This information refers to the following products

Rayburn GD80

(Natural gas & LPG models)
1992 – 1994)

Rayburn 380G

(Natural gas & LPG models)
1994 – 1995)

RAYBURN

Installation and Servicing Instructions for Rayburn GD80 Gas Fired Central Heating Cooker

Consumer Protection Act 1987
As manufacturers and suppliers of cooking and heating products, in compliance with Section 10 of the Consumer Protection Act 1987. We take every care to ensure, as far as is reasonably practicable, that these products are so designed and constructed as to meet the general safety requirement when properly used and installed. To this end, our products are thoroughly tested and examined before despatch.

IMPORTANT NOTICE: Any alteration that is not approved by Aga-Rayburn, could invalidate the approval of the appliance, the warranty and could also infringe the current issue of the statutory requirements.

Control of Substances – Health and Safety

Important:
This appliance could contain any of the materials that are indicated below. It is the Users/Installers responsibility to ensure that the necessary personal protective clothing is worn when handling, where applicable, the pertinent parts that contain any of the listed materials that could be interpreted as being injurious to health and safety, see below for information.

Firebricks, Fuel beds, Artificial Fuels – when handling use disposable gloves.

Fire cement – when handling use disposable gloves.

Glues and sealants – exercise caution – if these are still in liquid form use face mask and disposable gloves.

Glass Yarn, Mineral Wool, Insulation Pads, Ceramic Fibre, Kerosene Oil – may be harmful if inhaled, may be irritating to skin, eyes, nose and throat. When handling avoid inhaling and contact with skin or eyes. Use disposable gloves, face masks and eye protection. After handling wash hands and other exposed parts. When disposing of the product reduce dust with water spray, ensure that parts are securely wrapped.

INTRODUCTION

This Rayburn Gas combination appliance is combined cooker and hot water boiler providing central heating and domestic hot water in addition to special cooking facilities. It is available in open flue form, operating on natural draught, the boiler being designed for use in fully pumped systems only.
This appliance is suitable for Natural Gas or Propane depending upon model type.
Two separate independent controlled gas burners provide heat. One to central heating boiler section, providing heating and hot water, whilst the other provides heat to the cooker.

REGULATIONS

The installation of the appliance must be in accordance with the relevant requirements of the current Gas Safety (installation and Use) Regulations, Building Regulations, Building Standards (Scotland) Regulations, Current I.E.E. Wiring regulations and the bylaws of the local Water Undertaking.
It should be in accordance also with any relevant requirements of the local Gas Region and Local Authority and the relevant recommendations of the following current British Codes of Practice:-

BS6891	Specification for installation of low pressure gas pipework of up to 28mm(R1) in domestic premises (2nd family gas).
BS 5482	Code of Practice for domestic Butane and Propane gas burning Installations.
BS 6798	Selection and installation of gas space heating. Boilers of rated input not exceeding 60kW.
BS 5449	Central heating for domestic premises Part 1. Forced circulation hot water systems.
BS 5546	Code of Practice for installation of gas hot water supplies for domestic purposes (2nd family gases).
BS 5440	Flues and air supply for gas appliances of rated input not exceeding 60kW. Part 1. Flues. Part 2. Air Supply.
BS 6172	Code of Practice for installation of domestic cooking appliances.

In the interests of safety and to comply with the law, all gas appliances should be installed by competent persons, in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution.

		NATURAL GAS				PROPANE	
		BOILER		COOKER		BOILER	COOKER
		MAX	MIN	HIGH	LOW	MAX	HIGH
Heat Input	(kW)	29.34	22.9	8.06	1.8	29.34	8.06
	(Btu / h)	100,108	78,000	27,500	6,000	100,108	27,500
Heat Output to Water	(kW)	23.4	17.6	-	-	23.4	-
	(Btu / h)	80,000	60,000	-	-	80,000	-
Burner Pressure	(mbar)	15.0	9.5	14.0	0.5	-	-
	(in. w.g.)	6.0	3.8	5.6	0.2	-	-
Inlet Pressure	(mbar)	-	-	-	-	37.0	37.0
	(in. w.g.)	-	-	-	-	14.8	14.8
Injector size		Multiport 5 x ø2.1 mm		ø2.38mm		ø2.8mm	BRAY 360

Gas Connection	Rc 1/2 (1/2 in BSP int)	Boiler Connections	
Electrical Supply	240V~ 50 Hz 3amp Fused	Flow	Rp 1 (1 in BSP int)
Max working Hydraulic pressure of Boiler	3 bar	Return	Rp 1 (1 in BSP int)
		Flue Outlet Dia	150mm (6 in int)
Water capacity	0.8 litre	Appliance Dimensions Height	845mm
Appliance Weight	230kg	Width	962mm
		Depth	647mm

Fig.1. Technical Specifications

WP 2/94 EINS 510074

Important Facts of Rayburn GD80

Does the system have to be fully pumped?

Yes, in order to ensure the optimum efficiency of heat output to water, the GD80 is designed to operate with a modern fully pumped system.

Is it necessary to incorporate heat-leak radiators in the system?

No, the fully controllable boiler and cooker eliminates the requirement for heat leakage.

What size fluepipe is required from the appliance?

150mm internal diameter.

What size hot water cylinder is necessary?

The fully pumped domestic hot water system eliminates the requirement of a minimum 190 litre indirect cylinder a smaller one can be used.

How is the oven temperature maintained?

The oven thermostat automatically operates the cooker burner between LOW AND FULL rates to maintain a stable cooking temperature.

Can the appliance be connected to a programmer

Yes, all outputs of the appliance are fully programmable.
A two channel programmer will enable independent timed control of central heating and domestic hot water.
A separate single channel programmer will enable timed control of the cooker.

Tiling

You should NOT tile down to the back of the top plate or sides after the appliance has been installed as the top plate may require removing for service later.

Site requirements

LOCATION

The appliance must be installed on a solid level floor or base of incombustible material which is capable of supporting the total weight.
The location chosen for the appliance must permit installation and the provision of a satisfactory flue and an adequate air supply. The location must also provide space for servicing and air circulation around the appliance.

Between wall and LH. side of appliance 150mm
Between wall and R.H. side of appliance 25mm
Above the raised insulated cover handle 60mm

In addition, adequate clearance must be available at the front of the appliance to enable it to be operated and serviced. Flue pipes and fittings must not be closer than 25mm to combustible materials and where passing through a combustible partition such as a ceiling or roof, must be enclosed in a non - combustible sleeve providing an air space of at least 25mm.
Spaces around flue pipes passing through walls or floors should be sealed against the passage of smoke and flame.
Where the cooker is to stand in a recess or against a wall which is to be tiled, **in no circumstances should the tiles overlap the cooker top plate.**

GAS SUPPLY

Meters
A gas meter is connected to the service pipe by the 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 total rate of gas supply required. **(Natural Gas Only).**

Installation Pipes
Installation pipes should be fitted in accordance with BS 6891 for Natural Gas or BS 5482 for Propane.
Pipework from the meter to the appliance must be of adequate size. It is recommended that a minimum of 22mm Ø copper tubing is used to within 1m of the appliance. A reduction to 15mm Ø is permissible over the last metre to the appliance. Do not use pipes of a smaller size than the appliance gas connection.
The complete installation must be tested for soundness and purged as described in the above standards.

ELECTRICAL SUPPLY

External wiring must be correctly earthed, polarised and in accordance with current I.E.E. wiring regulations.
The main supply required is 240V. 50 Hz fused at 3A.
NOTE: The method of connection to the electricity supply must facilitate complete electrical isolation of the appliance, preferably by the use of a fused three pin plug and unswitched shuttered outlet, both complying with the requirements of BS 1363.
Alternatively, connection may be made by via a fused double - pole isolator with a contact separation of at least 3mm in all poles and serving the appliance and system control only.

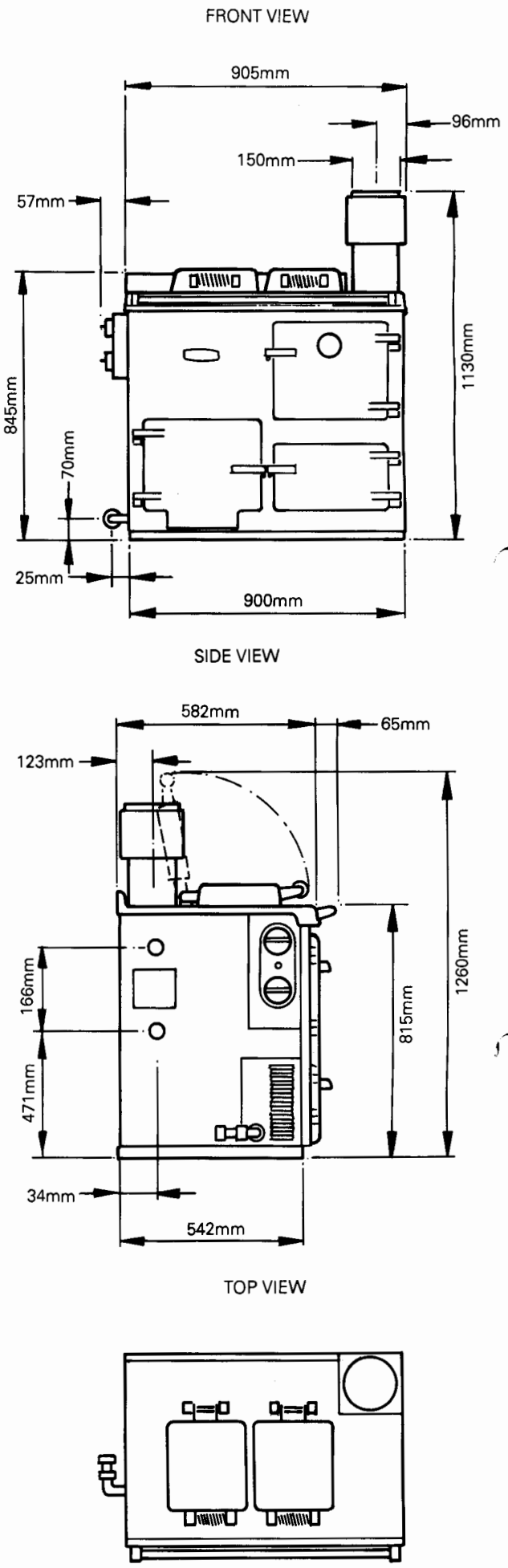


Fig.2 Appliance Dimensions DESN 510116

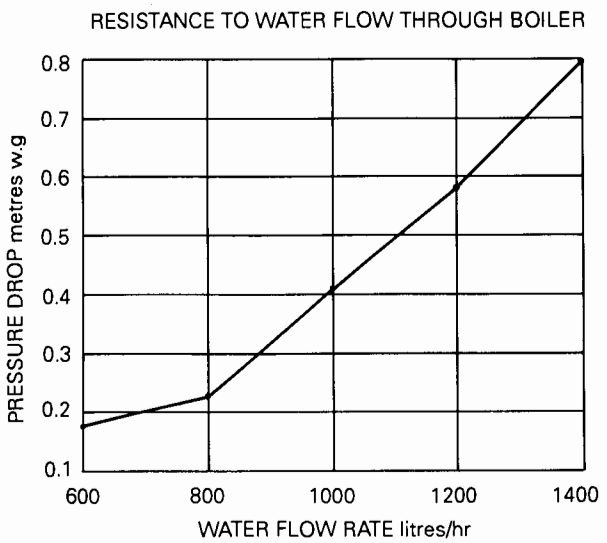


Fig 3. Pressure Loss Curve DESN 510117

CONTROLS

Independent temperature controls with time switch control are recommended for providing temperature comfort from radiators.
Typical controls can be motorised valves operated by room thermostat and cylinder thermostat.
Thermostatic radiator valves may be fitted if required and consideration should be given to fitting a frost thermostat which should be set to operate at a temperature of approximately 4°C (39°F).

A typical system layout is shown in Fig 4.

The Boiler should be controlled so that it operates on demand only.

Operation of the system under control of the boiler thermostat only, does not produce the best efficiency.

Refer to the control equipment manufacturer's literature for information e.g. wiring.

The internal boiler / cooker wiring diagram is shown in Fig 8.

FLUE SYSTEM

Open Flue

Detailed recommendations for fluing are given in BS 5440:1.
The following notes are intended to give general guidance.
The cross - sectional area of the flue serving the cooker must not be less than the area of the flue outlet of the cooker. If flue pipe is to be used it must not be less than 150mm internal diameter.

A straight vertical section of flue pipe of a length not less than 600mm must be utilised immediately above the draught diverter before any bends are used.

Flue pipes and fittings should be constructed from one of the following materials:-

(a) Cement to BS 567
(b) Aluminium or stainless steel to BS 715
(c) Cast iron or mild steel to BS 41 acid resistant vitreous enamel lined.

If double walled flue pipe is used it should be of a type acceptable to British Gas.
If a chimney is to be used, it preferably should be one that is composed of or lined with a non - porous acid resistant material. (Chimneys lined with salt glazed earthenware pipes are acceptable if the pipes comply with BS 65). A flue pipe constructed to one of the standards in (a) to (c) above, should form the initial connection to lined chimneys.

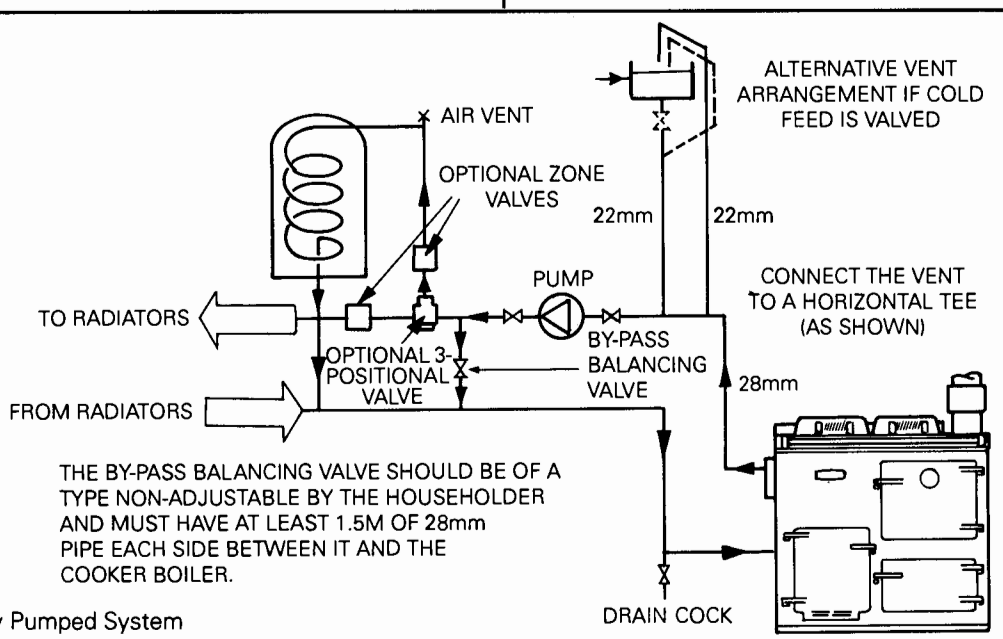


Fig 4. Typical Fully Pumped System DESN 510114

Site requirements

Where a chimney is to be used which is not composed of or lined with a non - porous acid resistant material it should be lined with a stainless steel flexible flue liner or any other liner of a type that is acceptable to British Gas.

The internal diameter of the liner must not be less than 150mm and the number of joints must be kept to a minimum. If the flue is not to be connected directly to the appliance draught diverter, a flue pipe which is manufactured from one of the materials in (a) to (c) above should form the connection between the draught diverter and flue liner.
Before connecting the appliance to or inserting a liner into, a flue that has been previously used the flue must be thoroughly swept clean of any soot and loose materials. If a register plate, restrictor plate, damper, etc. is fitted in the flue it must be removed before connecting the appliance to, or inserting a liner into the flue.
The flue should terminate in accordance with the relevant recommendations given in BS 5440:1.
A terminal of a type that has been tested and found satisfactory by British Gas should be fitted at the flue outlet.

AIR SUPPLY

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

Kitchen or Internal Space Air Supply
Wherever an open flue appliance is to be installed it must have a permanent air vent. This vent must be either direct to outside air or to an adjacent room or internal space which itself must have a permanent air vent of at least the same size direct to outside air.
The minimum effective area of the permanent air vent in the outside wall must be 144cm^2.

Effect of an Extract Fan
If there is any type of extract fan fitted in the same room as an open flue appliance there is a possibility that if adequate air inlet area from outside is not provided, spillage of the products from the appliance flue could occur when the extract fan is in operation. Where such installations occur, a spillage test as detailed in BS 5440:1 must be carried out and any necessary remedial action taken.

WATER CIRCULATION SYSTEM

Detailed recommendations for the water circulation system are given in BS 6891, BS 5449:1 (for smallbore and microbore central heating systems).
The following notes are of particular importance:- In a combined central heating and domestic hot water system, the hot water storage vessel **MUST** be of the indirect cylinder or calorifier type e.g. (as manufactured by Albion Cylinders).

The hot water storage vessel should be insulated preferably, with not less than 75mm thick mineral fibre or its equivalent.
Pipework not forming part of the useful heating surface should be insulated to prevent heat loss and possible freezing, particularly where pipes are run through roof space and ventilated under floor spaces. Cisterns situated in areas which may be exposed to freezing conditions should also be insulated.

Draining taps must be located in accessible positions which permit the draining of the whole system, including the appliance and hot water storage vessel. Draining taps should be at least 1/2in BSP normal size and be in accordance with BS 2879.
The appliance boiler section should be connected to cistern water supply, subject to a maximum head of 27.5m, minimum of 1m.

The heating system must be designed (and adjusted if necessary) to give a temperature differential across the boiler at full output of 10° - 14°C (18 - 25°F). The use of horizontal pipe runs should be avoided wherever possible in order to prevent the collection of air in the system. If horizontal runs are unavoidable, the pipes should rise upwards in the direction away from the appliance.

