taken into account. The pump may be fitted on either the flow or return and **MUST** be wired directly to the boiler terminal block. It must be fitted with two isolating valves which are positioned as close to the pump as possible. Closing of any valve must always leave the open vent unobstructed.



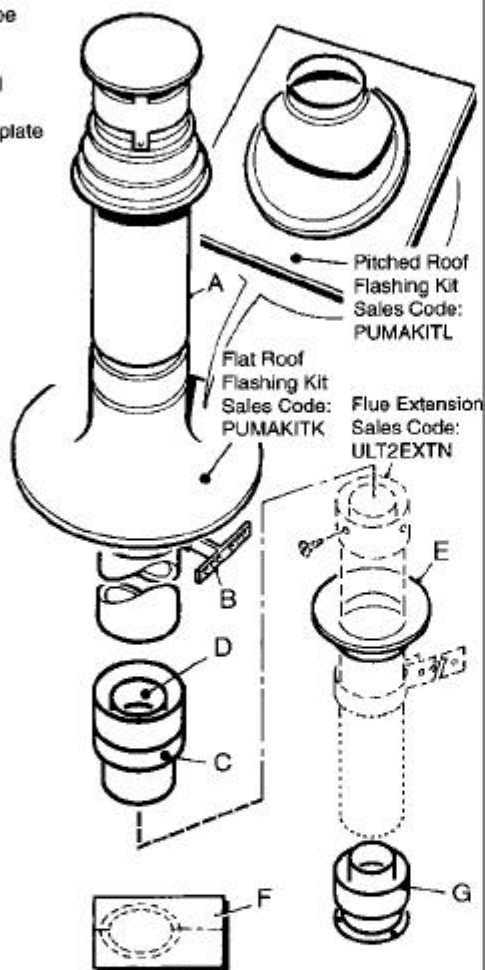
	Water Flow Rate	Boiler Resistance	
	l/min	mbar	m
100	37.4	147.0	1.5





## Concentric Vertical Flue Kit: Sales Code: SUPKITD

- A) Terminal Assy.
- B) Terminal Clamp Bracket
- C) Air Tube Adaptor
- D) Product Tube Adaptor
- E) Ceiling Seal
- F) Ceiling Template
- G) Adaptor



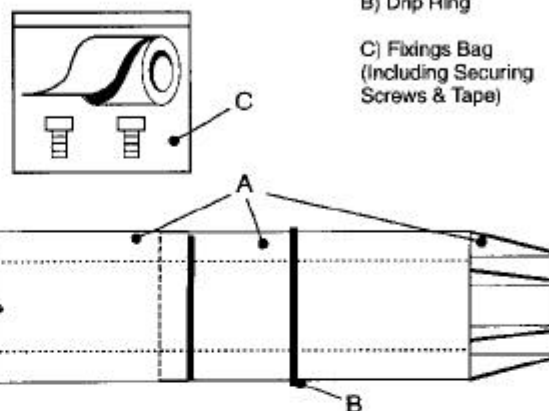
## Telescopic Horizontal Flue Kit: Sales Code: 1SUPFLUE (up to 300mm) Standard

## Sales Code: 2SUPFLUE (up to 550mm) Alternative

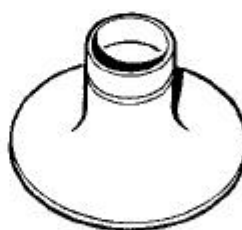
A) Telescopic Flue Assy.  
(Including Terminal)

B) Drip Ring

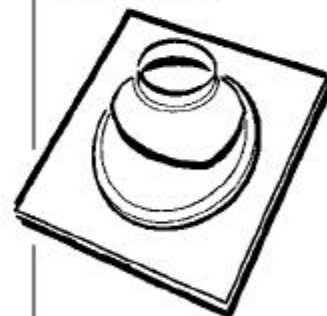
C) Fixings Bag  
(Including Securing  
Screws & Tape)



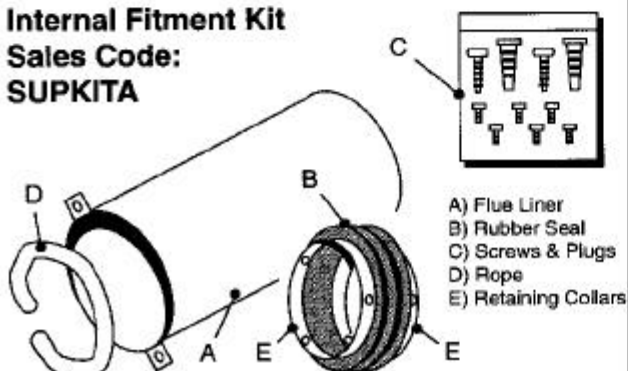
## Flat Roof Flashing Sales Code: PUMAKITK



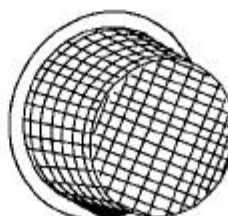
## Pitched Roof Flashing Sales Code: PUMAKITL



## Internal Fitment Kit Sales Code: SUPKITA



## Terminal Guard Sales Code: PTERMGUARDEF



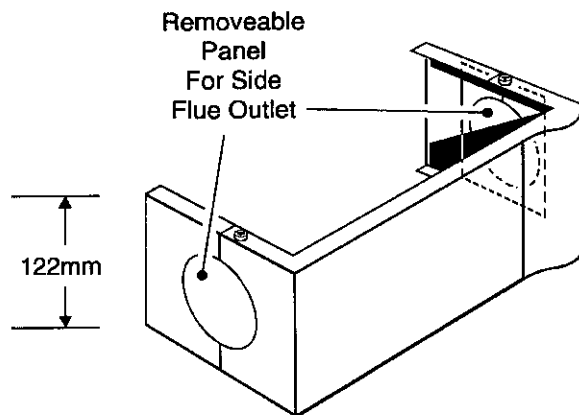
## Wall Plate Pack: Sales Code: SUPKITB



SUP006A

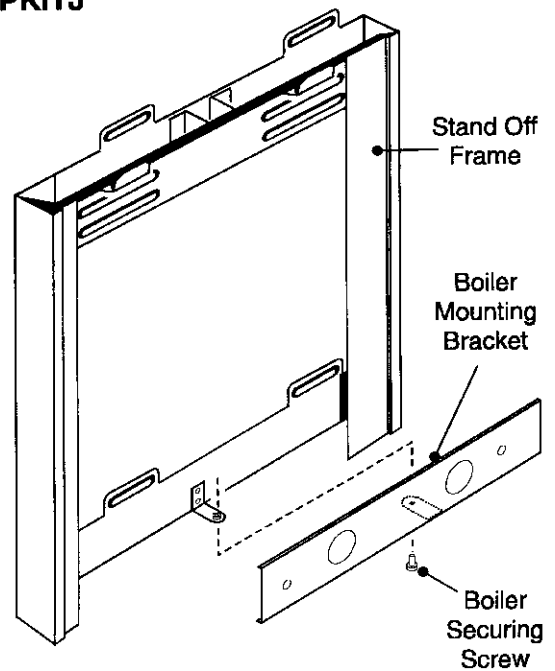
### Flue Turret Cover

**Sales Code:  
SUPFITI**



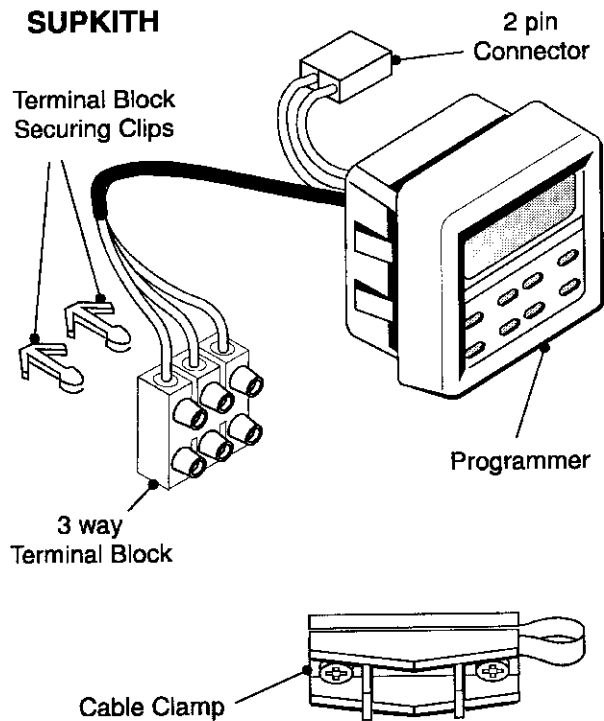
### Boiler Stand Off Kit

**Sales Code:  
SUPKITJ**



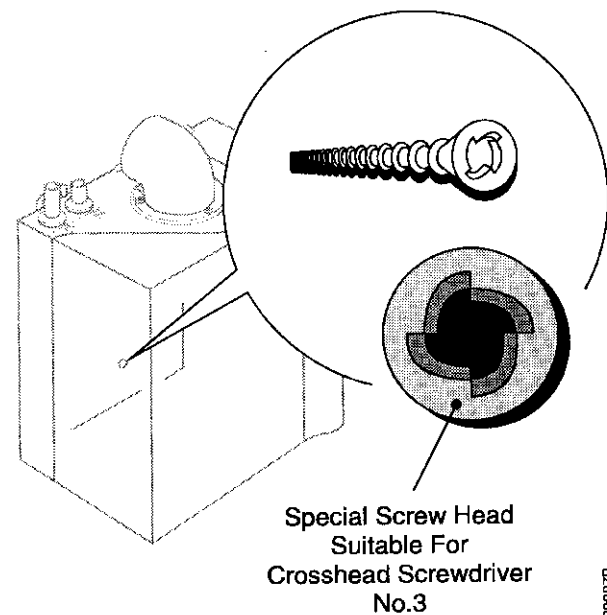
### Programmer Kit

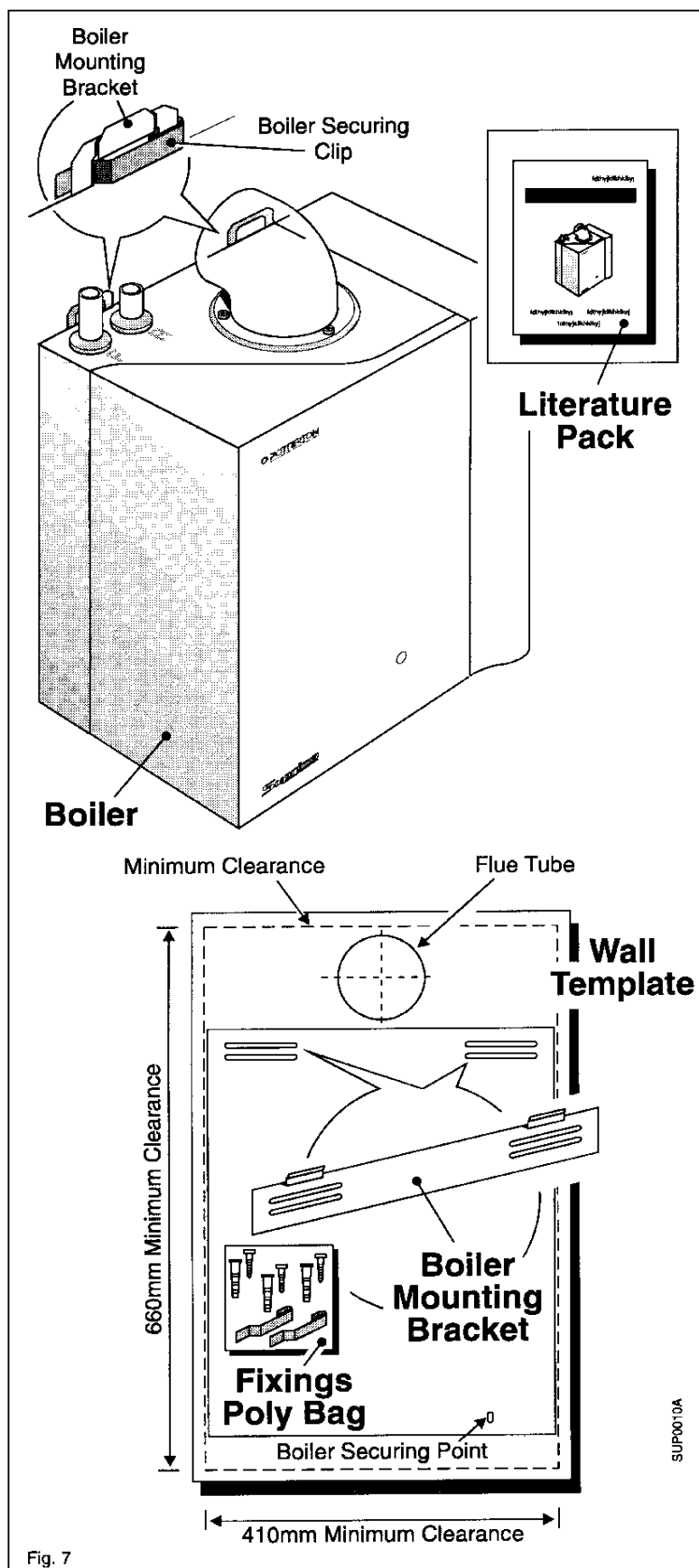
**Sales Code:  
SUPKITH**



### Anti-theft Kit

**Sales Code:  
SUPKITP**





## 2.1 Unpack & Prepare the Boiler

These instructions assume you have decided on where the boiler will be located and the type of flue system to be used.

1. Carefully unpack the boiler.
2. Do not discard any packaging until all the items are accounted for.
3. Open the controls cover, remove the securing screw and washer, pull off the controls cover and put safely aside.
4. Remove two screws and washers, remove the white front case and put safely aside.
5. Place the mounting template in the proposed boiler position ensuring that it is level. Minimum clearances are accounted for on the template.
6. Mark the flue hole, remove the template and carefully cut the flue hole through the wall. See fig.8 for Side Flue.
7. Place the mounting template centrally over the hole (ensure the template is level) and mark out the two screw fixing hole positions.
8. Remove the template and drill the two holes using a 7mm drill.
9. Insert wall plugs and secure the mounting bracket to the wall using three No. 12 x 2" woodscrews.
10. Lift the boiler onto the mounting bracket, slide both boiler securing clips over the mounting bracket (this prevents the boiler from being accidentally lifted off the the mounting bracket), see fig.7.
11. The third screw provided is also to prevent the boiler from being lifted off the mounting bracket, once the boiler is mounted on the wall. This screw can be replaced by an anti-theft kit see note below.

**Note:** There is provision for an anti-theft securing point (sales code: SUPKITP) which may be used if required.

## 2.2 Install the Flue

**Maximum flue lengths are as follows:**  
**100 Model - 680mm**

**Note:** For flue lengths less than the minimum telescopic length, the tubes can be cut to suit. Ensure that the same length is removed from the inner and outer tubes to maintain a 20mm overlap (minimum).

These instructions are for rear and side flue applications.

### Rear Flue

1. Measure the wall thickness and add 66mm (or 106mm for installations using the System Boiler or Stand Off Kits).

### Side Flue

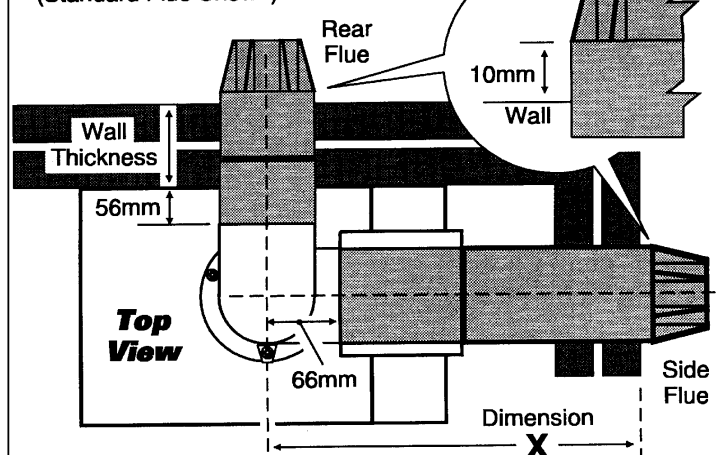
1. Determine the X dimension (wall thickness + distance to boiler centreline).

### For both Rear & Side Flues

2. Extend the telescopic flue to the required length, minimum 20mm overlap.
3. Drill through the pilot hole and secure with self tapping screw.
4. Wrap tape around the joint on the outer duct to seal the flue, slide drip ring into a position to coincide with the air gap in the wall (cavity wall).
5. Slide the flue through the hole until it stops on the pin.
6. The boiler is supplied with the flue elbow set to the rear. For side outlet slacken the screws and turn the elbow to the required position and re-tighten screws. Ensure that the seals are still correctly located.
7. Hang the boiler onto the mounting bracket. To square the boiler to the wall adjust the boiler alignment screws on the back panel of the boiler.
8. Slide the flue back until it engages in the elbow bayonet connection, twist anti-clockwise to lock.
9. Drill through pilot hole and lock flue in position with the self tapping screw provided.
10. Make good the wall around the flue, both outside and inside.

## Flue Measurements

(Standard Flue Shown)



Rear Flue without Boiler Stand Off Kit	Rear Flue with Boiler Stand Off and System kits	Side Flue
<b>Flue Length =</b> Wall Thickness + 66mm	<b>Flue Length =</b> Wall Thickness + 106mm	<b>Flue Length =</b> Dimension X - 56mm

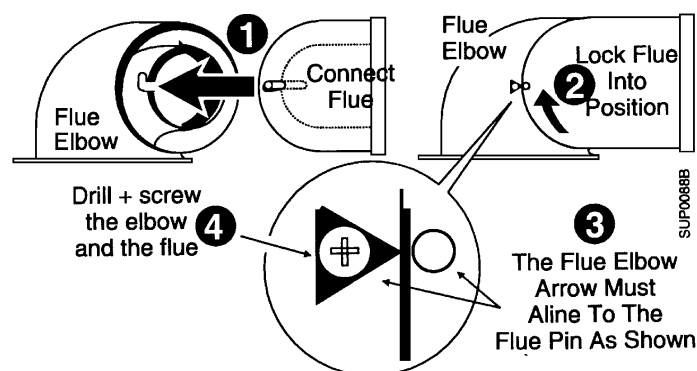
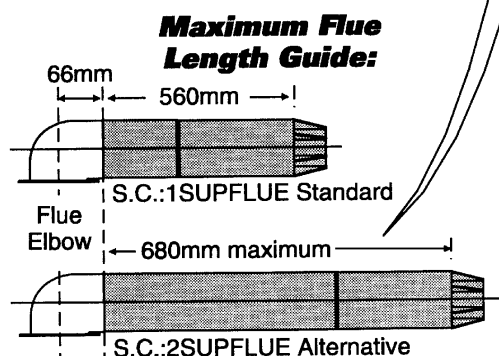
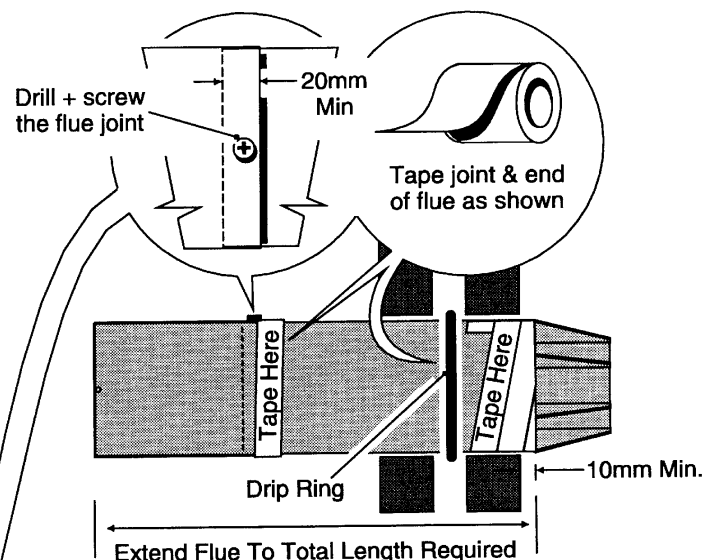


Fig. 8

## 2.3 Connect the Power Supply Cable

1. Cable clamping is provided on the front of the controls panel. Feed the cables up and over the back of the chassis, through the clamp and into the terminal connection. Connect the wires, brown to L and blue to N and green/yellow to earth ( $\perp$ ).

**Note:** When connecting the power supply cable, ensure that the length of the earth wire is such, that if the power supply cable pulls out of the cable clamp the live and neutral wires become taut before the earth wire.

