

WARNING

This information is a copy of an original archive, therefore Aga cannot be held responsible for its continued accuracy.

This information refers to the following products

Rayburn 499G Mk2
(open flue models 1996 – 1998)

RAYBURN

Home on the Range.

Users Instructions for Rayburn 480G Central Heating Cooker

Also covers model Rayburn 499G

For use in GB and IE

PLEASE READ THESE INSTRUCTIONS BEFORE USING THIS APPLIANCE

Consumer Protection

As manufacturers and suppliers of cooking and heating products. We take every care to ensure, as far as is reasonably practical, 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, operation of the warranty and could affect your statutory rights.

Important

This appliance may contain some of the materials that are indicated. 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/Gas Oil - may be harmful if inhaled. May be irritating to skin, eyes, nose and throat. When handling avoid 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

Thank you for buying a Rayburn Appliance. To get the best from it, please read this leaflet and carefully follow the instructions before using your Rayburn for the first time.

Your Rayburn has been designed to provide cooking, central heating and domestic hot water when you require it. It is designed to run intermittently.

If the weather is very cold, or if you prefer, the appliance can be run on a continuous low setting and turned up as required.

This Rayburn is for use with Natural Gas only.

This appliance must be commissioned by an approved engineer. See list of Authorised Commissioning Engineers supplied with your cooker.

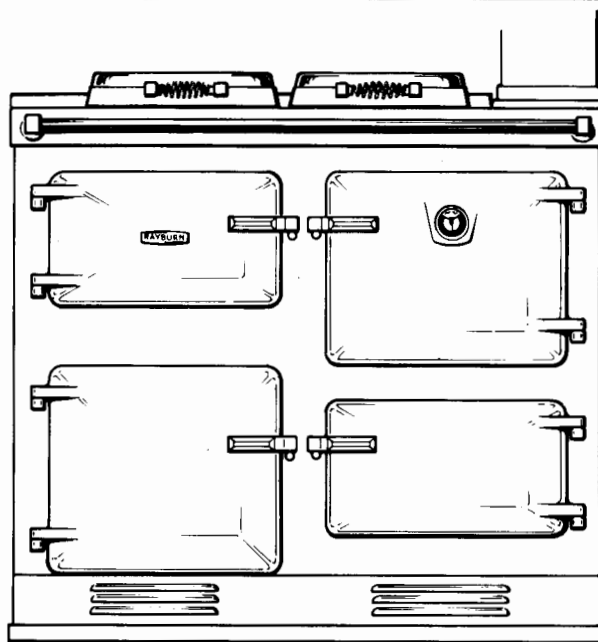
A Rayburn programmer is supplied as an integral part of the appliance and allows the cooking and heating functions to be used separately or together.

Two independently fired gas burners are fitted. These are:-

1. The boiler burner which gives domestic hot water and central heating or domestic hot water only.
2. The cooker burner gives control of hotplate and oven temperatures.

Your Rayburn comes complete with:

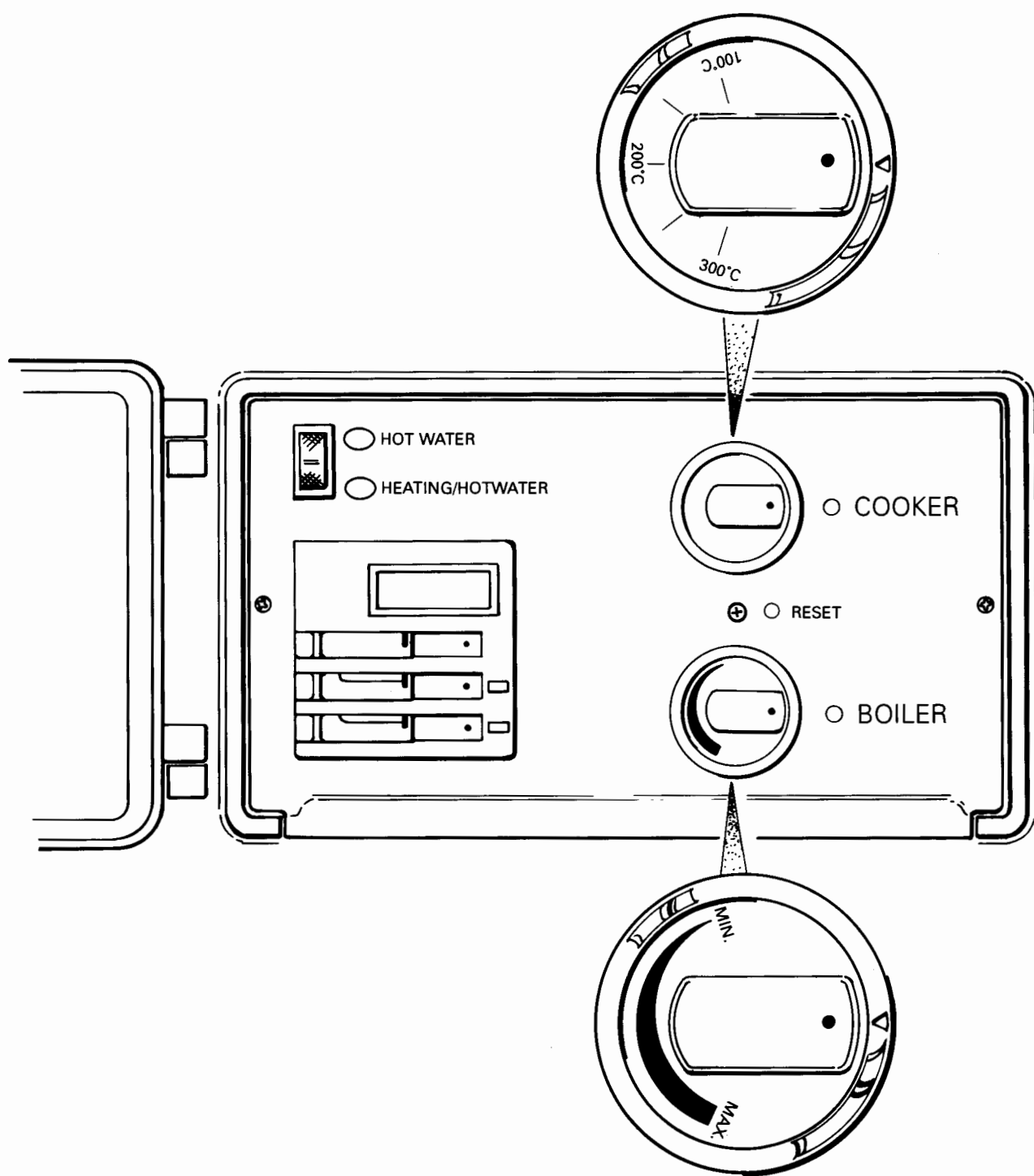
- | | |
|----------------|----------------------------|
| 1 Meat Tin | 1 Users Instruction |
| 1 Grill Rack | 1 Installation Instruction |
| 1 Solid Shelf | 1 Servicing Instruction |
| 2 Grid Shelves | 1 Commissioning Form |
| 1 Wire Brush | 1 Commissioning |
| 1 Cookbook | Engineers List |



DESN 510517

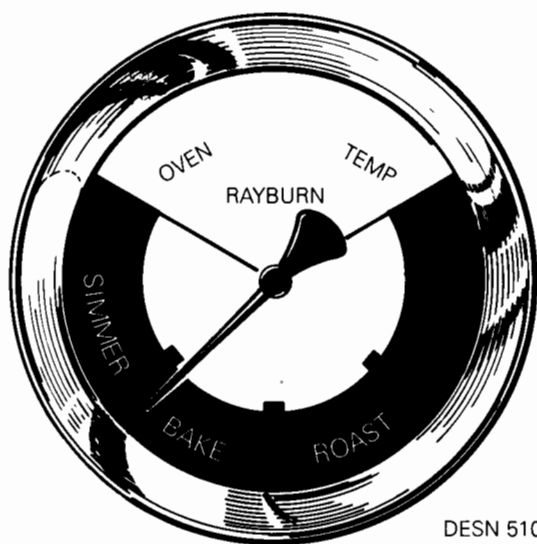
PAT. APP 2 280 747
AND OTHER GB & IE
PATENTS PENDING

CONTROLS



DESN 51055

USER INFORMATION

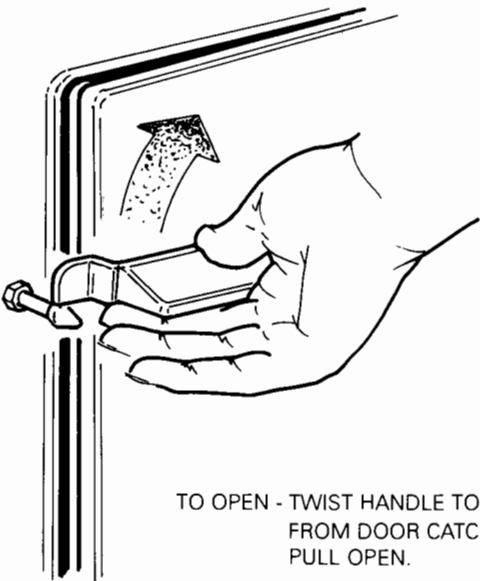


DESN 510555

THE THERMODIAL ON THE MAIN OVEN DOOR IS A GUIDE TO THE CENTRE OVEN TEMPERATURE WHEN COOKING. SEE COOKING CHART ON PAGE 4 AND COOKING HINTS ON PAGE 5 FOR FURTHER INFORMATION.