Circulating Pump
It is recommended that the selected pump be sized to suit the boiler pressure loss (see Fig 3.) and therefore adequate to give the required temperature differential between the flow and return.
The pump should be able to meet the requirements of the system design and fitted in a readily accessible position.

Isolating Valves
Isolating valves (preferably of the keyless type) must be fitted to the inlet and outlet of the circulating pump to facilitate service and replacement of pump without draining the system.

Inhibitor
It is recommended that a corrosion inhibitor is added to the heating to protect the heat exchanger and pipework.

Use only the type for copper heat exchangers.

When using in an existing system take special care to drain the entire system, including the radiators, then thoroughly flushing out before fitting the boiler and adding the inhibitor.

Sealed System
See section 8 for details.

PRELIMINARY INSTALLATION

The appliance is delivered assembled with the exception of the following items which are supplied separately packed and require assembly:-

1. Draught Diverter Assembly - See Fig 5.
2. Appliance Rear Distance Bracket - (for use when appliance is installed 25mm) away from a rear wall of combustible material). See Fig 6.
3. Hotplate Covers
4. Hand Rail

The handrail brackets are held on the front ends of the cooker top-plate casting. Remove the travel nuts and replace with the handrail brackets ensuring the fibre protecting washers are in position. Insert the handrail in to the brackets, positioning them correctly, and tighten the locating bolts (Fig. 7).

Site Location -

1. Remove the appliance assembly from the transit wooden pallet by the temporary location of a sloping ramp board between the pallet and the floor. With the appliance on the floor, lift the front of the appliance (manually or crowbar) and insert a 1in BSP x 1m long tube between the front of the appliance base plate and the floor.

Draw the tube balanced appliance forward until the tube is at the rear of the appliance and then insert a second similar tube at the front of the appliance, between the base plate and the floor. The tube supported appliance can now slowly be "rolled" across the floor and positioned with its back against the wall, and in its intended position for flue connection.

Using a crowbar at the rear corner of the appliance base plate, take the weight of the appliance on the crowbar and remove the rear rolled tube, followed by similar action on the front tube.

2. Assemble and locate the flue draught diverter assembly on top plate. See Fig 5.

NOTE: IT IS RECOMMENDED THAT A "SLIP" OR "SPLIT" ADAPTOR IS FITTED BETWEEN THE DIVERTER FLUE SOCKET AND FLUE PIPE TO FACILITATE POSSIBLE FLUE DISCONNECTION AFTER COMMISSION.

Connect and terminate the flue system in accordance with standard practice.

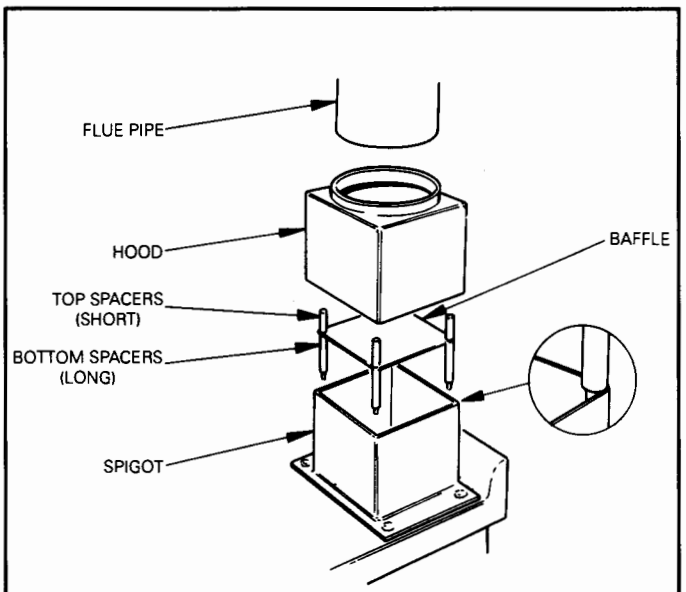


Fig.5 Appliance Draught Diverter - Open Flue DESN 510118

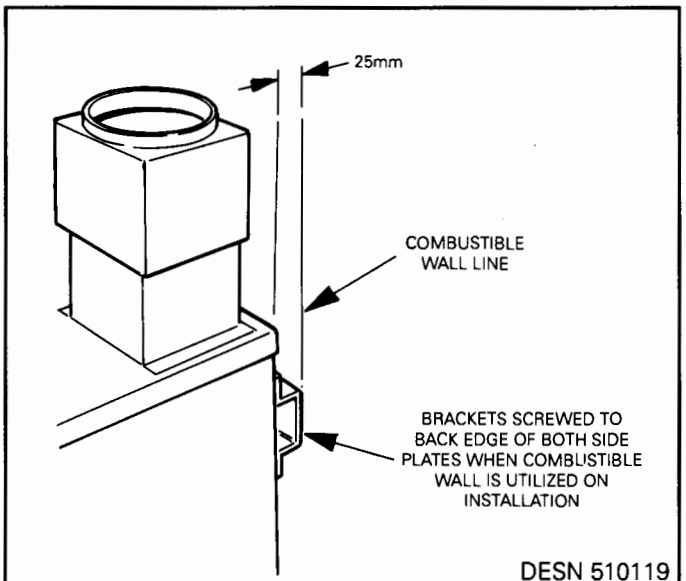


Fig.6 Clearence Between Cooker and Combustible Wall

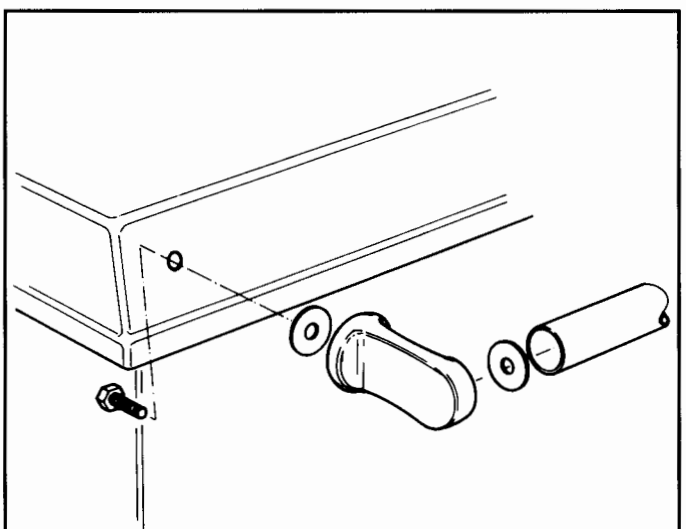


Fig.7

Installation Instructions

GAS CONNECTION

1. Connect the gas supply to the integral union gas service cock on the appliance.
2. Test the whole of the gas installation, including the meter and purge in accordance with the recommendations of BS 6891:

WATER CONNECTIONS

The two Rp1 (1in BSP int) flow and return connections are located towards the rear edge of the appliance left hand side panel, and pipe connections should be made with R1 (1in BSP ext) x 28mm dia copper compression fittings.

SYSTEM SUITABILITY

This boiler is suitable for fully pumped system only.
For Optimum operating conditions the heating system, into which the boiler is installed, should include a control system.
Such a system will include a timer switch and a room thermostat and/or a cylinder thermostat.
The boiler should be controlled so that it operates on demand only.
Operation of the system under control of the boiler thermostat only does not produce the best efficiency.
Refer to the control equipment manufacturer's literature for information e.g. wiring.
The internal boiler / cooker wiring diagram is shown in Fig 9.

ELECTRICAL CONNECTIONS

To connect the electrical wiring to the appliance. Remove the terminal cover plate at the bottom left hand side of the appliance.
Fit supply and pump cables to the terminals as shown in Fig 8. Ensure that the appropriate cable clamp is used.

The permanent live MUST be connected to the terminal marked L.
If a time switch is fitted to the boiler then the switch live MUST be connected to the terminal marked BSL. **NOTE:** The link between terminals L1 and BSL MUST be removed to ensure correct operation of the time switch.
If the time switch is fitted to the cooker then the switched live MUST be connected to the terminal marked CSL. **NOTE:** The link between terminals L1 and CSL MUST be removed to ensure correct operation of the time switch.
Refit the terminal cover plate.

WARNING
THIS APPLIANCE MUST BE EARTHED. EXTERNAL CONTROLS AND THE APPLIANCE MUST BE SUPPLIED VIA THE SAME PLUG AND SOCKET OR ISOLATOR.

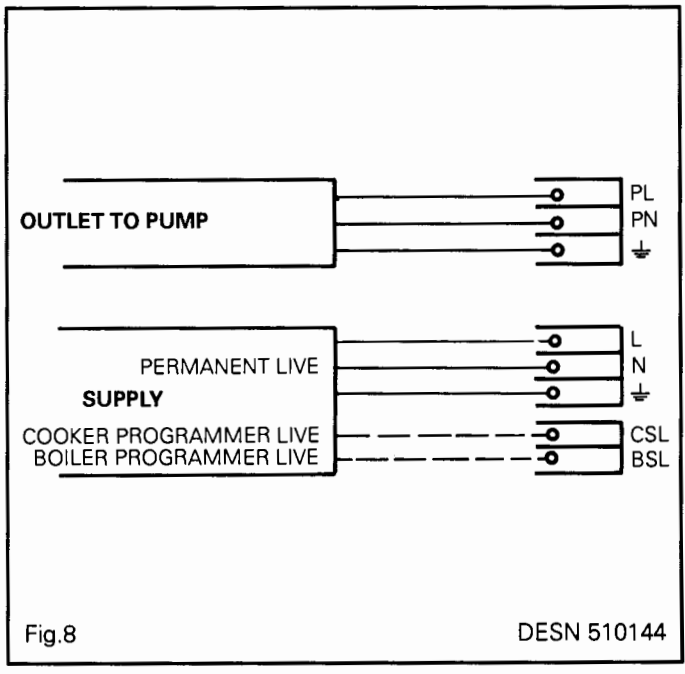


Fig.8 DESN 510144

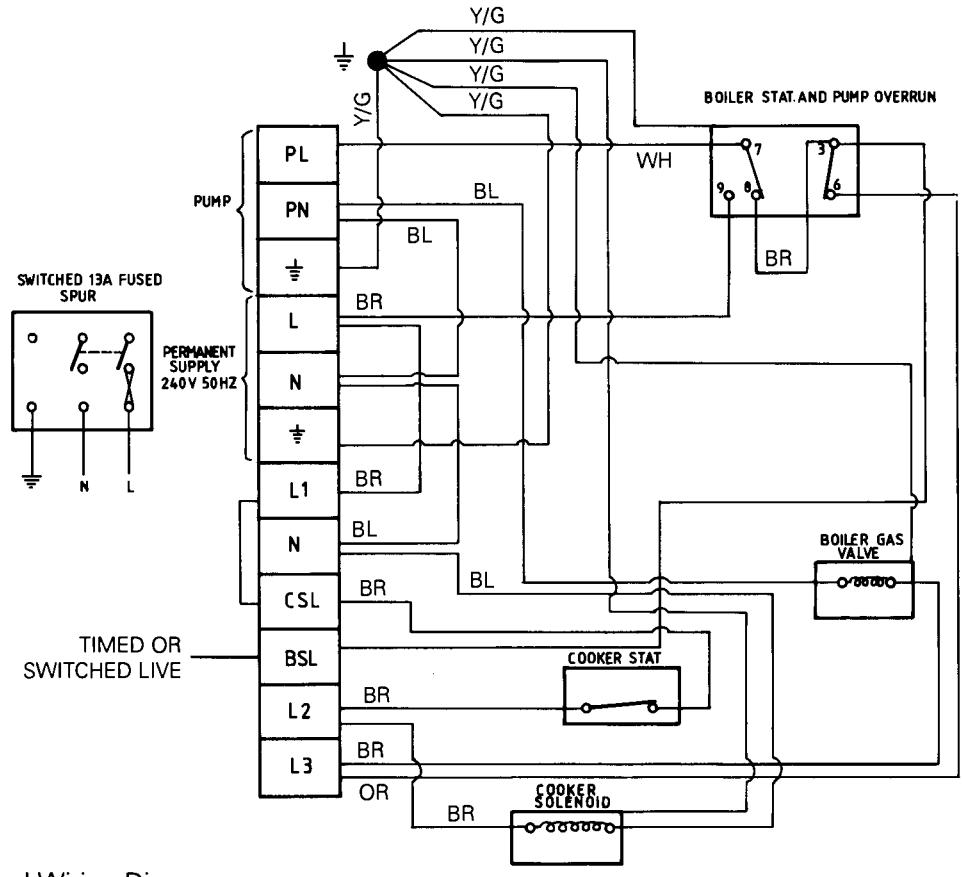
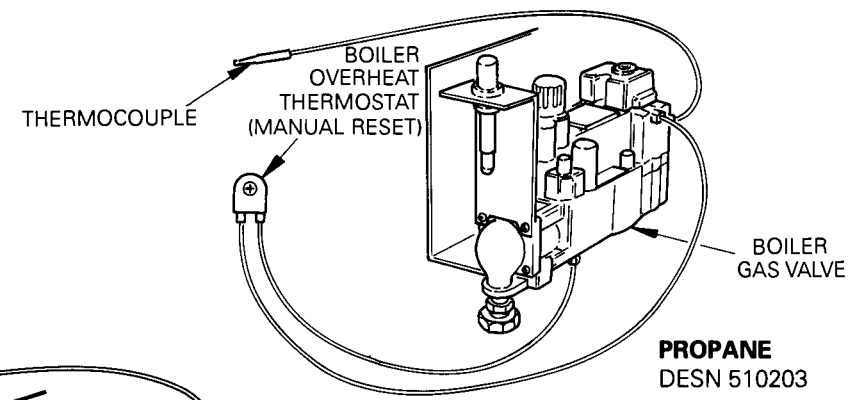


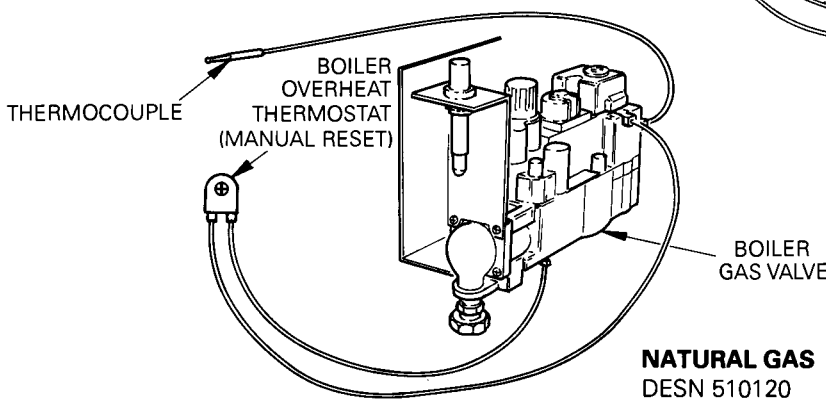
Fig.9 GD80 Internal Wiring Diagram

DESN 510115 B

When fitting cooker time switch, remove link L1 - CSL and connect switched supply to CSL.



PROPANE
DESN 510203



NATURAL GAS
DESN 510120

Boiler Overheat Thermostat - Schematic Diagram

Commissioning Instructions

ELECTRICAL INSTALLATION

Checks to ensure electrical safety should be carried out by a competent person, ie, earth continuity, polarity and resistance to earth as described in the British Gas Multimeter Handbook.

WATER CIRCULATION 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.
Vent all heat emitters and check for water soundness.

Sealed Systems
See section 8 for details

COMMISSIONING THE COOKER AND BOILER

Isolate electricity at the wall socket. Turn the knob OFF and cooker to LOW.

After ensuring gas is available to the appliance loosen joint and purge any air from the supply pipe. BS 6891.
WARNING: NO SMOKING OR NAKED LIGHTS.
Tighten joint and check the gas service cock is in the ON position. Check for gas soundness up to the gas valves.

LIGHTING THE PILOT

Boiler (see Fig 10.)

Push in and hold the gas control knob **A** allowing a few seconds for the gas to reach the boiler pilot. Press piezo igniter button **B** and the pilot burner will light.

Continue to hold the knob in for 15 seconds after the pilot has been lit so that when the knob is released, the pilot should remain alight.

If it does not, WAIT 3 MINUTES then repeat the procedure.

If the pilot flame does not remain alight, consult the fault finding section of this document.

Cooker (see Fig 10.)

Press in and hold the cooker flame failure override button **C** allowing a few seconds for the gas to reach the cooker pilot. Press the piezo igniter button **D** and the pilot burner will light.

Continue to hold the button in for 15 seconds after the pilot has been lit so that when the button is released, the pilot should remain alight.

If it does not, WAIT 3 MINUTES then repeat the procedure.
Once the pilot is established the cooker burner will cross light at the LOW rate.
If the pilot flame does not remain alight, consult the fault finding section of this document.

MAIN BURNER LIGHTING - See Fig. 10

Ensure the electricity supply is turned ON and set any external controls to the ON position.
Turn the boiler thermostat knob to 80°, and the boiler burner will cross light to full rate.
Turn the cooker thermostat to No.9, and the cooker burner will increase to full rate.
Should the sequence not occur, then refer to the fault finding section of this document.

Check for gas soundness of all leaks with leak detection fluid.

Turn off both burners. (by turning cooker thermostat knob to 'LOW' and boiler thermostat to 'OFF').

Connect a pressure gauge to the burner test nipple **E** on the boiler gas valve, loosening the test point screw.

Connect a pressure gauge to the burner test nipple **F** on the cooker burner inlet manifold by depressing and holding the flame failure override button and removing the pressure test point screw. Release button.

Re-light the main burners.

From the technical Specification check that the main burner pressures are correct after the appliance has been running for 10 minutes.

