

STELRAD

April 1981

MEXICO SUPER

RS 40 & RS 55

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.

B.G.C. Appliance No.'s

STELRAD MEXICO SUPER

RS 40 41 407 19

RS 55 41 407 21

NOTE: 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 40	RS 55
Main Burner Bar		Furigas SR604 4 24	Bray Mk.9 AB 16641
Gas Control		½ in. BSP Honeywell Compact V.4600 A 1023 240v	
Burner Injector		Bray Cat. 16 Size 1100	Bray Cat. 10 Size 1500
Pilot Injector		Honeywell 0,30 45000062-010	
Gas Supply Connection		Rc½	
in. BSP		½	
Flow Connections		Rc1	
in. BSP		1	
Return Connections		Rc1	
in. BSP		1	
Maximum Static Water Head		27.5	
m		90	
ft.			
Electric Supply		220/240 volt. 50 Hz	
External Fuse Rating		3 amp	
Water Content		litre	16
gal.		3,5	20
Dry Weight		kg	78,9
lb		173	86,4
			190
PERFORMANCE DATA		RS 40	RS 55
Boiler Input *	min.	kW	11,72
		Btu/h x 1 000	40
max.	kW	15,12	15,83
	Btu/h x 1 000	51	54
Boiler Output to Water	min.	kW	8,79
		Btu/h x 1 000	30
max.	kW	11,72	11,72
	Btu/h x 1 000	40	40
Burner Setting Pressure	min.	mbar (gauge)	8,7
		in. w.g.	3,5
max.	mbar (gauge)	14,1	8,6
	in. w.g.	5,6	3,4

Note: * To obtain gas consumption (a) in cu. ft/h — divide heat input (Btu/h) by C.V. of the Gas (Btu/cu.ft).
(b) in litres/second — divide heat input (kW) by C.V. of the gas (MJ/m³).

STELRAD GROUP

The Stelrad Mexico Super RS 40 and RS 55 are floor-standing, balanced flued gas boilers, range rated, having outputs of 8.79 to 11.72 kW (30 000 to 40 000 Btu/h and 11.72 to 16.12 kW (40 000 to 55 000 Btu/h) respectively. The boiler is supplied with an insulating blanket of aluminium foil backed fibreglass, covering the top and sides of the boiler body, and held in place by a securing strap. (See Fig. 1).

The boiler casing is of mild steel, white enamelled top, sides and lower front panel, with the upper front panel coloured Bedouin beige.

The boiler thermostat is located behind the lower front panel, in the control box mounted on the gas valve. Pump kits which fit neatly within the boiler casing, are

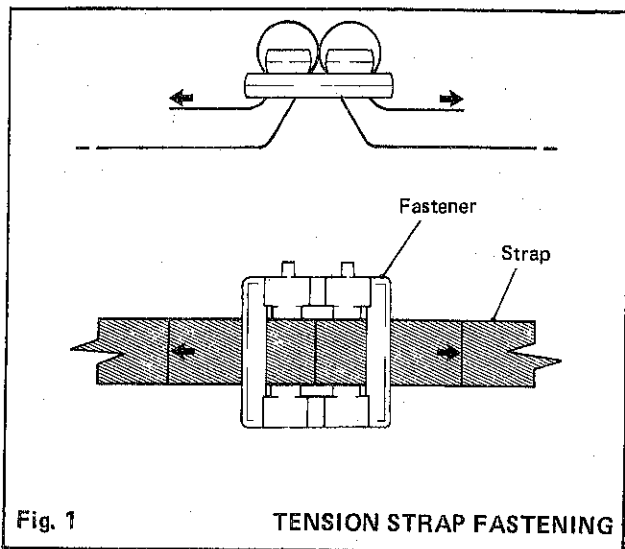



Fig. 1 TENSION STRAP FASTENING

available as optional extras. 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 DHW only, pumped central heating only, or pumped central heating combined with either a pumped or gravity circulating indirect DHW circuit.

IMPORTANT

Gas Safety Regulations, 1972:

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. Regulations, the by-laws of the Local Water Undertaking, any relevant requirements of the Local Authority and the relevant recommendations of the following British Standards:

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 supplies for domestic purposes (2nd Family gases).

BS 5440:1 Flues (for gas appliances of rated input not exceeding 60 kW).

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

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

LOCATION OF BOILER

The floor must be flat and level and of a suitable load bearing capacity. The boiler may be fitted on a combustible floor, and insulation, other than that required by the Local

Authority and Building Regulations, is not necessary. The boiler must be installed against an external wall, the back of the boiler cabinet may be fitted up to the wall. The boiler may be installed in any room, although particular attention is drawn to the requirements of the I.E.E. 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 containing a bath or shower. Where installation will be in an unusual position, 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 the 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. Side clearance is only necessary for installation. The amount of side clearance will depend on the type of connections used. Where side units are modified to facilitate installation then no clearance is required.
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 by the local Gas Region or 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 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 appliance MUST be installed so that the flue terminal discharges directly into the external air.
2. Termination should be on a clear expanse of wall, the terminal being preferably NOT less than 600mm (2ft) away from a corner, recess or projection.
3. Do NOT install the terminal:
 - (a) Within 300mm (1ft), measured vertically, from the bottom of an openable window, air vent or any other ventilation opening.
 - (b) Within 300mm (1ft) above adjacent ground level.
 - (c) Within 600mm (2ft) of any surface facing the terminal.
 - (d) Immediately below eaves or a balcony.
 - (e) Where it is subject to accidental obstruction.
4. Where the lowest part of the terminal is less than 2m (6.6ft) above the level of any ground, balcony, flat roof or place to which people have access, the terminal MUST be protected by a guard of suitable material. The

dimensions of the guard shall be such that when fitted in accordance with the manufacturer's instructions, it shall be at least 50mm (2in) from any part of the terminal, not including the wall plate.

The guard shall not have any sharp edges likely to cause injury, nor shall any opening permit the entry of a ball of 16mm diameter under a force of 5N.

The material finish and mechanical strength of the guard shall be such as to ensure a reasonable life in normal working conditions. The guard shall not affect the performance of the appliance.

Terminal guards are available from:—

Quinnel, Barret & Quinnel Ltd., 884 Old Kent Road, London SE 15, and from Tower Flue Components Ltd., Vale Rise, Tonbridge, Kent. TN9 1TB.

- The air inlet/products outlet duct, and the terminal of the boiler MUST be NOT closer than 50mm (2in) to combustible material.

Detailed recommendations on protection of combustible material are quoted in BS 5440:1.

BOILER TERMINAL

The terminal box of the balanced flue, with the addition, if necessary, of a duct extension, can be adapted to accommodate various wall thicknesses. Refer 'PACKAGING' (page 4).

Note: Where the boiler is to be installed in line with metric kitchen units, (i.e. 600mm in depth), a special flue terminal is available.

AIR SUPPLY

Detailed recommendations for air supply are given in BS 5440:2, the following notes being 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.

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

The minimum effective areas of the permanent air vents required in the cupboard/compartment are as follows:—

RS.40

Position of air vent	Air from room/ internal space	Air direct from outside
High Level	140cm ² (22in ²)	70cm ² (11in ²)
Low Level	140cm ² (22in ²)	70cm ² (11in ²)

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

RS.55

Position of air vent	Air from room/ internal space	Air direct from from outside
High Level	190cm ² (30in ²)	95cm ² (15in ²)
Low Level	190cm ² (30in ²)	95cm ² (15in ²)

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

The appliance 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 resistance of the boiler is negligible, e.g. at 55 000 Btu/h output with an 11°C temperature difference, the resistance will be approximately 2in. w.g. (5 mbar).

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 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. 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 are 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 to the opposite side. The boiler MUST be vented. If venting cannot be done via a flow connection, a separate vent must be fitted by the installer.

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.

Provision for the fitting of a drain tap is provided on the bottom front face of the heat exchanger.

ELECTRICAL SUPPLY

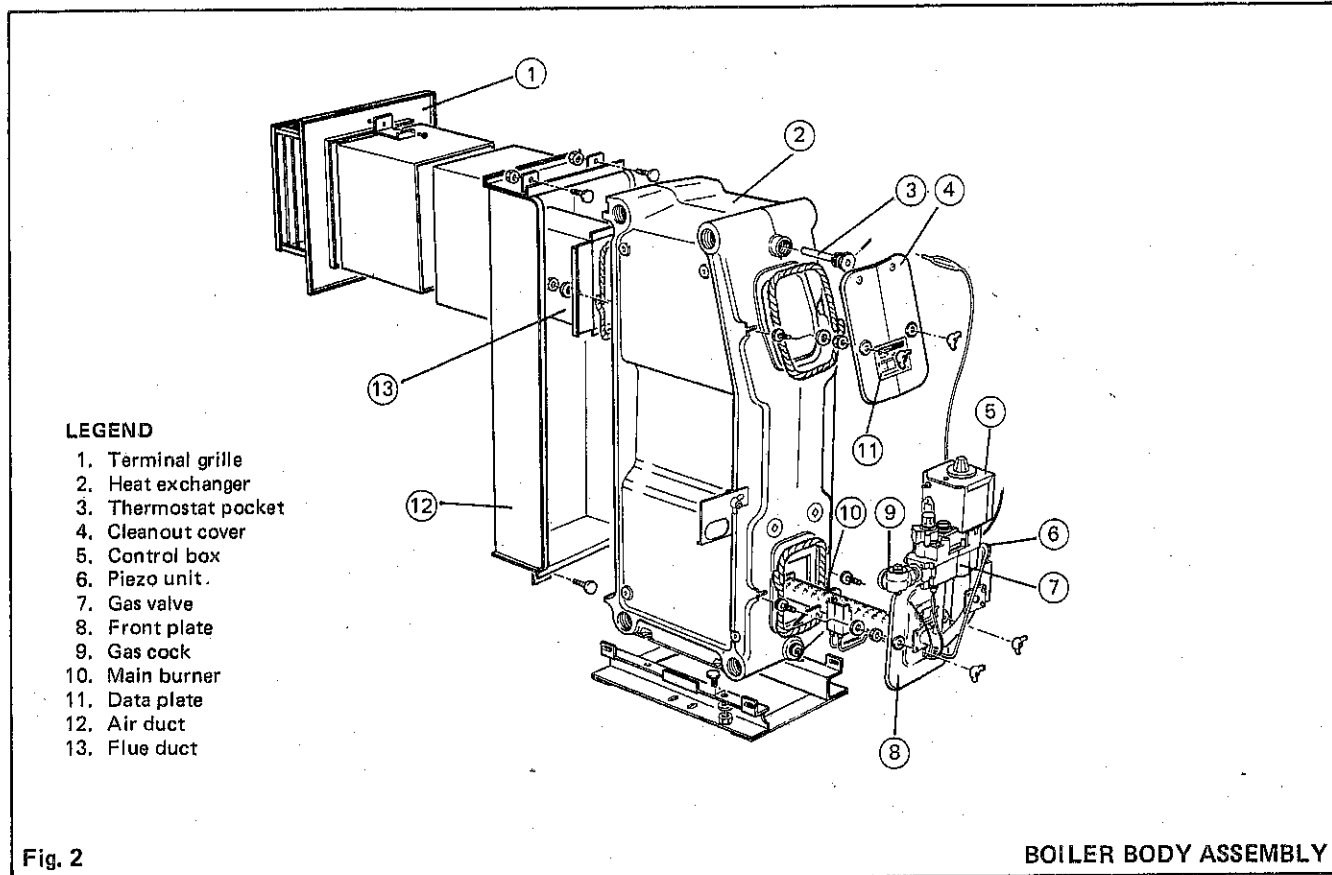
External wiring must be in accordance with the I.E.E. Regulations and any local regulations which apply.

The boiler is supplied for 220/240 volts 50 Hz AC single phase. Fuse rating is 3 amp. The method of connection to the mains electricity supply should 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, or fused spur-box, 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, together with either one or two of four cartons: B; B₁; C or D.

