

IDEAL

ELAN

RS. 30, 40, 55, 60 & 75

Wall Mounted

Balanced 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 the edges of sheet steel components.

NOTE: The appliances are for use with **NATURAL GAS ONLY.**

Ideal ELAN	RS.30
Ideal ELAN	RS.40
Ideal ELAN	RS.55
Ideal ELAN	RS.60
Ideal ELAN	RS.75

G.C. No.'s

41 407 96
41 407 95
41 407 93
41 407 97
41 407 98

NOTE TO INSTALLER:

LEAVE THESE INSTRUCTIONS ADJACENT TO THE GAS METER

 **STELRAD
GROUP**

INTRODUCTION

The IDEAL ELAN RS.30, RS.40, RS.55, RS.60 and RS.75 are wall mounted lightweight, natural draught, balanced flued gas boilers. The series is range rated and covers outputs of 5.9kW (20 000 Btu/h) to 22.0kW (75 000 Btu/h). The boiler casing is of white enamelled mild steel, with a removable smoked brown fascia.

The controls pod, also of white enamelled mild steel, has fixed sides and a removable bottom panel.

A smoked brown access door hinges downwards to reveal the boiler thermostat controls and gas valve, also the programmer if fitted.

When the door is closed, the controls can be seen through an observation window.

A programmer kit is available as an optional extra and separate fitting instructions are included with the kit.

The boilers are suitable for connection to fully pumped, open vented or sealed water systems.

Adequate arrangements for completely draining the system by provision of drain cocks, MUST be provided.

IMPORTANT:

This appliance range is certified by the British Standards Institute for safety and performance. It is, therefore, important that no external control devices — e.g. flue dampers, economisers, etc., — be directly connected to this appliance unless covered by these 'Installation and Servicing' instructions or otherwise recommended by Stelrad Group Ltd., in writing. If in doubt please enquire.

Any direct connection of a control device not approved by Stelrad Group Ltd., could invalidate the B.S.I. certification and the normal appliance warranty and could also infringe the Gas Safety Regulations.

Gas Safety (Installation and Use) Regulations: 1984

It is the law that all gas appliances are installed by competent persons (e.g. CORGI identified by ) in accordance with the above Regulations.

Failure to install appliances correctly could lead to prosecution.

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

The installation of the boiler MUST also be in accordance with I.E.E. Wiring Regulations, the Local Building Regulations, the by-laws of the Local Water Undertaking, and any relevant requirements of the Local Authority. Detailed recommendations are contained in the following British Standard Codes of Practice.

CP. 331:3 Low pressure installation pipes.

BS. 5376:2 Boilers of rated input not exceeding 60kW.

BS. 5449:1 Forced circulation hot water systems, (Smallbore and Microbore Domestic Central Heating Systems).

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 60kW).

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

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

LOCATION OF BOILER

The boiler MUST be installed on an external wall. The wall MUST be flat and vertical, and capable of adequately supporting the weight of the boiler and any ancillary equipment.

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

IMPORTANT NOTICE

If the appliance is to be fitted in a timber framed building it should be fitted in accordance with the British Gas publication 'Guide for Gas Installations in Timber Framed Housing', reference DM2. If in doubt advice must be sought from the Local Gas Region of British Gas.

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

Where installation will be in an unusual location special procedures may be necessary and BS. 5376:2 gives detailed guidance on this aspect.

A compartment used to enclose the boiler MUST be designed and constructed specially for this purpose. An existing cupboard, or compartment, may be used provided it is modified for the purpose.

Details of essential features of cupboard/compartment design, including airing cupboard installations, are given in BS. 5376:2.

In siting the boiler, the following limitations MUST be observed:

1. The position selected for installation MUST allow adequate space for servicing in front of the boiler and for air circulation around the boiler.
2. This position MUST also permit the provision of a satisfactory balanced flue termination.

GAS SUPPLY

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

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

A gas meter is connected to the service pipe by the Local Gas Region, or by a Local Gas 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 should be fitted in accordance with CP. 331:3.

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 adequate size.

Do NOT use pipes of a smaller size than the boiler inlet gas connection.

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

FLUING

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

The following notes are intended for general guidance.

1. The boiler MUST be installed so that the terminal is exposed to the external air.
2. It is important that the position of the terminal allows the free passage of air across it at all times.
3. The minimum acceptable spacings from the terminal to obstructions and ventilation openings are specified below.

Table 1 – GENERAL DATA

Boiler Size		RS.30	RS.40	RS.55	RS.60	RS.75
Main Burner		FURIGAS – Type 'R'				
		118.500.001		118.500.000		118.500.004
Gas Control		½in. BSP HONEYWELL V.4700E 1007 240V				
Burner Injector		BRAY Cat. 16				Bray Cat.10
		Size 800	Size 1400	Size 1500	Size 1800	Size 2200
Pilot Injector		HONEYWELL 45003 – 508 – 001 0.38/0.36A				
Gas Supply Connection		Rc½				
	in. BSP	½				
Flow Connection		22mm COPPER				28mm copper
Return Connection		22mm COPPER				28mm copper
MAXIMUM Static Water Head	m	30.5				
	ft	100				
MINIMUM Static Water Head	m	0.45				
	ft	1.5				
Electric Supply		220/240 volt, 50 Hz				
External Fuse Rating		3 amp				
Water Content	litre	1.0		1.2		1.5
	gal	0.22		0.27		0.33
Dry Weight	kg	18.6		20.6		26.9
	lb	40.9		45.3		59.3
MAXIMUM Installation Weight	kg	13.3		15.3		19.1
	lb	29.3		33.7		42.1

Table 2 – PERFORMANCE DATA

Boiler Size			RS.30	RS.40	RS.55	RS.60	RS.75
	MINIMUM	kW	7.4	11.1	14.6	20.2	22.3
		Btu/h	25 200	37 700	50 000	68 800	76 000
	MAXIMUM	kW	11.0	14.6	20.1	22.0	27.5
		Btu/h	37 500	50 000	68 700	75 000	93 800
Boiler Output to Water	MINIMUM	kW	5.9	8.8	11.7	16.1	17.6
		Btu/h	20 000	30 000	40 000	55 000	60 000
	MAXIMUM	kW	8.8	11.7	16.1	17.6	22.0
		Btu/h	30 000	40 000	55 000	60 000	75 000
Burner Setting Pressure (Hot)	MINIMUM	mbar (gauge)	6.3	5.2	7.7	10.2	9.1
		in.w.g.	2.5	2.1	3.1	4.1	3.7
	MAXIMUM	mbar (gauge)	12.8	8.3	14.2	12.0	13.8
		in.w.g.	5.1	3.3	5.7	4.8	5.5

Notes:

- To obtain gas consumption:
 - in l/s – divide heat input (kW) by C.V. of the gas (MJ/m³).
 - in ft³/h – divide heat input (Btu/h by C.V. of the gas (Btu/ft³).

- Heat inputs are pre-set to the highest nominal rating.

WATER CIRCULATION SYSTEM

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

The appliance is suitable for connection to fully pumped open vented or sealed water central heating systems or central heating combined with indirect domestic hot water systems.

The central heating system should be in accordance with the relevant recommendations given in BS. 5376:2 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 be, preferably, manufactured of copper. Single-feed indirect cylinders are not recommended, and MUST NOT be used on sealed systems.

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 spaces and ventilated under-floor spaces.

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, ½in. nominal size and be in accordance with BS.2879.

The hydraulic resistances of the boilers, at MAXIMUM OUTPUT, with an 11°C (20°F) temperature differential, are shown in Table 3.

Table 3

WATER FLOW RATE & PRESSURE LOSS

Boiler Size		RS 30	RS 40	RS 55	RS 60	RS 75
Boiler Output	kW	8.8	11.7	16.1	17.7	22.0
	Btu/h	30 000	40 000	55 000	60 000	75 000
Water Flow Rate	l/min	11.4	15.2	20.9	22.8	28.5
	gal/h	150	200	275	300	375
Pressure Loss	mbar	27	45	87	52	80
	in.w.g	11	18	35	21	32

ELECTRICAL SUPPLY

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

The boiler is supplied for 220/240 volt, 50 Hz, A.C., Single Phase.

Fuse rating is 3 amp.

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

Alternatively, a fused double-pole switch, having a 3mm contact separation in both poles and serving only the boiler, may be used.

The point of connection to the mains should be readily accessible and adjacent to the boiler, except that, for bathroom installations, the point of connection to the mains MUST be situated outside the bathroom.

INSTALLATION

ALLOW ADEQUATE SPACE IN FRONT OF THE BOILER FOR SERVICING PURPOSES.

PACKAGING

The boiler is supplied fully assembled and despatched in one carton — 'A' — together with one of three cartons — 'B', 'B.1' and 'C'.

Carton 'A' contains the boiler body assembly, wall mounting screws and plugs, the wall mounting plate, the wall fixing template and the Users Instructions.

Keep the carton the right way up, in accordance with the markings on the outside.

Cartons 'B', 'B.1' and 'C' contain the terminal outlet appropriate to the wall thickness — refer Table 4.

Table 4

Wall Thickness	Cartons Supplied
114 — 191 mm	A + C
4½ — 7½ in	
229 — 305 mm	A + B
9 — 12 in	
318 — 394 mm	A + B.1
12½ — 15½ in	

It is **MOST IMPORTANT** that this appliance be installed in a VERTICAL POSITION, with the flue/air duct passing through the wall in a HORIZONTAL PLANE.

A minor deviation from the horizontal is acceptable, provided that this results in a downward slope of the flue/air duct away from the boiler.

Two jacking screws, located at the bottom rear of the air duct, are provided to facilitate boiler alignment.

The boiler is to be hung on an external wall, and the space in which it is fitted **MUST** have the following minimum dimensions : Refer Fig. 4.

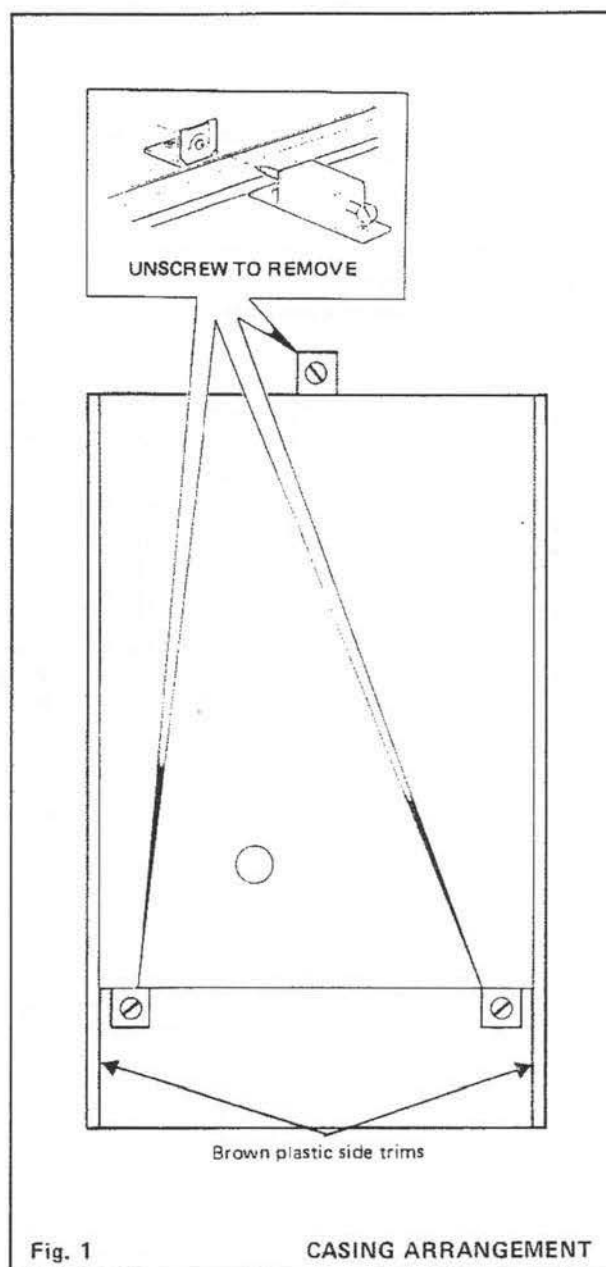
Boiler Size		Width	Depth	Height
RS. 30, 40 & 55	mm	390	300	750
	in	16	12	30
RS.60 & 75	mm	475	300	750
	in	19	12	30

This space includes the following minimum clearances for installation and servicing:

At the top of the boiler	50mm (2in)
At each side of the boiler	5mm (¼in)
Underneath the boiler	100mm (4in)

In addition, a minimum clearance of 300mm (12in) **MUST** be available at the front of the boiler to enable the appliance to be serviced.

To facilitate installation, the casing **MUST** be removed.



1. Lift up the brown plastic side trims (refer Fig. 1) to clear the controls access door hinge pins and remove the door.
2. Undo the two screws securing the controls pod bottom panel.
3. Slide out the controls pod bottom panel.
4. Undo the nut securing the control box to the bottom of the boiler casing.
5. Lift the back of the control box slightly and swing the box downwards pivoting from the back.
6. Release the two captive screws, at the bottom, and the single captive screw at the top of the casing and lift the casing off the boiler — refer Fig. 1.
The casing should be safely placed aside to avoid possible damage.
7. Remove the wall mounting plate and the hardware pack from the packaging at the top end of the boiler.

PREPARING THE WALL — Refer Fig. 2

1. Tape the template to the wall in the selected position.
2. Mark out the position of the two wall mounting plate screws and the position of the hole for the duct.

3. Drill the two holes with an 8mm (5/16in) masonry drill and insert the two plastic plugs provided.
4. Cut the appropriate hole in the wall for insertion of the terminal assembly.

The terminal box must NOT come into contact with combustible material, such as that used in non-standard

- construction of timber framework and plasterboard etc.
5. Secure the mounting plate to the wall with the two No. 10 x 2in. screws provided.