2. The pump wiring should be routed through the hole in the base of the rear cover, through the cable clamp and connected to the terminal connection.
3. Take up excess slack in the cables between the terminal block and the cable clamp, then tighten the cable clamp screws. Ensure sufficient slack is available to the cable clamps to allow the control panel to hinge freely. Check by opening the control panel. If fitting the optional Potterton timer go to section 2.4 before performing steps 4 and 5 below.
4. Secure the controls assembly to the chassis using the screw previously removed.
5. Carry out preliminary electrical system checks i.e. Earth Continuity, Short Circuit, Polarity and Resistance to Earth.

### Frost Thermostat:

If a Frost Thermostat is to be fitted, the connections should be made in the wiring external to the boiler. The Frost Thermostat should be connected between the Permanent Live & Switch Live in the supply cable to the boiler.

**Do not switch on the electricity supply at this stage.**

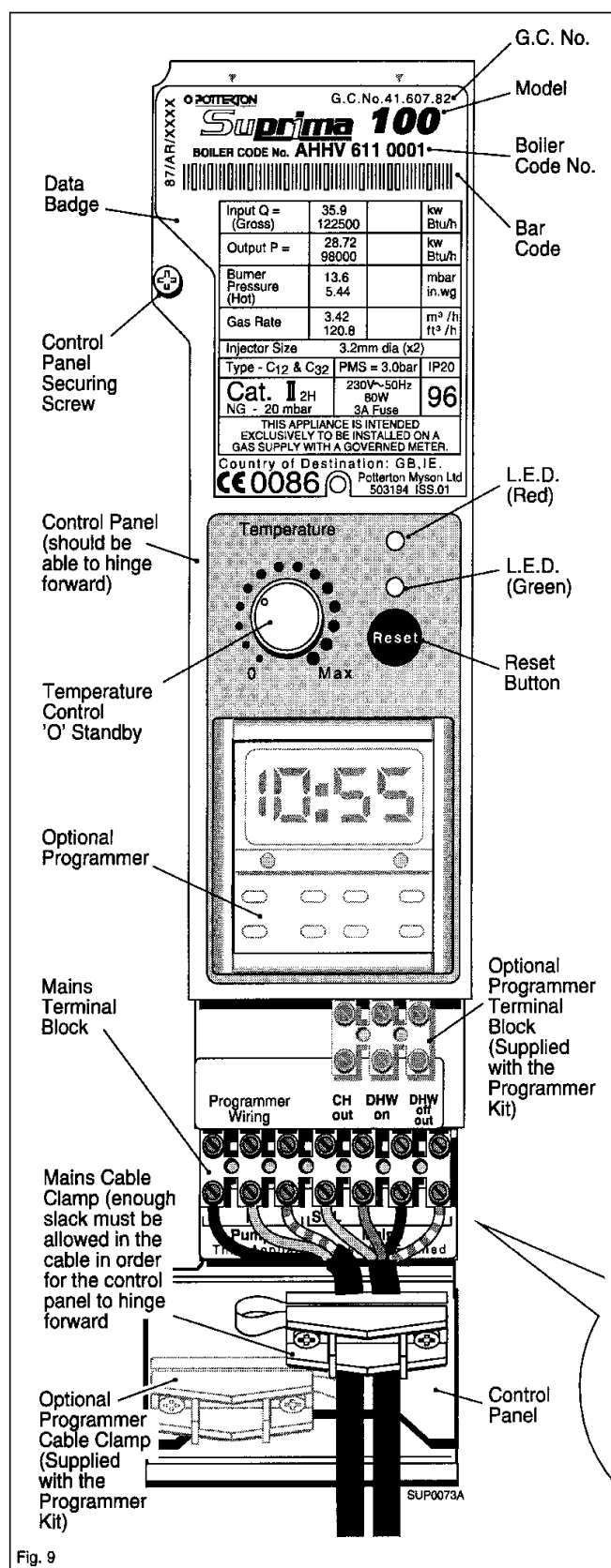
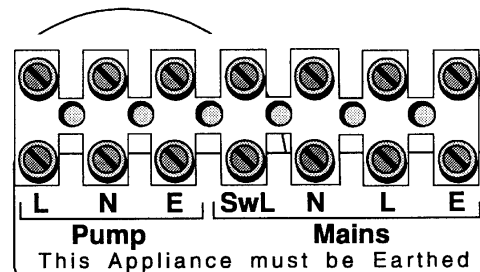
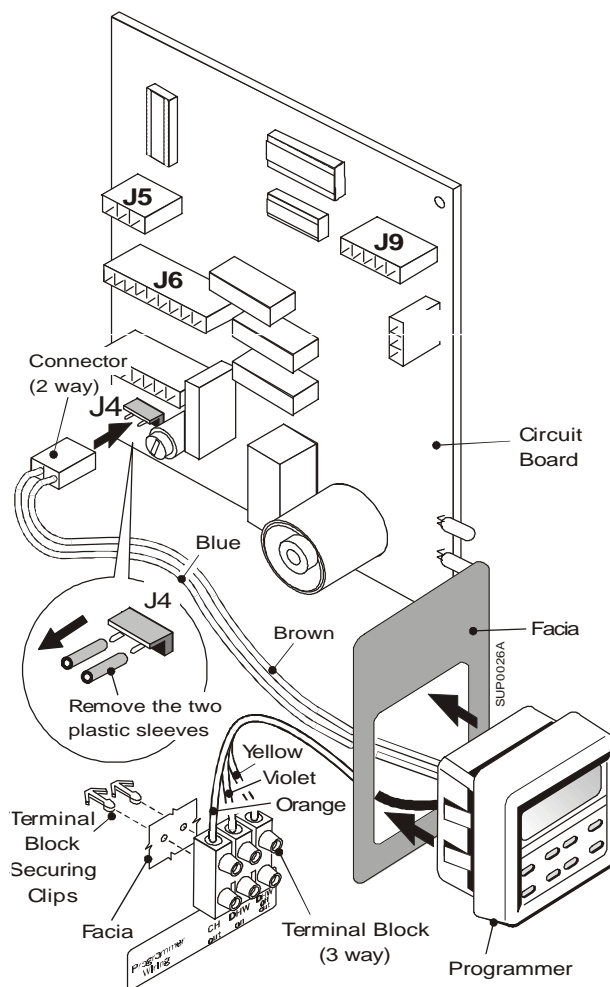


Fig. 9



## 2.4 Install the Optional Programmer

1. Carefully remove the blanking panel from the fascia and locate the programmer into the cut out.
2. Remove the two plastic sleeves and connect the programmer's electrical plug onto position J4 on the circuit board.
3. Connect the 3 way terminal block to the metal work immediately below the programmer using the two screws provided.



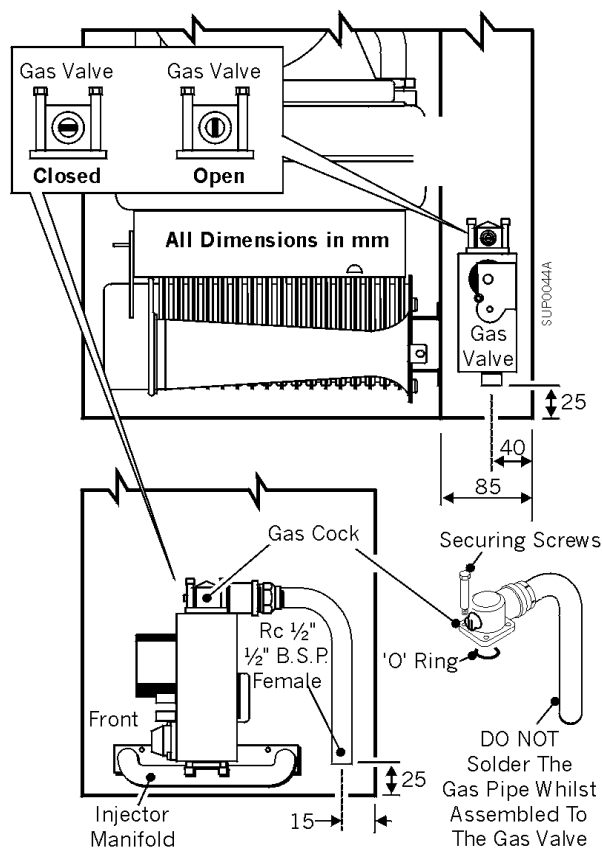
## 2.5 Connect the Gas Supply

Ensure that the gas supply is isolated. Connect the gas supply using a suitable adaptor to the gas cock.

**Important:**  
Do not solder the fitting whilst assembled to the gas cock.

The pipe diameter required will depend on the boiler model and the pipe length from the gas meter. Ensure that the gas supply pipe is selected in accordance with BS 6891 so that an adequate gas supply to the boiler is provided.

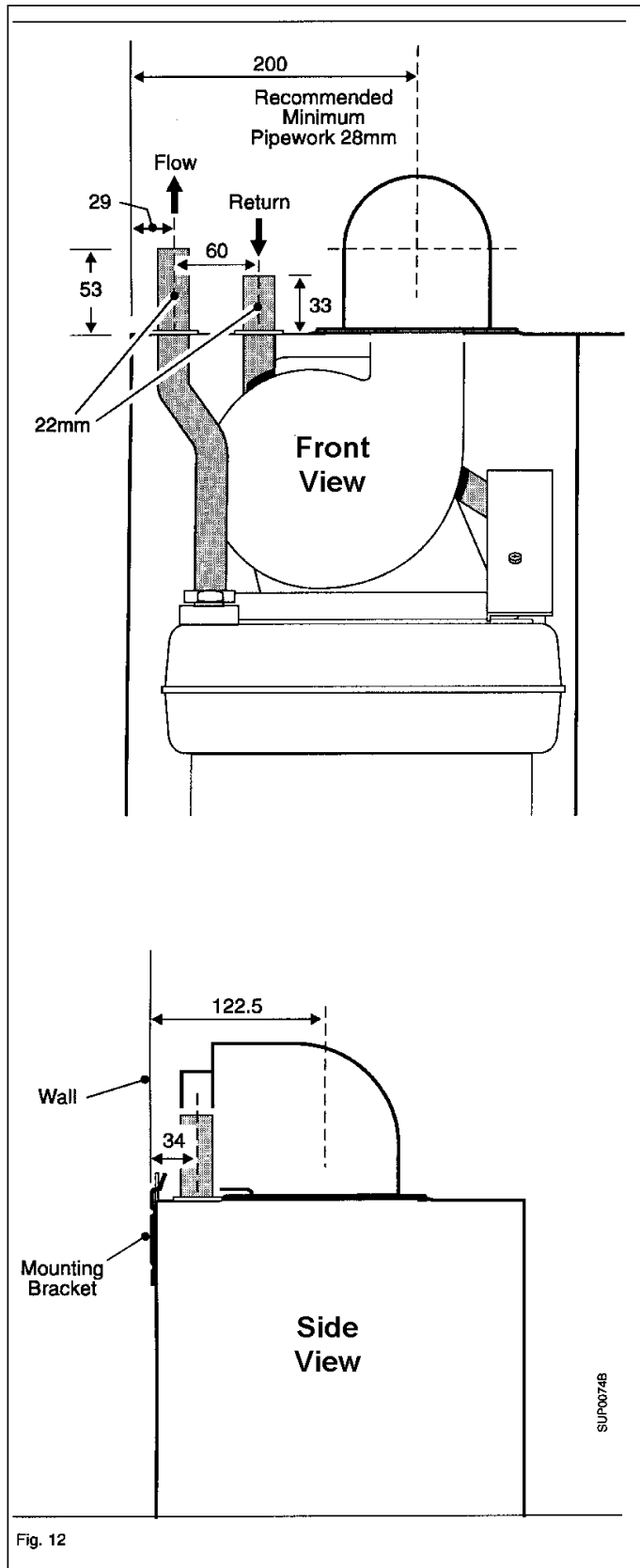
Do not turn the gas supply on at this stage.



## 2.6 Connect the Water System

1. Connect system pipework to the boiler, compression fittings should be used.

**Note:** Drain off taps should be installed at the lowest points in the system.



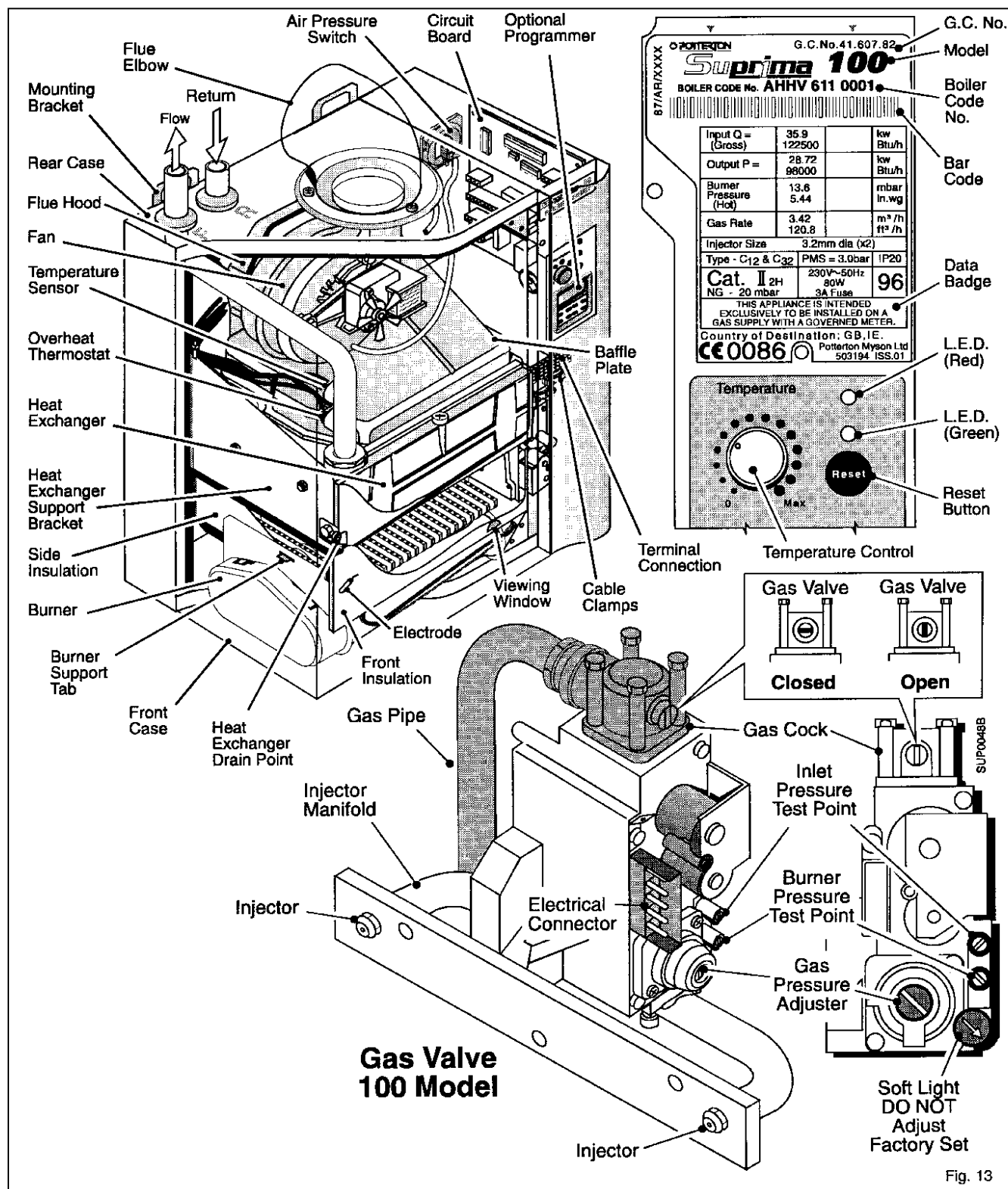


Fig. 13

### Important

The Commissioning and boiler adjustment must only be carried out by a suitably qualified personnel. Potterton Myson Ltd. offer this service on a chargeable basis.

### Important

When checking for gas soundness open all windows and doors in the room. Extinguish all naked lights, cigarettes, pipes, etc.



### 3.1 Commission the Boiler

**Open Vented Systems** - Remove the pump and flush the system thoroughly with cold water. Re-fit the pump. Fill and vent the system then check for leaks.

**Sealed Systems - Note:** The system can be filled using a sealed system filler pump with a break tank or by any other method approved by the Local Water Authority. Remove the pump and flush the system thoroughly with cold water. Re-fit the pump. Fill and vent the system until the pressure gauge registers 1.5 bar (21.5 lbf/in<sup>2</sup>) and check for leaks. Raise the pressure until the safety valve lifts, this should occur within  $\pm 0.3$  bar of the preset lift pressure of 3 bar. Release water to attain the correct cold fill pressure.

#### All Systems

**Warning:** Before lighting the boiler, ensure that the outer white case has been correctly fitted and that the sealing strip fitted to the outer white case is forming a tight seal with the main boiler chassis. The controls cover is left off at this stage.

Preliminary electrical system checks. These checks must be carried out before attempting to light the boiler.

They are:- Earth Continuity, Short Circuit, Polarity & Resistance to Earth.

- 1) The whole of the gas installation must be checked for soundness and purged in accordance with BS 6891.
- 2) Set the boiler temperature control knob to 'O' Standby.
- 3) Turn the boiler gas service cock to the 'On' position and that the main gas supply is turned 'On'.
- 4) Make sure that the system is full of water and that the pump and radiator isolating valves are open. Vent air from the system.
- 5) Ensure that the main electricity supply is 'On'.
- 6) Check that the time control, if fitted, is in an 'On' position and that the room and cylinder thermostat, where fitted are set to high temperatures.

#### First time lighting:

- 7) Set the temperature control knob to its maximum setting.

The boiler will attempt to light, if the boiler does not light within 3 attempts (due to air in the system) the boiler controls will go to 'Lockout' and the upper Red LED on the control panel will go to a rapid flashing mode. To re-start the lighting sequence press the reset button on the control panel. There will be a short delay before the lighting sequence starts.

When the boiler burner flame has established and the burner lights the lower Green LED on the user control panel will be on continuously.

LED Indicators		
Status	Green LED	Red LED
Mains ON Only	OFF	ON
Ext. Call for Heat (Boiler set to STNDBY Temp. Control set to 'O' Off)	FLASHING 2 Per Sec.	ON
Ext. Call for Heat (STNDBY switch to ON, Temp. Control set to Max.)	FLASHING 2 Per Sec.	OFF
Ignition (i.e. Gas and Sparks ON)	FLASHING 16 Per Sec.	OFF
FLAME Detected	ON	OFF
Boiler Temperature Control Satisfied	FLASHING 2 Per Sec.	ON

- 8) With the main burner running, check for gas soundness using leak detection fluid.
  - 9) Allow the system to reach maximum working temperature and examine for water leaks. Set the temperature control to 'Standby' and drain the system whilst still hot.
- Note:** Should the boiler fail to operate correctly refer to the Fault Finding Guide and the boiler wiring diagram for further information.
- 10) Re-fill and vent the system making a final check for leaks.

On sealed systems adjust to the correct cold fill pressure. Set the pressure gauge pointer to the system design pressure.

If a by-pass circuit is fitted the by-pass valve should be adjusted with the boiler operating under minimum load conditions to maintain sufficient water flow through the boiler to ensure that the overheat thermostat does not operate under normal conditions.

### If the boiler fails to operate

Check the LED indicator fault modes below and refer to fault finding guide and boiler wiring diagram.

LED Indicators Fault Modes		
Status	Green LED	Red LED
<b>Blocking</b> - Mains Frequency incorrect or Air Switch <b>Fault</b> > 1 min. or <b>Reset</b> button held in to force a restart	ON	FLASHING 2 Per Sec.
<b>Earth Fault</b> or <b>Mains Reversal</b>	FLASHING 2 Per Sec.	FLASHING 2 Per Sec.
<b>Lockout</b>	OFF	FLASHING 2 Per Sec.

### 3.2 Final Adjustments

- 1) Use a pressure gauge to check the inlet and burner pressures. See the Data Badge for figures.
- 2) Turn the boiler on and allow to run for 10 minutes.
- 3) Check that the inlet pressure is 20mbar.
- 4) Check that the burner pressure is in accordance with the information on the boiler data badge.
- 5) If burner pressure adjustment is required turn the pressure adjusting screw anti - clockwise to increase pressure or clockwise to decrease.
- 6) Check at the gas meter that the gas rate is correct.
- 7) Shut down the boiler, remove the pressure gauges, re- fit the screws and check for gas soundness.
- 8) Stick the self adhesive arrow (from the literature pack) onto the data badge to indicate the appropriate burner setting pressure
- 9) Re-fit the controls cover and secure with the screw previously removed.