If necessary, adjustment to boiler main burner pressure may be made by removing the cover screw **G** to adjust the governor **H**. **Natural Gas Only.**

Adjustment to cooker main burner pressure may be made by removing the cover screw **J** to adjust the governor **K**. **Natural Gas Only.**

Turn cooker thermostat knob to LOW. Depress and hold flame failure override button. Replace pressure test point screw. Release button. Refit the governor cover screw.

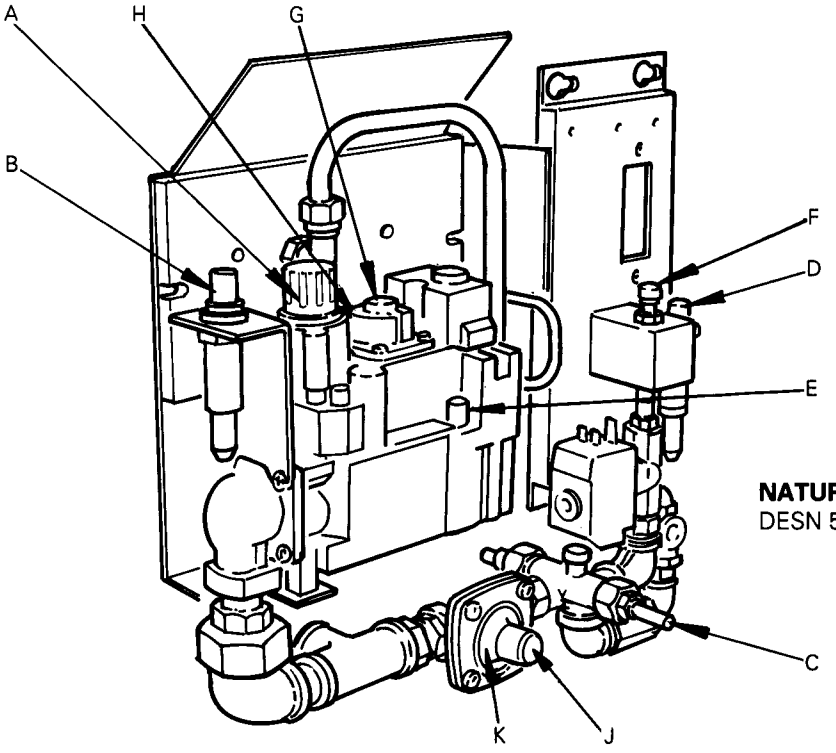
Turn the boiler thermostat knob to OFF position refit the governor cover screw and tighten the burner pressure point screw. Turn the thermostat knob to the required setting.

The boiler and pump should be run until the system is hot. Check for water leaks, then flush the system with all manual automatic valves open. Upon refilling check the system for leaks. When all the air has been removed from the water circuit, the pump and radiators should be balanced to achieve the correct temperature to drop across the system.

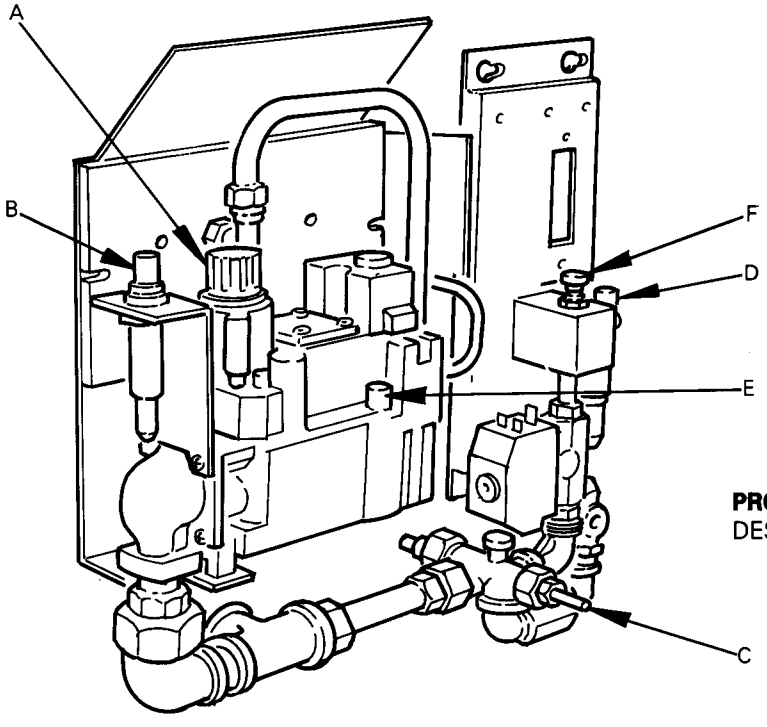
Set any timer control, room thermostat etc to suit the customer's requirements.

KEY

A. Boiler Gas Control Knob
B. Piezo Igniter Button
C. Cooker Flame Failure Override Button
D. Piezo Igniter Button
E. Burner Pressure Test Nipple
F. Burner Pressure Test Nipple
G. Cover Screw
H. Governor
J. Cover Screw
K. Governor



NATURAL GAS
DESN 510112A



PROPANE
DESN 510204A

Fig.10

Servicing Instructions

ANNUAL SERVICING

It is important for the correct operation of the appliance that servicing be carried out annually by a competent person in accordance with gas safety regulations. A contract may be made with your local gas board.

With normal use, a boiler / cooker service should be carried out immediately after the end of the heating season. The householder should be advised to turn off both burner and cooker control knobs the night preceding the day of the service, so that the appliance will be cooled down by the following morning, in readiness for servicing.

Before commencing any service, isolate the electricity supply then turn OFF the gas supply at the gas service cock.

SERVICING SCHEDULE

1 Carry out a pre - service check noting any operational faults.

2 Clean the hotplate

3 Clean the burners

4 Clean the burner and pilot injectors

5 Clean the heat exchanger

6 Check the condition of the boiler combustion chamber insulation.

7 Check that the flueway is unobstructed and that the draught diverter unit is correctly assembled

PRE-SERVICE CHECK

Operate the appliance and system, noting any faults which may need to be corrected during service.
NOTE: Isolate unit from electricity supply and turn off gas at service cock before servicing. After completing service always check for gas soundness and check the function of controls.

HOTPLATE CLEANING - See Fig.11

Lift out the hotplate using the lifting tools provided (Fig 11). Brush the fins with a wire brush to remove any deposits.

BURNER CLEANING

Boiler (see Fig 12 and 12a.)

Ensure isolation of electricity and gas supply.

Remove electrical terminal cover **J** from boiler gas valve.

Remove electrical connections

Slacken union nut **K**

Slacken three screws **L**

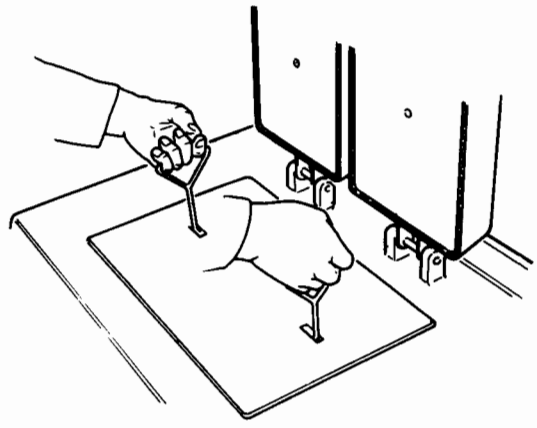


Fig.11 Removal of Hot Plate DESN 510145

Undo union nut. Lift and remove burner, complete with gas valve, from the unit. (see Fig 12a).

Brush the boiler burner top and check the flame ports are clear. Any deposits may be removed with a non-metallic brush.

Remove the burner injector, check the orifice and remove any deposits from the injector and burner venturi using a suitable non-metallic brush.

Remove pilot injector. Clean any deposits by rinsing in warm water or use a suitable brush. DO NOT attempt to push a wire through the orifice.

Cooker (see Fig 12 and 12b.)

Remove solenoid connector plug **M**.

Slacken union nut **N**.

Slacken three screws **P**.

Undo union nut. Slide the assembly to the right and remove burner, complete with controls, from the unit (see Fig 12b).

Brush the cooker burner top and check flame ports are clear.

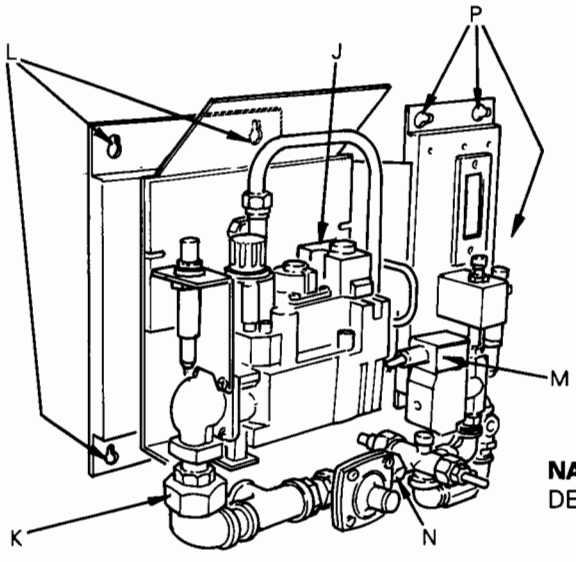
Remove screws and end plate from burner.

Remove any deposits from inside the burner or venturi and tip downwards to discharge debris.

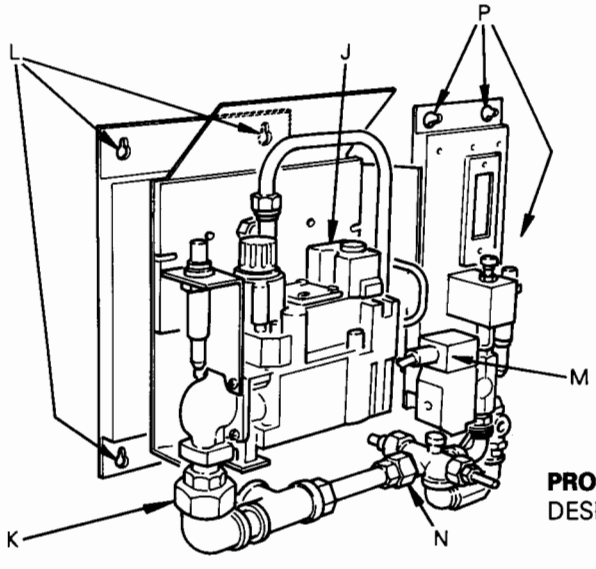
Re-secure the end plate.

Remove the burner injector, check the orifice and remove any deposits from the injector using a suitable non-metallic brush.

Remove pilot injector. Clean any deposits by rinsing in warm water or use a suitable non-metallic brush. DO NOT attempt to push a wire through the orifice.



NATURAL GAS
DESN 510146A



PROPANE
DESN 510205A

Fig.12

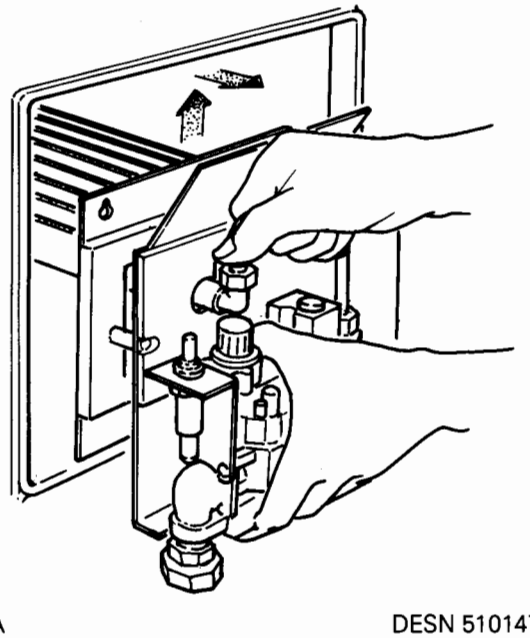


Fig.12A DESN 510147A

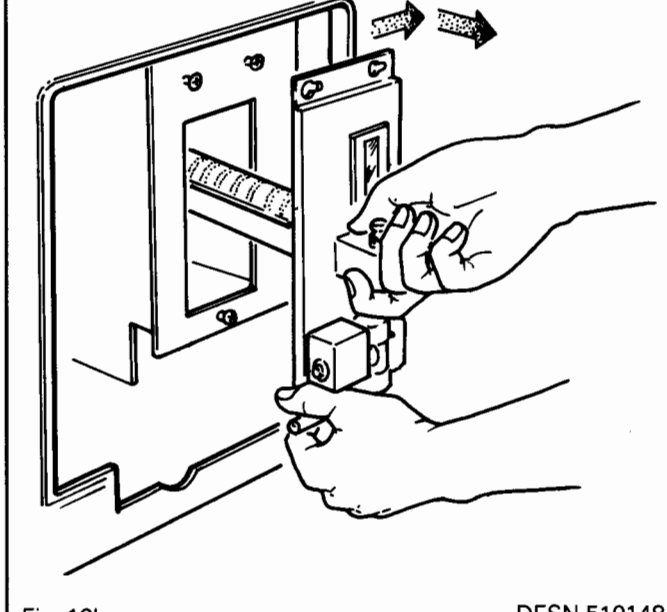


Fig. 12b DESN 510148

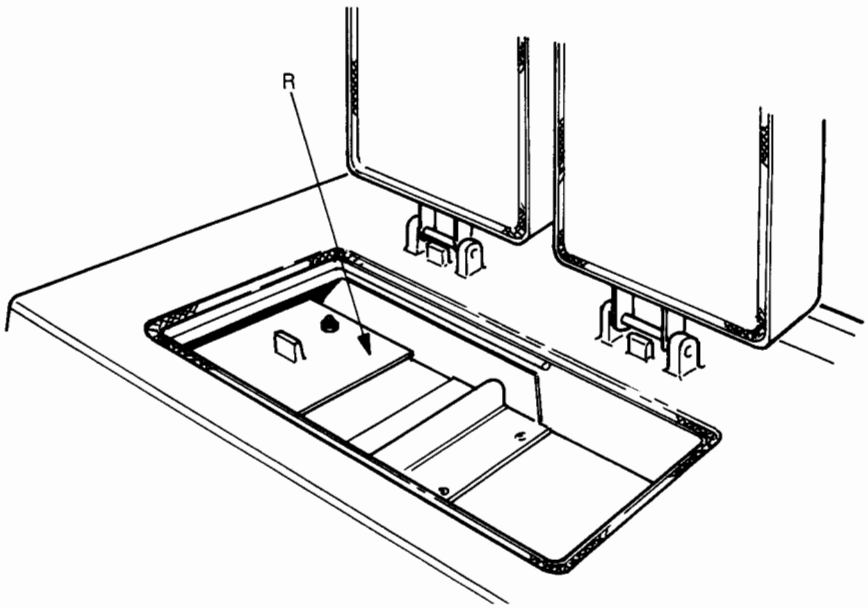


Fig.13 DESN 510149

HEAT EXCHANGER - See fig.13

Remove access plate **R**

Using a suitable brush clean the heat exchanger from above and below.

NOTE: The insulation used on the inside surface of the combustion chamber is delicate. Great care must be taken when cleaning the heat exchanger not to abrade it. No attempt should be made to clean the insulation.

COMBUSTION CHAMBER INSULATION

Remove boiler burner assembly as previously described. Check insulation for any signs of deterioration or Physical damage and replace if necessary.

FLUE CLEANING

Brush out cooker and boiler flueways with a suitable brush.

Check the assembly of the draught diverter.

RE-ASSEMBLE THE APPLIANCE

Re-assemble the appliance in the reverse order.

Refit the burner injectors to the assembly.

Refit access plate **R**

Refit the pilot injectors and pilot supply pipe to the pilot assembly.

Refit boiler and cooker burner assemblies and refit screw and tighten union nuts.

Re-connect solenoid electrical supply to cooker burner assembly.

Re-connect electrical terminals to the boiler gas valve.

Replace terminal cover.

Replace hotplate.

Test fully for gas soundness.

Test the Appliance and Installation

Ensure that gas is turned on at the service cock and electrical supply is ON.

Following the sequence in COMMISSIONING INSTRUCTIONS.

TO FIT NEW THERMOELECTRIC VALVE - See fig. 14

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1 Disconnect the necessary fittings and remove existing valve.

2 Transfer inlet and outlet elbows to the replacement valve.

3 Re-assemble in reverse order.

4 Check for gas soundness.

TO FIT NEW PILOT INJECTOR - See Fig.15

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1 Unfasten the secure nuts on each end of the supply pipe and remove.

2 Remove the injector.

3 Fit replacement injector.

4 Re-assemble in reverse order.

5 Test for gas soundness.

TO FIT NEW THERMOCOUPLE

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1 Disconnect thermocouple from thermoelectric valve via tube nut and from pilot assembly.