All dimensions in mm (in)
N.B. Imperial dimensions approximate

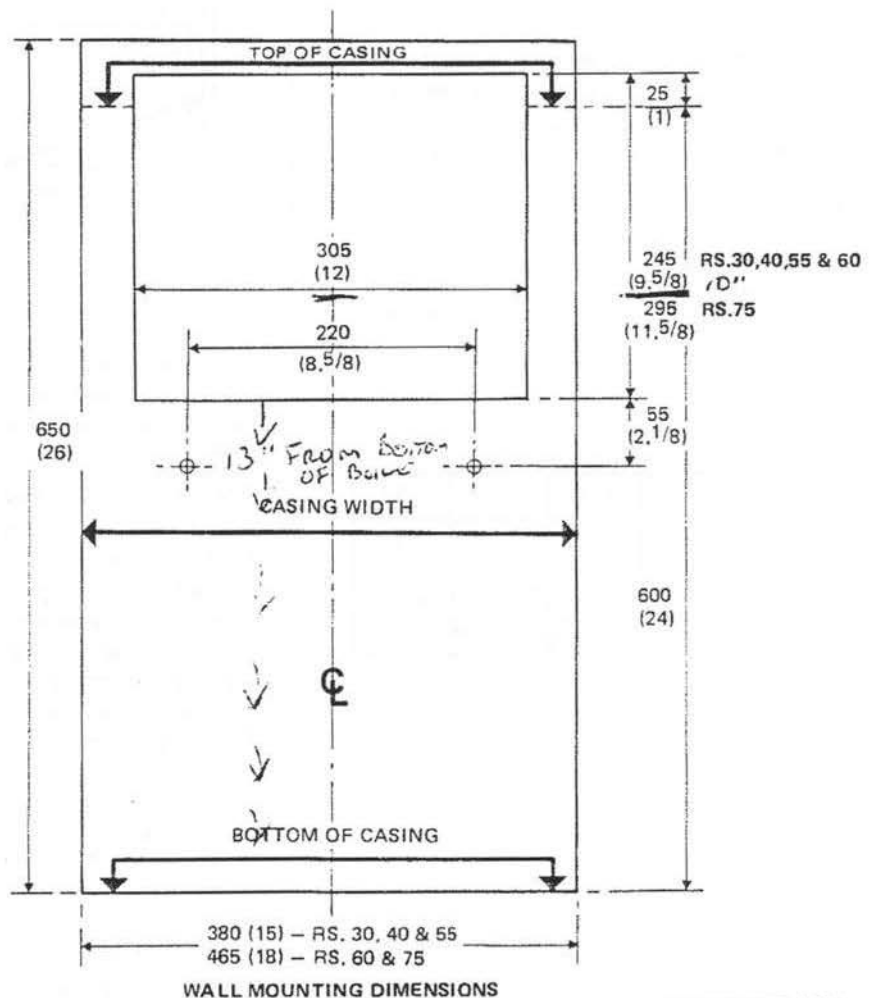
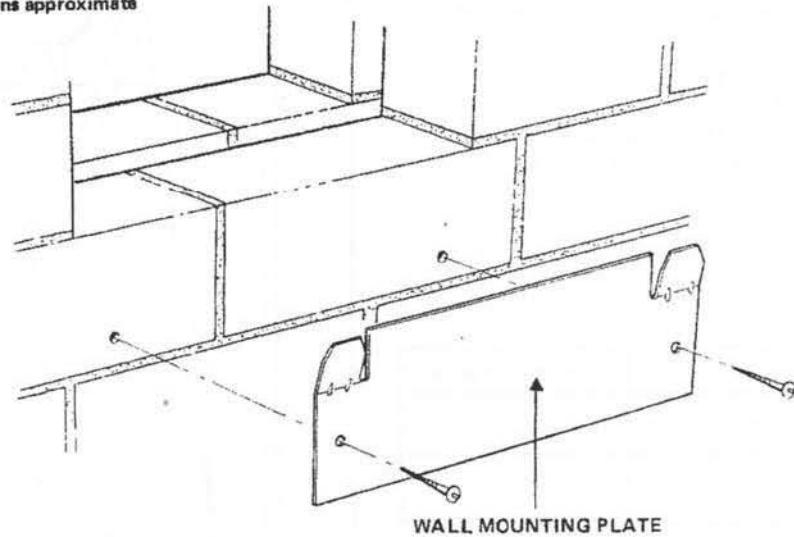
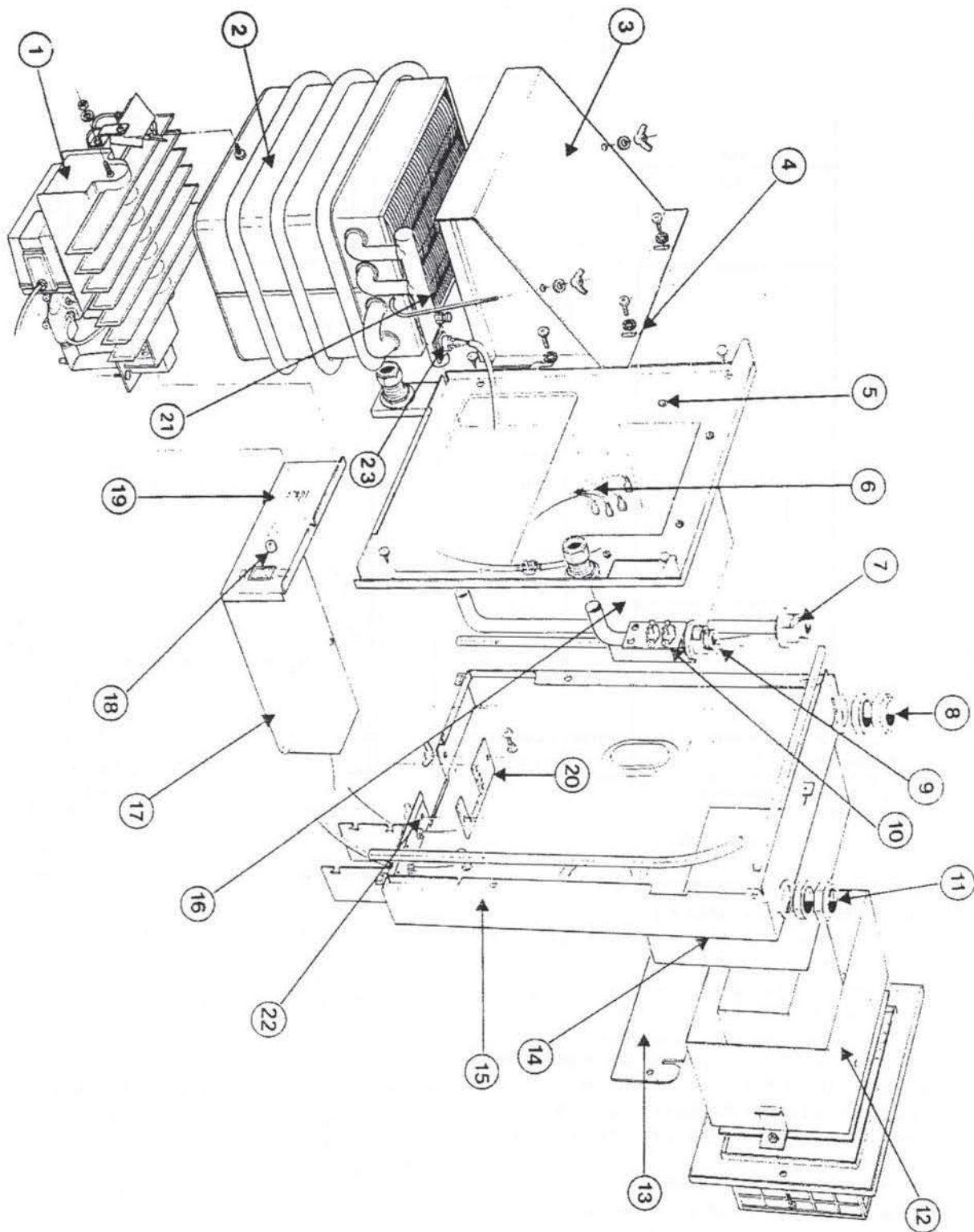


Fig. 2

TEMPLATE AND
WALL MOUNTING PLATE



LEGEND:

- | | | |
|-------------------------------------|------------------------------|----------------------------|
| 1. Burner/Controls Assembly | 8. Return Connection | 15. Air Box |
| 2. Heat Exchanger | 9. Flow Pipe | 16. Flue Duct |
| 3. Collector Hood (includes Item 4) | 10. Thermostats | 17. Control Box |
| 4. Collector Hood Gasket | 11. Flow Connection | 18. Piezo Igniter |
| 5. Air Duct Interpanel | 12. Terminal Grille Assembly | 19. Programmer |
| 6. Thermostat Leads | 13. Wall Mounting Plate | 20. Burner Mounting Gasket |
| 7. Return Pipe | 14. Air Duct | 21. Automatic Air Vent |
| | | 22. Earth Point |
| | | 23. Overheat Thermostat |

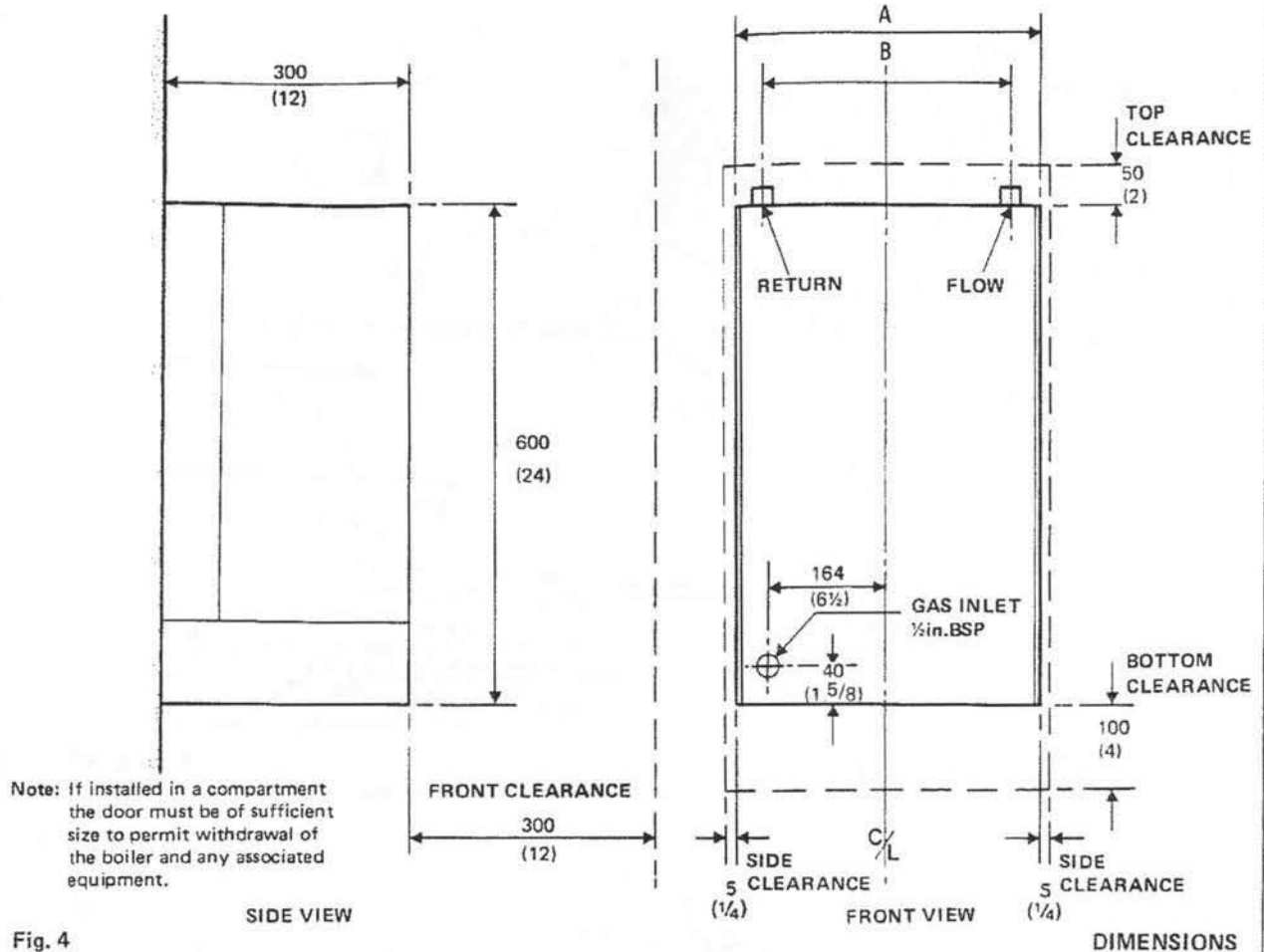
Fig. 3

RS.55 BOILER ILLUSTRATED

BOILER UNIT —
EXPLODED VIEW

All dimensions in mm (in)
N.B. Imperial dimensions approximate

RS	30/40	55	60/75
A DIM	380 (15)	380 (15)	465 (18)
B DIM	234 (9¼)	310 (12¼)	394 (15½)



FITTING TO THE WALL – Refer Fig. 2

1. Remove the union compression nuts and olives from the flow and return connections.
2. If side access is limited, i.e. less than 25mm, fit stub connections to the flow and return tappings.
3. Lift the boiler into position, entering the projecting flue duct into the opening cut in the wall, and engaging the backplate on to the wall mounting plate lugs.
4. Using the jacking screws, located at the bottom rear of the air duct, adjust as necessary until the flue duct is horizontal.
Check alignment with a spirit level.
5. Make good the brickwork around the wall opening.

WATER CONNECTION – Refer Fig. 5

The two water connection can now be made to the TOP of the boiler.

The whole of the system should be thoroughly flushed out with cold water – WITHOUT the pump in position.

Ensure all valves are open.

With the pump fitted fill and vent the system. Check for water soundness.

Notes:

- (a) The boiler flow header is fitted with an automatic air vent. This must be OPEN at all times. Screw the vent adjuster CLOCKWISE until resistance is felt, and then ANTI-CLOCKWISE for one half turn. Water will issue from the vent initially, until the automatic seal is made.

If the boiler is connected to a sealed water system, this vent MUST be replaced with a manual vent, an automatic vent of the non-hygroscopic type, or a 1/8in. B.S.P. taper plug.