#### Control Thermostat

At its minimum and maximum settings, the thermostat should control the water flow temperature at approximately 57°C - 82°C.

Set the temperature control knob to 'O' Standby and check that the main burner shuts down.

#### Overheat Thermostat

The overheat thermostat is pre-set and no adjustment is possible. It will require manual re-setting if an overheat condition occurs (the LED will go to flashing Red).

The re-set button is located on the controls assembly.

### Other Boiler Controls

No further setting or checking is necessary as all boiler mounted controls are designed so that if a fault should occur they will fail safe.

### External Controls

Check that any other external controls connected in the system, such as clocks or thermostats, control the boiler as required.

### 3.3 Instruct the User

On completion of the installation, the installer should demonstrate the operation of the boiler and its associated controls. Also hand over all the instructions.

### 3.4 Advise the User

1. If a timer is fitted, set the time and programme the required settings. For a wall mounted programmer, see separate programmer instructions. For the Suprima timer, see the timer Instructions for Use fitted to the controls cover door.
2. Hand the Instructions for Use, these Installation & Service Instructions (and the programmer instructions) to the User and instruct in the safe operation of the boiler and controls.
3. Advise the User of the precautions necessary to prevent damage to the system and to the building in the event of the system remaining inoperative during frost conditions.
4. Advise the User that for continued efficient and safe operation of the boiler it is important that adequate servicing is carried out at least once a year by a Potterton Myson Service Engineer, the local Gas Region or a C.O.R.G.I. Registered Installer.
5. Leave a permanent card attached to the boiler giving:
  - a. Name and address of installer.
  - b. Date of installation.
  - c. A wiring diagram of the external control circuit.

## 4. To Service the Boiler & Component Replacement - Page 22

To ensure continued efficient operation of the appliance, it is recommended that it is checked and cleaned as necessary at regular intervals.

The frequency of servicing will depend upon the particular installation conditions and usage but in general once per year should be adequate.

It is the law that any service work must be carried out by a competent person who is C.O.R.G.I. Registered.

Before servicing, fire the appliance and check that the flames are blue.  
Yellow flame and excessive lifting indicate poor combustion.

### **WARNING**

**Before commencing work turn the temperature control knob to 'O' Off and allow the appliance to cool, isolate the electricity supply.**

**If the gas valve is to be removed turn off the gas supply at the appliance service cock.**

### **IMPORTANT**

**Always test for gas soundness after completing any servicing of gas carrying components and carry out functional checks of controls.**

### **IMPORTANT**

**Ensure that the outer white case is correctly fitted and that the sealing strip fitted to the door is forming a tight seal with the boiler casing.**

## **Notes on Cleaning Boiler Components**

### **Heat Exchanger**

Place a sheet of paper under the heat exchanger then using a flat blade tool (Part No. 907736), scrape the flueway fin surfaces in a downward movement. This will ensure that most of the deposits will be collected on the paper.

### **Burner**

Brush the burner top and check that the flame ports are clear. Any blockage may be removed with a fine wire brush. Turn the burner upside down and tap gently to remove any debris (Protect the electrode).

### **Electrode**

If the electrode requires cleaning wipe the surface using a solvent.

### **Main Injectors**

Omit this operation if the gas rate is correct, otherwise clean by blowing through. Do NOT clear the injector with a pin or wire.

### **Fan Assembly**

Examine the fan impellor and carefully clean if necessary.

### **Flue**

Inspect the flue terminal and flue/air tube for blockage and integrity, rectify if necessary.

## **4.1 General Access**

**Warning:** Before starting work, open the controls cover and set the temperature control knob to 'O' Off. Isolate the electricity supply and if a gas carrying component is to be removed, isolate the gas supply at the appliance service cock. Allow the boiler to cool.

**Important:** Always test for gas soundness after completing any exchange of gas carrying components and carry out a functional check of the controls.

***Re-assemble all parts in reverse order.***

1. Remove the securing screw and slide off the controls cover. Put safely aside.
-

To complete sections 4.3.3 to 4.3.11 perform the following:-

2. Remove the two screws securing the outer white case to the chassis. Hinge forward, pull bottom of cover forward and lift off. Put safely aside.
3. Remove the screw securing the combustion chamber front to the heat exchanger and the two side screws, remove the panel.

## 4.2 To Service the Boiler

1. Loosen the baffle plate securing screw and remove the baffle plate. Disconnect the tube from the front of the fan housing.
2. Disconnect the 4 wires from the fan motor, at the in-line 4 way connector.
3. Remove the two screws securing the fan to the flue hood. Carefully pull the fan down and away from the flue hood.
4. Remove the flue hood.
5. Disconnect the electrode and earth wire.
6. Undo the fixing screw, hold the burner at the right hand side and pull forward to disconnect from the box.

If necessary, remove the injector as follows:-

7. Undo the two screws securing the side and rear insulation assembly on the front of the chassis. Pull the assembly forward and away from the boiler.
8. If the injectors are removed use a new sealing washer when re-fitting each injector.

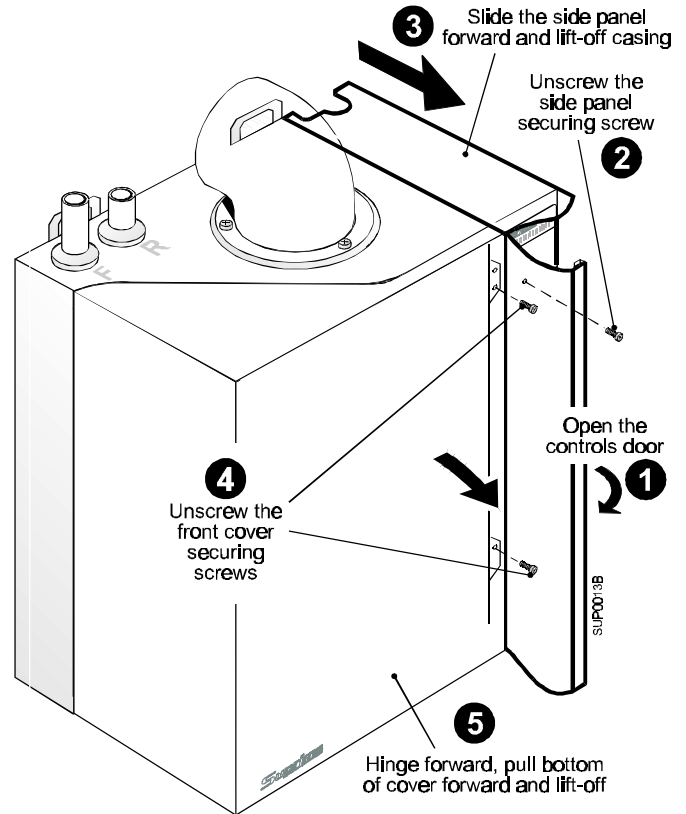
The heat exchanger, burner and fan can now be inspected. If deposits have formed on these items and on ancillary components clean as detailed in the notes at the start of this section.

The boiler can be re-assembled in reverse order. Refit baffle plate and ensure that any electrical connections are in place and that any damaged seals or insulation are replaced before re-fitting the controls cover.

Check the gas pressure, refer to Section 3 'Commissioning'.

### Other Components

No other servicing is required on any other boiler component.



## 4.3 Component Replacement (see over page)

### Warning

Before attempting to remove any component from the appliance first disconnect the mains electricity supply by removing the plug from the wall socket or by switching off the appliance at the external isolating switch.

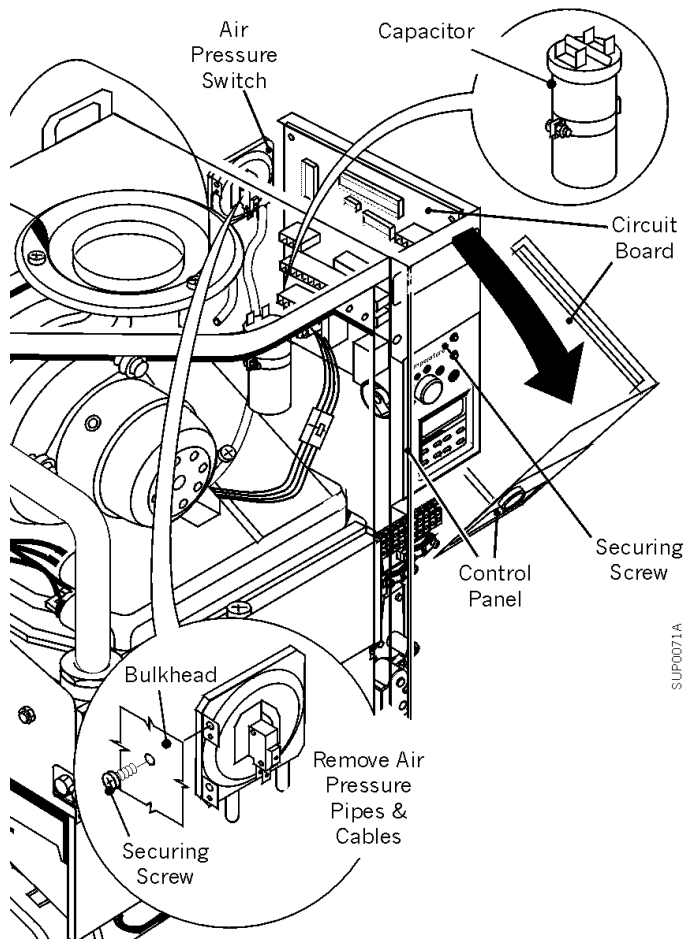
### Notes

The 'O' (off) position on the boiler temperature control will leave parts of the boiler Live.

If the appliance gas valve is to be removed it will be necessary to isolate the gas supply at the appliance isolating valve.

### Important

After removal or replacement of any gas carrying component a test for gas soundness must be made and functional check of the controls carried out.



### 4.3.1 Electronic Control Board

Gain General Access - See 4.1

1. Remove the securing screw and allow the control panel to pivot forwards.
2. Disconnect all connectors and wires, unscrew the four securing screws and remove the board.
3. On re-assembly refer to the wiring diagram when re-connecting wires and connectors.

### 4.3.2 Air Pressure Switch

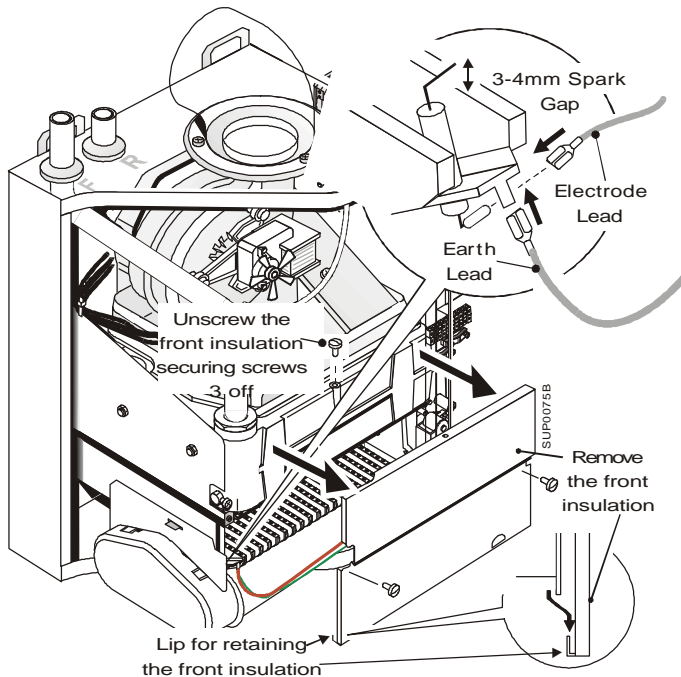
Gain General Access - See 4.1

1. Remove the securing screw and allow the control panel to pivot forwards.
2. Note the wire connections and disconnect the wires to the air pressure switch.
3. Remove the screw (access through the fan compartment) securing the air pressure switch to the chassis.
4. Re-assemble in reverse order, ensure that the Normally Closed (N.C) terminal is shrouded.

### 4.3.3 Electrode

Gain General Access - See 4.1

1. Pull the electrode lead off the electrode, remove the securing screw and remove the electrode.
2. On re-assembly check the gap between the electrode tip and the burner face. It should be 3 - 4mm. If required adjustment can be made by careful use of pliers.



### 4.3.4 Burner

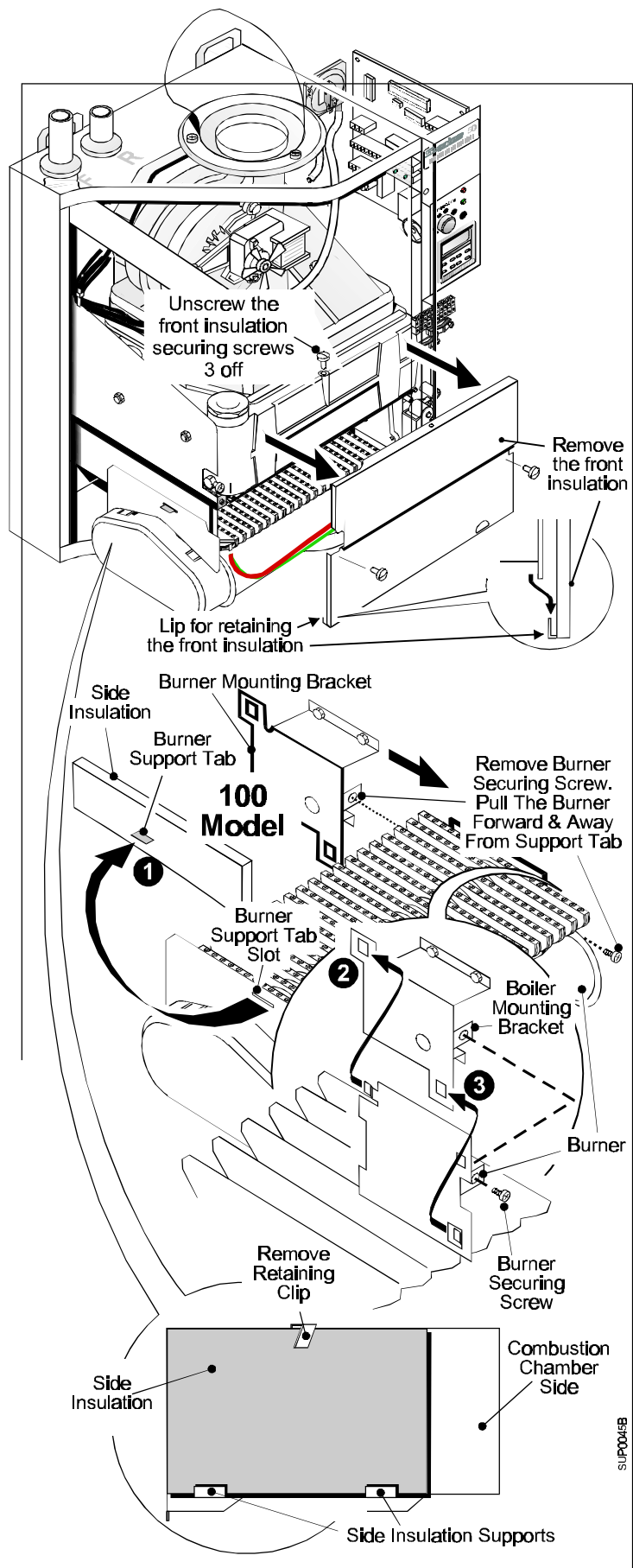
Gain General Access - See 4.1

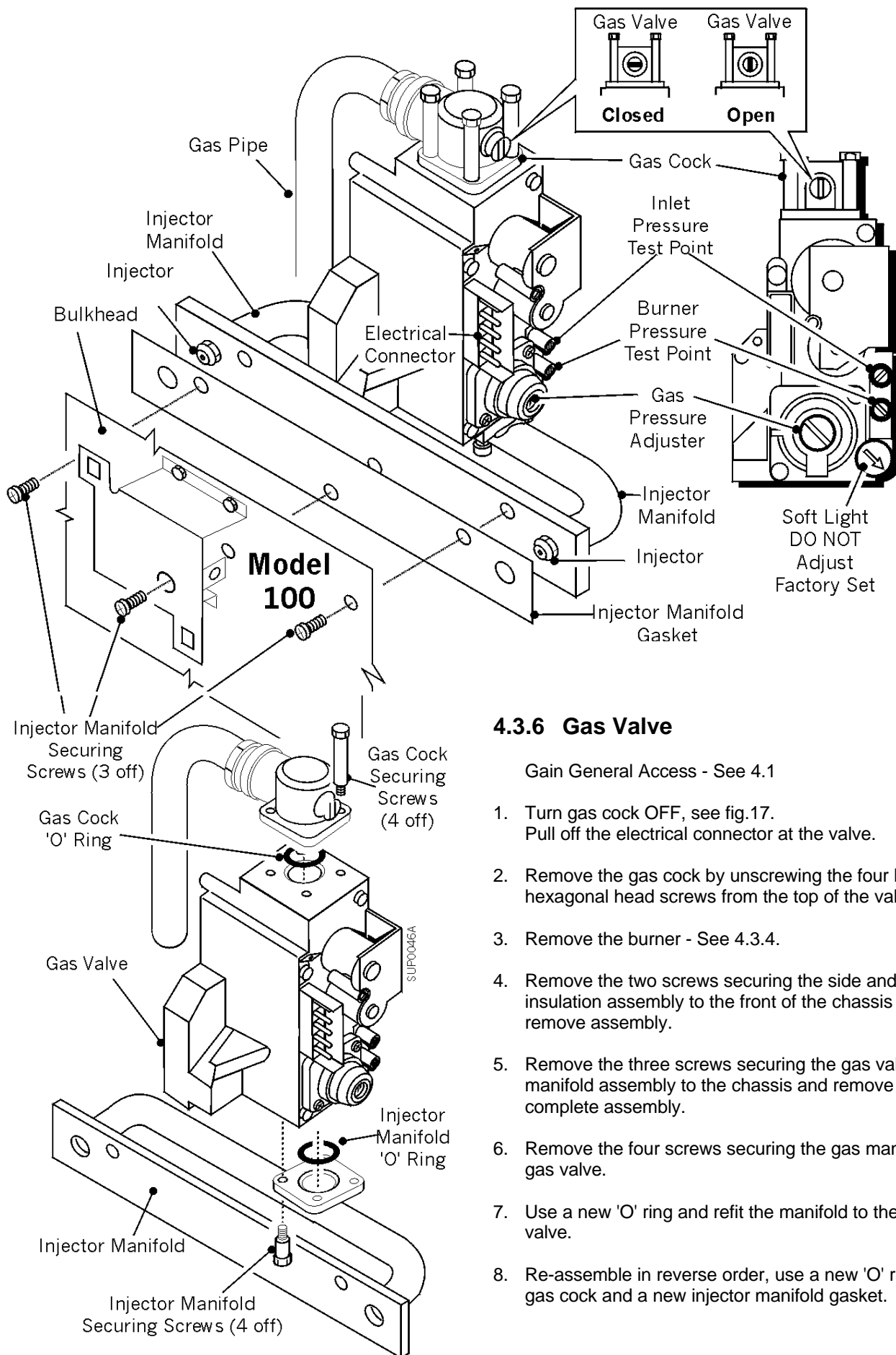
1. Disconnect the electrode lead and earth wire.
2. Undo the fixing screw, hold the burner at the right hand side. Pull forwards and to the left, disconnect from the air box and support tab.
3. Unscrew the electrode and transfer to the new burner.
4. Re-assemble in reverse order.  
Locate the left hand side of the burner onto the support tab on the side insulation. Hook the rear of the locating bracket (2) in place before locating the front (3) and re-fitting the screw.

### 4.3.5 Combustion Chamber Insulation

Gain General Access - See 4.1

1. The front insulation is accessible as the front is already off.
2. Remove the burner - See 4.3.4.
3. Remove the two screws securing the side and rear insulation assembly to the front of the chassis.
4. Pull the assembly forwards and away from the boiler. Replace insulation pieces as required, replace any securing clip if damaged.
5. Re-assemble in reverse order.





#### 4.3.6 Gas Valve

Gain General Access - See 4.1

1. Turn gas cock OFF, see fig.17.  
Pull off the electrical connector at the valve.
2. Remove the gas cock by unscrewing the four long hexagonal head screws from the top of the valve.
3. Remove the burner - See 4.3.4.
4. Remove the two screws securing the side and rear insulation assembly to the front of the chassis and remove assembly.
5. Remove the three screws securing the gas valve manifold assembly to the chassis and remove the complete assembly.
6. Remove the four screws securing the gas manifold to the gas valve.
7. Use a new 'O' ring and refit the manifold to the new gas valve.
8. Re-assemble in reverse order, use a new 'O' ring in the gas cock and a new injector manifold gasket.

