IDEAL W2000

February 1991

CF 40N, CF 50N & CF 60N

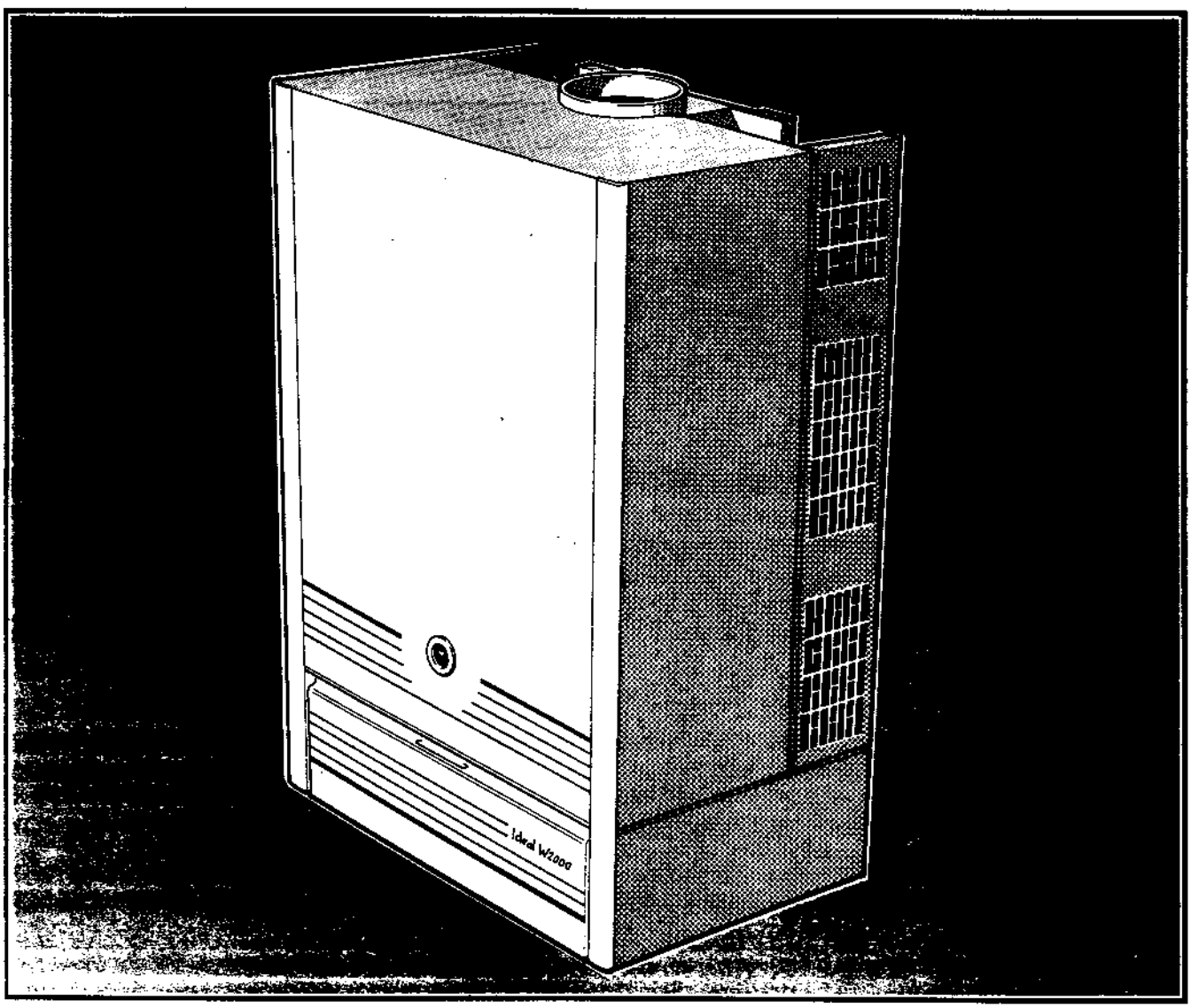
Wall Mounted, Open Flue Gas Boilers

Installation & Servicing

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

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

Ideal W2000	G.C Appliance No.
CF 40N	41 429 17
CF 50N	41 429 18
CF 60N	41 429 19



NOTE TO THE INSTALLER: LEAVE THESE INSTRUCTIONS ADJACENT TO THE GAS METER

Glenfield Ideal

Table 1- GENERAL DATA

Boiler Size			CF 40N	CF 50N	CF 60N
Main Burner Bar			Aeromatic AC 19/123 256		Aeromatic AC 19/123 257
Gas Control			1/2 in BSP Honeywell V 4700E 1007, 240 V		
Burner Injector			BRAY 16 1200	BRAY 16 1600	BRAY 16 1800
Pilot Injector			SIT 0, 977, 113		
Gas Supply Connection		(in. BSP)	Rc 1/2 (1/2)		
Flue Connection		mm (in.)	100 (4)		
Flow Connections		(in. BSP)	Rc 1 (1)		
Return Connections		(in. BSP) (in. BSP)	Rc 1 Rc 3/4 (3/4)		
Maximum Static Water Head		m (ft.)	30.5 (100)		
Minimum Static Water Head		m (ft.)	0.45 (1.5)		
Electric Supply			240 V ~ 50 Hz		
External Fuse Rating			3 A		
Water Content		litre (gal.)	10.9 (2.4)		
Dry Weight		kg (lb)	67.0 (147.0)		
Maximum Installation Weight		kg (lb)	59.0 (130.0)		
Boiler Size	Height	mm (in.)	740 (29.1)		
	Width	mm (in.)	490 (19.3)		
	Depth	mm (in.)	312 (12.3)		

Table 2- PERFORMANCE DATA

Boiler Size			CF 40N	CF 50N	CF 60N
Boiler Input To obtain gas consumption (a) For l/s; divide heat input (kW) by C.V. of the gas (MJ/m^3). (b) For ft^3/h; divide heat input (Btu/h) by C.V. of the gas (Btu/ft^3). Heat inputs are pre-set to the highest nominal rating.	MINIMUM	kW (Btu/h)	11.7 (40 000)	16.0 (54 500)	20.4 (69 500)
	Gas Consumption	l/s (ft^3/h)	0.3 (38.5)	0.41 (52.5)	0.52 (66.9)
	MID	kW (Btu/h)	13.5 (46 000)	17.7 (60 600)	21.9 (74 700)
	Gas Consumption	l/s (ft^3/h)	0.35 (44.7)	0.46 (58.4)	0.56 (72.0)
	MAXIMUM	kW (Btu/h)	15.3 (52 300)	19.5 (66 500)	23.4 (80 000)
	Gas Consumption	l/s (ft^3/h)	0.39 (50.4)	0.50 (64.0)	0.60 (77.1)
Boiler Output	MINIMUM	kW (Btu/h)	8.8 (30 000)	11.7 (40 000)	14.6 (50 000)
	MID	kW (Btu/h)	10.3 (35 000)	13.2 (45 000)	16.1 (55 000)
	MAXIMUM	kW (Btu/h)	11.7 (40 000)	14.6 (50 000)	17.6 (60 000)
Burner Setting Pressure	MINIMUM	mbar (in.w.g.)	8.0 (3.2)	8.5 (3.4)	10.9 (4.4)
	MID	mbar (in.w.g.)	10.6 (4.2)	10.4 (4.2)	12.5 (5.0)
	[illegible]	[illegible]	[illegible] (5.2)	12.4 (5.0)	14.2 (5.7)

GENERAL GUIDANCE

INTRODUCTION

The **Ideal W 2000** CF 40N, CF 50N and CF 60N are wall mounted open flued, natural draught gas boilers.

They are range rated, having outputs of 8.8 kW (30 000 Btu/h) to 11.7 kW (40 000 Btu/h), 11.7 kW (40 000 Btu/h) to 14.7 kW (50 000 Btu/h) and 14.7 kW (50 000 Btu/h) to 17.6 kW (60 000 Btu/h).

The boiler casing is of white enamelled mild steel as is the controls pod which contains a drop down door and removable base.

The boiler thermostat is located behind the controls access door, in the box mounted adjacent to the gas valve.

Programmer and pump kits, which fit neatly within the casing, are available as optional extras.

Separate fitting instructions are included with these kits.

The boilers are suitable as standard for connection to open vented systems ONLY. An optional overheat thermostat kit is available to allow the boiler to be used on sealed water systems.

THE OPTIONAL PUMP KIT CANNOT BE USED IN CONJUNCTION WITH THE OVERHEAT THERMOSTAT KIT, AN ALTERNATIVE PUMP ARRANGEMENT MUST BE INSTALLED.

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

See Frame 3 for details of correct boiler tappings to use.

Gas Safety (Installation and Use) Regulations, 1984

It is law that all gas appliances are installed by competent persons (e.g. CORGI identified by ⚙) in accordance with the above Regulations. Failure to install appliances correctly could lead to prosecution.

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

The installation of the boiler MUST also be in accordance with the latest I.E.E. Wiring Regulations, the Local Building Regulations, the by-laws of the Local Water Authority, the Building Regulations and the Building Standards (Scotland) and any relevant requirements of the Local Authority.

Detailed recommendations are contained in the following British Standard Codes of Practice.

BS.6891	Low pressure installation pipes
BS.6798	Installation of gas fired hot water boilers of rated input not exceeding 60 kW
BS.5449:1	Forced circulation hot water systems. (Smallbore and Microbore Domestic Central Heating System)
BS.5546	Installation of gas hot water supplies for domestic purposes (2nd Family Gases)
BS.5440:1	Flues (for gas appliances of rated input not exceeding 60 kW)
BS.5440:2	Air supply (for gas appliances of rated input not exceeding 60 kW)

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

IMPORTANT: These appliances are certificated by the British Standards Institution for safety and performance. It is therefore, important that no external control devices e.g. flue dampers, economisers, etc,- are directly connected to these appliances unless covered by these 'Installation and Servicing' instructions or otherwise recommended by Stelrad Group Ltd., in writing.

If in doubt please ask us

Any direct connection which does not have the approval of Stelrad Group

INTRODUCTION- FLUEING

LOCATION OF BOILER

The wall MUST be flat and vertical, and of a suitable load bearing capacity.

The boiler may be fitted on a combustible wall, and insulation, other than that required by the Local Authority or any Building Regulations is NOT necessary.

The location selected for the boiler MUST permit the provision of a satisfactory flue, and an adequate air supply.

The location MUST also provide adequate space for servicing, and air circulation around the boiler (For minimum clearances required for safety and subsequent service see wall mounting template and Frame 7. In addition sufficient space may be required to allow lifting access onto the wall mounting plate).

This appliance MUST NOT be installed in a bedroom, and MUST NOT be installated in a room containing a bath or shower.

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

A compartment, used to enclose the boiler, MUST be designed, and constructed, 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 BS.6798.

THE BOILER IS NOT SUITABLE FOR EXTERNAL INSTALLATION.

GAS SUPPLY

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

An existing service pipe must NOT be used without prior consultation with the Local Gas Region.

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

An existing meter should be checked, preferably by the Gas Region, to ensure the meter is adequate to deal with the rate of gas supply required.

Installation pipes MUST be fitted in accordance with BS.6891 It would be wrong to assume that the gas supply pipe size provided will be suitable for all installations.

Pipework from the meter to the boiler MUST be of an adequate size. Do NOT use pipes of smaller size than the boiler inlet gas connection.

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

FLUEING

Detailed recommendations for fluing are given in BS.5440:1.

The following notes are intended for general guidance:

1. The cross-sectional area of the flue, serving the boiler, MUST NOT be less than the area of the flue outlet of the boiler. If flue pipe is to be used, it MUST NOT be less than 102 mm (4 in.) internal diameter.
2. Flue pipes, and fittings, MUST be constructed from one of the following materials:
   (a) Aluminium, Stainless Steel, or
   (b) Cast Iron- coated on the inside with acid resistant vitreous enamel, or
   (c) Other approved material.

If a proprietary flue pipe is used, it should be of a type acceptable to British Gas.

If asbestos cement flues are to be used, it should preferably be one which is coated or lined with, a non-porous, acid

A flue pipe, constructed from one of the materials in 2 (a), 2 (b) or 2 (c) above, should form the initial connection to lined chimneys.
Where a chimney is to be used that is not composed of, or lined with, a non-porous, acid resistant material, it should be lined with a stainless steel flexible flue liner that is acceptable to British Gas. The internal diameter of the liner MUST NOT be less than 102 mm (4 in) and the number of joints MUST be kept to a minimum.

5. Before connecting the boiler to, or inserting a liner into, a flue that has been previously used, the flue MUST be thoroughly swept clean of any soot and loose material.
   If a register plate, restrictor plate, damper etc., is fitted in the flue, it MUST be removed before connecting the boiler to, or inserting a liner into, the flue.
6. The flue MUST terminate in accordance with the relevant recommendations given in BS.5440:1.
7. The flue MUST be fitted with a terminal.
   The terminal shall be of a type which has been tested, and found satisfactory, by British Gas. This terminal must NOT be installed within 600 mm (24 in) of an openable window, air vent, or any other ventilation opening.

IMPORTANT: It is absolutely ESSENTIAL to ensure, in practice, that the flue discharge is in a downdraught-free zone, and that products of combustion, discharging from the terminal, cannot re-enter the building, or any other adjacent building, through ventilators, windows, doors, other sources of natural air infiltration, or forced ventilation/ air conditioning systems.

Products of combustion must NEVER be allowed to discharge from the appliance diverter relief outlets- as indicated in Frame 23.
If this should occur, the appliance MUST be turned OFF immediately, and the Local Gas Region called in to investigate.

AIR SUPPLY

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

The following notes are intended for general guidance:

The room in which the boiler is installed MUST have, or be provided with, a permanent air vent.

This vent MUST be either direct to outside air, or to an adjacent room or internal space- which MUST itself have, or be provided with, a permanent air vent, of at least the same size, direct to outside air.

The MINIMUM effective area of the permanent air vent(s) required is as follows:

Table 3

Boiler Size		CF 40N	CF 50N	CF 60N
Effective	cm^2	36	53	70
Area	(in^2)	(6)	(8)	(11)

The air vent(s) must NOT have provision for closing or adjustment, and should be sited to avoid risk of accidental damage or blockage.

If other methods of ventilation are invisaged, the Local Gas Region should be requested to advise before proceeding.

If the boiler is to be installed in a cupboard or compartment, then permanent air vents are required for combustion, flue dilution and cooling purposes in the cupboard. or compartment, at both high and low levels, to ensure safe, and efficient combustion and ventilation.

These air vents may communicate with a room/ internal space, appropriately ventilated, or be direct to outside air.

The MINIMUM effective areas of the permanent air vents required are as follows:

Table 4 - CF 40N

Position of air vent		Air from room/ internal space	Air direct from outside
HIGH LEVEL	cm^2	135	68
	(in^2)	(21)	(11)
LOW LEVEL	cm^2	270	135
	(in^2)	(42)	(21)

Table 5 - CF 50N

Position of air vent		Air from room/ internal space	Air direct from outside
HIGH LEVEL	cm^2	170	85
	(in^2)	(27)	(14)
LOW LEVEL	cm^2	340	170
	(in^2)	(54)	(27)

Table 6 - CF 60N

Position of air vent		Air from room/ internal space	Air direct from outside
HIGH LEVEL	cm^2	203	102
	(in^2)	(32)	(16)
LOW LEVEL	cm^2	406	203
	(in^2)	(64)	(32)

Note: Both air vents MUST communicate with the same room, or internal space, or MUST both be on the same wall to outside air.