- (b) This appliance is NOT suitable for use with a direct hot water cylinder.

GUIDE TO SYSTEM REQUIREMENTS – Figs. 5 & 6

Note: For sealed systems refer to Supplementary Instructions for Sealed Water Systems.

1. The pump MUST be fitted on the flow side of the boiler. A suitable pump is a domestic circulator capable of providing an 11°C (20°F) temperature differential (e.g. Grundfos UPS 15/50 or equivalent).
2. The vertical distance between the highest point of the system and the feed/expansion cistern water level MUST not be less than 450mm (18in).
3. There should be a minimum height of 450mm (18in) of open vent above the cistern water level. If this is not possible it is recommended that a surge arrestor be fitted in the expansion pipe above the water level. – Refer to supplementary Low Head Installation Instructions.
4. The vertical distance between the pump and feed/expansion cistern MUST comply with the pump Manufacturers minimum requirements to avoid cavitation. Should these conditions not apply, either lower the pump position or raise the cistern above the minimum requirement of Stelrad Group Ltd.

All dimensions in mm (in)
N.B. Imperial dimensions approximate

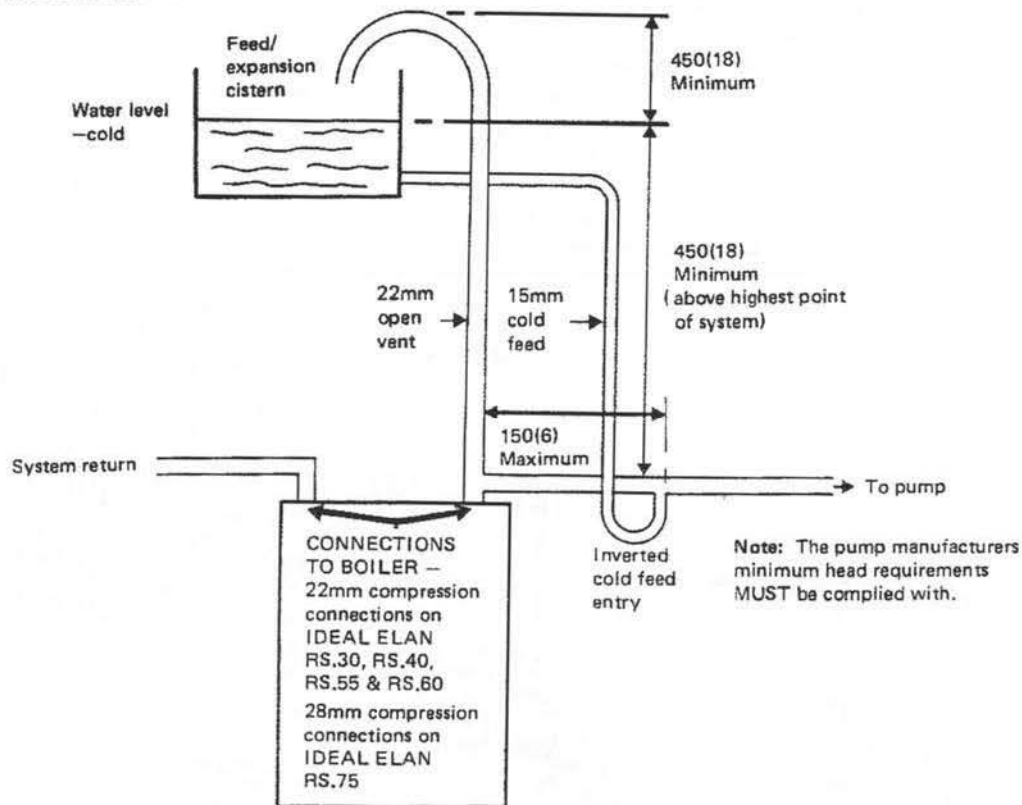


Fig. 5

GUIDE TO
MINIMUM REQUIREMENTS

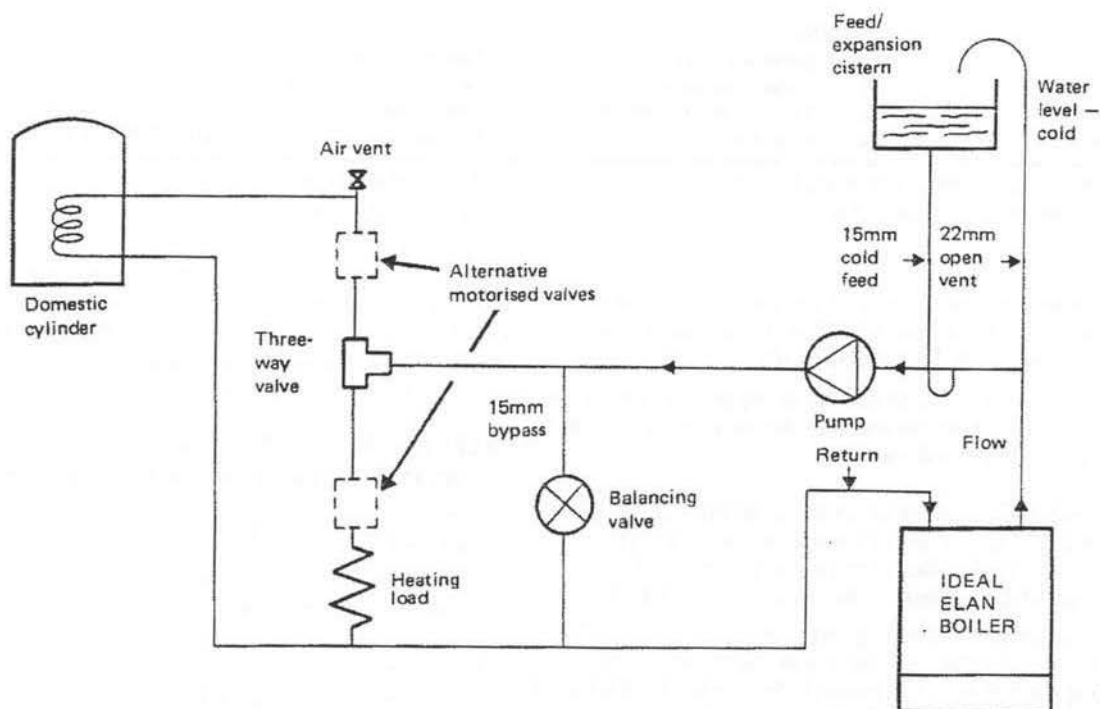


Fig. 6

SCHEMATIC PIPEWORK LAYOUT

5. The system should be vented directly off the boiler FLOW pipe, as close to the boiler as possible. The cold feed entry should be inverted — refer Fig. 5 — and MUST be positioned between the pump and the vent, and not more than 150mm (6in) away from the vent connection.
6. When the boiler output exceeds 14.4kW (49 000 Btu/h) 28mm (1in) pipes should be used to and from the boiler.
7. The flow through the boiler MUST NOT fall below the values shown in Table 3. A bypass MUST be fitted consisting of 15mm (½in) pipe, positioned as far from the boiler as possible, and incorporating a balancing valve which CANNOT be adjusted by the householder.

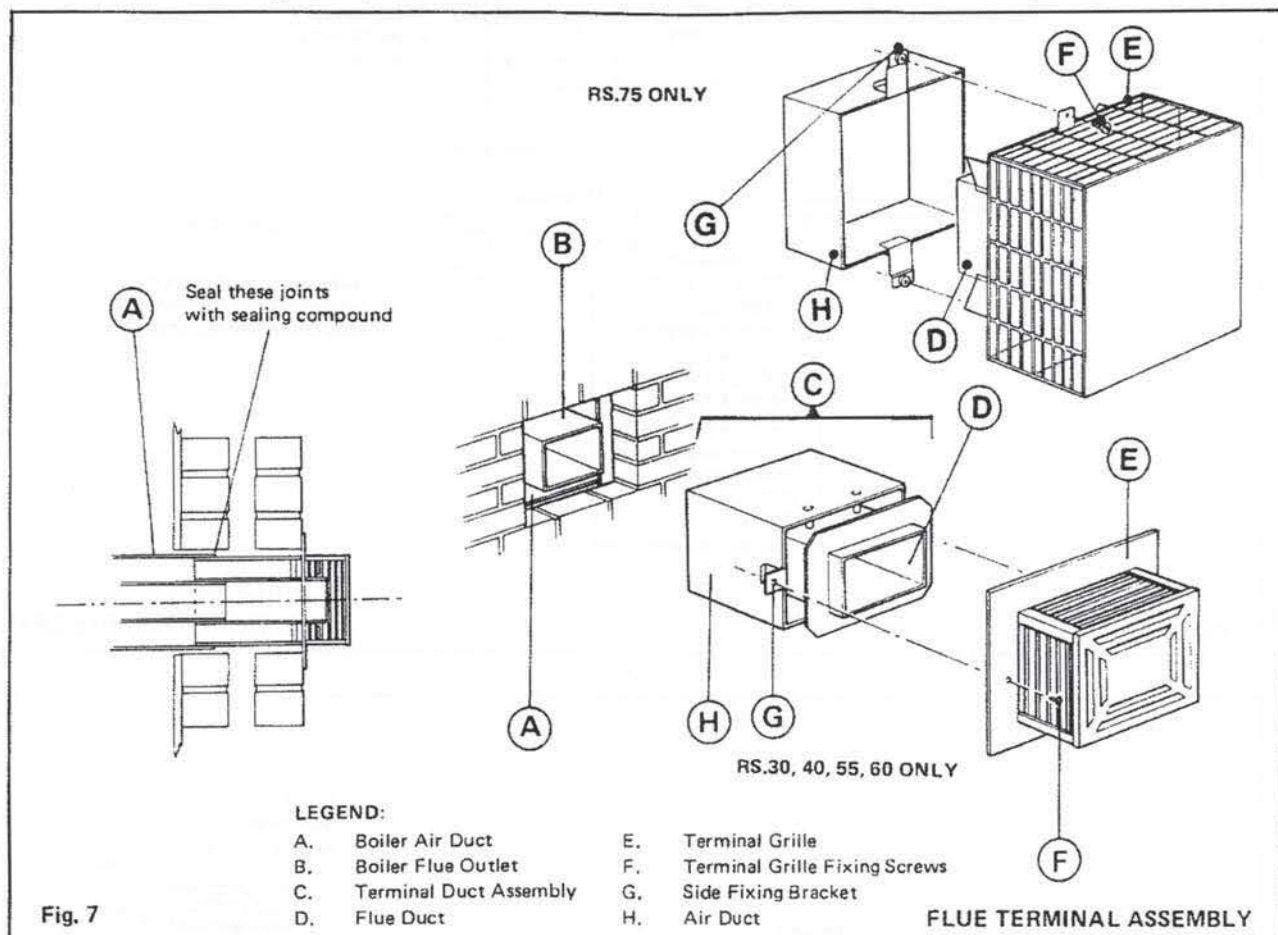
8. BY-PASS ADJUSTMENT

With the boiler firing, and with ALL circuits OPEN and the bypass CLOSED, adjust the pump to give the required minimum flow through the boiler.

Then with the DHW circuit only OPEN, if there is insufficient flow through the boiler, OPEN the bypass to whatever extent is necessary.

Note: If thermostatic radiator valves are fitted, the bypass MUST be OPEN.

If in doubt contact Stelrad Group Ltd.



FITTING THE FLUE DUCT ASSEMBLY and TERMINAL GRILLE — Fig. 7

Separate the terminal grille (E) from the terminal duct assembly (C) — RS.30, 40, 55, 60 or the air duct (H) — RS.75, by removing the two screws (F).

Apply a 25mm (1in) wide coating of the sealing compound, packed with the terminal grille, to the ends of the air inlet/flue outlet ducts as follows:

- to the INNER surface of the boiler air duct (A),
- to the OUTER surface of the terminal air duct (H),
- to the OUTER surface of the boiler flue duct (B),
- to the INNER surface of the terminal flue duct (D).

From OUTSIDE the building, pass the duct assembly (C) through the opening and slide it into the boiler outlet, ensuring the flue duct (D) slides OVER the boiler flue outlet and the air duct (H) slides INTO the boiler air duct (A).

When correctly entered, push the terminal duct assembly (C) fully in, until the side fixing brackets (G) contact the wall face.

Make good between wall and duct, OUTSIDE the building. When thoroughly dry, fasten the terminal grille (E) to the flue duct assembly (D) with the two screws (F).

GAS CONNECTIONS

A MINIMUM gas pressure of 20 mbar (8in.w.g) MUST be available at the boiler inlet.

The gas service cock is on the left hand side of the control valve, below the boiler, and connection to the gas supply MUST be from BELOW and from the REAR of the boiler.

Note: Ensure that the gas supply pipe does not foul the boiler casing when fitted.

ELECTRICAL CONNECTIONS

WARNING: The appliance MUST be efficiently earthed.

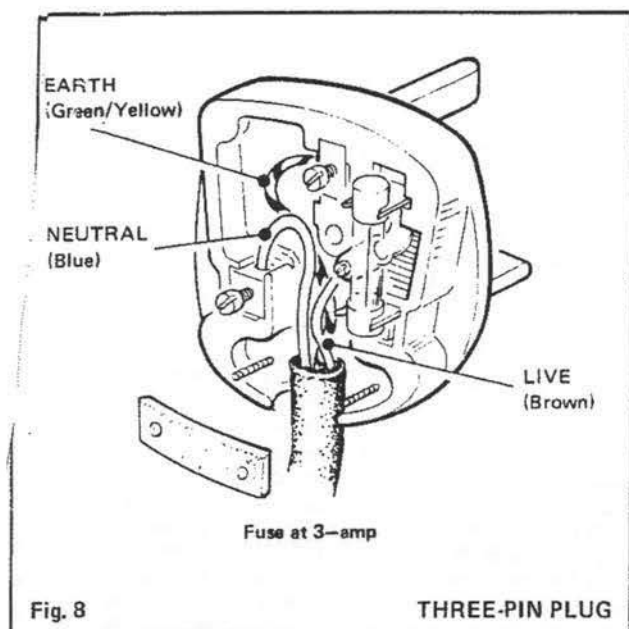
A mains supply of 220/240 volt, 50 Hz, A.C., Single Phase, is required.