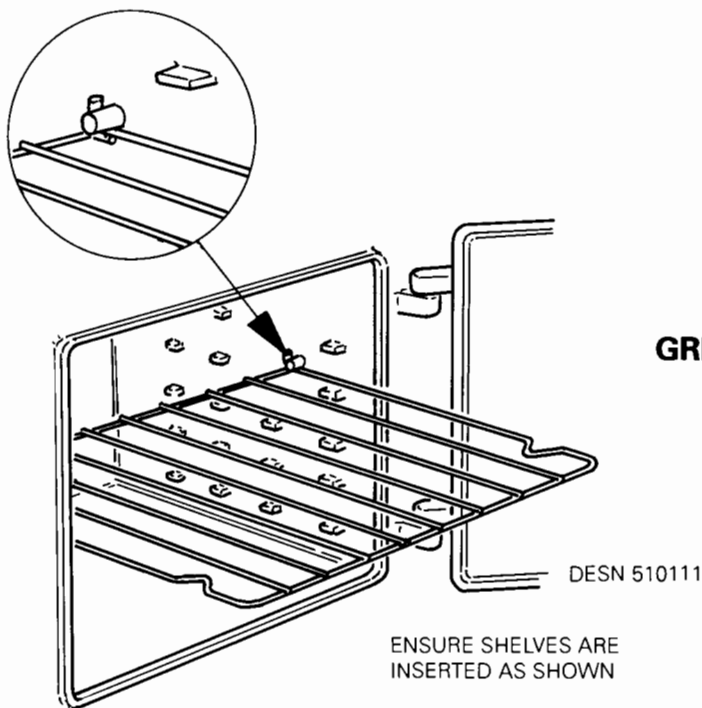
THERMODIAL

DOOR OPENING



TO OPEN - TWIST HANDLE TO RELEASE FROM DOOR CATCH AND PULL OPEN.

DESN 510556



GRID SHELF LOCATION

ENSURE SHELVES ARE INSERTED AS SHOWN

COOKER

The operation of the cooker is controlled by a built in programmer. It can be operated under automatic or manual control. See section 'PROGRAMMER'.

MAIN OVEN & HOTPLATE CONTROL

The main oven and hotplate temperatures are controlled by the cooker thermostat control knob which is situated behind the controls door. See section 'CONTROLS'. Turning the control knob clockwise increases the temperature.

HOTPLATE

The single hotplate of your Rayburn is graduated in temperature. Just slide pans to a hotter or cooler area depending on whether boiling or simmering is required. The hottest area is in the middle right hand side.

The hotplate temperature is also variable, depending upon the setting used; the higher the setting then the higher the hotplate temperature.

Made of thick cast iron, the hotplate is machined flat. In order to ensure perfect contact and even heat distribution it is recommended that all pans and kettles used have thick, flat machined bases. Pans should also have tight fitting lids for greatest efficiency. Keep the insulated hotplate covers down when the hotplate is not in use to conserve heat.

THE MAIN OVEN

The oven thermostat control knob is marked ● (OFF) then temperature graduated. (See diagram, page 2).

THE LOWER OVEN

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

THE RAYBURN COOKBOOK

The cookbook is supplied with your Rayburn cooker is generic to all Rayburns. When following the recipes consult these operating instructions to ascertain details relevant to your Rayburn.

COOKING CHART (MAIN OVEN)

	Temperature	Shelf	Approximate Time
Scones	220°C (425°F)	1 or 2	10 - 15 mins
Small Cakes	190°C (375°F)	3	15 - 20 mins
Victoria Sandwich	180°C (350°F)	3 + 5 OR 4	20 - 30 mins (Move lower cake up when top cake cooked) 20 - 30 mins (Both cakes on one shelf)
Semi-rich fruit cake	150°C (300°F)	4 or 5	2 hours
Rich Fruit Cake	135°C (275°F)	4 or 5	Depending on size
Shortcrust - tartlets	200°C (400°F)	2 or 3	20 mins
Shortcrust Pie	200°C (400°F)	4 or 5	45 mins
Quiche	200°C (400°F) - 220°C (425°F)	Floor	45 mins
Puff Pastry	210°C (410°F) - 220°C (425°F)	2 or 3	15 mins
Meringues	100°C (212°F) - 120°C (240°F)	5	1½ - 2 hours
Casseroles	120°C (240°F)	4 or 5	3 hours or more
Bread - rolls	210°C (410°F) - 220°C (425°F)	2	15 - 20 mins
Bread - loaf	210°C (410°F) - 220°C (425°F)	4 or 5	35 mins
Soufflé	180°C (350°F)	4	30 mins

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

The positions are a guide only and can of course be altered to suit.

COOKING HINTS

The ovens are indirectly heated from the outside by hot gases from the heat source so that no flame or elements are within the ovens. This means that full use can be made of the whole cooking space. Both ovens are vented to the flue so cooking smells disappear to the outside.

MAIN OVEN

This oven is hotter towards the top than the bottom.

For perfect results turn food during cooking.

On low settings the oven can be used for long slow cooking such as casseroles, stock, soup, ratatouille, curries, meringues, creme caramel, rice pudding, etc. Turn up to a higher setting for baking fruit cakes, victoria sandwiches, small cakes, soufflés, scones, bread and roasting etc. (See temperature/setting chart on previous page for details).

One of the many benefits of the cast iron oven is that the floor of the oven is hot and can be used as a cooking area in its own right.

1. For Baking - no need to bake a pastry case or quiche "blind" just place the flan dish directly on the oven floor for the whole, or part of, the cooking time to achieve "soggy-free" pastry bases that are crisp and golden. In the same way an apple pie can be part cooked on the oven floor to ensure a well cooked base.
2. For Frying - when the oven is hot the floor of the oven can be used for frying. Think of it as a hidden hot plate. A cast iron dish is recommended. Allow it to heat up first before adding the food. It's an excellent method for frying bacon and egg, fish such as trout/salmon or onions etc. Any fat splashes are carbonised on the insides of the oven so cleaning is minimal (carbonised crumbs can be brushed out using a stiff brush) and frying smells are taken away through the flue.

The top of the oven is where grilling takes place. Do this when the oven is turned to a high setting. The heat radiating from the roof of the oven seals and cooks the food efficiently. Arrange the food on the grill rack in the meat tin set on the highest set of runners.

Cast iron retains the heat well so you can peep at a cake or soufflé to see how it is cooking without it sinking. As the meat tin supplied with your Rayburn fits directly on to the runners the grid shelves are left free for other dishes. For safety reasons the grid shelves are non-tilt, use as directed in section 'USER INFORMATION'.

THERMODIAL

The thermodial on the main oven door is a guide to the condition of the internal oven. On opening through, the pointer will appear to drop as it registers cooler air away from the oven, do not worry, close the door and after a few minutes it will regain its position.

LOWER OVEN

A valuable oven for slower more gentle cooking when the main oven is turned up high, as it is roughly half the temperature of the main oven. Ideal for meringues, casseroles, milk puddings, egg custards etc. When cooking a casserole in this oven allow it to heat through and simmer for 5-10 minutes on the hotplate or main oven floor before transferring to the lower oven. Although there are runners on the sides of the oven for the grid shelf/meat tin, dishes may also be cooked on the floor of the oven.

SOLID SHELF

The solid shelf can be used as a baking sheet or as a heat deflector to protect food from over browning/cooking. It is ideal as a solid baking sheet as it maximises the whole oven area. When in position the solid shelf and the space above can still be used for cooking, while it is protecting the food below. As a heat deflector slide it in two runners above the food. To be effective it must be used from cold and therefore it should be stored outside the oven.

HOT PLATE

Apart from its obvious use for boiling and simmering, the hot plate can be used directly, for making toast, toasted sandwiches, drop scones, see the Rayburn cookbook for details. After cooking directly on the hotplate make sure you brush off any crumbs or this could impair the boiling performance of the kettle or sauce pans.

ACCESSORIES

Further accessories, tins, shelves, solid shelves, saucepans, apron and gauntlets, etc are available from your Rayburn Stockist. *

LOCATION OF OVEN GRID SHELVES

To ensure the correct operation of the oven grid shelves, ensure that they are inserted as shown (See section 'USER INFORMATION').

DOORS

To open the doors. Twist the handle slightly to disengage the door catch from the locking spindle and pull door open. (See section 'USER INFORMATION').

To close the doors. Gently push the door shut until the door catch engages with the locking spindle.

IT IS NOT ADVISABLE TO PUT VERY WET CLOTHES ONTO THE HAND RAIL AS THIS MAY CRAZE THE ENAMEL,

BOILER

The operation of the boiler is controlled by the built in programmer. It can be operated under automatic or manual control. See section 'PROGRAMMER'.

The temperature of the hot water supplied can be adjusted by means of the boiler thermostat control knob. This knob can also be used to turn the boiler off.

The boiler thermostat knob is situated behind the control door (See Fig. 1). Turn the knob clockwise to increase the temperature of the water.

For safety purposes an overheat thermostat is fitted. This thermostat is a safety cut-out device which is intended to operate if other controls fail. This control will "Lock-out:" and switches everything off except for the programmer and the "pump overrun" facility.

This thermostat has to be manually reset once the temperature has cooled down.

To reset press the centre of the reset button (See Fig. 1) with a small probe (pencil, ball point, etc).

In the event of repeated failure switch off gas and electrical supply to the appliance and contact your installer/service engineer.

HOTWATER/HEATING AND HOTWATER SWITCH SEE FIG. 1

Switch up to
'HOTWATER'

- Water from boiler to hot water cylinder only.

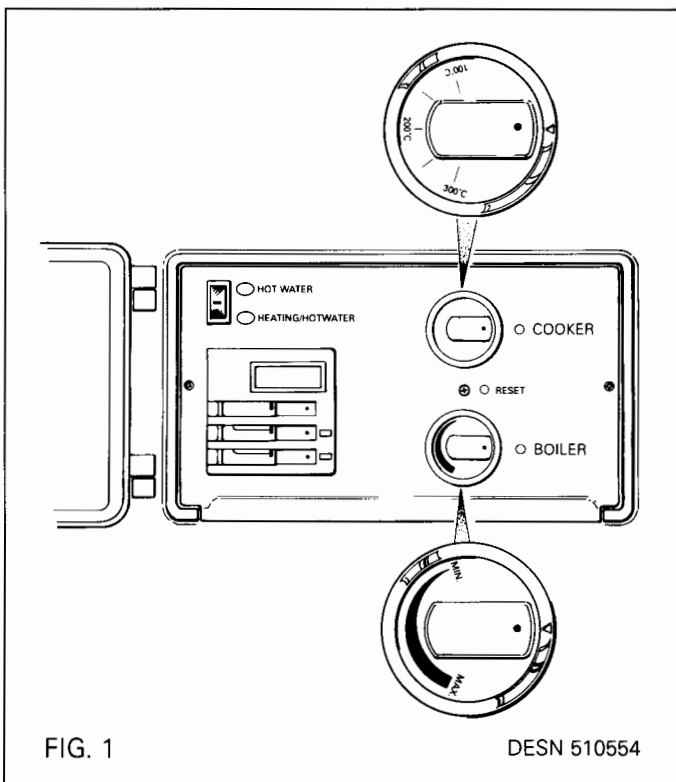
Switch down to

'HEATING/HOTWATER'

- Water from boiler to hot water cylinder and central heating system.