Cartons B, B₁ and C contain the terminal outlet appropriate to the wall thickness. Carton D contains flue duct extensions.

Supplied in carton	With boiler fitted flush up to wall Wall thickness		With boiler fitted in line with metric kitchen units Wall thickness	
	mm	in	mm	in
C	114 to 191	4½ to 7½	up to 125	up to 5
B	229 to 308	9 to 12	163 to 242	6½ to 9½
B ₁	319 to 398	12½ to 15½	253 to 332	10 to 13
B and D	406 to 584	16 to 23	340 to 518	13½ to 20½

The boiler is to be floor-standing, and the space in which the boiler is to be fitted must have the following minimum dimensions:—

Width	450mm (17¾in)
Depth	535mm (21in)
Height	855mm (33¾in)

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

At the top of the boiler	5mm (¼in)
At each side of the boiler	5mm (¼in)

In addition a minimum clearance of 250mm (10in) must be available at the front of the boiler to enable the boiler to be serviced.

To facilitate pipework installation and removal of boiler from packaging base, the boiler casing will have to be removed (refer to Fig. 6).

First, lift off the lower front panel, disconnect the mains plug from the boiler control box, the upper front panel can now be removed by unfastening the screws securing it to the

front edges of the side panels, and lifting it off the locating clips.

Unfasten the screws securing the side panels to the support brackets. The bottom side panel support brackets are secured to the channels of the boiler foot assembly with an M6 x 10mm pozipan head screw through the front hole in each channel, and secured with an M6 nut. Remove these nuts and screws and the jacket assembly can then be slid forward away from the boiler.

The boiler is held to the packaging base by two M6 hex head screws, one through each boiler foot channel into the packaging base. Remove these two screws in order to remove the boiler from the base.

Cut a suitable opening in the wall (refer Fig. 3). The brick courses will probably dictate a larger hole than the one indicated. The installer is advised to make good the hole in the inner skin to the given dimensions before fitting the boiler. This will ease the job of sealing between the terminal box and the wall after the boiler has been fixed in position.

The terminal box must not come into contact with combustible material, such as that used in non-standard constructions of timber framework and plaster board etc.

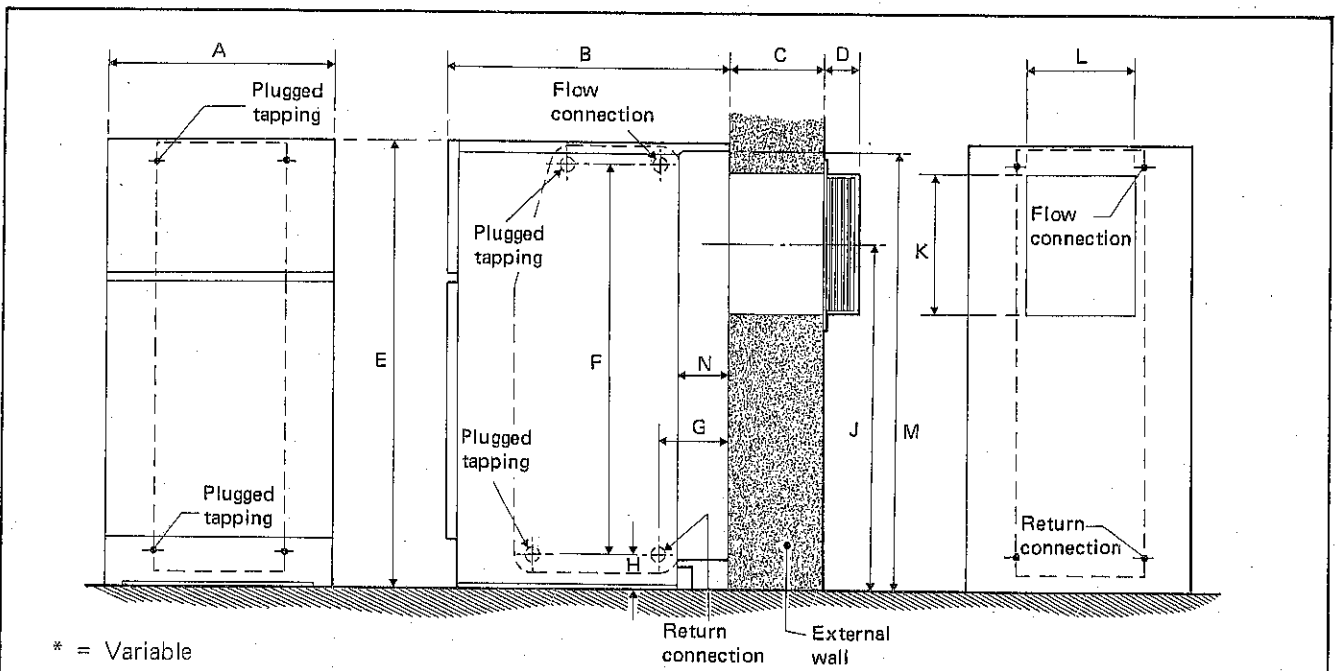
If in difficulty, the Local Gas Region will advise.

Place the boiler in the selected position ready for water and flue connections.

FITTING THE FLUE DUCT ASSEMBLY AND TERMINAL GRILLE. (See Figs. 4 and 4A).

Separate the terminal grille (A) from the terminal duct assembly (B), by removing the two screws (C). Smear mastic liberally on the inner surface of the boiler air duct (G) and the outer surface of the terminal air duct (F). The end of each duct should be coated to a minimum depth of 25mm (1in).

From outside the building pass the duct assembly through the opening and slide it into the boiler outlet.



* = Variable

Dimension	A	B	C	D	E	F	G	H	J	K	L	M	N
Metric mm	440	534	*	110	850	740	140	75	660	280	200	835	90
Imperial in	17.3	20.9	*	4.3	33.4	29.1	5.5	2.9	25.9	11.0	7.8	32.7	3.5

Fig. 3

DIMENSIONS

Ensure the flue duct (D) slides over the boiler flue outlet (E) and the air duct (F) slides into the boiler air duct (G); Push the terminal duct assembly in until the side fixing brackets (H) contact the wall face. Make good between wall and ducts, inside and outside the building. When thoroughly dry, fasten the terminal grille to

the flue duct assembly with the two screws.

EXTENSION DUCTS

Extension ducts are available for installation where the wall thickness exceeds 408mm (16in). They are used to bridge the gap between the appliance terminal box and the flue duct assembly and no other method should be used. Neither

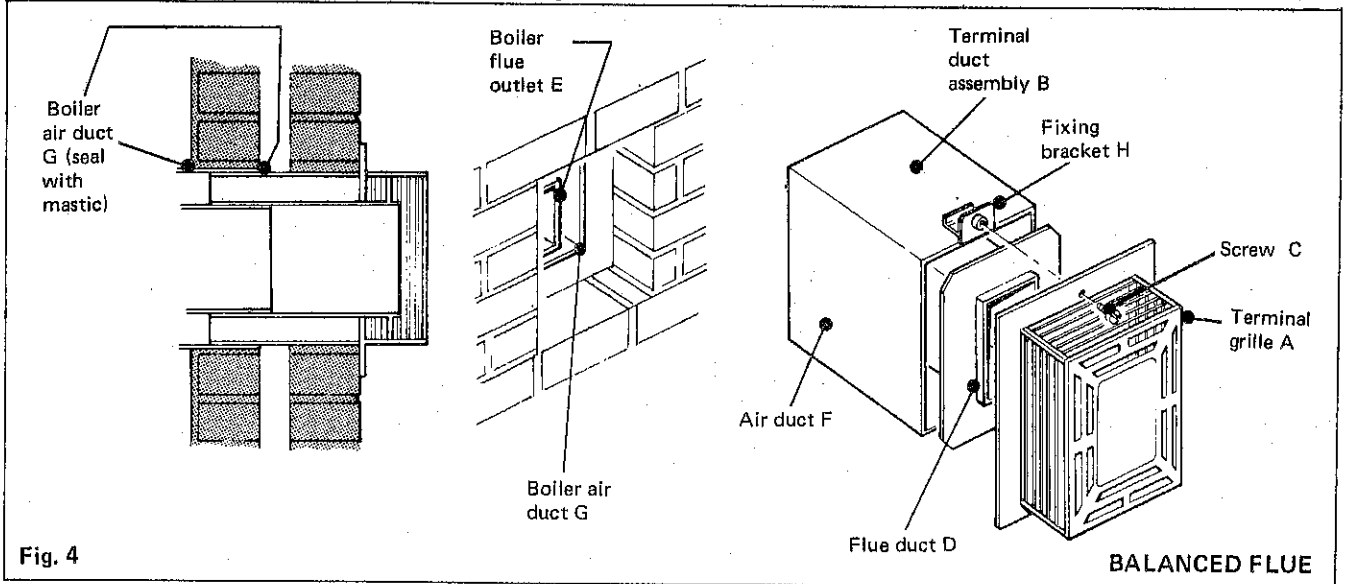


Fig. 4

BALANCED FLUE

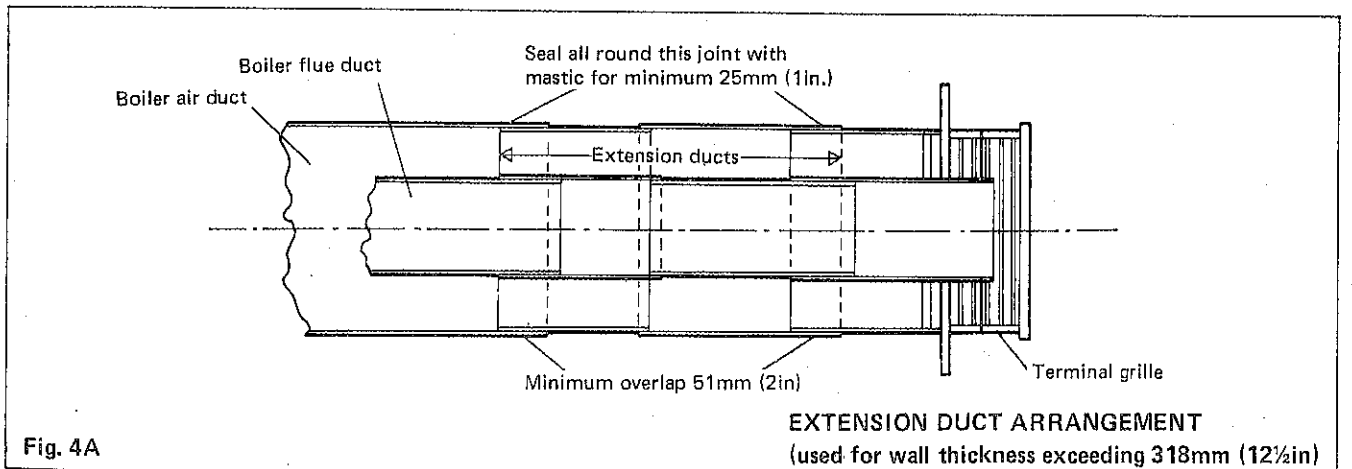
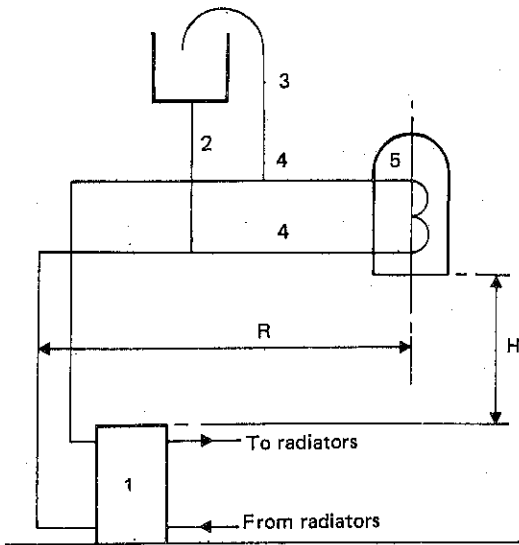


Fig. 4A

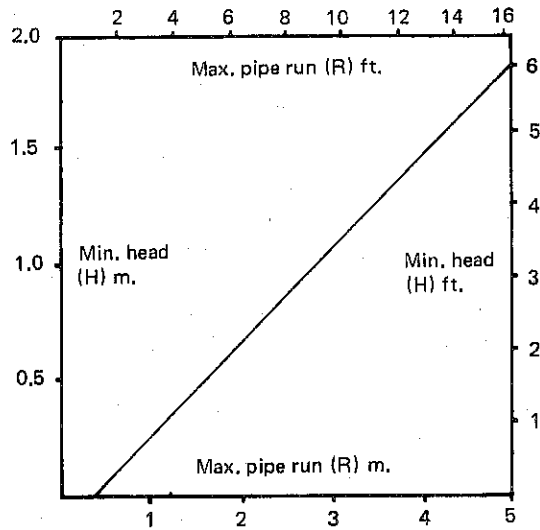
EXTENSION DUCT ARRANGEMENT

(used for wall thickness exceeding 318mm (12½in))



- 1. Heat exchanger
- 2. Cold feed
- 3. Vent 22mm pipe
- 4. 28mm pipe
- 5. Cylinder

Fig. 5



PUMPED CH and GRAVITY DHW SCHEMATIC PIPEWORK

should the gap be left unbridged.