Where cupboard/ compartment air vents are open to a room, or internal space, then the room or internal space MUST itself be provided with a permanent air vent, as previously specified.

EFFECT OF AN EXTRACTOR FAN

If there is any type of extract fan fitted in the premises, there is a possibility that, if adequate air inlet area from outside is not provided, spillage of the products from the boiler flue could occur when the fan is in operation.

Where such installations occur, a spillage test, as detailed in BS.5440:1 MUST be carried out, and any necessary action taken.

VENTILATION IN SERIES

In installations requiring two ventilators to be fitted in series, e.g. across a cavity wall, EACH should be sized in accordance with the above data.

Where there are more than two vetilators in series, EACH should have an area of 50% in excess of the value quoted above.

WATER CIRCULATION SYSTEM

The boiler must NOT be used for direct hot water supply.

Fo the types of system and correct piping procedure- see Introduction and Frame 3.

Note: All water connections MUST be made to the boiler REAR tappings.

The appliances are NOT suitable for gravity central heating systems, with or without additional gravity domestic hot water supply, nor are they suitable for the provision of gravity domestic hot water.

The resistance of the boiler, at 17.6 kW (60 000 Btu/h) output with an 11°C (20°F) temperature difference, is approximately 51 mbar (20.5 in.w.g.). Refer Table 7.

Table 7- WATER FLOW RATE/ PRESSURE LOSS

Boiler Size		CF 40N	CF 50N	CF 60N
Boiler Output	kW (Btu/h)	11.7 (40 000)	14.7 (50 000)	17.7 (60 000)
Water Flow Rate	l/min (gal/h)	15.2 (200)	19.0 (250)	22.8 (300)
Pressure Loss	mbar (in.w.g.)	27 (10.8)	39 (15.6)	51 (20.5)

The above table is based on a temperature rise of 11°C (20°F).

AVOID flow rates in excess of the above values, as it may result in an excessive pressure drop across the boier.

The central heating system should be in accordance with the relevant recommendations given in BS.6798 and in addition, for Smallbore and Microbore systems - BS.5449:1

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

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

The hot water storage cylinder MUST be of the indirect type and should preferably be manufactured of copper.

The hot water cylinder and ancillary pipework, not forming part of the useful heating surface, should be lagged to prevent heat loss and any possible freezing, particularly where pipes run through roof or ventilated under floor spaces.

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

This does NOT mean that more than one open vent is required. Other parts of the system, which may become unavoidably air locked, can be automatically vented.

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

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

ELECTRICITY SUPPLY

External wiring MUST be in accordance with the latest I.E.E. Regulations, and any Local Regulations which apply.

The boiler is supplied for 240 V ~ 50 Hz

Single Phase.

Fuse Rating is 3A

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

Alternatively, a fused double-pole switch, having a contact seperation of at least 3 mm (1/8 in) in both poles and servicing only the boiler may be used.

The point of connection to the mains should be readily accessible and adjacent to the boiler.

1 UNPACKING

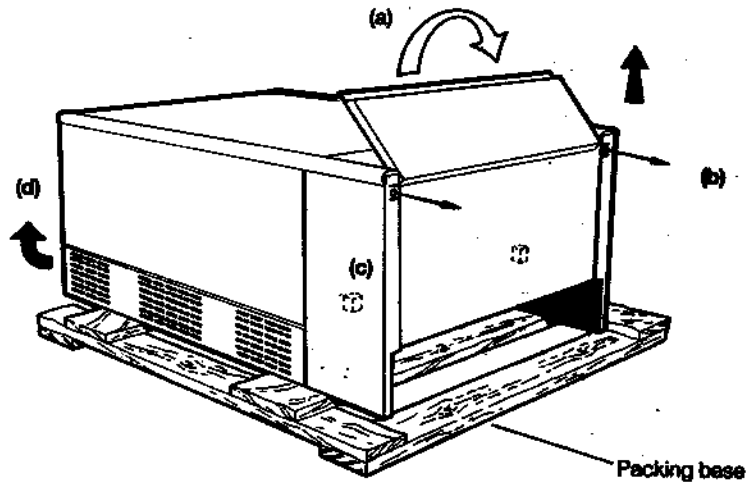
The boiler is supplied fully assembled & is despatched in one box. Optional extras (Pump Kit, Programmer Kit and Sealed System Kit), are supplied in seperate boxes.

BOX CONTENTS

- Complete boiler
- Wall mounting template
- Wall mounting plate
- Installation & Servicing Instructions
- User Instructions
- Hardware pack

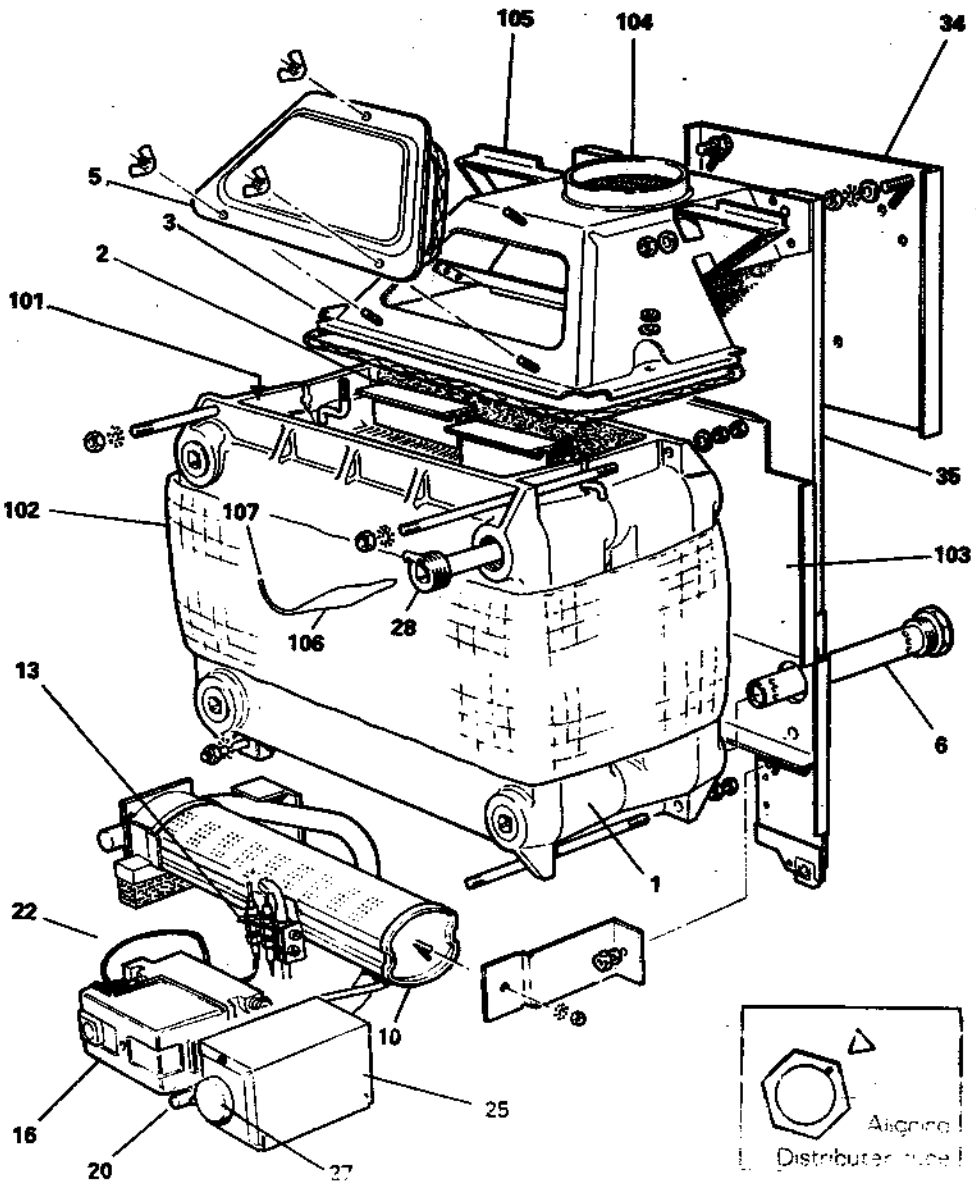
HARDWARE PACK CONTENTS

- Distributor tube, 1 off
- Cable Clips 2 off
- 1 in B.S.P. Recessed plugs, 2 off
- Wall fixing plugs & coach screw, 3 off
- Square bar (adaptor for plugs), 1 off
- M8 Nuts & washers, 2 off
- Data plate Indicator arrow, 1 off



1. Unpack the boiler
2. Remove the casing as follows.
   Place to one side to avoid damage.
   - (a) Open control pod door, unhinge & remove.
   - (b) Undo the two screws retaining the casing bottom panel and pull the panel forwards to remove.
   - (c) Undo the screws retaining the casing to the back panel.
   - (d) Unhook the casing from the top supports & remove.
3. Remove the boiler from its packing base (2 screws).

2 BOILER ASSEMBLY- Exploded view



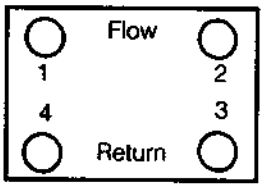
LEGEND:

1	Heat exchanger
2	Flueway baffles
3	Collector hood
5	Cleanout cover
6	Distributor (left or right, one side only)
10	Main burner
13	Pilot burner assembly
16	Gas valve
20	Piezo unit
22	Thermocouple lead
25	Control box
27	Boiler thermostat
28	Boiler thermostat pocket (left or right)
34	Wall mounting plate
35	Back panel
101	Heat exchanger flue
102	Insulation quilt
103	Heat exchanger insulation retaining Panel.
104	Flue outlet
105	Casing support clips
106	Boiler thermostat phial
107	Thermostat capillary

3 BOILER WATER CONNECTIONS (Open vented systems)

1. Use approved jointing compound for all water connections.
2. This appliance is NOT suitable for use in a direct hot water system.
3. If the boiler is to be used on a sealed system, an optional extra kit is available and must be installed in accordance with the instructions supplied with the kit.

All water connections must be made to the REAR tappings. The distributor tube MUST be fitted to the HEATING return. Ensure that the index mark on the tube is aligned with the arrow on the boiler back panel, refer to Frame 2. The thermostat pocket MUST be fitted to the FRONT top tapping at the SAME SIDE of the boiler as the distributor tube. Plug all tappings not used with recessed plugs provided.



SCHEMATIC REAR VIEW OF BOILER, showing boiler flow & return tappings.

***Note:** The boiler as supplied has been plugged for the return connection into tapping 4. These plugs may be repositioned if other options are required.*

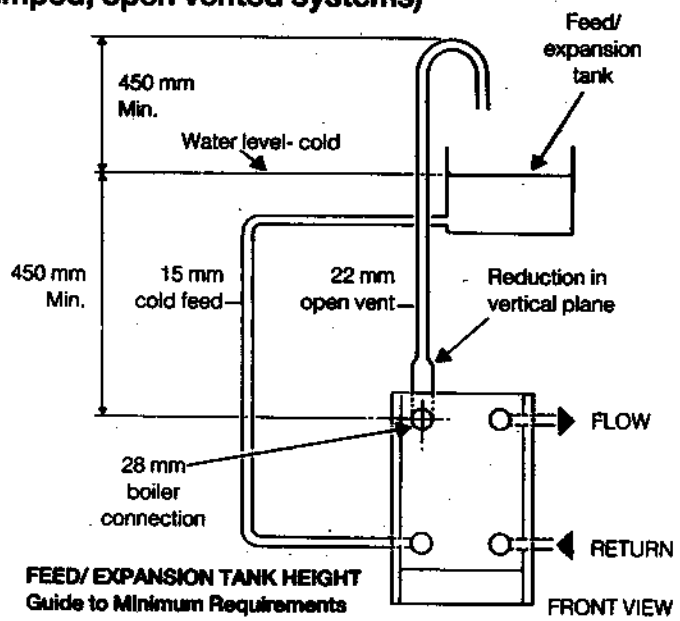
SYSTEM REQUIRED	TAPPINGS TO BE USED
Fully Pumped (Pump kit fitted)	Flow 1 Return 3 or 4
Fully Pumped (External Pump)	Flow 1 or 2 Return 3 or 4
Pumped CH (Pump Kit Fitted) & Gravity HW	Flow 1 Return 4 Flow 2: Return 3
Pumped CH (External Pump) & Gravity HW	Flow 1 or 2 Return 3 or 4 Flow 1: Return 4 Flow 2: Return 3
Pumped CH Only (Pump Kit Fitted)	Flow 1 Return 3 or 4
Pumped CH Only (External Pump)	Flow 1 or 2 Return 3 or 4
Gravity HW Only	Flow 1: Return 4 or Flow 2: Return 3

For Sealed System applications (fully Pump) refer to the Overheat Thermostat Kit Instructions.

4 MINIMUM REQUIREMENTS- (Fully pumped, open vented systems)

1. Open vent & cold feed connections are made to the boiler flow/ return tappings as shown.
2. The boiler is assumed to be the highest point of the circulating system.
3. The circulation pump is positioned on the FLOW. The vertical distance, between the pump & the feed/expansion tank, complies with the Pump Manufacturer's minimum requirements - to avoid cavitation. Should these conditions not apply, either lower the pump position, or raise the feed/expansion tank above the minimum requirements of Stelrad Group Ltd,.
4. The water velocity through the boiler flow/return pipes is assumed to be below 1 m/s (3 ft/s), whilst the pump flow rate is set to provide a temperature difference of 11°C (20°F) across the boiler flow/ return, at design input.
5. This information is intended as a GUIDE ONLY and cannot take into account instantaneous changes in head caused by the operation of motorised valves, pump etc. Due allowance MUST be made if surging is liable to occur.

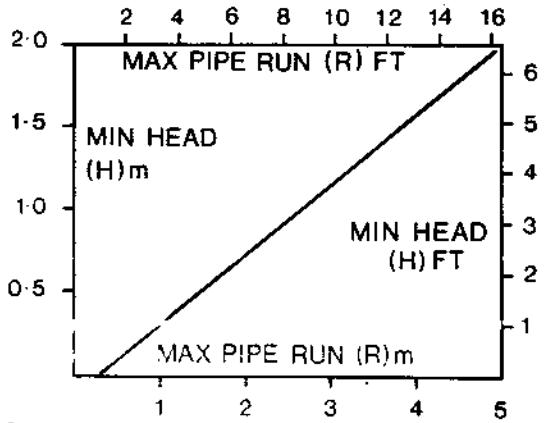
   If in doubt contact Stelrad Group Ltd.