2 Remove thermocouple.

3 Fit replacement thermocouple.

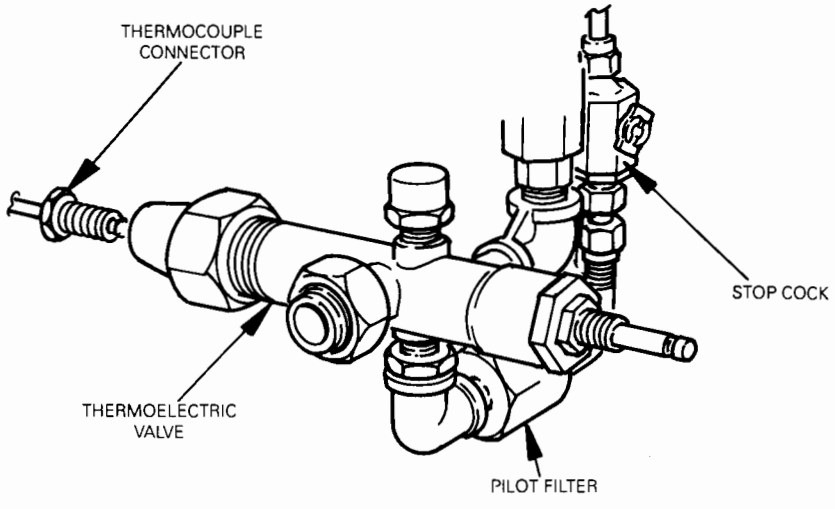


Fig 14. Thermoelectric Valve DESN 510150

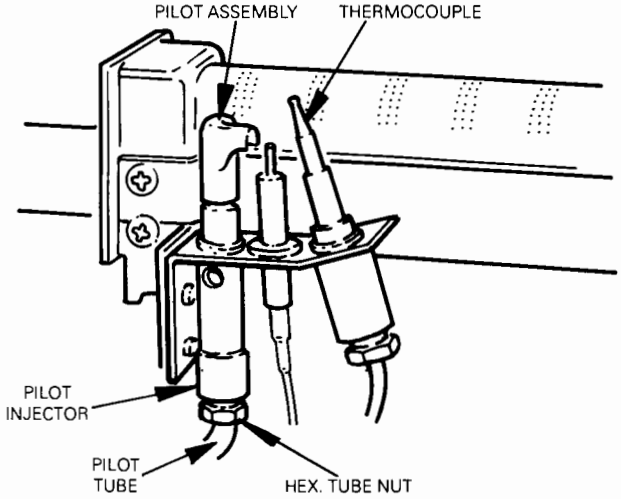


Fig 15. Pilot / Thermocouple Assembly DESN 510151

Replacement of parts - Cooker

TO FIT NEW PILOT FILTER - See fig.14

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1 Disconnect the compression fitting between filter and stop cock.

2 Unscrew filter.

3 Fit replacement filter.

4 Re-assemble fitting.

5 Check for gas soundness.

TO FIT NEW PILOT STOP COCK

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1 Disconnect the compression fittings

2 Remove stop cock.

3 Fit replacement.

4 Re-assemble fittings.

5 Check for gas soundness.

TO FIT NEW BURNER

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1 Remove two pilot assembly screws.

2 Slacken locknut.

3 Lift and remove burner.

4 Fit new burner.

5 Re-assemble in reverse order.

TO FIT NEW BURNER INJECTOR

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1 Refer to above and remove burner

2 Unscrew injector.

3 Fit replacement.

4 Re-assemble in reverse order.

TO FIT NEW SOLENOID COIL

1 Remove electrical connector plug.

2 Remove nut and pull coil from solenoid body.

3 Fit replacement.

TO FIT NEW COOKER THERMOSTAT - See fig.16

1 Remove thermostat knobs.

2 Remove screws and control panel cover.

3 Unclip thermostat phial **A** from LH side of roasting oven and withdraw phial and capillary tube clear of oven and front plate until it is fully clear at the LH side of the appliance.

4 Remove electrical leads from thermostat noting position.

5 Remove spindle locknut **B** and extract thermostat **C**.

6 Fit replacement.

7 Re-assemble in reverse order.

KEY
A. THERMOSTAT PHIAL
B. SPINDLE LOCKNUT
C. THERMOSTAT

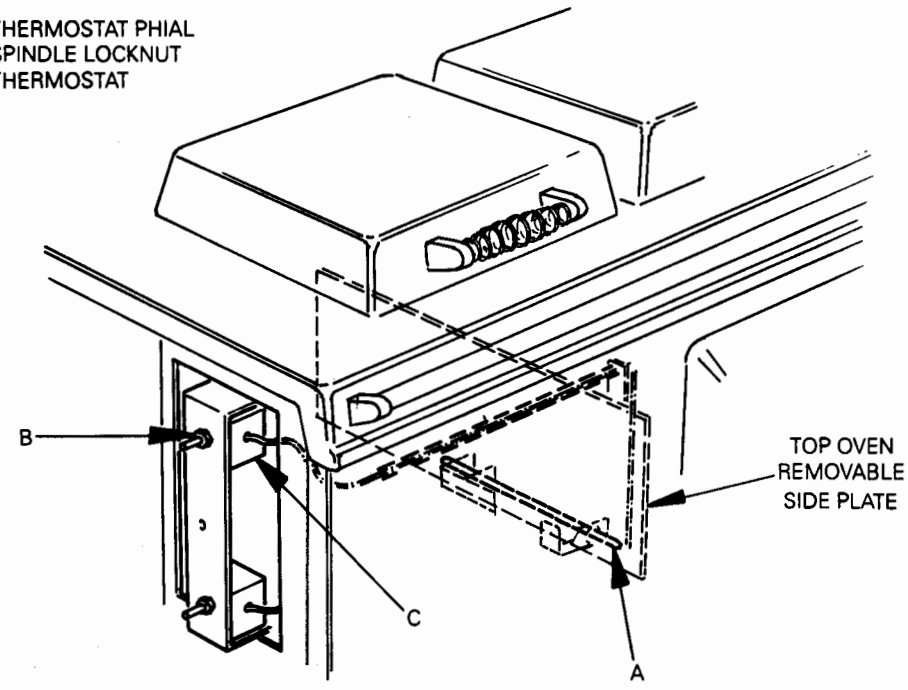
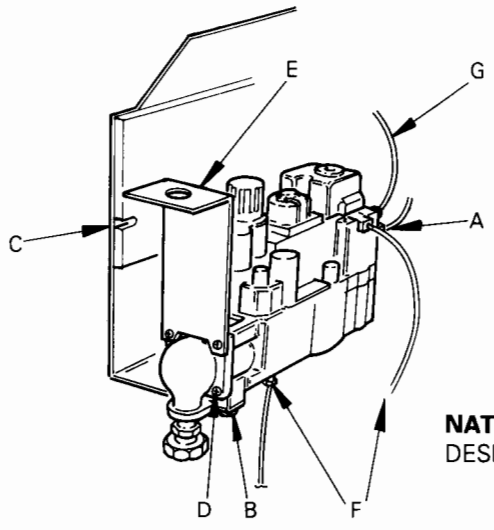


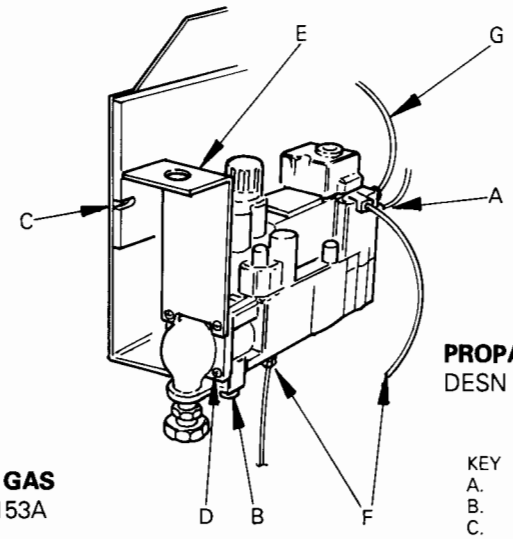
Fig 16

DESN 510152

Replacement of parts - Boiler



NATURAL GAS
DESN 510153A



PROPANE
DESN 510206A

KEY
- A. PILOT FITTING
- B. VALVE CLAMPING SCREW
- C. BAFFLE PLATE
- D. PAN HEAD PINS
- E. IGNITOR MOUNTING BRACKET
- F. THERMOCOUPLE INTERRUPTER LEADS
- G. THERMOCOUPLE

Fig 17 Boiler Gas Valve

TO FIT NEW GAS VALVE - See fig.17

Follow instructions in section Burner cleaning of Servicing Instructions and remove the boiler burner assembly.

1. Unscrew the pilot fitting **A** on the gas valve and remove.
2. Unscrew the valve clamping screw **B** beneath the baffle plate **C**.
3. Remove valve.
4. Unscrew the four pan head pins **D** on each end of the gas valve, remove the two elbow flanges and the ignitor mounting bracket **E**.
5. Fit the two elbow flanges to the new gas valve ensuring the correct positioning.
   N.B. ALWAYS USE NEW 'O' RINGS.
6. Re-assemble in reverse order.
7. Check for gas soundness.

TO FIT NEW PILOT INJECTOR - See fig.15

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1. Release both ends of the pilot supply pipe.
2. Remove injector.
3. Fit replacement.
4. Re-assemble in reverse order.
5. Check for gas soundness.

TO FIT NEW THERMOCOUPLE - See Fig. 17

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1. Release thermocouple **G** from right hand side of gas valve and from pilot assembly.
2. Remove thermocouple, noting the route taken.
3. Re-assemble in reverse order.

TO FIT NEW BURNER

Follow instructions in section Burner cleaning of Servicing Instructions and remove the cooker burner assembly.

1. Remove two pilot assembly clamping screws.
2. Remove two screws and spacers from baffle plate assembly.
3. Remove two burner housing screws.
4. Remove burner.
5. Transfer injector to replacement burner.
6. Re-assemble in reverse order.

KEY
D. ACCESS COVER
E. INSULATION BLANKET
F. PHIAL
G. THERMOSTAT COIL
H. SPINDLE LOCKNUT
J. THERMOSTAT (BOILER)
K. THERMOSTAT (OVERHEAT)

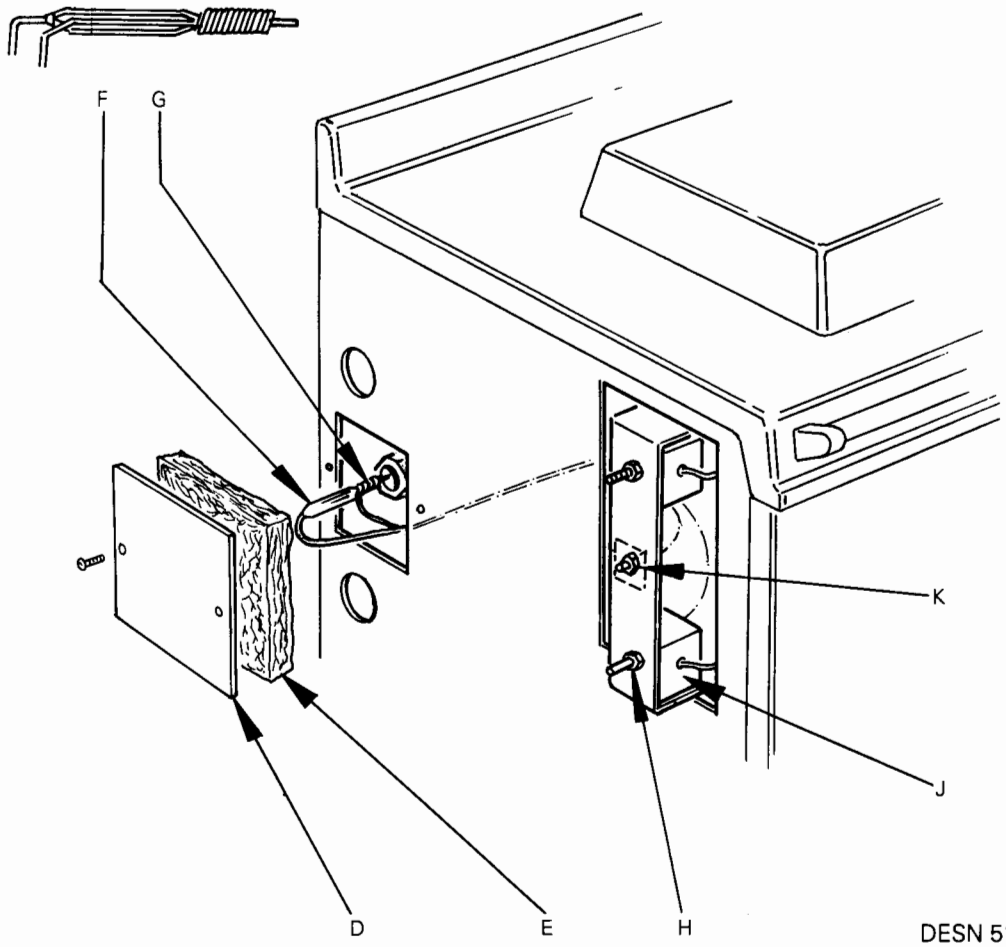


Fig.18 DESN 510154A

TO FIT NEW BURNER INJECTOR

Follow instructions in section Burner cleaning of Servicing Instructions and remove the boiler burner assembly.

1 Unscrew injector.

Fit and tighten replacement.

TO FIT NEW BOILER THERMOSTAT - See fig.18

1 Remove thermostat knobs.

2 Remove screws and control panel cover.

3 Remove screws and thermostat phial access cover **D.**

4 Remove thermostat phial insulation blanket **E.**

5 Remove phial **F** from heat exchanger via rear access panel.

6 Remove overheat thermostat coil **G** from phial.

7 Remove electrical leads from thermostat noting positions.

8 Remove spindle locknut **H** and extract thermostat **J** carefully guiding the phial back into its guide tube on the inside of the side panel.

9 Fit replacement.

10 Re-assemble in reverse order.

TO FIT NEW BOILER OVERHEAT THERMOSTAT

Follow new boiler thermostat instructions 1 to 5.

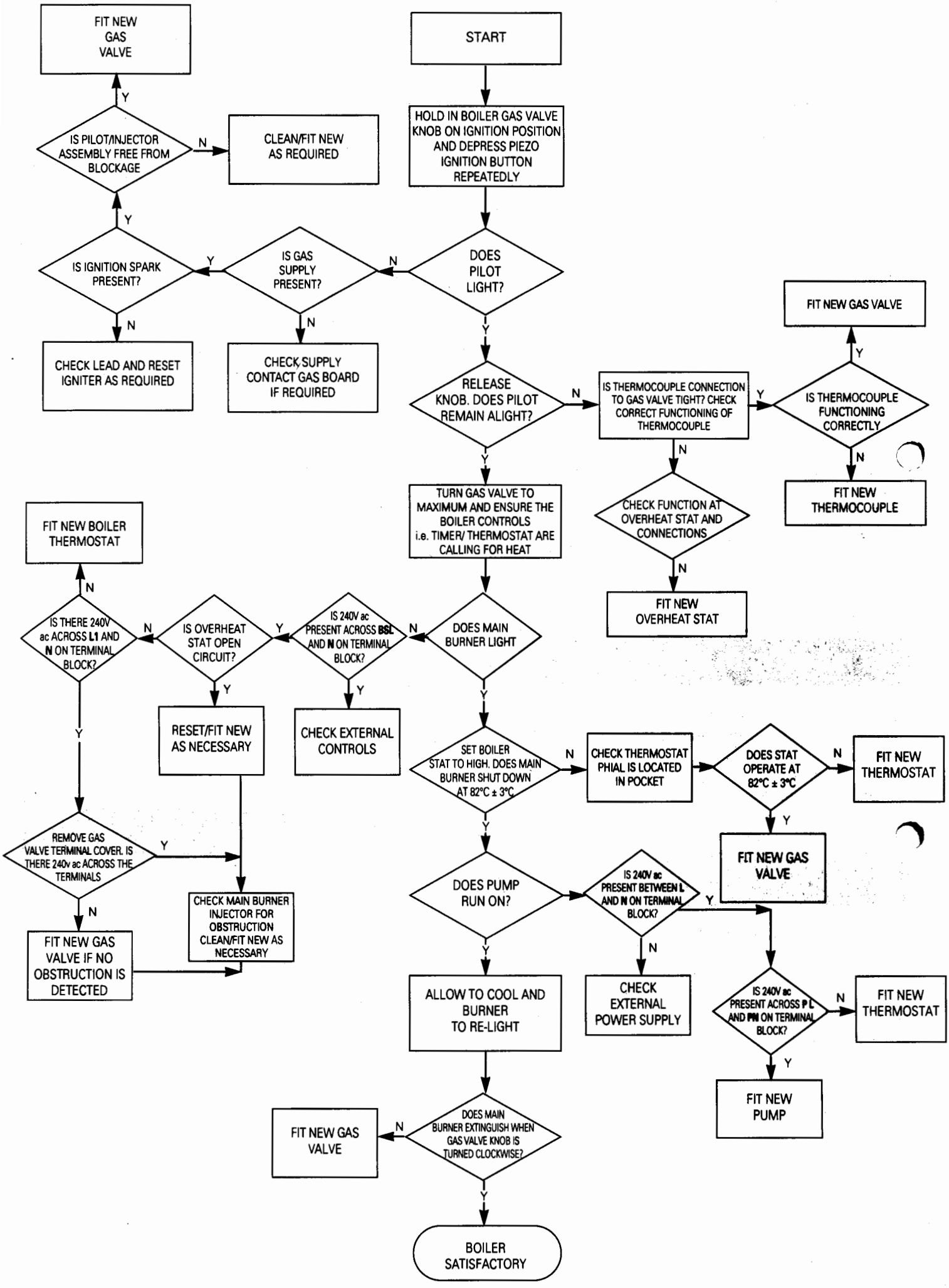
1 Remove electrical leads from thermostat **K.**

2 Remove spindle locknut and extract overheat thermostat.

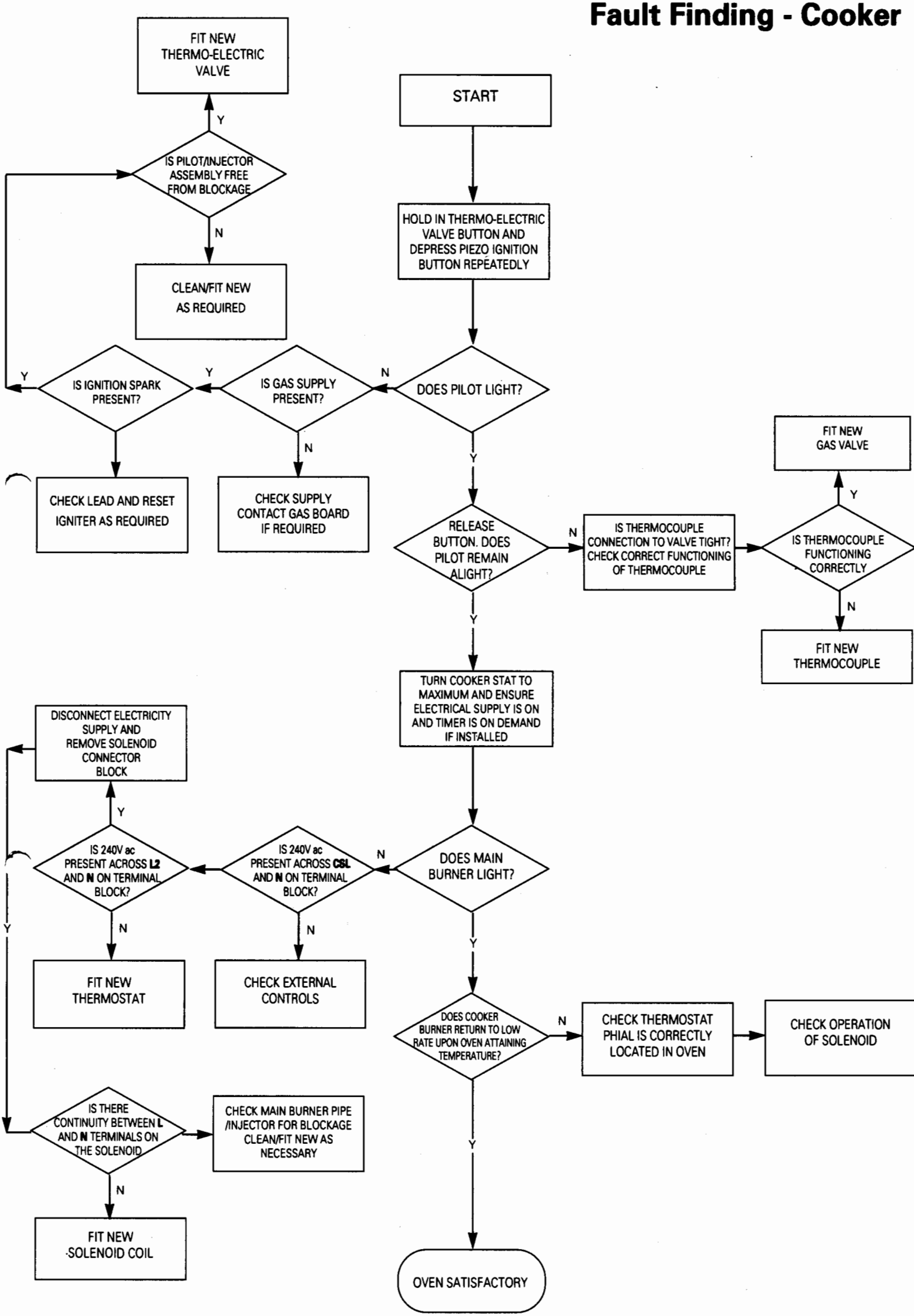
3 Fit replacement.

