

IDEAL WLx RS 50 & 60

March, 1986

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.

G.C. Appliance No.

Ideal WLx RS.50

41 415 56

Ideal WLx RS.60

41 415 57

IMPORTANT; The appliances are for use with **NATURAL GAS ONLY.**

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

Table 1

GENERAL DATA

Boiler Size	RS.50	RS.60
Main Burner	FURIGAS 118-500-022	Aeromatic AC 19/123232
Gas Control Valve	$\frac{1}{2}$ in. BSP Honeywell Compact V.4600 A 1023 24V	
Burner Injector	Furigas 3.3 mm	Aeromatic (373)
Pilot Injector	Honeywell 38/36A	
Gas Supply Connection in. BSP	Rc $\frac{1}{2}$ $\frac{1}{2}$	
Flow Connections in. BSP	Rc1 1	
Return Connections in. BSP in. BSP	Rc1 1 Rc $\frac{3}{4}$ $\frac{3}{4}$	
Maximum Static Water Head, m ft	30.5 100	
Electric Supply	220/240V 50 Hz ~	
External Fuse Rating	3 A	
Water Content, Litre Gial	10.9 2.4	
Dry Weight, kg lb	76.8 169	
Maximum Installation Weight, kg lb	57.6 127.0	

Table 2

PERFORMANCE DATA

Boiler Size		RS.50	RS.60
Boiler Input	MINIMUM	\dot{V} W (Btu/h)	11.5 (39200)
	Gas Consumption	/s (ft ³ /h)	0.30 (37.8)
	MID	\dot{V} W (Btu/h)	15.1 (51500)
	Gas Consumption	/s (ft ³ /h)	0.39 (49.6)
	MAXIMUM	\dot{V} W (Btu/h)	18.7 (63800)
	Gas Consumption	/s (ft ³ /h)	0.48 (61.5)
Boiler output to water	MINIMUM	\dot{V} W (Btu/h)	8.8 (30000)
	MID	\dot{V} W (Btu/h)	11.7 (40000)
	MAXIMUM	\dot{V} W (Btu/h)	14.7 (50000)
Burner Setting Pressure (Hot)	MINIMUM	nbar (in.wg)	5.3 (2.1)
	MID	nbar (in.wg)	8.9 (3.6)
	MAXIMUM	nbar (in.wg)	14.2 (5.7)

Notes:

- (a) Gas consumption is calculated using a calorific value of 38.7 MJ/m³ (1038 Btu/ft³)
- (b) The appliance is pre-set at the factory to the highest nominal rating.

INTRODUCTION

The IDEAL WLx RS.50 and RS.60 are wall mounted, balanced flued, natural draught gas boilers, range rated, having outputs of 8.8 kW to 14.7 kW (30 000 Btu/h to 50 000 Btu/h); 13.2 kW to 17.6 kW (45 000 Btu/h to 60 000 Btu/h) respectively.

The boiler is supplied with an insulating blanket of aluminium foil backed fibre glass, covering the front and sides of the boiler body, and held in place by securing straps.

The boiler casing, and controls access door, are of mild steel, white enamelled, with the controls pod sides, and push-on pipe concealment plates, coloured mid-brown.

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

Programmer and pump kits which fit neatly within the casing are available as OPTIONAL EXTRAS.

The pump kit is suitable for mounting on the right hand side flow or return tappings ONLY.

Separate fitting instructions are included with these kits.

The boilers are suitable for connection to open vented systems- ONLY.

The systems may be pumped, or gravity circulating indirect domestic hot water only, pumped central heating only, or pumped central heating combined with either a pumped or gravity circulating indirect domestic hot water circuit.


Note: A distributor tube, packed in the hardware pack is supplied with each boiler.

On all systems with fully pumped circulation, only ONE boiler return tapping may be used, even if independent circuits for hot water and central heating are provided, each with its own pump.

The distributor tube MUST be fitted into the tapping used for the return from the pumped system, even if domestic hot water is by gravity circulation.

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

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 that 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 given in the following British Standard Codes of Practice.

- CP.331:3 Low pressure installation pipes.
- BS.5376:2 Boilers of rated input not exceeding 60 kW.
- BS.5449:1 Forced circulation hot water systems (smallbore and microbore domestic central heating systems).
- BS.5546 Installation of gas hot water supplied for domestic purposes (2nd Family Gases).
- BS.5440:1 Flues (for gas appliances of rated input not exceeding 30 kW).
- BS.5440:2 Air supply (for gas appliances of rated input not exceeding 60 kW).

IMPORTANT:

This appliance is approved by the British Gas Corporation 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 the '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 recommended by Stelrad Group Ltd., could invalidate the B.G.C. approval and the normal appliance warranty and could also infringe the Gas Safety Regulations and above regulations.

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 between the wall and the boiler is not necessary - unless required by the local authority.

IMPORTANT NOTICE

If the boiler 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 Frame 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 can only be connected 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 that the meter is adequate to deal with the rate of gas supply required.

Installation pipes should be fitted in accordance with CP.331:3.

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

The complete installation MUST be tested for gas soundness and purged 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 in Table 3.
4. Where the lowest part of the terminal is fitted less than 2 m (6.6 ft) above a balcony, above ground or above a flat roof to which people have access, the terminal MUST be protected by a purpose designed guard.
Terminal guards are available from:
Quinnel, Barret & Quinnel Ltd., 884 Old Kent Road, London, SE15, and from Tower Flue Components Ltd., Vale Rise, Tonbridge, Kent, TN9 1TB.
5. Where the terminal is fitted within 850 mm (34 in) of a plastic or painted gutter, or 450 mm (18 in) of painted eaves, an aluminium shield of at least 750 mm (30 in) long should be fitted to the underside of the gutter or painted surface.
6. The air inlet/products outlet duct and the terminal of the boiler MUST be NOT closer than 25 mm (1 in) to combustible material. Detailed recommendations on protection of combustible material are given in BS.5440:1 1978, sub-clause 20:1.

Table 3

Terminal Position	Minimum Spacing Natural Draught
1. Directly below an openable window, air vent or any other ventilation opening.	300 mm (12 in)
2. Below guttering, eaves, drain-pipes or soil pipes.	300 mm (12 in)
3. Below balconies	600 mm (24 in)
4. Above adjacent ground or balcony level	300 mm (12 in)
5. From vertical drain pipes or soil pipes.	75 mm (3 in)
6. From internal or external corners.	600 mm (24 in)
7. From a surface facing the terminal.	600 mm (24 in)
8. From a terminal facing the terminal	600 mm (24 in)

IMPORTANT:

It is absolutely ESSENTIAL to ensure, in practice, 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.

If this eventuality should occur, the appliance MUST be turned OFF IMMEDIATELY and the Local Gas Region consulted.

TERMINAL

The terminal assembly of the balanced flue, with the addition, if necessary, of a duct extensor, can be adapted to accommodate various wall thicknesses -refer 'Packaging'.

AIR SUPPLY

Detailed recommendations for air supply are given in BS.5440:2. The following notes are intended for general guidance.

- It is NOT necessary to have a purpose provided air vent in the room in which the boiler is installed.
- If the boiler is to be installed in a cupboard or compartment, permanent air vents are required (for cooling purposes) in the cupboard/compartment, at both high and low levels.
The air vents may communicate with a room/internal space or be direct to outside air.
The minimum effective areas of the permanent air vents required in the cupboard/compartment, are specified below and are related to the maximum rated heat inputs of the boilers.

Table 4. RS.50

Position of air vent	Air from room/ intnl. space	Air direct from outside
HIGH LEVEL cm ² , (in ² .)	168, (26)	84, (13)
LOW LEVEL cm ² , (in ² .)	168, (26)	84, (13)

Table 5. RS.60

Position of air vent	Air from room/ intnl. space	Air direct from outside
HIGH LEVEL cm ² , (in ² .)	208, (32)	104, (16)
LOW LEVEL cm ² , (in ² .)	208, (32)	104, (16)

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

WATER CIRCULATION SYSTEM

The boiler must NOT be used for direct hot water supply, or for sealed systems.

The boiler is suitable for connection to pumped, open vent 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.

The boiler is NOT suitable for gravity central heating systems with or without additional gravity domestic hot water supply, nor is it suitable for the provision of gravity domestic hot water requirements above a 181.8 litre (40 gal) tank capacity, depending on the model.

The central heating system should be in accordance with the relevant recommendations given in BS.5376:2 and, in addition for small bore and microbore systems - BS.5449:1.

The domestic hot water system, if applicable, should be in accordance with the relevant recommendations of BS.5545: 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.

The hot water cylinder and ancillary of 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.

The flow and return connections to a fully pumped system may be made either at one side of the boiler, or diagonally, to suit convenience.

In a combined pumped heating and gravity domestic hot water system, the gravity flow and return connections MUST be made to the same side of the boiler, and the pumped connections the OPPOSITE side.

The distributor tube MUST be fitted into the tapping used for the return from ALL pumped systems - refer to further note under 'Preparing the Boiler' in the Installation section of this publication.

The boiler thermostat phial and pocket MUST be fitted in the front upper tapping, on the same side of the boiler as that selected for the pumped return.

When using the Ideal WLx Pump Kit, the flow and return tapping chosen MUST ALWAYS be made to the right hand side of the boiler.

The boiler MUST be vented. If venting cannot be done via a flow connection, 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. 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, as shown in Table 6. The figures, quoted, are for boilers fitted with a distributor tube.

Table 6

Boiler Size		RS.50	RS.60
Boiler Output	kW	14.7	17.6
	Btu/h	50 000	60 000
Water Flow Rate	l/min	19.0	22.7
	gal/h	250	300
Pressure Loss	mbar	39	51
	in.w.g.	15.6	20.5

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., ~, single Phase.

Fuse rating is 3 A.

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 3 mm (1/8 in.) 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 pack 'A' together with one or two of four packs - 'B', 'B1', 'C' or 'D'.

Pack 'A' contains the boiler body assembly, mounted on a wooden cradle, wall mounting plate, wall fixing template, two push-on side plates, instruction books and a hardware pack containing

- 1 off- Thermostat pocket/bush assembly
- 5 off- R1 Hexagon head hollow plugs
- 1 off- Distributor tube assembly
- 3 off- Wall fixing plugs
- 3 off- 8 mm x 50 mm lg. Coach screws
- 2 off- M8 Hexagon nuts
- 2 off- M8 Form A washers
- 1 off- Split pin
- 2 off- Cable clips

Keep the pack, 'A', the right way up, in accordance with the markings on the outside.

Packs 'B', 'B1' and 'C' contain the terminal outlet appropriate to the wall thickness, and sealing compound. Pack D contains the duct extensions -Refer Table 7.

Table 7- Wall Thickness

Wall Thickness	Packs Supplied
mm- 114 - 191 in- 4½ - 7½	A + C
mm- 229 - 305 in- 9 - 12	A + B
mm- 318 - 394 in- 12½ - 15½	A + B1
mm- 406 - 584 in -16 - 23	A + B + D

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 beneath the back panel 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. 3.

Width - 540 mm (22 in)
Depth - 350 mm (14 in)
Height - 1040 mm (41 in)

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

Above the boiler - 150 mm (6 in)
At each side of the boiler - 25 mm (1 in)
Underneath the boiler - 150 mm (6 in)

In addition, a minimum clearance of 350 mm (14 in) MUST be available at the front of the boiler to enable the appliance to be serviced.

UNPACKING THE BOILER

Lift off the outer box from pack, 'A', and remove the wall fixing template, side plates, and Instruction books.

To facilitate installation and the removal of the boiler from the wooden cradle, the casing MUST be removed.

REMOVING THE BOILER CASING - Refer Fig. 1

1. Remove the controls pod by pulling it upwards.
2. Remove the four wing nuts securing the boiler casing to the backplate, and lift the casing off the boiler taking care not to damage the glass fascia panel. Place the casing safely to one side.
3. Remove the wall mounting plate and hardware pack from the floor of the cradle.
4. Remove the two hexagon head screws securing the boiler to the cradle.

PREPARING THE WALL - Refer Fig. 4

1. Tape the template to the wall in the selected position.
2. Mark out the position of the three mounting plate screws, choosing one from each group of three and mark the position of the hole for the duct. Ensure that the chosen positions are satisfactory, i.e. not in the way of a mortar course, etc.
3. Drill the three holes with a 10 mm (3/8 in) masonry drill and insert the three TP3 plastic plugs provided.
4. If an optional pump kit is to be used, drill the two appropriate holes with a 10 mm (3/8 in) masonry drill and insert the two TP3 plastic plugs provided.
5. Cut the appropriate hole in the wall for insertion of the terminal assembly.
The terminal assembly MUST NOT come into contact with combustible material, such as that used in non-standard construction of timber framework and plasterboard etc.
6. Secure the mounting plate to the wall with the three 8 mm x 50 mm (5/16 in x 2 in) coach screws provided.

Note: This type of fastening is suitable for use with conventional brick, or breeze block walls. Where unconventional materials are used, the installer should use fasteners compatible with the material involved.

PREPARING THE BOILER

IMPORTANT

Extra care MUST be taken when making pre-piping joints as access to them once the boiler is hung on the wall may not be possible particularly if side clearances are limited.

1. Raise the side of the boiler body sufficiently to enter the distributor tube into the selected return tapping, and using an approved jointing compound screw the tube home, with the arrow on the boiler backplate in alignment with the index mark on the distributor tube bushing - Refer Fig. 2.

Notes:

- (a) Lift the boiler by the heat exchanger ONLY to avoid damaging the sheet metal parts.
- (b) To facilitate the fitting of the distributor tube, the side plate bracket, located on the lower tie rod, may be temporarily removed.

2. If an optional Pump Kit is to be used, it must be fitted at this stage - refer to the separate fitting instructions included with the kit.
3. Screw the boiler thermostat pocket and bush, supplied in the hardware packs into the front upper tapping on the side selected for the pumped return connection, using an approved jointing compound.
4. Insert the thermostat phial into the pocket, and fasten it in position with the split pin provided.
5. Unfasten the two screws securing the gas supply pipe clamp to the backplate, and remove the clamp.
6. Route the capillary tube between the backplate and the clamp and secure it with the spring clips - Refer Fig. 5.
7. Replace the pipe clamp.
8. Fit stub connections to the flow and return tapings, using copper pipe and approved compression fittings, and terminating with unions projecting clear of the boiler casing.