ALL external controls and external wiring MUST be suitable for mains voltage.

Wiring should be in three-core, PVC insulated cable, NOT LESS than 24/0.2mm

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

The supply connection may be made via a removable plug to a 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 in Fig. 8, fused at 3amp, and complying with the requirements of BS.1363.



INTERNAL WIRING

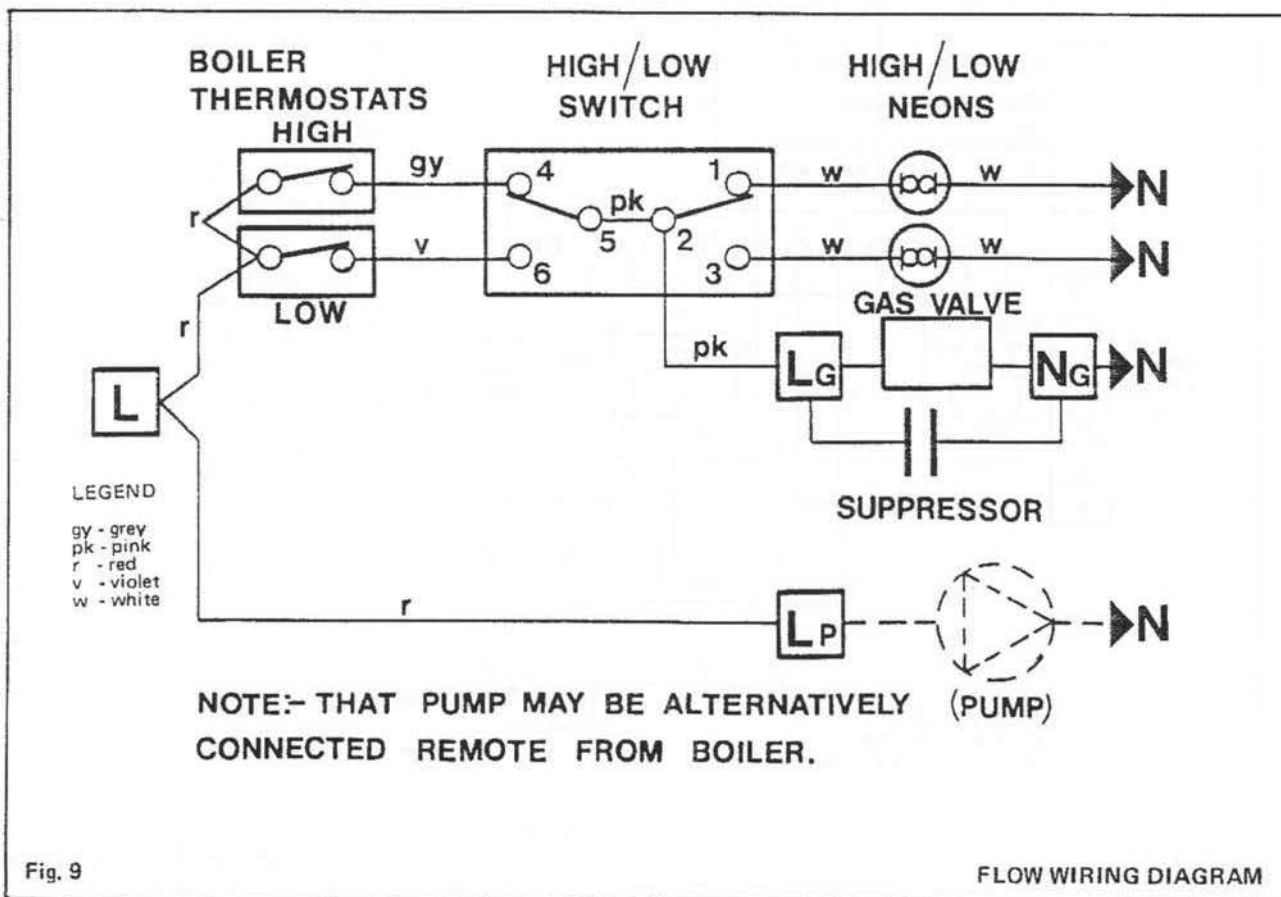
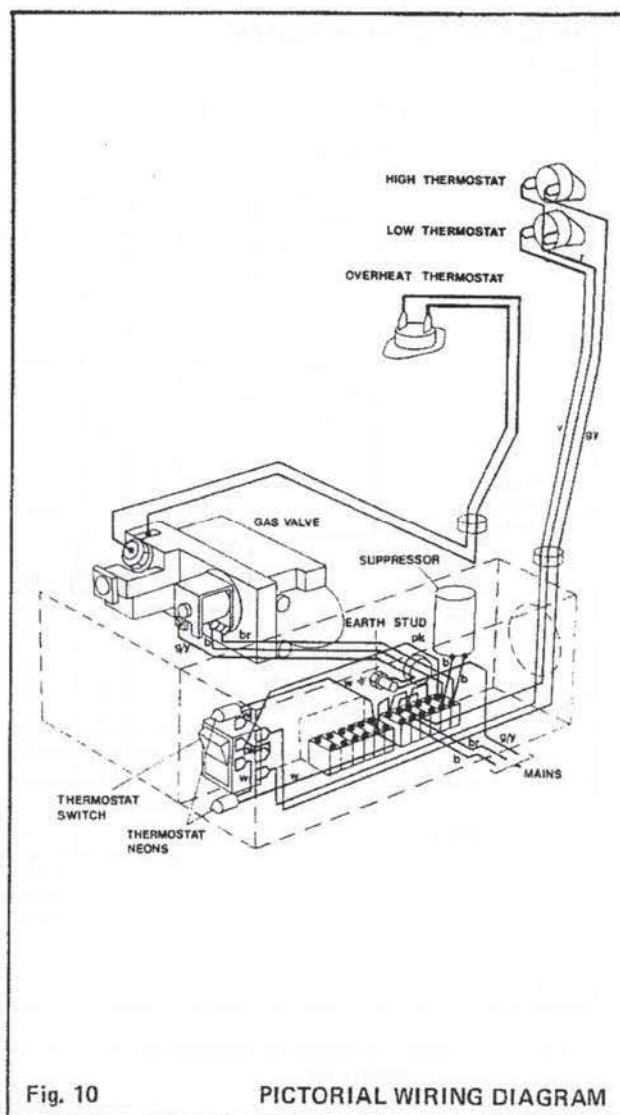
The internal wiring of the control box is shown in Figs. 9 and 10.

A wiring diagram is also included on the lighting instruction plate on the bottom of the controls pod.

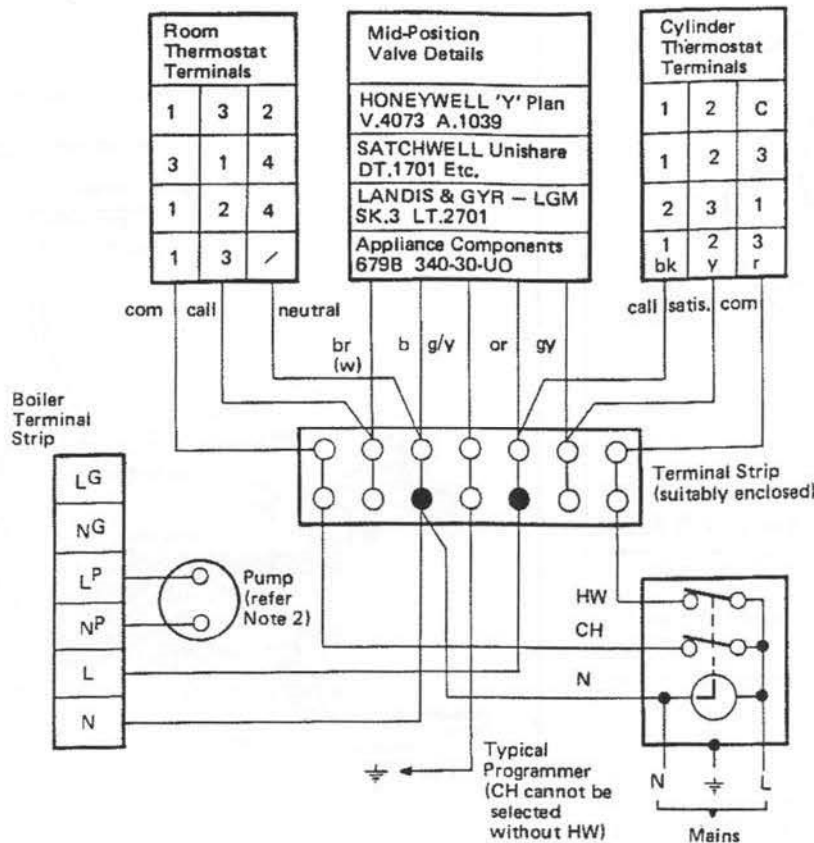
1. Undo the securing screw on top of the box and remove the cover.
2. Route the mains lead in the box via the grommetted hole at the rear and wire into the SUPPLY terminals marked L, N & ⏏ and secure with the cable clamp.

Note: The mains lead connection must be made such that the current carrying conductors become taut before the earthing conductor if the lead slips out of the cord anchorage.

3. Wire the pump into the terminals marked PUMP.
4. Refit the control box cover.



MID-POSITION VALVE SYSTEM (No Relay)



LEGEND:

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

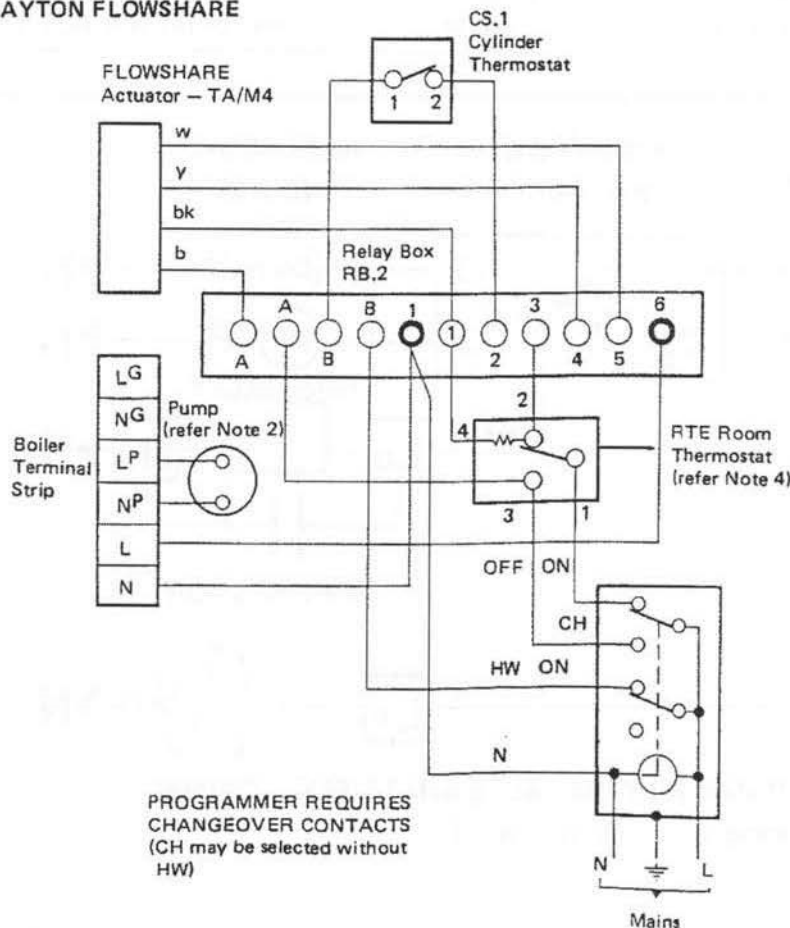
NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. This is a fully controlled system — set the boiler thermostat to HIGH.
4. Numbering of thermostat terminals applies ONLY to the Manufacturer mentioned.

Fig. 11

**WIRING DIAGRAM —
PUMPED ONLY SYSTEM**

DRAYTON FLOWSHARE



LEGEND:

b — blue
 bk — black
 y — yellow
 w — white

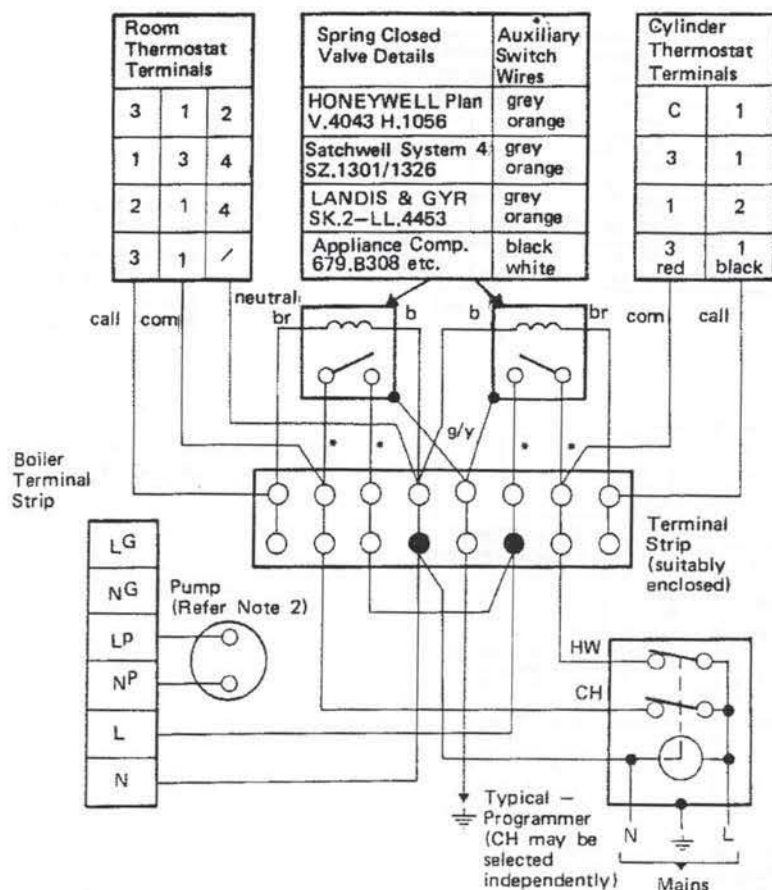
NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. This is a fully controlled system — set the boiler thermostat to HIGH.
4. Note room thermostat terminals have different numbering to previous DRAYTON models.