FEED/ EXPANSION TANK HEIGHT Guide to Minimum Requirements

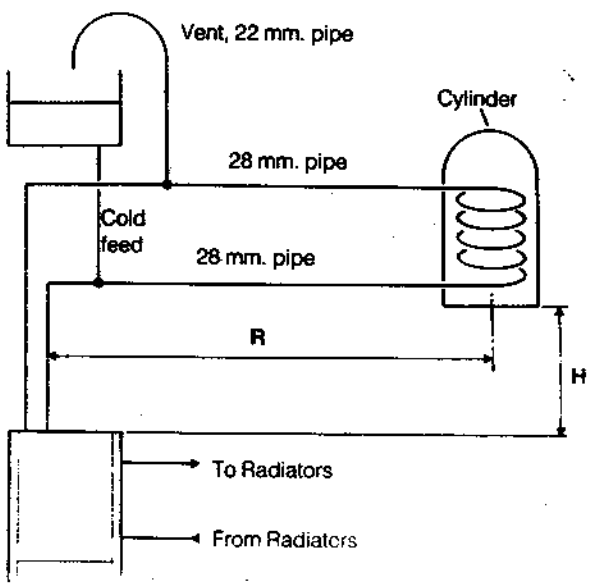
5 REQUIREMENTS FOR CORRECT GRAVITY HOT WATER PERFORMANCE

Note: Gravity horizontal pipes should be ABOVE ceiling level and as SHORT as possible. A MINIMUM inclination of 25 mm per 3m run (1 in per 10 ft) is required to avoid air locks. If these conditions cannot be met, pumped primaries MUST be used.



The above graph assumes 8 elbows in the gravity circuit.

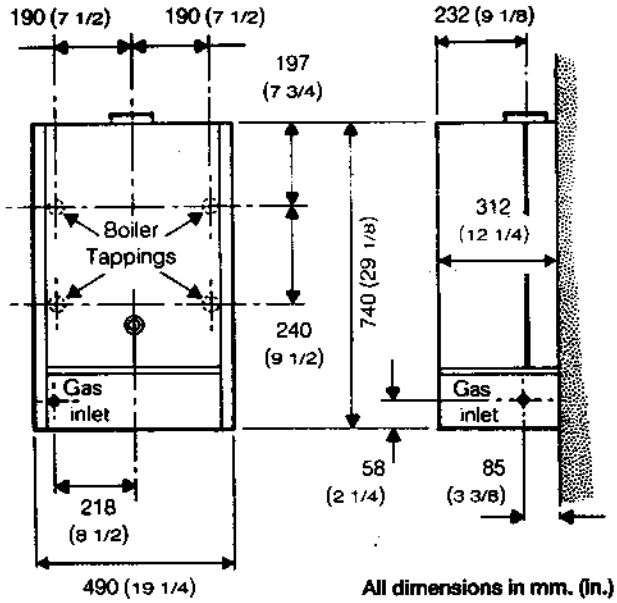
R must be reduced by 300 mm



INSTALLATION

WALL PREPARATION- BOILER LOCATION

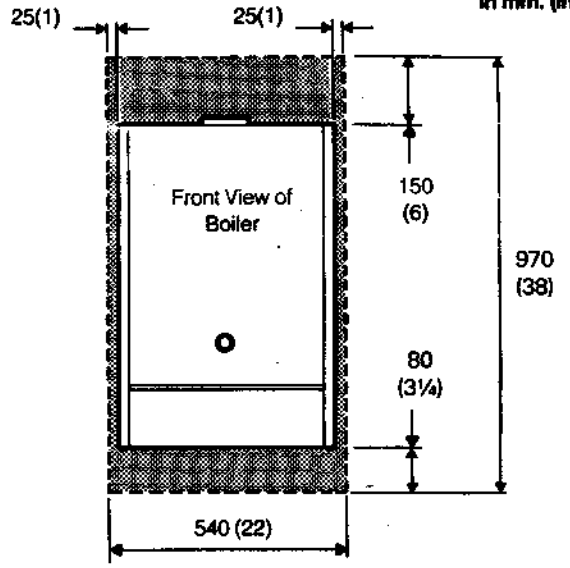
6 BOILER DIMENSIONS/ SERVICES



All dimensions in mm. (in.)

7 BOILER CLEARANCES

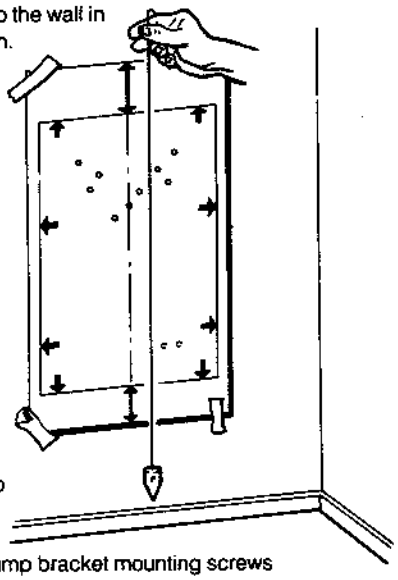
All dimensions in mm. (in.)



Front clearance: 450 (17 3/ 4), from the front of the boiler casing

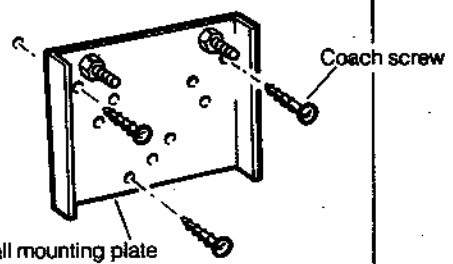
8 WALL MOUNTING TEMPLATE

1. Tape the template to the wall in the required position. Ensure squareness by hanging a plumb-line, as shown.
2. Mark out the 3 mounting plate screws, choosing one from each group of three holes.
3. Drill the holes (No 20 or 10 mm) and insert the plastic plugs provided.
4. If the optional pump kit is to be used, mark and drill the two holes for the pump bracket mounting screws (No.20 or 10 mm) as marked on the template.



9 PREPARING THE WALL

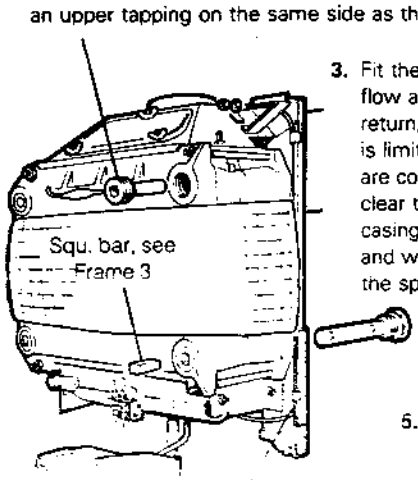
1. Remove the template from the wall.
2. Screw the mounting plate to the wall with the 3 coach screws provided.



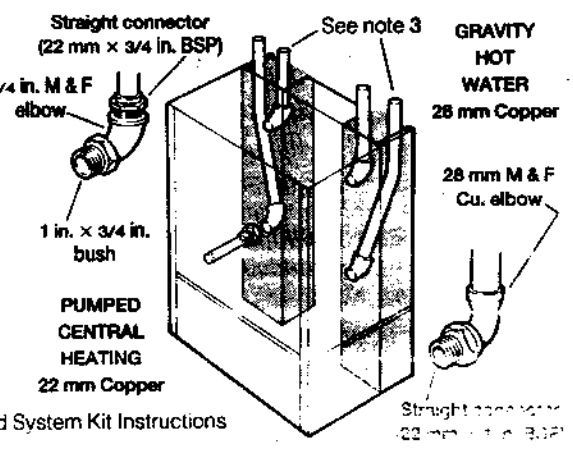
3. If applicable, screw the pump mounting bracket to the wall using the screws and plugs provided in the pump kit.

10 PREPARING THE BOILER

1. Fit the distributor tube to the chosen pumped heating return connection (align the index mark on the tube with the arrow n the back panel, refer to Frame 2). Note: If optional pump is to be fitted, do so at this stage. Up to the point of fitting boiler on the wall, refer to separate Instructions supplied with the kit.
2. The thermostat pocket is pre-fitted to the upper R.H. side tapping, but should be re-positioned if required such that it is always in an upper tapping on the same side as the distributor tube.



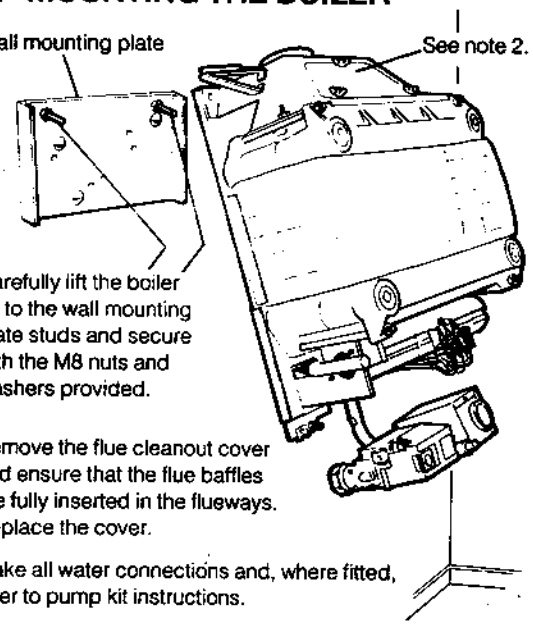
3. Fit the stub connections for the heating flow and return, and gravity flow and return, if required. If the side clearance is limited, ensure the stub connections are continued upwards or downwards to clear the top or bottom of the boiler casing. To fit the boiler casing the gas and water connections MUST run within the space enclosed.



4. Plug spare tappings with the recessed plugs, provided.
5. If the boiler is to be fitted on a sealed system- refer to the Sealed System Kit Instructions [illegible] of thermostat phial) [illegible] Frame 3, Servicing).

Using the above fittings [illegible] ensures the [illegible]

11 MOUNTING THE BOILER



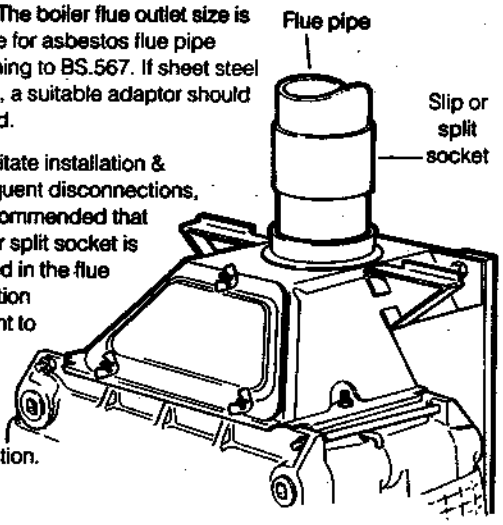
1. Carefully lift the boiler on to the wall mounting plate studs and secure with the M8 nuts and washers provided.
2. Remove the flue cleanout cover and ensure that the flue baffles are fully inserted in the flueways. Replace the cover.
3. Make all water connections and, where fitted, refer to pump kit instructions.

12 CONNECTING THE FLUE PIPE

Connect the flue pipe to the flue outlet.
The flue pipe spigot and socket connections should be sealed with fibreglass rope or similar and a suitable fireclay cement.

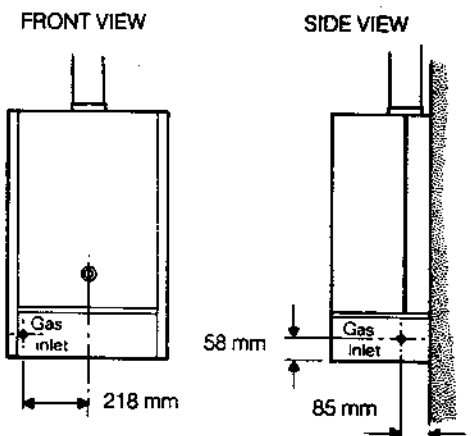
Note: (a) The boiler flue outlet size is suitable for asbestos flue pipe confirming to BS.567. If sheet steel is fitted, a suitable adaptor should be used.

(b) To facilitate installation & subsequent disconnections, it is recommended that a slip or split socket is included in the flue installation adjacent to the boiler flue outlet connection.



13 GAS CONNECTION

A MINIMUM gas pressure of 20 mbar (8 in.w.g.) MUST be available at the boiler inlet.
The main gas cock is on the left hand side of the control valve, below the boiler, and connection to the gas supply MUST be from the REAR of the boiler, and from below.



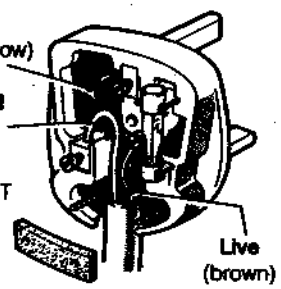
Also refer to section headed Gas Supply- Page 3.

14 ELECTRICAL CONNECTION

WARNING: The appliance MUST be efficiently earthed.

A mains supply of 240 V ~ 50 Hz, Single Phase, is required.

All external controls & wiring MUST be suitable for mains voltage.
Wiring should be in 3- core PVC insulating cable, NOT LESS than 224/0.2 mm (0.75 mm²) to BS.6500 Table 16.

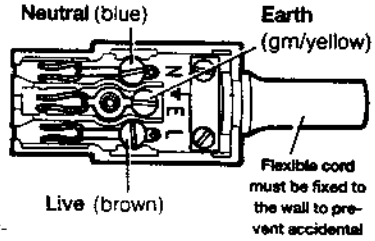


All wiring external to the boiler, including the room thermostat etc., MUST be in accordance with the latest I.E.E. Wiring Regulations and Local Regulations which apply.
The supply connection may be made via a removable plug to an unswitched shuttered socket outlet and should such a plug be used for connection to the mains, it MUST be of 3-pin type, wired as shown, fused at 3 A and complying with the requirements of BS.1363.
Alternatively a fused, double pole switch, having at least a 3 mm (1/8 in) contact separation in both poles and serving only the boiler may be used.

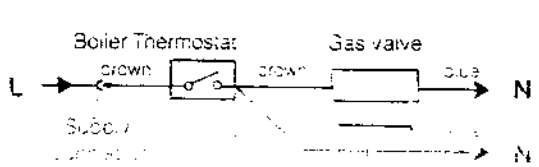
15 ELECTRICAL CONNECTION

Note: If the optional programmer kit is to be fitted, refer to the instructions provided with kit, ignore this Frame and go to frame 17

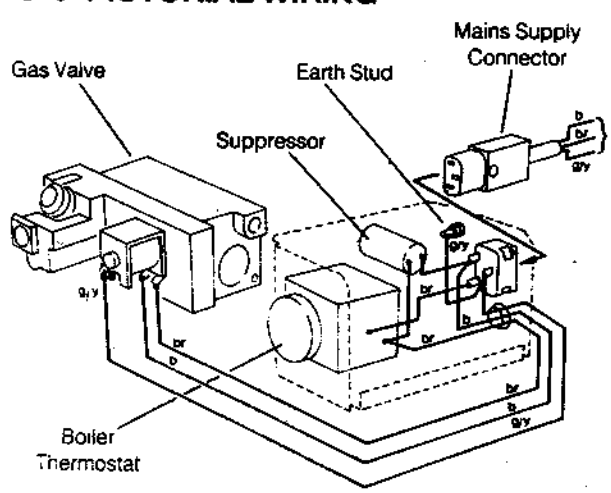
The internal wiring of the control box is also shown in frame 18.
A wiring diagram is also contained in the Lighting Instructions (inside the control pod door). A plug & socket connector is provided on the boiler control box for mains supply.



Flow Wiring Diagram



14 PICTORIAL WIRING



LEGEND
br brown g/y green/ yellow

17 EXTERNAL CONTROLS

The wiring diagrams illustrated in frames 18- 21 cover the systems mosty likely to be fitted to this appliance.
For wiring external controls to the Ideal W 2000 boiler, reference should be made to the system wiring diagrams supplied by the relevant Manufacturer, in conjunction with the wiring diagrams shown in Fames 15 and 16.