4 Re-assemble in reverse order.

Fault Finding - Boiler



Fault Finding - Cooker



SEALED SYSTEM REQUIREMENTS

See Fig.19

a. The installation must comply with the requirements of BS 6798 and BS 449. Maximum water 82°C + 3°C.

b. A safety valve set to operate at 3 bar (45 lbf/in²) shall be fitted in the flow pipe close to the boiler. There must be not any valves between the safety valve and the boiler. The valve should be positioned on a discharge pipe fitted to prevent any discharge creating a hazard to occupants or cause damage to electrical components and wiring.

c. A Pressure gauge covering at least the range 0 to 4 bar (0 to 60 lbf/in²) shall be fitted in the system.

d. A diaphragm type expansion vessel, to BS 4814, shall be connected at a point in the return pipe close to the boiler. The vessel must be chosen to suit the volume of water in the system and the charge pressure must not be less than the static head at the point of connection. Further details can be obtained from "Materials and Installation Specification for Domestic Central Heating and Hot Water" published by British Gas and BS 7074:1.

Sizing table:

Air or Nitrogen charge pressure (bar)	0.5		1.0	
Pre-pressurisation pressure (bar)	None	1.0	None	1.5
Expansion vessel volume (litres)	A x 0.07	A x 0.120	A x 0.088	A x 0.160

A = System volume (litres)

e. The hot water cylinder shall be either the indirect coil type or a cylinder fitted with an calorifier.

f. Water lost from the system shall be replaced from a make-up vessel and non-return valve, mounted higher than the top of the system on the return side of the cylinder or radiators. Where access to a make-up vessel would be difficult make-up can be provided by pre-pressurisation of the system.

g. The system may be filled from the mains via a temporary hose connection from a draw-off tap supplied from a service pipe under mains pressure, provided that this pressure is acceptable to the local water authority. The following fittings should form a permanent part of the system and fitted in the order stated. (See Fig.20).

(i) a stop valve complying to the requirements of BS1010:2.

(ii) an anti-vacuum valve of a type approved by the National Water Council.

(iii) a non-return valve of an approved type.

h. Fill the system until the pressure gauge registers 1.5 bar (2 lbf/in²). Examine for leaks and rectify where necessary. Refer to the commissioning instructions, light the boiler and allow the system to reach its maximum working temperature. Examine for leaks then turn off the boiler. Drain the system while it is still hot. Refill, vent and adjust the cold fill pressure to the required valve.

COMMISSIONING

Follow the commissioning instructions as for open vented systems, (See Section 3, Commissioning Instructions), with the following additions:-

Fill the system until the pressure gauge registers 1.5 bar (21.5lbf/in²). Clear any airlocks and check for water soundness.

Check the operation of the safety valve, by allowing the water pressure to rise until the valve opens. The valve should open within +/- 0.3 bar (+/- 0.43 lbf/in²) of the preset pressure. If this is not possible conduct a manual check and test.

Release cold water to initial filling pressure.

Any set pointer on the pressure gauge should be set to coincide with the recommended filling pressure.

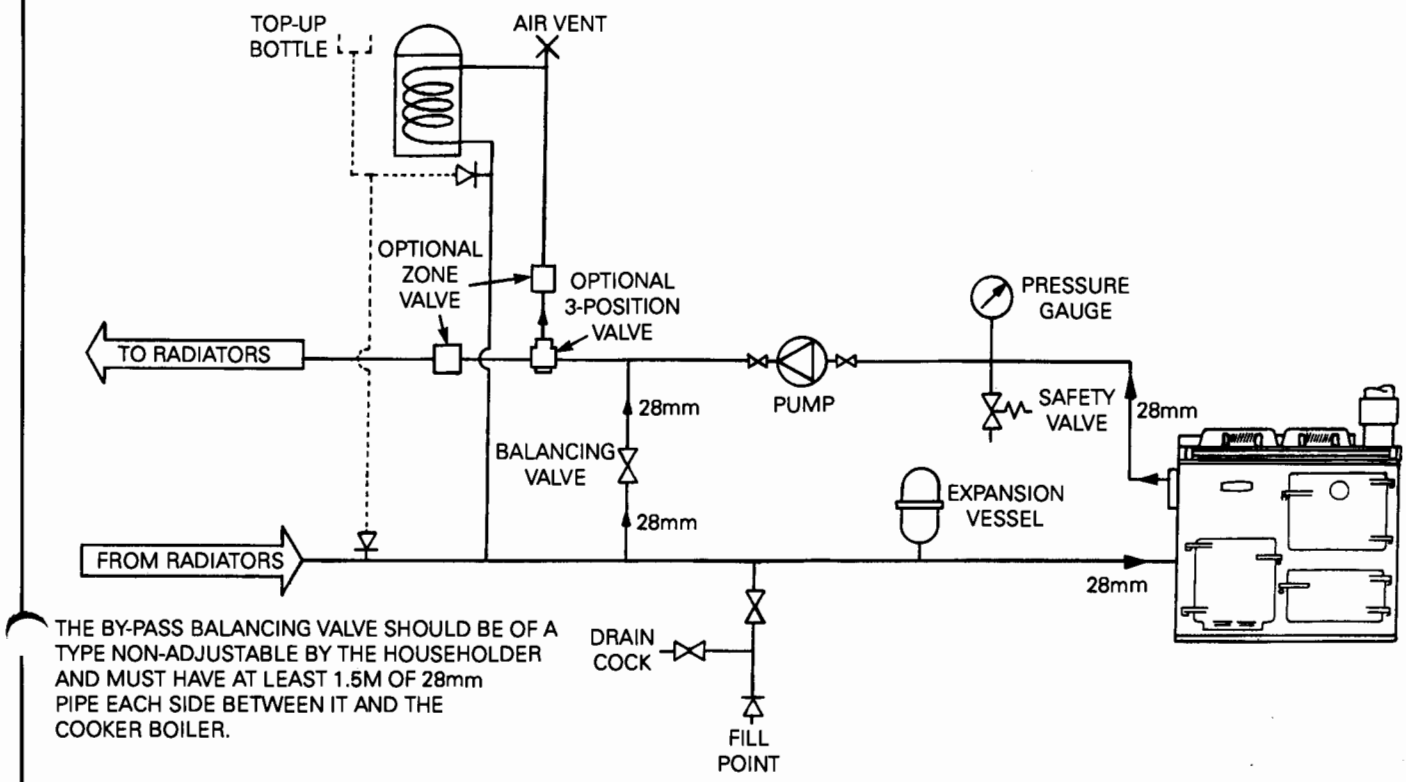


Fig.19 Sealed System Requirements DESN 510198

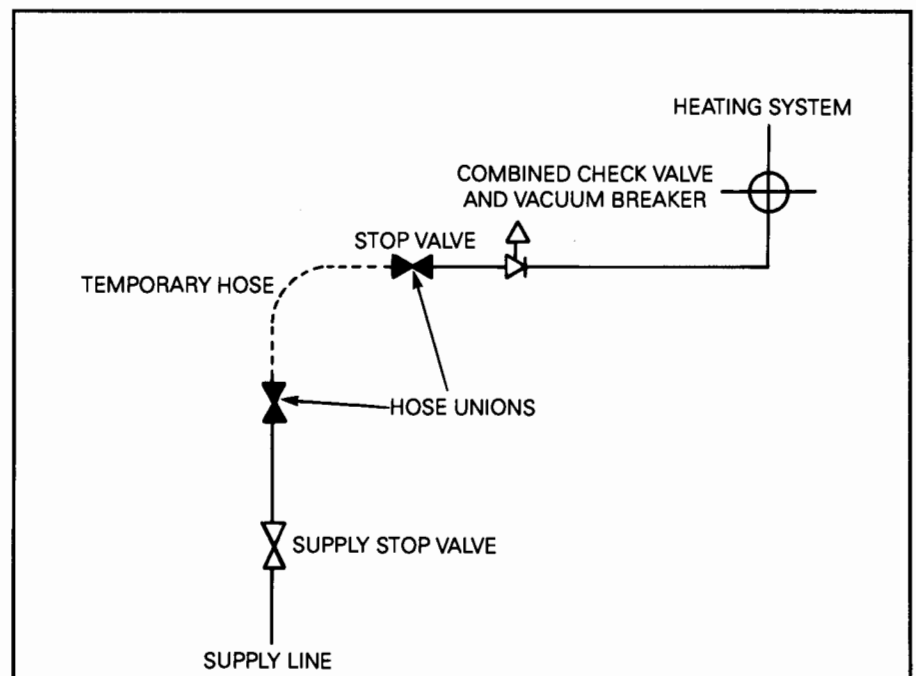
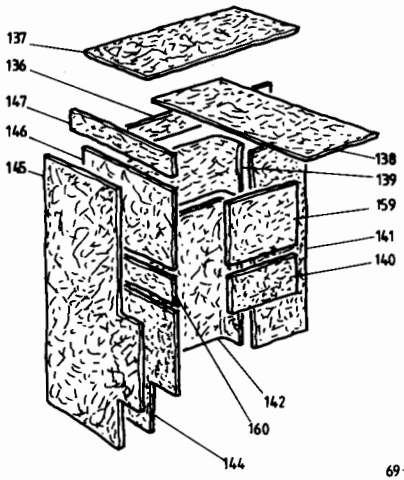
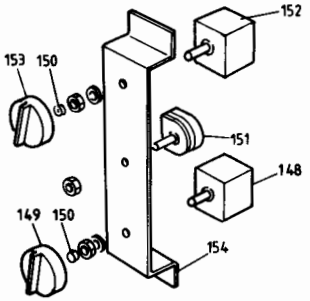


Fig.20 Mains Filling Method DESN 510199



DESN 510254A



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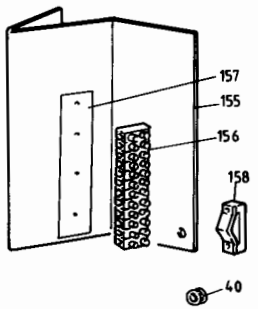

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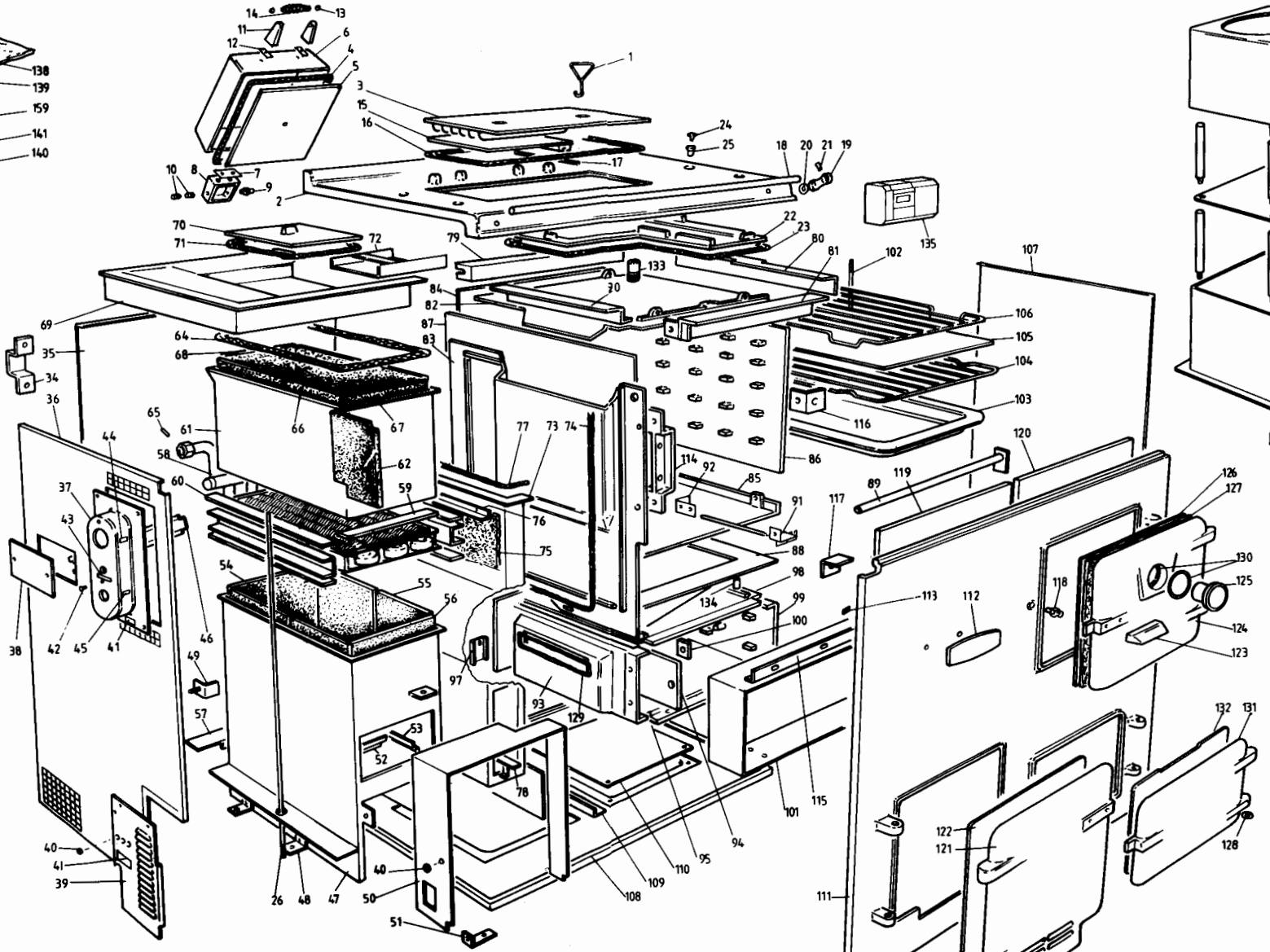
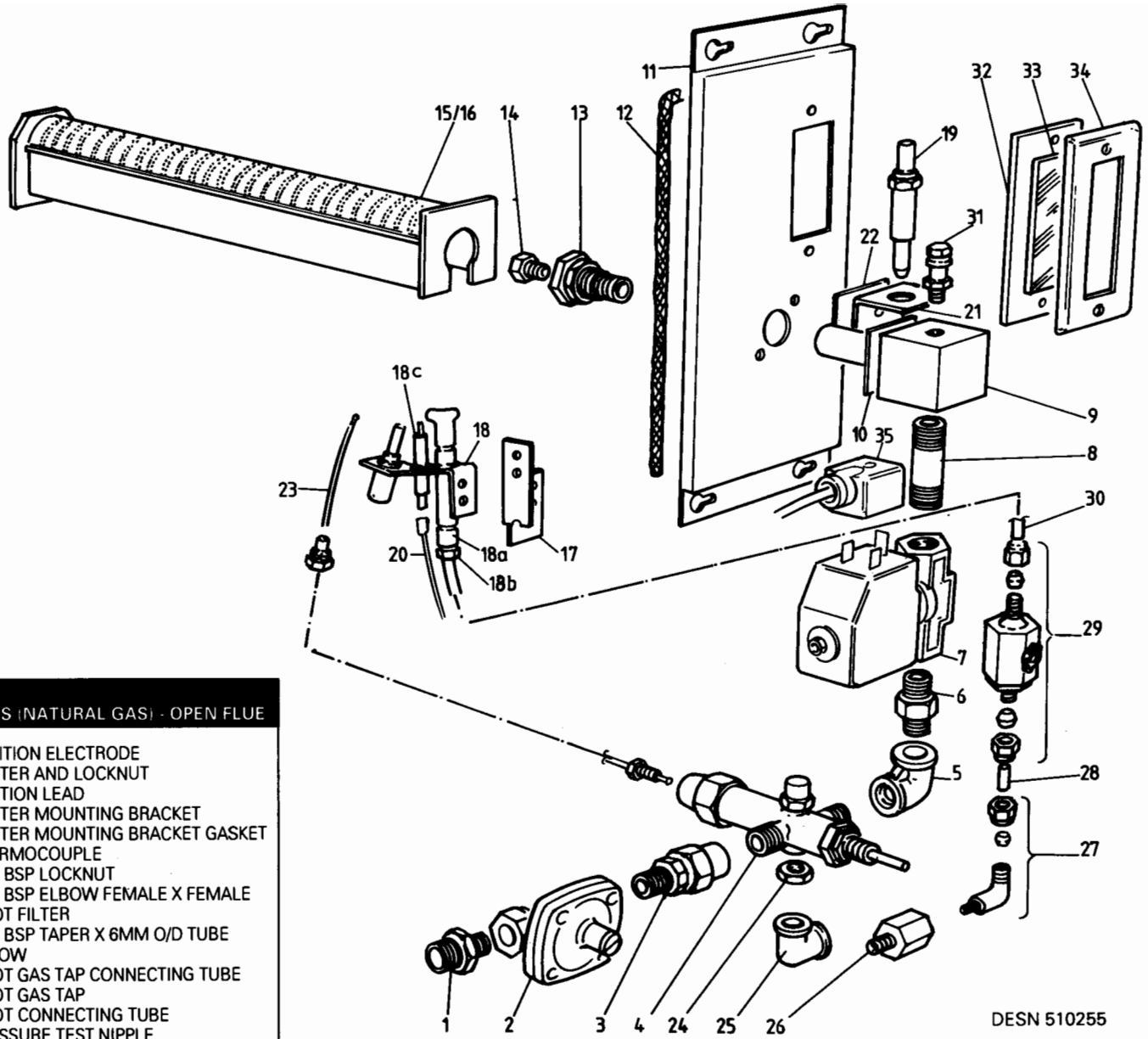