Fig. 12

**WIRING DIAGRAM
PUMPED ONLY SYSTEM**

TWO SPRING CLOSED VALVES



LEGEND:

b — blue
br — brown
g — green
g/y — green/yellow
r — red
y — yellow

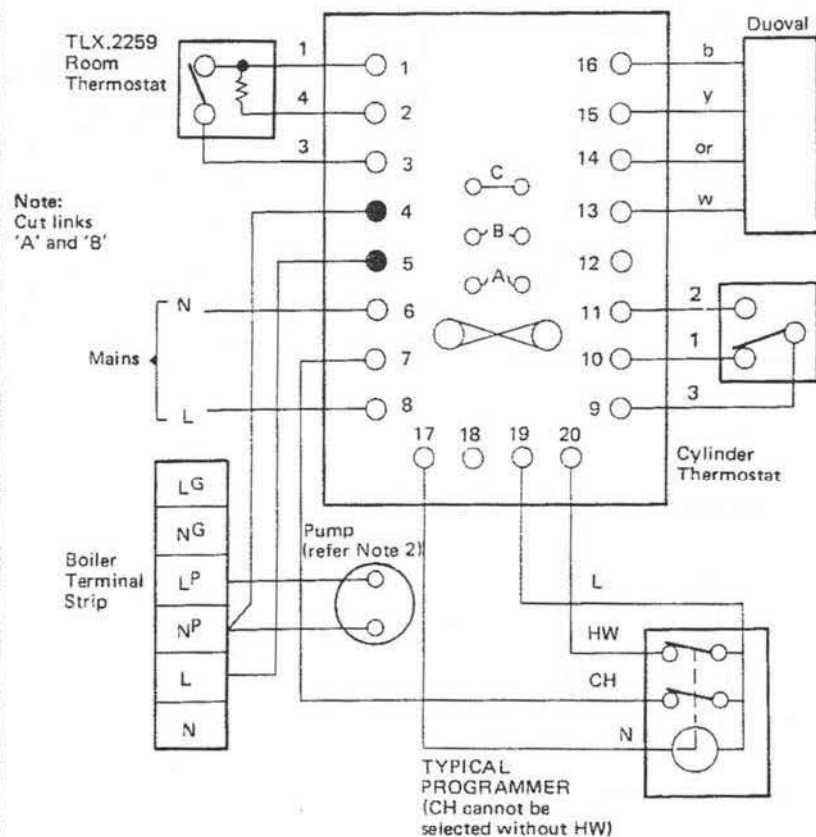
NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. This is a fully controlled system — set the boiler thermostat to HIGH.
4. Numbering of thermostat terminals applies ONLY to the Manufacturer mentioned.

Fig. 13

WIRING DIAGRAM —
PUMPED ONLY SYSTEM

SATCHWELL DUOFLO



LEGEND:

b — blue
or — orange
w — white
y — yellow

NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Black dots denote alternative pump connections.
3. This is a fully controlled system — set the boiler thermostat to HIGH.
4. Numbering of thermostat terminals applies ONLY to the Manufacturer mentioned.

Fig. 14

WIRING DIAGRAM —
PUMPED ONLY SYSTEM

ONE VALVE IN HEATING CIRCUIT

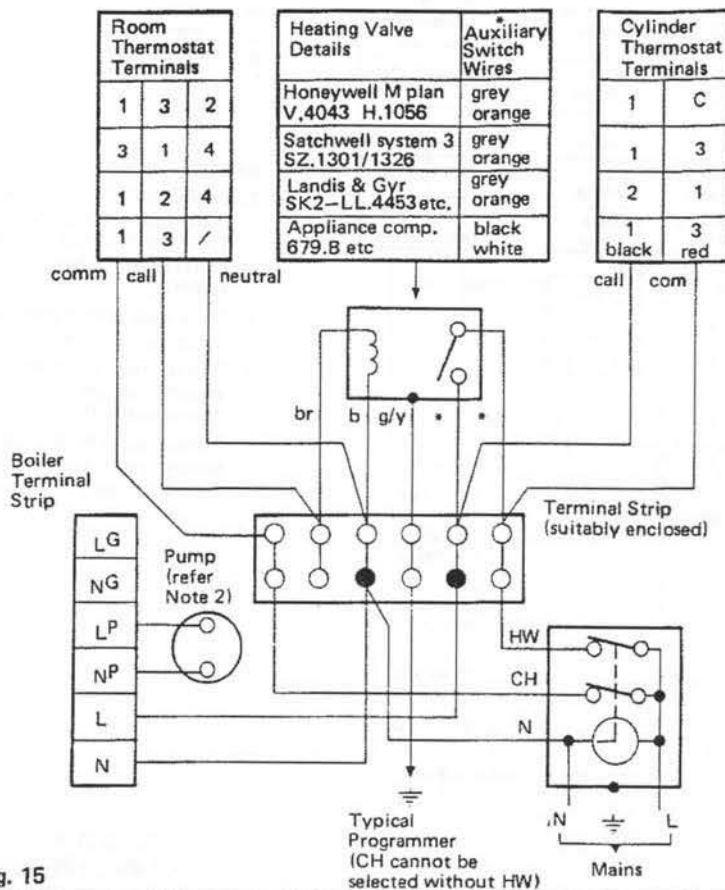


Fig. 15

WIRING DIAGRAM —
PUMPED ONLY SYSTEM

FROST PROTECTION

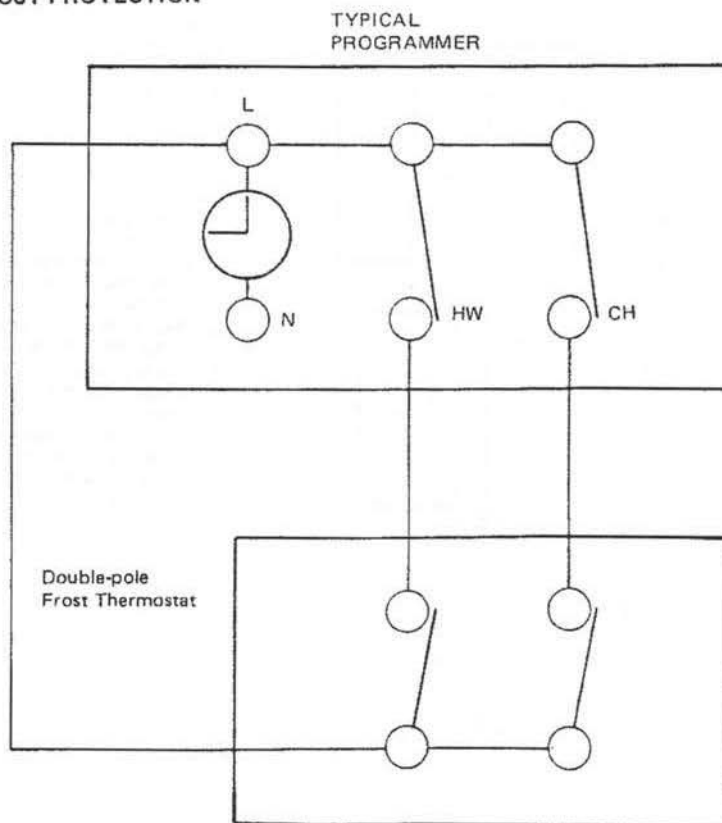


Fig. 16

WIRING DIAGRAM —
Double-Pole Frost Thermostat —
Wired to Programmer

EXTERNAL CONTROLS

External wiring **MUST** be in accordance with the I.E.E. Wiring Regulations.

The wiring diagrams illustrated in Figs. 11–15 cover the systems most likely to be used with this appliance.

For wiring external controls to the IDEAL ELAN boiler, reference should be made to the system wiring diagram supplied by the relevant Manufacturer, in conjunction with the wiring diagrams shown in Figs. 9 and 10.

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

1. Controls that switch the system ON and OFF, e.g. a time switch, **MUST** be wired, in series, in the live mains lead to the boiler.
2. Controls that over-ride on 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 Fig. 16.
3. If a proprietary system is used, follow the instructions supplied by the Manufacturers.
4. **SYSTEM DESIGNS, FEATURING CONTROLS OR WIRING ARRANGEMENTS WHICH ALLOW THE BOILER TO FIRE WHEN THERE IS NO PUMPED CIRCULATION TAKING PLACE MUST NOT BE FITTED.**

Notes: (a) If there are no external controls, the circulating pump **MUST** also be wired into the control box — refer Fig. 9.
(b) When the OPTIONAL programmer kit is fitted, the incoming mains lead **MUST** be wired into the boiler control box terminals marked LT, N & ⏏ — refer Figs 2–6, contained in the Programmer Kit Installation Instructions.

FITTING THE CASING

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

Note: Before fitting the casing remove the protective polythene bag from the plastic fascia, and refit the fascia if required.

1. Lift the boiler casing up to the boiler assembly and hook the top two fixings over the brackets.
The casing **MUST** seat correctly:
2. Swing the control box into position and secure to the casing with the nut provided.
3. Slide the controls pod bottom panel into position.
4. Replace the bottom panel securing screws.
5. Lift up the brown plastic side trims (refer Fig. 1), locate the controls access door hinge pins into the casing and drop the plastic side trims into place.

COMMISSIONING AND TESTING

Electrical Installation:

Checks to ensure electrical safety should be carried out by a competent person.

ALWAYS carry out the preliminary electrical system checks as detailed on pages 6–9 of the Instructions for the British Gas Multimeter.

Check that the earth connection on the bottom panel is properly made. **THIS CONNECTION IS IMPORTANT AND MUST NEVER BE OMITTED.**

Gas Installation:

The whole of the gas installation, including the meter, should be inspected and tested for soundness, and purged in accordance with the recommendations of CP.331:3.

Purging air from the gas installation may be expedited by the removal of the controls pod door and bottom panel, loosening the union on the gas service cock and purging until gas is smelled.

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 naked lights and **DO NOT SMOKE.**

Water Circulating System:

The whole of the system should be thoroughly flushed out with cold water — **WITHOUT** the pump in position.

Ensure all valves are open.

With the pump fitted, the system should be filled and airlocks cleared.

Check for water soundness.

INITIAL LIGHTING INSTRUCTIONS —

Refer Fig. 17

1. Remove the controls pod access door and bottom panel.

Note: The gas service cock **MUST** have been OFF for at least three minutes before initiating the lighting sequence.

2. Check that all drain cocks are CLOSED, and stop valves in the flow and return lines are OPEN.
3. Check that the gas service cock (K) is ON and the boiler thermostat selector switch (D) is OFF.
4. Remove the screw in the burner pressure test nipple (G) and connect a gas pressure gauge via a flexible tube.
5. Slide the gas control button (A) to the RIGHT until resistance is felt and then release it.
6. Push in and retain fully depressed the gas control button (A), press and release the piezo unit button (F) repeatedly until the pilot is seen to light through the sight glass (B).
7. Hold the gas control button depressed for 15 seconds after the pilot burner has ignited.
8. 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 (A).
9. Check that the electricity supply and all external controls are ON.
10. Set the boiler thermostat selector switch to HIGH and check that the burner cross lights smoothly from the pilot flame. The HIGH indicator neon will glow when the boiler is alight.
11. Test for gas soundness around the boiler gas components, using leak detection fluid.
12. Operate the boiler for ten minutes to stabilise the burner temperature.
13. Check the burner setting pressure against the relevant values quoted in Table 2 on Page 2.
14. If the burner setting pressure requires adjustment, swing the control box down as previously described, and remove the gas valve cover.
Turn the pressure adjusting screw (H) **ANTI-CLOCKWISE** to INCREASE the pressure or **CLOCKWISE** to DECREASE it.
15. Replace the valve cover and swing the control box back into its working position.
16. Set the boiler thermostat selector switch to OFF.
17. Remove the pressure gauge and tube, and replace the sealing screw in the pressure test nipple.
18. Set the boiler thermostat selector switch to HIGH.
19. Check for gas soundness around the test nipple.
20. Replace the controls pod bottom panel and access door.

GENERAL CHECKS

Make the following checks for correct operation:

1. Turn the boiler thermostat selector switch from OFF to HIGH and from OFF to LOW, and check the main burner and appropriate indicator neon light and extinguish in response.
 2. Check the appearance of the pilot flame to ensure it envelops 13mm (1/2in) of the thermocouple tip, — refer 'Pilot Burner Setting'.
The pilot flame is factory set and no adjustment should be necessary.
 3. Check the operation of the flame failure device in the gas control.
The flame failure device MUST cut off the gas to the burner within 60 seconds.
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 of approximately 30 seconds before the boiler can be relit.
4. The correct operation of the programmer, if fitted, and all other system controls should be proved.
Operate each control separately and check the main burner and circulating pump respond.
 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.