Difficulty in wiring should not arise, providing the following directions are observed.

1. Controls that switch the system ON & OFF, e.g. a time switch, MUST be wired, in series, in the live mains lead to the boiler.
2. Controls that over-ride an ON/ OFF control, e.g. a frost thermostat, MUST be wired into the mains lead, in parallel, with the control(s) to be over-ridden, refer to Frame 21.
3. Controls that switch the circulation pump only ON and OFF e.g. a room thermostat, MUST be wired, in series, with the pump in the live pump lead.
4. If a proprietary system is used, follow the instructions supplied by the Manufacturers.
5. SYSTEM DESIGNS FEATURING CONTROLS OR WIRING ARRANGEMENTS , WHICH ALLOW THE BOILER TO FIRE WHEN THERE IS NO PUMPED OR GRAVITY CIRCULATION TAKING PLACE, SHOULD NOT BE FITTED.

Advice on required modifications to the wiring may be obtained from the component Manufacturers.

Note: 1. Connections between a frost thermostat and the time control should be made without disturbing other wiring.
2. A frost thermostat should be sited in a cool place in the house, but where it can sense heat from the system.

Wire the mains connector, supplied strapped to the control box, as follows:

Live (brown) to **L**
Neutral (blue) to **N**
Earth (green/yellow) to ⏚

The connector may now be plugged into the control box.

Note: When the optional programmer kit is fitted, the incoming mains lead should be connected to the programmer mains plug. The boiler control box three-pin plug should be wired in accordance with the system diagrams shown in Frames 18- 21 and the Programmer Installation Instructions.

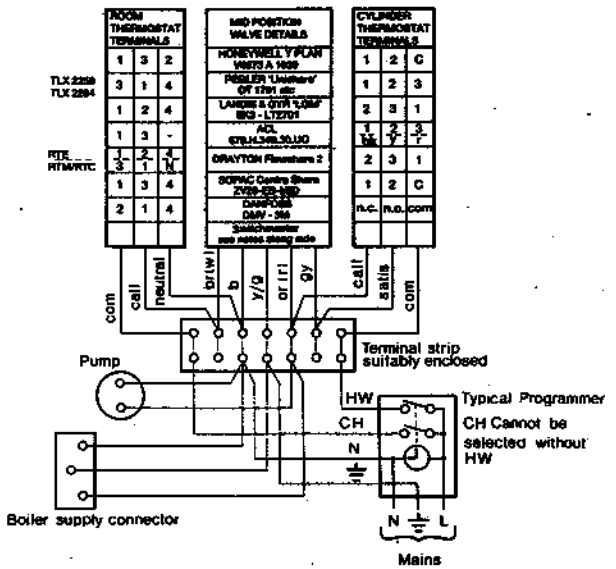
18 MID POSITION VALVE
Pumped only

Notes:

1. Some earth wires are omitted for clarity.
   Ensure proper earth continuity when wiring.
2. This is a fully controlled system- set the boiler thermostat to it's highest position.
3. The numbering of the thermostat terminals is specific to the manufacturer.
4. Switchmaster MIDI operates similarly, but the wiring is not identical- see Manufacturer's wiring diagrams.

Legend

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



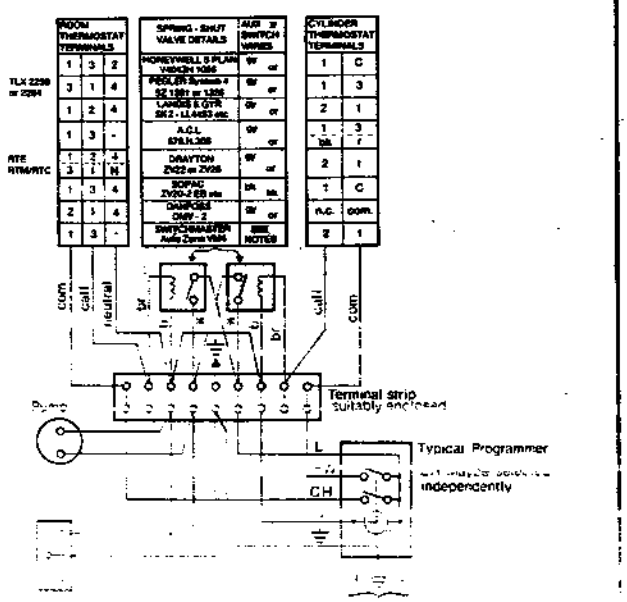
19 TWO SPRING CLOSED VALVES,
Pumped ony

Notes:

1. Some earth wires are omitted for clarity.
   Ensure proper earth continuity when wiring.
2. This is a fully controlled system- set the boiler thermostat to it's highest position.
3. The numbering of the thermostat terminals is specific to the manufacturer.
4. Switchmaster valve has grey and orange auxilary switch leads, but the GREY wire must be connected to the incoming live supply.

Legend

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



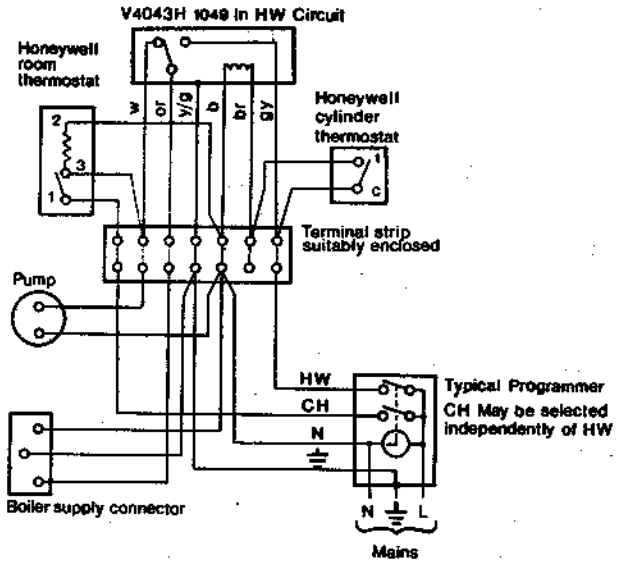
20 HONEYWELL 'C' PLAN
Gravity HW & pumped CH

Notes:

1. Some earth wires are omitted for clarity. Ensure proper earth continuity when wiring.
2. The numbering of the thermostat terminals is specific to the manufacturer shown.

Legend

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



21 FROST PROTECTION

Central heating systems fitted wholly inside the house do not not normally require frost protection, since the house acts as an overnight 'storage heater', and can generally be left at least 24 hours without fear of frost damage.

However, if parts of the pipework run outside the house, or if the boiler will be left off for more than a day or so, then a frost-stat' should be wired into the system. This is usually done at the programmer, in which case the programme SELECTOR switches are set to 'Off' & all other controls MUST be left in the running position.

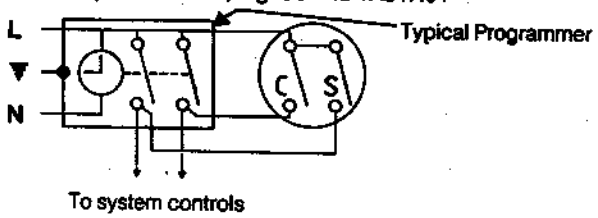
The frost stat should be sited in a cold place, but where it can sense heat from the system. Wiring should be basically as shown, with minimal disturbance of other wiring to the programmer. Designation of the terminals will vary, but the programmer and thermostat manufacturer's leaflets will give full details.

Diagram 'A' shows a double pole frost stat', which should suffice for all systems which do not use the 'OFF' terminals of the programmer.

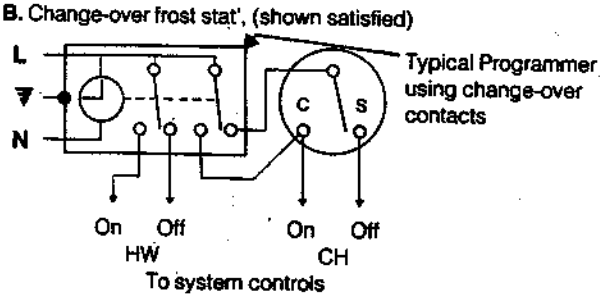
Diagram 'B' shows a 'change-over' frost stat', which will cover most systems which do use 'CH OFF'. If, however, on such a system, the HW pipework is in an isolated part of the house, a second frost stat' may be used to protect it also.

If in doubt, ask your installer for advice.

A. Double pole frost stat', e.g. SOPAC TA347.04



B. Change-over frost stat', (shown satisfied)



22 COMMISSIONING & TESTING

(a) Electrical Installation

1. Checks to ensure electrical safety should be carried out by a competent person.
2. ALWAYS carry out preliminary electrical system checks as detailed on the instructions for the British Gas Multimeter, or similar test meter.
3. Refit the control box cover.

(b) Gas Installation

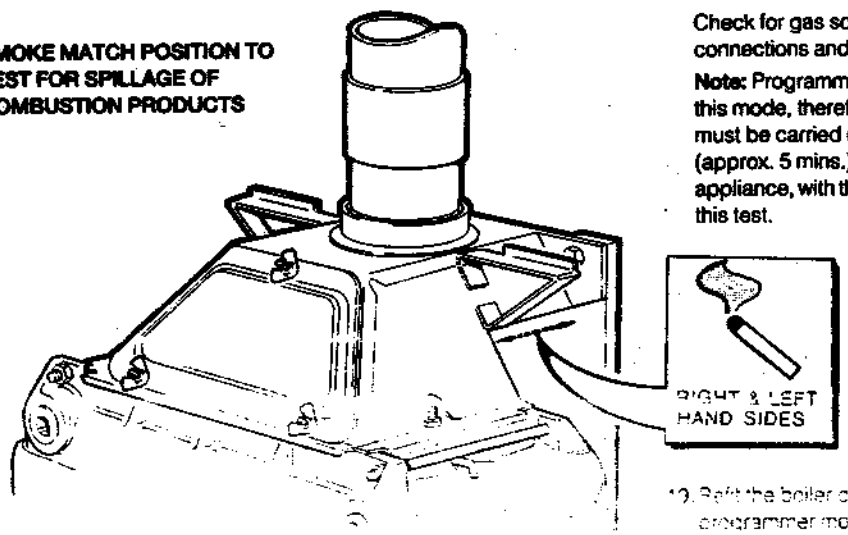
1. The whole of the gas installation, including the meter, MUST be inspected and tested for soundness, and purged in accordance with the recommendations of BS.6891
2. Purging air from the gas installation may be expedited by loosening the union on the gas service cock and purging until gas is smelled.
3. Retighten the union and check for gas soundness.

WARNING: Whilst effecting the required gas soundness test and purging air from the gas installation, open all windows and doors, extinguish maked lights and DO NOT SMOKE.

LIGHTING INSTRUCTIONS

1. Check that all drain cocks are CLOSED, that the stop valves in the flow and return lines are OPEN, and that the thermostat phial is fitted into its pocket.
2. Check that the gas service cock (I) is ON and that the boiler thermostat control knob (D) is OFF. Fit the boiler casing (Frame 24) and, if fitted, make any programmer electrical connections.
3. Loosen the screw in the burner pressure test nipple (F) and connect a gas pressure gauge via a flexible tube.
4. Slide the gas control button (A) to the RIGHT until resistance is felt and then release it. WAIT FOR THREE MINUTES.
5. Push in and retain fully depressed the gas control button (A). Press and release the piezo unit button (E) repeatedly until the pilot is seen to light.
6. Hold the gas control button depressed for 15 seconds after the pilot burner has ignited.
7. If the pilot burner fails to remain alight at this stage, repeat the procedure detailed above but wait longer than 15 seconds before releasing the gas control button.
8. Check the appearance of the pilot flame to ensure that it envelops the tip of the thermocouple and is approximately 25 mm (1 in) long.
   The pilot flame is factory set and no adjustment should be necessary. If the pilot length is incorrect refer to Frame 7 of the Servicing Instructions.
9. Test the complete pilot gas supply for gas soundness, using leak detection fluid.
10. Check that the electricity supply & all external controls are ON.

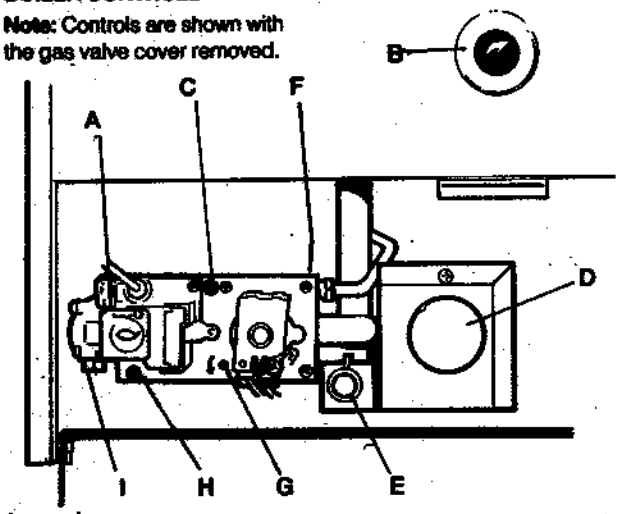
SMOKE MATCH POSITION TO TEST FOR SPILLAGE OF COMBUSTION PRODUCTS



23 INITIAL LIGHTING

BOILER CONTROLS

Note: Controls are shown with the gas valve cover removed.



Legend

- **A.** Gas valve control button
- **B.** Sight glass
- **C.** Pilot pressure adjuster
- **D.** Thermostat control knob
- **E.** Piezo unit ignition
- **F.** Burner pressure test nipple
- **G.** Main burner pressure adjuster
- **H.** Inlet pressure test nipple
- **I.** Gas service cock

11. Set the boiler thermostat control knob to position 6 and check that the burner cross lights smoothly from the pilot flame.
12. Test for gas soundness around the boiler gas component joints, available at this time, using leak detection fluid.
13. Operate the boiler for ten minutes to stabilise the burner temperature.
14. Check the burner setting pressure against the relevant values quoted in Table 2 on Page 2.
15. If the burner setting pressure requires adjustment, remove the gas valve cover. Adjust the pressure adjusting screw (G) as required, (CLOCKWISE to DECREASE).
16. Replace the valve cover.
17. Set the boiler thermostat control knob to OFF.
    Remove the pressure gauge tube, and replace the sealing screw in the pressure test nipple.
    Isolate the electrical supply.
    Remove the boiler casing (Frame 2, Routine Servicing).
    For programmer models, insert the mains electrical plug (previously in the base of the programmer) into the rear of the boiler control box.
    Set the boiler thermostat control knob to 6 and immediately carry out the following spillage test.

    SPILLAGE TEST

    Check that there is no spillage of any products of combustion from the draught diverter outlets by carrying out a spillage test as detailed n B.S. 5440:1. Refer, also, to the diagram opposite.

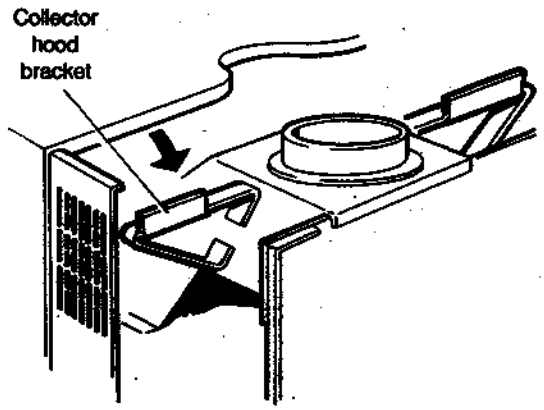
    Check for gas soundness at the injector, pilot supply connections and the pressure test point screw.