DESN 510253

DESN 510252A

SPARE PARTS LIST
RAYBURN GD80 COOKER OPEN FLUE

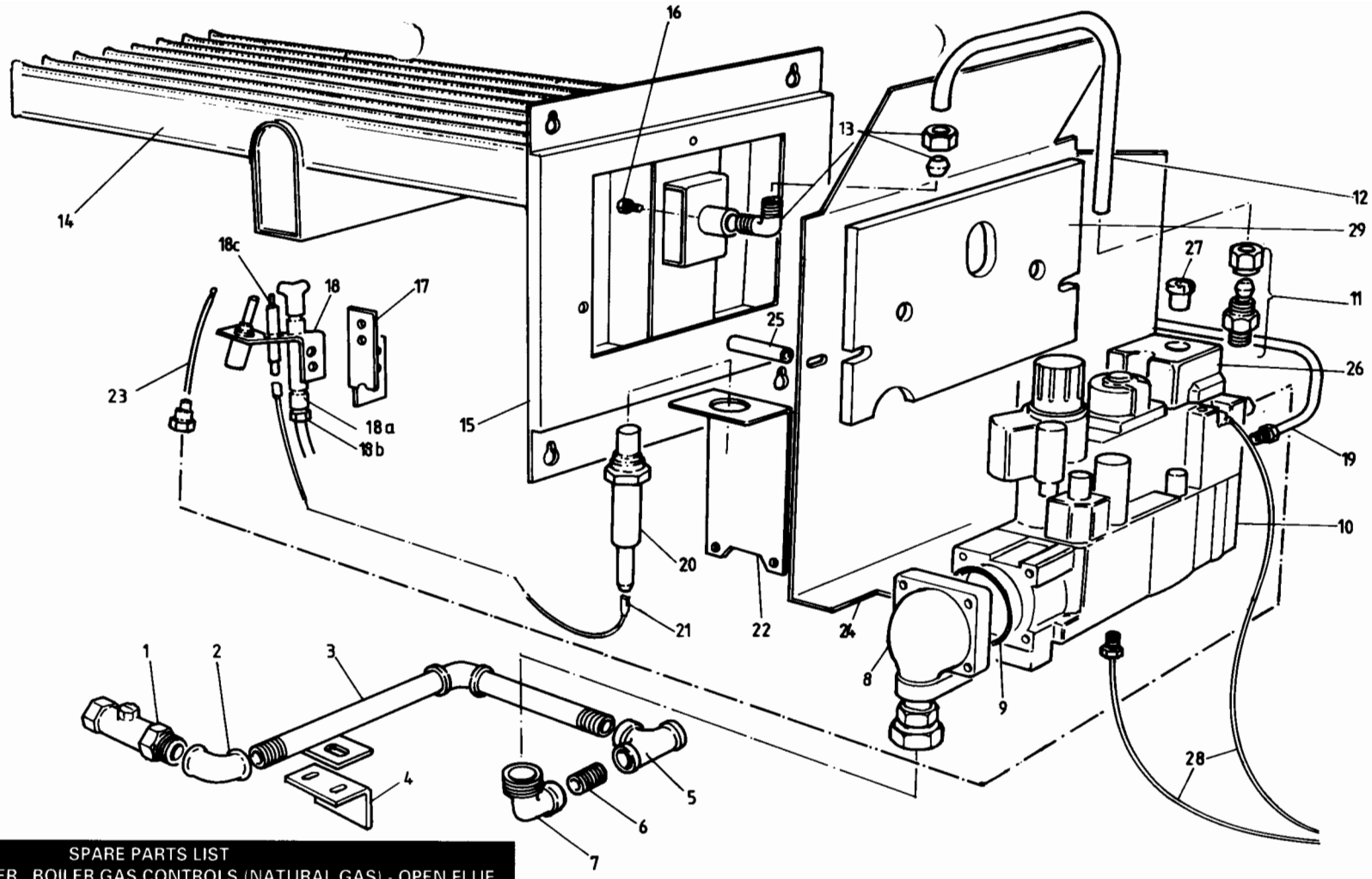
1 HOT PLATE LIFTING TOOL
2 HOB PLATE
3 HOTPLATE
4 SEAL MARSEAL 800S X 1060MM LONG
5 INSULATING COVER LINING PLATE
6 INSULATING COVER
7 HINGE GASKET
8 INSULATING COVER HINGE
9 FIXED PIVOT BEARING
10 GRUB SCREW SOCKET M10 X 10MM LONG
11 HANDLE BRACKETS
12 SEATING WASHER
13 CUP WASHERS
14 COIL HANDLE
15 HOTPLATE BAFFLE
16 ROPE 13MM DIA X 1600MM LONG
17 ROPE 13MM DIA X 230MM LONG
18 HANDRAIL
19 HANDRAIL BRACKETS
20 FIBRE WASHER
21 1/8" DIA X 1/2" LONG ROLL PIN
22 HOB PLATE PROTECTOR PLATE
23 ROPE 13MM DIA X 2400MM LONG
24 CORNER STAY BUTTONS
25 CORNER STAY NUTS
26 CORNER STAY RODS
27 FLUE SOCKET
28 FLUE SOCKET FIXING BRACKET
29 FLUE DIVERTER HOOD
30 FLUE DIVERTER TOP SPACER
31 FLUE DIVERTER BAFFLE
32 FLUE DIVERTER BOTTOM SPACER
33 FLUE DIVERTER SPIGOT
34 COOKER DISTANCE BRACKET - COMBUSTIBLE WALL
35 BACK PLATE
36 L.H. SIDE PANEL
37 CONTROL COVER
38 ACCESS PANEL FOR THERMOSTAT PHIAL
39 L.H. SIDE FILLER PLATE
40 GROMMET
41 WARNING LABEL 'ISOLATE FROM MAINS'
42 HOLE PLUG
43 TRANSFER 'RESET'
44 TRANSFER 'COOKER'
45 TRANSFER 'BOILER'
46 THERMOSTAT PHIAL GUIDE BRACKET
47 BOILER BURNER CHAMBER
48 BURNER CHAMBER TO BASE FIXING BRACKET
49 BURNER CHAMBER SPACING BRACKET
50 BURNER HOUSING FRAME
51 BURNER HOUSING FRAME FIXING BRACKET
52 BURNER CHAMBER REAR INSULATING BRACKET
53 BURNER CHAMBER SIDE INSULATION BRACKET
54 BURNER CHAMBER REAR INSULATION PAD
55 BURNER CHAMBER SIDE INSULATION PAD
56 BURNER CHAMBER FRONT INSULATION PAD
57 REAR INSULATION SUPPORT BRACKET
58 HEAT EXCHANGER
59 SEALING STRIP FOR HEAT EXCHANGER END PLATE
60 SEALING STRIP FOR HEAT EXCHANGER CHANNELS
61 BOILER FLUE COLLECTOR
62 INSULATION PAD FOR THERMOSTAT HOUSING
64 ROPE 13MM DIA X 1220MM LONG
65 COTTER PIN
66 FLUE COLLECTOR SIDE INSULATION PAD
67 FLUE COLLECTOR FRONT INSULATION PAD
68 FLUE COLLECTOR REAR INSULATION PAD
69 FLUE SEPARATING DUCT
70 HEAT EXCHANGER ACCESS DOOR
71 ROPE 7MM DIA X 620MM LONG
72 FLUE DUCT EXTENSION
73 COOKER BURNER CHAMBER
74 ROPE 13MM DIA X 1400MM LONG
75 COOKER BURNER CHAMBER INSULATING BRACKET
76 INSULATION RETAINING BRACKET
77 ROPE 13MM DIA X 750MM LONG
78 COOKER BURNER BAFFLE
79 OVEN TOP REAR FLUE PLATE
80 OVEN TOP L.H. FLUE PLATE
81 OVEN TOP FRONT FLUE PLATE
82 TOP OVEN TOP PLATE
83 FIREBOX SIDE PLATE
84 TOP OVEN BACK PLATE
85 TOP OVEN BOTTOM PLATE
86 TOP OVEN R.H. FIXED SIDE PLATE
87 TOP OVEN L.H. REMOVABLE SIDE PLATE
88 TOP OVEN REFLECTOR DUCT
89 OVEN THERMOSTAT PHIAL GUIDE TUBE
90 HOTPLATE BAFFLE SEALING PLATE
91 THERMOSTAT PHIAL FRONT LOCATION BRACKET
92 THERMOSTAT PHIAL REAR INSULATION BRACKET
93 SIMMERING OVEN L.H. FIXED SIDE PLATE
94 SIMMERING OVEN L.H. REMOVABLE SIDE PLATE
95 SIMMERING OVEN BOTTOM PLATE
96 SIMMERING OVEN BACK PLATE
97 SIMMERING OVEN SUPPORT BRACKET
98 SIMMERING OVEN TOP PLATE
99 SIMMERING OVEN R.H. SIDE PLATE
100 SIMMERING OVEN RETAINING BRACKET
101 SIMMERING OVEN INSULATING FRINGE
102 OVEN STAY ROD
103 MEAT TRAY
104 OVEN GRID SHELF
105 OVEN SHELF
106 GRILL RACK
107 R.H. SIDE PANEL
108 BASE PLATE
109 COOKER BURNER CHAMBER FIXING BRACKET
110 BASE PLATE FILLER PLATE
111 FRONT PLATE
112 NAME BADGE
113 PUSH ON CLIPS
114 FIREBOX SIDE FIXING BRACKET
115 OVEN RETAINING BRACKET
116 TOP OVEN R.H. RETAINING BRACKET
117 SIDE PANEL RETAINING BRACKET
118 OVEN CATCH
119 TOP HEAT SHIELD - BOILER
120 TOP HEAT SHIELD - OVEN
121 OUTER BURNER DOOR
122 DATA PLAQUE
123 DOOR HANDLE
124 TOP OVEN DOOR
125 THERMODIAL
126 TOP OVEN DOOR LINING PANEL
127 DOOR INSULATION
128 NYLON WASHER
129 ROPE 7MM DIA X 640MM LONG
130 THERMODIAL SEALING WASHER
131 SIMMERING OVEN DOOR
132 SIMMERING OVEN DOOR LINING PANEL
133 TOP OVEN VENT PIPE
134 SIMMERING OVEN VENT PIPE
135 PROGRAMMABLE TIME SWITCH - OPTIONAL
136 FLUE SEPARATER REAR BLANKET
137 FLUE SEPARATER TOP BLANKET
138 THERMOSTAT HOUSING TOP BLANKET
139 FLUE COLLECTOR REAR BLANKET
140 BOILER BURNER CHAMBER FRONT BLANKET
141 COOKER BURNER CHAMBER REAR BLANKET
142 BOILER BURNER CHAMBER REAR BLANKET
144 BOILER BURNER CHAMBER L.H. SIDE BLANKET
145 L.H. SIDE PANEL BLANKET
146 FLUE COLLECTOR L.H. SIDE BLANKET
147 FLUE SEPARATER L.H. SIDE BLANKET
148 BOILER THERMOSTAT
149 BOILER THERMOSTAT KNOB
150 KNOB TO SHAFT CLIP
151 OVERHEAT THERMOSTAT
152 COOKER THERMOSTAT
153 COOKER THERMOSTAT KNOB
154 THERMOSTAT MOUNTING BRACKET
155 TERMINAL BLOCK MOUNTING BRACKET
156 12-WAY TERMINAL BLOCK
157 TERMINAL BLOCK LABEL
158 CABLE CLAMP
159 FLUE COLLECTOR FRONT BLANKET
160 HEAT EXCHANGER CHANNEL BLANKET



SPARE PARTS LIST

RAYBURN GD80 COOKER COOKER GAS CONTROLS (NATURAL GAS) - OPEN FLUE

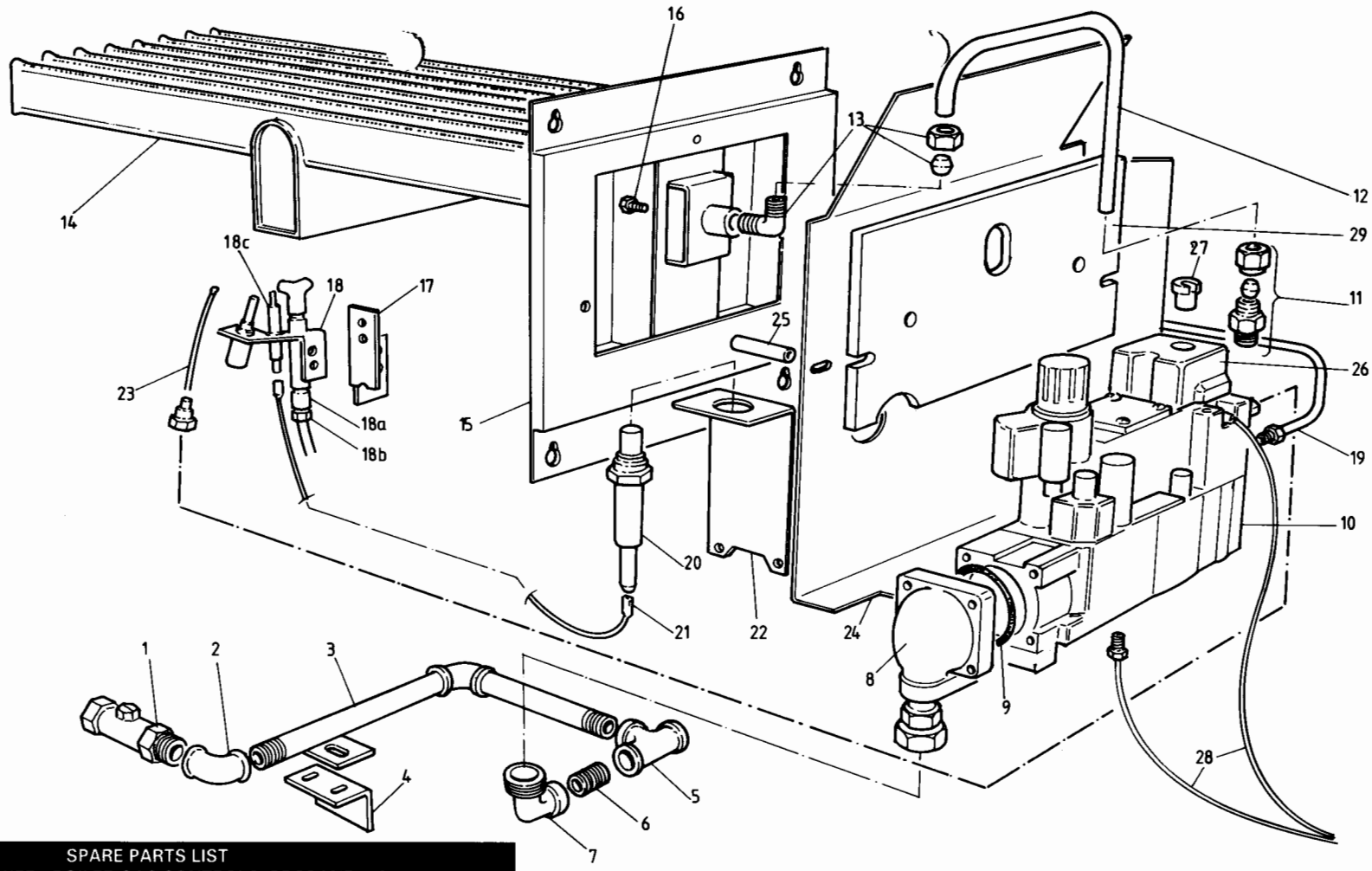
1 1/2 " X 1/4 " BSP TAPER REDUCING NIPPLE	18C IGNITION ELECTRODE
2 GOVERNOR	19 IGNITER AND LOCKNUT
3 1/4 " BSP UNION MALE X FEMALE	20 IGNITION LEAD
4 FLAME FAILURE VALVE	21 IGNITER MOUNTING BRACKET
5 1/4 " BSP ELBOW FEMALE X FEMALE	22 IGNITER MOUNTING BRACKET GASKET
6 1/4 " BSP HEXAGON NIPPLE	23 THERMOCOUPLE
7 SOLENOID	24 1/8 " BSP LOCKNUT
8 1/4 " BSP NIPPLE	25 1/8 " BSP ELBOW FEMALE X FEMALE
9 COOKER BURNER MANIFOLD	26 PILOT FILTER
10 MANIFOLD GASKET	27 1/8 " BSP TAPER X 6MM O/D TUBE ELBOW
11 COOKER BURNER DOOR	28 PILOT GAS TAP CONNECTING TUBE
12 ROPE 12MM DIA X 440MM LONG	29 PILOT GAS TAP
13 INJECTOR HOLDER	30 PILOT CONNECTING TUBE
14 BURNER INJECTOR	31 PRESSURE TEST NIPPLE
15 COOKER BURNER (BRAY)	32 SIGHT GLASS GASKET
16 ANTI-LINTING GAUZE (COOKER-BURNER)	33 SIGHT GLASS
17 PILOT MOUNTING BRACKET	34 SIGHT GLASS FIXING BRACKET
18 PILOT BURNER (JOHNSON)	35 SOLENOID PLUG & CABLE
18A PILOT INJECTOR	
18B COMPRESSION NUT AND OLIVE	