Take care NOT to rotate the distributor tube when screwing the fitting into the pumped return tapping.

9. Tightly plug any tapings not used, with the plugs provided in the hardware pack using an approved jointing compound.

Notes:

- (a) To fit the push-on side plates, the gas and water connections MUST run within the space enclosed.
- (b) Gravity domestic hot water piping, and fittings, MUST be 28 mm (1 in), smaller pipe and fittings MUST NOT be used.
- (c) Whilst 22 mm (7/8 in.) piping, and fittings, may be used for the central heating flow and return pipes, to and from the boiler, the boiler FLOW tapings SHOULD NOT be bushed down directly when fitting either a separate 22 mm (7/8 in) open vent, or a common 22 mm (7/8 in) flow pipe to a fully pumped system, otherwise inadequate air venting from the boiler may result.

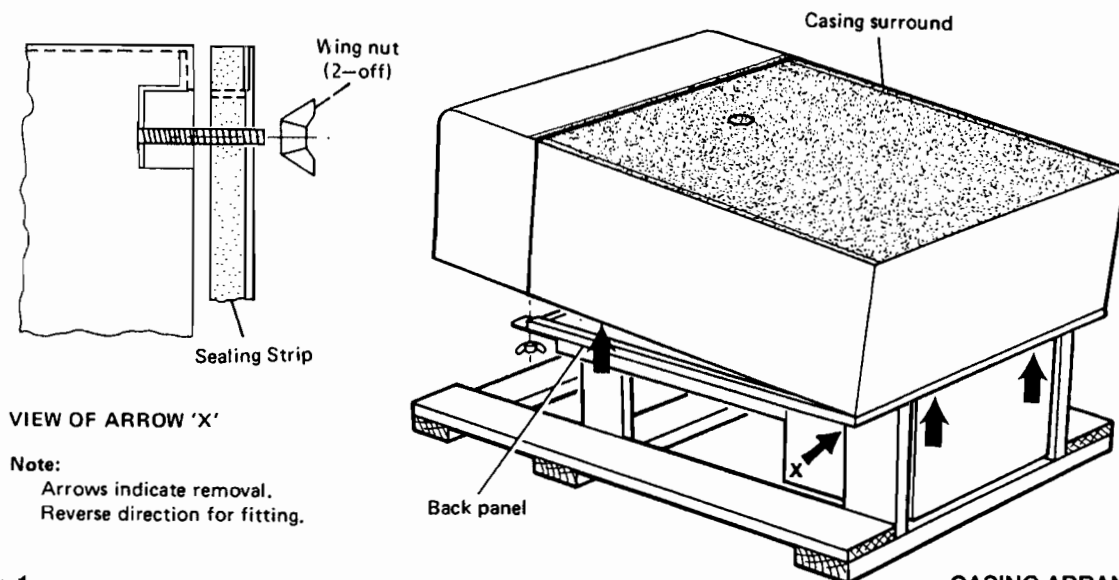
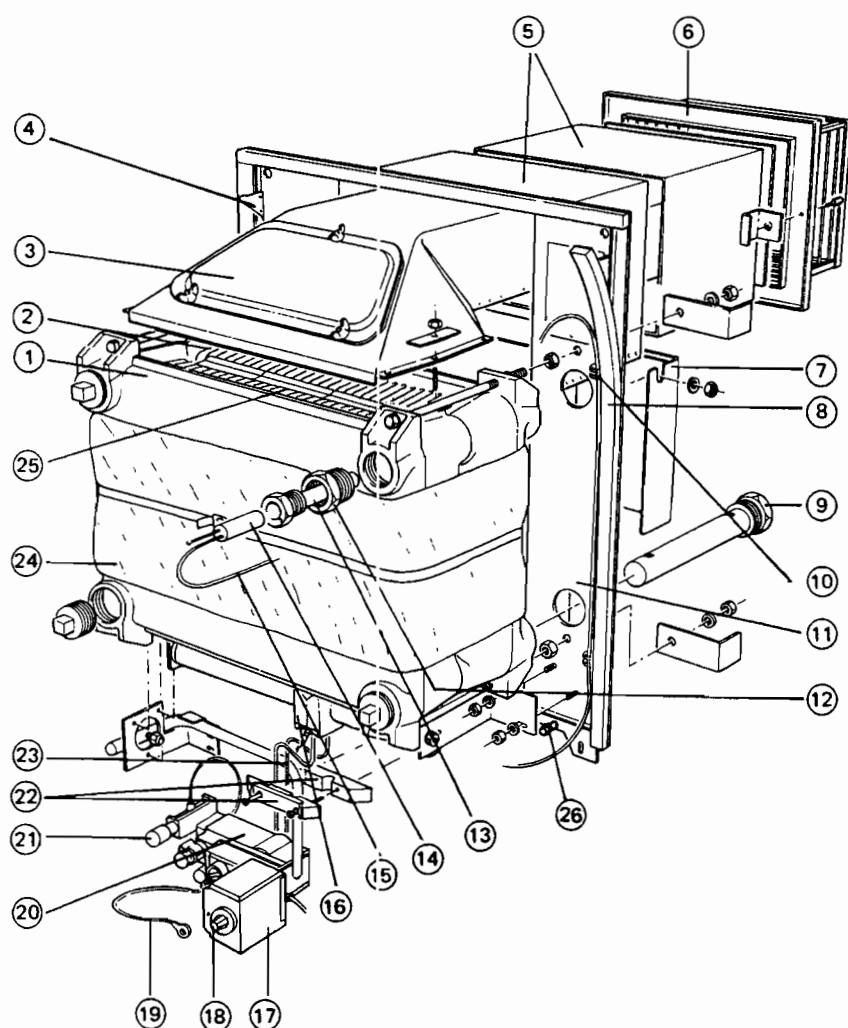
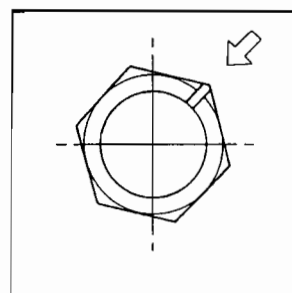


Fig. 1



LEGEND:

1. Heat Exchanger
2. Heat Exchanger flue
3. Flue Cleanout Cover
4. Casing Support Clips
5. Ducts
6. Balanced Flue Terminal
7. Wall Mounting Plate
8. Casing Sealing Strips
9. Distributor Tube
10. Thermostat Capillary Clips
11. Back Panel
12. Bush
13. Boiler Thermostat Pocket
14. Boiler Thermostat Phial
15. Thermostat Capillary
16. Pilot Bracket
17. Control Box
18. Boiler Thermostat
19. Earth Bonding Wire
20. Gas control valve
21. Piezo Unit
22. Rubber Sealing Blocks
23. Thermocouple Lead
24. Insulation
25. Flue baffles (RS,50 ONLY)
26. Jacking screws(2)



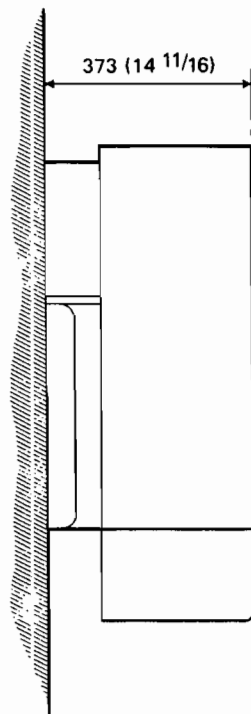
DISTRIBUTOR TUBE ALIGNMENT

Fig. 2

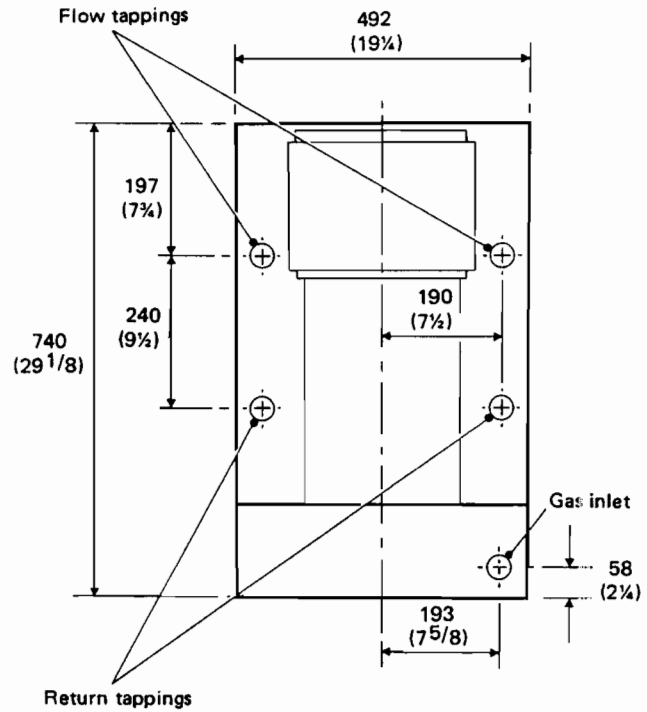
RS. 50 Boiler illustrated

BOILER UNIT-Exploded View

All Dimensions in mm (in)



SIDE VIEW

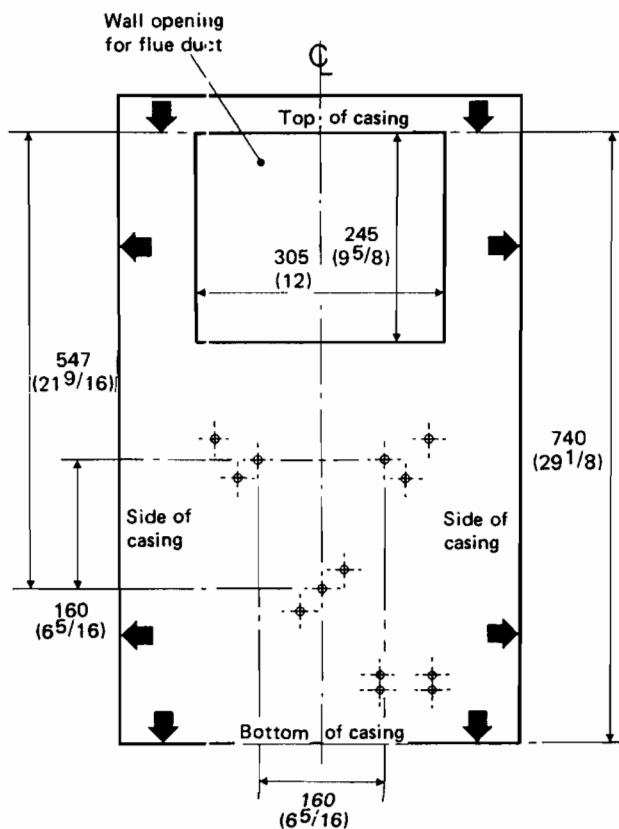


REAR VIEW

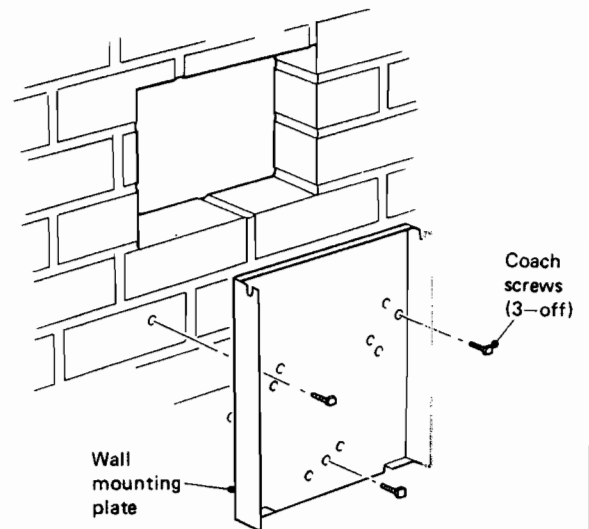
Fig. 3

DIMENSIONS

All Dimensions in mm (in)

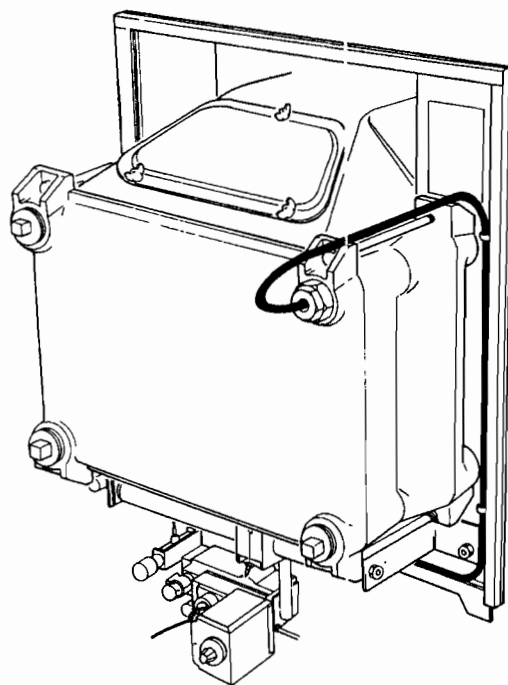


WALL MOUNTING DIMENSIONS



TEMPLATE AND WALL MOUNTING PLATE

Fig. 4



Note:

Right hand installation of thermostat shown, for left hand installation route capillary on left hand and move clips to left hand of back panel

**BOILER THERMOSTAT
-Capillary route**

Fig. 5

- (d) When the boiler output exceeds 14.4 kW (49 000 Btu/h), 28 mm (1 in) pipework should be used to and from the boiler.
This will mean bushing down from 28 mm (1 in) to 22 mm (7/8 in), JUST BEFORE entry into the distributor tube fitted into the boiler return tapping.