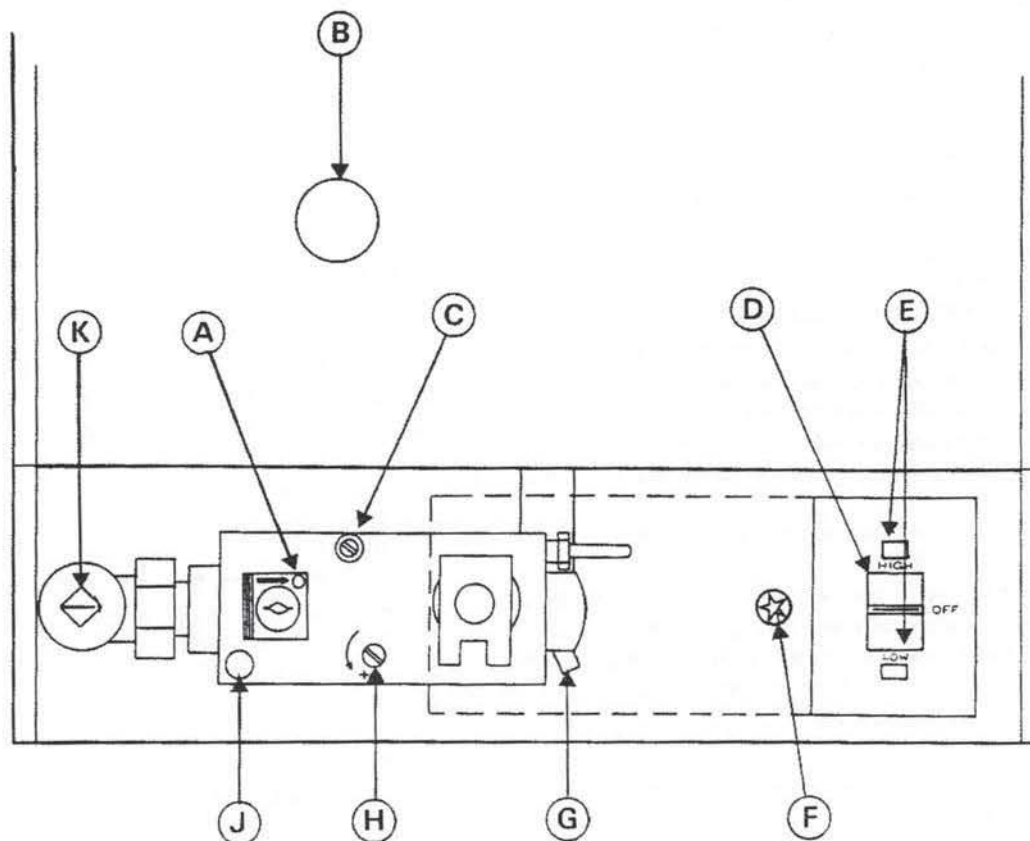
Thermostat Setting	Flow Temperature	
	°C	°F
HIGH	82	180
LOW	60	140

Note: The HIGH or LOW indicator neons will glow whenever that thermostat is 'Calling for Heat'.

HANDING OVER

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

1. Hand the User's Instructions publication to the Householder and explain his/her responsibilities under the Gas Safety Regulations, 1972.
2. Draw attention to the Lighting Instruction plate affixed to the inside of the controls access door.
3. Explain and demonstrate the lighting and shutting down procedures.
4. The operation of the boiler and the use and adjustment of ALL system controls should be fully explained to the Householder, to ensure the greatest possible fuel economy, consistent with 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 frost conditions.
5. Explain the function and the use of the boiler thermostat and external controls.
6. Explain and demonstrate the function of time and temperature controls, radiator valves, etc., in the economic use of the system.
7. 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.



LEGEND:

- | | |
|-------------------------------|----------------------------------|
| A. Gas valve control button | F. Piezo unit ignition |
| B. Sight glass | G. Burner pressure test nipple |
| C. Pilot pressure adjuster | H. Main burner pressure adjuster |
| D. Thermostat selector switch | J. Inlet pressure test nipple |
| E. Thermostat indicator neons | K. Gas service cock |

Note: CONTROLS ARE SHOWN WITH THE GAS VALVE COVER REMOVED.

Fig. 17

BOILER CONTROLS

SERVICING

WARNING:

ALWAYS turn OFF the gas supply at the gas cock and switch OFF and DISCONNECT the electricity supply to the appliance **BEFORE** SERVICING.

IMPORTANT

After completing any servicing or exchange of gas carrying components **ALWAYS** test for gas soundness.

TO REMOVE THE BOILER CASING

1. Lift up the brown plastic side trims (refer Fig. 1) to clear the controls access door hinge pins and remove the door.
2. Undo the two screws securing the controls pod bottom panel
3. Slide out the controls pod bottom panel.
4. Undo the nut securing the control box to the bottom of the boiler casing.
5. Lift the back of the control box slightly and swing the box downwards — (complete with programmer if fitted) — pivoting from the back.

6. Disconnect the earth bonding wire from the bottom of the boiler casing.
7. Release the three captive screws securing the boiler casing to the backplate and remove the casing.

REMOVE MAIN BURNER & CONTROLS ASSEMBLY

Refer Fig. 18

1. Undo the screw securing the plastic cover of the gas valve and remove the cover.
2. Disconnect the electrical leads from the gas valve solenoid.
3. Disconnect the thermocouple and the two interrupter leads from the gas valve.
4. Disconnect the ignition lead from the piezo unit body.
5. Undo the union nut on the gas service cock.
6. Undo the two wing nuts securing the burner and controls assembly to the bottom of the air duct.
7. Support the assembly and undo the wing nut securing the burner front support bracket to the heat exchanger skirt.
8. Remove the complete assembly by lifting and drawing it forward.
9. Remove to a convenient working surface for attention.
10. Brush off any deposits that may have fallen on to the burner head, ensuring the flame ports are unobstructed, and remove any debris that may have collected.

Note: Brushes with metallic bristles MUST NOT be used.

11. Remove the main burner injector; ensure there is no blockage or damage.
12. Replace the injector, using an approved jointing compound.
13. 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.
 - (b) The pilot shield is clean and unobstructed.
 - (c) The spark electrode is clean and undamaged.
 - (d) The ignition lead is in good condition and securely connected.
 - (e) The spark gap is correct — Refer Fig. 19.
 - (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 Fig. 19.
 - (h) The thermocouple terminal at the gas valve is clean and tight.

TO CLEAN THE FLUEWAYS

With the main burner and controls assembly removed as previously described.

1. Remove the two screws at the top rear of the flue collector hood.
2. Loosen the screw at each side of the hood — RS.55, 60 & 75 models ONLY.
3. Undo the two wing nuts on top of the collector hood and remove the tie-rods — NOTING THEIR POSITION — and remove the hood.
4. Remove all loose deposits from the heat exchanger finned block, brushing from above and below, and from the copper skirt, using a suitable brush — available from Local Gas Regions, Ref. No. 4798.E.
5. Refit the flue collector hood in reverse order of removal, replacing any damaged or deteriorating sealing gaskets using a suitable high temperature adhesive.
6. Refit the burner and controls assembly in reverse

order of removal, ensuring the burner manifold gasket is correctly positioned.

7. Reconnect the gas and electrical supplies.
8. Ensure the sight glass in the boiler casing is clean and undamaged.
9. Swing the control box back to its working position.
10. Refit the boiler casing, controls pod bottom panel and access door in reverse order of removal.

Note: DO NOT FORGET TO RECONNECT the earth bonding wire to the earthing stud.

PILOT BURNER SETTING

Light the pilot and check that the pilot flame covers approximately 13mm (½in) of the thermocouple tip.

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 — (C), Fig. 17 — as follows:

- (a) Slide the gas control button, (A), Fig.17, to the RIGHT until resistance is felt and then release it.
- (b) Swing the control box down as previously described and remove the gas valve cover.
- (c) Turn the pilot pressure adjuster screw CLOCKWISE until fully CLOSED.
- (d) Turn the pilot pressure adjuster screw ANTI-CLOCKWISE four full turns to give maximum setting.
- (e) Refit the gas valve cover and swing the control box back into its working position.
- (f) Relight the pilot in accordance with the Lighting Instructions.

ADJUSTMENT OF GAS 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 and the heat input.

Any required adjustments should be made by using the pressure adjustment screw (H), Fig. 17.

REPLACEMENT OF COMPONENTS

WARNING:

ALWAYS turn OFF the gas supply at the gas service cock and switch OFF and DISCONNECT the electricity supply BEFORE WORKING ON THE APPLIANCE.

Note: To replace the following components, it will be necessary to remove the boiler casing, as previously described in the Servicing Section of this publication.

Sight Glass

1. Remove the plastic fascia panel, if fitted, from the casing by sliding it upwards.
2. Unfasten the two nuts holding the sight glass assembly to the casing front panel.
3. When fitting the replacement assembly, make certain the parts are in the correct order, i.e. gasket, glass, gasket and frame.

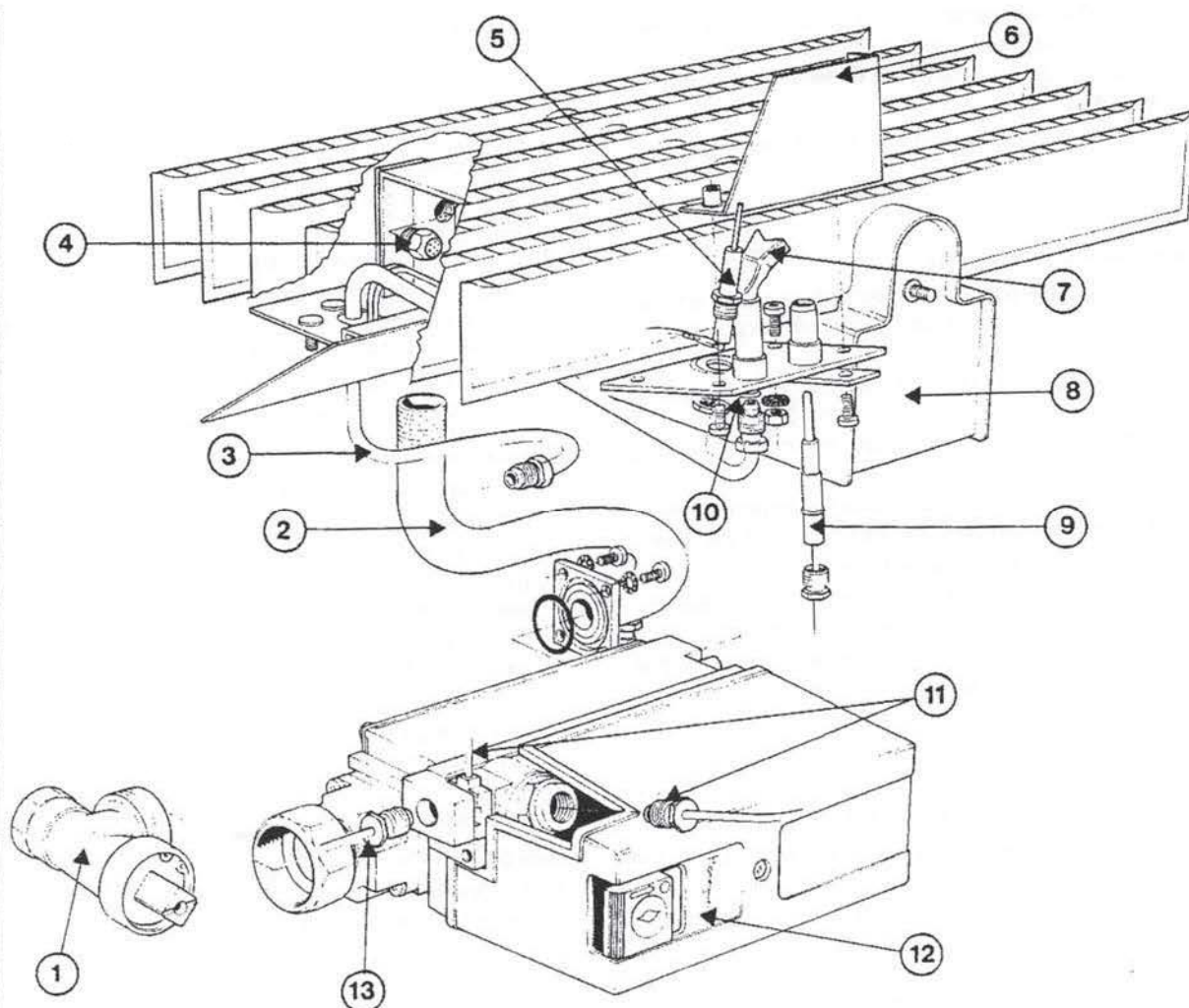
Note: The frame MUST have the return edge at the bottom.

4. Retighten the two nuts to ensure an airtight seal. Do NOT overtighten.
5. Refit the plastic fascia panel.

Boiler Control Thermostats

1. Undo the screw securing the thermostat access cover at the top right hand side of the backplate, and remove the cover.

The HIGH thermostat is positioned uppermost on the FLOW pipe, with the LOW thermostat immediately below it.



LEGEND:

- | | | |
|-------------------------|---------------------------|-------------------------------|
| 1. Gas service cock | 6. Pilot burner shield | 11. Thermocouple interrupters |
| 2. Gas manifold | 7. Pilot burner | 12. Main gas valve |
| 3. Pilot pipe | 8. Main burner | 13. Thermocouple connection |
| 4. Main burner injector | 9. Thermocouple | |
| 5. Spark electrode | 10. Pilot burner injector | |

Fig. 18

RS.55 BURNER ILLUSTRATED

BURNER and CONTROL ASSEMBLY

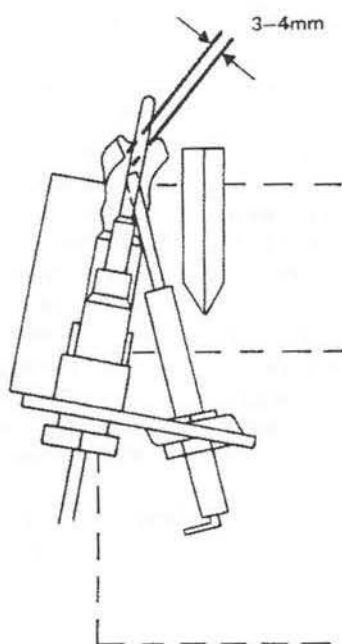


Fig. 19

PILOT and ELECTRODE POSITION

2. Loosen the two screws securing the thermostat to the mounting plate and disengage the thermostat.
3. Disconnect the two electrical connections from the thermostat.
4. Fit the replacement thermostat and re-assemble in reverse order.

Boiler Overheat Thermostat

1. The overheat thermostat is mounted on a plate situated on the flow pipe of the heat exchanger next to the automatic vent boss.
2. Undo the screw securing the plastic cover of the gas valve and remove the cover.
3. Disconnect the two thermocouple interrupter leads from the gas valve.
4. Release the strain relief bush from the bottom of the unit and withdraw the interrupter leads from the gas valve.
5. Unclip the leads from the back plate.
6. Remove the two set screws securing the thermostat to the mounting plate and remove the thermostat.
7. Fit the new assembly in the reverse order (ensuring that the strain relief bush is fitted correctly).