    Note: Programmer models will not have the pump running in this mode, therefore the spillage and gas soundness tests must be carried out before the boiler thermostat operates, (approx. 5 mins.). It is important to have pre-heated the appliance, with the casing fitted and the pump running, prior to this test.

    UNDER NO CIRCUMSTANCE SHOULD THE CONTROL THERMOSTAT PHIAL BE REMOVED.
18. Fix the self adhesive arrow (supplied in the hardware pack) to the data plate, on the bottom right hand side of the back panel, indicating the intended burner setting pressure/ heat input that the appliance has been set to.
19. Refit the boiler casing (Frame 24) ensuring that, on the programmer models the mains plug is inserted in the

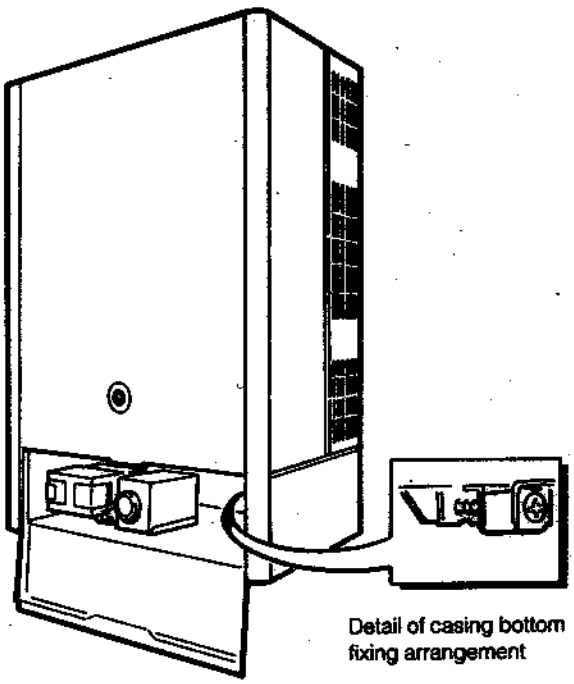
24 FITTING THE CASING

1. Lift the boiler casing up to the boiler assembly.



Detail of casing top fixing arrangement

2. Hook the casing top return over the collector hood bracket.
3. Screw in the two bottom casing fixing screws.



Detail of casing bottom fixing arrangement

FITTING THE CASING ON PROGRAMMER MODELS.

See Routine Servicing Frame 2.

25 GENERAL CHECKS

Make the following checks for correct operation:

1. Turn the boiler thermostat OFF and ON, and check that the main burner is extinguished and relit in response.
2. Check the appearance of the pilot flame to ensure it envelopes the tip of the thermocouple and is approximately 25 mm (1 in.) long.
   Refer to Pilot Burner Setting (Frame 7- servicing)
   Flame Failure Device
   Check the operation of the flame failure device in the gas control valve as follows:
   (a) Extinguish the pilot flame by closing the gas service cock (I), (the casing bottom panel must be removed to facilitate service cock isolation), and note the time taken for the flame failure device to shut down - identified by a click within the gas control valve. This MUST NOT be longer than 50 seconds.
   (b) Open the gas service cock, refit the casing bottom panel and re-light the pilot.
3. With the burner alight again, slide the gas control button to the right until resistance is felt, and then release it. The burner and pilot flames should shut down immediately.
   Note: A latch in the gas control provides a safe delay period before the boiler can be re-lit.
4. The correct operation of ANY programmer, and all other system controls, should be proved. Operate each control separately, and check that the main burner, or circulating pump, as the case may be, responds.
5. With the system HOT, examine all water connections for soundness. Then turn OFF the gas, electricity and water supplies to the appliance, and drain down whilst the system is still hot, in order to complete the flushing process. Refill and vent the system and again check for water soundness.
6. Finally, set the controls to the User's requirements.
   The temperatures quoted below are approximate & vary between installations:

Thermostat Knob Setting	Flow Temperature °C	°F
1	54	130
2	60	140
3	66	150
4	71	160
5	77	170
6	82	180

26 HANDING OVER

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

1. Hand the User's Instructions to the Householder and explain his or her responsibilities under the Gas Safety (Installation and Use) Regulations 1984.
2. Draw attention to the Lighting Instruction Label affixed.
3. Explain and demonstrate the lighting and shutting down procedures.
4. The operation of the boiler and the use and adjustment of ALL system controls should be fully explained to the Householder. to ensure the greatest possible fuel economy. consistant with household requirements of both heating and hot water consumption.
   Advise the User of the precautions necessary to prevent damage to the system, and to the building, in the event of the system remaining inoperative during frosty conditions
5. Explain the function and the use of the boiler thermostat and external controls.
6. Explain the function of the boiler over-heat thermostat (ONLY FITTED FOR SEALED SYSTEM USE) and emphasise that if cut out persists, the boiler should be turned off and the local Heating Installer consulted.
7. Explain and demonstrate the function of time and temperature controls, radiator valves, etc for the economic use of the system.
8. If any Programmer Kit is fitted, then draw to the Programmer Kit User's instructions and hand them to the Householder.
9. Stress the importance of regular servicing by the Local Gas Region or by a qualified Heating Engineer and that a comprehensive service should be carried out AT LEAST ONCE A YEAR.

1 SCHEDULE

The following should be carried out at periods not exceeding one year.

(a) Light the boiler and carry out a pre-service check, noting any operational faults.
(b) Clean the main burner.
(c) Clean the heat exchanger.
(d) Clean the main and pilot injectors.
(e) Check that the flue terminal is unobstructed and that the flue system, including the inner cover is sealed correctly.
(f) If the appliance has been installed in a compartment check that the ventilation areas are clear.

The servicing procedures are covered more fully in Frames 2 to 8 and must be carried out in sequence.

WARNING: Disconnect the electrical supply.

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

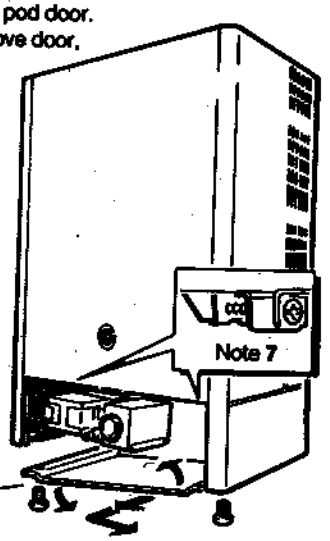
Note: In order to carry out either servicing or replacement of components, the boiler casing must be removed (Frame 2).

IMPORTANT: When work is complete the casing MUST be correctly refitted.

2 BOILER CASING REMOVAL

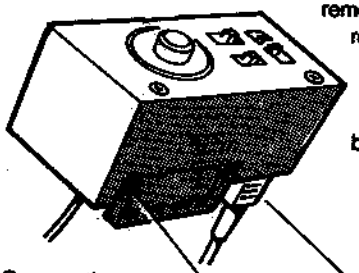
1. Open the controls pod door. Unhinge and remove door.
2. Disconnect the connector plug located at the rear of the control box.

   (If a programmer is fitted follow steps 3, 4, 5, and 6 otherwise proceed to 7).



PROGRAMMER MODELS

3. If a programmer is fitted, remove the two screws retaining the BOTTOM of the programmer to the control casing bottom panel.



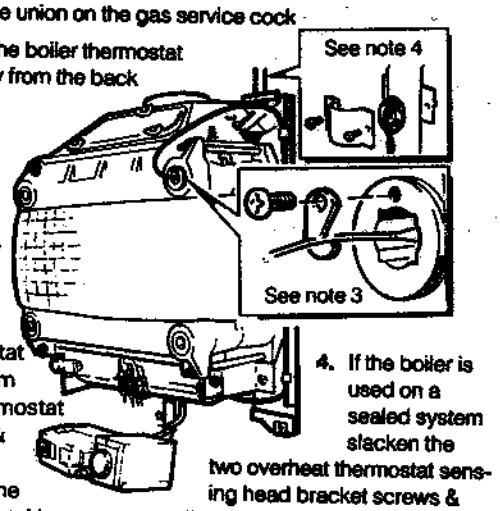
4. Remove the screws retaining the control casing bottom panel and slide the panel out.
5. Pull out the mains connector plug from the base of the programmer.
6. Remove the two screws securing the external controls/pump plug connector and pull out the connector.

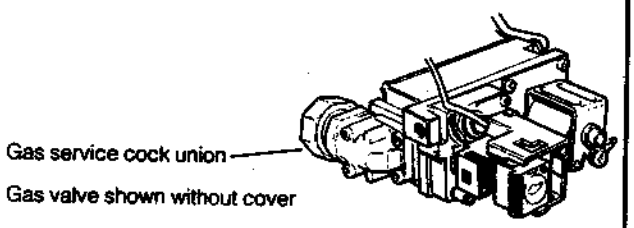
STANDARD & PROGRAMMER MODELS

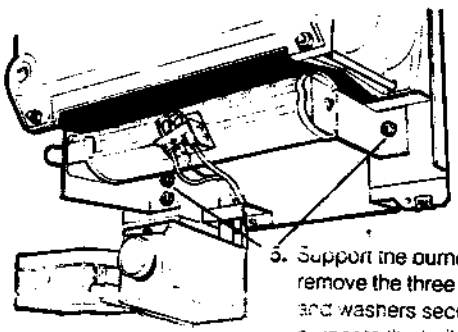
7. Release the two captive screws at the bottom of the casing. Lift the casing off the boiler and retain in a safe place.
8. Isolate the gas supply at the service cock.

3 BURNER AND CONTROLS ASSEMBLY REMOVAL

1. Undo the union on the gas service cock
2. Unclip the boiler thermostat capillary from the back plate.
3. Remove the boiler control thermostat phial from the thermostat pocket & carefully coil up the capillary, taking care not to bend it tightly.
4. If the boiler is used on a sealed system slacken the two overheat thermostat sensing head bracket screws & pull the sensing head clear of the bracket. Remove the overheat thermostat capillary from its spring clip.



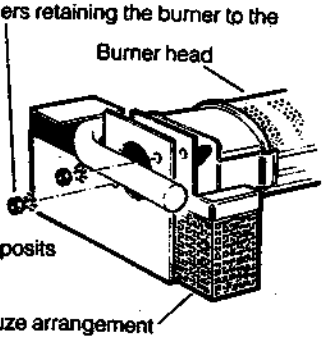




5. Support the burner and remove the three nuts and washers securing the burner to the boiler back panel (2 left, 1 right)
6. Remove burner

4 CLEANING THE BURNER ASSEMBLY

1. Undo the two nuts & washers retaining the burner to the manifold.
2. Pull the burner from the manifold sufficiently to release the two fixing studs.
3. Remove the gauze arrangement.
4. Clean the gauze of any deposits of lint or fluff, etc.



5. Brush off any deposits that may have fallen on to the burner head, ensuring the flame ports are un-obstructed. Remove any debris that may have collected.

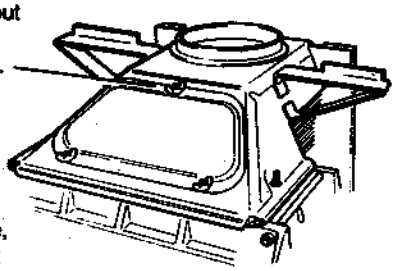
   Note: Brushes with metallic bristles MUST NOT be used.
6. Remove the main burner injector. Ensure that there is no blockage or damage.

5 CLEANING THE BURNER ASSEMBLY- Continued

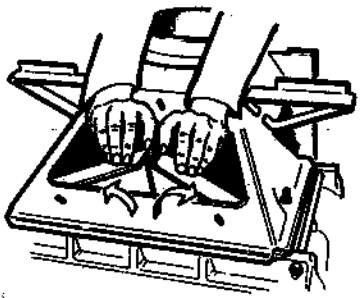
7. Replace the injector, using an approved jointing compound, sparingly.
8. Re-assemble the burner in reverse order. Ensure that the gauze arrangement is correctly replaced between the manifold and the burner.
9. Inspect the pilot burner, thermocouple and spark electrode: ensure they are clean and in good condition.
   In particular check that:
   (a) The pilot burner injector is not blocked or damaged (Refer Frame 14 for details of removal).
   (b) The pilot burner is clean and unobstructed.
   (c) The spark electrode is clean and undamaged.
   (d) The spark lead is in good condition & securely connected.
   (e) The spark gap is correct- refer to Frame 7.
   (f) The thermocouple tip is not burned or cracked.
   (g) The position of the thermocouple relative to the pilot burner and main burner is correct- refer to Frame 7.
   (h) The thermocouple terminal at the gas valve is clean.

6 CLEANING THE FLUEWAYS

1. Remove the cleanout cover by undoing the three wing nuts.



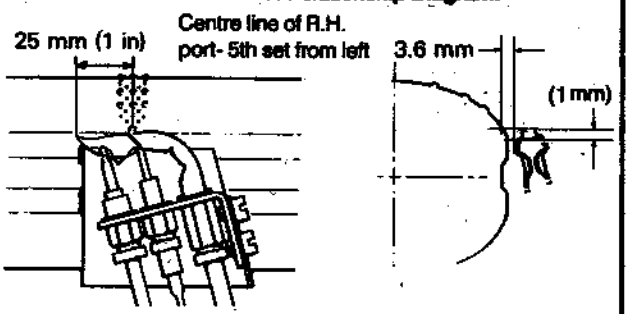
2. Remove the flue baffles through cleanout cover opening. (Lift both baffles at the centre, then remove one at a time).



3. Remove all loose deposits from the heat exchanger, particularly between the fins, using a suitable brush.

7 PILOT BURNER SETTING

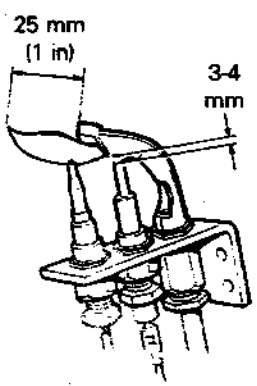
Ideal W2000 RS Boilers- Pilot Relationship Diagram.



1. Turn on the gas supply.
2. Light the pilot and check that the pilot flame envelopes the tip of the thermocouple and is approximately 25 mm (1 in) long. The pilot adjuster screw is factory set to maximum and no further adjustment should be necessary. However, if the pilot flame appears small, check the adjustment of the pilot pressure adjuster screw.
   a) Press the green button to the right in the direction of the arrow to turn pilot off.
   b) Turn the pilot pressure adjuster screw (A), see Frame 23 Installation section, CLOCKWISE until fully CLOSED.
   c) Turn the pilot pressure adjuster screw ANTI-CLOCKWISE four full turns, to give maximum setting.
   d) Relight the pilot burner, Frame 23- Installation section.

NOTE: Heat Input/ Setting Pressure:
After each occasion of servicing, reference should be made to Table 2, which quotes details of the rated output, with the related burner setting pressure & the heat input.
Any required adjustment sould be made by using the pressure adjustment screw, refer to Frame 23, Installation section.

Ideal W2000 CFN boiler: Detail of spark gap.



8 RE- ASSEMBLY

Re-assemble in reverse order to that shown in Frames 2 to 7.