DESN 510256A

SPARE PARTS LIST
RAYBURN GD80 COOKER BOILER GAS CONTROLS (NATURAL GAS) - OPEN FLUE

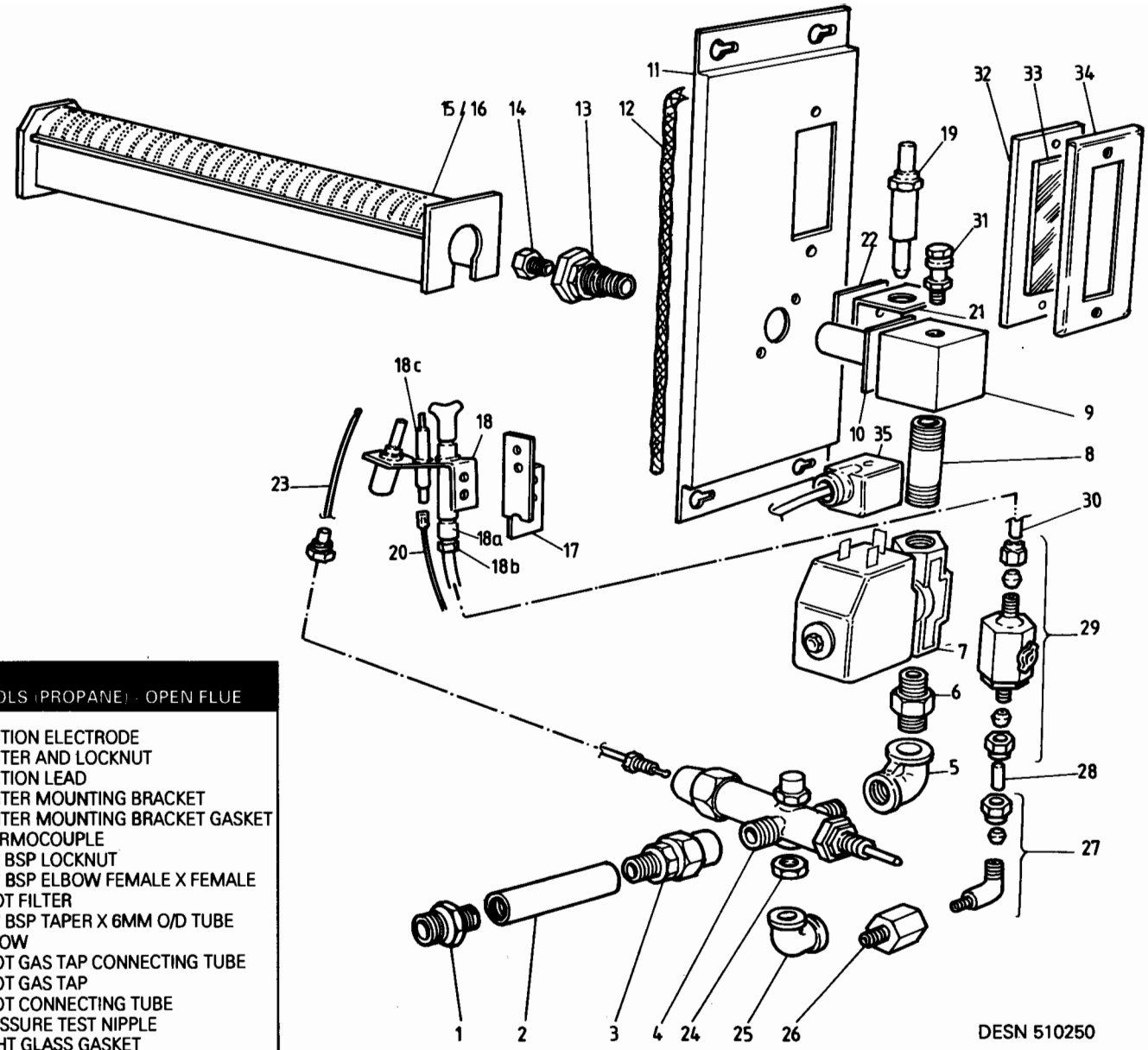
1	GAS COCK	16	BURNER INJECTOR
2	1/2 " BSP FEMALE ELBOW	17	PILOT MOUNTING BRACKET
3	GAS FEED MANIFOLD	18	PILOT BURNER (JOHNSON)
4	GAS MANIFOLD SUPPORT BRACKET	18A	PILOT INJECTOR
5	1/2 " BSP FEMALE TEE	18B	COMPRESSION NUT AND OLIVE
6	1/2 " BSP CLOSE TAPER NIPPLE	18C	IGNITION ELECTRODE
7	1/2 " BSP UNION ELBOW MALE X FEMALE	19	PILOT FEED TUBE
8	1/2 " BSP FLANGED ELBOW	20	IGNITER AND LOCKNUT
9	'O' RING	21	IGNITION LEAD
10	GAS VALVE (HONEYWELL)	22	IGNITER MOUNTING BRACKET
11	1/2 " BSP TAPER X 10MM O/D TUBE STUD COUPLING	23	THERMOCOUPLE
		24	GAS VALVE SHIELD
12	BOILER BURNER FEED PIPE	25	GAS VALVE SHIELD SPACER
13	1/4 " BSP TAPER X 10MM O/D TUBE ELBOW	26	HONEYWELL GAS VALVE COVER
14	BOILER BURNER (FURIGAS)	27	HEYCO STRAIN RELIEF BUSH
15	BOILER BURNER DOOR	28	SPLIT WIRE ENERGY CUT OUT
		29	GAS VALVE INSULATION PAD



DESN 510251A

SPARE PARTS LIST
RAYBURN GD80 COOKER BOILER GAS CONTROLS (PROPANE) - OPEN FLUE

1	GAS COCK	16	BURNER INJECTOR
2	1/2 " BSP FEMALE ELBOW	17	PILOT MOUNTING BRACKET
3	GAS FEED MANIFOLD	18	PILOT BURNER (JOHNSON)
4	GAS MANIFOLD SUPPORT BRACKET	18A	PILOT INJECTOR
5	1/2 " BSP FEMALE TEE	18B	COMPRESSION NUT AND OLIVE
6	1/2 " BSP CLOSE TAPER NIPPLE	18C	IGNITION ELECTRODE
7	1/2 " BSP UNION ELBOW MALE X FEMALE	19	PILOT FEED TUBE
8	1/2 " BSP FLANGED ELBOW	20	IGNITER AND LOCKNUT
9	'O' RING	21	IGNITION LEAD
10	GAS VALVE (HONEYWELL)	22	IGNITER MOUNTING BRACKET
11	1/2 " BSP TAPER X 10MM O/D TUBE STUD COUPLING	23	THERMOCOUPLE
12	BOILER BURNER FEED PIPE	24	GAS VALVE SHIELD
13	1/4 " BSP TAPER X 10MM O/D TUBE ELBOW	25	GAS VALVE SHIELD SPACER
14	BOILER BURNER (FURIGAS)	26	HONEYWELL GAS VALVE COVER
15	BOILER BURNER DOOR	27	HEYCO STRAIN RELIEF BUSH
		28	SPLIT WIRE ENERGY CUT OUT
		29	GAS VALVE INSULATION PAD



SPARE PARTS LIST
RAYBURN GD80 COOKER COOKER GAS CONTROLS (PROPANE) - OPEN FLUE

1	1/2 " X 1/4 " BSP TAPER REDUCING NIPPLE	18C	IGNITION ELECTRODE
2	ADAPTOR SOCKET	19	IGNITER AND LOCKNUT
3	1/4 " BSP UNION MALE X FEMALE	20	IGNITION LEAD
4	FLAME FAILURE VALVE	21	IGNITER MOUNTING BRACKET
5	1/4 " BSP ELBOW FEMALE X FEMALE	22	IGNITER MOUNTING BRACKET GASKET
6	1/4 " BSP HEXAGON NIPPLE	23	THERMOCOUPLE
7	SOLENOID	24	1/8 " BSP LOCKNUT
8	1/4 " BSP NIPPLE	25	1/8 " BSP ELBOW FEMALE X FEMALE
9	COOKER BURNER MANIFOLD	26	PILOT FILTER
10	MANIFOLD GASKET	27	1/8 " BSP TAPER X 6MM O/D TUBE ELBOW
11	COOKER BURNER DOOR	28	PILOT GAS TAP CONNECTING TUBE
12	ROPE 12MM DIA X 440MM LONG	29	PILOT GAS TAP
13	INJECTOR HOLDER	30	PILOT CONNECTING TUBE
14	BURNER INJECTOR	31	PRESSURE TEST NIPPLE
15	COOKER BURNER (BRAY)	32	SIGHT GLASS GASKET
16	ANTI-LINTING GAUZE (COOKER-BURNER)	33	SIGHT GLASS
17	PILOT MOUNTING BRACKET	34	SIGHT GLASS FIXING BRACKET
18	PILOT BURNER (JOHNSON)	35	SOLENOID PLUG & CABLE
18A	PILOT INJECTOR		
18B	COMPRESSION NUT AND OLIVE		

RAYBURN

Operating Instructions for Rayburn GD80 Gas Fired Central Heating Cooker

Consumer Protection Act 1987
As manufacturers and suppliers of cooking and heating products, in compliance with Section 10 of the Consumer Protection Act 1987. We take every care to ensure, as far as is reasonably practicable, that these products are so designed and constructed as to meet the general safety requirement when properly used and installed. To this end, our products are thoroughly tested and examined before despatch.

IMPORTANT NOTICE: Any alteration that is not approved by Rayburn, could invalidate the approval of the appliance, the warranty and could also infringe the current issue of the statutory requirements.

Control of Substances – Health and Safety
Important:

This appliance could contain any of the materials that are indicated below. It is the Users/Installers responsibility to ensure that the necessary personal protective clothing is worn when handling, where applicable, the pertinent parts that contain any of the listed materials that could be interpreted as being injurious to health and safety, see below for information.
Firebricks, Fluebeds, Artificial Fuels – when handling use disposable gloves.
Fire cement – when handling use disposable gloves.
Glues and sealants – exercise caution – if these are still in liquid form use face mask and disposable gloves.
Glass Yarn, Mineral Wool, Insulation Pads, Ceramic Fibre, Kerosene Oil – may be harmful if inhaled, may be irritating to skin, eyes, nose and throat. When handling avoid inhaling and contact with skin or eyes. Use disposable gloves, face masks and eye protection. After handling wash hands and other exposed parts. When disposing of the product reduce dust with water spray, ensure that parts are securely wrapped.

THE RAYBURN GD80 GAS FIRED CENTRAL HEATING COOKER

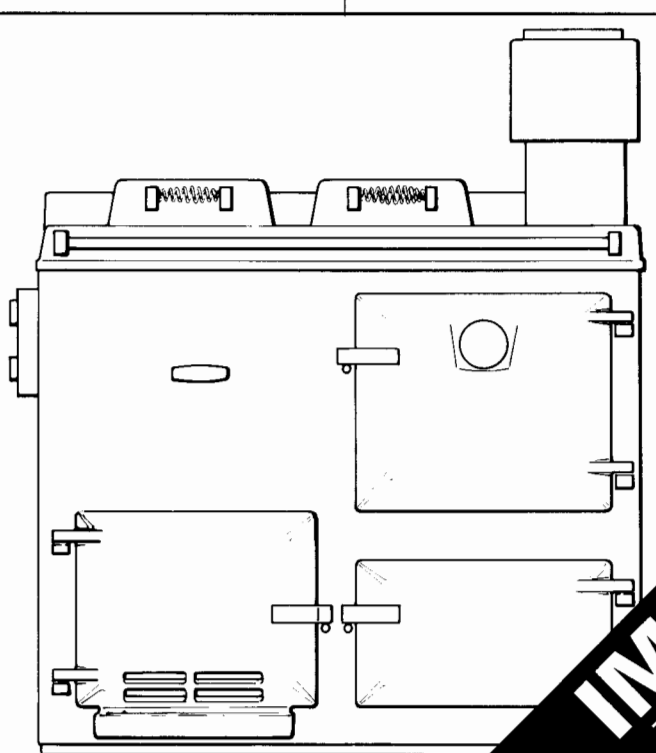
Thank you for buying this Rayburn appliance. We want you to get the best from it, so please read this leaflet carefully and follow the instructions before using your Rayburn for the first time.

Your Rayburn GD80 has ben designed to provide cooking, central heating, and domestic hot water when you require it. Two separate burners provide heat for the appliance. The cooker burner provides heat for the cooking, whilst the boiler burner provides heat for the central heating and domestic hot water requirements.

The cooker burner is set to run continuous alight - at a low rate when not in use, and full rate upon operation of the thermostat.

The boiler burner is designed to operate on demand and can be electrically controlled by a time switch or programmer to give selected heating use.

An optional Rayburn programmer is available from your Rayburn stockist, which will control your cooking function. An ideal extra for people who wish to combine traditional elegance with today's lifestyle.



IMPORTANT
The cooker burner is intended to run in a continuously alight condition at all times, at low fire rate when idling. Turning the cooker burner OFF is NOT recommended unless servicing is required.

WP7/92 EOPI 510073

You will find supplied with your Rayburn the following:-

1 Wire Brush
1 solid shelf
2 grid shelves
1 meat tin
1 grill rack
1 cookbook

In addition there is a guarantee registration card which should be completed and returned to us at Rayburn.

INSTRUCTIONS

LIGHTING

Lighting instructions can also be found on the data plate on the inside of the burner door.

LIGHTING THE PILOT

Boiler (See fig.1).
Ensure gas supply valve is in the ON position.
Ensure the electricity supply is OFF.
Push in and hold the boiler gas control knob (A) allowing a few seconds for the gas to reach the boiler pilot. Press piezo igniter button (B) and the pilot burner will light.

Continue to hold the knob in for 15 seconds after the pilot has been lit so that when the knob is released, the pilot should remain alight.

If it does not, WAIT 3 MINUTES then repeat the procedure.

Cooker (See Fig 1).
Press in and hold the cooker flame failure override button (C) allowing a few seconds for the gas to reach the boiler pilot.
Press the piezo igniter button (D) and the pilot burner will light.

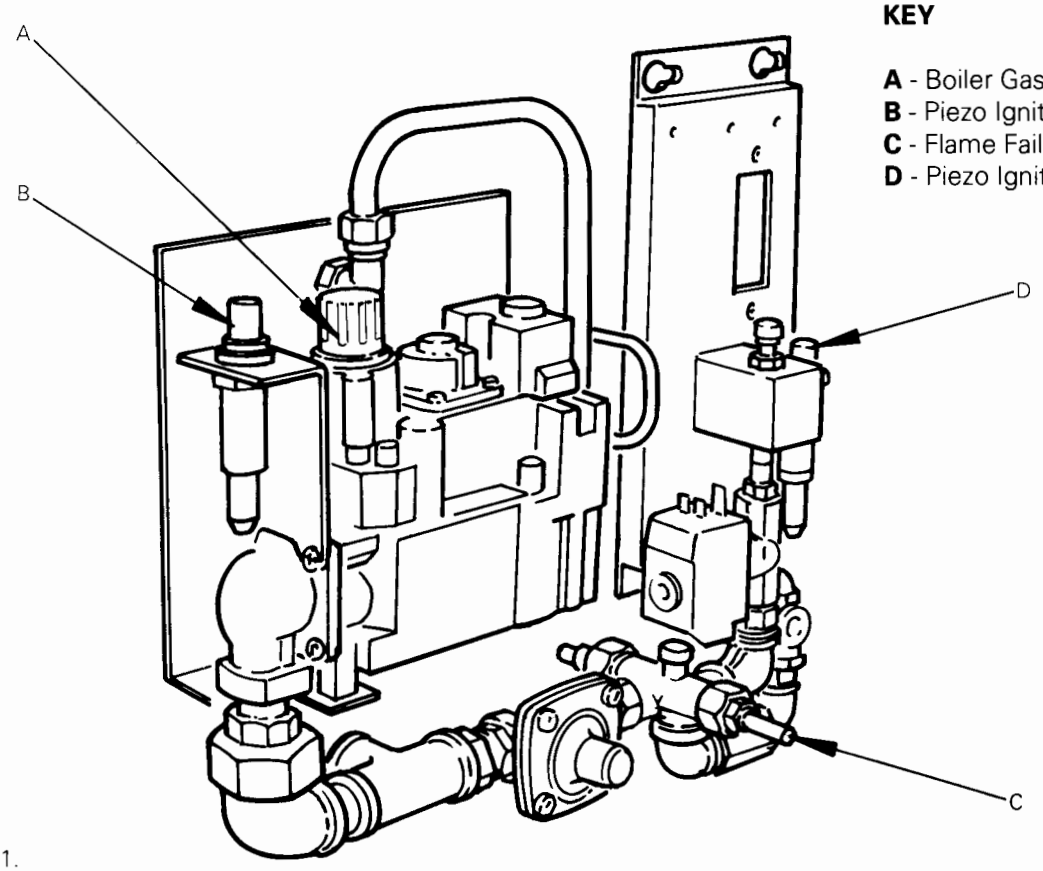
Continuous to hold the button in for 15 seconds after the pilot has been lit so that when the button is released, the pilot should remain alight. If it does not, WAIT 3 MINUTES then repeat the procedure.