FITTING THE EXTENSION DUCT

The extension duct has ends of unequal size corresponding to the thickness of the metal. Take the larger duct and apply mastic liberally over 25mm (1in) of the outer surface of the smaller end. Next similarly apply mastic to 25mm (1in) of the inner surface of the boiler terminal air duct. (This is the outer duct). Slide the small end of the air duct extension through the wall opening and approximately 51mm (2in) into the boiler terminal box air duct. Slide the large end of the flue duct extension over the boiler terminal box flue duct approximately 51mm (2in). Apply mastic liberally to the first 25mm (1in) of the inner surface of the air duct extension and the outer surface of the terminal duct assembly air duct.

Now fit the terminal duct assembly from outside the building. (The terminal grille must be removed by means of screws (C). Slide the flue duct OVER the extension flue duct and the air duct INTO the extension air duct.

Push the terminal duct assembly inward until the fixing brackets contact the wall surface.

Make good inside and outside the building around the wall opening and fit the terminal grille.

WATER CONNECTIONS (Fig. 3)

This appliance is **NOT** suitable for use in either a sealed system or a direct system. All water connections are Rc1

(1in.BSP). Pipework connections to all systems may use flow and return connections on the same side, or opposite sides of the boiler. That is:—

Fully Pumped System

In a fully pumped system, either a LH or a RH flow connection, together with a LH or-RH return connection, may be used.

Gravity Domestic Hot Water and Pumped Central Heating

In a gravity DHW and pumped CH system separate flow and return connections are used for each service.

The use of a cylinder thermostat is recommended. This will prevent excessive domestic hot water temperatures and thus reduce gas consumption.

To enable the boiler casing to be easily fitted to the boiler body it is necessary to use elbow connections into the flow and return tappings. The elbows must not project more than 75mm from the face of the tappings. All pipework should then be routed to the rear of the boiler and then outside the casing through the space provided. (See Fig.3 for dimensions).

If it is intended to route the pipework through the floor after routing to the rear of the boiler, the bottom side panel support brackets should be placed in position at this stage. This will enable exact positions for the pipework to be determined.

Six spare blanking-off plugs are provided in the hardware pack, for use as necessary in the front and rear flow or

LEGEND

- A. Bottom side panel support brackets
- B. Side panels
- C. Top panel
- D. Upper front panel
- E. Lower front panel
- F. Kick plate
- G. Jacket support brackets
- H. Jacket bracing angles

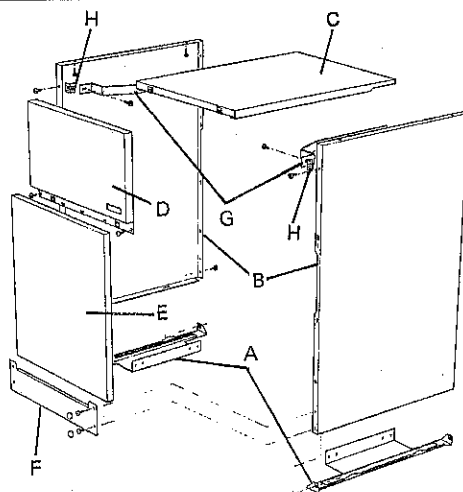


Fig. 6

JACKET ASSEMBLY

return water connections.

The schematic pipework graph shown in Fig. 5 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 300mm (12in), or (H) increased by 100mm (4in). The pipe runs for gravity circulation should be planned with reference to the diagram and graph illustrated by Fig. 5. 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.

GAS CONNECTIONS

A minimum gas pressure of 20 m/bar (8in.w.g.) must be available at the boiler inlet.

The main gas cock is on the LH front of the boiler and connection to the gas supply MUST be from the rear of the boiler. (The gas supply pipe must not pass across the front plate).

A pipe support bracket is supplied in the hardware pack.

The supply pipe must be passed through the hole in the bracket plate before connection to the gas cock. The bracket should then be securely fastened to the heat exchanger flange. When the boiler has been located in the chosen position, and pipework installation has been completed, the jacket assembly should be slid back around the boiler, ensuring that the bottom side panel support brackets are slid into the channels of the boiler foot assembly into the riveted side clips.

ELECTRICAL CONNECTIONS

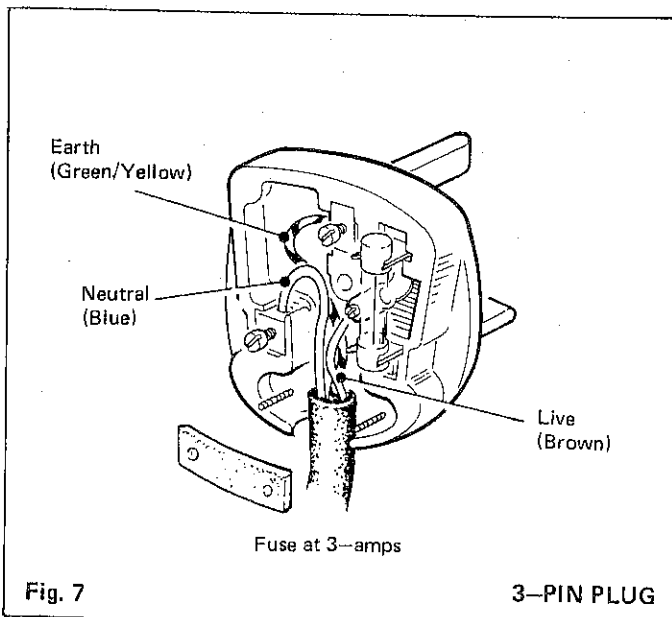
The appliance MUST be efficiently earthed

A mains supply of 220/240 volts 50Hz AC single phase is required.

All external controls and associated wiring MUST be suitable for mains voltage. Wiring should be in three-core PVC insulated cable, not less than 16/0.20mm. Wiring external to the boiler must be in accordance with the I.E.E. 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. 7, fused at 3 amps and complying with the requirements of BS 1363.

Wiring within the boiler casing must be neatly secured in the cable clips provided and such wiring must not be permitted to touch the burner plate or the cleanout cover.

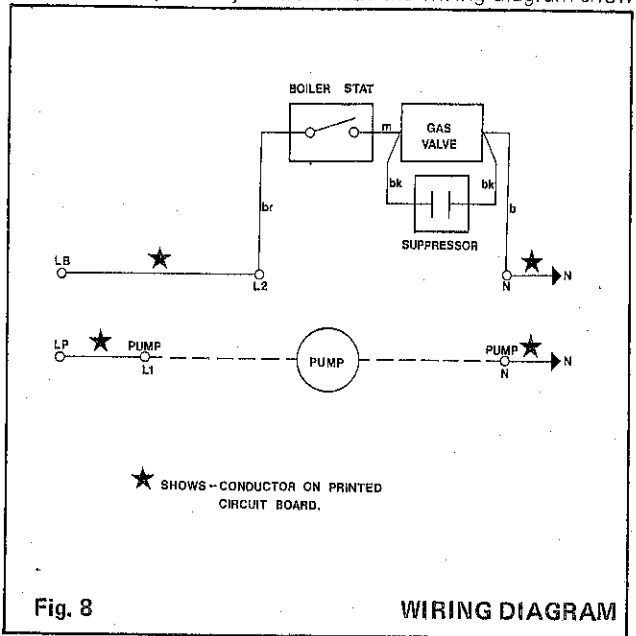


INTERNAL WIRING

The internal wiring of the junction box and control box is shown in Figs. 8 and 9. A wiring diagram is also contained in the lighting instruction plate inside the lower front panel of the boiler.

EXTERNAL CONTROLS

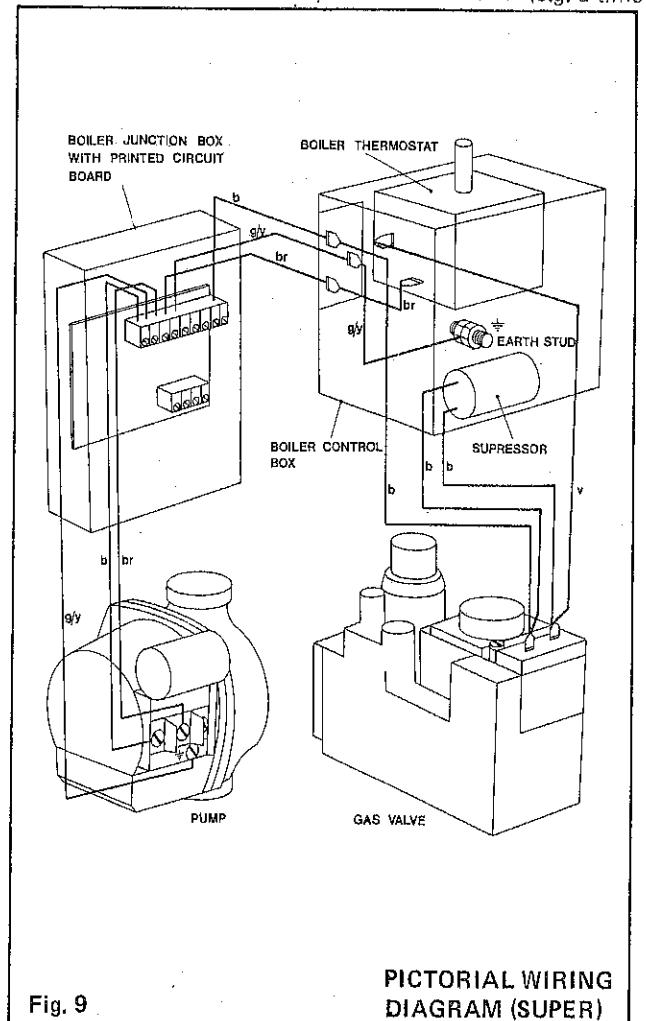
The wiring diagrams illustrated in Figs. 10–16, cover the systems most likely to be fitted to this appliance. For wiring external controls to the Super boiler, reference should be made to the system wiring diagrams supplied by the relevant manufacturer, in conjunction with the wiring diagram shown