FITTING TO THE WALL

1. Lift the boiler on to the wall mounting plate, entering the projecting air duct into the opening cut in the wall, and lowering the two suspension studs into the slotted bearers at the top of the wall mounting plate side angles.
2. Using the jacking screws, located beneath the back panel refer Fig.2- adjust as necessary until the flue duct is horizontal or sloping lightly downwards away from the boiler.
Check the alignment with a spirit level.
3. Fit the M8 washers and nuts, provided in the hardware pack and secure the boiler in position.

Note: (RS.50 ONLY)

Remove the flue cleanout cover and ensure that the flue baffles are fully inserted in the flueways.

WATER CONNECTIONS - Refer Fig. 6

1. Complete the water connections to the boiler.
2. Thoroughly flush the system with cold water WITHOUT the pump in position.
3. Ensure all valves are open.
4. With the pump fitted fill and vent the systems and check for water soundness.

Note: Pipework connections to all systems may use flow and return connections on the same side, or opposite sides, of the boiler. That is:

(a) Fully Pumped Systems -

Either a L.H. or a R.H. flow connection, together with a L.H. or R.H. return connection, may be used. This does NOT apply when using the IDEAL WLx Pump Kit which is suitable for mounting on the right hand side flow or return tappings ONLY.

(b) Gravity Domestic Hot Water and Pumped Central Heating

Separate flow and return connections are used for each service.

The gravity connections MUST be made to one side of the boiler and the pumped connections to the opposite side.

GUIDE TO SYSTEM REQUIREMENTS

1. Gravity Circulation

The pipe runs for gravity circulation should be planned with reference to the diagram and graph illustrated in Fig. 6.

The graph has been calculated on the assumption that NOT more than eight elbows are used in the gravity loop, including entry to the boiler.

For each extra elbow in excess of eight, (R) must be reduced by 300 mm (12 in), or (H) increased by 100 mm (4 in).

Whatever value is selected for (R), i.e. the horizontal distance between the centre line of the cylinder and the boiler tappings used, measured along the pipe run, the value of (H), i.e. the vertical distance between the top of the boiler and the base of the cylinder, MUST be at least that indicated by the graph.

Notes:

- (a) Flow and return pipes should rise vertically on leaving the boiler.
- (b) Horizontal pipes should be ABOVE ceiling level and as SHORT as possible.
- (c) A MINIMUM inclination of 25 mm per 3 m run (1 in. per 10 ft), is required to avoid air locks.
If the above conditions cannot be met, pumped primaries should be used.

2. Fully Pumped Circulation

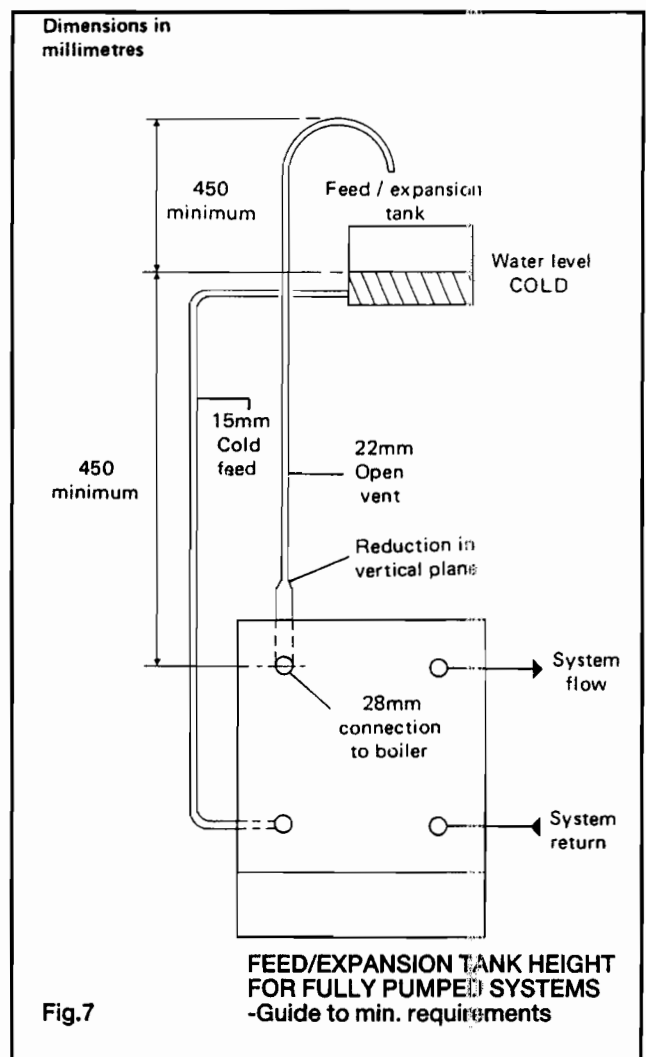
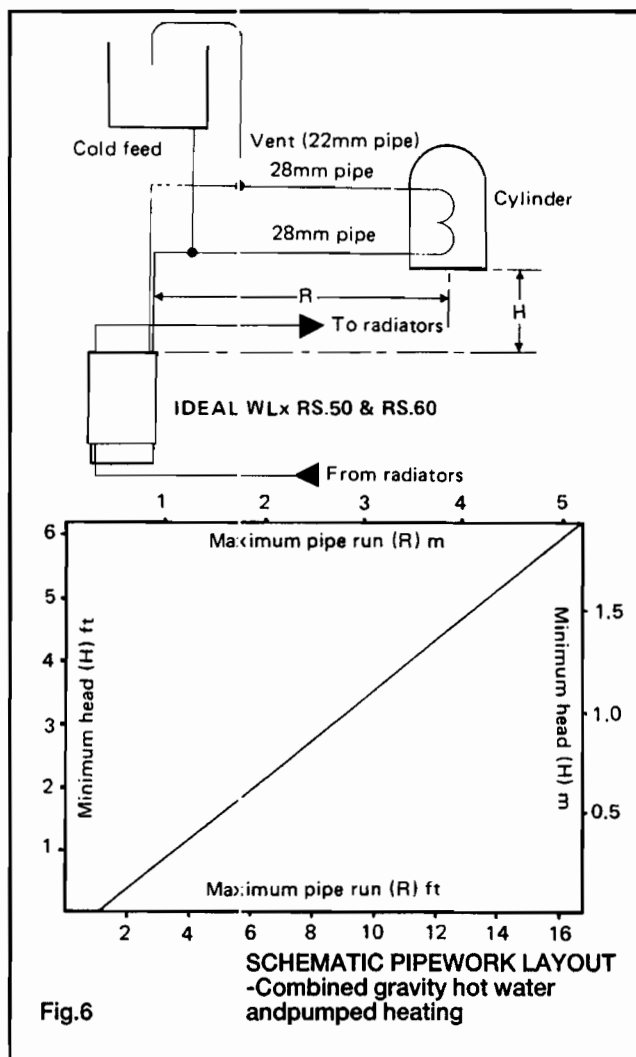
With reference to Fig. 7 the following assumptions and conditions apply:

- (a) Open vent and cold feed connections are made to the boiler flow/return tappings as shown.
- (b) The boiler is assumed to be the highest point of the circulating system.
- (c) The circulating pump is positioned on the FLOW and the vertical distance between the pump and 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.
- (d) 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.
- (e) 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 any doubt contact Stelrad Group.

FITTING THE AIR/FLUE DUCT ASSEMBLY AND TERMINAL GRILLE - Refer Fig. 8

1. Separate the terminal grille (E) from the terminal duct assembly (C) by removing the two screws (F).
2. Apply approximately 25 mm (1 in) 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).
3. From OUTSIDE the building, pass the terminal duct assembly (c) through the opening and slide it into the boiler air and flue ducts ensuring that duct (D) slides OVER the flue duct (B) and that duct (H) slides INTO the air duct (A).
4. When correctly entered, push the terminal duct assembly (C) fully in, until the side fixing brackets (G) contact the wall.
5. Make good between wall and duct outside and inside the building.
6. Fasten the terminal grille (E) to the duct assembly (C) with the two screws (F).



EXTENSION DUCT

An extension duct is available for installation where wall thickness exceeds 403 mm (16 in).

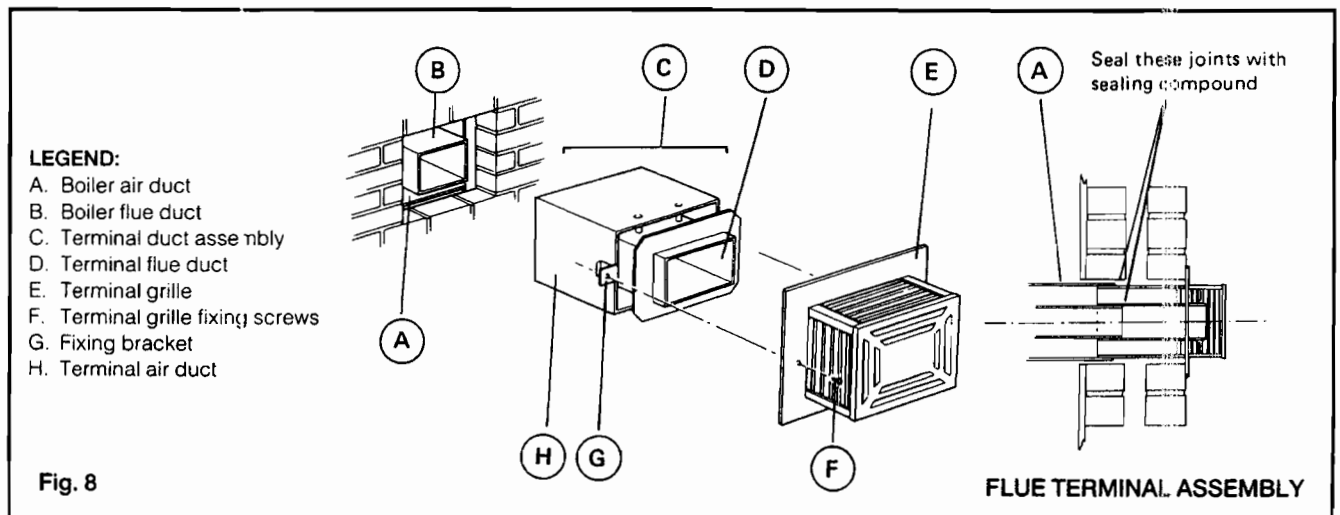
Fitting the extension duct - Refer Fig. 9.

The extension duct has ends of unequal sizes corresponding to the metal thickness.

1. Separate the terminal grille (E) from the terminal duct assembly (C) by removing the two screws (F).
2. Apply approximately 25 mm (1 in) wide coating of the sealing compound packed with the terminal grille to the ends of the extension duct and boiler ducts as follows:-
To the OUTER surface of the SMALL end of the extension air duct (J),
To the INNER surface of the boiler air duct (A),
To the INNER surface of the LARGE end of the extension flue duct (K),
To the OUTER surface of the boiler flue duct (B).
3. Slide the SMALL end of the extension air duct (J) through the wall opening and approximately 50 mm (2 in) INTO the boiler air duct (A).
4. Slide the LARGE end of the extension flue duct (K)

through the wall opening and approximately 50 mm (2 in) OVER the boiler flue duct (B).

5. Apply approximately 25 mm (1 in) wide coating of the sealing compound provided to the ends of the extension duct and terminal ducts as follows:-
To the INNER surface of the LARGE end of the extension air duct (J)
To the OUTER surface of the terminal air duct (H)
To the OUTER surface of the SMALL end of the extension flue duct (K)
To the INNER surface of the terminal flue duct (D)
6. Fit the terminal duct assembly (C) from OUTSIDE the building, sliding the duct (D) OVER the extension flue duct (K) and duct (H) INTO the extension air duct (J).
7. When correctly entered, push the terminal duct assembly (C) fully in until the side fixing brackets (G) contact the wall.
8. Make good between wall and duct outside and inside the building.
9. Fasten the terminal grille (E) to the duct assembly (C) with the two screws (F).



LEGEND:

- A. Boiler air duct
- B. Boiler flue duct
- C. Terminal duct assembly
- D. Terminal flue duct
- E. Terminal grille
- H. Terminal air duct
- J. Extension air duct
- K. Extension flue duct

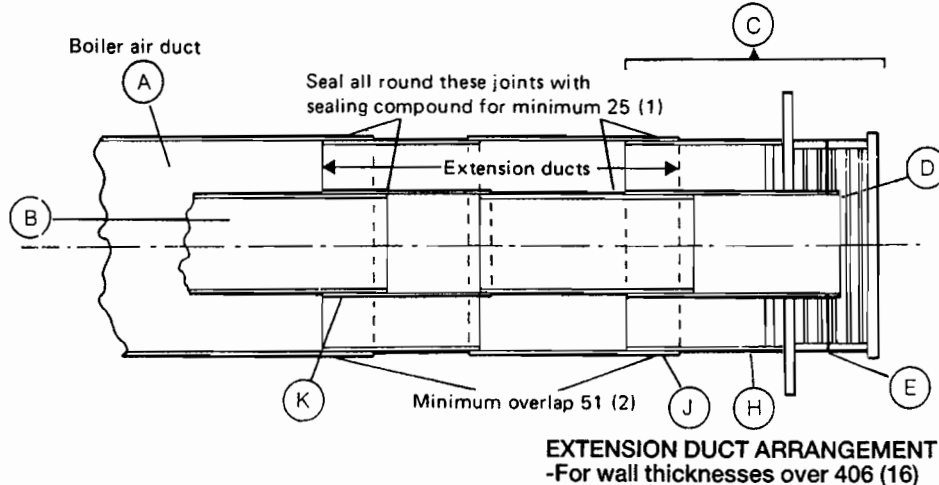


Fig. 9

GAS CONNECTIONS

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

Extend a gas supply pipe NOT LESS THAN 15 mm O.D. to the boiler and connect to the gas service cock - situated at the bottom left hand side of the boiler. Connection must be made from the REAR of the boiler.

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

ELECTRICAL CONNECTIONS

WARNING: The appliance MUST be efficiently earthed.