FROST PRECAUTIONS

In the event of the boiler being OFF for long periods during very cold weather, the advice of your installer should be obtained.



PROGRAMMER

SETTING THE CORRECT TIME

1. Move the **TIME SET** selector to the **SET CLOCK** position. The display will now be flashing to indicate it can be changed.

2. Press the + or - button to set the correct time of day.

Each press of the button will change the time by one minute. Holding the button down for more than a few seconds will change the time quickly. The display will stop flashing to indicate the time has been set.

3. Move the **TIME SET** selector to the **AUTO** position to complete setting the time of day.

SETTING THE PROGRAMME TIMES

The unit has **ON/OFF** programme times per day to control your Boiler and Cooker. To help you set your personal programme quickly, a built-in programme has been incorporated with commonly used programme times. This programme is selected automatically when the unit is first connected to the mains power or when the **RESET** button is pressed.

Each programme time can be set between 3.00am and 2.50am (on the next day) to allow you to programme past midnight, if required.

1. Move the **TIME SET** selector to the first **ON** position (second from left). The first **ON** time will now be flashing in the display to indicate it can be changed.
2. Press the + or - buttons to set the first **ON** time.

Each press of the button will change the time by 10 minutes. Holding the button down for more than a few seconds will change the time quickly. The display will stop flashing to indicate the time has been set.

3. Move the **TIME SET** selector to the first **OFF** position. Set the first **OFF** time using the + or - buttons.
4. Move the **TIME SET** selector to the second **ON** position. Set the second **ON** time using the + or - buttons.
5. Move the **TIME SET** selector to the second **OFF** position. Set the second **OFF** time using the + or - buttons.
6. Move the **TIME SET** selector to the **AUTO** position to complete setting the programme times.
7. Your programmer will now switch your boiler and cooker automatically.
8. Set the cooker and boiler thermostat knobs to the desired settings.

The cooker and boiler burners will automatically fire until the desired temperatures are reached.

NOTES

- (i) On 12 hour clock versions ensure the **AM** or **PM** marker is correct. If not, adjust the time by a further 12 hours.
- (ii) Programme times cannot be set out of sequence. If the - button is being pressed , the time will stop changing when it equals a previous programme time. If the + button is being pressed, subsequent programme times will be pushed forward along with the one being set.
- (iii) If the **TIME SET** selector is accidentally left in an **ON/OFF** or **SET CLOCK** position for a period of 10 minutes, the unit will start to operate as if it had been left in **AUTO**. The display will flash when this occurs to remind you to move the selector to the correct position.

REVIEWING AND CHANGING PROGRAMME TIMES

- 1 To review/change the **ON/OFF** programme times move the **TIME SET** selector to each of the **ON/OFF** positions in turn. Any time can be adjusted by using the + or - buttons.
- 2 Move the **TIME SET** selector to the **AUTO** position to complete reviewing/changing the programme times.

TEMPORARY CHANGE

The two **CHANGE** buttons switch the output **ON** or **OFF** (without altering the programme) when the **TIME SET** selector is in the **AUTO** position and the **HEATING** and/or **HOT WATER** selectors are set to **ONCE** or **TWICE**. When the indicator lamp is **ON**, pressing the **CHANGE** button switches the output **OFF** until the next programme **ON** time.

When the indicator lamp is **OFF**, pressing the **CHANGE** button switches the output **ON** until the next programme **OFF** time.

OPERATING YOUR PROGRAMMER

For normal operation the **TIME SET** selector must be in the **AUTO** position.

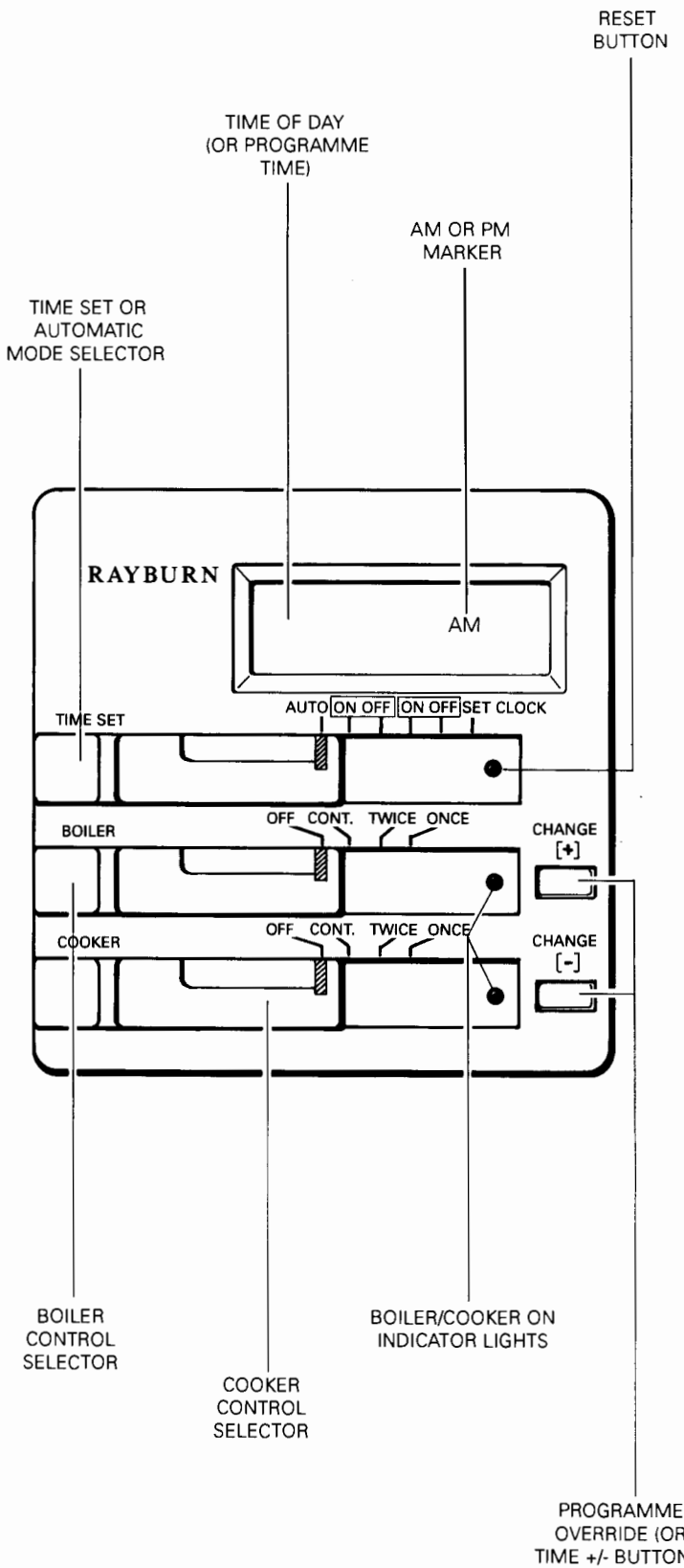
Red indicator lamps show when the Boiler or Cooker is switched **ON**.

The two lower selectors are used to control the Boiler and Cooker as follows:

- OFF** The heating will remain **OFF** permanently.
- CONT** The heating will remain **ON** permanently.
- TWICE** The heating will be switched **ON** and **OFF** automatically at the programme times.
- ONCE** The heating will be switched **ON** automatically after the first programme **ON** time and **OFF** at the last **OFF** time. The first **OFF** and second **ON** times will be ignored.

POWER FAILURE

This unit has a built-in battery to ensure correct operation after a mains power cut. No action should be necessary following a power cut up to 7 days. Longer power cuts may require you to reprogramme the unit.



DESN 510557 'A'

PROGRAMMER

EXAMPLE SETTING

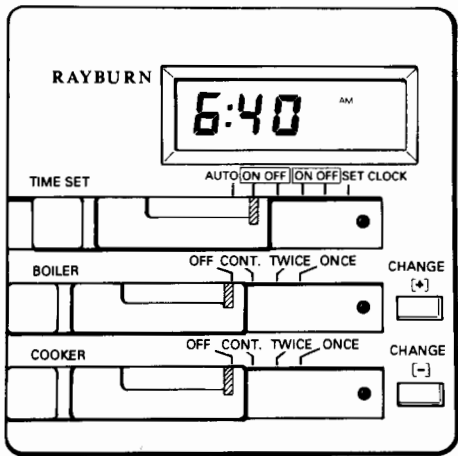
For a typical family, the sequence of Heating and Cooking might be boiler on all day, cooker on twice a day, for example:-

BOILER & COOKER **ON** at 6.40am Rising from bed at 7.00am

COOKER **OFF** at 8.30am Family at work/school but hot water required for washing etc.

EXAMPLE SETTING SEQUENCE

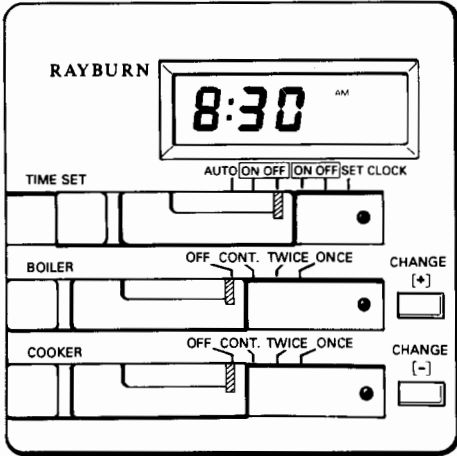
1.