1. Refit the flue baffles.
2. Refit the collector hood cleanout cover, replaceing any damaged or deteriorating gaskets.
3. Refit the burner and controls assembly.
4. Re-connect and turn on the gas supply.
5. Ensure that the sightglass in the boiler casing is clean and undamaged.
6. Refit the boiler casing and tighten the two captive screws.
7. For programmer models connect the mains supply plug to the base of the programmer.
8. Refit the external controls/pump plug connector (2 screws) and connect the remaining plug to the control box.
9. For non programmer models, connect the mains supply plug to the control box.
10. Slide the bottom panel into the casing surround. Refit the fixing screws for the bottom panel, and programmer- if fitted.
11. Refit the controls pod door.

9 GENERAL

When replaceing any component:

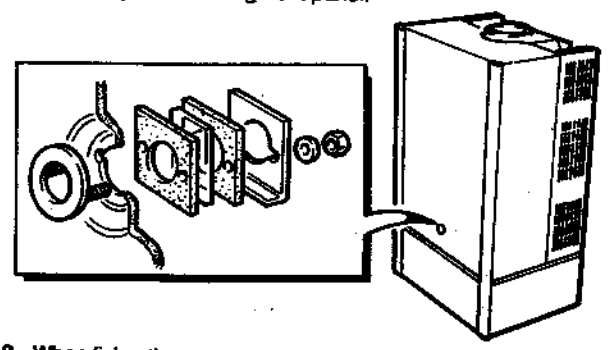
(a) Isolate the electricity supply

(b) Turn off the gas supply

(c) Remove the boiler casing (see Frame 2).

10 SIGHTGLASS REPLACEMENT

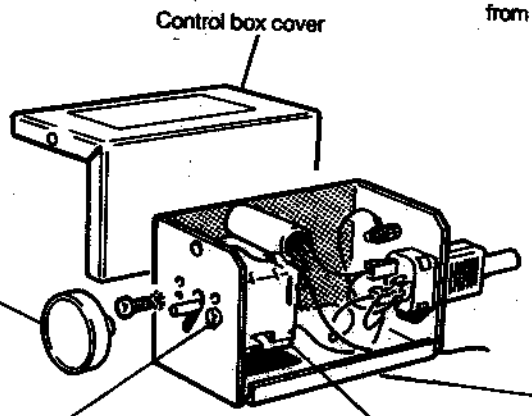
1. Refer to Frame 9
2. Unfasten the two nuts and washers holding the sight-glass assembly to the casing front panel.



3. When fixing the new assembly, make certain that the parts are in the correct order.
   The frame MUST have the return edge at the bottom.
4. Retighten the two nuts to ensure an airtight seal.
   Do NOT overtighten.
5. Replace the boiler casing, refer to Frame 8.

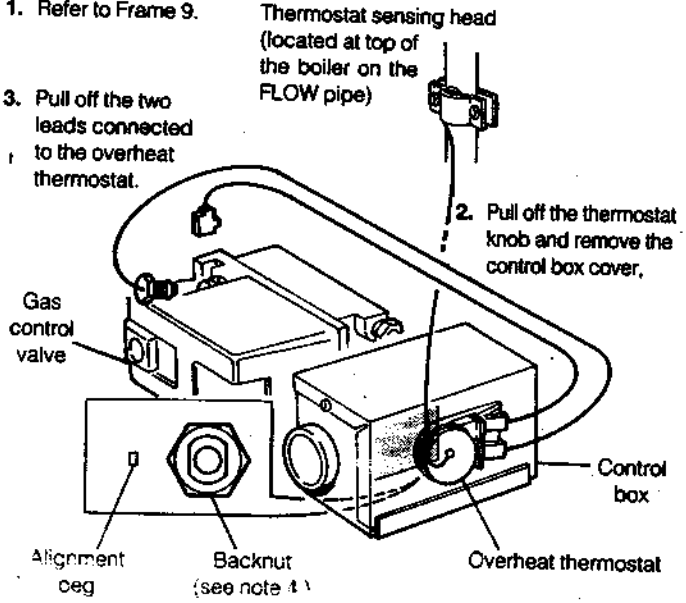
11 CONTROL THERMOSTAT REPLACEMENT

1. Refer to Frame 9.
2. Remove the control box cover.
3. Pull off the three electrical connections from the thermostat head.
4. Release the screw securing the thermostat phial retaining bracket and remove phial from the pocket. Unclip the capillary from the routing clip on side of back panel.
   Remove the boiler thermostat.
5. Remove the two screws securing the thermostat.
6. Fit the new thermostat and re-fit in reverse order, ensuring the electrical connections are at the bottom of the box (polarity immaterial).
   Note: Use the bottom two fixing holes for the thermostat.
   Ensure phial is correctly replaced in pocket (diagram in frame 3) and capillary routed as shown in frame 10 -Installation.
7. Replace the boiler casing - Frame 8.
8. Check the operation of the new thermostat - refer Frame 23, Installation section.

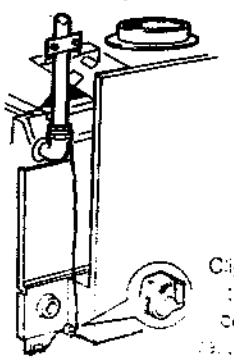


12 OVERHEAT THERMOSTAT REPLACEMENT (Optional extra for sealed systems only)

1. Refer to Frame 9.
2. Pull off the thermostat knob and remove the control box cover.
3. Pull off the two leads connected to the overheat thermostat.
4. Remove the backnut retaining the overheat thermostat.
5. Slacken the two screws retaining the thermostat sensing head bracket to the flow pipe.
   Pull the sensing head clear of the bracket and remove the capillary from the bottom spring clip.
6. Fit the new overheat thermostat & re-assemble in reverse order (polarity immaterial).
   Ensure that the thermostat sensing head is correctly positioned underneath the bracket on the flow pipe. Tighten the bracket screws & fit the capillary into the bottom spring clip.
7. Replace the boiler casing - Fr...



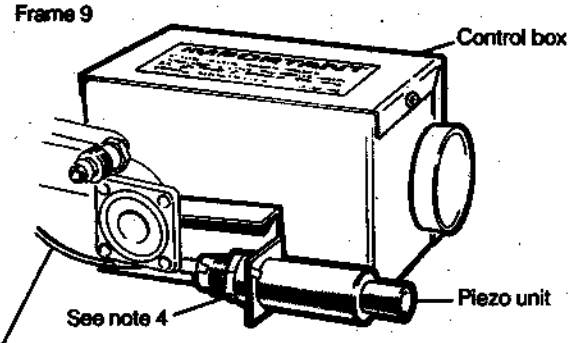
Overheat thermostat capillary route



13 PIEZO UNIT REPLACEMENT

1. Refer to Frame 9

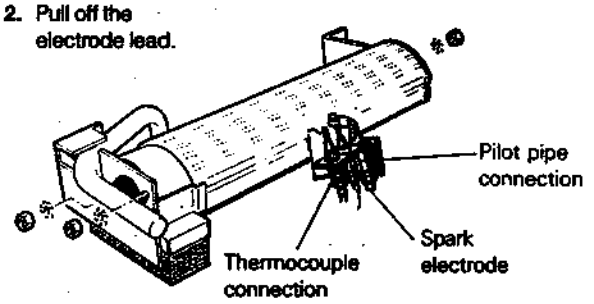
Note: Gas control valve not shown.



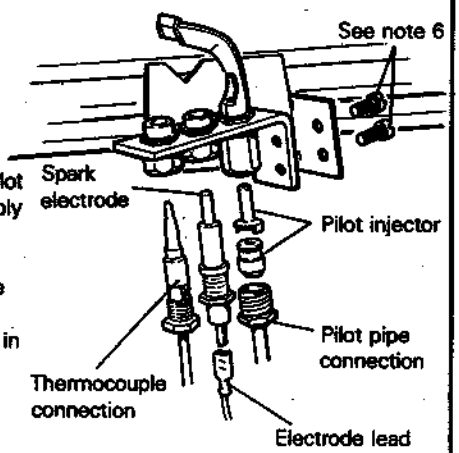
2. Disconnect the ignition lead from the piezo unit.
3. Remove the gas control cover.
4. Unscrew the locking nut at the rear of the piezo unit mounting bracket.
5. Remove the piezo unit, refit the new unit & re-assemble in reverse order.
6. Replace the boiler casing- Frame 8.
7. Check the operation of the new Piezo unit.

14 PILOT BURNER REPLACEMENT

1. Refer to Frame 9.
2. Pull off the electrode lead.



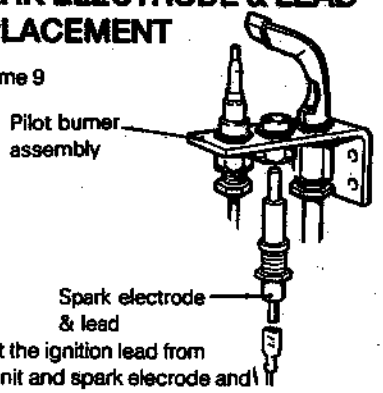
3. Remove the nut retaining the electrode & remove the electrode from the pilot assembly.
4. Undo the thermocouple connection and pull the thermocouple clear.
5. Undo the pilot pipe connection and pull the pipe clear.
   Note: Do not lose the pilot injector which will fall out as the pilot pipe is disengaged.
6. Remove the two screws at the sides of the assembly retaining the pilot burner.



7. Replace the pilot burner assembly and refit in reverse order. Ensure that the pilot injector is fitted correctly in the new pilot burner.
8. Check the pilot burner relationship to the main burner & spark gap, Refer to Frame 7, Routine Servicing
9. Check for gas soundness of the pilot supply (Refer to Frame 23 - Installation section if a is programmer fitted).
10. Replace the boiler casing- Frame 8.
11. Check the pilot length. Refer Frame 7- Routine Servicing.
12. Check the pilot operation (cross lighting, holding in time etc).

15 SPARK ELECTRODE & LEAD REPLACEMENT

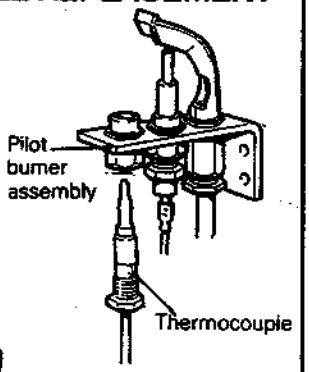
1. Refer to Frame 9

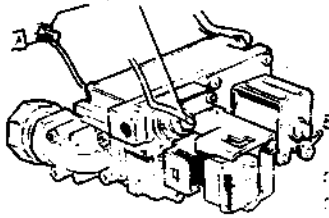


2. Disconnect the ignition lead from the piezo unit and spark elecrode and remove from the clip securing the lead to the pilot pipe. Remove the electrode by undoing the retaining nut at the pilot burner.It may be necessary to remove the thermocouple first.
3. Refit the new electrode and lead in reverse order.
4. Check the spark gap- refer to Frame 8, Routine Servicing.
5. Replace the boiler casing (refer to frame 7).
6. Check the pilot ignition.

16 THERMOCOUPLE REPLACEMENT

1. Refer to Frame 9.
2. Remove the thermocouple from the pilot burner assembly and buckle clip.
3. Remove the gas control valve cover.
4. Remove the thermocouple connection at the gas control valve.





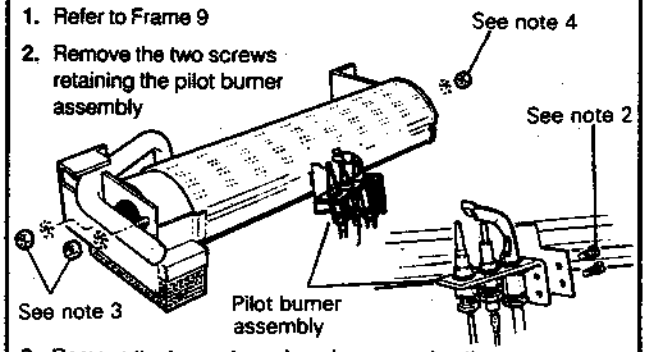
5. Refit the new thermocouple & re-assemble in reverse order.

Note: Avoid sharp bends in thermocouple capillary & follow the route of the lead.

6. Replace the burner as in Frame 8

17 MAIN BURNER REPLACEMENT

1. Refer to Frame 9
2. Remove the two screws retaining the pilot burner assembly

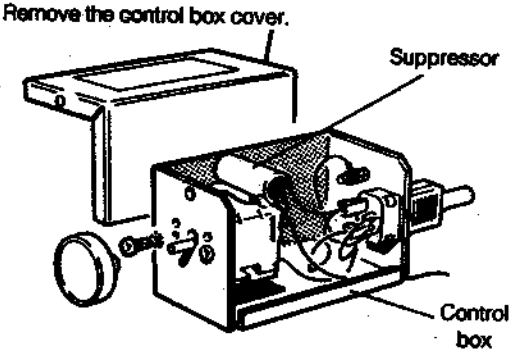


3. Remove the two nuts and washers securing the burner to the gas manifold.
4. Remove the nut and washer securing the burner to the right hand end bracket. Remove burner and lint gauze.
5. Fit the new burner in reverse order. Take care not to damage the burner injector, which is screwed into the gas manifold.
6. Refit the pilot burner assembly.
7. Refit the boiler casing (refer to Frame 8).

Check lighting and flame stability

18 SUPPRESSOR REPLACEMENT

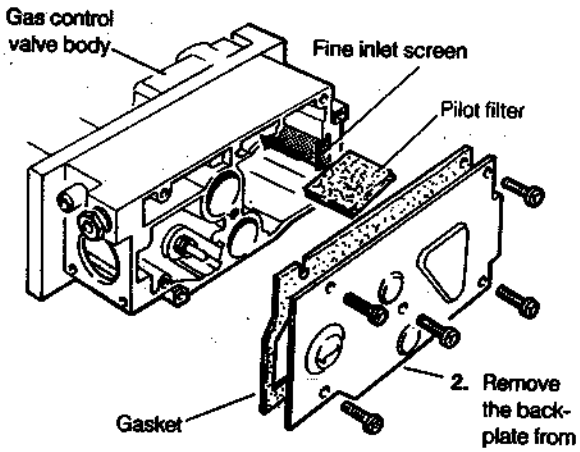
1. Refer to Frame 9
2. Remove the control box cover.



3. Remove the suppressor by pulling off the two push-on terminals.
4. Fit the new suppressor and re-assemble in reverse order, ensuring all electrical connections are correctly remade. (Refer to Wiring Diagrams)
5. Replace the boiler casing - refer to Frame 8.
6. Check the operation of the control thermostat.

19 PILOT FILTER REPLACEMENT

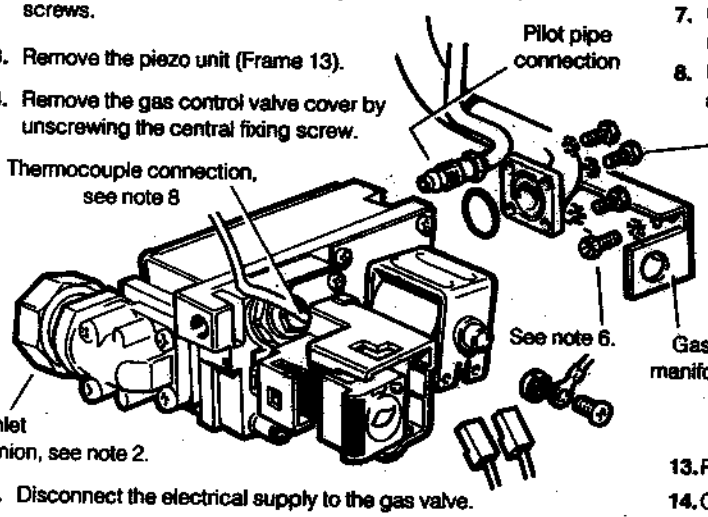
1. Refer to Frame 9.