A mains supply of 220/240 Volt, 50 Hz., ~, 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 24/0.2 mm. (0.75mm²)

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. 10, fused at 3 Amp and complying with the requirements of BS. 1363.

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

EXTERNAL CONTROLS

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

The wiring diagrams illustrated in Figs. 13-20 cover the systems most likely to be fitted to this appliance.

For wiring external controls to the IDEAL WLx boiler, reference should be made to the system wiring diagrams supplied by the relevant Manufacturer, in conjunction with the wiring diagrams in Figs. 11 and 12.

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 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 Fig. 14.
3. Controls that switch the circulating 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 MUST NOT BE FITTED. Advice on required modifications to the wiring may be obtained from the component Manufacturers.

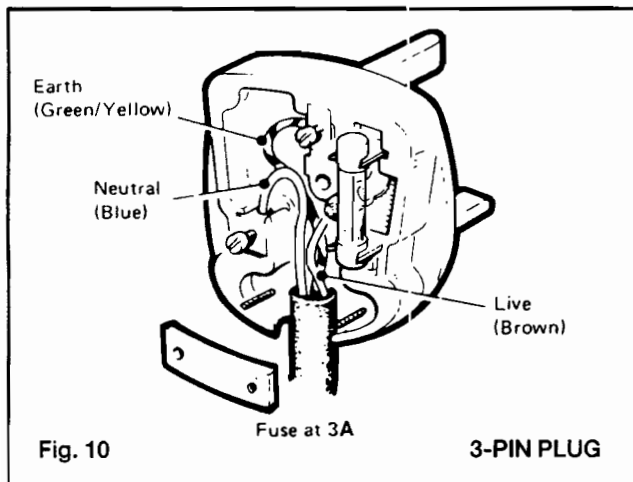


Fig. 10

3-PIN PLUG

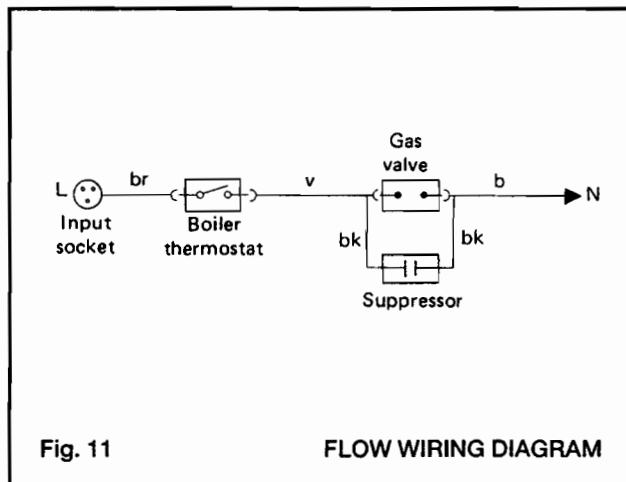


Fig. 11

FLOW WIRING DIAGRAM

INTERNAL WIRING

The internal wiring of the control box is shown in Figs. 11 and 12.

A wiring diagram is also included on the Lighting Instruction label on the inside of the controls pod door.

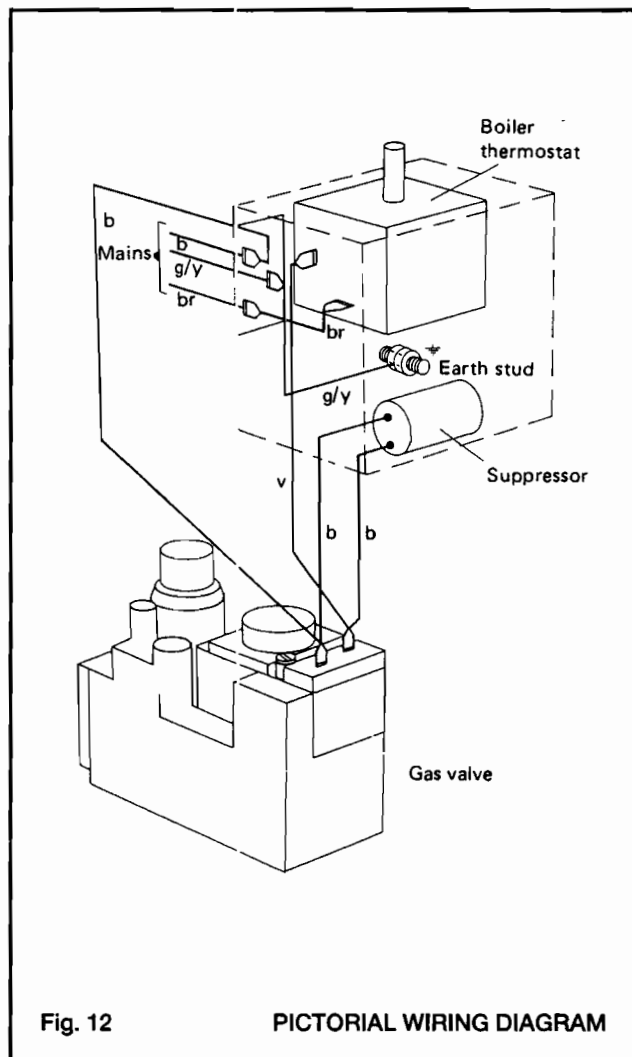
A plug and socket connector is provided on the boiler control box for the mains supply.

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

- Live (Brown) to L
- Neutral (Blue) to N
- Earth (Green/Yellow) to ⚡

Notes:

- (a) Connections between a frost thermostat and the time control should be made without disturbing other wiring.
- (b) A frost thermostat should be sited in a cool place in the house, but where it can sense heat from the system.
- (c) When the optional Programmer Kit is fitted, the incoming mains lead should be connected to the programmer input terminals, and the boiler control box three-pin plug wired in accordance with the system diagrams shown in Fig. 2-9 inclusive, of the Ideal WLx Programmer Kit Installation Instructions.



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 details in the Instructions for the British Gas Multimeter.

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 loosening the union on the gas service cock and purging until gas is smelled.

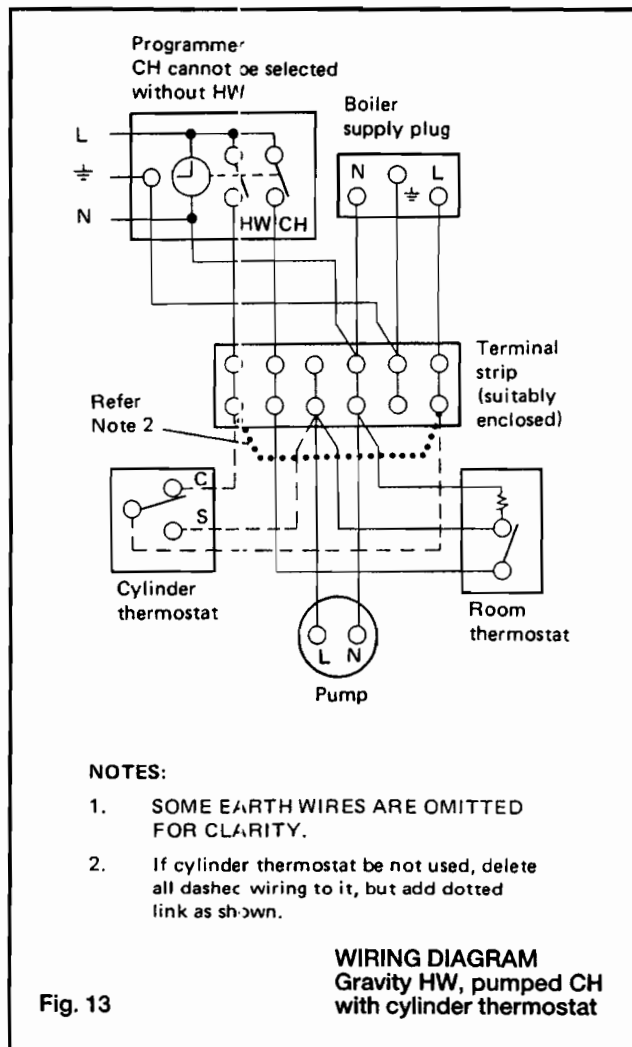
Retighten the union and check for gas soundness.

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.

INITIAL LIGHTING - Refer Fig. 21

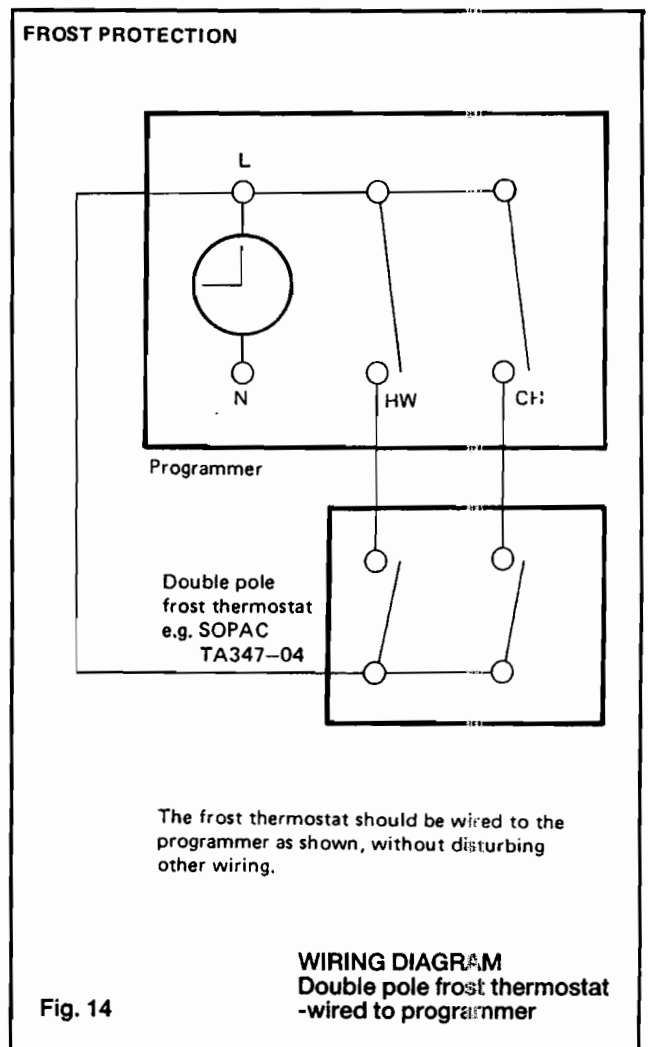
1. Check that the gas service cock (H) is ON and that the boiler thermostat control knob (D) is OFF.
2. Slacken the screw in the burner pressure test nipple (F) and connect a gas pressure gauge via a flexible tube.
3. Turn the gas control knob (A) CLOCKWISE until resistance is felt and then release it.
4. Push in and retain fully depressed the gas control knob (A), press and release the piezo ignition button (G) repeatedly until the pilot lights.
5. Hold the gas control knob depressed for 15 seconds after the pilot burner has ignited.
6. If the pilot fails to remain alight at this stage, repeat the procedure detailed above but wait longer than 15 seconds before releasing the gas control knob (A).
7. 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.



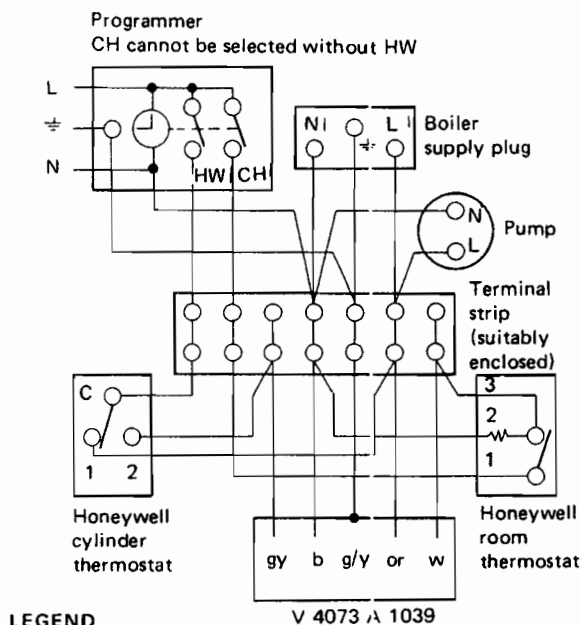
NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY.
2. If cylinder thermostat be not used, delete all dashed wiring to it, but add dotted link as shown.



The frost thermostat should be wired to the programmer as shown, without disturbing other wiring.

HONEYWELL 'Y' PLAN



LEGEND

gy	—	grey	or	—	orange
b	—	blue	w	—	white
g/y	—	green/yellow			

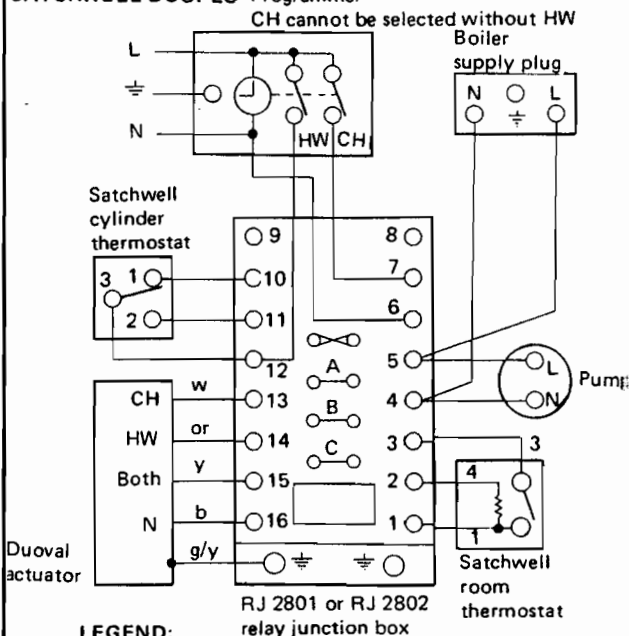
NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Numbering of terminals on thermostats applies only to the Manufacturer mentioned.
3. This is a fully controlled system — set the boiler thermostat to maximum.