### 4.3.7 Injector

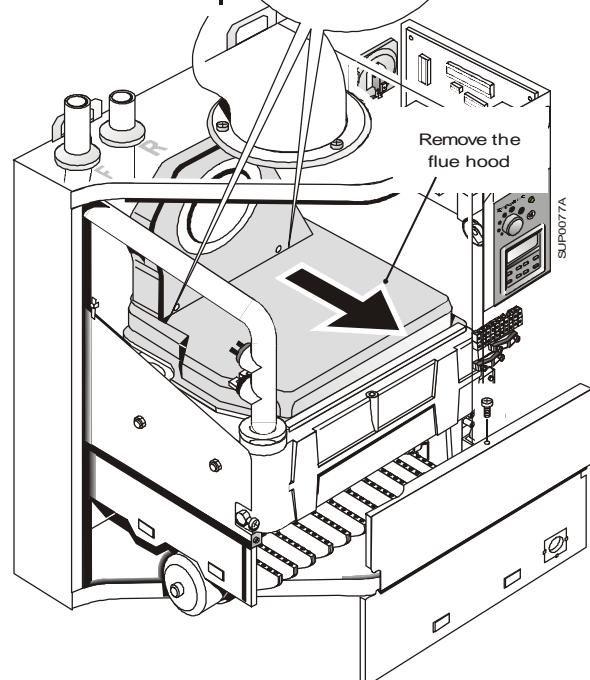
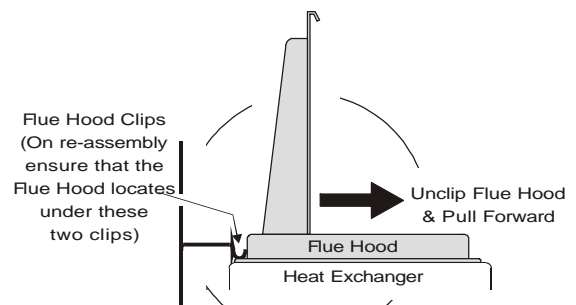
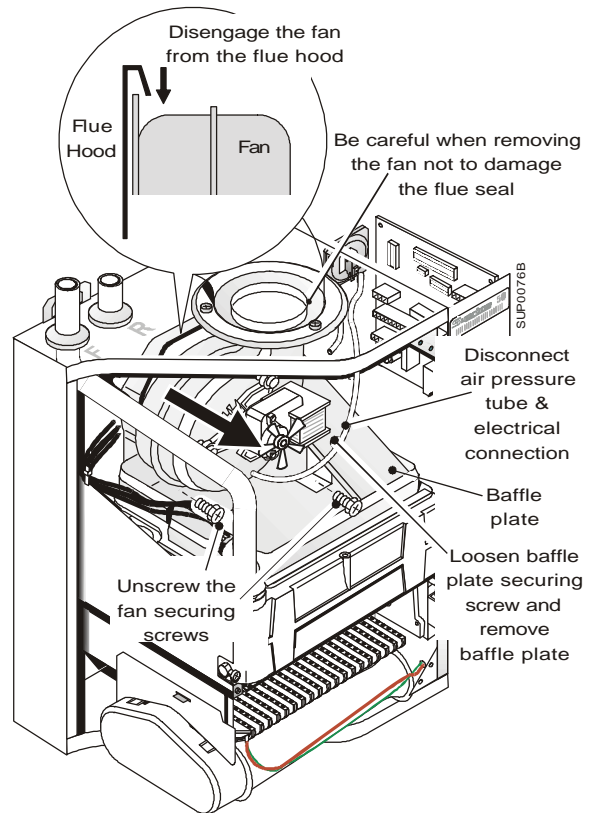
Gain General Access - See 4.1

1. Remove the burner - See 4.3.4.
2. Use a 13mm (A/F) or ½ (A/F) socket spanner to remove the injectors.
3. Unscrew the injector, use a new sealing washer on re-assembly.

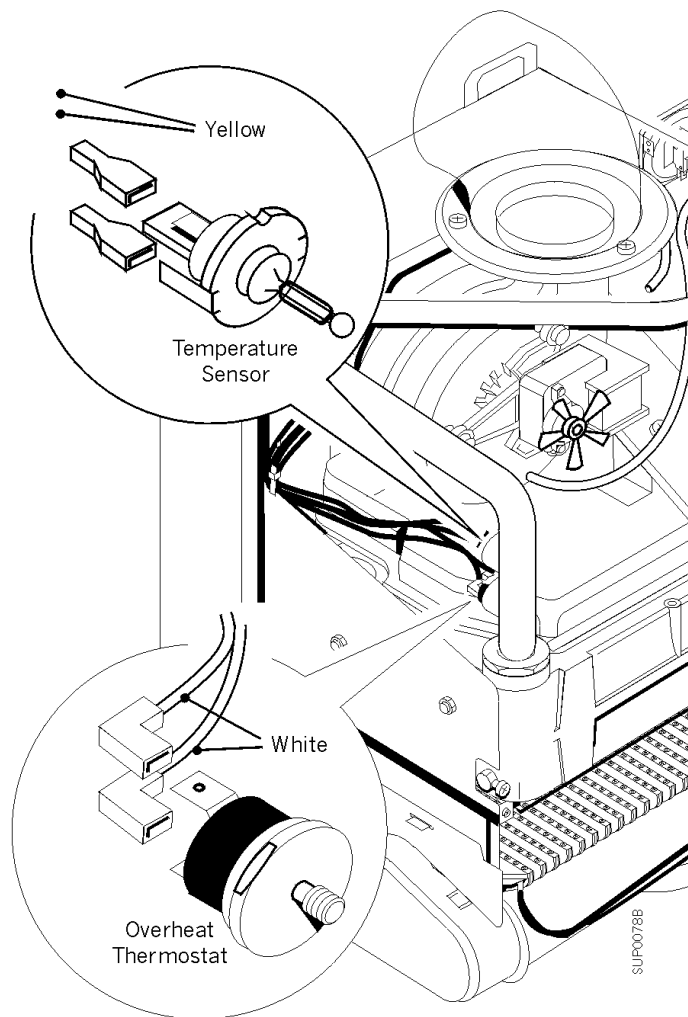
### 4.3.8 Fan & Flue Hood

Gain General Access - See 4.1

1. Disconnect the tube from the front of the fan housing - note how it fits.
2. Disconnect the four wires from the fan motor, at the in-line 4 way connector.  
Loosen the baffle plate securing screw and remove the baffle plate.
3. Remove the two screws securing the fan to the flue hood.
4. Carefully pull the fan down and away from the boiler.
5. *Flue Hood:* On re-assembly ensure that the flue hood locates under the two brackets at the rear of the chassis. Check the seal and replace if damaged.
6. *Fan:* On re-assembly ensure that the rubber seal around the fan opening is located correctly into the base of the flue elbow.
7. Re-assemble in reverse order.







#### 4.3.9 Temperature Sensor

Gain General Access - See 4.1

1. Disconnect the wires from the sensor.
2. Depress the clips on the outside of the sensor and pull it clear of the pipe.
3. Re-assemble in reverse order, use fresh conducting paste.

#### 4.3.10 Overheat Thermostat

Gain General Access - See 4.1

1. Disconnect the wires from the thermostat.
2. Unscrew the thermostat.
3. Re-assemble in reverse order.

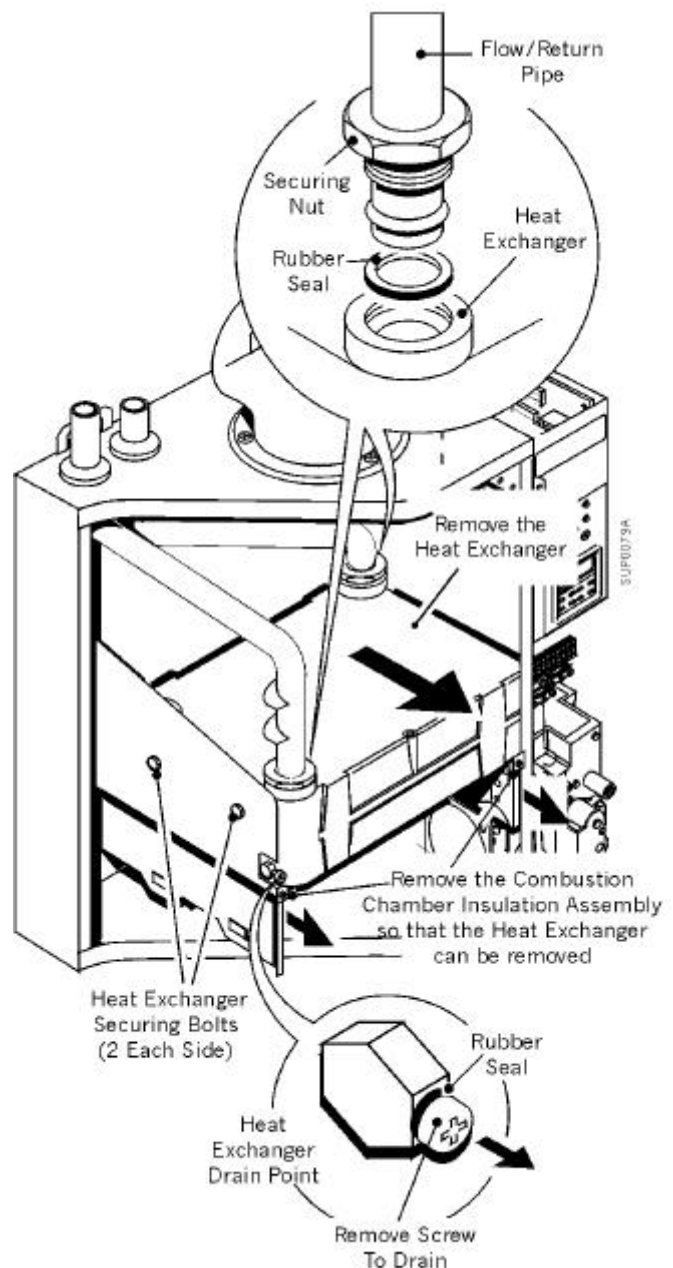
### 4.3.11 Heat Exchanger

**Warning:**

For Sealed Systems relieve system pressure through pressure relief valve before draining.

Gain General Access - See 4.1.

1. Drain the system at its lowest point.
2. Remove the fan and flue hood - See 4.3.8
3. Remove the burner - See 4.3.4.
4. Hold a suitable container under the left hand side of the heat exchanger and unscrew the drain screw. Drain the heat exchanger.
5. Remove the screws securing the combustion chamber insulation assembly to the chassis and withdraw it.
6. Release both the flow and return nuts at the top of the heat exchanger.
7. Support the heat exchanger, remove the four bolts (Two each side) and carefully remove the heat exchanger.
8. Replace rubber seals in flow and return ports, feed the new heat exchanger into position ensuring the pipe connections are correctly located.
9. Secure the heat exchanger with the four fixing screws and tighten the two sealing nuts.
10. Re-assemble in reverse order.



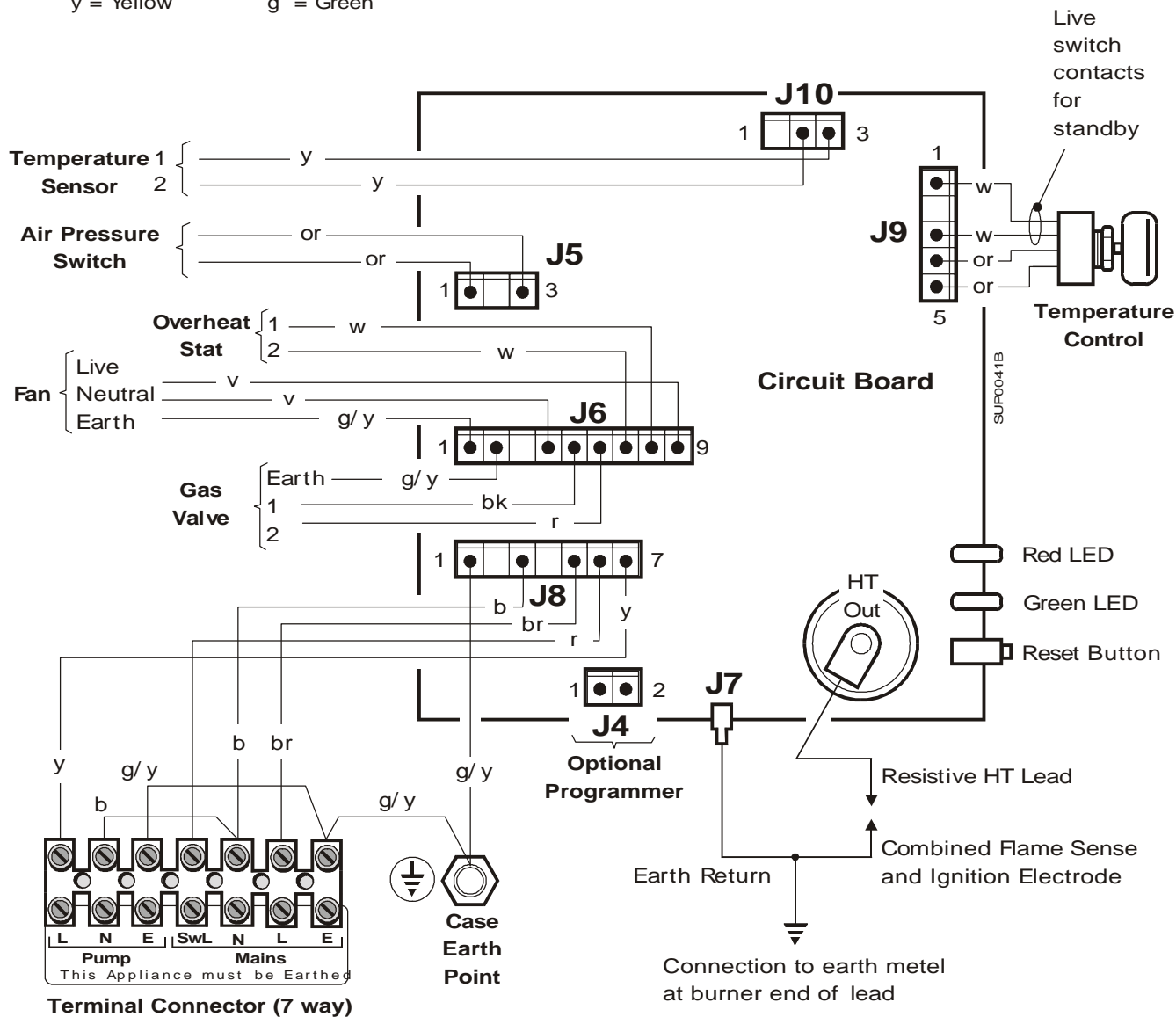
## 3. Functional Wiring Diagram

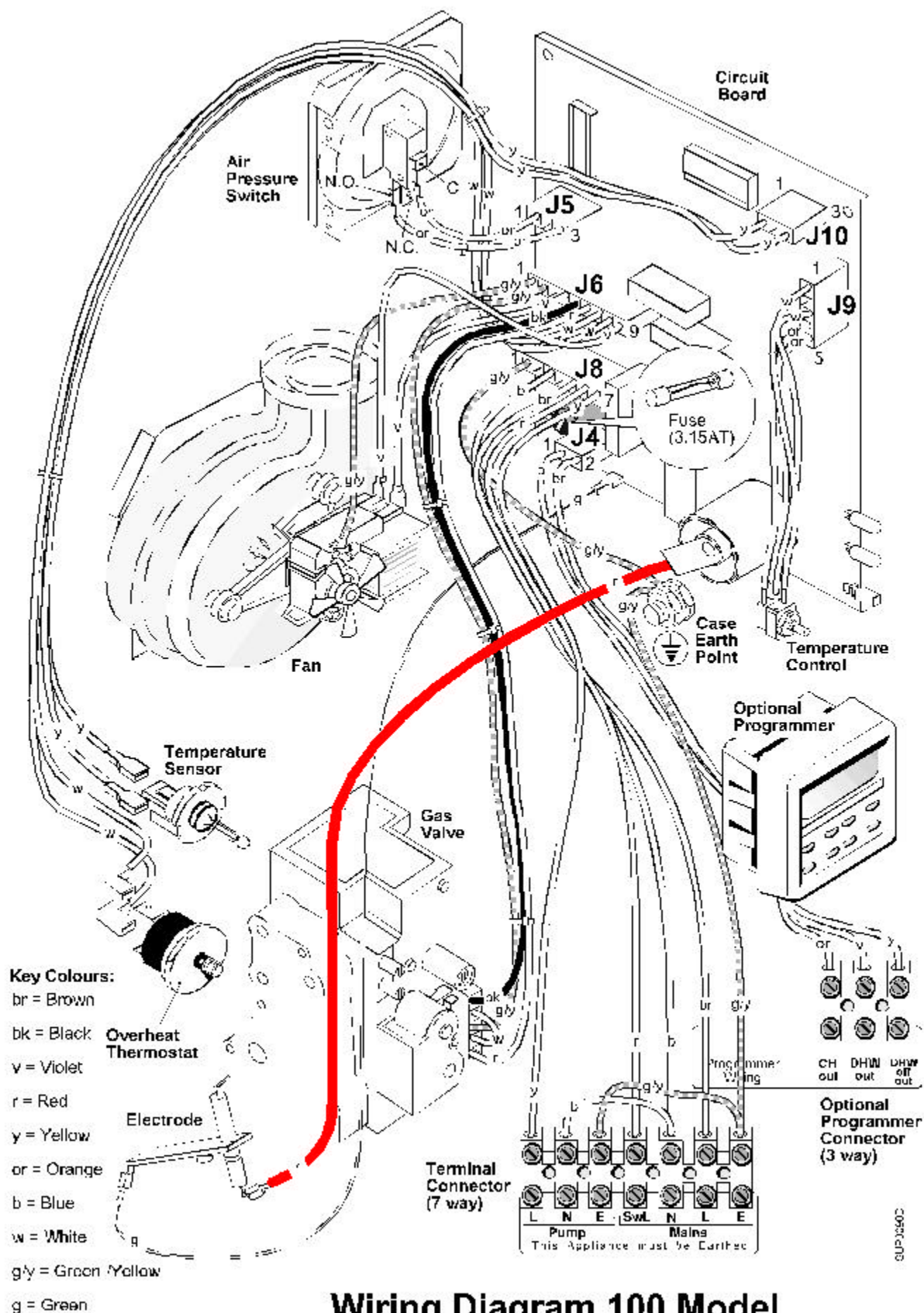
### Boiler Lighting Sequence

1. Supply external voltage to boiler terminal connections L and N, 230 volts, 50 HZ.
2. Supply external voltage to boiler terminal connection, switch line SW 230 volts, 50 HZ.
3. Pump live from boiler energised, diverter/zone valves operate in accordance with system demand.
4. Boiler control checks, air pressure switch for "No Air Condition" (red light "On", green light "Flashing").
5. If "No Air" the control switches on the fan.
6. After ten seconds air pressure switch proves fan is on.
7. Gas valves open and ignition for 3 seconds (green light flashes rapidly).
8. Boiler firing (green light "On" only).
9. If the flame is not detected at this time, the boiler will turn off.
10. The above sequence will repeat for a further two ignition attempts before going to lockout (indicated by the red light flashing).
11. Pressing the reset button will re-start boiler at No. 1.
12. The control will continue to run the pump for several minutes after any firing of the boiler.
13. The control will run the pump automatically for a few minutes every twenty four hours to maintain the free running of the pump.
14. The standby position on the thermostat control knob will prevent the boiler firing but will permit operation of the pump for sequences 12 and 13.