3. Withdraw the pilot filter.
4. Fit the new filter and re-assemble in reverse order.
5. Refit the boiler casing (refer to Frame 8).

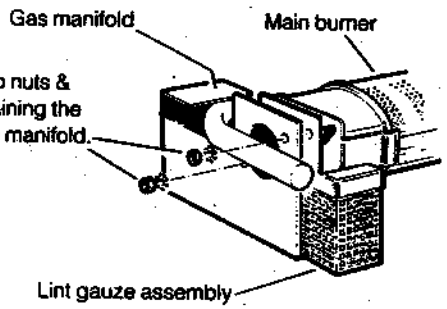
20 GAS CONTROL VALVE REPLACEMENT

1. Refer to Frame 9.
2. Remove the inlet union arrangement from the gas control valve by undoing the four retaining screws.
3. Remove the piezo unit (Frame 13).
4. Remove the gas control valve cover by unscrewing the central fixing screw.



5. Disconnect the electrical supply to the gas valve.
6. Remove the two screws securing the control box to the mounting bracket and remove the box (Remove the overheat thermostat leads if a sealed system kit is fitted).
7. Undo the pilot pipe connection at the gas control valve and remove the pipe.
8. Undo the thermocouple connection at the gas control valve and remove the thermocouple.
9. Undo the four screws securing the gas control valve outlet gas manifold and remove the gas control valve. The sealing 'O' rings should be discarded and new ones fitted.
10. Fit a new valve and re-assemble in reverse order Ensure that:-
    a) The new gas valve is fitted the correct way round, an arrow is engraved on the back indicating gas flow direction.
    b) The 'O' rings are correctly fitted at inlet & outlet flanges.
13. Replace the boiler casing (Frame 8).
14. Check the gas valve operation.

21 LINT GAUZE ASSEMBLY REPLACEMENT



2. Pull the burner from the manifold sufficiently to release the two fixing studs.
3. Remove the gauze assembly.
4. Fit the new lint gauze assembly & re-assemble in reverse order.
5. Replace the boiler casing, refer to Frame 8.
6. Check the boiler operation.

22 HEAT EXCHANGER REPLACEMENT

Note: Refer to Frame 24 of 'Exploded Views', on the next page, for the illustration of any parts itemised below.

1. Refer to Frame 9.
2. Drain the system.
3. In order to remove the boiler from the wall it is necessary to disconnect all water connections at the rear of the heat exchanger. If this cannot be achieved because of limited side clearances, the pipes must be cut and then remade on re-assembly.
   Note: If a sealed system kit is fitted then the flow pipe must be cut above the overheat thermostat fixing bracket and a fill-in piece must be replaced upon re-assembly. The flow pipe fitted with the overheat thermostat MUST NOT be discarded.
4. Remove the solit socket flue connection. See Frame 12 of the Installation section.
5. Support the boiler and remove the two M8 nuts retaining the [illegible] Item 34. Carefully [illegible]

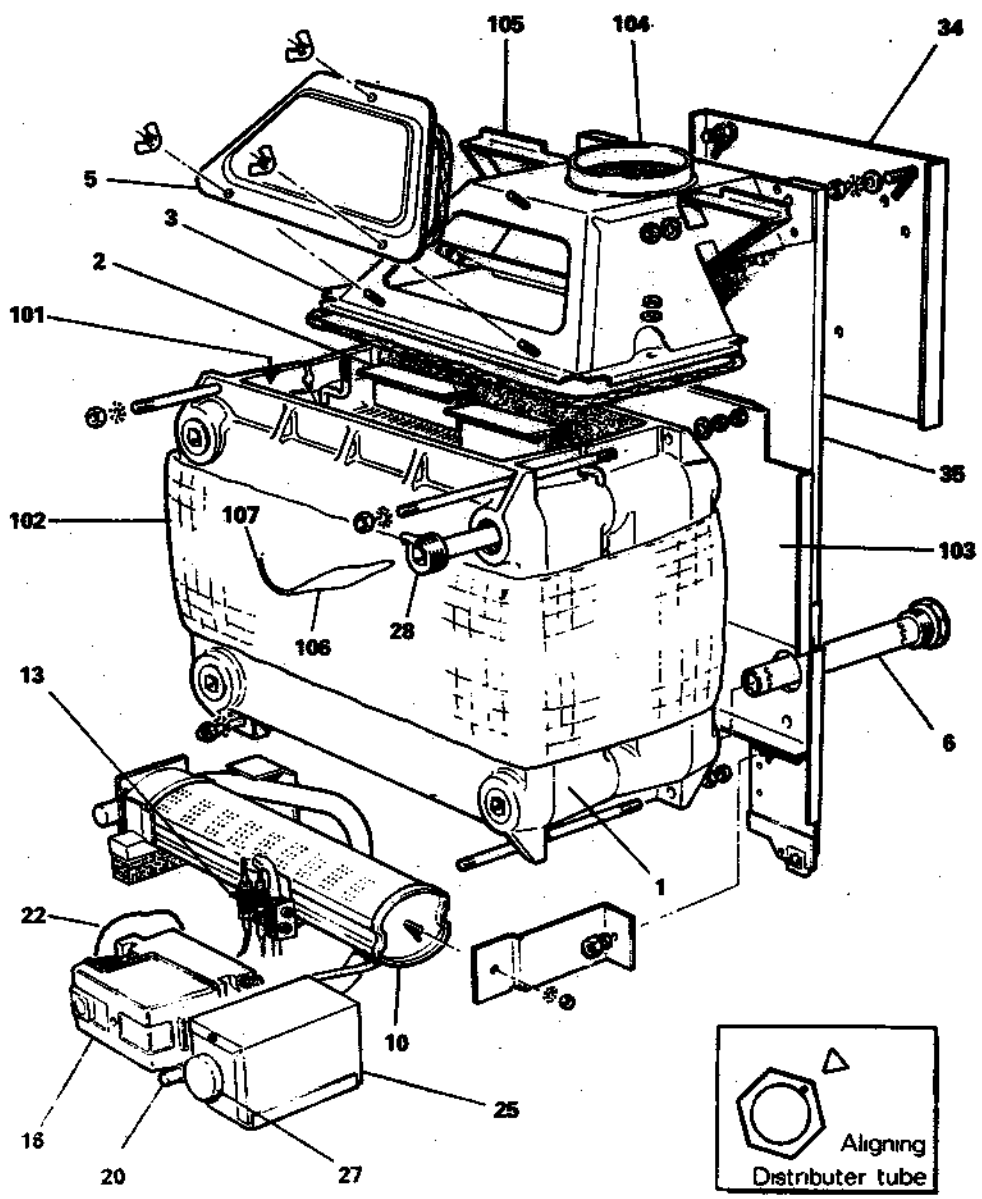
23 HEAT EXCHANGER REPLACEMENT, Continued

Note: Refer to Frame 24 of 'Exploded Views' for the illustration of any parts itemised below.

6. Place the boiler face down and remove all water connections from the rear heat exchanger, (Item 1), tappings- including the distibutor tube,(Item 6).
7. Remove the two nuts retaining the collector hood, (Item 3), to the heat exchanger.
8. Remove the two nuts retaining the heat exchanger bottom tie rods to the back panel,(Item 103).
9. Lift the back panel clear of the tie rods and then clear of the collector hood fixing studs and remove the back panel/collector hood assembly.
10. Remove new heat exchanger insulation, (Item 102), and discard.
11. Remove the thermostat pocket, (Item 28), from the old heat exchanger and fit it to the new heat exchanger. Plug any unwanted tappings with the recessed plugs provided (using a suitable sealing compound for all connections).
12. Fit the back panel/collector hood assembly to the new heat exchanger ensuring the gaps around the fixing hook bolts are sealed with the compound provided. Replace the collector hood/heat exchanger gasket if necessary.
13. Replace the distributor tube,(Item 6)- ensure that the index mark on the tube is aligned with the arrow on the back panel, & re-make all water the required connections.
14. Replace the boiler on to the wall. Refit the retaining nuts.
15. Remove the flue baffles, (Item 2), from the old heat exchanger and fit into the new heat exchanger by removing the clean-out cover.
16. Remake all water connections; refill system & check for leaks.
17. Re-assemble the remaining boiler parts in reverse order.

EXPLODED VIEWS

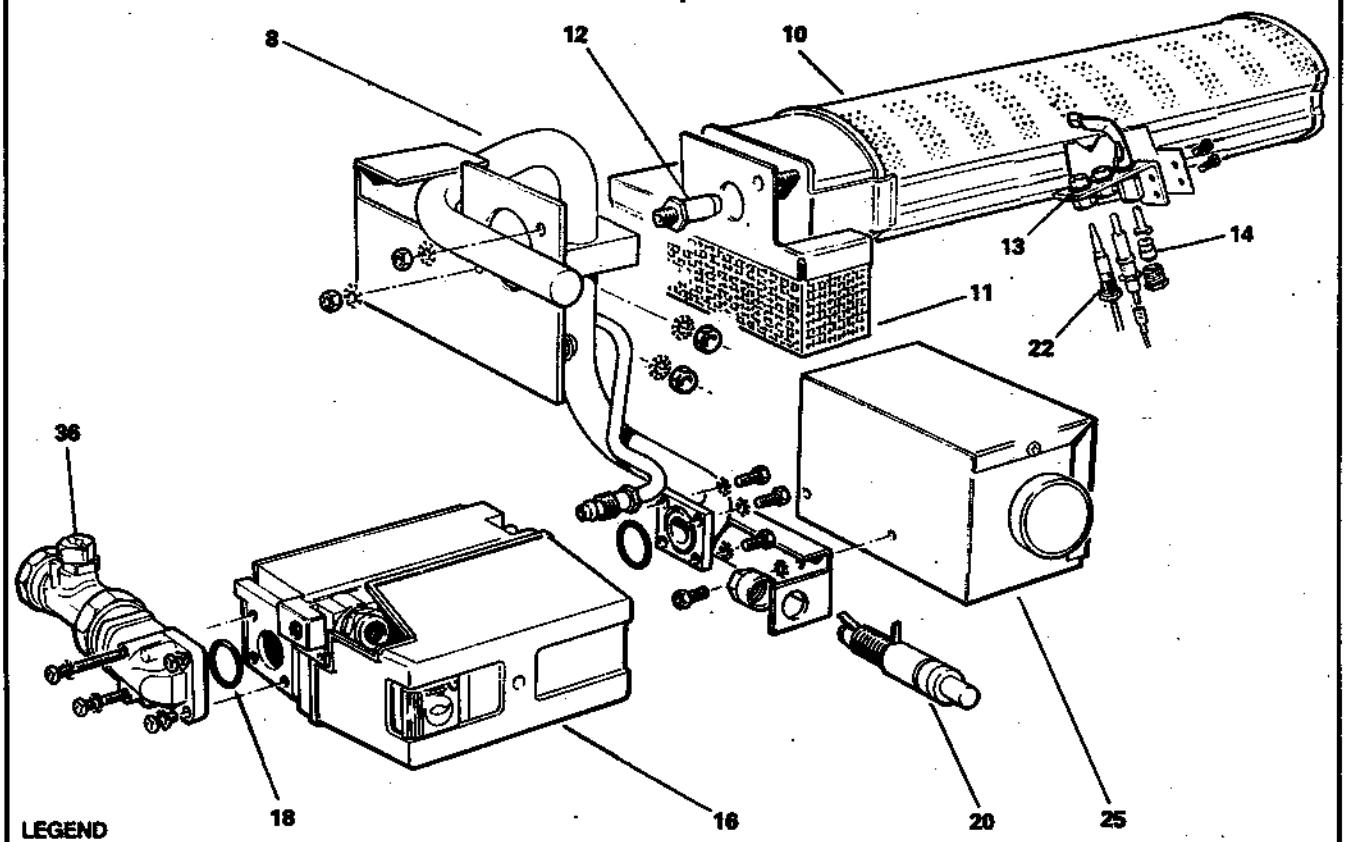
24 BOILER ASSEMBLY- Exploded view



LEGEND:

1	Heat exchanger
2	Flueway baffles
3	Collector hood
5	Cleanout cover
6	Distributor tube (left or right, one side only)
10	Main burner
13	Pilot burner assembly
18	Gas valve
20	Piezo unit
22	Thermocouple lead
25	Control box
27	Boiler thermostat
28	Boiler thermostat pocket (left or right)
34	Wall mounting plate
35	Back panel
101	Heat exchanger flue
102	Insulation quilt
103	Heat exchanger insulation retaining Panel.
104	Flue outlet
105	Casing support clips
106	Boiler thermostat phial
107	Thermostat capillary

25 BURNER & CONTROLS ASSEMBLY- Exploded view



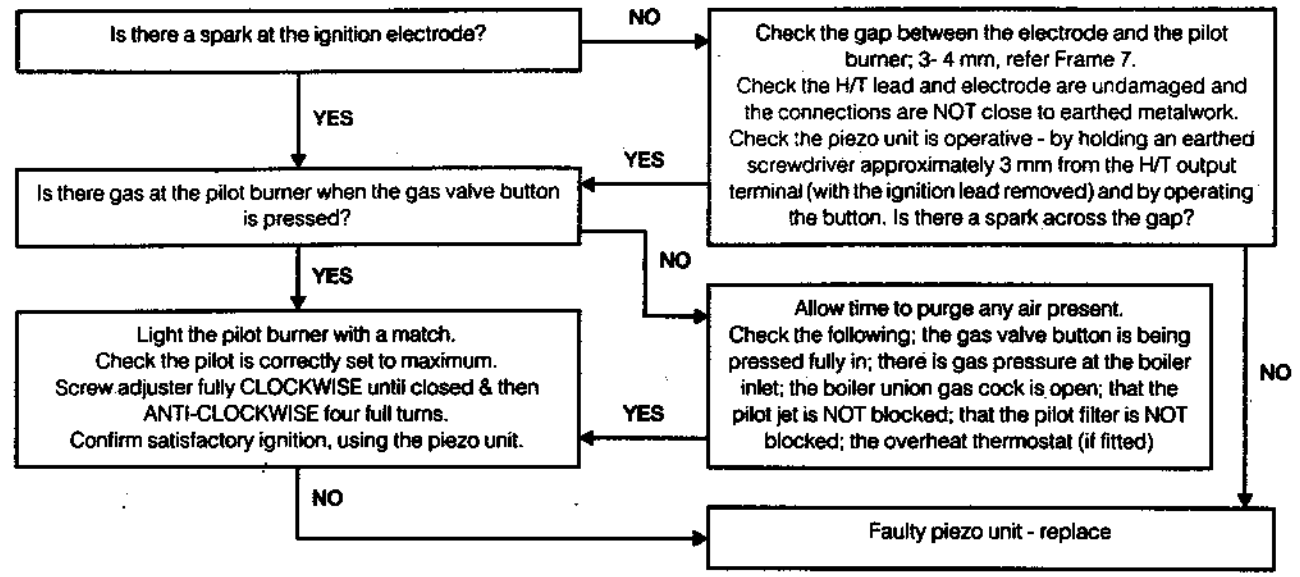
LEGEND

8	Gas manifold	12	Main injector	16	Gas control valve	22	Thermocouple
10	Main burner	13	Pilot burner assembly	18	'O' ring	25	Boiler control box
11	Lint gauze	14	Pilot pipe & pilot injector	20	Piezo igniter	36	Gas service cock