WIRING DIAGRAM -Pumped only system

Fig. 15

SATCHWELL DUOFLO Programmer



LEGEND:

w	—	white	b	—	blue
or	—	orange	g/y	—	green/yellow
y	—	yellow			

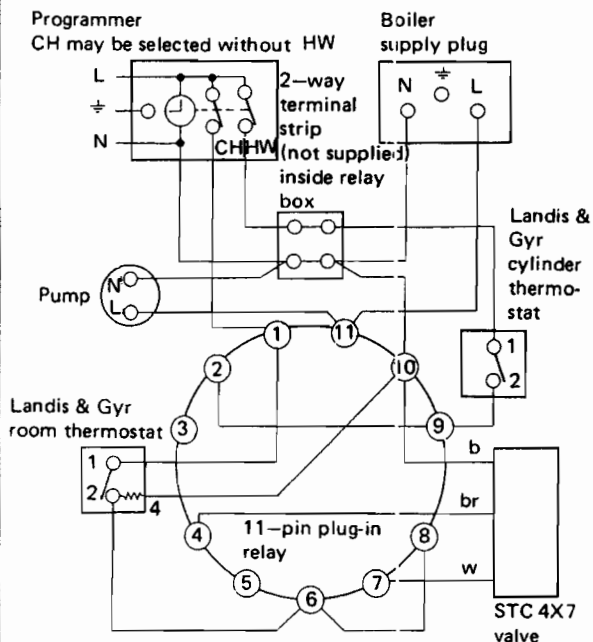
NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Numbering of terminals on thermostats applies only to the Manufacturer mentioned.
3. This is a fully controlled system — set the boiler thermostat to maximum.

WIRING DIAGRAM -Pumped only system

Fig. 16

LANDIS & GYR LGM



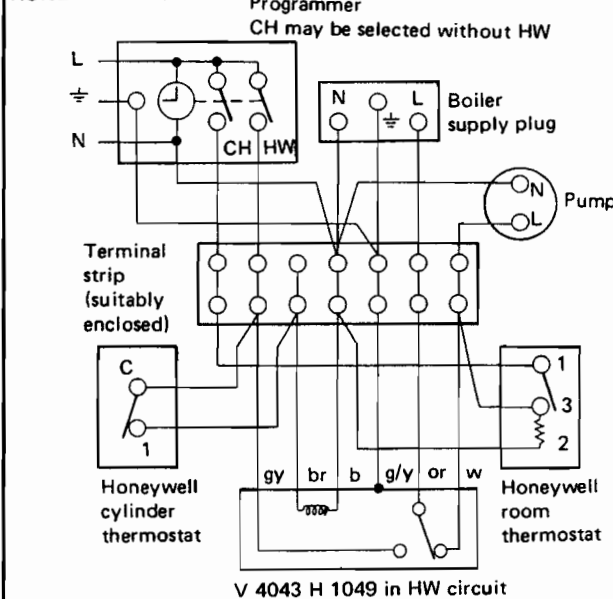
NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Numbering of terminals on thermostats applies only to the Manufacturer mentioned.
3. This is a fully controlled system — set the boiler thermostat to maximum.

WIRING DIAGRAM -Pumped only system

Fig. 17

HONEYWELL 'C' PLAN



LEGEND:

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

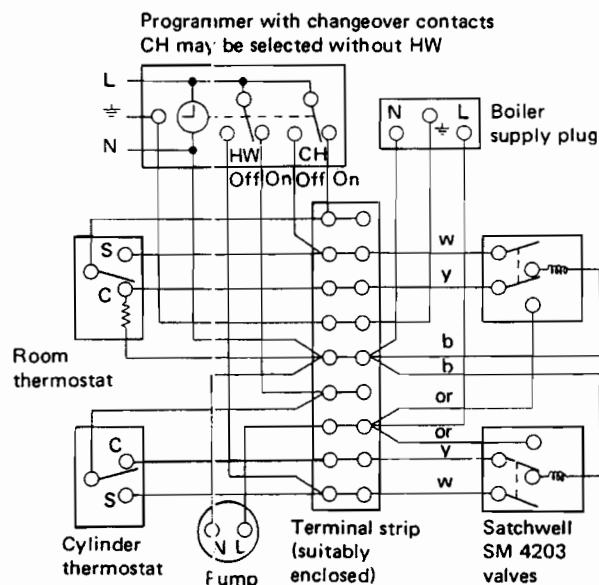
NOTES:

1. SOME EARTH WIRES ARE OMITTED FOR CLARITY. ENSURE PROPER EARTH CONTINUITY WHEN WIRING.
2. Numbering of terminals on thermostats applies only to the Manufacturer mentioned.
3. This is a fully controlled system — set the boiler thermostat to maximum.

WIRING DIAGRAM -Gravity HW, pumped CH system

Fig. 18

TWIN MOTORISED VALVES



NOTES:

LEGEND:

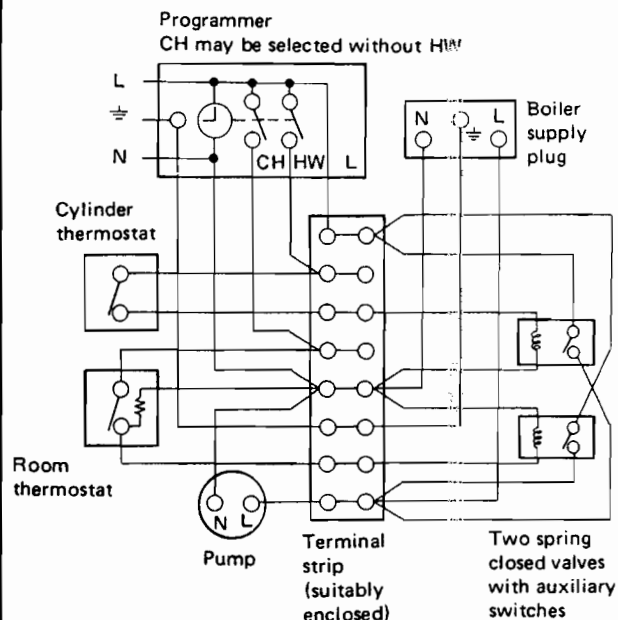
w — white
y — yellow
b — blue
or — orange

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 maximum.
3. Satchwell SM 4203 valves illustrated. Other makes may require auxiliary contacts to be separately energised.
4. Programmers with neons fitted — neons may light in error under certain circumstances with this system.

Fig. 19

WIRING DIAGRAM -Pumped only system

TWO SPRING CLOSED VALVES



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 maximum.

Fig. 20

WIRING DIAGRAM -Pumped only system

8. Switch the electricity supply ON, and check that all external controls are calling for heat.
9. Turn the boiler thermostat knob (D) to position 6 and check that the burner cross-lights smoothly.
10. Test for gas soundness around the boiler gas components using leak detection fluid.
11. Turn the boiler thermostat knob to OFF and fit the boiler casing as follows:-

Note: Before fitting the casing, remove the retaining tape from the fascia.
Refit the fascia if required.

Fitting the Casing

- (a) Lift the boiler casing up to the boiler assembly and locate it on the rests on each side of the backplate.
 - (b) Push the casing so that the studs at each corner pass through the holes in the backplate.
 - (c) Secure with the four wind nuts provided. The casing **MUST** seat correctly and compress the sealing strip to make an airtight joint. If side clearance is limited this may be checked by ensuring that the top and bottom edges of the casing are correctly located.
12. Turn the boiler thermostat knob (D) to position 6 and check that the burner cross-lights smoothly from the pilot flame.
 13. Operate the boiler for ten minutes to stabilise the burner temperature.

The boiler is pre-set at the factory to its highest nominal rating, but can be range rated to suit the system design requirements. - Refer Table 2 on Page 2. If the burner pressure setting requires adjustment proceed as follows:-

- (a) Remove the protective cap from the pressure adjusting screw (B).
 - (b) Turn the screw **CLOCKWISE** to **INCREASE** the pressure or **ANTI-CLOCKWISE** to **DECREASE** the pressure.
 - (c) Replace the protective cap.
14. Set the indicator on the Data Plate, located at the top RH side of the boiler back panel, to the appropriate burner setting pressure.

15. Turn the boiler thermostat knob to OFF
16. Remove the pressure gauge and tube, and retighten the sealing screw in the pressure test nipple, ensuring that a gas-tight seal is made.
17. Locate the top of the controls pod in the runners on the underside of the boiler casing and slide the pod into position.
18. Fit the side plates, if required, as follows:-
Align the two slots in the side plate with the brackets behind the edge of the boiler back plate and engage by pulling the plate forward.

Note: The side plates are right and left handed.

GENERAL CHECKS

Make the following checks for correct operation:

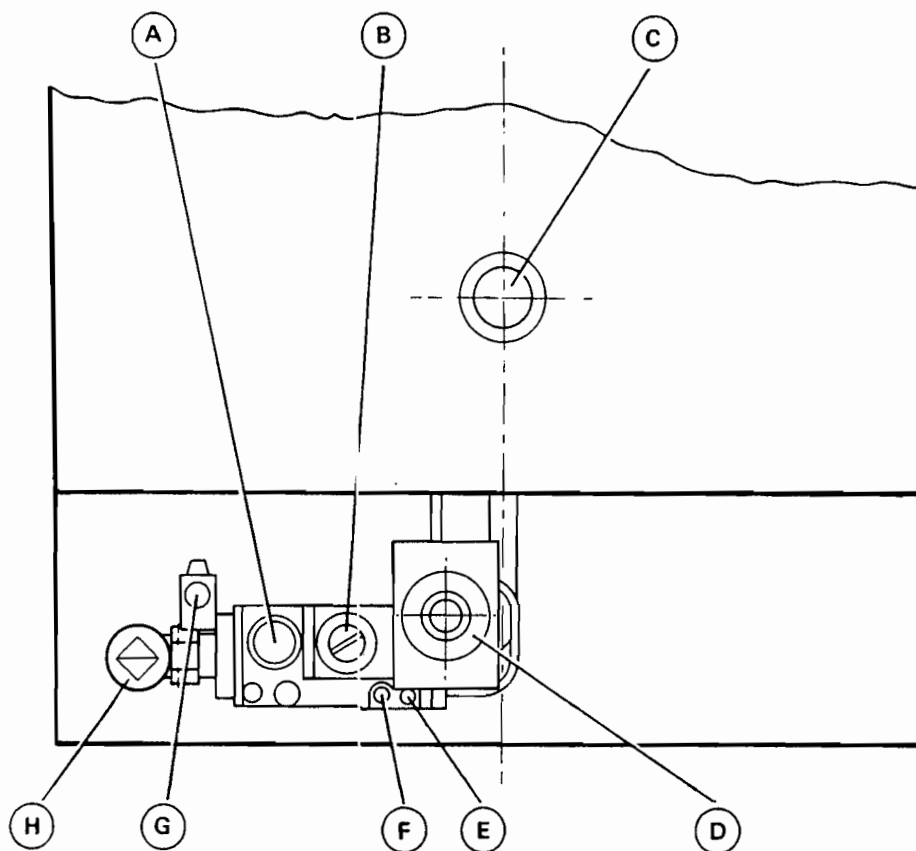
1. Open the controls pod door.
2. Turn the boiler thermostat OFF and ON, and check that the main burner is extinguished and relights in response.
3. Check that the programmer, if fitted, and all other system controls function correctly.
Operate each control separately and check that the main burner or circulating pump, as the case may be, responds.

4. 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 (H) 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 60 seconds.
- (b) Open the gas service cock and re-light the pilot.
- (c) Turn the boiler thermostat knob ON and the burner should light.
- (d) Turn the gas control knob (A) **CLOCKWISE** until resistance is felt and then release it. The main burner and pilot flames should shut down immediately.

Note: A latch in the gas control valve provides a safety delay period of approximately 30 seconds before the boiler can be re-lit.



LEGEND:

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

Fig. 21

BOILER CONTROLS

5. Water Circulation System

- (a) With the system HOT examine all water connections for soundness.
- (b) With the system still hot turn off the gas, water and electricity supplies to the boiler and drain down in order to complete the flushing process.
- (c) Re-fill and vent the system, - clear all air locks and again check for water soundness.

Finally:-

Set the controls to the User's requirements, and close the controls pod door.

Notes:

1. If an optional Programmer Kit is fitted refer to the Programmer Kit Installation and User's Instructions.
2. The temperatures quoted below are approximate and vary between installations:

Table 8

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

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

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 to the Householder and explain his/her responsibilities under the Gas Safety, (Installation and Use) Regulations 1984.
2. Draw attention to the Lighting Instruction label affixed to the inside of the controls pod 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 in-operative 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, for the economic use of the system.
7. If an optional Programmer Kit is fitted, then draw attention to the Programmer Kit User's Instructions and hand them to the Householder.
8. 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.

SERVICING

WARNING:

ALWAYS turn OFF the gas supply at the gas 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 - Refer Fig. 1

1. Remove the controls pod by sliding it forward.
Note: If a Programmer Kit is fitted open the control pod door and slide the control pod forward sufficiently to remove the two screws securing the plug connector to the left hand side of the programmer, and pull out the plug connector.
Remove the controls pod, complete with the programmer, by sliding it forwards.
2. If the boiler is fitted with push-on side plates, remove by pushing them back to disengage from the retaining brackets.
3. Remove the four wing nuts, securing the boiler casing to the backplate, and remove the casing by pulling it forwards, taking care not to damage the glass fascia panel (if fitted).