### Key Colours:

br = Brown	o = Orange
bk = Black	b = Blue
v = Violet	w = White
r = Red	g/ y = Green / Yellow
y = Yellow	g = Green



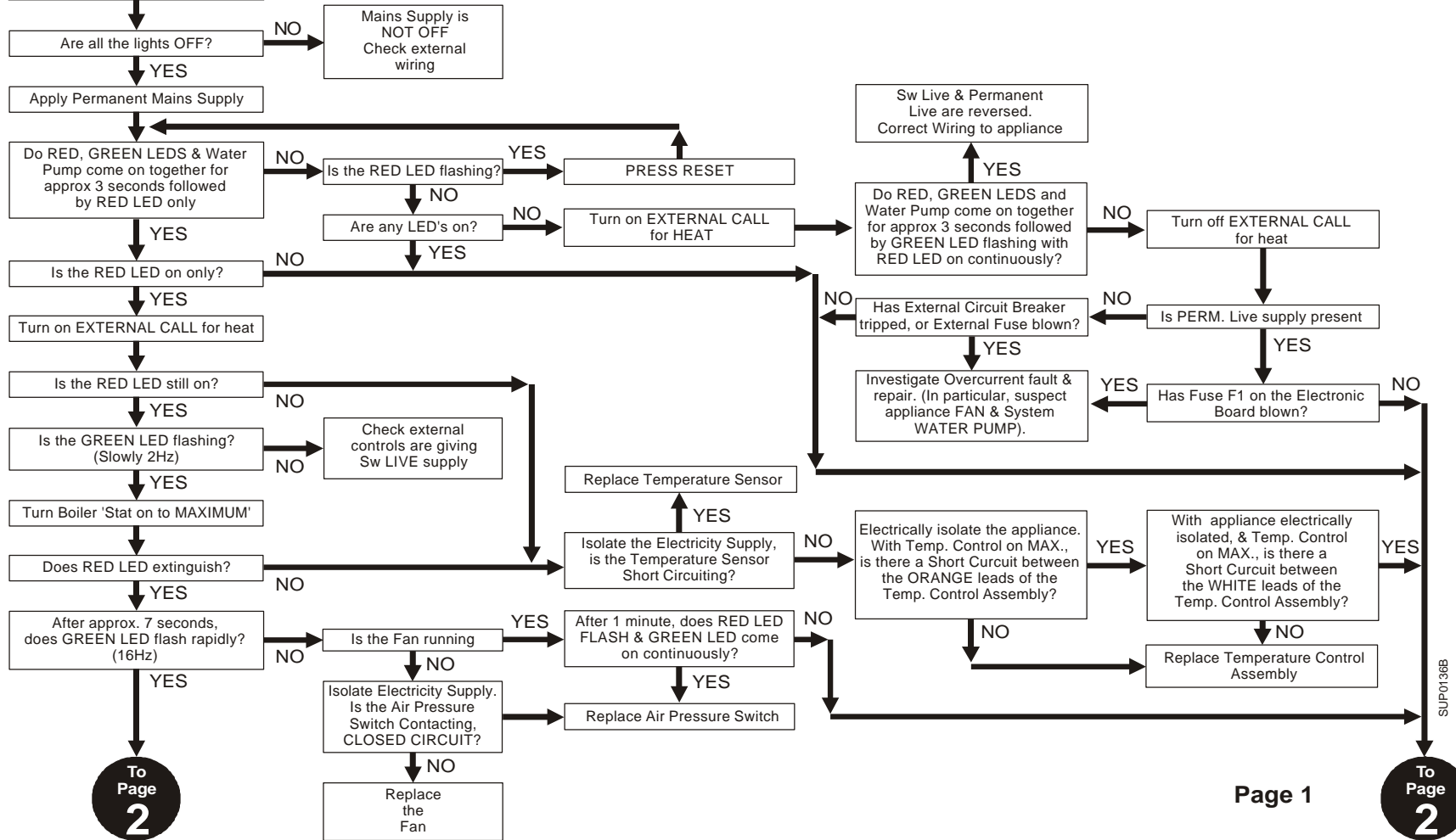




## Fault Finding Guide For 100 Model

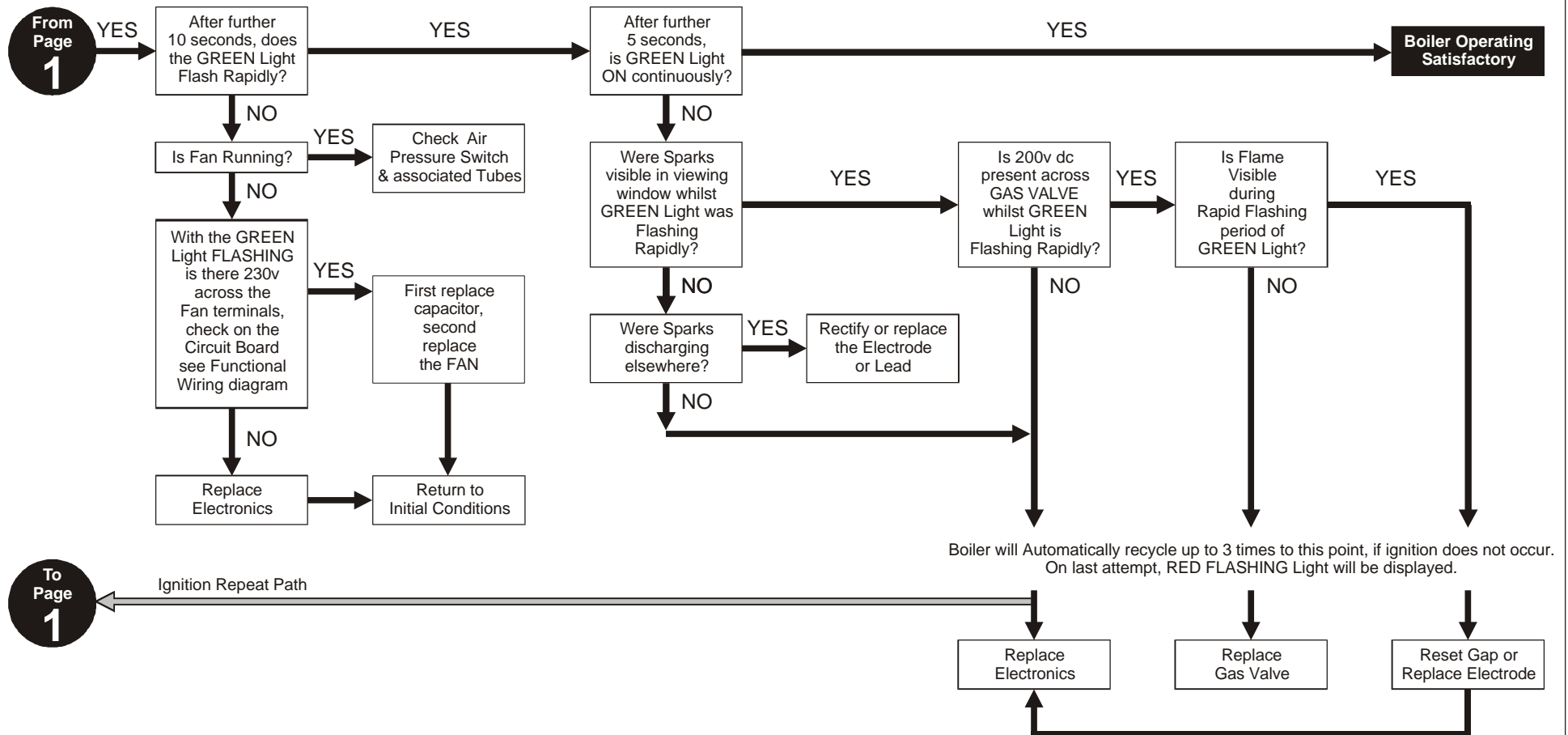
### INITIAL CONDITIONS

1. All Electric Power Off.
2. No External Call for Heat.
3. Boiler Thermostat to '0' (Off)
4. Check Gas Supply is ON



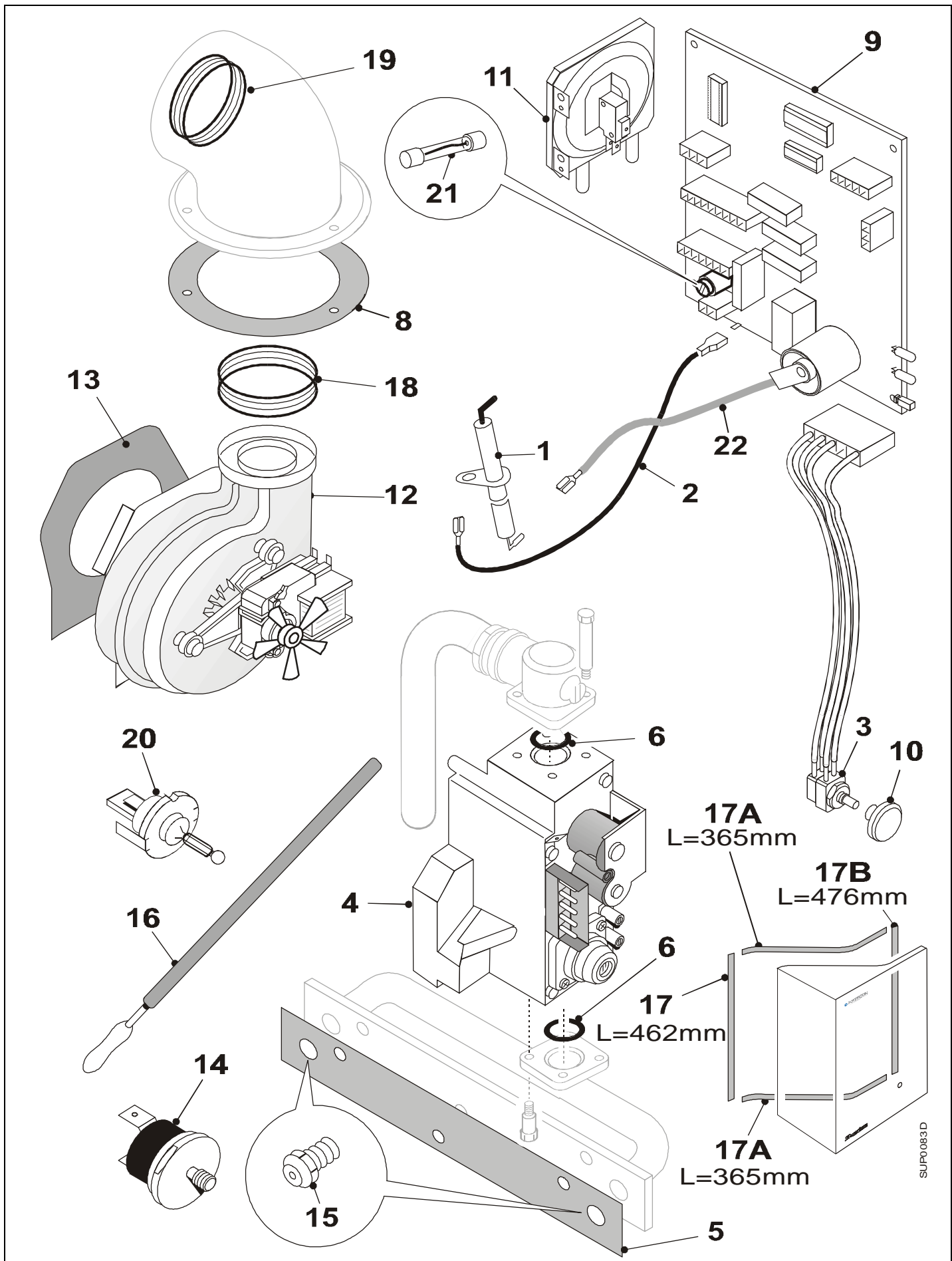


# Fault Finding Guide For 100 Model









# Short List of Spare Parts - Page 33

Drg. Ref.	G.C. No.	Description	Qty.	Part No.
1	114 982	Electrode	1	8407754
2	114 861	Earth Lead	1	8238269
3	114 863	Temperature Control	1	8933012
4	173 154	Gas Control Valve Kit	1	8402552
5	114 833	Injector Manifold Gasket - Case/Manifold	1	8238226
6	114 962	Manifold 'O' Rings - Gas Cock	1	8401648
8	114 945	Flue Elbow Seal	2	8238146
9	114 954	Circuit Board	1	8407750
10	114 864	Thermostat Knob	1	8238172
11	173 155	Pressure Switch - Honeywell	1	8642227
12		Fan Assembly - 100	1	409597
13	114 811	Fan Gasket	1	8238165
14	173 130	Overheat Thermostat	1	8404517
15	173 139	Injector - Main Burner - 100	2	8411028
16	337 862	Flue Scraper	1	907736
17	114 873	Front Panel Seal - Type 1	1	8650691
17a	114 874	Front Panel Seal - Type 2	2	8650692
17b	114 875	Front Panel Seal - Type 3		8650693
18	114 948	Fan Outlet Seal	1	8238147
19	114 949	Flue Tube/Elbow Seal	1	8238148
20	114 776	Temperature Sensor	1	8404516
21	114 983	Fuse (Type: 3.15AT)	1	8160038
22	114 859	Electrode Lead	1	8407756

Back Page

## **Replacement PCB Kit**

**Kit Part Number 5111603**

for use with

**Potterton Suprima/Suprima L  
(30-100 models only)**

The kit can be fitted to appliances with or without an integral water flow switch.

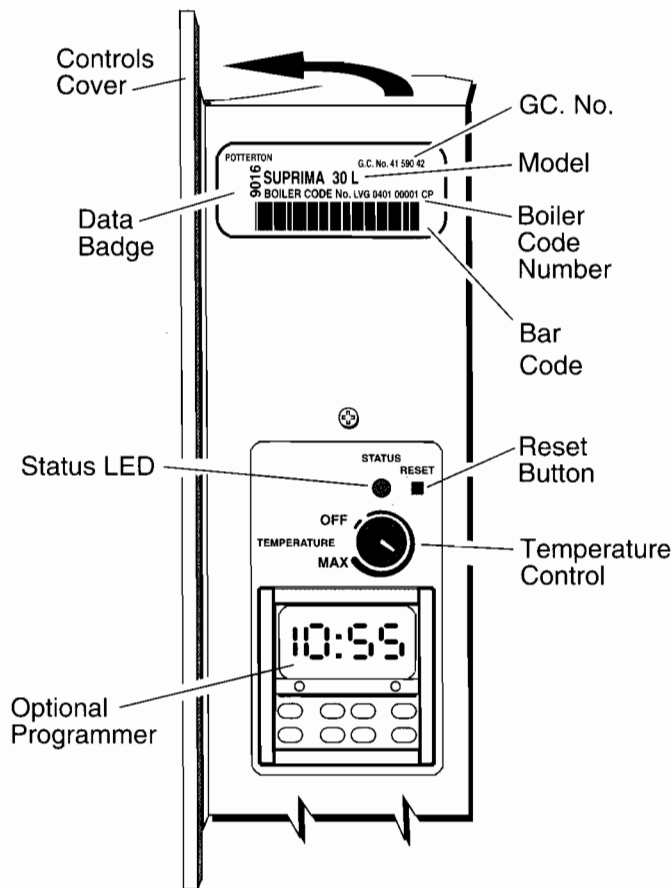
This document contains revised User, Commissioning and Fault Finding Instructions, a revised Wiring Diagram and Spare Parts list that replace the information shown in the User's Guide and Installation & Service Instructions originally supplied with the boiler.

User' Guide	Page 2
Replacement of Controls Assembly	Pages 3 - 7
Wiring diagram	Page 8
Spare parts	Page 8
Commissioning/Test Controls	Pages 9
Fault finding	Pages 10 - 15

**To ensure correct identification on future service visits, it is essential that the data label is filled in as stated on Page 7. Failure to do so may invalidate any warranty.**

**Leave this document with the Installation & Service Instructions as it will be required for any future service visits.**

# User's Guide



## Temperature Control

This enables you to control the temperature of the water as it leaves the boiler and is also used for turning the boiler on and off. The control can be set between 'Off' and 'Max' which corresponds approximately to a temperature range of 55 °C to 82 °C.

## To Light

1. Ensure that the boiler temperature control is set at 'Off'.
2. Switch ON the main electricity supply, The LED will show a continuous orange light.
3. Ensure the electronic programmer or other time control, if fitted, is in an 'ON' position (refer to the literature supplied with it).
4. Ensure that any heating and/or hot water controls are at a high temperature setting (refer to the literature supplied with them).
5. Turn the boiler temperature control to the required setting and the boiler will light. The LED will show a continuous green light.
6. Set the time control and any thermostats to their desired settings.

## Reset Button

If the boiler fails to light or the boiler is running and the gas is turned off, the LED will start to flash red. Press the reset button for a minimum of 1 and a maximum of 10 seconds (*Do Not use excessive pressure*), the LED will stop flashing and the boiler will attempt to relight.

If the button is pressed for more than 10 seconds the LED will flash red rapidly and will need to be reset again. If pressed for less than 1 second, the boiler will not reset.

If the boiler will not light it should be attended to by a competent person.

## To Shut Off

Turn the boiler temperature control to 'Off' or switch the programmer to the 'Off' position.

To operate the boiler again, simply turn the boiler temperature control to the required setting and switch the programmer 'On'.

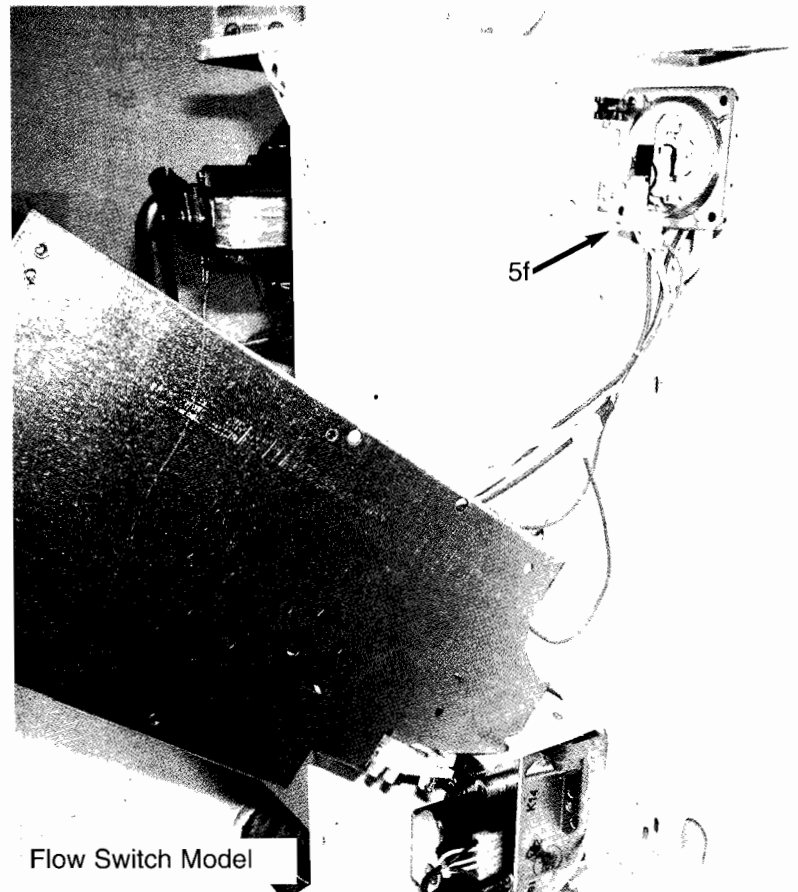
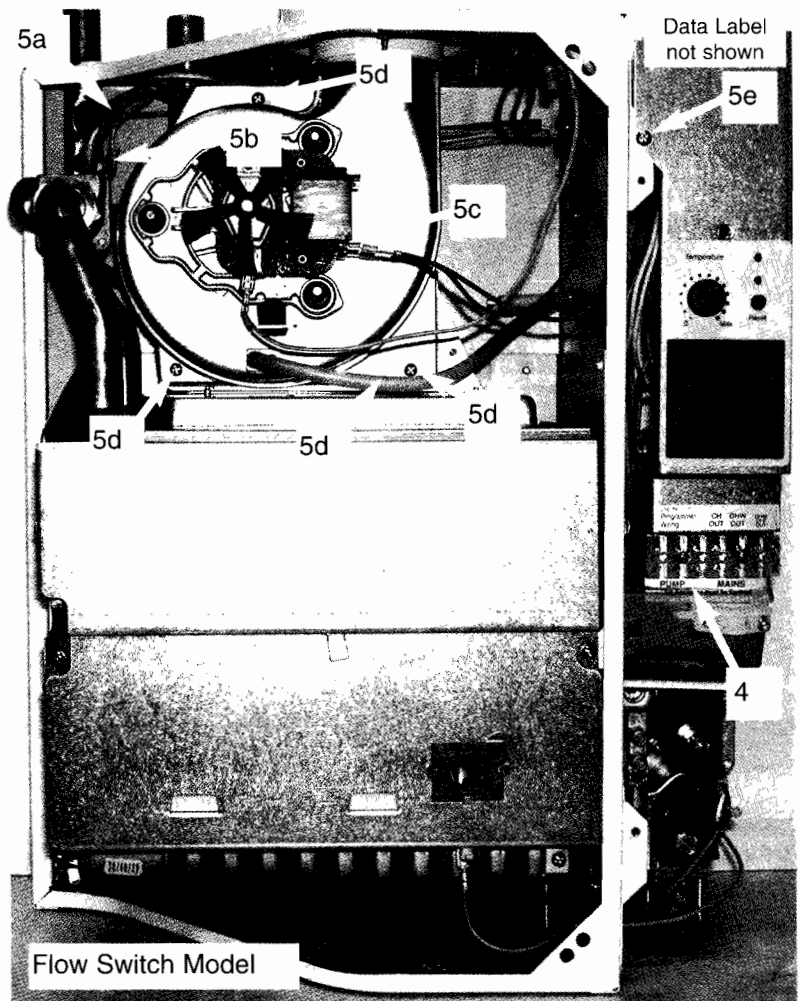
## LED Indication