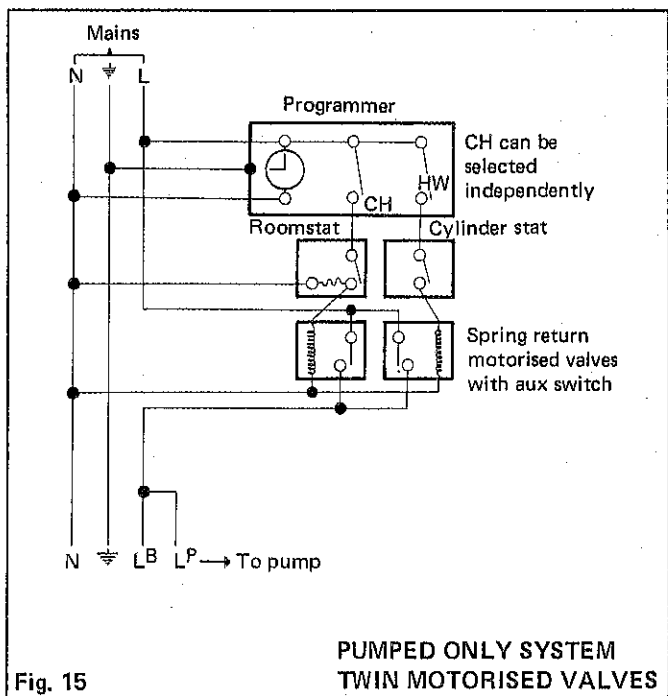
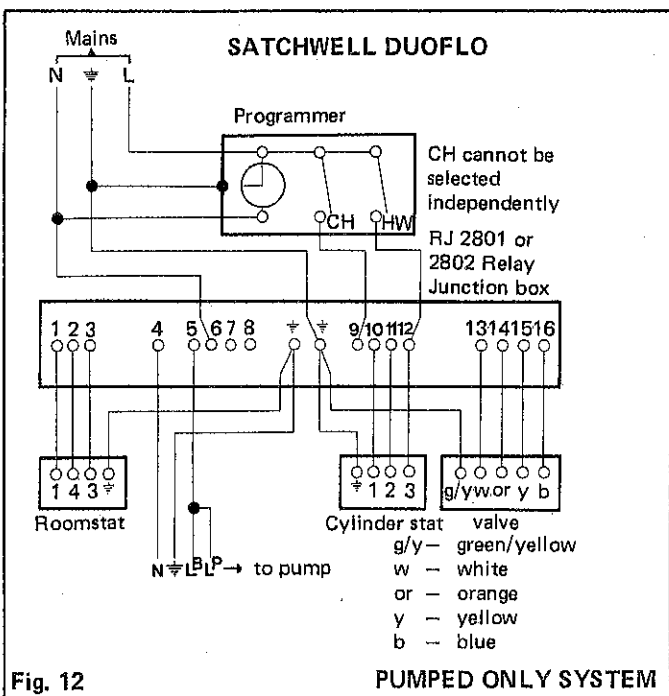
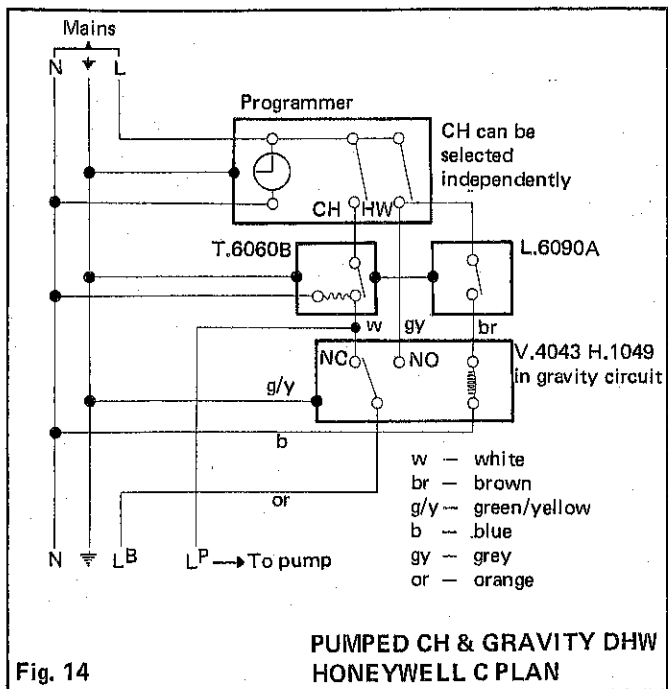
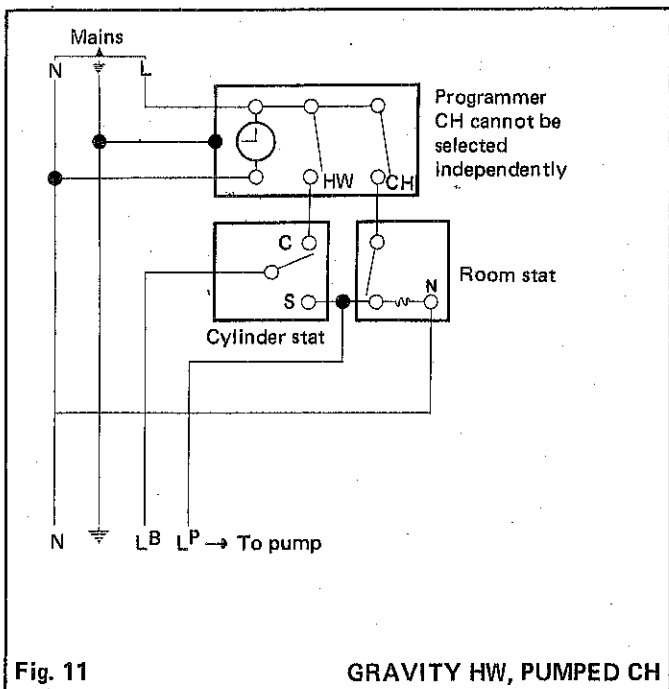
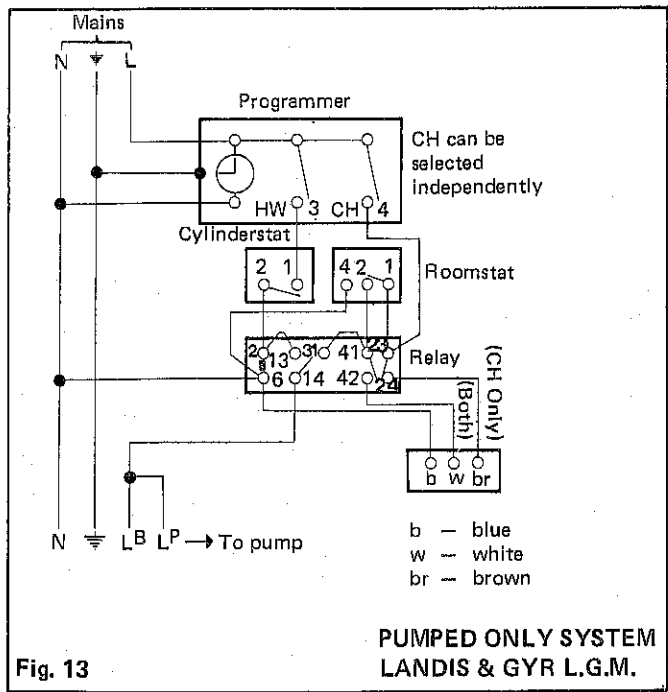
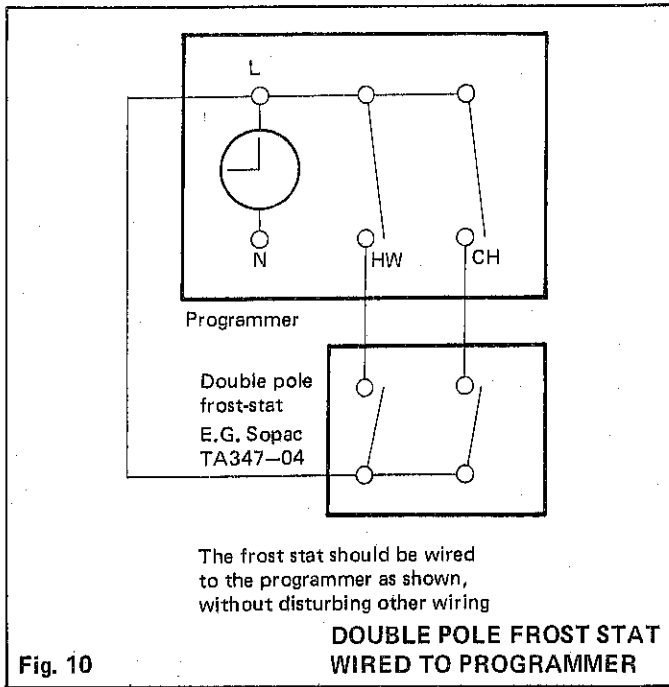


in Fig. 8.

Difficulty in wiring up 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.
- 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-riden (See Fig.10).
- 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.
- If a proprietary system is used, follow the instructions supplied by the manufacturers.

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

Note:

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

COMMISSIONING AND TESTING

Electrical Installation

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

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 removing the cabinet front panel of the boiler, loosening the union on the inlet gas cock and purging until gas is smelt. 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 that all valves are open.

With the pump fitted, the system should be filled and air locks cleared. Check for water soundness.

INITIAL LIGHTING INSTRUCTIONS (Refer Fig. 17)

The inlet gas cock must have been OFF for at least three minutes before initiating the lighting sequence.

Check that all drain cocks are closed and that stop valves in the flow and return lines are open.

Check that the inlet gas cock is ON and that the boiler thermostat control knob is at OFF.

Loosen the screw in the burner pressure test nipple (9) and connect a gas pressure gauge via a flexible tube.

Turn the gas control knob (4) clockwise until resistance is felt and then release it. Wait for three minutes.

Push in the gas control knob, press and release the piezo unit button (10) repeatedly, until the pilot is seen to light through the sight glass. Hold the gas control knob depressed for 20 seconds after the pilot burner has ignited.

Should the pilot light go out, at this or any other stage, turn the gas control knob clockwise and release it. Wait for three minutes and then repeat the procedure detailed above, but wait longer than 20 seconds before releasing the gas control knob.

The pilot flame should cover 10mm (3/8in) of the thermocouple tip. Turn the pilot adjuster screw (8) anti-clockwise to increase the flame and clockwise to decrease it.

Check that the electricity supply, and all external controls, are ON.

Turn the boiler thermostat knob (6) to position 6, the boiler will then light. Operate the boiler for ten minutes to stabilise

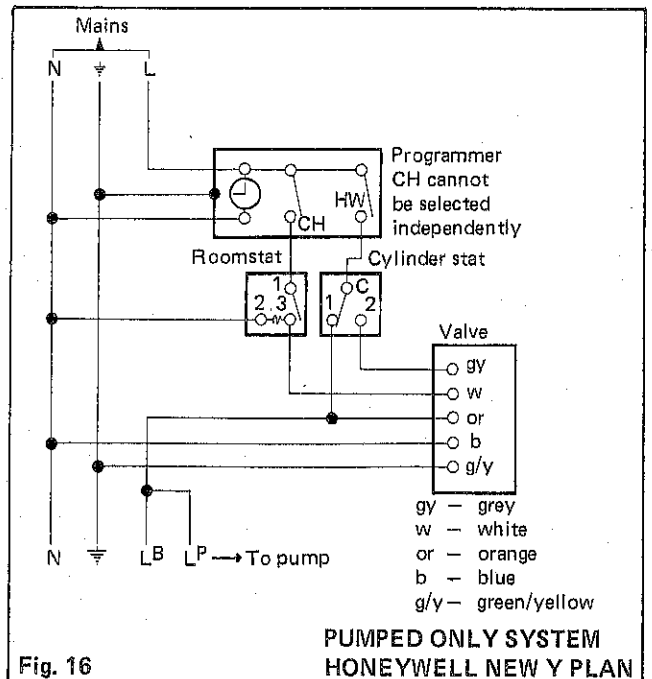


Fig. 16

the burner temperature.