TO REMOVE THE MAIN BURNER AND CONTROLS ASSEMBLY - Refer Figs. 22 & 23

1. Unclip the boiler thermostat capillary from the backplate.
Remove the split pin securing the thermostat phial and withdraw the phial from its pocket.
2. Unplug the mains connector from the left hand side of the control box.
3. Undo the union nut on the gas service cock.
4. Undo the two screws, securing the gas supply pipe sealing clamp to the backplate, and remove the clamp and front rubber block.
5. Support the burner and controls assembly, and remove the four nuts securing the burner to the backplate.
6. Withdraw the assembly from the boiler and remove to a convenient working surface for attention.
7. Brush off any deposits that may have fallen on to the burner head, ensuring the flame ports are un-obstructed, and remove any debris that may have collected.
Note: Brushes with metallic bristles must NOT be used.
8. Remove the main burner injector; ensure there is no blockage or damage.
9. Replace the injector - use an approved jointing compound, sparingly.
10. 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 burner is clean and unobstructed.
 - (c) The spark electrode is clean and undamaged.
 - (d) The spark lead is in good condition and securely connected.
 - (e) The spark gap is correct - Refer Figs. 24 & 25.
 - (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 Figs. 24 & 25.
 - (h) The thermocouple terminal at the gas valve is clean.

TO CLEAN THE FLUEWAYS - Refer Fig. 2

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

1. Remove the flue cleanout cover on top of the boiler
2. Remove the flueway baffles (RS 50 ONLY).
3. Remove all loose deposits from the heat exchanger, particularly from the flueways formed between the fins, using a suitable brush.
4. Refit the flueways baffles (RS 50 ONLY).
5. Refit the flue cleanout cover, replacing any damaged or deteriorating sealing gaskets using a suitable high temperature adhesive.

6. Refit the burner and controls assembly in reverse order
7. Reconnect the gas and electrical supplies.
8. Ensure the sight glass in the boiler casing is clean and undamaged.
9. Refit the boiler casing, controls pod, and side panels (if fitted).

PILOT BURNER

Light the pilot and check that the pilot flame envelops 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 - Fig. 21 as follows:-

- (a) Turn the gas control knob (A) CLOCKWISE until resistance is felt and then release it.
- (b) Turn the pilot pressure adjuster screw (E) CLOCKWISE until fully CLOSED.
- (c) Turn the pilot pressure adjuster screw ANTI-CLOCKWISE four full turns to give maximum setting.
- (d) Relight the pilot in accordance with the Lighting Instructions.

Note: A large capacity pilot filter is incorporated in the gas control valve, and requires no maintenance.

ADJUSTMENT OF GAS PRESSURE - Refer Fig. 21

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 adjustment should be made by using the pressure adjustment screw (B).

Refer to 'Initial Lighting' on P. 13.

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.

Sight Glass

1. Remove the fascia panel, if fitted, from the casing by sliding it upwards.
2. Unfasten the two nuts and washers holding the sight glass assembly to the casing front panel.
3. When fitting the new 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 fascia panel.

Boiler Thermostat

1. Unplug the mains connector from the side of the control box.
2. Unclip the thermostat capillary from the backplate.
3. Remove the split pin and withdraw the thermostat phial from the pocket.
4. Undo the two screws, securing the gas supply pipe sealing clamp to the backplate, and remove the clamp and front rubber block.
5. Remove the screw on the front of the control box, and pull away the cover.
6. Pull off the two electrical connections from the thermostat.
7. Pull off the thermostat knob.
8. Remove the thermostat capillary clip from the control box cover.
9. Remove the two screws securing the thermostat to the control box, and withdraw the thermostat.
10. Fit the new thermostat and re-assemble in reverse order, ensuring that the electrical connectors are at the bottom of the control box - Refer Fig. 28

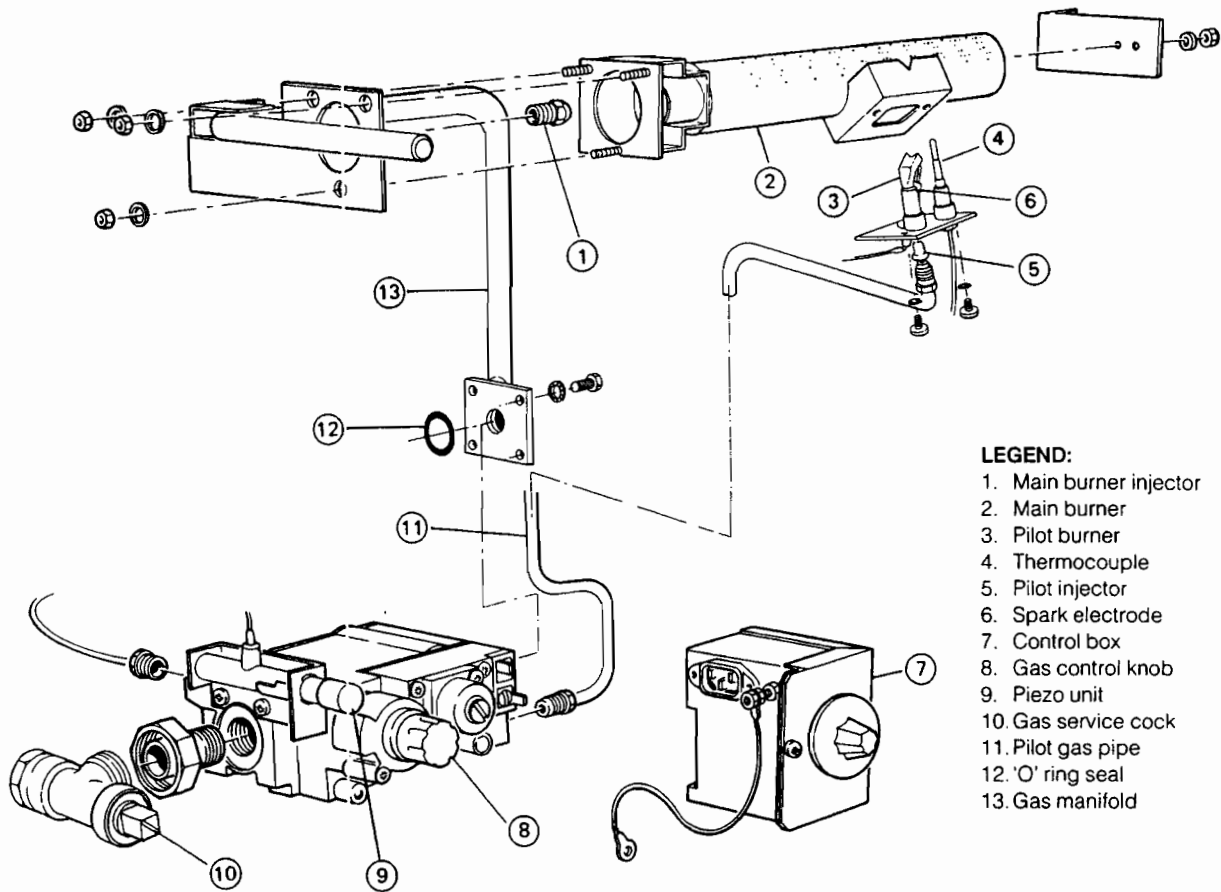


Fig. 22

BURNER AND CONTROL ASSEMBLY
-Ideal WLx RS. 50

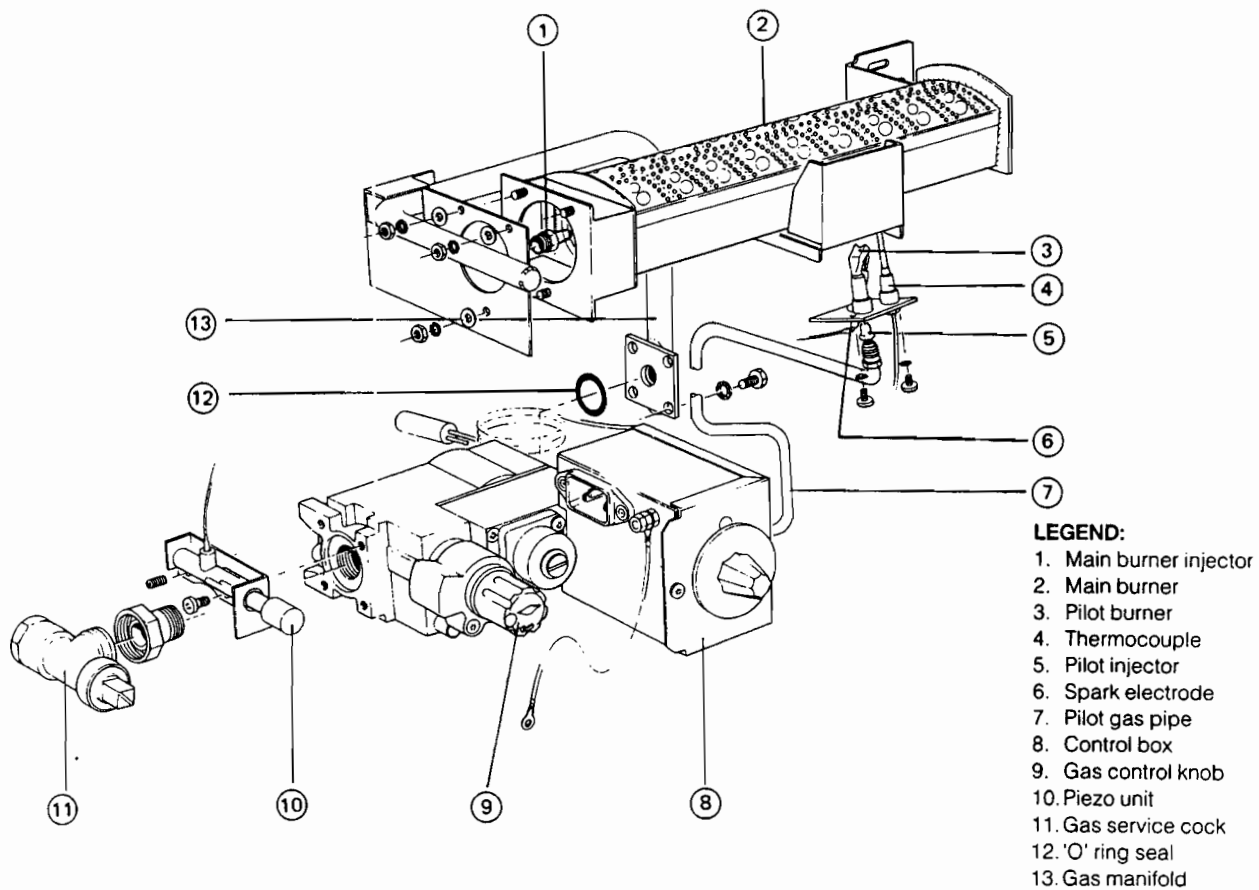


Fig. 23

BURNER AND CONTROL ASSEMBLY
-Ideal WLx RS. 60

Piezo Unit

1. Disconnect the spark lead from the piezo unit body.
2. Remove the screw and shakeproof washer securing the piezo unit to the gas control valve and withdraw the unit.
3. Fit the new unit and re-assemble in reverse order.

Spark Lead

1. Disconnect the spark lead from the piezo unit body, and from the base of the electrode.
2. Undo the two screws securing the gas supply pipe sealing clamp to the backplate, and remove the clamp and front rubber block.
3. Remove the clip, securing the lead to the pilot supply pipe, and withdraw the lead.
4. Fit the new lead and re-assemble in reverse order.

Thermocouple

1. Remove the clip from the pilot supply pipe.
 2. Undo the two screws securing the gas supply pipe sealing clamp to the back plate and remove the clamp and front rubber block.
 3. Undo the thermocouple connections at the pilot burner and gas control valve, and withdraw the thermocouple.
 4. Fit the new thermocouple and re-assemble in reverse order.
- Avoid sharp bends in the thermocouple and ensure that it follows the same route- as previously.

Pilot Burner

1. Remove the clip from the pilot supply pipe.
2. Undo the two screws securing the gas supply pipe sealing clamp to the backplate and remove the clamp and front rubber block.
3. Undo the thermocouple and pilot pipe connections at the gas valve and at the pilot burner, and pull clear of the pilot burner.
Do NOT lose the pilot injector which is a push fit in the pilot pipe connection to the pilot burner.
4. Pull off the spark lead from the base of the electrode.
5. Remove the two screws securing the pilot burner to the pilot shield and withdraw the pilot burner.
6. Transfer the electrode to the new pilot burner.
7. Fit the new pilot burner, ensuring that the pilot injector is in position when re-fitting the pilot pipe.
8. Re-assemble in reverse order.

Spark Electrode

1. Disconnect the spark lead from the electrode.
2. Remove the pilot burner assembly as previously described.
3. Unfasten the backnut, retaining the electrode, and withdraw from the pilot bracket.
4. Fit the new electrode and re-assemble in reverse order.

Control Box - Refer Fig. 28

1. Unplug the mains connector, from the left hand side of the control box.
2. Undo the two screws, securing the gas supply sealing clamp to the backplate, and remove the clamp and front rubber block.
3. Unclip the thermostat capillary from the backplate.
4. Remove the split pin and withdraw the phial from the thermostat pocket.
5. Remove the screw on the front of the control box, and withdraw the control box cover.

6. Disconnect the electrical leads from the gas control valve.
7. Remove the screw securing the control box body to the gas control valve and withdraw the box.
8. Fit the new control box, and re-assemble in reverse order.

Main Burner - Refer Figs. 22, 23 & 24

1. Remove the burner and controls assembly as previously described.
2. Remove the two screws securing the pilot burner assembly to the pilot shield.
3. Undo the three nuts securing the left hand end of the burner to the gas manifold, and remove the burner.
4. RS 60 only: Transfer the pilot shield to the new burner.
5. RS 50 only: Transfer the RH end support bracket to the new burner.
6. Fit the new burner in reverse order, being careful not to damage the main burner injector which is screwed into the gas manifold.