Status	LED
Mains Off	Off
Mains ON <i>No external call for heat</i>	Continuously Orange
External Call for Heat <i>Temperature Control set to Off</i>	Flashing Orange
Air Proving & Ignition	Flashing Orange/Green
Burner On	Continuously Green
Boiler Temperature Control Satisfied	Flashing Green
Lockout	Flashing Red or Continuously Red

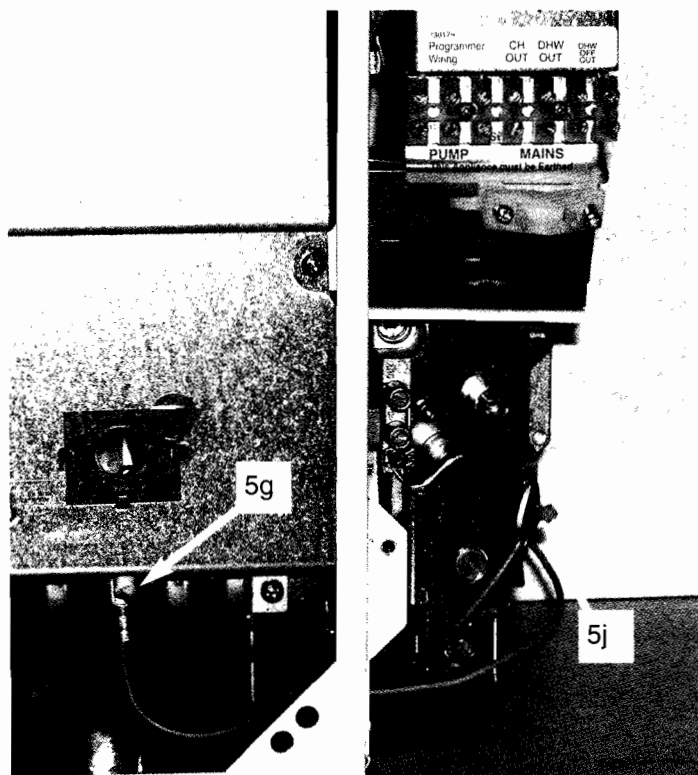
# Replacement of Controls Assembly

## Remove existing controls assembly

1. **Isolate both the gas and electrical supply to the appliance and ensure the appliance is cool before starting work.**
2. Open the side panel door and undo the panel retaining screw. Slide the side panel forward and remove.
3. Undo the two retaining screws and remove the outer white front case.
4. Note the position of mains and pump wires and disconnect them.
5. Disconnect the following:-
  - a. 2 yellow wires to the thermistor on the flow pipe, (top).
  - b. 2 white wires from the limit thermostat on the flow pipe (bottom).
  - c. 2 violet wires and 1 earth wire from the fan motor.
  - d. Disconnect the sensing tube from the fan, undo the 3 retaining screws and remove the fan.
  - e. Unscrew the control panel retaining screw and allow the control panel to pivot forwards.
  - f. Disconnect the 2 orange wires from the air pressure switch. If a flow switch is fitted disconnect, the white wire to the air pressure switch and the white wire to orange wire connection. If the flow switch is fitted internally on the boiler, draw the wiring harness through the side panel.

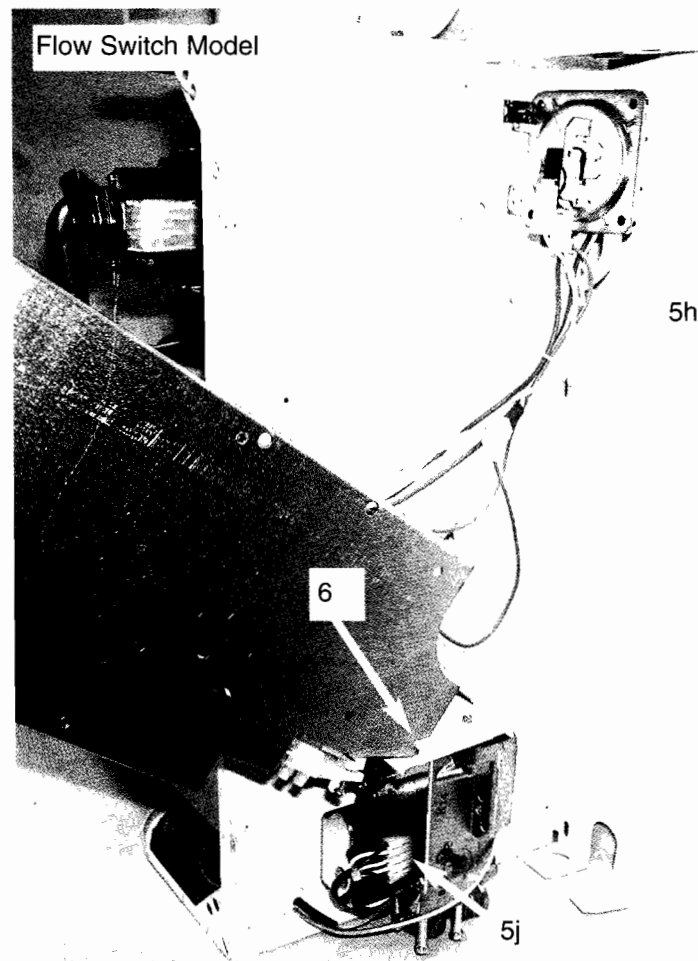


# Replacement of Controls Assembly

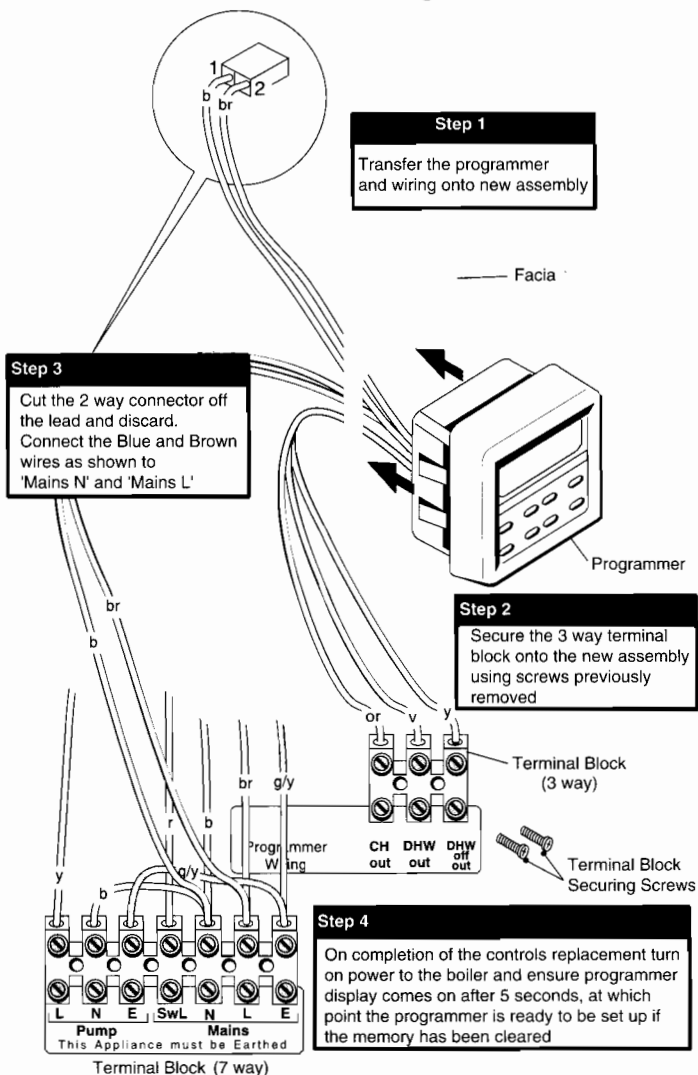


## Remove existing controls assembly

- g. Disconnect the earth wire and the spark electrode lead from the spark igniter and draw them through side panel hole (lower), also remove the white grommet.
  - h. Draw the fan, thermistor, and limit thermostat wires through the side panel hole (upper) and remove the red grommet.
- Removal of the air pressure switch may be necessary if access is restricted at the right hand side.
- j. Remove the 'Molex' connector from the gas valve and cut the cable tie securing the lead to the chassis.
6. Remove the complete controls assembly by lifting into the vertical position to disconnect it from its lower mountings. If a integral timer is fitted, remove and fit to the new controls assembly.



## Remove and re-fit integral timer



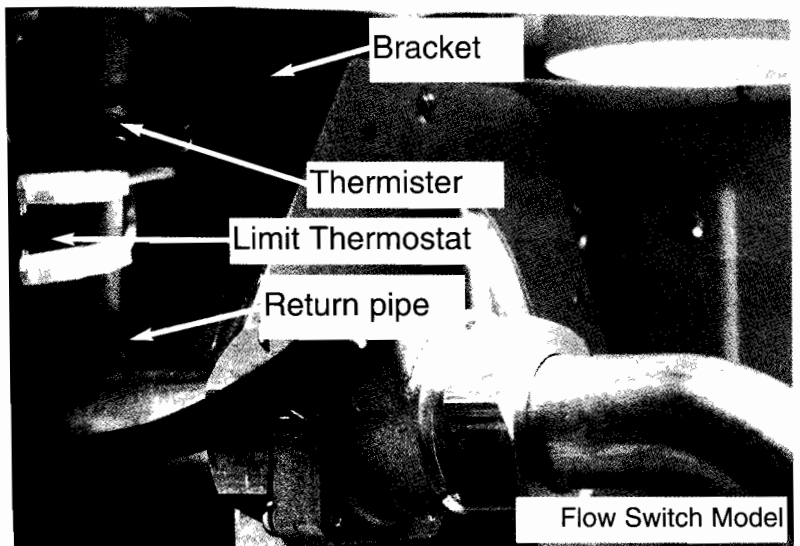
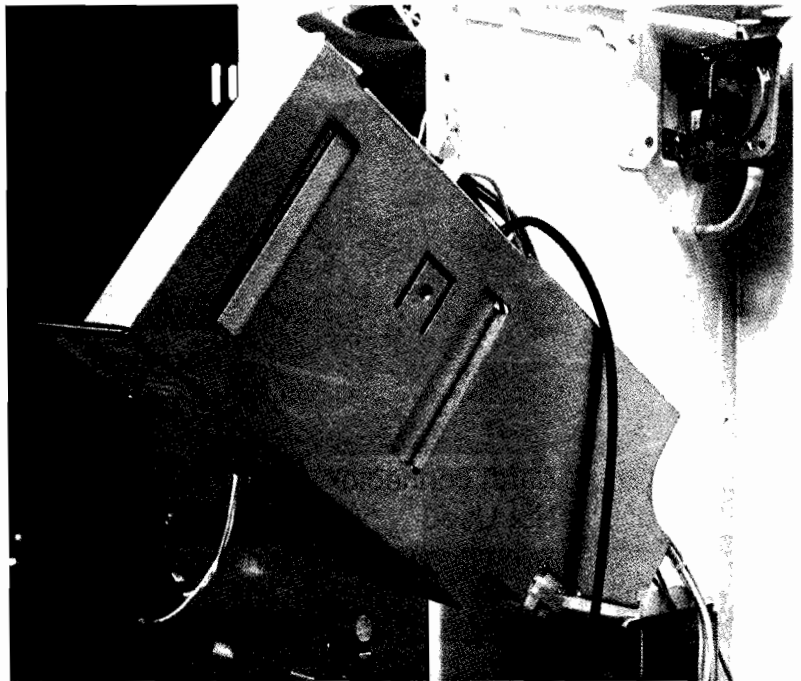
# Replacement of Controls Assembly

## Fit new controls

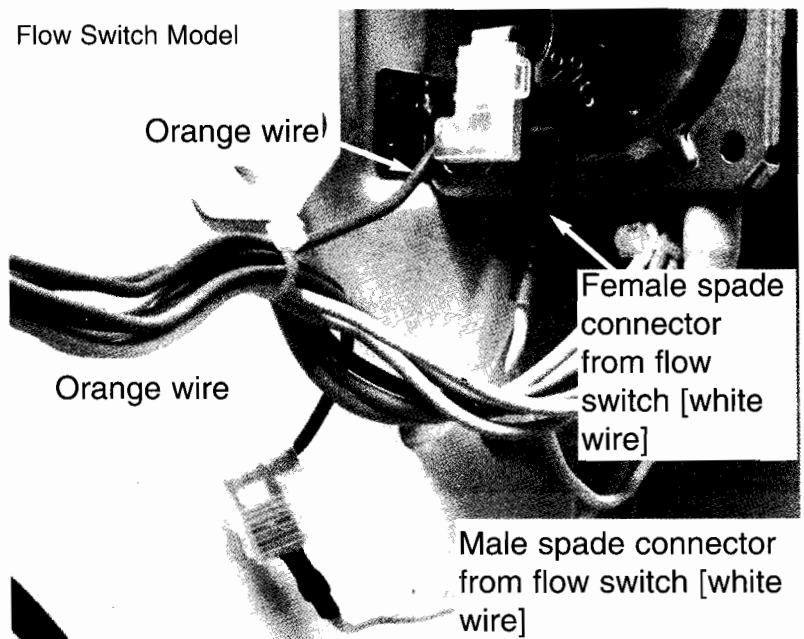
**Important:** For 30-80 models fit the shorter electrode lead to the PCB. The shorter earth lead must be fitted to the control panel earth mounting point. On 100 models the longer leads must be used.

1. The new complete controls assembly can now be fitted to the boiler in reverse order of dismantling.
2. Connect the harness wires in the following order:
  - Pass the fan, thermistor and limit thermostat wires through the side panel hole (upper). The wires for thermistor and limit thermostat must be routed through the bracket at the top of the appliance behind the flue hood and behind the return pipe.
  - Reconnect the white wires to the limit thermostat and the yellow wires to the thermistor.
  - If a flow switch is fitted internally, route the wiring harness behind the return pipe, through the bracket at the top of the appliance and out through the side panel hole (upper).
  - Reconnect the orange wires to the air pressure switch.

If a flow switch is fitted, the female spade terminal (white wire) connects to the air pressure switch microswitch and the male spade (white wire) connects to one of the orange wires. The other orange wire connects to the air pressure switch microswitch.

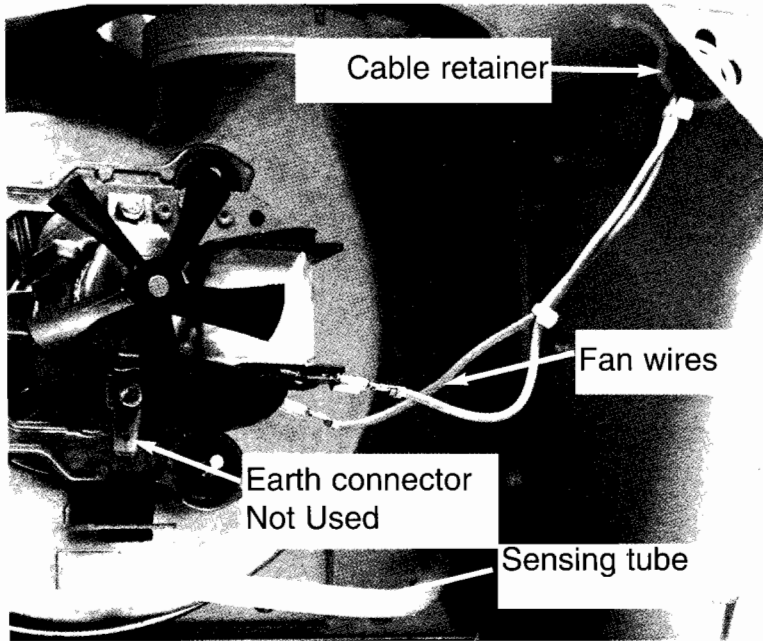


Flow Switch Model



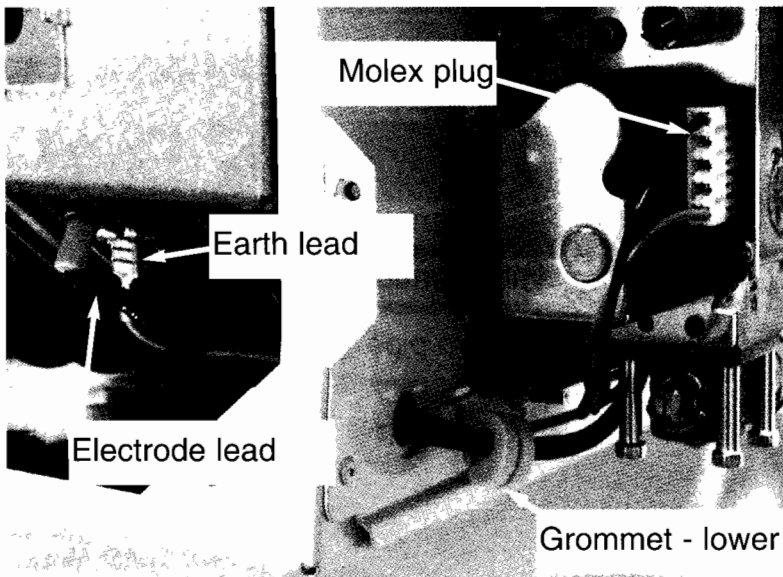


# Replacement of Controls Assembly

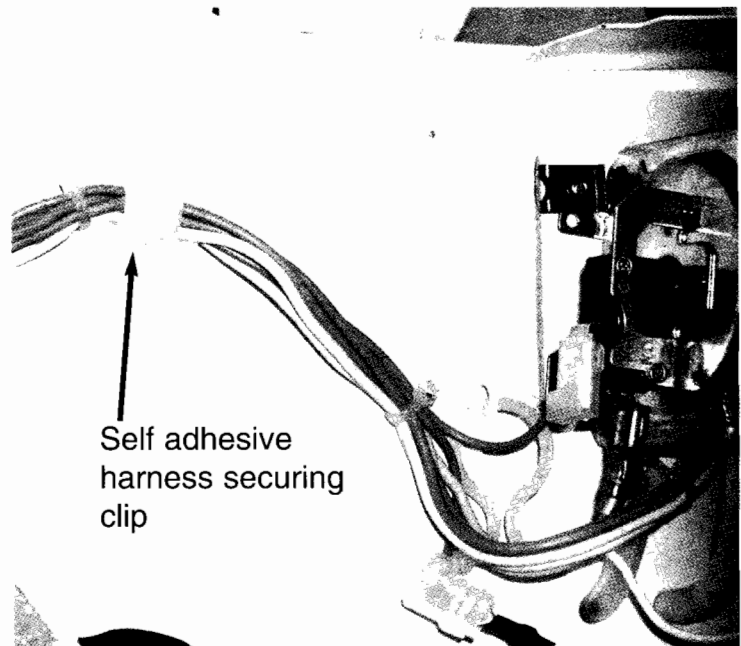
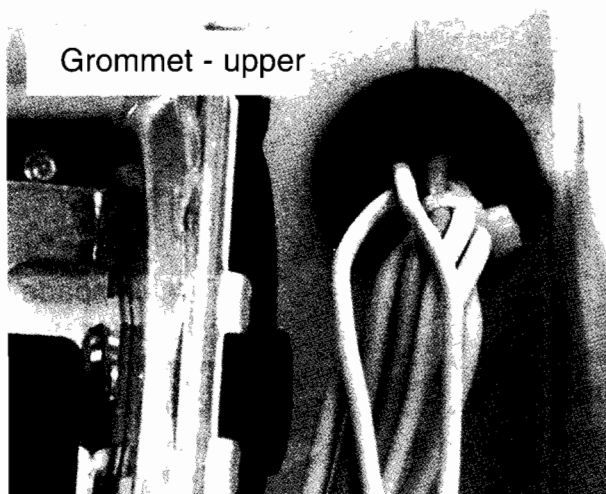


3. Check the condition of the fan gasket and outlet seal and replace if necessary.
  - Refit the fan and secure using the 3 screws previously removed. Connect the 2 violet wires ensuring they are secured in the plastic cable retainer.
  - Reconnect the sensing tube to the fan.
4. Run the electrode lead wire and earth through the side panel hole (lower) to their respective spades terminal on the spark igniter bracket.
5. **Important:** To ensure case soundness, the upper and lower side panel hole grommets must be fitted.