Once the pilot is established the cooker burner will cross light at the LOW rate.

Main Burner Lighting (See Fig 2)
Ensure the electricity supply is turned ON and set any external controls to the ON position.

Turn the boiler thermostat knob to 80°, and the boiler burner will cross light to full rate.

Turn the cooker thermostat knob to No.9, and the cooker burner will increase to full rate.



KEY

A - Boiler Gas Control Knob
B - Piezo Igniter Button
C - Flame Failure Override Button
D - Piezo Igniter Button

Fig.1.

TO USE THE BOILER

The operation of the boiler can be automatic if a programmer is fitted. This may also be used in conjunction with a room thermostat or other devices to control temperature.
The boiler thermostat control knob controls the temperature of the hot water.

The boiler thermostat control knob is situated on the left hand side of the appliance beneath the oven thermostat knob.
(See Fig 2).

Turning the control knob clockwise will increase the temperature of the boiler which will provide hot water to the radiators and to the hot water cylinder.

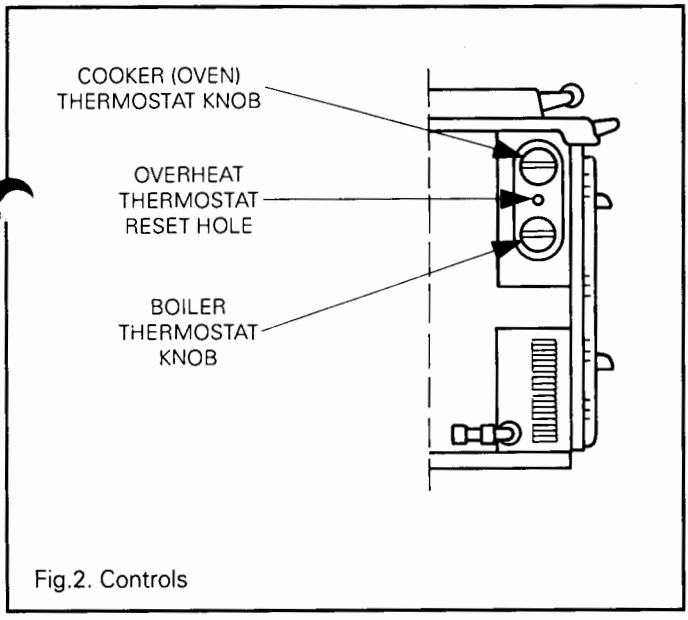


Fig.2. Controls

For safety shutdown purposes an overheat thermostat is included (as shown in Fig 2).

This will operate only if the water temperature in the system is in excess of 95°C. This indicates a system fault and it should be determined and rectified before re-lighting the boiler.

TO USE THE HOT PLATE AND OVENS

To increase the temperature of the hotplate and ovens turn the thermostat knob (see Fig 2) to the required setting.

Cooking techniques are different from a conventional cooker, so to get the best from your Rayburn please refer to these instructions and the cooking hints section.

THE HOTPLATE

The single hotplate of your Rayburn is graduated in temperature, the hottest side is on the left hand side and cooler over the ovens. Just slide pan to a hotter or cooler area depending on whether boiling or simmering is required. The hotplate temperature is also variable, depending on the setting used; the higher the setting the hotter the hotplate.

Made thick of cast iron, the hotplate is ground flat. In order to ensure perfect contact, even heat distribution and quicker response it is recommended that all pans and utensils used have thick flat ground bases. Pans should also have tight fitting lids for greatest efficiency.

NOTE: Hotplate cooking is quicker when the gas burner is on high fire. So increase the setting of the thermostat knob (see fig 2) to increase the temperature of the hotplate. (The hotplate gains in heat quicker than the oven).

Keep the insulated hotplate covers down when the hotplate is not being used to conserve heat.

If the programmer is not in use turn the thermostat knob to number 9 setting in the morning to increase the hotplate temperature and minimise the time to boil a kettle. Then turn to the setting required.

THE OVENS

Both the ovens are made of cast iron and are indirectly heated.

MAIN OVEN

This oven is thermostatically controlled by the thermostat knob (see fig 2). When the oven reaches the desired temperature this is maintained by the thermostat.

As a guide, the numbered setting give the following approximate oven temperatures and an indication of heat-up time.

The thermodial temperature on the oven door is the approximate temperature in the centre of the oven.

NOTE: Due to the varying operating demands on the cooker the thermodial temperature relative to thermostat knob is given as a guide only.

SETTING	APPROXIMATE MAIN OVEN TEMPERATURE	APPROXIMATE HEAT UP TIME FROM LOW
	LOW	IDLING
2	140-160°C (284-320°F)	15MINS
4	170-190°C (338-374°F)	25MINS
6	195-215°C (383-419°F)	32MINS
8	220-240°C (428-464°F)	45MINS
9	234-255°C (445-491°F)	50MINS

The low setting may vary, dependant upon weather conditions.

When the ovens are not required during the day or overnight, then turn to the LOW (idling) setting to give the lowest burning rate.

NOTE: When the main oven is at LOW, slow cooking and meringues can be cooked here.

COOKING CHART

	MAIN OVEN SETTING	TEMP	SHELF	APPROXIMATE TIME
Scones	7	210°C / 410°F	2	10 - 15 mins
Small Cakes	5	180°C / 350°F	3	15 - 20 mins
Victoria Sandwich	4	180°C / 350°F	3 + 5	20 - 30 mins (Move lower cake up when top cake is cooked)
			or 4	20 - 30 mins (Both cakes on one shelf)
Semi - rich fruit cake	2	150°C / 300°F	4	2 hours
Shortcrust - tartlets	6	200°C / 400°F	2 or 3	20 mins
Shortcrust Pie	6	200°C / 400°F	3	45 mins
Quiche	6	200°C / 400°F - 220°C / 425°F	Floor	45 mins
Puff Pastry	7	210°C / 410°F - 220°C / 425°F	2 or 3	15 mins
Meringues	Low	120°C / 240°F	5	1½ - 2 hours
Casseroles	Low	120°C / 240°F	4 or 5	3 hours or more
Bread - rolls	7	210°C / 410°F - 220°C / 425°F	2	15 - 20 mins
Bread - loaf	7	210°C / 410°F	4 or 5	35 mins
Soufflé	4	180°C / 350°F	4	30 mins

Shelf positions are counted from the top downwards ie: top shelf position is number 1.

LOWER OVEN

The temperature of the cast iron lower oven is dependant on the temperature of the main oven. As a guide, it is around half the temperature of the main oven. This means that it can be used as a cooking oven when the main oven is at higher temperature ie. over (200°C / 400°F) for meringues, casseroles, milk puddings etc.

Best results are obtained if food is brought up to heat (either on the hotplate or on the main oven) first, then transferred to the lower oven. (The exception being meringues).

Root vegetables and rice can also be steamed here, (see below).

Some examples of items that are suitable for the lower oven temperatures are given below, for these times the thermostat knob (see Fig 2) is above setting 6:-

Casseroles:- Bring to boiling point, place on floor of lower oven for about 2½ to 3 hours.

Rice pudding:- Bring to boiling point, place in middle of lower oven for about 2 to 3 hours.

Lemon Meringue Pie:- To cook meringue topping place completed pie in lower oven for about 1¾ hours.

Meringues:- Place on baking parchment on the solid shelf, middle of lower oven, for about 1½ to 2 hours.

Root vegetables:- Bring to the boil on the hotplate and boil for 3 - 5 minutes then drain and place the saucepan and contents covered with the lid, on the floor of the lower oven for 35 - 45 minutes.

Rice:- Place 8oz (225g) rice and 12 fl oz (360ml) of water plus ½-1 tsp salt into a saucepan, cover. Bring to the boil, stir, replace the lid and place on the floor of the lower oven for 20 minutes. (40 minutes for brown rice).

When the main oven is at a cooler temperature the lower oven can be used for warming plates and dishes and for keeping food warm.

RAYBURN COOKBOOK

The cookbook supplied with your Rayburn heating cooker is generic to all Rayburns. When following the recipes consult these operating instructions to ascertain which thermostat setting is required and other details relevant to the GD80.

PROGRAMMER (OPTIONAL)

This control is available giving three individual time settings and an override control. It may be used for the following:

1. Pre-set morning programme to turn cooker to desired temperature, so that cooker is available for immediate use on rising.

The programmer can be set to give the desired cooking temperature when you want it, without having to wait for the warming up period. For example, if you wish to cook breakfast at 7.30am, the programme can be set to give the required heat up time prior to this. Thus, if it takes 60 minutes to come to the temperature you require, the programmer will be set to operate at 6.30am and the thermostat knob (see fig.2) set to the position you require, the night before. The cooker will continue to operate at LOW until the programme switches on at 6.30am, when the cooker will commence to warm up. The 'Time Off' will need to be set to allow sufficient time for your cooking period.

The recommendations for the best use of the appliance are guidelines only and the respective settings of the cooker thermostat knob which best suit your requirements will be apparent with experience.

CLEANING

REMEMBER: BE CAREFUL OF THE HOT APPLIANCE

To keep the vitreous enamelled surface bright and clean, wipe over daily with a soapy damp cloth, followed by a polish with a clean dry duster. If milk, fruit juice or anything containing acid is spilt on the top plate or down the cooker, be sure to wipe it immediately or the vitreous enamel may be permanently discoloured. Keep a damp cloth handy, while cooking to wipe up spills as they occur, so they do not harden and become more difficult to remove later. If spills do become baked on a cream cleanser carrying the VEDC, (Vitreous Enamel Development Council), approval logo, can be used. For stubborn deposits a soap impregnated pad can be carefully used on the vitreous enamel.

In the main oven, spills and fat splashes are carbonised at high temperatures; occasionally brush out with stiff brush. The oven doors can be removed for cleaning, use oven gloves to lift the door off its hinges and lay on a towel, (to protect the enamel) enamel side down onto a work surface. Allow to cool. Clean with a cream cleanser or soap impregnated pad. Wipe clean and dry with a cloth. Replace the door on its hinges, ensuring the plastic washer is still located on the lower hinge pin.

Shelves can be soaked and cleaned with a cream cleanser.

Wipe any spills off the lower oven.

To clean the meat tin and solid shelf, soak in hot soapy water and clean with a cream cleanser, for stubborn marks, use a soap impregnated pad.

Both insulating covers should be raised and allowed to cool before cleaning with a soapy damp cloth.

Use a wire brush to keep the cast iron hot plate clean.

General cleaning is best carried out when the Rayburn is cool.

DO NOT USE OVEN CLEANERS OR CLEANERS CONTAINING CITRIC ACID ON ENAMELLED SURFACES.

COOKING HINTS

The oven is in directly heated from outside by hot gases from the heat source so that no flame or elements within the oven means full use can be made of the whole cooking space.

The main oven is slightly hotter towards the top than the bottom. At a low idling heat the main oven can be used for long slow cooking such as casseroles, stock, soup, ratatouille, curries, meringues, crème caramels, rice puddings etc., all of which benefit from the gentle slow heat, and as the oven is vented into the flue, cooking smells disappear to the outside.

Alternatively, the lower oven can be used for slow cooking when the main oven is being used at a high temperature.

One of the many benefits of the cast iron main oven is that the floor of the oven is hotter than a conventional cooker. No need to bake quiche pastry cases "blind", just place the flan dish on the oven floor for 'soggy-free' pastry. When the oven is hot, the floor of the oven can be used for shallow frying (a cast iron dish is recommended) with the added advantages that fat splashes are carbonised, so cleaning is minimised and frying smells are taken away through the flue.

For perfect baking results, turn food during cooking.

The top of a hot oven is where grilling takes place. Place the grill rack in the meat tin, arrange food to be grilled on grill rack and slide onto the top set of runners of the main oven.

The thermodial temperature gauge on the main oven door is a guide to the internal oven temperature. Remember though, on opening the door the temperature will appear to drop, do not worry, close the door and after a few minutes the oven temperature can be read again. Heat is not lost as quickly from a cast iron oven, as a pressed metal box type, so you can peep at a cake to see how it is cooking without it sinking.

As you have probably realised, the meat tin supplied with your Rayburn fits the oven size, hanging directly from the runners, so leaving the grid shelves free for other dishes. The oven grid shelves are designed to be non-tilt and should be fitted with the upstand to the top and at the back, so when pulled forward the shelf cannot come right out.

The solid shelf can be used as a baking sheet or as a heat deflector. If the oven is to hot or food already in oven is beginning to over brown, slide the solid shelf above the food. To be effective, this shelf should be stored out of the oven so that it can be used from cold.

NOTE: TAKE CARE WHEN CLOSING THE DOORS TO LIFT THEM ONTO THE CATCH. IT IS NOT ADVISABLE TO PUT VERY WET CLOTHES ONTO THE HAND RAIL AS THEY MAY CRAZE THE ENAMEL

Further accessories such as Rayburn oven gauntlets and aprons or extra meat tins, shelves, solid shelves are available from your Stockist.

MAINTENANCE

It is important to have the appliance serviced once a year by a competent maintenance engineer. It is recommended that a regular servicing contract is made with British Gas or a CORGI registered installer.

WARNING: IF A GAS LEAK OR FAULT IS SUSPECTED, TURN OFF THE APPLIANCE AND CONSULT YOUR LOCAL REGISTERED CORGI INSTALLER.

Rayburns are designed to be continuous burning appliances. If left unlit for any length of time, leave the doors slightly open to allow air circulation.

With normal use a Boiler / Cooker annual service should be carried out by a competent person in accordance with gas safety regulations.

Both the cooker and boiler should be turned off, by the user, the night before servicing is to commence in order to allow the appliance to cool down. A HOT APPLIANCE CANNOT BE SERVICED. To turn off the boiler turn the boiler thermostat knob to 'OFF'.

To turn the cooker off, turn the cooker thermostat knob to 'LOW' and, using a screwdriver turn the cooker pilot stop cock through 90° to the off position. (See Fig 3).

NOTE: THE BURNER DOOR ON THE LH SIDE OF THE APPLIANCE FRONT MUST BE OPENED TO GAIN ACCESS TO THE STOP COCK.

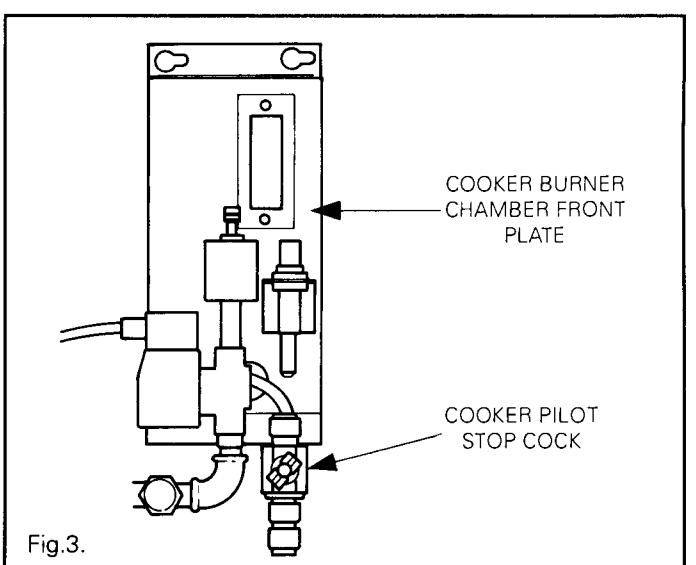


Fig.3.

GAS LEAK OR FAULT

If a gas leak or fault is suspected the unit must be turned off and isolated at the gas and electricity supply points and should not be used until the fault has been rectified.

Advice / Help should be obtained from your Installation / Servicing company.

ELECTRICAL POWER FAILURE

Cooker
The cooker will continue to operate, but at a low fire only until power is restored. The cooker will then revert to operating at the setting previously in use.

Boiler
The boiler being fully pumped will automatically close down until power is restored. The boiler will then revert to operating at the setting previously in use.

NOTE: LOCATION OF OVEN GRID SHELVES

To ensure the correct operation of oven grid shelves, ensure they are inserted as shown.

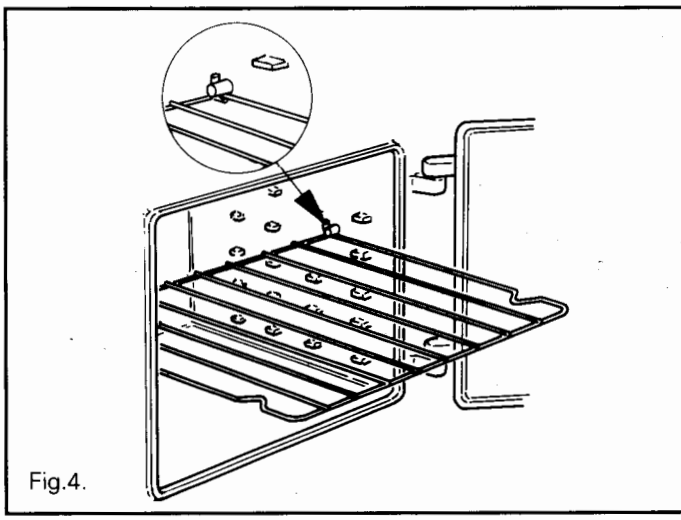


Fig.4.