Test for gas leaks around boiler gas components, using leak detection fluid. Check the burner setting pressure against the values quoted in Table 1.

If the burner setting pressure requires adjusting, remove the protective cap and turn the pressure adjusting screw (7), clockwise to increase the pressure and anti-clockwise to decrease it. A screwdriver with a 10mm bit should always be used for adjustment to avoid damaging the plastic head on the screw. Replace the protective cap. Remove the gas pressure gauge and tube and retighten the sealing screw in the pressure test nipple. Check for gas leaks around test nipple.

If the piezo unit should not work for any reason, the boiler may be lit by means of a paper spill. Remove the sight glass (1) and position a lighted spill near the pilot burner. Push in the gas control knob and hold it depressed until the pilot burner lights; hold down the knob for a further 20 seconds. Replace the sight glass and effect the subsequent lighting

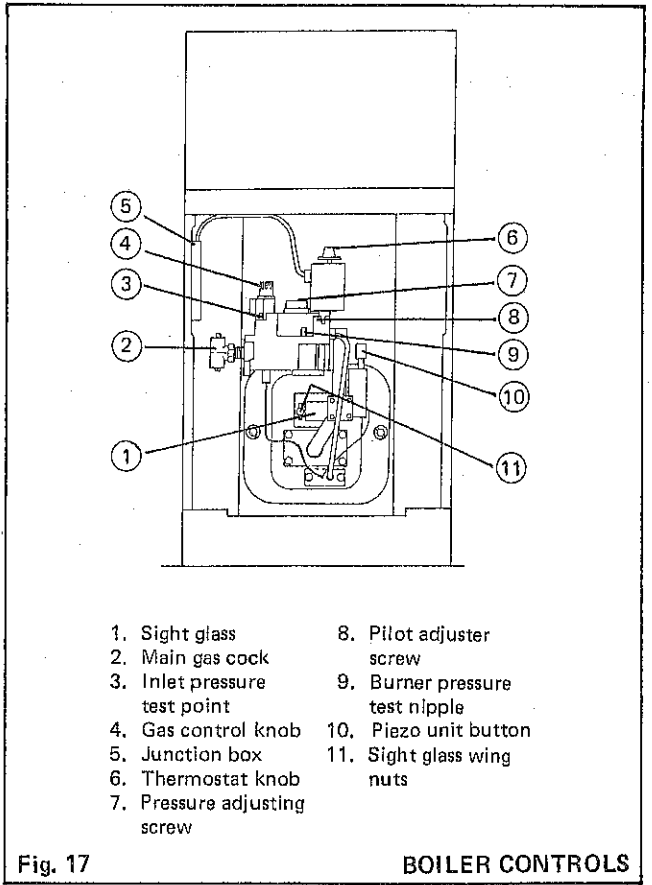


Fig. 17

BOILER CONTROLS

procedure detailed in the foregoing instructions. Any fault on the piezo unit must be rectified.

GENERAL CHECKS

Make the following checks for correct operation:

1. Turn the boiler thermostat OFF and ON and check that the main burner is extinguished and re-lit in response.
2. 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 turn the gas control knob clockwise until resistance is felt and then release it. The burner and pilot flames should shut down immediately.

Note: A latch in the gas control provides a safe delay period before the boiler can be re-lit.

3. Check the appearance of the pilot flame and, if necessary make appropriate adjustment by use of the pilot adjuster screw, refer (8) Fig.17 – 'Initial Lighting Instructions'.
4. The correct operation of the programmer and all other system controls should be proved. Operate each control separately and check that the main burner or circulating pump, as the case may be, responds.
5. With the system HOT, examine all water connections for soundness. Then turn OFF the gas, electricity and water supplies to the appliance and drain down whilst the system is still hot, in order to complete the flushing process. Refill and vent the system, and again check for water soundness.
6. Finally, set the controls to the User's requirements. The temperatures quoted below are approximate and may vary between installations:

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

USER'S INSTRUCTIONS

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 front panel, and also stick the relevant label indicating boiler size and type in the space provided on the Lighting Instruction Plate. These labels are included in the jacket hardware pack.
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., in the economic use of the system.
7. Stress the importance of regular servicing by the Gas Region or by a qualified Heating Engineer.

SERVICING

WARNING:

Switch OFF, and disconnect, the electricity supply and turn OFF the inlet gas cock BEFORE servicing the boiler.

A comprehensive service should be carried out at least once a year. The User is advised to make a contract with the Gas Region or a qualified Heating Engineer.

MAIN BURNER

Remove the lower front panel of the cabinet, disconnect the mains plug from the boiler control box. Then remove the cable straps securing the cable to the lower edge of the upper front panel, by nipping and pulling apart the straps. The upper front panel can now be removed by unfastening the screws securing it to the front edges of the side panels and lifting it off the locating clips. Remove the phial of the boiler

thermostat from its pocket. Undo the union nut on the gas inlet cock, remove the wing nuts and washers, securing the burner front plate, and remove the burner assembly complete with the gas valve, control box and associated gas line etc., from the boiler.

Remove to a convenient working surface for attention.

When replacing a defective main burner bar, it is most important that the baffles (Refer Fig. 19—Items 12 & 13) are fitted to the new burner.

Inspect the pilot burner, thermocouple and ignition electrode; ensure they are clean and in good condition.

In particular, check that:

1. The pilot burner is firmly secured.
2. The pilot shield is clean and unobstructed.

3. The ignition electrode, and lead, are clean, undamaged and secure.
4. The thermocouple tip is not burnt or cracked.
5. The thermocouple terminal, at the gas valve, is clean and secure.
6. The pilot observation window is clean and undamaged.

FLUEWAYS

Remove the complete burner assembly (Figs. 18 and 19), and also the cleanout cover at the top of the boiler.

Remove all loose deposits from the heat exchanger, particularly from the flueways formed between the fins, using a suitable flexible brush, (available from local Gas Regions, ref. No. 4798 A, C and K), and sweep the debris from the combustion chamber floor. Refit the cleanout cover and the burner assembly, replacing any damaged or deteriorated sealing gaskets.

Replace the upper front panel, connect the mains plug into the boiler control box, then replace the cable with the cable straps, to the lower edge of the upper front panel.

Complete the gas and electrical connections.

Replace lower front panel.

PILOT BURNER

Light the boiler and check that:

1. The pilot flame impinges on the thermocouple head and that the position of the thermocouple relative to the pilot burner, and the main burner, is as shown by Fig. 21.
2. The pilot flame covers 10mm (3/8in) of the thermocouple tip. Turn the adjuster screw (8) — Fig.17, anti-clockwise, to increase the flame, and clockwise to decrease it.

ADJUSTMENT OF GAS PRESSURE

After each occasion of servicing, reference should be made to Table 1 which quotes details of the rated output with the related burner setting pressure and heat input. Any required adjustments should be made by using the pressure adjustment screw (7) — illustrated in Fig. 17.

REPLACEMENT OF COMPONENTS

WARNING

ALWAYS TURN OFF THE GAS SUPPLY AND SWITCH OFF THE ELECTRICITY SUPPLY BEFORE WORKING ON THE APPLIANCE.

To facilitate the replacement of components, remove and replace the upper and lower front panels where necessary as previously described in SERVICING.

Sight Glass

Unfasten the two wing nuts holding the sight glass assembly to the burner front plate. When fitting the replacement assembly make certain the parts are in correct order, i.e. gasket, glass, gasket and frame. Re-tighten the two wing nuts to ensure an airtight seal but DO NOT OVERTIGHTEN.

Boiler Thermostat

Remove the electrical plug connection at the side of the control box. Remove the split pin and withdraw the phial from the pocket. Remove the screw on the top left hand side of the control box and lift away the top half of the control box from the bottom half. It is not necessary to disconnect the lead to the gas valve. Pull off the thermostat knob and the two electrical connections to the thermostat head. Unscrew the two screws holding the thermostat to the control box and withdraw the thermostat capillary from the plastic clip inside the control box. Fit the replacement thermostat and re-assemble in reverse order.

Piezo Unit

Unplug the igniter lead from the piezo unit body, remove the two screws and nuts securing the body to the gas pipe and fit the new unit. Reconnect the igniter lead.

Igniter Lead

Switch off the electricity supply and disconnect the mains plug from the boiler control box.

Turn off the inlet gas cock and disconnect the union nut. Withdraw the boiler thermostat phial from the pocket after removing the split pin.

Remove the wing nuts securing the burner front plate. This plate, complete with burner assembly and gas line, can now be removed from the boiler. The igniter lead can be removed by disconnecting at the piezo unit and the electrode.

Fit the new lead and re-assemble in reverse order.

Thermocouple

Remove the burner assembly as previously described. Undo the thermocouple connections at the pilot burner and gas

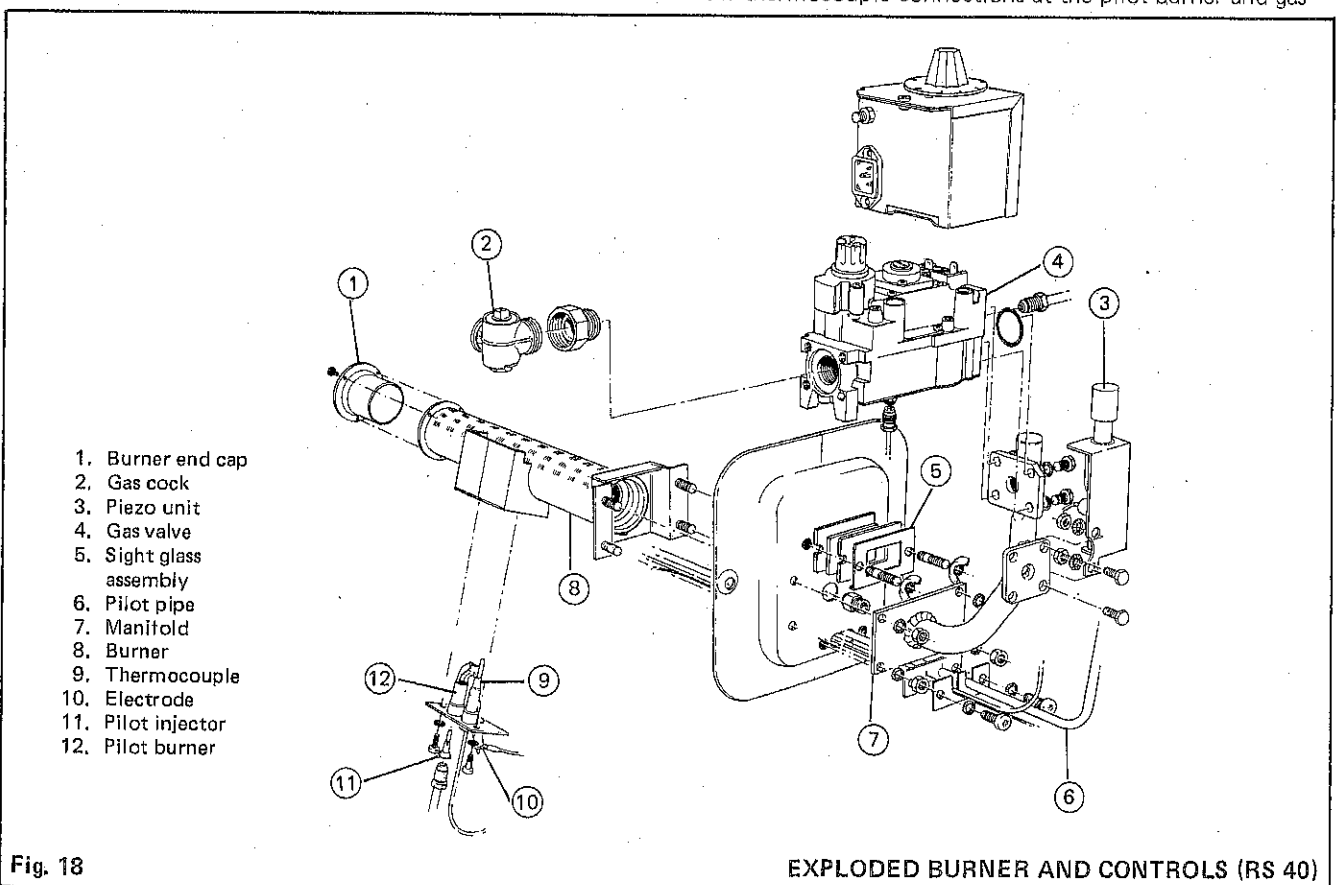


Fig. 18

EXPLODED BURNER AND CONTROLS (RS 40)

valve. Fit new thermocouple. Avoid sharp bends in the thermocouple lead. Re-assemble in reverse order.