TIMESET slider 1st **ON** select time A.M. 6.40

DESN 510558'A'

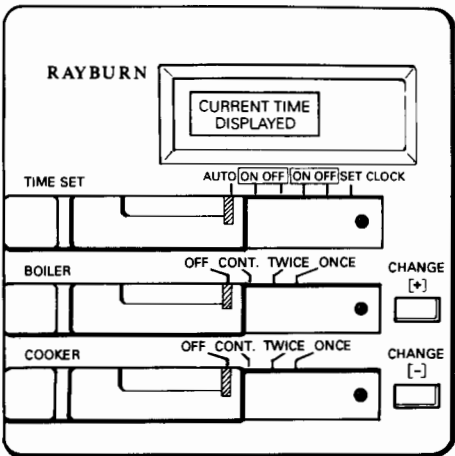
2.



TIMESET slider 1st **OFF** select time A.M. 8.30

DESN 510558'A'

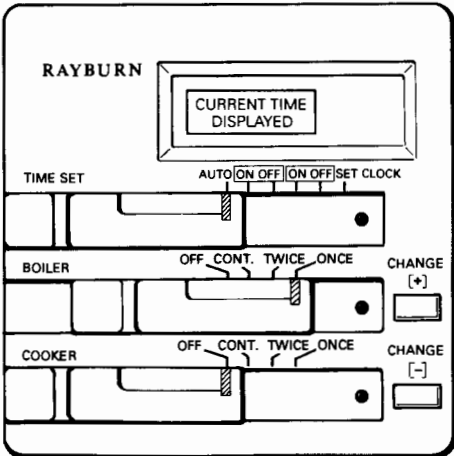
5.



TIMESET slider **AUTO**

DESN 510558'A'

6.



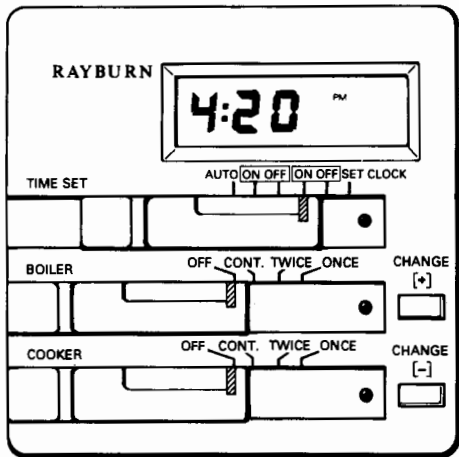
BOILER slider **ONCE**

DESN 510558'A'

COOKER ON at 4.20pm Family returning home

BOILER & COOKER OFF at 10.50pm Family gone to bed, heating and cooking no longer required.

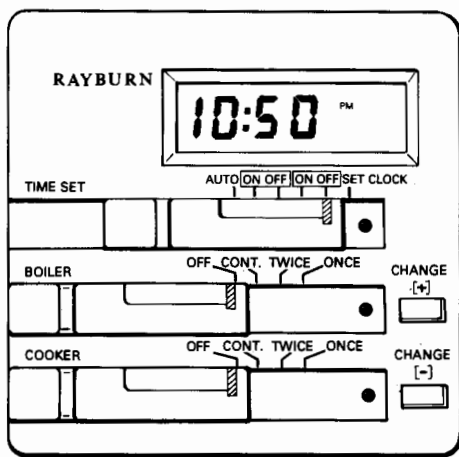
3.



TIMESET slider 2nd **ON** select time P.M. 4.20

DESN 510558'A'

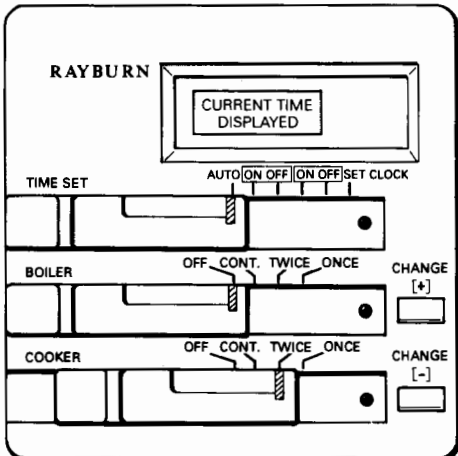
4.



TIMESET slider 2nd **OFF** select time P.M. 10.50

DESN 510558'A'

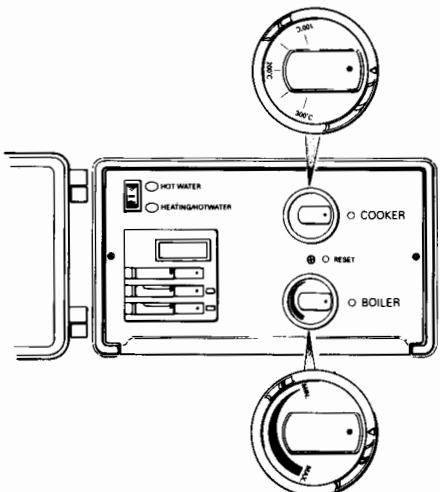
7.



COOKER slider **TWICE**

DESN 510558'A'

8.



The Hotwater/Heating and hot water switch should be set down to HEATING/HOT WATER.
Set the BOILER and COOKER thermostat knobs to the desired setting.
The programmer will now switch your boiler and cooker automatically.

DESN 510554'A'

CLEANING

REMEMBER TO BE CAREFUL OF THE HOT APPLIANCE

To keep the vitreous enamel surface bright and clean, wipe over daily with a soapy cloth, followed by a polish with a clean duster.

If milk, fruit juice or anything containing acid is split 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. Look for cleaners carrying the VEDC (Vitreous Enamel Development Council) approval logo as this indicates they can be used on your Rayburn.

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 the ovens with a stiff brush. Do not use oven cleaners.

The oven doors can be removed for cleaning the linings. Do not immerse in water. Lay the door on a towel on the work surface to protect the enamel and clean the linings with a cream cleanser or soap impregnated pad.

Shelves can be soaked and cleaned with a cream cleanser.

Both insulating covers should be raised and allowed to cool before cleaning with a soapy damp cloth. Get into the habit of wiping them before lowering. Use a wire brush to keep the hotplate clean. General cleaning is best carried out when the Rayburn is cold.

DO NOT USE ABRASIVE PADS, OVEN CLEANER, OR CLEANERS CONTAINING CITRIC ACID ON ENAMELLED SURFACES.

SERVICING

With normal use a boiler/cooker annual flueway clean and burner maintenance should be carried out immediately before the end of the heating season.

A HOT APPLIANCE CANNOT BE SERVICED.

Both cooker and boiler thermostat knobs should be turned OFF the night preceding the day of the servicing so that the appliance will have cooled down by the following morning.

GAS LEAK OR FAULT

If a gas leak or fault exists or is suspected the unit must be isolated from the gas and electrical supply. The appliance must not be used until the fault has been rectified.

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

POWER FAILURE

In the event of power failure your appliance will become inoperative. When the power is restored it will automatically restart, if programmed or manually set to do so.

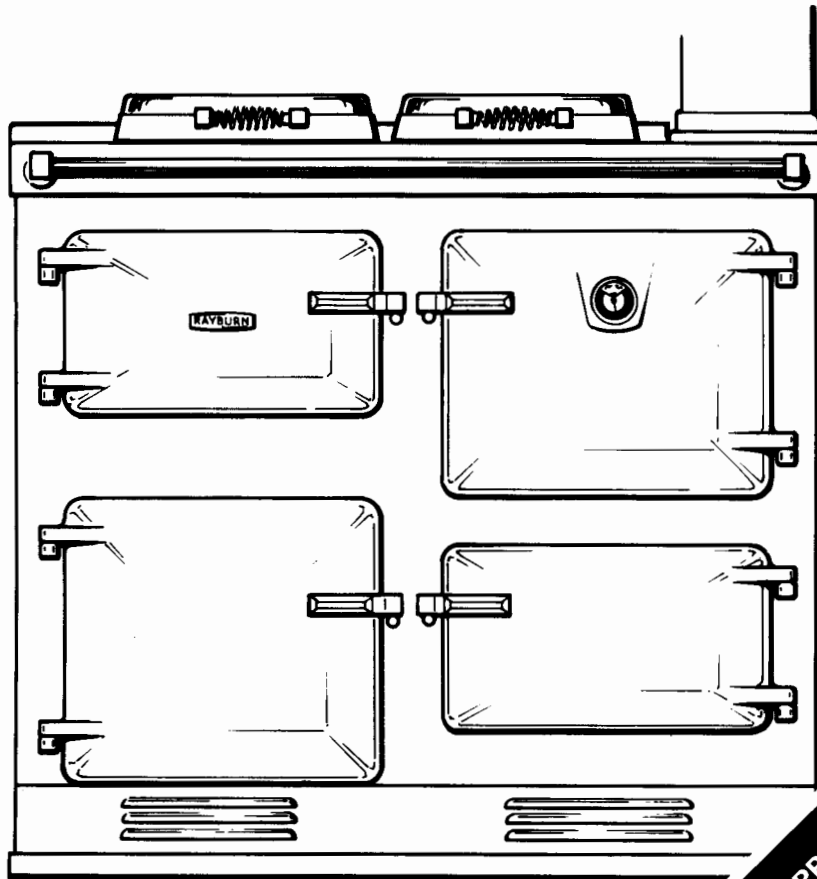


Home on the Range.

499 G

Installation Instructions

For use in GB and IE



DESN 510517

PAT. APP 2 280 747
AND OTHER GB & IE
PATENTS PENDING

PLEASE READ THESE INSTRUCTIONS BEFORE INSTALLING THIS APPLIANCE



WP 1/97 EINS 511489

Consumer Protection

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Health & Safety

This appliance may contain some of the materials that are indicated. 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.

Fire bricks, Fuel beds, Artificial Fuels

When handling use disposable gloves.

Fire cement

When handling use disposable gloves.