Gas Control Valve

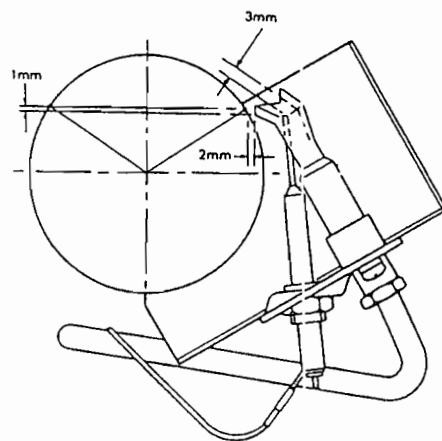
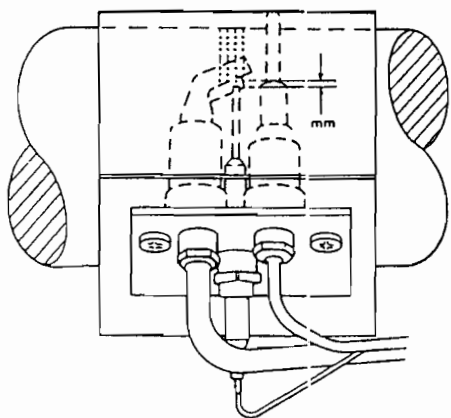
1. Remove the control box as previously described.
2. Remove the piezo unit, and transfer the locating grub screw to the new valve.
3. Undo the pilot pipe and thermocouple connections at the gas valve.
4. Undo the union nut on the gas service cock.
5. Unscrew the union from the left hand side of the valve and transfer it to the new valve, using a suitable jointing compound.
6. Remove the four screws securing the gas valve outlet pipe and withdraw the valve.
The sealing 'O' ring should be discarded and a new one fitted.
7. Fit the new gas valve ensuring that:
 - (a) The valve is fitted the right way round; an arrow engraved on the valve indicates the direction of flow.
 - (b) The sealing 'O' ring, supplied with the valve, is correctly fitted at the outlet flange.
8. Re-assemble in reverse order.

Casing Seals

1. Remove the old seals from the top and sides of the back plate and, also, from the middle edge of the boiler casing. Scrape off any traces of old adhesive, etc.
2. Peel the backing tape off the new sealing strip; apply to the back and sides of the backplate and also to the middle edge of the boiler casing.
The top strip should overlap the side strips at the top corners. Avoid stretching the strip and ensure a good bond by pressing down firmly.
3. Re-assemble in reverse order. Ensure that the casing is correctly seated -compressing the sealing strip to make an airtight joint. If the side clearances are limited then this can be checked by ensuring that the top and bottom edges of the casing are correctly located.

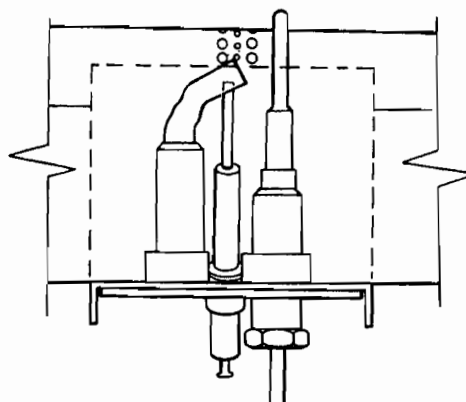
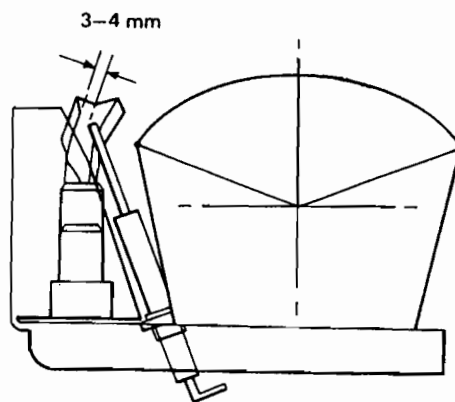
Pipe Sealing Blocks

1. Remove the burner and controls assembly as previously described.
2. Remove the sealing blocks in the pipe clamp and the backplate bracket.
3. Fit the new blocks and re-assemble in reverse order.



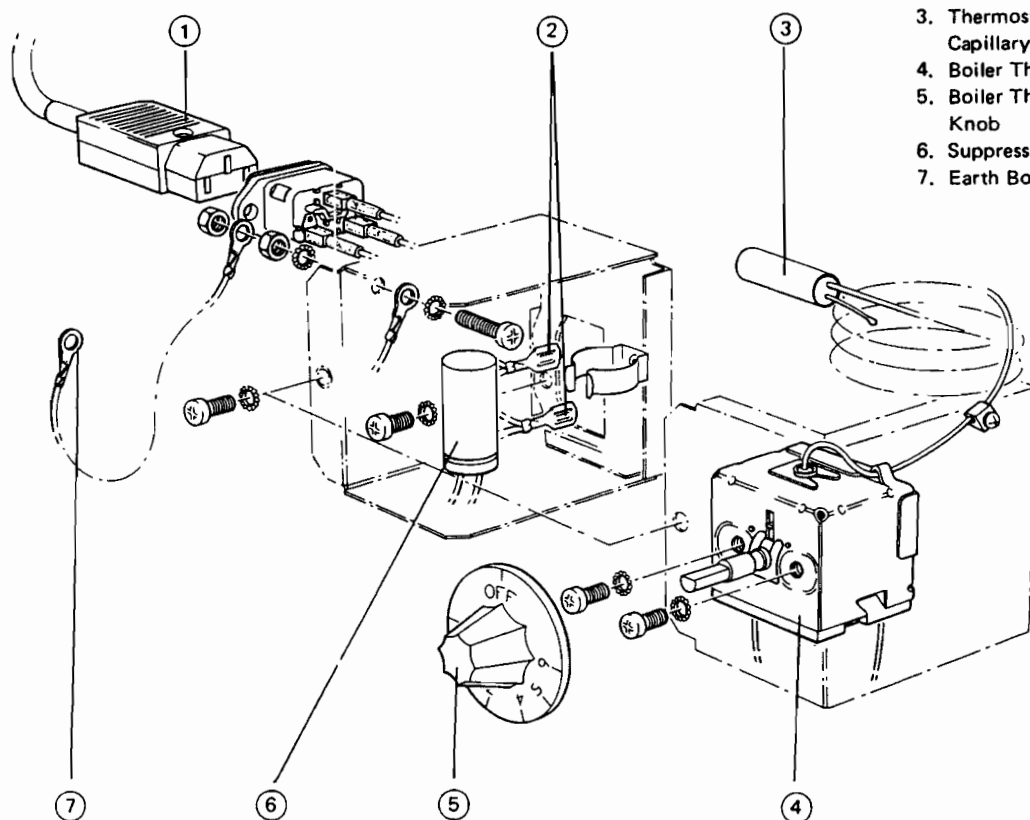
PILOT AND ELECTRODE POSITION
-Ideal WLx RS. 50

Fig. 24



PILOT AND ELECTRODE POSITION
-Ideal WLx RS. 60

Fig. 25



LEGEND:

1. Mains Plug Connector
2. Gas Valve Electrical Leads
3. Thermostat Phial & Capillary
4. Boiler Thermostat
5. Boiler Thermostat Knob
6. Suppressor
7. Earth Bonding Wire

Fig. 26

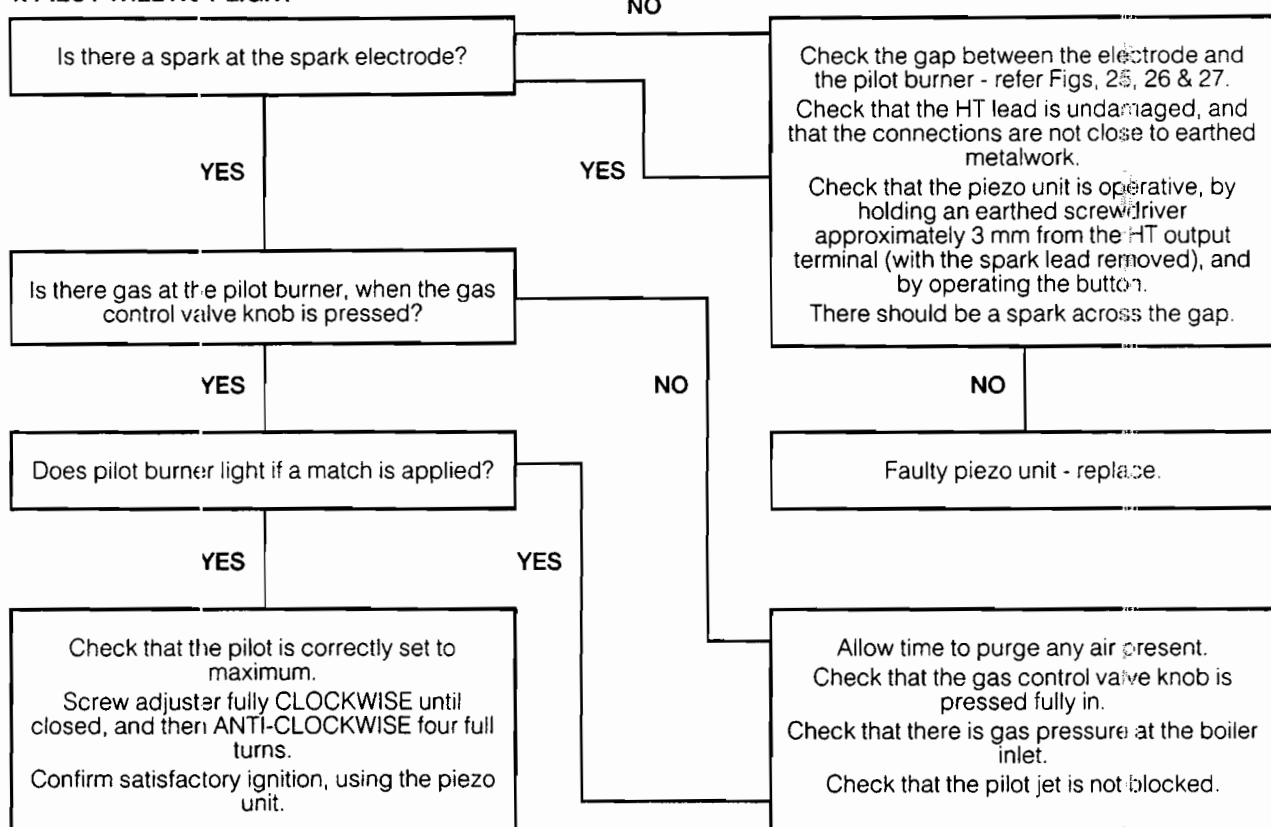
BOILER CONTROL BOX
-Exploded view

FAULT FINDING

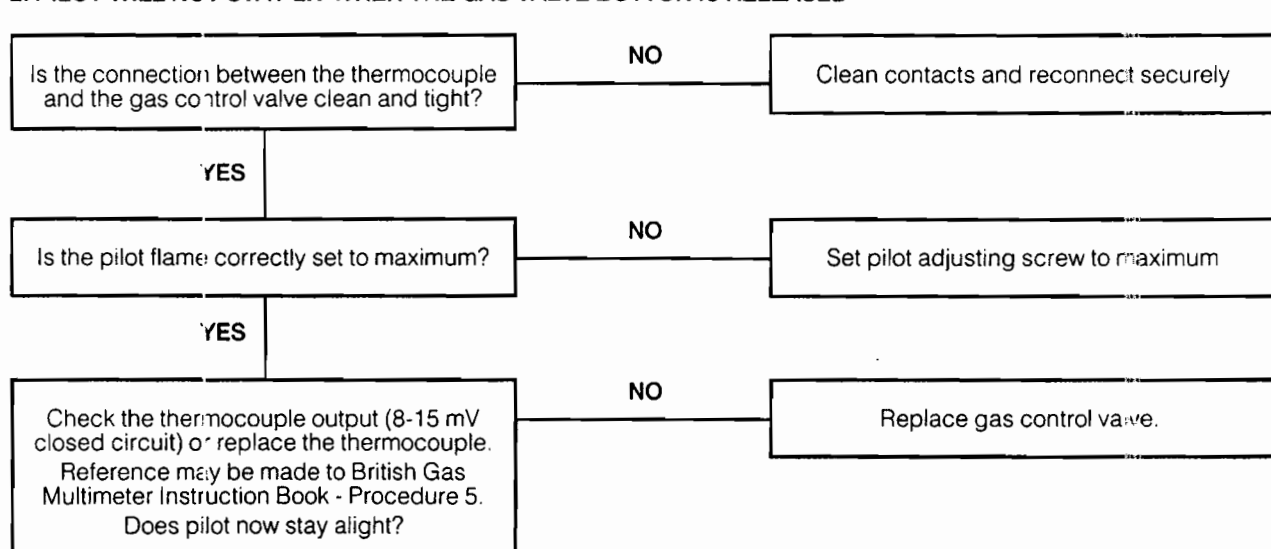
Before attempting any electrical fault finding; ALWAYS carry out the preliminary electrical system checks as detailed on pages 6-9 of the Instructions for the British Gas Multimeter