Pilot Burner

Remove the burner assembly as previously described. Undo the thermocouple and pilot pipe connections at the gas valve and at the pilot burner. Pull off the igniter lead at the base of the spark electrode. Undo the two screws holding the pilot burner to the pilot burner bracket. The pilot burner can now be withdrawn. Remove the electrode. Fit the new pilot burner, ensuring that the pilot injector is in position when refitting the pilot pipe, and re-fit the electrode. Re-assemble in reverse order.

Electrode

Remove the burner assembly and pilot burner as previously described, unplug the igniter lead from the electrode, unfasten the back nut retaining the electrode. Fit the new electrode. Re-assemble in reverse order.

Control Box

Disconnect the electrical plug connection at the left hand side of the control box. Remove the split pin and withdraw the thermostat phial from the pocket. Remove the screw on the top left hand side of the control box and withdraw the top half of the control box from the lower half. Disconnect the leads from the gas valve. Remove the lower half of the control box from the gas valve by unfastening the securing screw. Fit the new control box in reverse order.

GAS VALVE AND MAIN BURNER

Remove the burner and control assembly as previously described.

Main Burner

Undo the nut securing the pilot bracket to the main burner and remove the pilot bracket.

Undo the four nuts securing the burner to the front plate and gas valve outlet pipe and withdraw the burner.

Remove the nuts securing the burner baffles to the burner. (Ensure these baffles are refitted to the new burner).

Fit the new burner in reverse order being careful not to damage the main burner injector which is screwed into the end of the gas valve outlet pipe.

Gas Valve

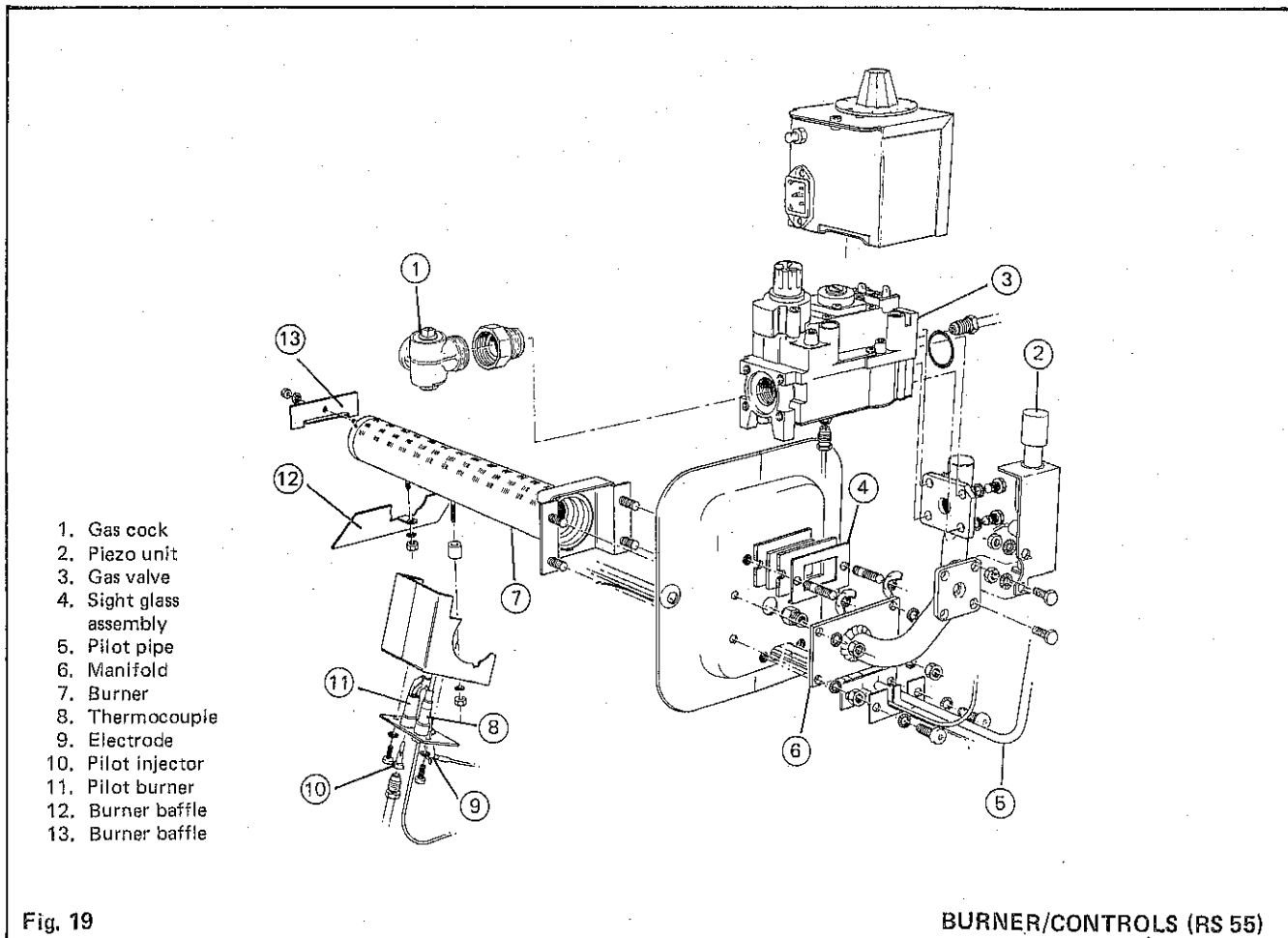
Remove the control box as previously described.

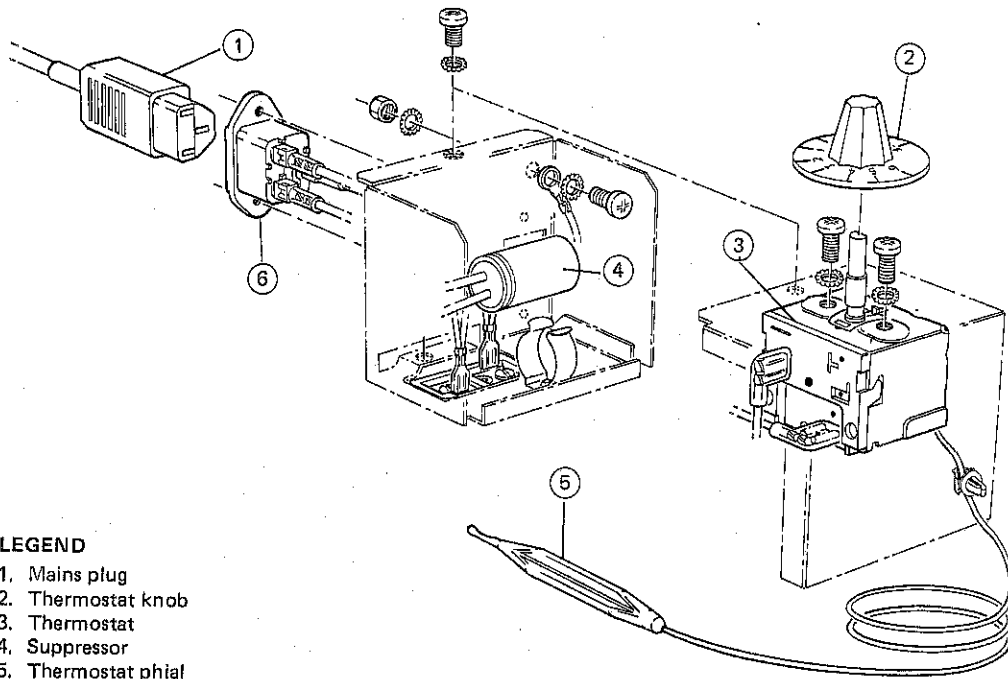
Undo the pilot pipe and thermocouple connections at the gas valve. Unscrew the gas cock union at the left hand side of the gas valve. Unfasten the four screws securing the gas valve outlet pipe. The sealing 'O' ring should be discarded and a new 'O' ring fitted. Re-assemble in reverse order, ensuring that the new gas valve is fitted the right way round. (An arrow engraved on the gas valve indicates the direction of flow). Ensure that the sealing 'O' ring is fitted correctly between the flanges on the end of the gas pipe and the gas valve.

Re-seal the gas inlet pipe and check the complete assembly for gas soundness.

IMPORTANT

Use an approved jointing compound when replacing the main burner injector, or service cock.





LEGEND

- 1. Mains plug
- 2. Thermostat knob
- 3. Thermostat
- 4. Suppressor
- 5. Thermostat phial
- 6. Mains socket

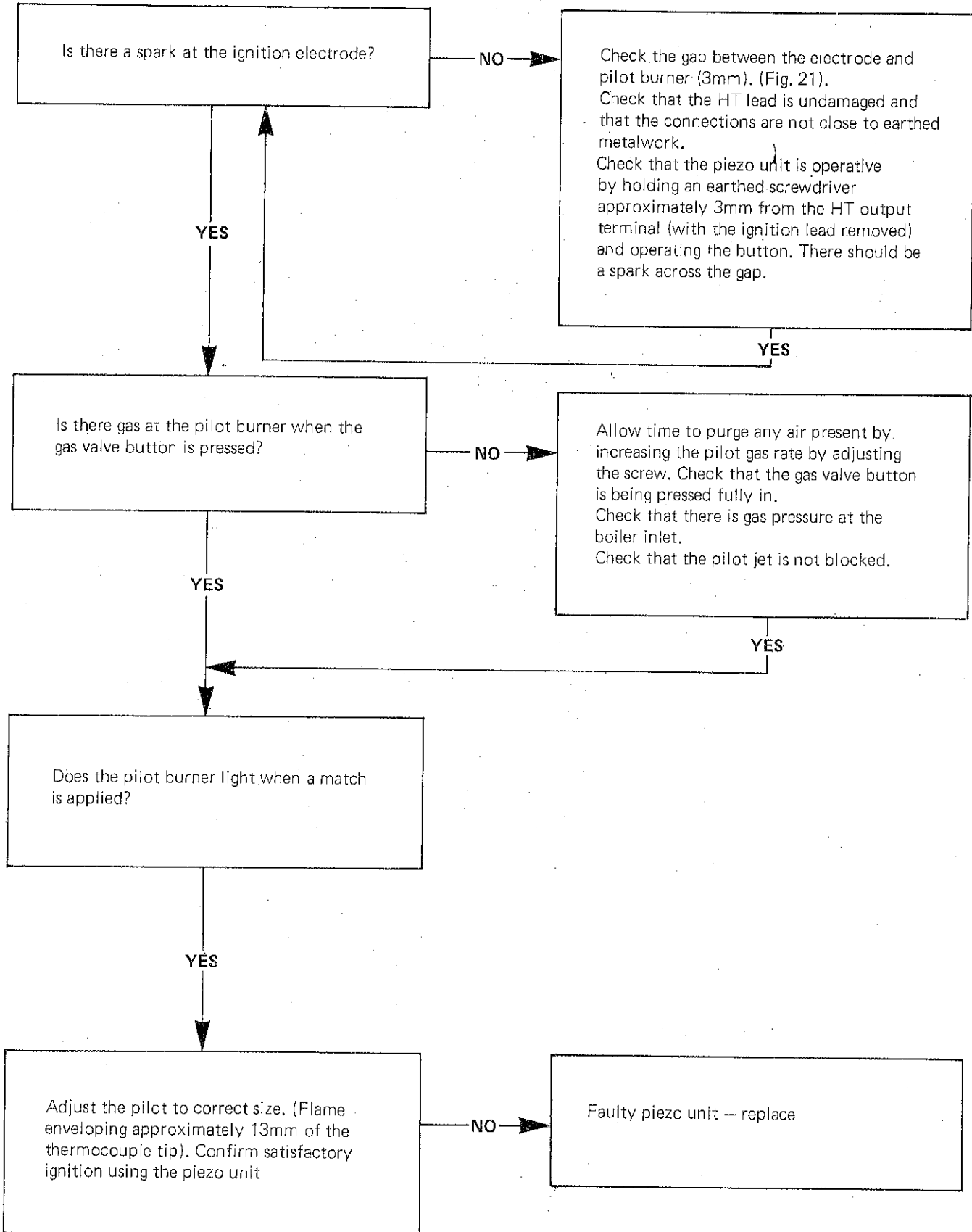
Fig. 20

CONTROL BOX ASSEMBLY

FAULT FINDING

Detailed instructions on the replacement of faulty components will be found in the Servicing section of this booklet.