**Important:** The self adhesive harness securing clip must be attached the the case as shown. Clip the harness into it before securing the controls in the upright position.



6. Swing the controls up into position and secure using the retaining screw.
7. Reconnect the 'Molex' plug to the gas valve and secure the Red and Black wires to the lower case side bracket using a cable tie.
8. Refit the outer white front case and secure using the screw previously removed.
9. Reconnect the mains and pump wires to the 7 way terminal block.



# Replacement of Controls Assembly

10. It is essential that the original data label information is written onto the label provided in the kit.

The label must be fixed to the new controls panel as shown.

POTTERTON		SEE INSTRUCTIONS																					
<b>SUPRIMA</b>		9016																					
INSERT SERIAL NUMBER BELOW																							
<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																							
G.C. No.																							
Input (GROSS) Q =		kW																					
Output P =		kW																					
Burner Pressure (HOT)		mbar																					
Gas Rate		cu. m/h	cu. ft/h																				
Injector Size		mm Dia. NO x CLASS																					
Type - C <sub>12</sub> C <sub>32</sub>	PMS = 3.0 bar IP 20																						
CAT. I <sub>2H</sub>		230V ~ 50Hz																					
2H - G20 - 20 mbar		80W 3A Fuse																					
THIS APPLIANCE IS INTENDED EXCLUSIVELY TO BE INSTALLED ON A GOVERNED GAS METER USE WITH NATURAL GAS (G20) ONLY																							
FOR INSTALLATION IN THE UK AND IRELAND ONLY																							
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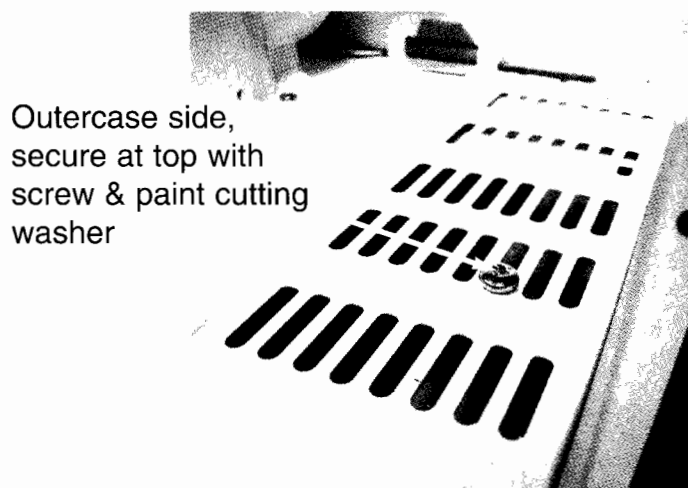
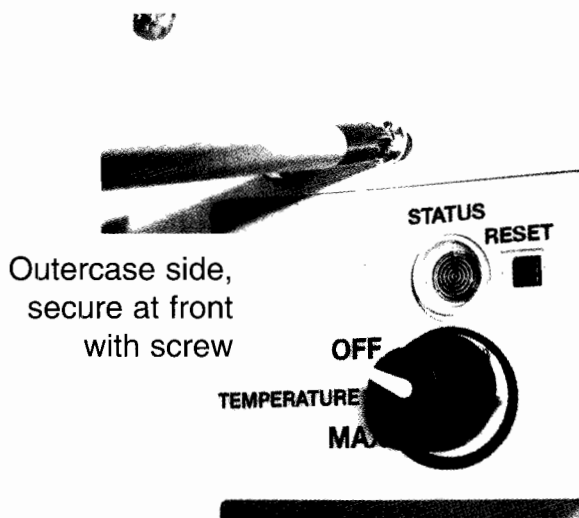
Sample of Data Label

11. Refit the outercase side and secure at the front using the plastite screw.

**Important: The outercase side must be earthed.** Insert the remaining screw and paint cutting washer through the top of the outercase side and into the rivnut.

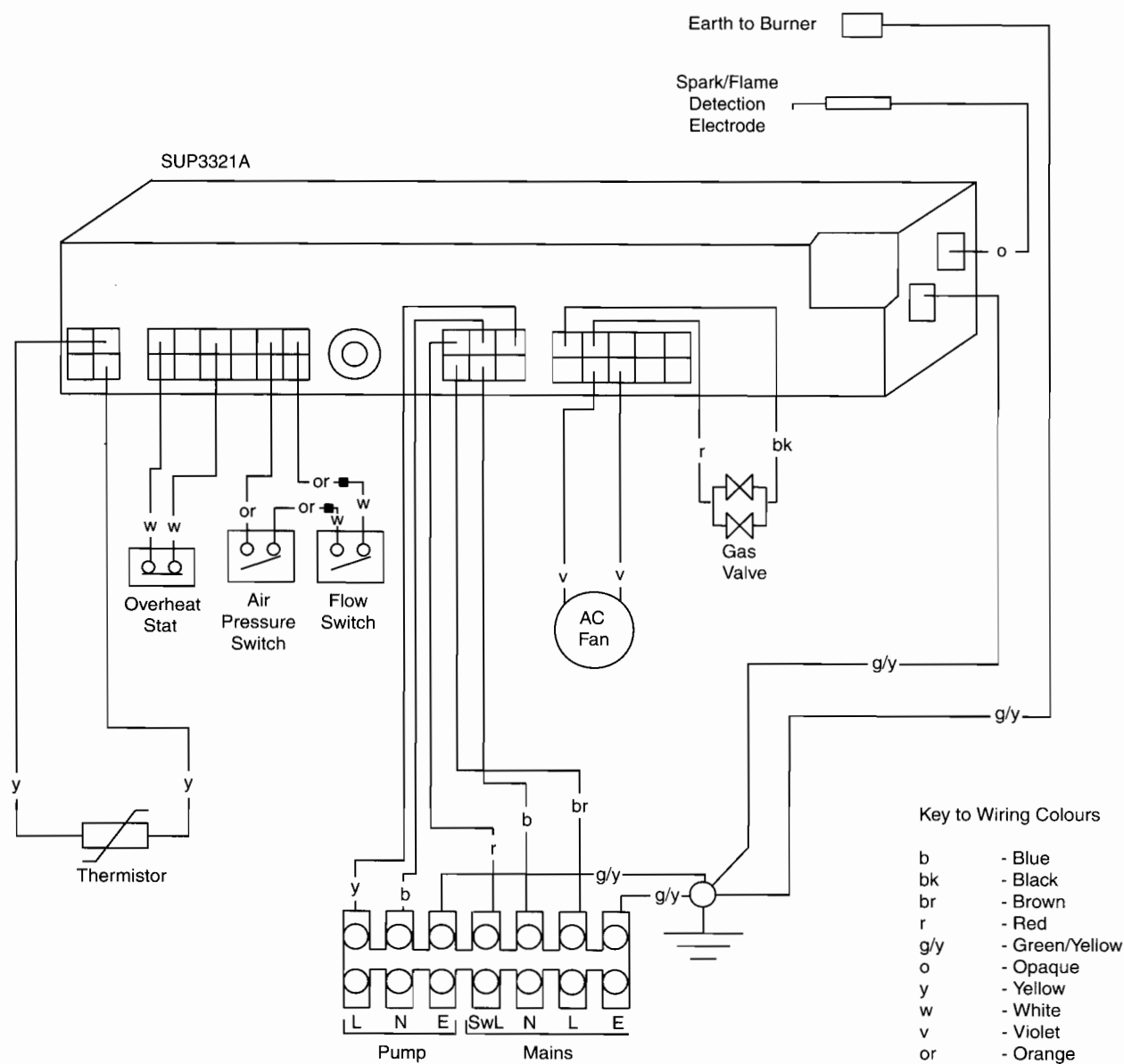
12. Carry out a functional check of the controls as shown on Page 9.

13. Show the User how to operate the boiler as shown on Page 2.

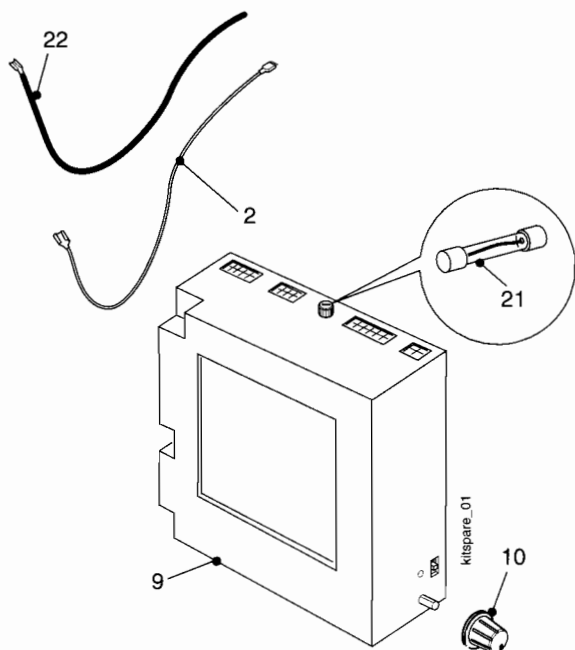


**Important:** The screw and paint cutting washer are used to earth the outercase side.

# Wiring diagram



## Spare parts



Drg. Ref.	Description	Qty.	Part No.
2	Earth Lead 30 - 80 models	1	5111772
	Earth Lead 100 model	1	5111773
9	PCB Enclosure	1	5112178
10	Control Knob	1	230981
21	Fuse (Type: 3.15AT)	1	160036
22	Electrode Lead 30 - 80 models	1	5111600
	Electrode Lead 100 model	1	5111601

# Commissioning/Test Controls

## 3.1 Commission the System & Boiler

### Important

Refer to the Installation & Service Instructions supplied with the boiler for all other commissioning requirements.

### Commission the boiler

1. Set the boiler temperature control knob to 'Off'.
2. Turn the boiler gas service cock to the 'On' position and ensure that the main gas supply is turned 'On'.
3. Ensure that the main electricity supply is 'On'.
4. Check that the programmer, if fitted, is in an 'On' position and calling for heat.
5. Set the temperature control knob to its maximum setting and the boiler will attempt to light.

If the boiler fails to light after five attempts (possibly due to air in system) it will lockout and the LED will flash red/off once per second. **Press the reset button for a minimum of 1 and a maximum of 10 seconds.** (*Do Not use excessive pressure*), the boiler will attempt to relight a further five times.

If the button is pressed for more than 10 seconds the LED will flash rapidly and will need to be reset again. If pressed for less than 1 second, the boiler will not reset.

6. When the burner flame has established, the LED on the user control panel will show a continuous green light.

### If the boiler fails to operate

Check the LED indicator fault modes below and refer to fault finding guide and boiler wiring diagram.

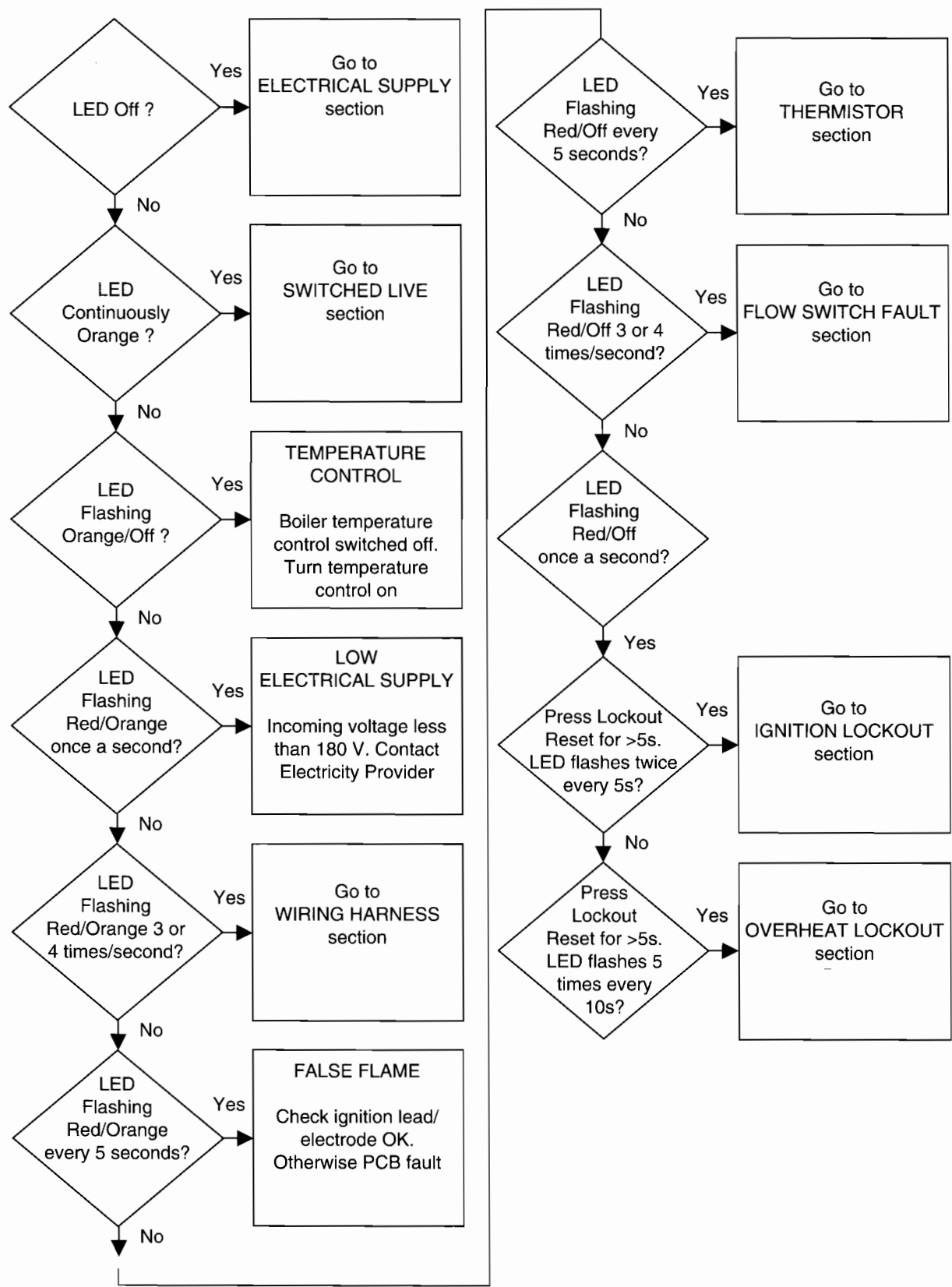
LED Indicators Fault Modes	
Status	LED
Thermister Fault	Flashing Red every 5 sec
Wiring Harness Fault	Flashing Red/Orange 3 times/sec
Incoming Voltage <180V	Flashing Red/Orange once/sec
False Flame	Flashing Red/Orange every 5 sec
APS or Flow Switch Fault	Flashing Red 3 times/sec
PCB Fault	Continuous Red
Lockout Press reset button for more than 10 seconds & count flashes	5 Flashes = Overheat 2 Flashes = Ignition Failure

LED Indication	
Status	LED
Mains Off	Off
Mains On No Ext. Call for Heat	Continuous Orange
Ext. Call for Heat (Temp. Control set to Off)	Flashing Orange
Air Proving & Ignition	Flashing Orange/Green
Burner On	Continuous Green
Boiler Temperature Control Satisfied	Flashing Green

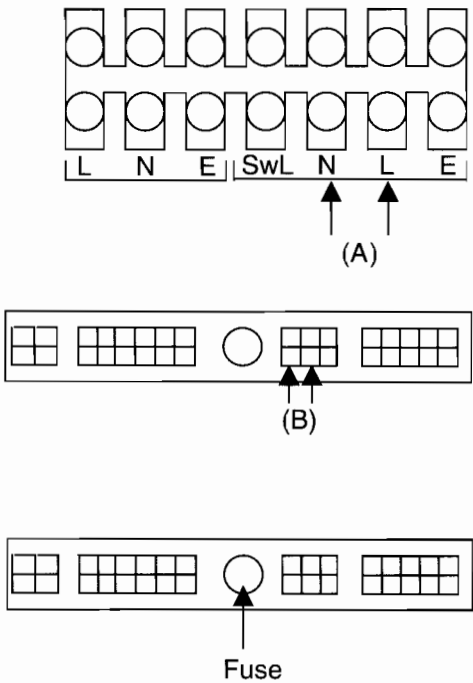
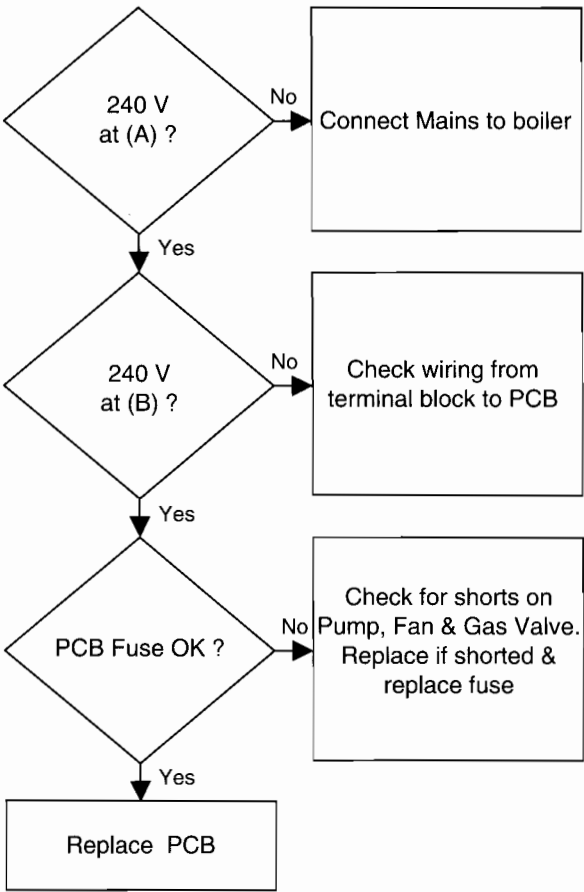
# Fault finding

Carry out preliminary electrical system checks i.e. Earth Continuity, Short Circuit, Polarity and Resistance to Earth before Fault Finding.