Glues and Sealants

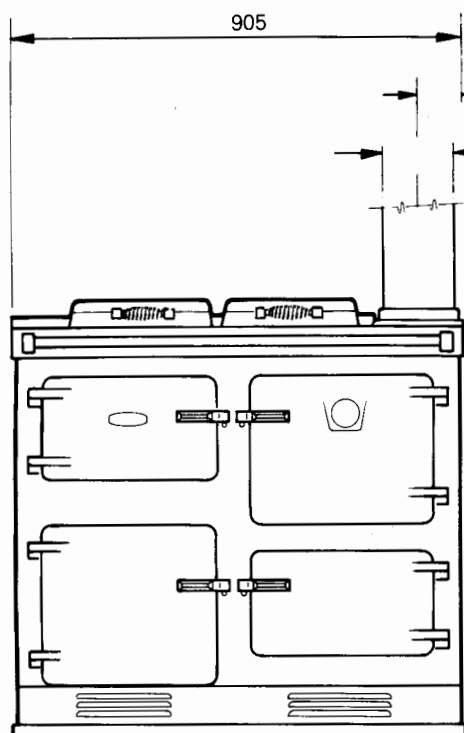
Exercise caution - if these are still in liquid form use face mask and disposable gloves.

Glass Yarn, Mineral Wool, Insulation Pads, Ceramic Fibre

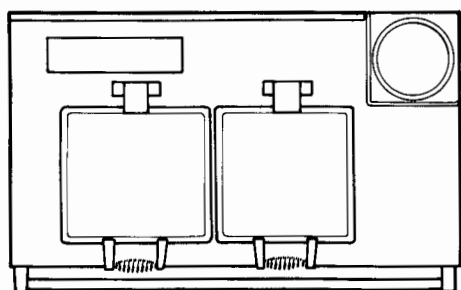
May be harmful if inhaled. May be irritating to skin, eyes, nose and throat. When handling avoid contact with skin or eyes. Use disposable gloves, face-masks and eye protection. After handling wash hands and other exposed parts. When disposing of the product, reduce dust with water spray, ensure that parts are securely wrapped.

NOTE SMOKE/SMELL EMITTED DURING INITIAL USAGE

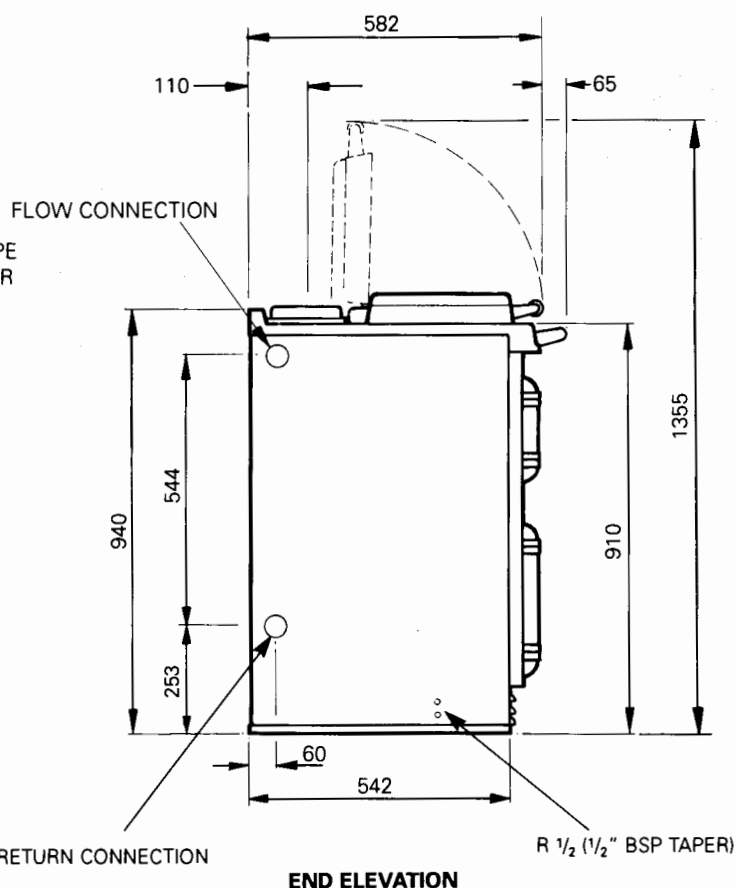
Some parts of the cooker have been coated with a light covering of protective oil. During initial operation of the cooker, this may cause smoke/smell to be emitted and is normal and not a fault with the appliance, it is therefore advisable to open doors and windows to allow for ventilation. Lift the lids to prevent staining the linings.



FRONT ELEVATION



PLAN



END ELEVATION

PLEASE NOTE: IT IS ADVISABLE TO CHECK THE ACTUAL SIZE/WIDTH OF YOUR APPLIANCE BEFORE FINALLY FIXING ANY KITCHEN UNITS SINCE ENAMELLED CAST IRON CAN VARY IN SIZE.

DIMENSIONS IN MM

DESN 510518

GENERAL SPECIFICATIONS

Boiler Water Connections

Flow (one)	Rp 1 (1in.BSP Int)
Return (one)	Rp 1 (1in.BSP Int)

Both connections are located towards the rear edge of the appliance L.H. side panel.

Gas Inlet R 1/2" (1/2" BSP Taper)

Flue Outlet 150mm

Max. Flue Temp. 229°C

CO% 93 ppm (MAX)

CO₂% 8.5 - 9.0

Electrical Supply 230V ~ 50Hz 3 amp Fused

Max. Water Temp. 82°C

Water Capacity of Boiler 25.5 litres

Max. Operating Pressure of Boiler 2 bar

Weight of Appliance 420kg

Fuel NATURAL GAS (G20)Cat I_{2H}



499G		BOILER BURNER	COOKER BURNER
	INLET PRESSURE mbar	20	20
	BURNER PRESSURE mbar	14	12
	INJECTOR	16 x 1.6mm	16 x1.6mm
	HEAT INPUT kW	36.4	15.8
	BOILER OUTPUT kW	29.3	0.8 MAX

INTRODUCTION

The Rayburn is a floor standing combined cooker and central heating boiler. It gives independent operation for space heating, domestic hot water and cooking. It is available with vertical flue outlet. The appliance is fired by two independent gas burners. Either burner can be independently operated under programmer control if required.

The boiler is designed for use on a fully pumped low pressure hot water circulation system, with a pumped over run facility or alternatively on a sealed system.

IMPORTANT

The burners fitted to this appliance have been designed and constructed exclusively for use with the Rayburn 400 Series Cooker/Boiler and MUST not be used on any other appliances.

An Indirect Cylinder MUST be fitted. If the heating circuits are controlled in such a way that both heating and cylinder circuits can be closed off at the same time then a PERMANENTLY OPEN BYPASS LOOP should be provided.

REGULATIONS

In the interests of safety all gas appliances should be installed by competent persons in accordance with the regulations in force.

LOCATION

The appliance is floor mounted and must be installed on a solid floor or base of incombustible material which is capable of supporting the total weight

The location chosen for the appliance must permit the installation and the provision of a satisfactory flue and an adequate air supply. The location must also provide adequate space for servicing and for air circulation around the appliance. See "Installation of the Appliance".

The space in which the appliance is to be fitted must have the following minimum dimensions.

Between wall and LH side of appliance - 3mm
Between wall and RH side of appliance - 10mm
Above the raised insulating 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 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

Installation Pipes

Pipework from the meter to the appliance must be of adequate size. It is recommended that a minimum of Ø22mm copper tubing is used to within 1m of the appliance. A reduction to Ø15mm is permissible over the last metre of 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 in accordance with the regulations in force.

Site requirements

FLUE SYSTEM

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 cast iron flue pipe of a length not less than 600mm must be utilised immediately above the flue spigot before any bends are used.

In any event the minimum flue length must not be less than 3m.

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

- (a) Cement
- (b) Aluminium or stainless steel
- (c) Cast iron or mild steel acid resistant vitreous enamel lined.

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.

A flue pipe constructed in cast iron, should form the initial connection to lined chimneys.

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 in accordance with relevant standards.

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 baffle plate, 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 relevant recommendations.

AIR REQUIREMENTS

The appliance can only be installed in a room which meets the ventilation regulations in force. But, in any event the room must have a permanent vent of minimum free air area, see below.

MODEL	MIN. AIR REQUIREMENT
499G	204 cm ²

IMPORTANT: THE LOUVRED AIR INTAKE AT THE BOTTOM FRONT OF THIS APPLIANCE MUST BE KEPT CLEAR OF ANY OBSTRUCTIONS.

WATER CIRCULATION SYSTEM

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.

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.

The bypass balancing valve should be of a type non-adjustable by the householder and must have at least 2.5 metres of 28mm pipe each side between it and the cooker burner.

Alternatively the bypass loop can incorporate a towel rail, controlled by a non-adjustable balancing valve.

The bypass loop must not 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.

The appliance boiler section should be connected to cistern water supply, subject to a maximum head of 2 bar (20m), minimum of .1bar (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. 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. 1) 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.