PILOT WILL NOT LIGHT:



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

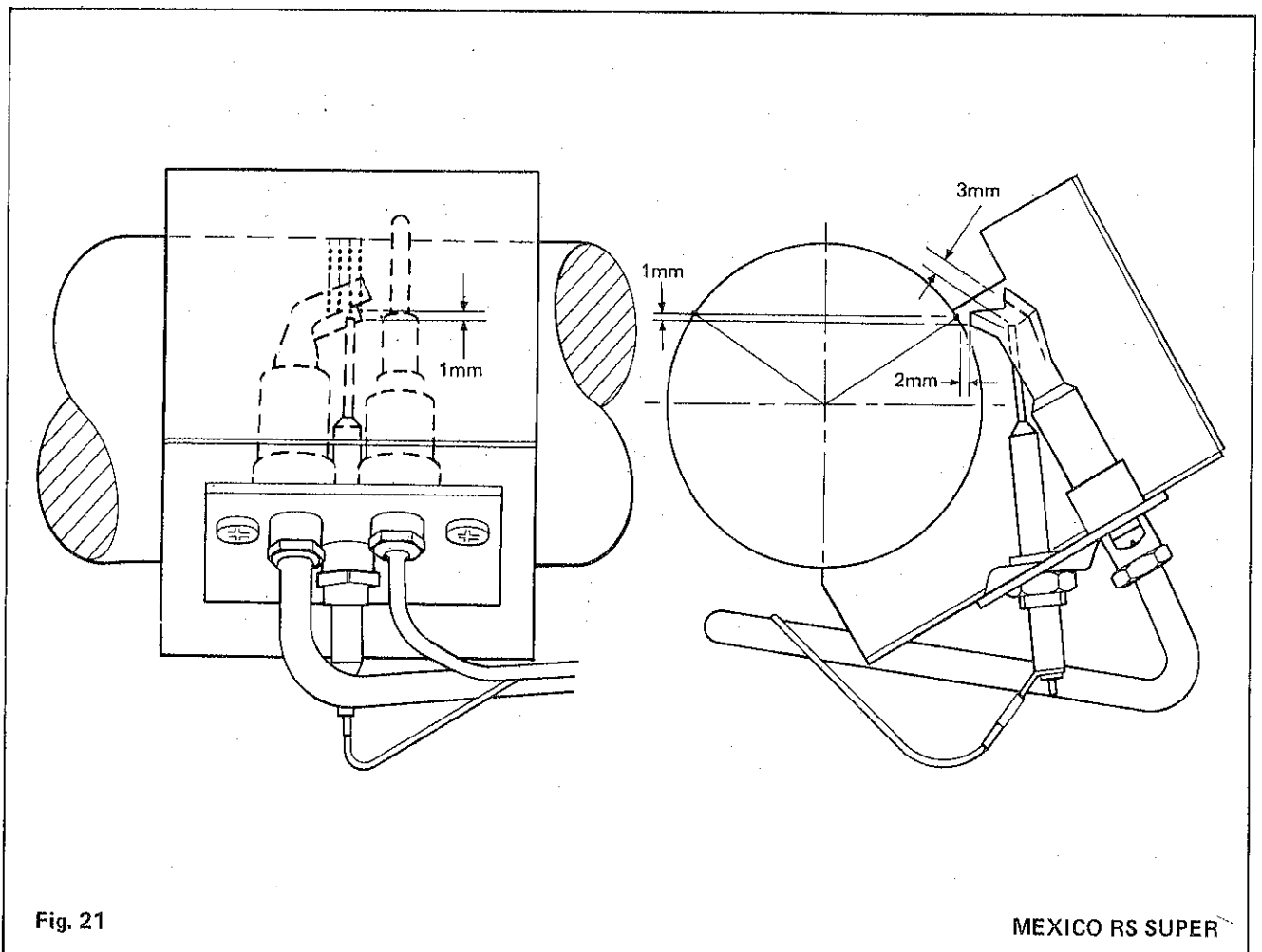
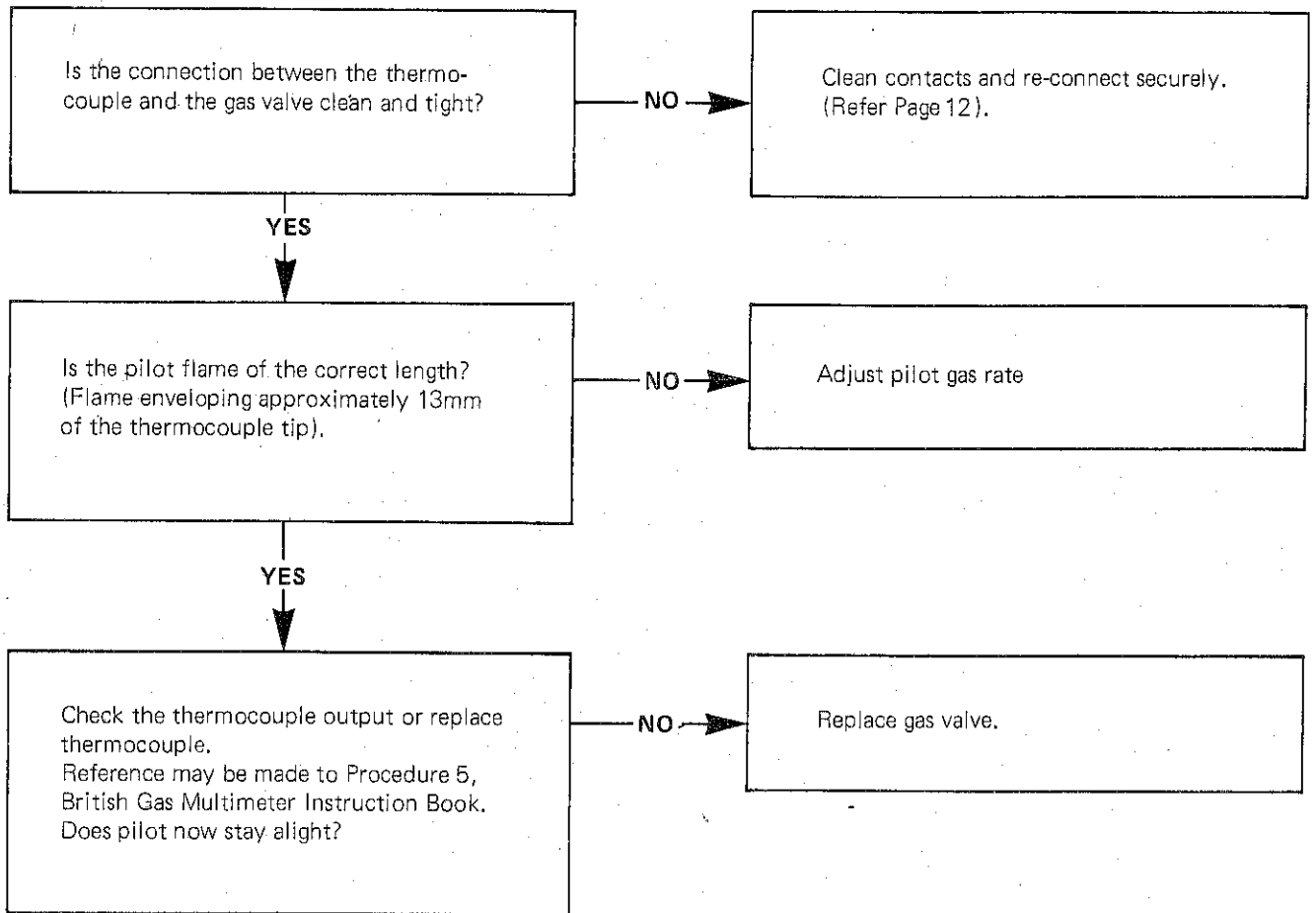
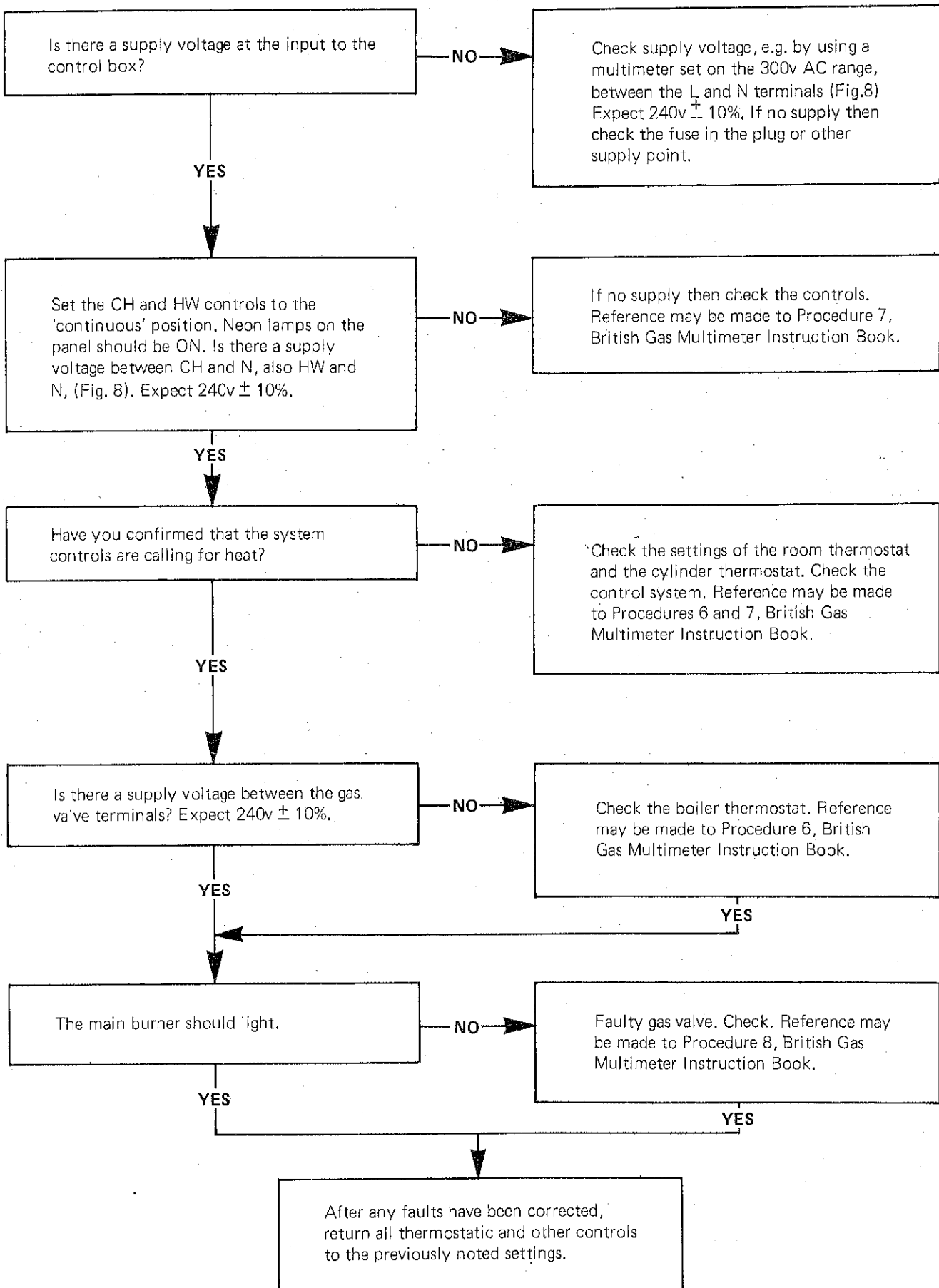


Fig. 21

MEXICO RS SUPER

PILOT LIT BUT NO MAINS GAS:



SHORT LIST OF PARTS

The following list comprises parts commonly required as replacements. It is extracted from the B.G.C. List of Parts which contains all available spare parts. Copies of the B.G.C. lists are held by Gas Regions, Stelrad distributors and by merchants.