Piezo Unit

1. Remove the programmer if fitted: –
 - (a) Undo the securing screw on top of the control box, and remove the cover.
 - (b) Undo the two screws securing the programmer flying-lead connector to the control box and unplug the connector.
 - (c) Undo the two screws securing the programmer to the controls mounting panel and remove the programmer.
2. Disconnect the ignition lead from the piezo unit body.
3. Remove the two securing screws and shake-proof washers and remove the piezo unit.
4. Fit the new unit and re-assemble in reverse order.

Pilot Burner Assembly

1. Undo the thermocouple and pilot pipe connections at the pilot burner and pull clear of the burner.
Do NOT lose the pilot injector, which is a push fit in the pilot pipe connection to the pilot burner.
2. Disconnect the ignition lead from the base of the electrode.
3. Undo the nut and two screws securing the pilot burner to the main burner and remove, complete with the pilot shield.
4. Undo the screw securing the shield to the pilot burner and remove the shield.
5. Transfer the electrode and shield to the new pilot burner ensuring that the spark gap is correct – Refer Fig. 19.
6. Fit the new pilot burner, ensuring that the pilot injector is in position when refitting the pilot pipe, and re-assemble in reverse order.

Electrode

1. Undo the thermocouple and pilot pipe connections at the pilot burner and pull clear of the burner.
Do NOT lose the pilot injector, which is a push fit in the pilot pipe connection to the pilot burner.
2. Disconnect the ignition lead from the electrode.
3. Unfasten the backnut retaining the electrode and withdraw from the pilot bracket.

4. Fit the new electrode and re-assemble in reverse order.

Note: To replace the following components, it is necessary to remove the burner and controls assembly as previously described.

Ignition Lead

1. Remove the clip securing the ignition lead to the pilot supply pipe.
2. Unplug the ignition lead from the base of the electrode.
3. Undo the two nuts securing the pilot pipe/thermocouple sealing plate to the underside of the burner manifold, remove the plate and gasket, and withdraw the lead.
4. Fit the new lead and re-assemble in reverse order.
5. Reconnect the gas and electrical supplies.

Thermocouple

1. Remove the clip securing the thermocouple to the pilot supply pipe.
2. Undo the thermocouple connection at the pilot burner.
3. Undo the two nuts securing the pilot pipe/thermocouple sealing plate to the underside of the burner manifold, remove the plate and gasket, and withdraw the thermocouple.
4. Fit the new thermocouple.
Avoid sharp bends in the thermocouple lead, ensuring this follows the same route as previously.
5. Re-assemble in reverse order, and re-connect the gas and electrical supplies.

Main Burner – refer Fig. 18

1. Remove the pilot burner assembly, thermocouple and ignition lead as previously described.
2. Undo the pilot pipe connection at the gas valve and remove the pilot supply pipe.
3. Unscrew the gas outlet pipe, complete with gas valve, from the burner and remove the burner.
4. Unscrew the main burner injector and transfer to the new burner, using an approved jointing compound.
5. Remove the burner end bracket and transfer to the new burner.
6. Fit the new burner in reverse order, using an approved jointing compound when screwing the gas outlet pipe into the burner.
7. Re-assemble in reverse order and reconnect the gas and electrical supplies.

Gas Valve

1. Undo the pilot pipe connection at the gas valve.
2. Undo the four screws securing the gas service cock union at the left hand side of the gas valve.
3. Undo the four screws securing the gas valve outlet pipe. The sealing 'O' rings should be discarded and new ones fitted.
4. Re-assemble in reverse order, ensuring:
 - (a) The new gas valve is fitted the right way round: an arrow, engraved on the valve, indicates the direction of flow.
 - (b) The sealing 'O' rings are fitted correctly at the gas valve inlet and outlet flanges.
5. Refit the burner and controls assembly in reverse order and re-connect the gas and electrical supplies.

Heat Exchanger

1. Drain down the system.
2. Remove the boiler casing as previously described.
3. Remove the burner and controls assembly and the flue collector hood, as previously described.
4. Support the heat exchanger and undo the union nuts connecting the flow and return pipes to the back panel.

waterproof sheet or similar.

5. Disengage the rear edge of the heat exchanger skirt from the back panel and withdraw the heat exchanger.
6. Fit the new heat exchanger and re-assemble in reverse order.

Note: If the boiler is connected to a sealed water system, the automatic air vent supplied with the new heat exchanger **MUST** be replaced with a manual vent, an automatic vent of the non-hygroscopic type, or a 1/8in B.S.P. taper plug.

Cabinet Seals

1. Remove the boiler casing as previously described.
2. Remove the old seals from the top and sides of the backplate and from the bottom edge of the boiler casing. Scrape off any traces of old adhesive, etc.

3. Peel off the backing from the new sealing strip and adhere to the top and sides of the backplate and the bottom edge of the boiler casing.

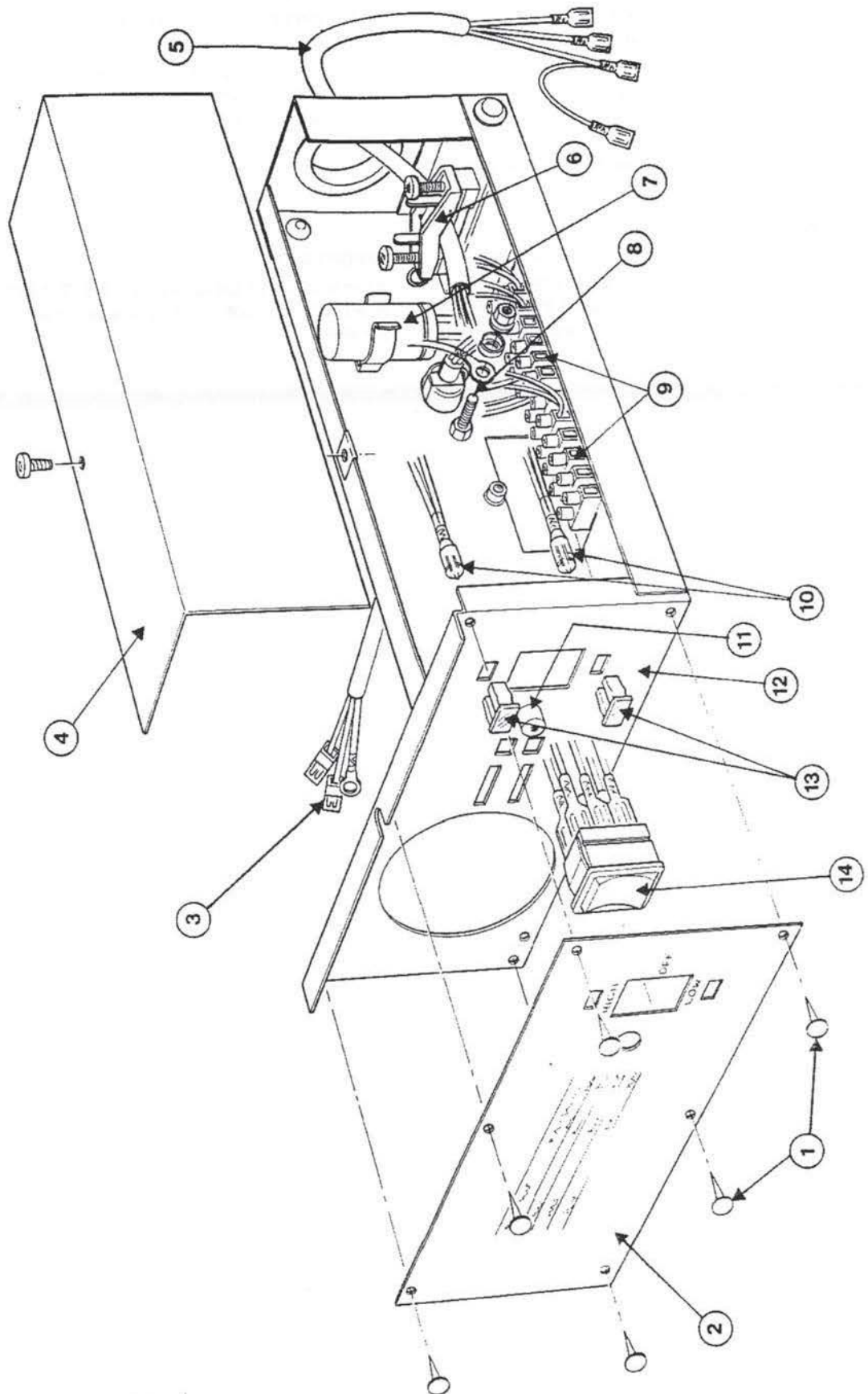
The top strip should overlap the side strips at the top corners.

Avoid stretching the sealing strip and ensure a good bond by pressing down firmly.

4. Replace the boiler casing.

IMPORTANT:

After working on the appliance — NEVER FORGET TO REPLACE the earth bonding wire to the earthing stud on the boiler.



LEGEND:

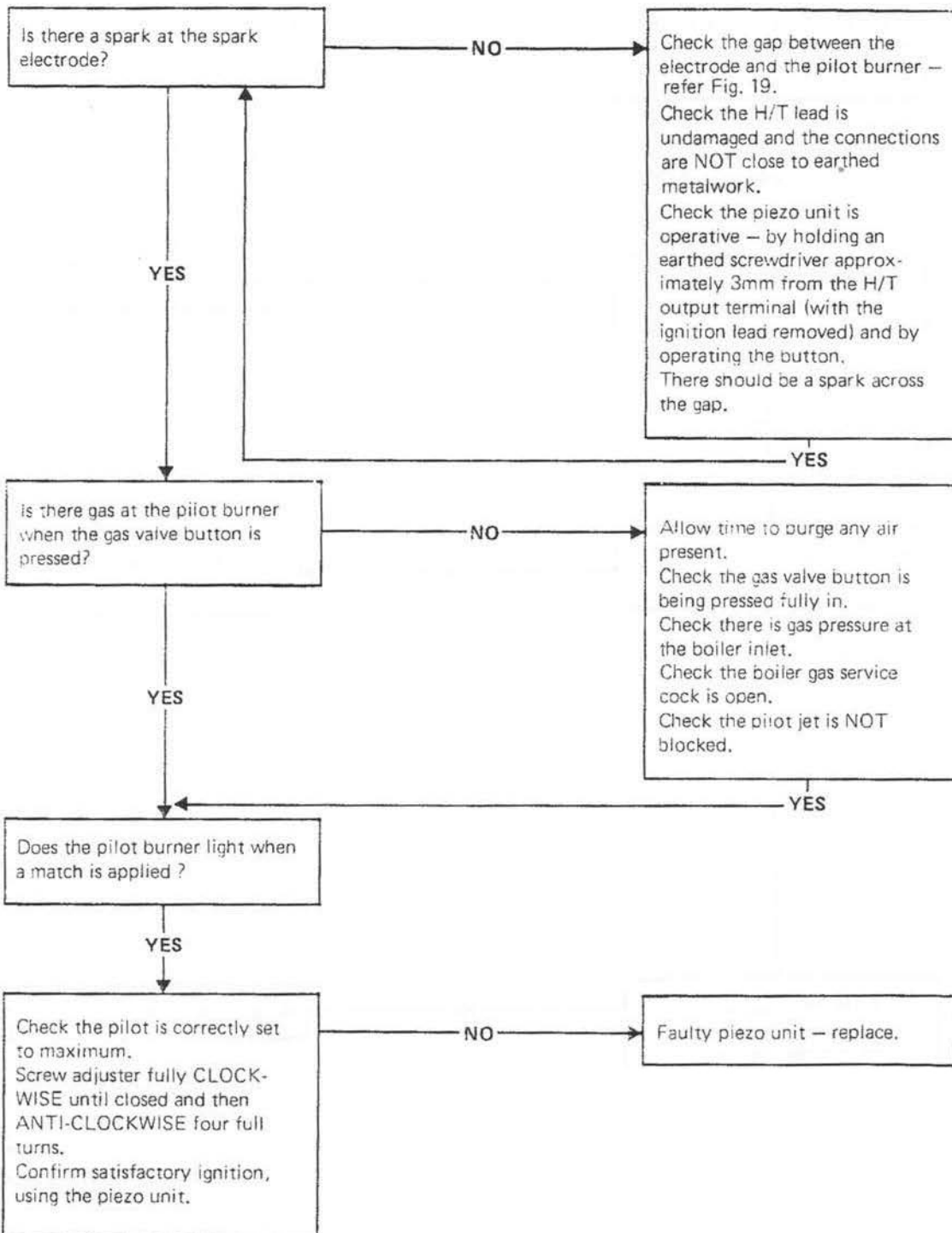
- | | | |
|-----------------------|---------------------|---------------------------|
| 1. Fascia pins | 6. Cable clamp | 11. Piezo unit |
| 2. Fascia | 7. Suppressor | 12. Control box |
| 3. Gas valve lead | 8. Earth stud | 13. Neon indicator lenses |
| 4. Control box cover | 9. Terminal strips | 14. Thermostat switch |
| 5. Thermostat harness | 10. Neon indicators | |