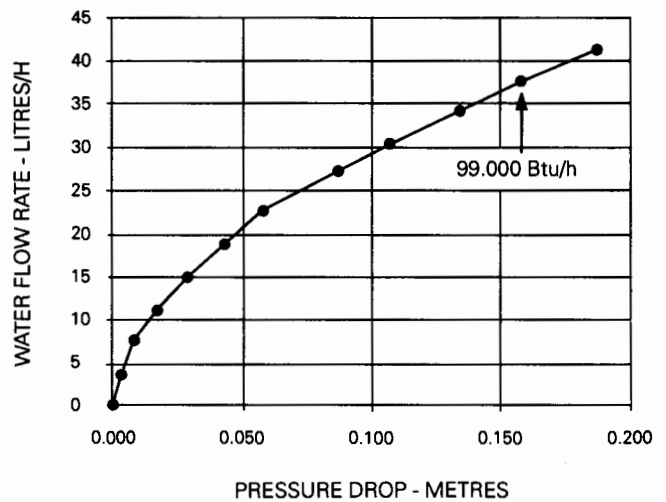
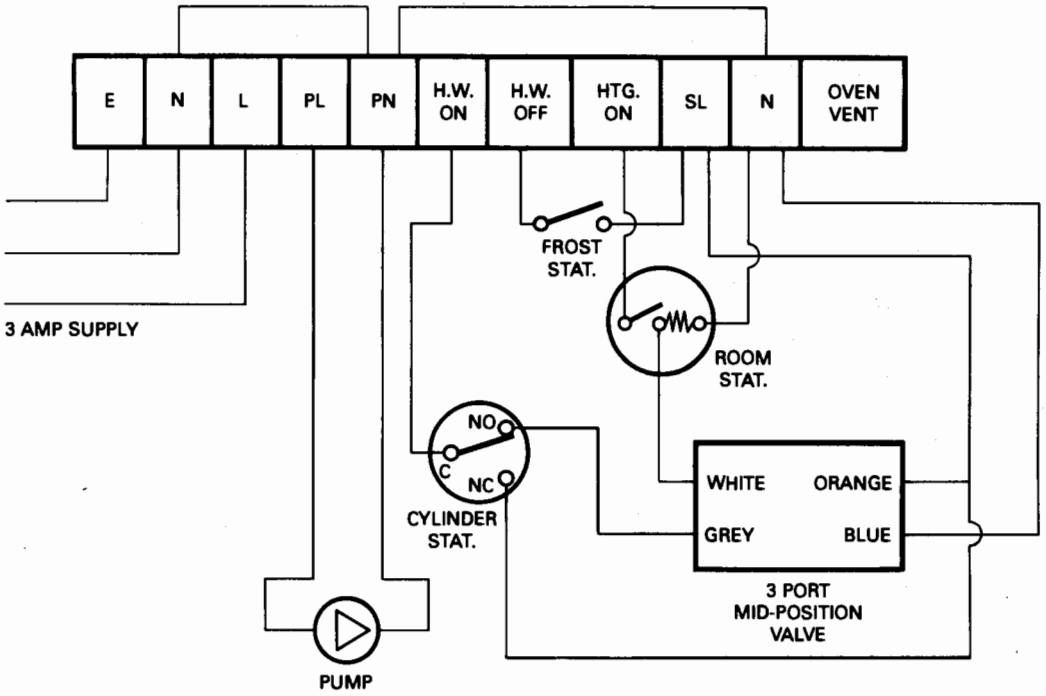


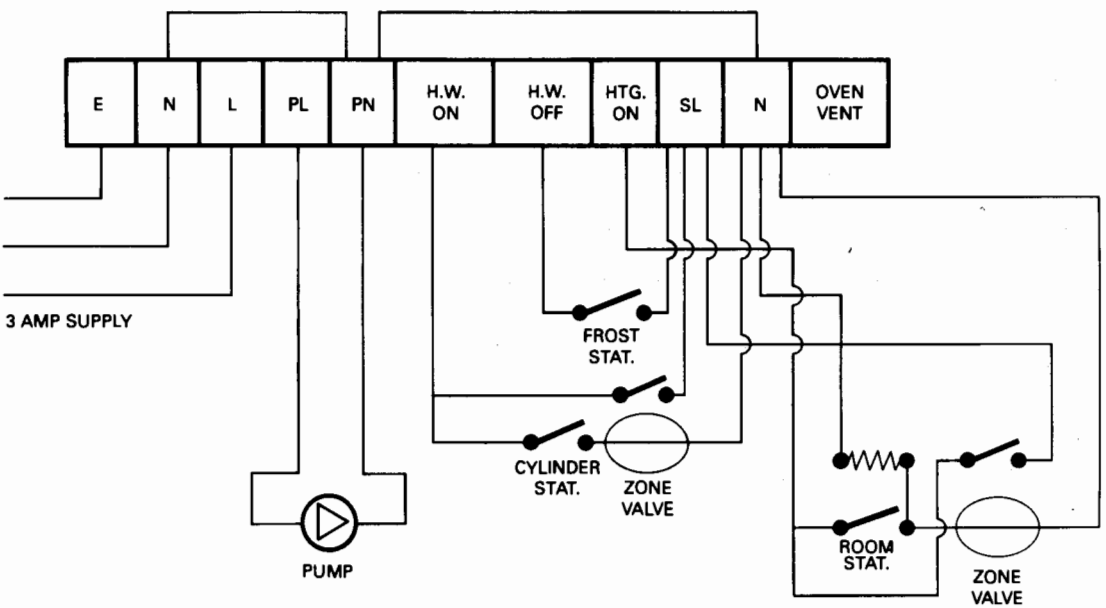
FIG. 1

RAYBURN

499G External Controls



Typical External Wiring with 3-Port based on the Honeywell Mid-Position Valve



Typical External Wiring with 2 Honeywell N.C Motorised Zone Valves

Site requirements

HEATING CONTROLS

Internal temperature and time controls are supplied. These provide control of cooking and hot water temperatures. The cooker is supplied with 2-channel programmer:-

Channel 1 supplies hot water - Marked "BOILER".

Channel 2 controls the cooker burner - Marked "COOKER".

A separate switch in conjunction with the hot water channel gives priority to either the domestic hot water or the supply of hot water for central heating/DHW (if external controls are fitted).

It is recommended that independent temperature controls are provided for comfortable room temperatures, for economic operation and for control of the domestic hot water flow to the cylinder.

Consideration should be given to fitting a frost thermostat which should be set to operate at a temperature of approximately 4°C.

ELECTRICAL SUPPLY

Wiring external to the appliance must be installed in accordance with current National Wiring Regulations and any local regulations which apply. The appliance is supplied for 230 Volt ~ 50Hz and a fuse rating of 3 amps. The method of connection to the mains supply should facilitate complete electrical isolation of the appliance, by the use of a fused double pole switch having a contact separation of at least 3mm serving only the appliance. The point of connection to the mains should be readily accessible and adjacent to the appliance. The installation should be protected by a 30mA Residual Current Circuit Breaker (RCCB).

The minimum requirement for the power cable is that it should be a 3 core PVC sheathed flexible cord (85°C min) at least 0.75mm² (24 x 0.2mm) to the relevant standard.

WARNING THIS APPLIANCE MUST BE EARTHED

In the event of an electrical fault after installation of the appliance, preliminary electrical system checks must be carried out i.e. earth continuity, short circuit, polarity and resistance to earth.

For wiring instructions see wiring diagram.

The circulating pump **MUST** be connected to PL and PN on the terminal block (see Fig. 2) and the cables passed through the grommet in the left hand side panel, at the front.