MEXICO SUPER RS 40 GAS BOILER

When ordering spares, please quote:

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

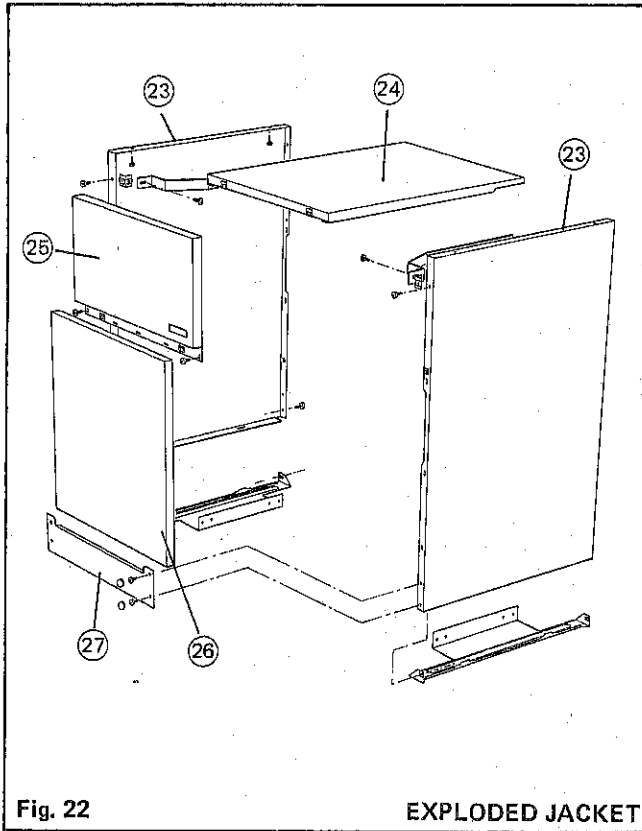


Fig. 22

EXPLODED JACKET

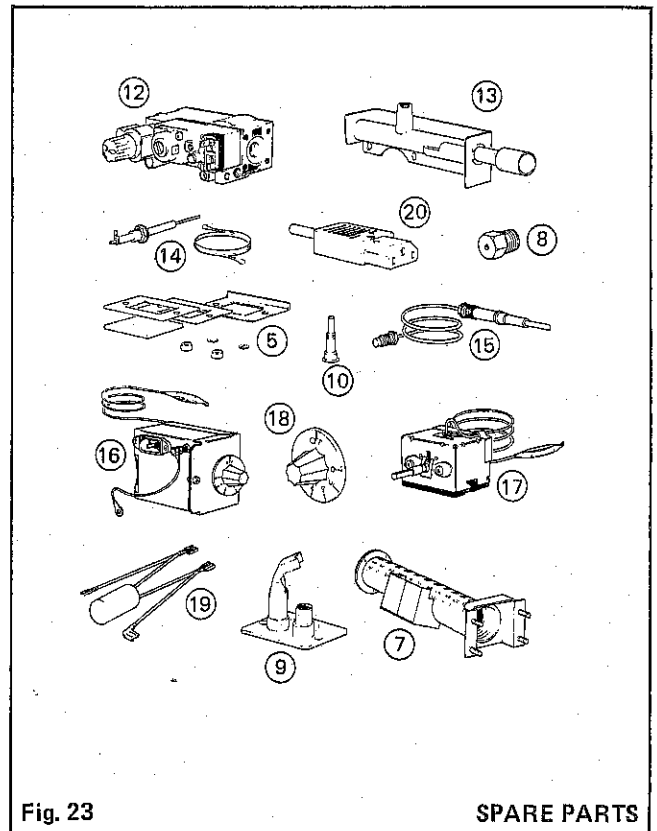


Fig. 23

SPARE PARTS

Key No.	B.G.C. Pt. No.	Description	No. Off	Maker's Pt. No.
5	354 997	Sight glass assy. comprising sight glass and frame with 2—sight glass gaskets and 2—M5 studs and wing nuts	1	129198725
7	384 806	Main burner Furigas SR 604/4/24 (less injector) complete with pilot burner bracket	1	129308735
8	398 339	Burner injector Bray Cat. 16 size 1100	1	129298736
9	391 664	Pilot burner Honeywell Q359A 1041 complete with injector Key No.10	1	129198740
10	391 665	Pilot burner injector Honeywell 0.30A 45000062—010	1	589040081
12	393 659	½in. BSP Honeywell Compact gas control V.4600A 1023 240v	1	586121900
13	388 047	Piezo unit Vernitron 60038/01	1	586810087
14	388 003	Ignition electrode and HT lead assy. (HT lead 460mm lg.)	1	589030088
15	390 039	Thermocouple Honeywell Q309A 2739 600mm lg.	1	576890051
16	341 060	Control box including Key Nos. 17, 18 and 19	1	586811270
17	382 337	Thermostat Ranco C26 P0616 with 24in. capillary	1	586121511
18	382 327	Thermostat knob Ranco 83151—31	1	589020051
19	393 390	Suppressor assy. ITT TS121A plastic 'Can' type with wiring harness	1	589040010
20	354 776	Mains connector Ashley or Bulgin to CEE 22 Sheet V and BS 4491	1	589030015
22		Jacket White stove enamel with Bedouin upper front panel and dark brown trim, Key Nos: 23,24,25,26,27,28,29 and 30	1	129098110
23	341 211	Jacket side panel assy. White stove enamel	2	129038112
24	341 212	Jacket top panel assy. White stove enamel	1	129078116
25		Jacket upper front panel assy. Bedouin with dark brown trim	1	129098111
26	341 214	Jacket lower front panel assy. White stove enamel	1	129038118
27	341 215	Jacket kicking strip Brown stove enamel	1	129038128

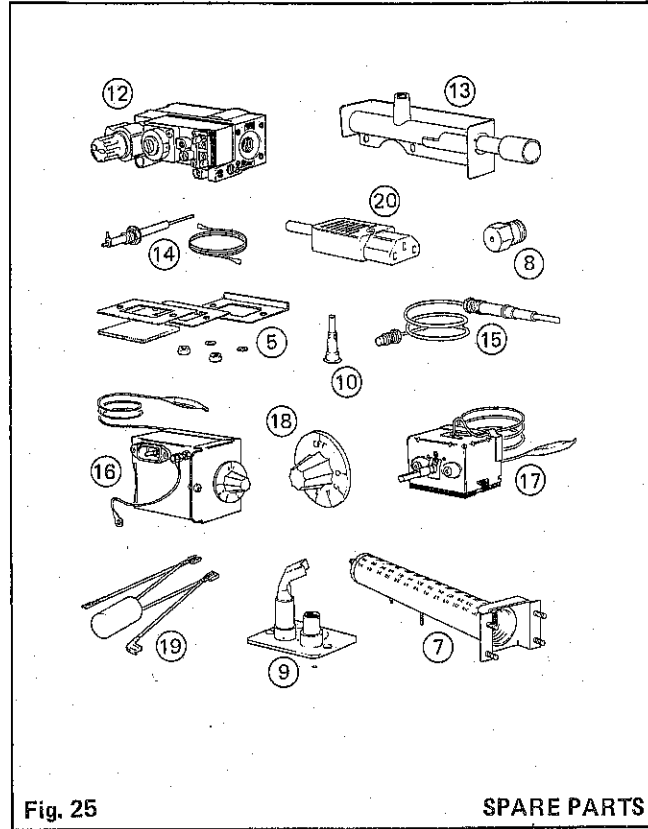
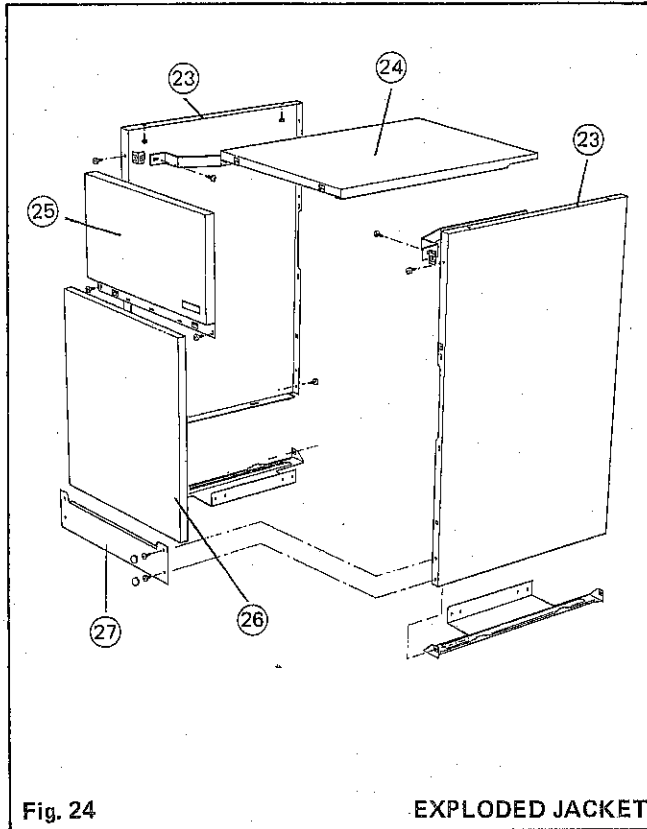
SHORT LIST OF PARTS

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MEXICO SUPER RS 55 GAS BOILER

When ordering spares, please quote:

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



Key No.	B.G.C. Pt. No.	Description	No. Off	Maker's Pt. No.
5.	354 997	Sight glass assy comprising sight glass and frame with 2—sight glass gaskets and 2—M5 studs and wing nuts	1	129198725
7	398 251	Main burner Bray Mk. 9 AB 16641 (less injector) complete with pilot burner bracket	1	129208735
8	398 057	Burner injector Bray Cat. 10 size 1500	1	189356061
9	391 664	Pilot burner Honeywell Q359A 1041 complete with injector Key No.10	1	129198740
10	391 665	Pilot burner injector Honeywell O.30A 45000062—010	1	589040081
12	393 659	½in. BSP Honeywell Compact gas control V4600A 1023 240v	1	586121900
13	388 047	Piezo unit Vernitron 60038/01	1	586810087
14	388 003	Ignition electrode and HT lead assy. (HT lead 460mm lg.)	1	589030088
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26	341 214	Jacket lower front panel assy. White stove enamel	1	129038118
27	341 215	Jacket kicking strip Brown stove enamel	1	129038128