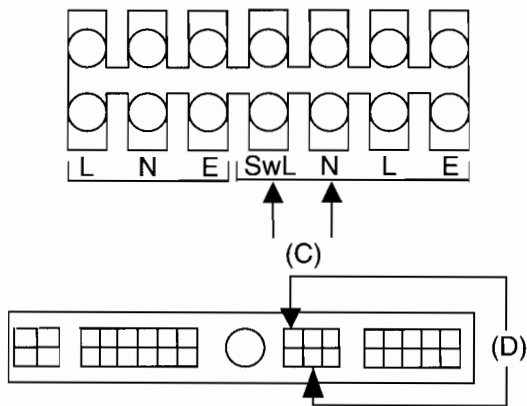
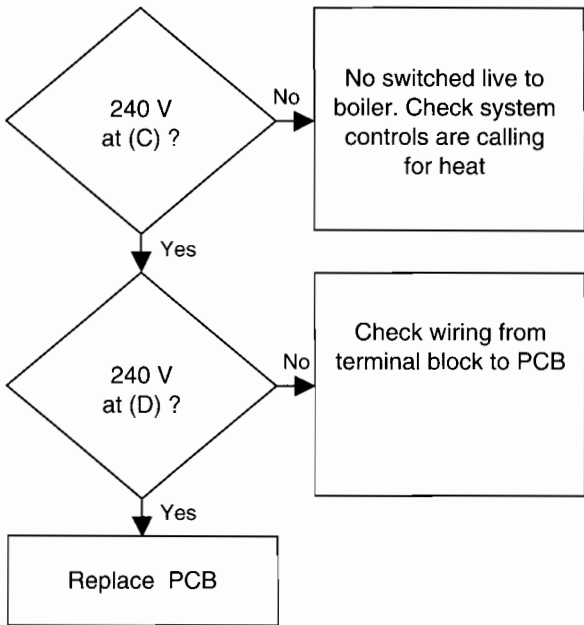
## Fault Finding - Master Sheet



Fault Finding - Electrical Supply (LED Off)

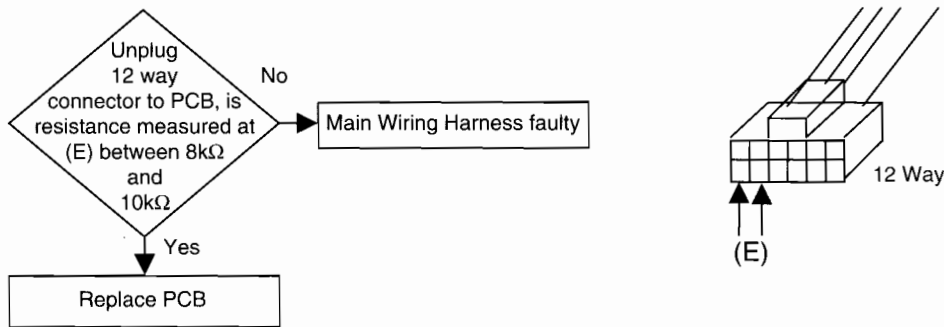


Fault Finding - Switched Live (LED Continuously Orange)

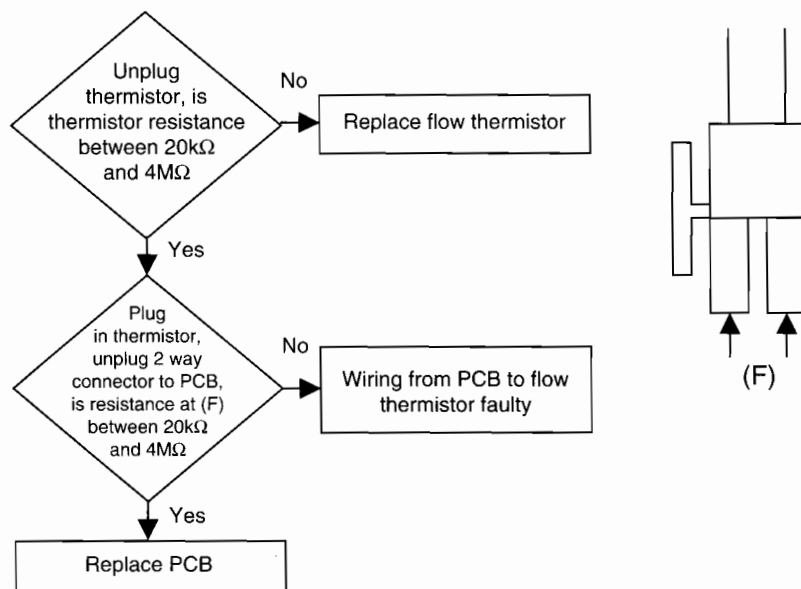


# Fault finding

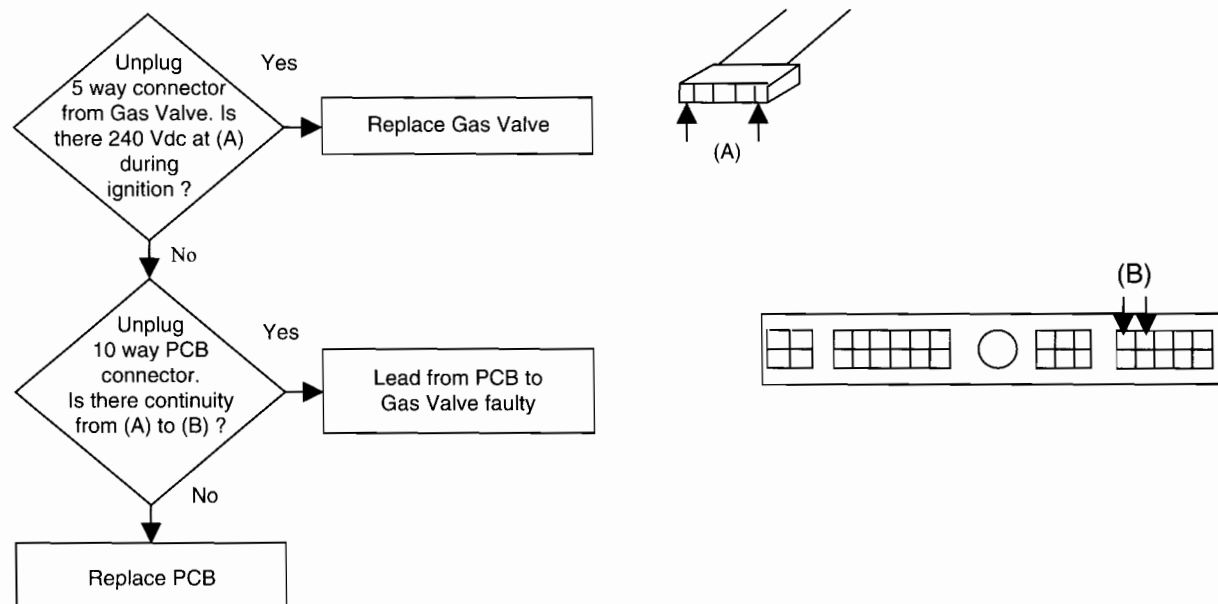
## Fault Finding - Wiring Harness (LED Flashing Red/Orange 3 or 4 times/second)



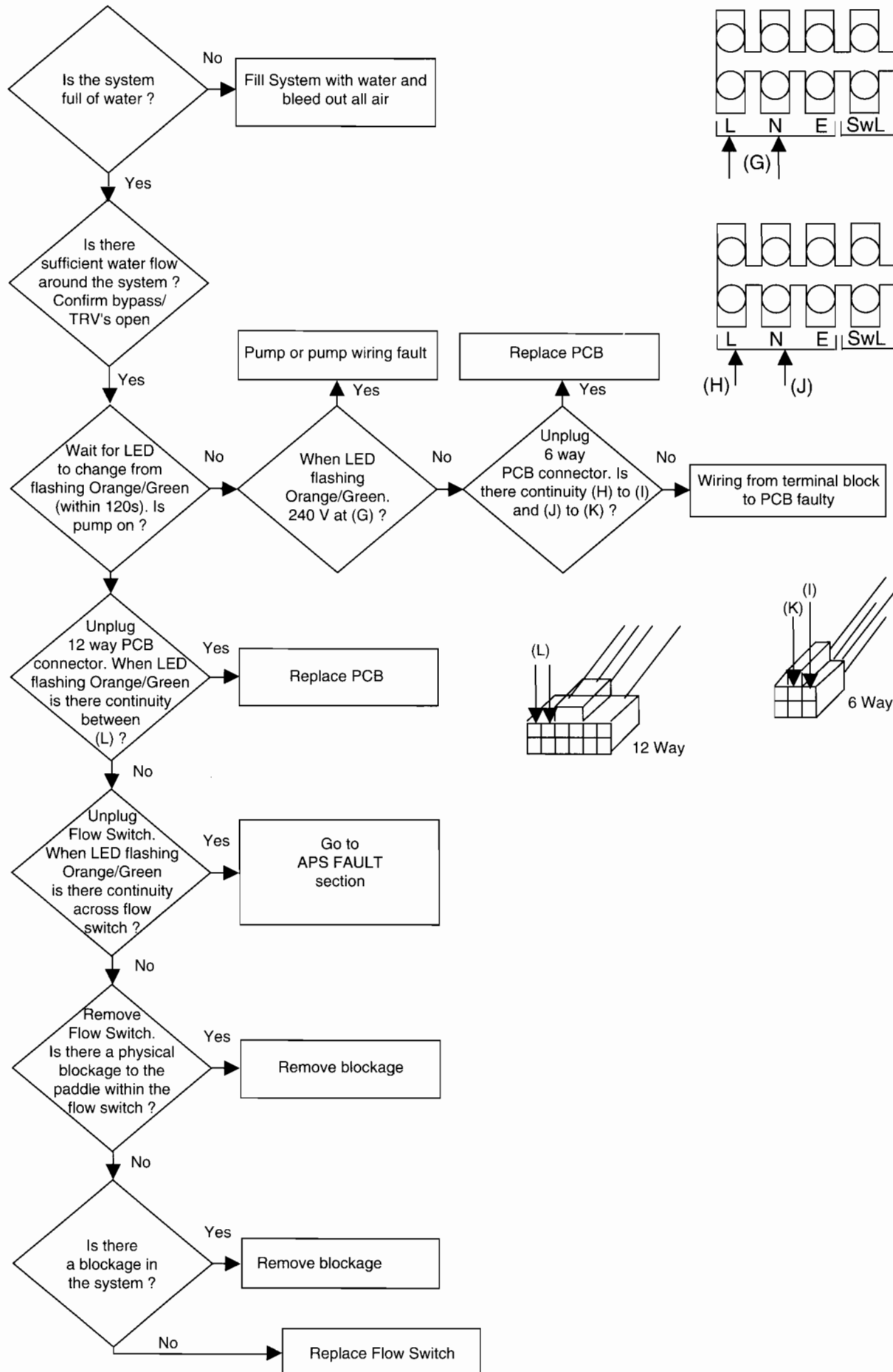
## Fault Finding - Thermistor (LED Flashing Red/Off)



## Fault Finding - Gas Valve Fault



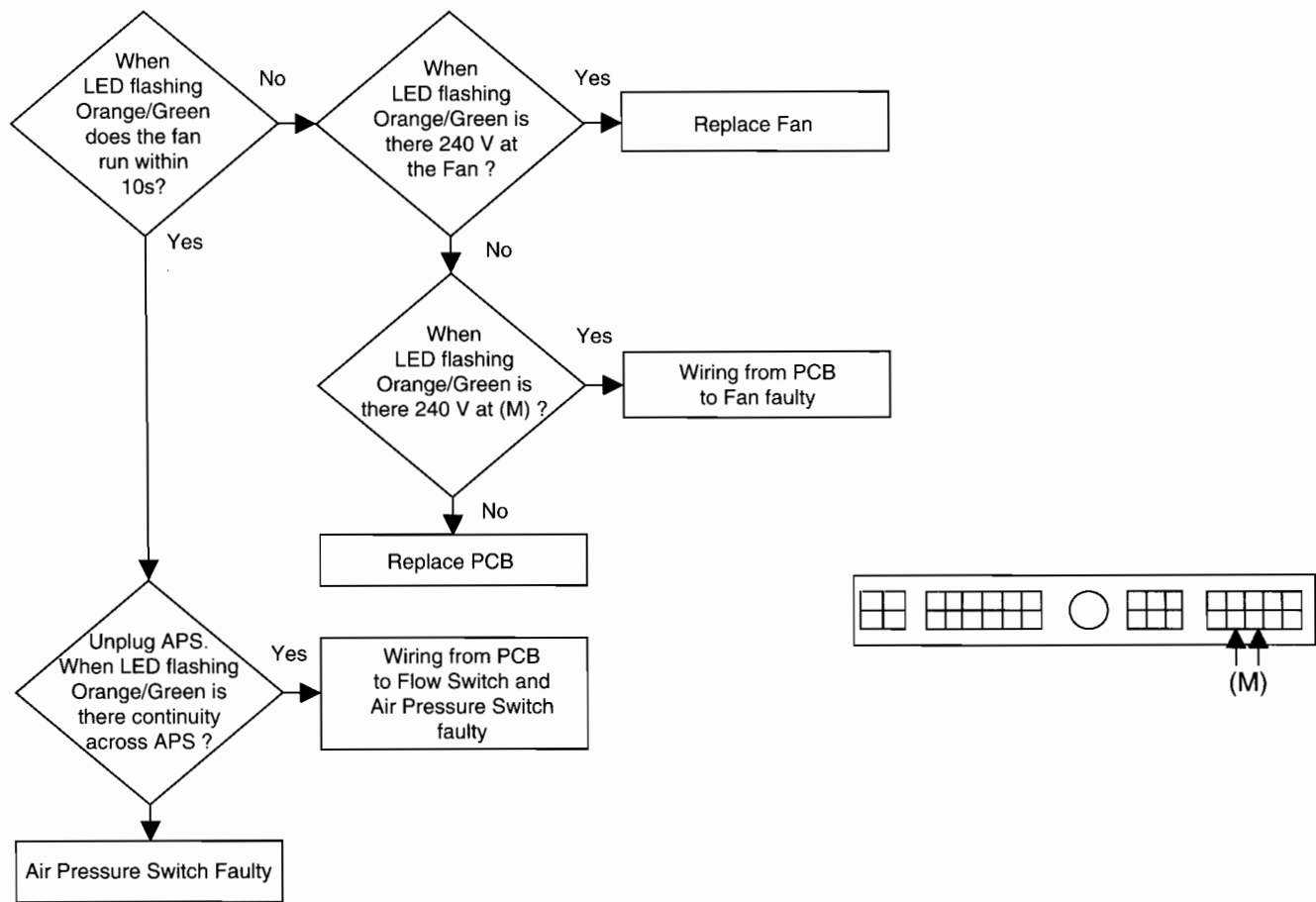
## Fault Finding - Flow Switch Fault (LED Flashing Red/Off 3 or 4 times/second)



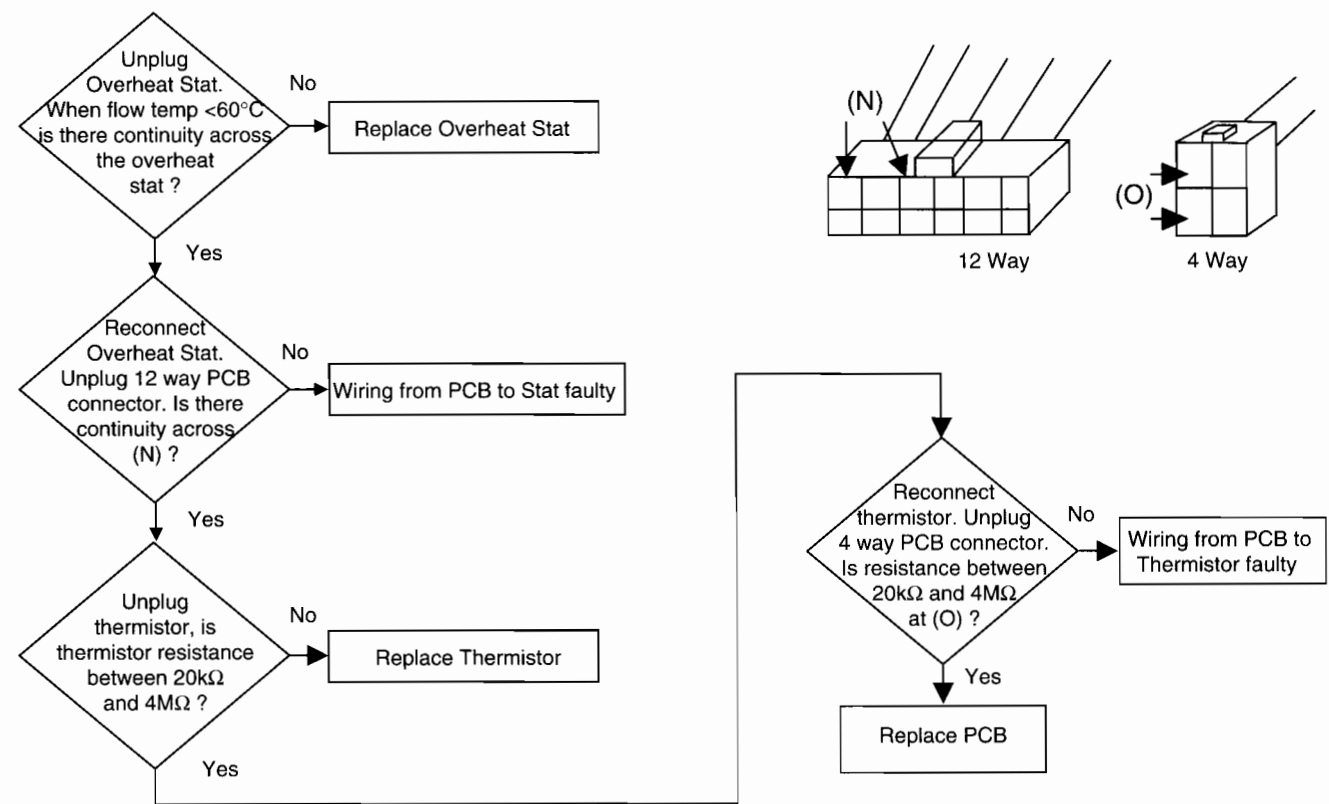


# Fault finding

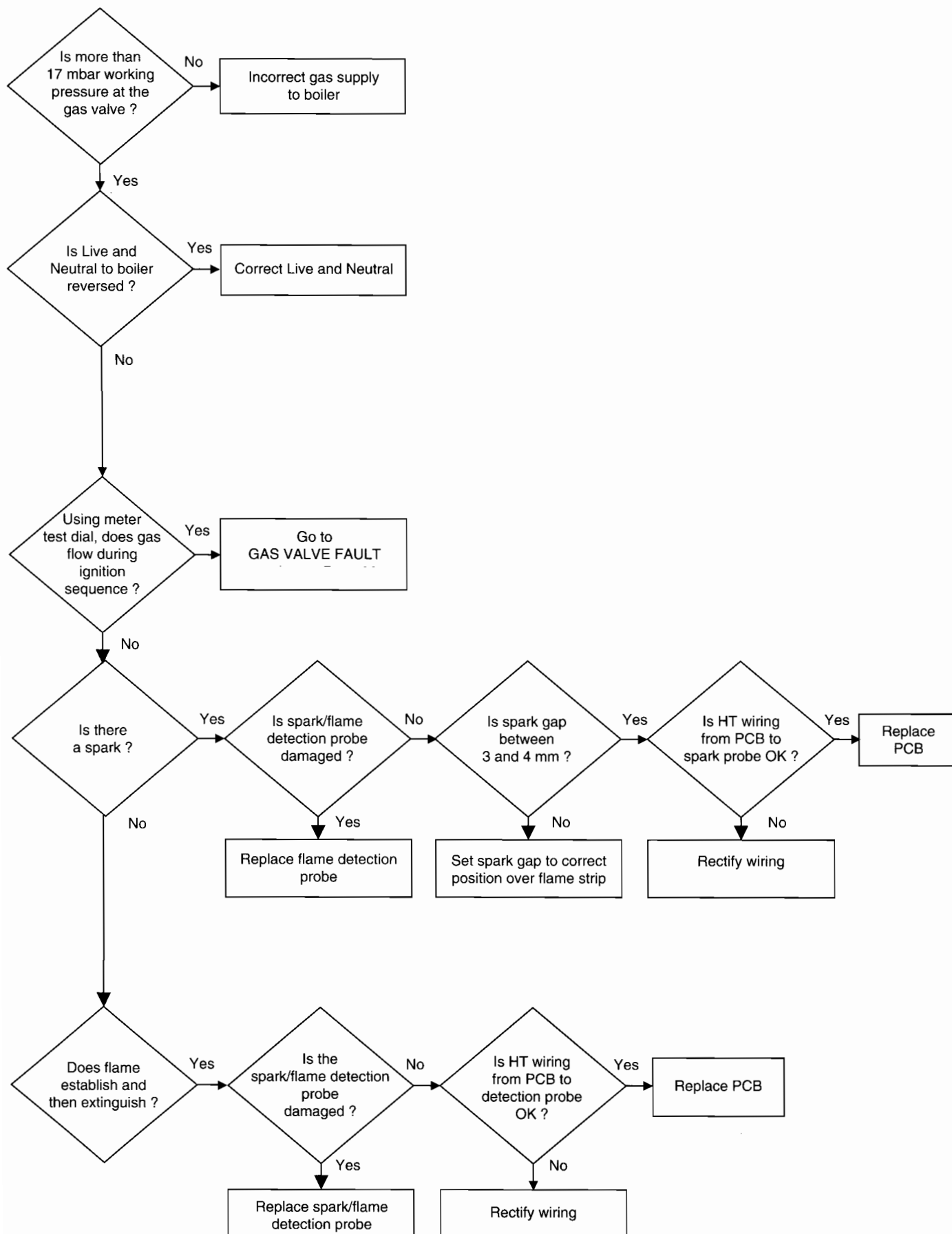
## Fault Finding - Air Pressure Switch Fault



## Fault Finding - Overheat Lockout (LED Red/Off 5 times every 10 seconds)



## Fault Finding - Ignition Lockout (LED Flashing Red/Off 2 times every 5 seconds)



**SPARES INQUIRIES:**

Spare parts are available nationwide via the **interpart** stockists network. For your local stockist consult Yellow Pages under Central Heating.

All descriptions and illustrations contained in this catalogue have been carefully prepared, but we reserve the right to make changes and improvements in our products which may affect the accuracy of the information contained in this catalogue. All goods are sold subject to our standard Conditions of sale which are available on request.

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