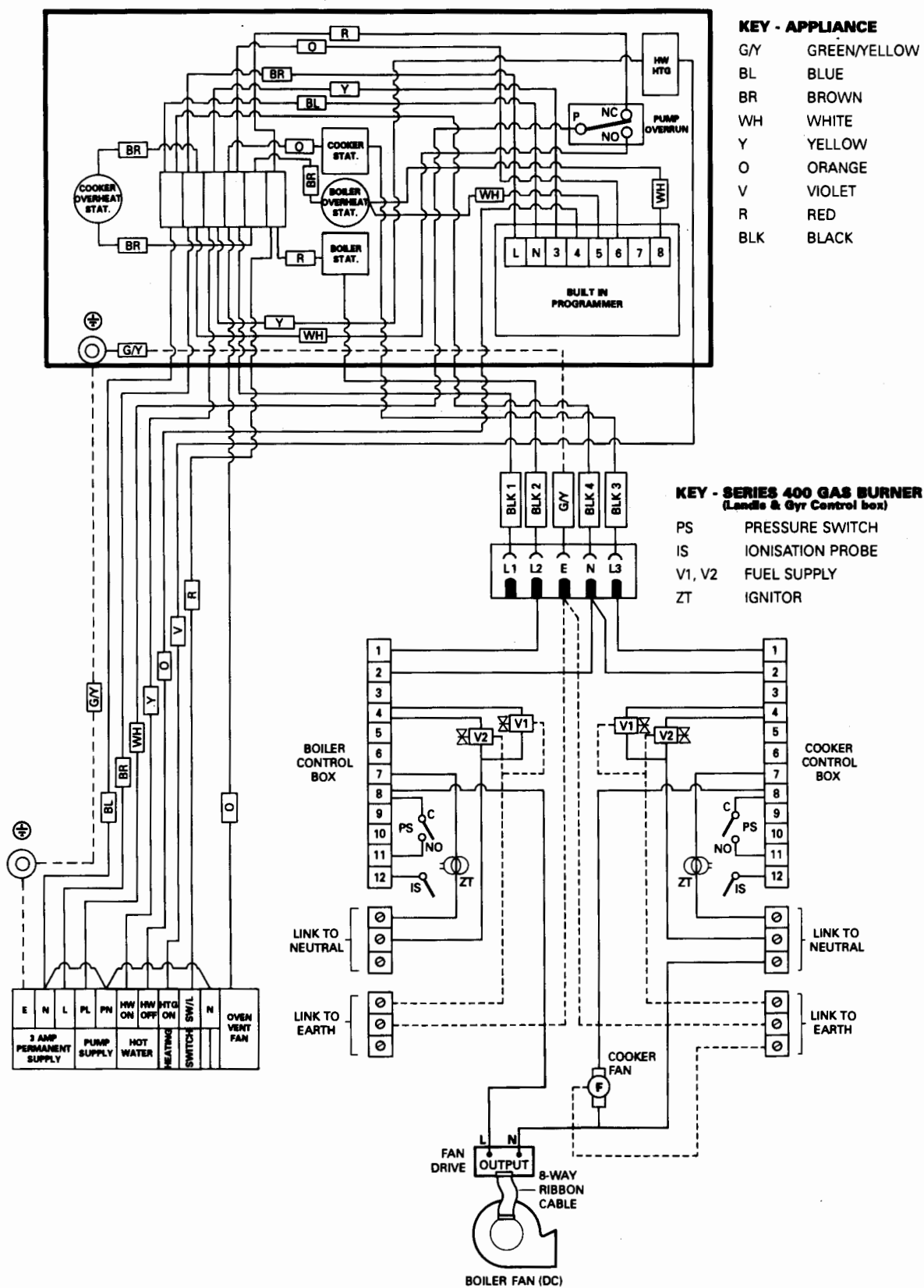


FIG.2

PRELIMINARY INSTALLATION

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

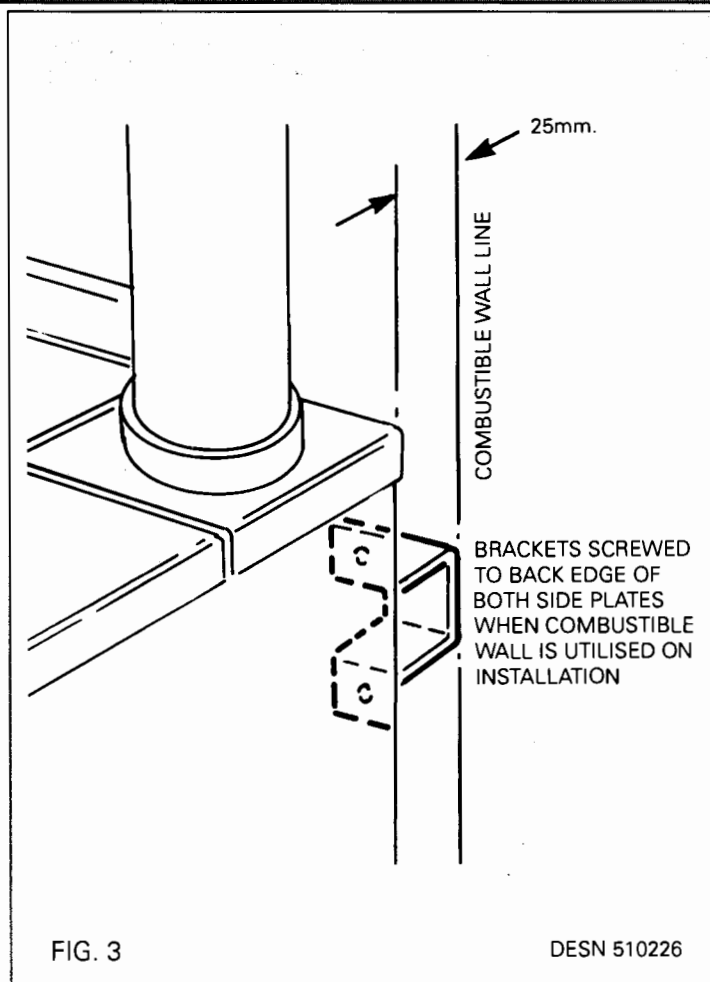
The appliance rear distance bracket.

The cooker handrail.

SEE FIG. 3

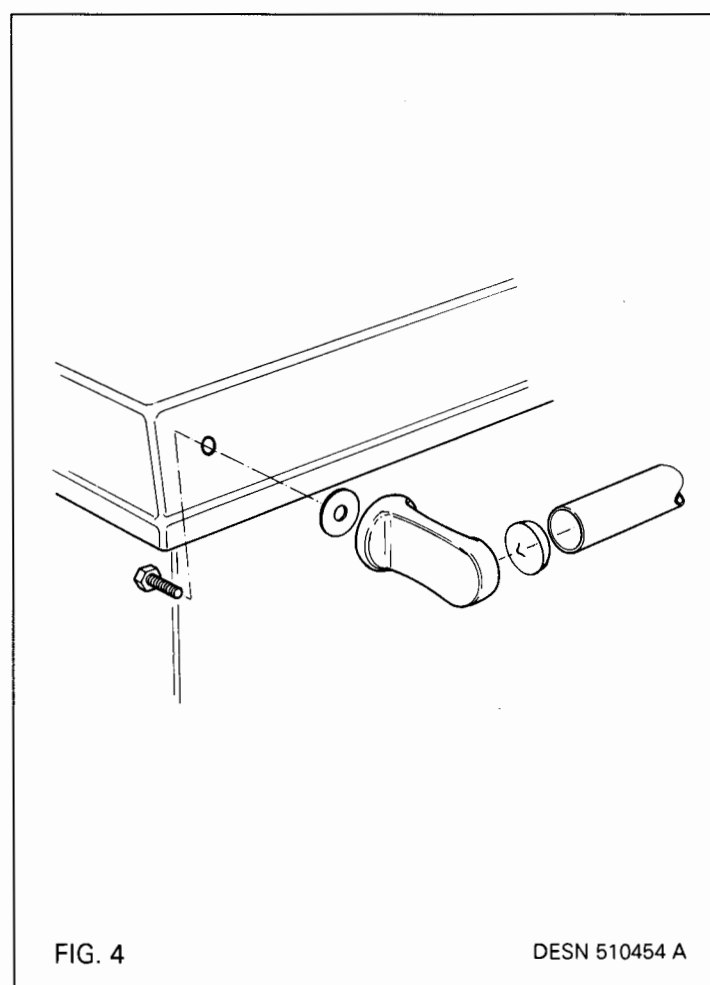
Appliance rear distance bracket: if the rear wall is of combustible material, there must be an air gap of 25mm between the wall and the rear of the cooker. Fit the rear distance brackets as shown. Whenever possible it is recommended that the skirting board is removed for the width of the appliance to enable the rear edge of the appliance top plate to make contact with the vertical wall and avoid a rear gap. (Combustible wall excepted).

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 TOP PLATE.**



SEE FIG. 4

The handrail brackets are held on the front edges of the cooker top-plate casting. Remove the travel nuts and replace with the the handrail brackets ensuring the fibre protecting washers are in position. Insert the handrail with fitted end caps into the brackets positioning them correctly, and tighten the locating bolts.



SITE LOCATION

SEE FIG. 5

1. Check that the hearth is level, then remove the appliance from its transit wooden pallet, and position it with its back against the wall and in its intended position for flue connection.
2. Locate and fit flue pipe into socket of flue pipe adaptor, sealing joint with fire cement.
3. Connect and terminate the flue system in accordance with standard practice.
4. Lift up the insulating covers and remove the hotplate using lifting hooks provided.

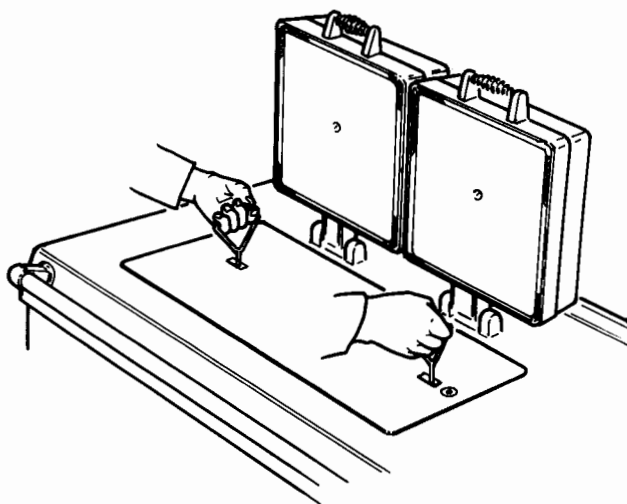


FIG. 5

DESN 510523

SEE FIG.6

5. Remove the insulation pad (B).
6. Remove the 4 flue cleaning access door securing bolts and remove door.
7. Check the position of the boiler flueway baffles.
8. Replace door and refit bolts.
9. Replace insulation pad (B) and the hotplate ensuring that it seals around the edges.

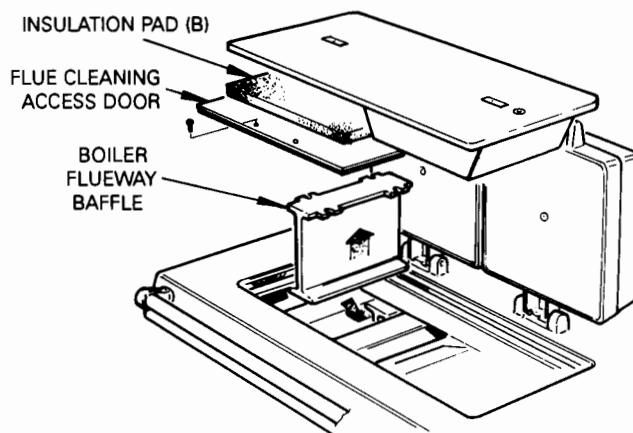


FIG. 6

DESN 510524

Commissioning Instructions

BURNER ACCESS

SEE FIG. 7.

1. Open the burner access door. Remove door and put in a safe place.
2. Remove 4 inner panel securing screws and remove panel.
3. Remove 3 screws securing plinth.
4. Remove plinth.