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

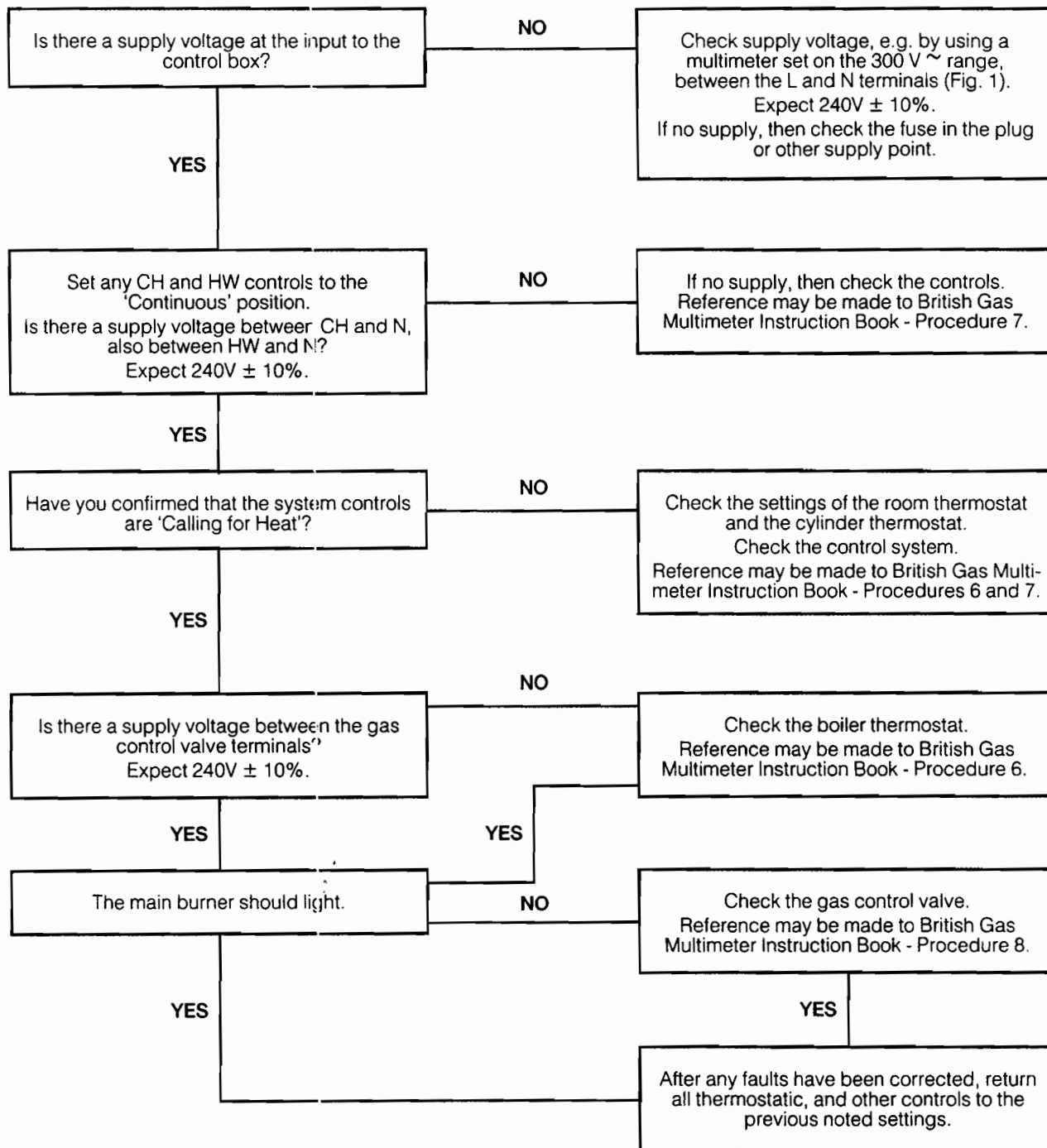
1. PILOT WILL NOT LIGHT



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



3. PILOT LIT, BUT NO MAINS GAS



SHORT LIST OF PARTS

The following list comprises parts commonly required as replacement components due to damage, expendability, or such that their failure or absence is likely to affect safety or performance.

The list is extracted from the British Gas List of Parts, which contains all available spare parts.

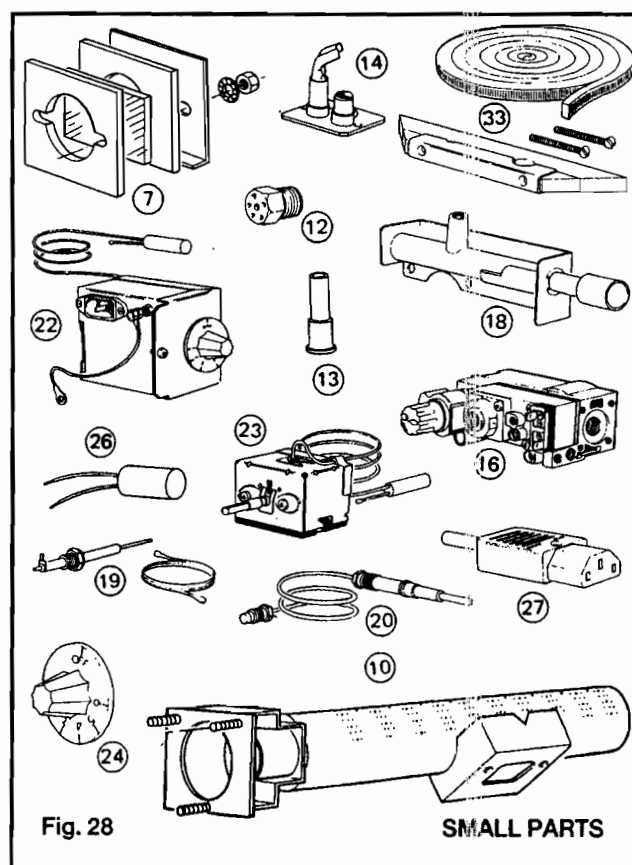
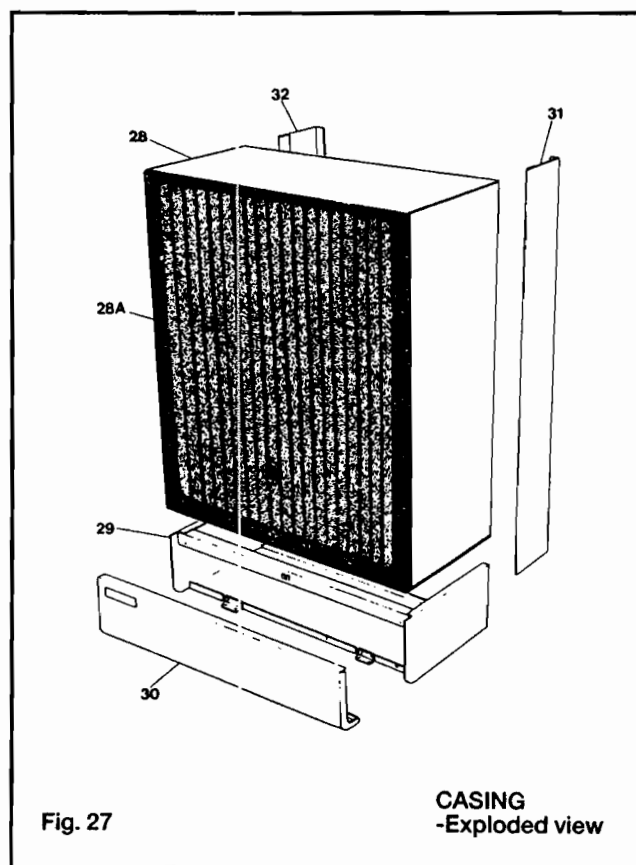
Details of the British Gas Lists are held by Gas Regions, STELRAD Distributors and by Merchants.

IDEAL WLx RS 50 GAS BOILER

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, 2- sight glass gaskets, 2 x M4 hex nuts and 2 x M4 shakeproof washers	1	189648175
10		Main burner - FURIGAS 118-500-022	1	189584084
12		Main burner injector - FURIGAS 015/002/000 (3.3)	1	189586069
13	382 536	Pilot burner injector - HONEYWELL .38/.36A No. 45003-508001	1	589040083
14	391 667	Pilot burner - HONEYWELL Q359 A1041 with injector Key No. 13	1	589040084
16	393 659	1/2 in. BSP HONEYWELL Compact gas control V 4600 A1023-240V	1	586121900
18	383 047	Spark Generator VERNITRON 60038, with RH outlet	1	589040086
19	393 630	Spark electrode and H/T lead assembly (H/T lead 460 mm lg.)	1	589030089
20	390 039	Thermocouple - HONEYWELL Q309A2739 - 24 in. lg.	1	576890051
22	354 991	Control box, including Key No.s 23, 24 & 26	1	589040065
23		Thermostat - RANCO CL6 P0105 with 48 in. capillary	1	589040051
24	382 327	Thermostat knob - RANCO 8315131	1	589020051
27	354 776	Mains connector - ASHLEY or BULGIN to CEE 22 sheet 5 and BS.4491	1	589030015
28		Boiler casing assembly, White Stove Enamel, with sight glass trim, bottom sealing strip, dimple foil insulation, and 4 x M5 wing nuts - includes Key No. 7	1	189 584 030
28A		Smoked brown glass fascia	1	189 580 Q85
29		Controls casing (less door), brown, with 2 hinges and door clip	1	189 580 088
30		Controls casing door, brown stove enamel, with name badge and Lighting Instructions Label	1	189 580 089
31		R.H. push on side plate	1	189 586 058
32		L.H. push on side plate	1	189 586 059
33	341 303	Sealing pack, comprising: 2 sealing strips - 485 mm lg., 2 sealing strips - 585 mm lg., 1 pair sealing blocks, pipe sealing clamp and 2 x M5 x 45 mm lg. csk. hd. screws	1	189 534 033
26	393 390	Suppressor assembly/can type- 85mm lds & harness	1	589 040 010



SHORT LIST OF PARTS

The following list comprises parts commonly required as replacement components due to damage, expendability, or such that their failure or absence is likely to affect safety or performance.

The list is extracted from the British Gas List of Parts, which contains all available spare parts.

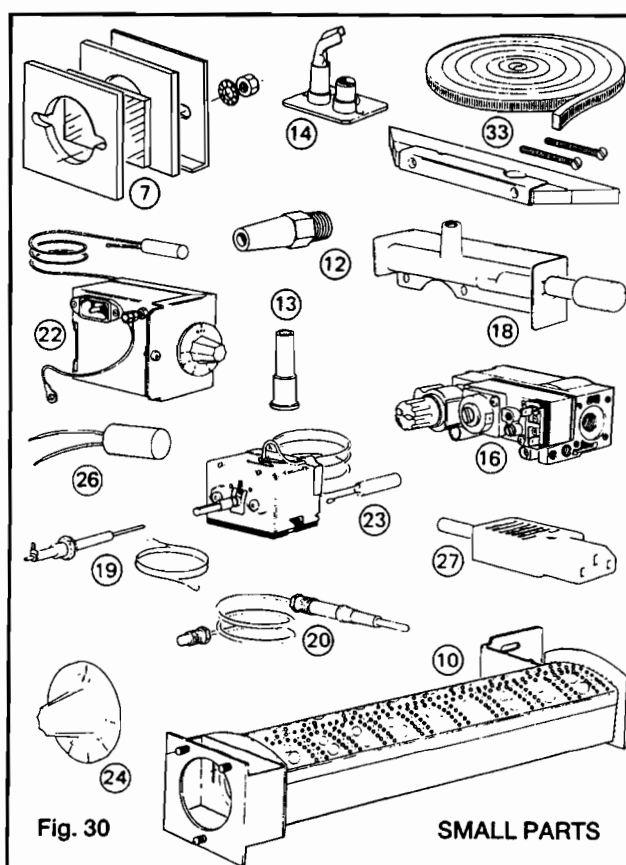
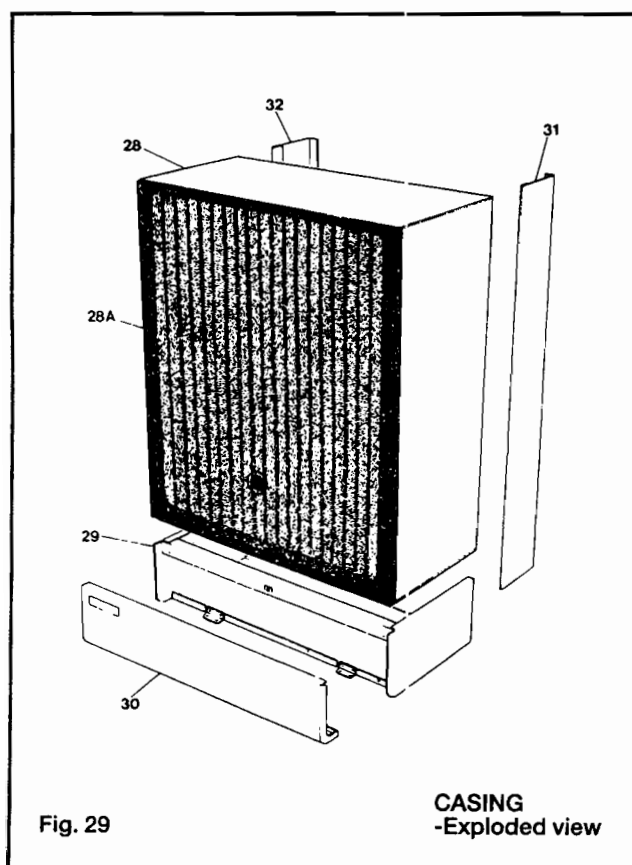
Details of the British Gas Lists are held by Gas Regions, STELRAD Distributors and by Merchants.

IDEAL WLx RS 60 GAS BOILER

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, 2- sight glass gaskets, 2 x M4 hex nuts and 2 x M4 shakeproof washers	1	189648175
10B	383 590	Main burner - AEROMATIC AC19/123232	1	189594084
12A	383 583	Main burner injector - AEROMATIC 939003	1	189596069
13	382 536	Pilot burner injector - HONEYWELL .38/.36A No. 45003-508001	1	589040083
14	391 667	Pilot burner - HONEYWELL Q359 A1041 with injector Key No. 13	1	589040084
16	393 659	1/2 in. BSP HONEYWELL Compact gas control V 4600 A1023-240V	1	586121900
18	388 047	Spark Generator VERNITRON 60038, with RH outlet	1	589040086
19	388 003	Spark electrode -KIGASS-and H/T lead assembly (H/T lead 460 mm lg.)	1	589030089
20	390 039	Thermocouple - HONEYWELL Q309A2739 - 24 in. lg.	1	576890051
22	354 991	Control box, including Key No.s 23, 24 & 26	1	589040065
23		Thermostat - RANCO CL6 P0105 with 48 in. capillary	1	589040051
24	382 327	Thermostat knob - RANCO 8315131	1	589020051
27	354 776	Mains connector - ASHLEY or BULGIN to CEE 22 sheet 5 and BS.4491	1	589030015
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28A		Smoked brown glass fascia	1	189 580 085
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26	393 390	Suppressor assembly/can type- 85mm lds & harness	1	589 040 010





**THIS SYMBOL IS YOUR
ASSURANCE OF QUALITY**

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

STELRAD GROUP pursues a policy of continuing improvement in design and performance of its products. The right is, therefore, reserved to vary specification without notice.

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H.0464 (4) 3/86

Printed in England.