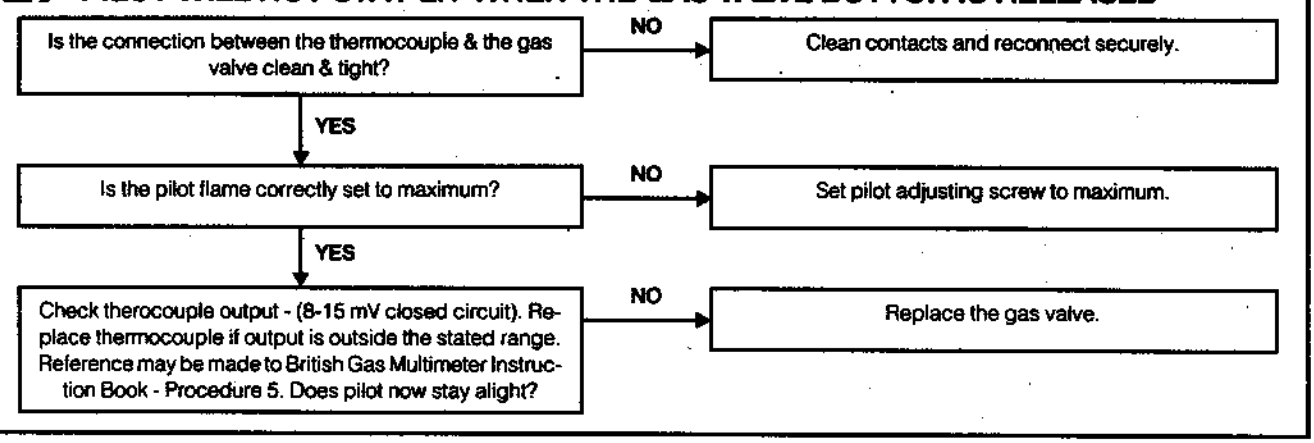
Before attempting any electrical fault finding, ALWAYS carry out the preliminary electrical system checks as detailed on pages 6 - 9 of the Instructions for the British Gas Multimeter, or similar test meter.

Detailed instructions on the cleaning & adjustment or replacement of faulty components are contained in the 'Servicing' section, of this publication.

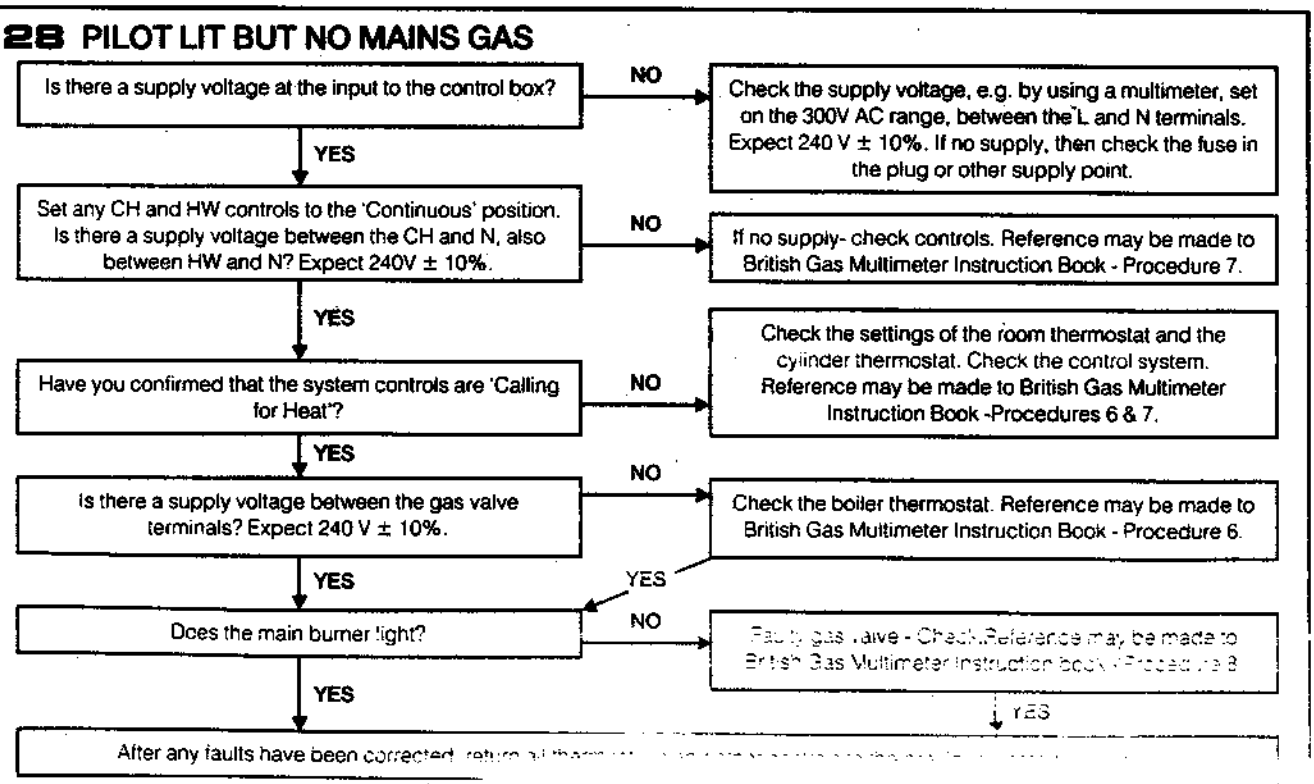
26 PILOT WILL NOT LIGHT



27 PILOT WILL NOT STAY LIT WHEN THE GAS VALVE BUTTON IS RELEASED



28 PILOT LIT BUT NO MAINS GAS



SERVICING

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

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

SHORT LIST OF PARTS

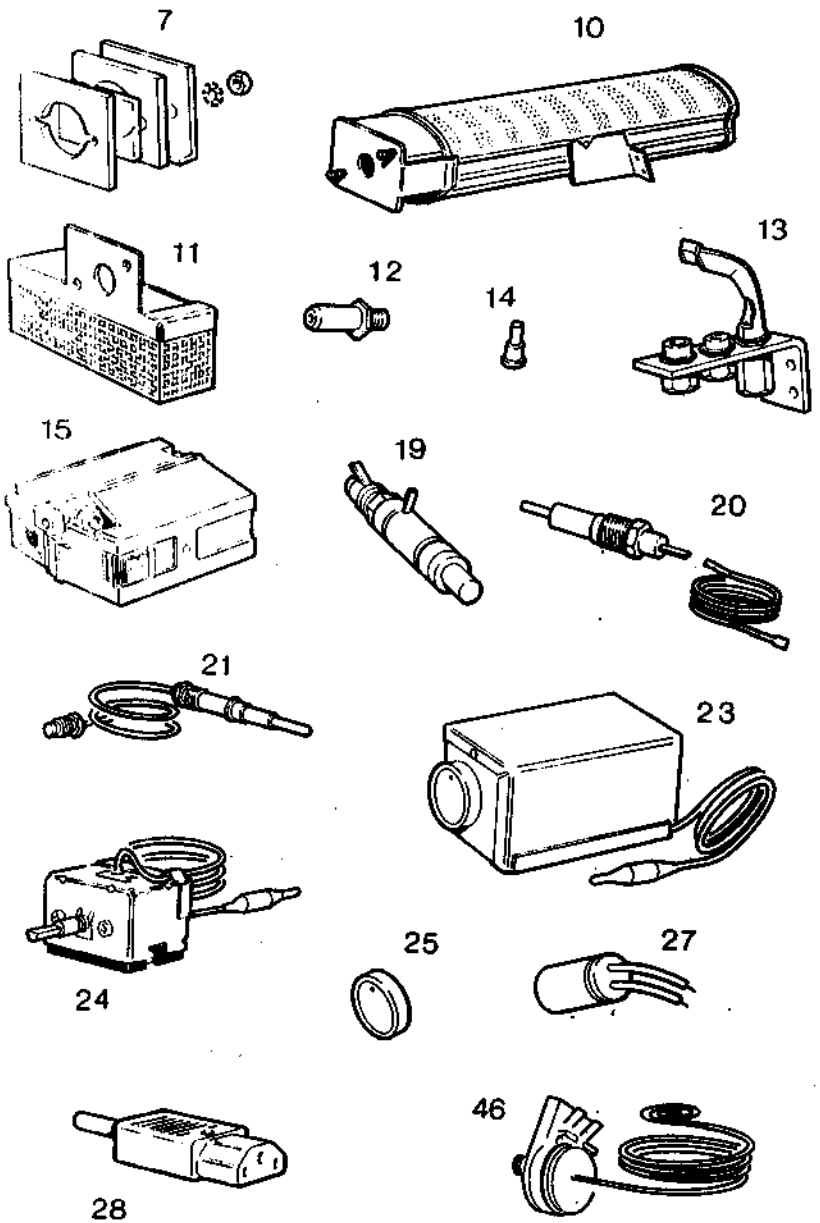
Ideal W 2000 CF 40N, CF 50N & CF 60N Gas Boilers

When ordering spares, please quote:

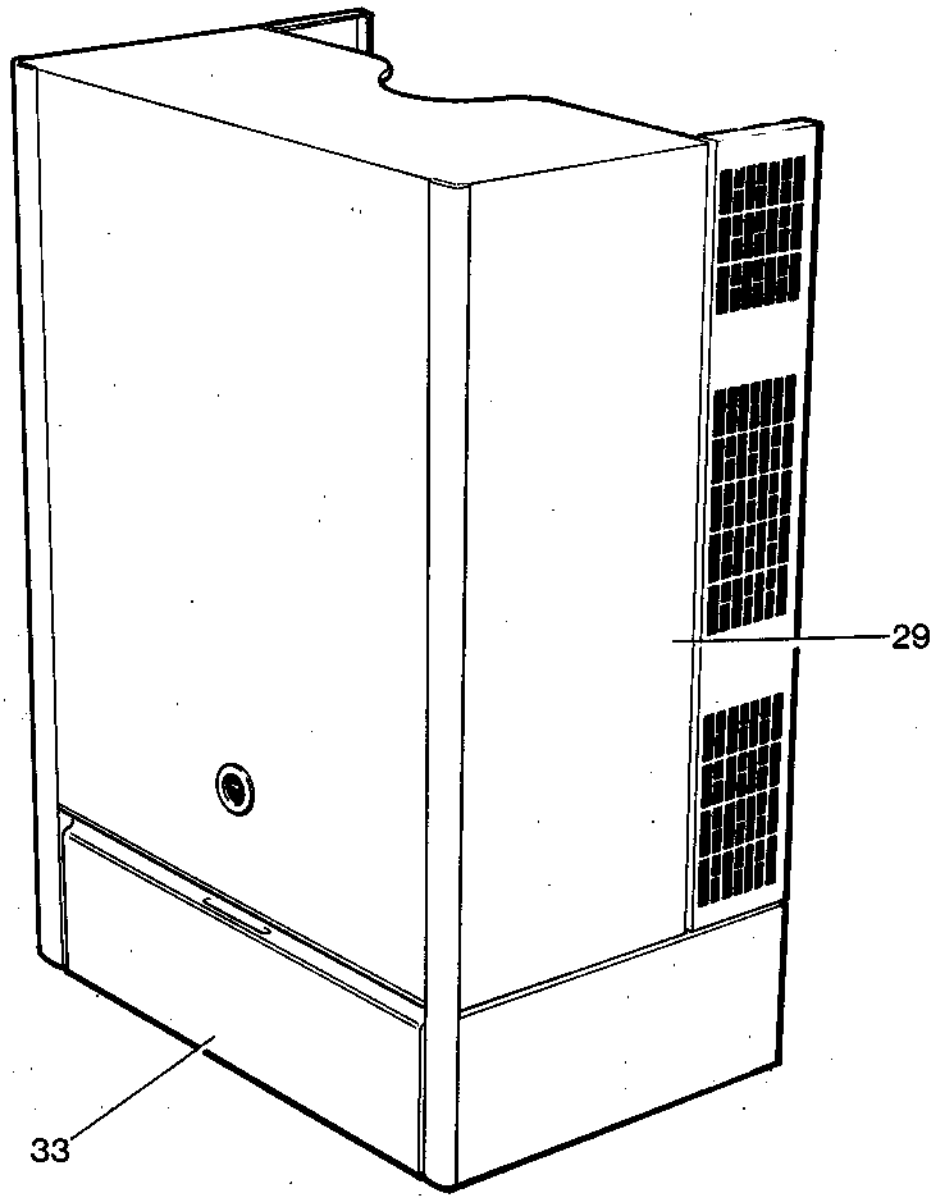
1. Boiler Model
2. Appliance G.C. Number
3. Description
4. Maker's Part Number
5. Quantity

Key No.	G.C. Part No.	Description	No. off	Maker's Part No.
7	341 277	Sight glass assembly, comprising, sight glass and frame, two sight glass gaskets, two M4 Hex nuts and two M4 shakeproof washers	1	189 648 175
10		Main burner, AEROMATIC		
		No. AC 19/ 123.256, Ideal W 2000 CF 40N & CF 50 N	1	
		No. AC 19/ 123.257, Ideal W 2000 CF 60N	1	
11		Lint arresting gauze, AEROMATIC 600031	1	
12		Main burner injector, BRAY		
		Cat 16- Size 1200; Ideal W 2000 CF 40N	1	
	398 331	Cat 16- Size 1600; Ideal W 2000 CF 50N	1	189 856 060
	398 333	Cat 16- Size 1800; Ideal W 2000 CF 60N	1	189 666 067
13		Pilot burner, SIT 0140, 019 with injector Key No. 14	1	589 740 085
14		Pilot burner injector, SIT 0, 977, 113	1	589 038 742
15	395 685	Gas control, HONEYWELL V 4700E 1007, 240 V with 2 'O' rings	1	586 731 900
19	395 705	Piezo unit, VERNITRON 60080	1	589 830 086
20		Ignition electrode and H/T lead SIT 007, 213	1	589 730 088
21		Thermocouple, SIT 750 mm (0 290 174)	1	
23		Control box, including thermostat, thermostat knob & suppressor assembly	1	589 410 065
24		Thermostat RANCO CL6 PO149 with 48 in. capillary.	1	589 410 051
25	341 359	Thermostat knob	1	586 011 517
27	384 689	Suppressor assembly/(can type).	1	589 040 030
28	354 776	Mains connector, ASHLEY or BULGIN, to CEE 22,, sheet 5 and BS.4491	1	589 030 015
29		Boiler casing assembly- white stove enamel, with sightglass trim, foil insulation & also with Key No.7.	1	199 474 030
33		Controls casing door- white stove enamel with Lighting Instructions.	1	199 410 089
46	314 216	Overheat thermostat, RANCO LM7 (Sealed systems only)	1	589 250 074

29 SMALL PARTS



30 BOILER CASING ASSEMBLY





THIS SYMBOL IS YOUR ASSURANCE OF QUALITY

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

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

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

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