Fig. 20

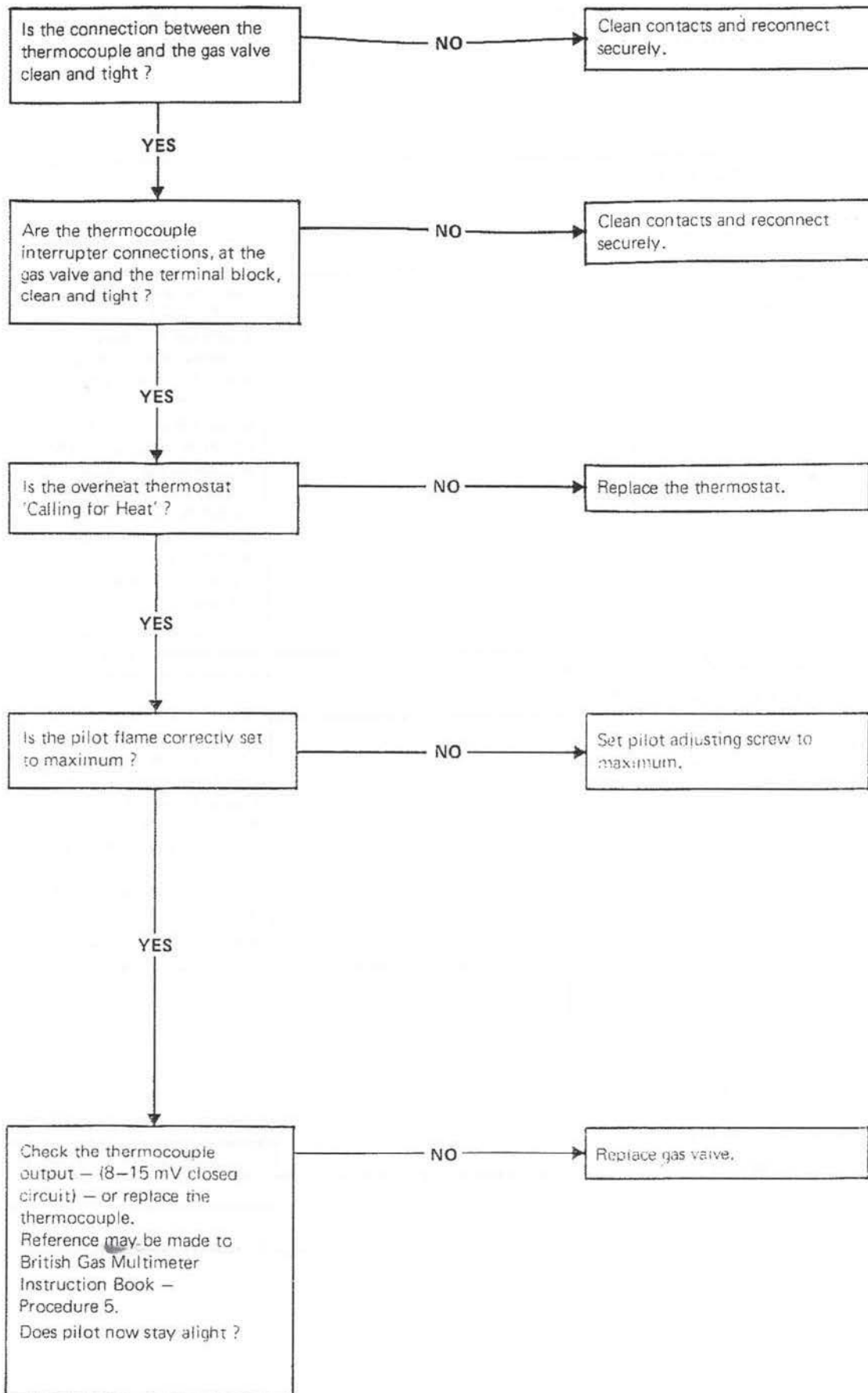
Before attempting any electrical fault finding, ALWAYS carry out the preliminary electrical system checks as detailed on pages 6–9 of the Instructions for the British Gas Multimeter.

Detailed instructions on the replacement of faulty components are contained in the Servicing section of this publication.

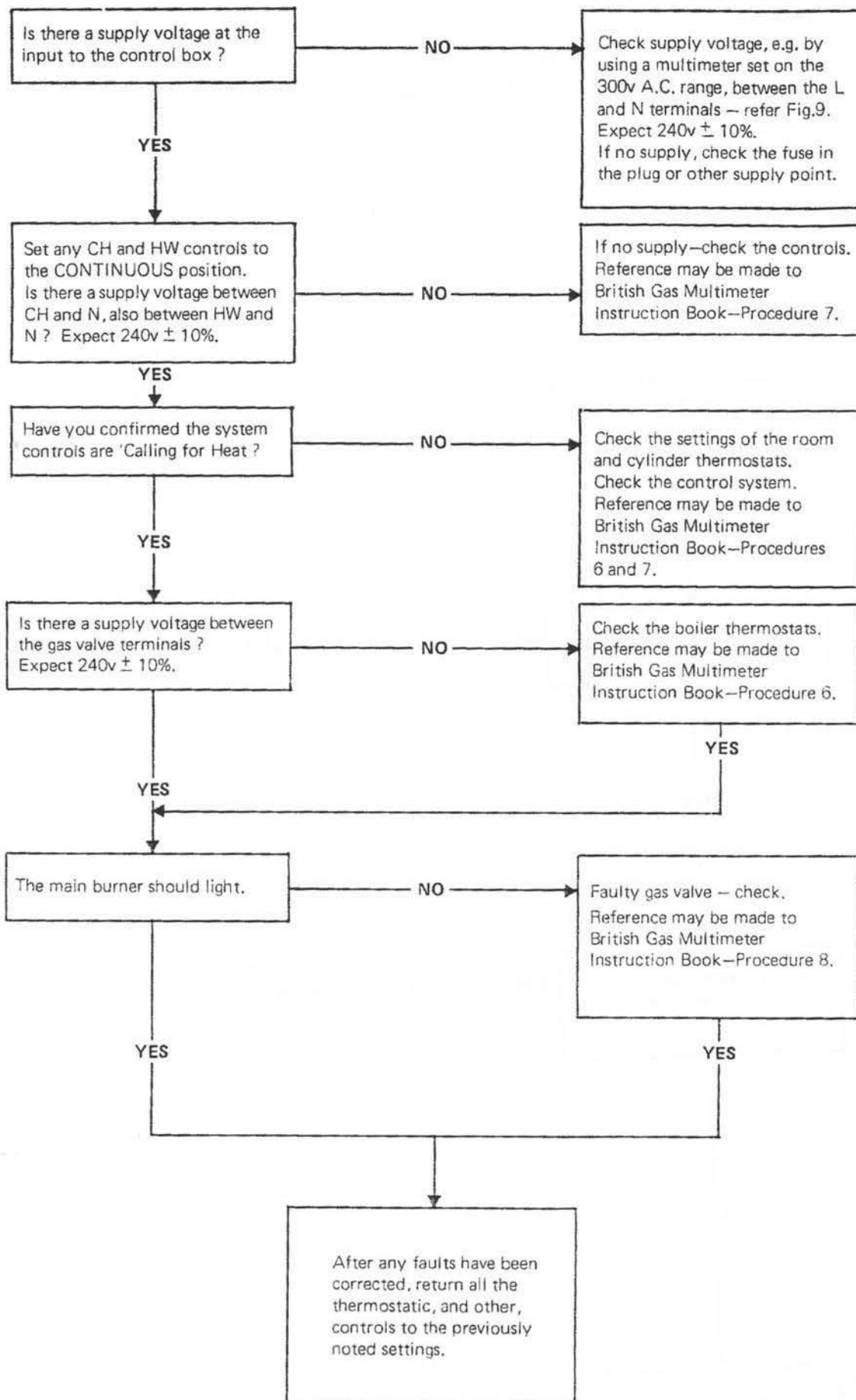
1. PILOT WILL NOT LIGHT



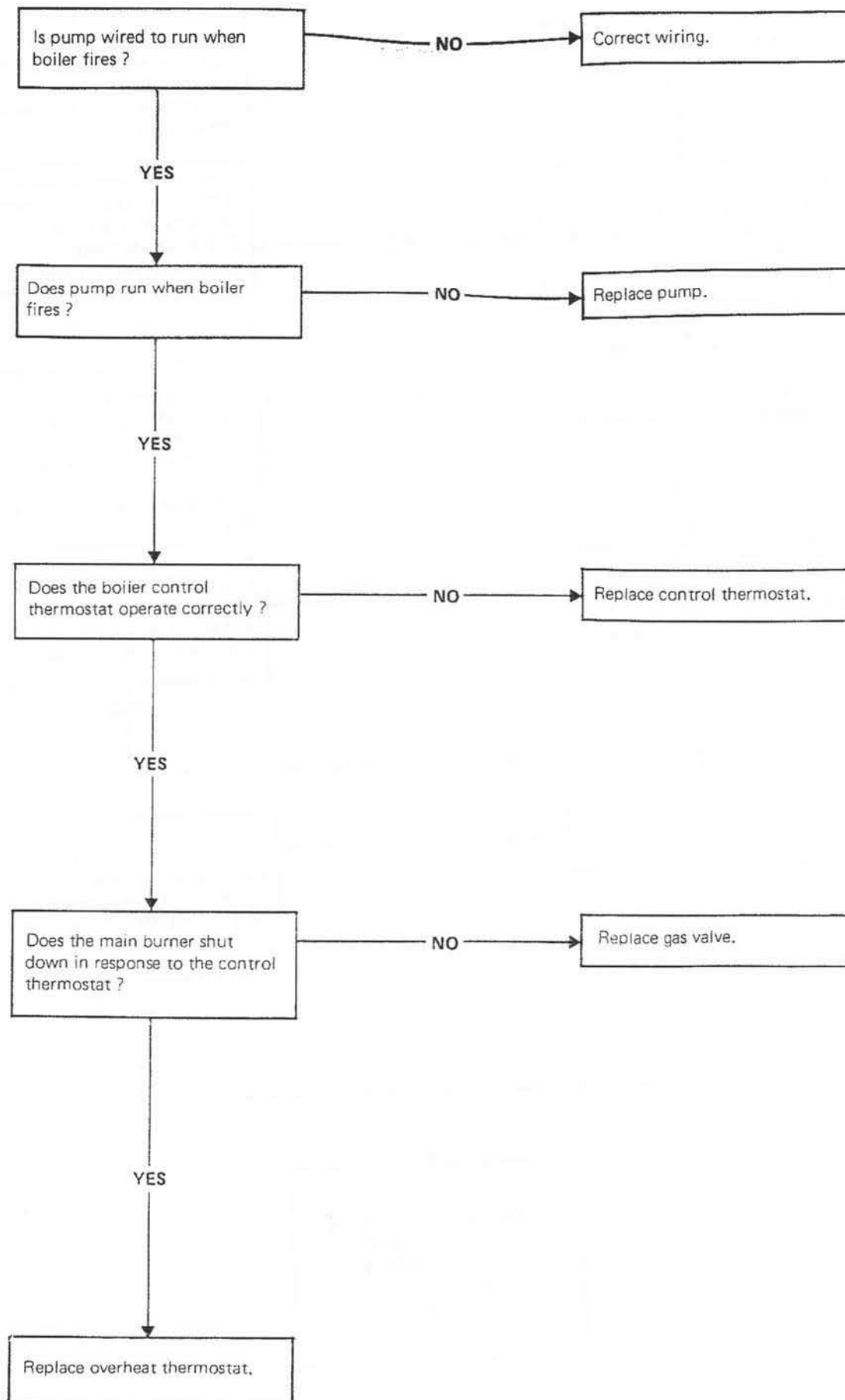
2. PILOT WILL NOT STAY LIT WHEN THE GAS VALVE BUTTON IS RELEASED



3. PILOT LIT, BUT NO MAINS GAS



4. MAIN BURNER SHUT DOWN BY OVERHEAT THERMOSTAT



SHORT LIST OF PARTS

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.

IDEAL ELAN RS.30, 40, 55, 60 & 75 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.
3	341 446	Sight glass assembly, comprising sight glass and frame, two sight glass gaskets, two M4 Hex nuts and two M4 shakeproof washers	1	189736045
6	341 449	Main burner — FURIGAS Type 'R' — No.118.500.001 RS.30 & RS.40	1	189736064
	341 450	No.118.500.000 RS.55 ONLY	1	189756064
	341 451	No.118.500.004—RS.60 & RS.75	1	189766064
8	398 316	Main burner injector — BRAY Cat.16 — Size 800 RS.30 ONLY	1	189736060
	398 329	BRAY Cat.16 — Size 1400 RS.40 ONLY	1	189746060
	398 330	BRAY Cat.16 — Size 1500 RS.55 ONLY	1	129198736
	398 333	BRAY Cat.16 — Size 1800 RS.60 ONLY	1	189666067
		BRAY Cat.10 — Size 2200 RS.75 ONLY	1	
10	382 536	Pilot burner injector — HONEYWELL 0.38/036A No.45003—508001	1	589040083
9	391 664	Pilot burner HONEYWELL No. Q359A 1041 with Double Orifice injector	1	589040085
12	395 685	1/4in. BSP Gas Control— HONEYWELL V.4700E 1007 — 240v	1	586731900
14	395 705	Piezo Unit VERNITRON No. 60080	1	589730086
15	395 700	Spark electrode and H/T lead assembly — VERNITRON No. 60843 H/T lead 600mm lg.	1	589030088
16	390 039	Thermocouple — HONEYWELL No. Q309A — 2739 — 24in. lg.	1	576890051
7	341 452	Burner mounting gasket	1	189736074
23	395 686	Thermostat — HIGH setting — ESSEX Type 495—107	1	589730051
24	395 687	— LOW setting — ESSEX Type 495—108	1	589730052
25A		— OVERHEAT — complete with 850 lg leads and thermocouple interrupter assembly	1	589730054
21	341 461	Neon indicator — READILEADS Ltd	2	589730067
20	393 451	Thermostat selector switch — ARCOLECTRIC No. C470	1	589030104
22	384 689	Suppressor — I.T.T. No. TS.121A — 'CAN' Type, with 85mm leads	1	589040030
26	341 462	Boiler casing assembly — white stove enamel, with removable smoked brown plastic fascia, sight glass assembly, bottom sealing strip, dimple foil insulation, earthing point, and three fixing screws with retaining washers	1	189734030
	341 463	— RS.30,40 & 50	1	189764030
	341 464	— RS.60 & 75	1	189764030
27	341 465	Plastic fascia — smoked brown	1	189730087
		— RS.30,40 & 55	1	189760087
		— RS.60 & 75	1	189760087
27A	341 566	Glass fascia — smoked brown	1	189730088
	341 567	— RS.30,40 & 55	1	189760088
		— RS.60 & 75	1	189760088
28	341 958	Controls pod door — smoked brown with name badge and User Instruction Plate	1	189730090
	341 959	— RS.30,40 & 55	1	189760090
		— RS.60 & 75	1	189760090
29	341 468	Sealing Pack — comprising, four sealing strips	1	189734033
	341 469	— RS.30,40 & 55	1	189764033
		— RS.60 & 75	1	189764033
30		Controls casing bottom panel with Lighting Instruction Plate and two fixing screws	1	
		— RS.30,40 & 55	1	
		— RS.60 & 75	1	