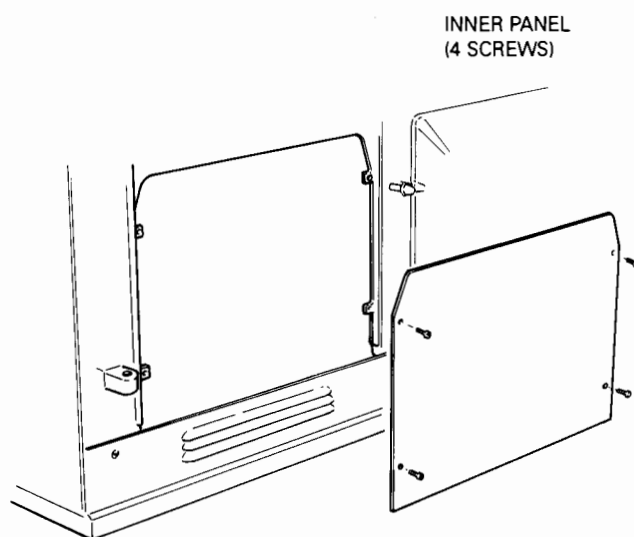


FIG. 7

DESN 511119

ELECTRICAL CONNECTION

SEE FIG. 8

1. Make electrical connections to terminal strip as wiring diagram (see Fig.9).

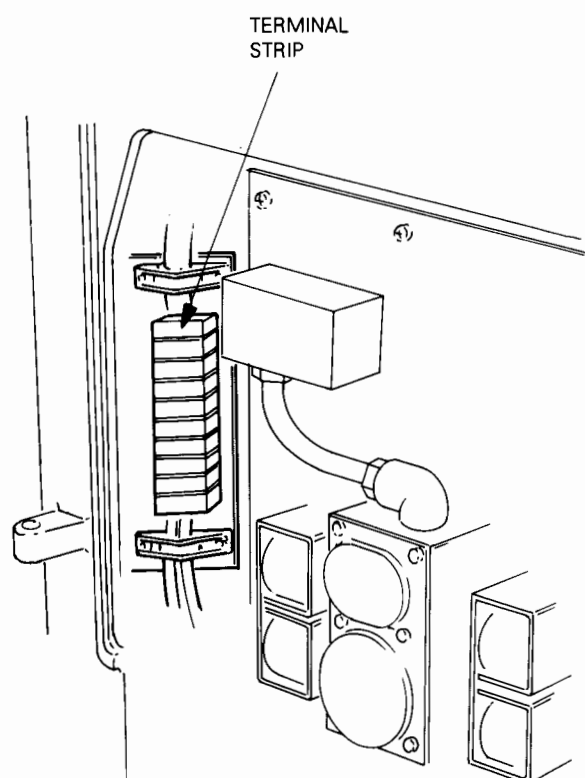
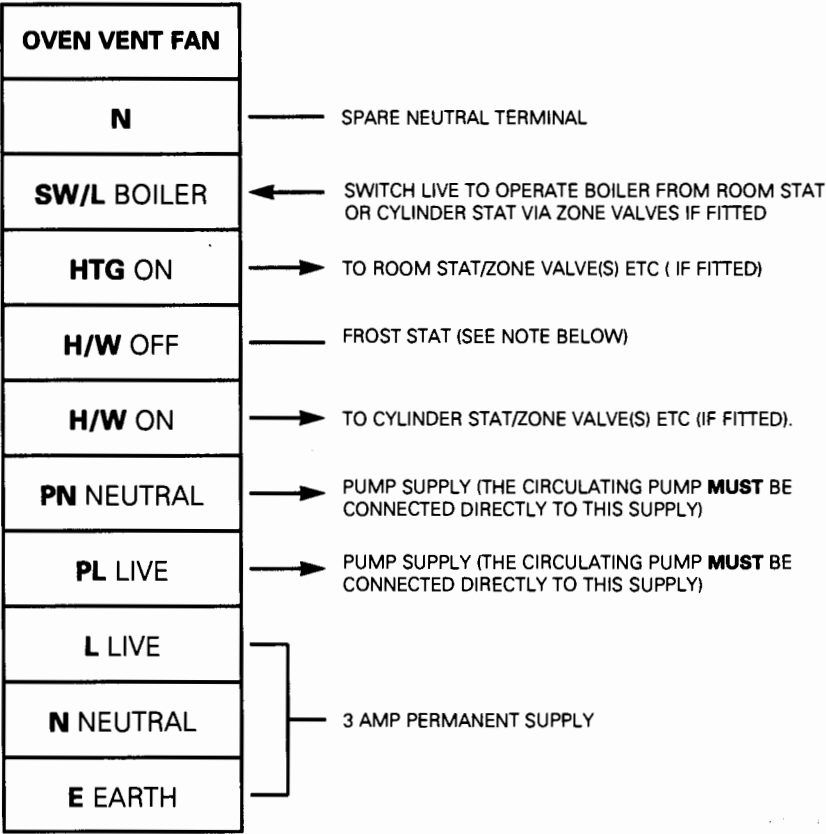


FIG. 8

DESN 511120

TERMINAL STRIP CONNECTIONS



NOTE:

If no Hot Water System Controls are used a link **MUST** be fitted between **H/W ON** and **SW/L BOILER**.
 If no Central Heating System Controls are used a link **MUST** be fitted between **HTG ON** and **SW/L BOILER**.
 If a Frost Thermostat is fitted it **MUST** be connected to **SW/L BOILER** and **H/W OFF**.

FIG. 9

Commissioning Instructions

BURNER CONTROL BOX OPERATION

When the boiler or cooker thermostat is calling for heat, 230V is supplied to terminal 1 of either burner control box and the air pressure switch checked to ensure that it is in the 'no air' position.

Providing this check is satisfactory, after a short delay, the burner fan will run (supplied from terminal 8).

The combustion air supplied by the fan will be detected by the air pressure switch.

If this is also found to be satisfactory, after a delay 10-15 seconds of the fan pre-purging, the ignition device is energised (supplied from terminal 7), at the same time the twin gas valve solenoids are energised (supplied from terminal 4).

Providing the start gas flame is established within 3 seconds and detected by the flame detection probe (connected to terminal 12), the burner will run.

The gas valves are a two stage design and although both solenoids open at the same time a low start facility initially operates and the gas will run at full rate after approximately 8 seconds.

ELECTRICAL CHECK

SEE FIG. 10

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

Check gas cock is in the on position.

Switch on the Electricity

Set the boiler burner time clock switch to continuous and turn the boiler thermostat to maximum. The boiler burner should run on pre-purge for 10 to 15 seconds, the burner should then ignite.

Until all the air from the gas burner is purged out the burner may go to lock-out.

This will be shown by the burner stopping and the illumination of the signal light in the reset button of the control box. In this event, **wait at least one minute**, then press the re-set button to restart.

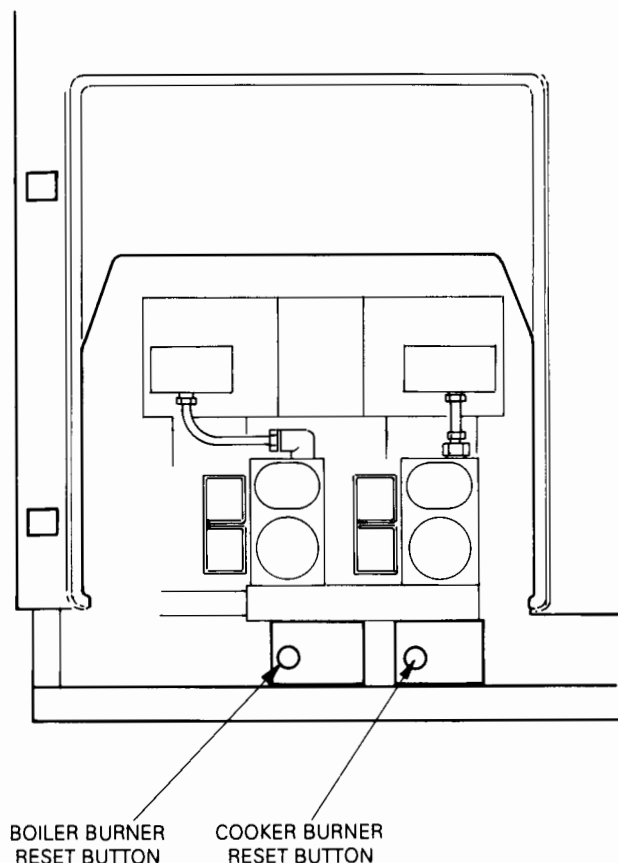
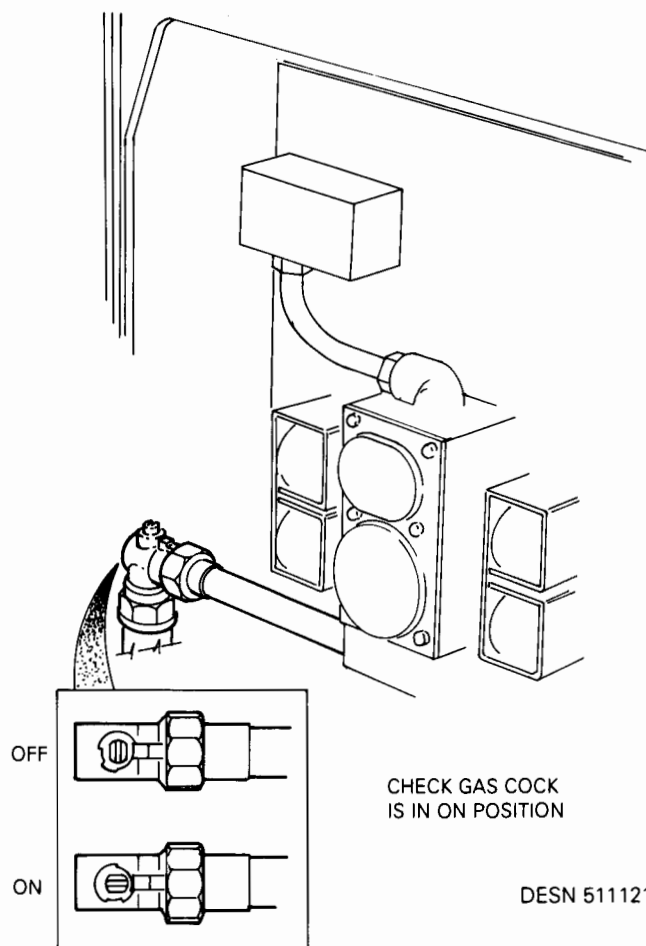


FIG. 10

DESN 511122

SET COMBUSTION AIR

SEE FIG. 11

Boiler Burner

After 15 minutes remove the enamelled top cover panel (behind the L.H. insulating cover) and remove the insulation pad A. Remove the plugging screw and insert the sensing end of a portable indicator to check the CO₂ (Carbon Dioxide) level. Adjust the boiler burner air intake until the CO₂ / CO are as specified:-

CO% 93 ppm (MAX)

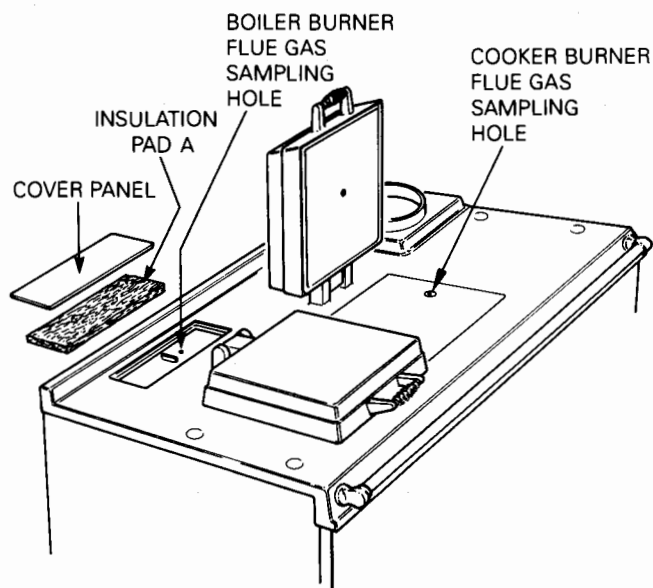
CO₂% 8.5 - 9.0

Cooker Burner

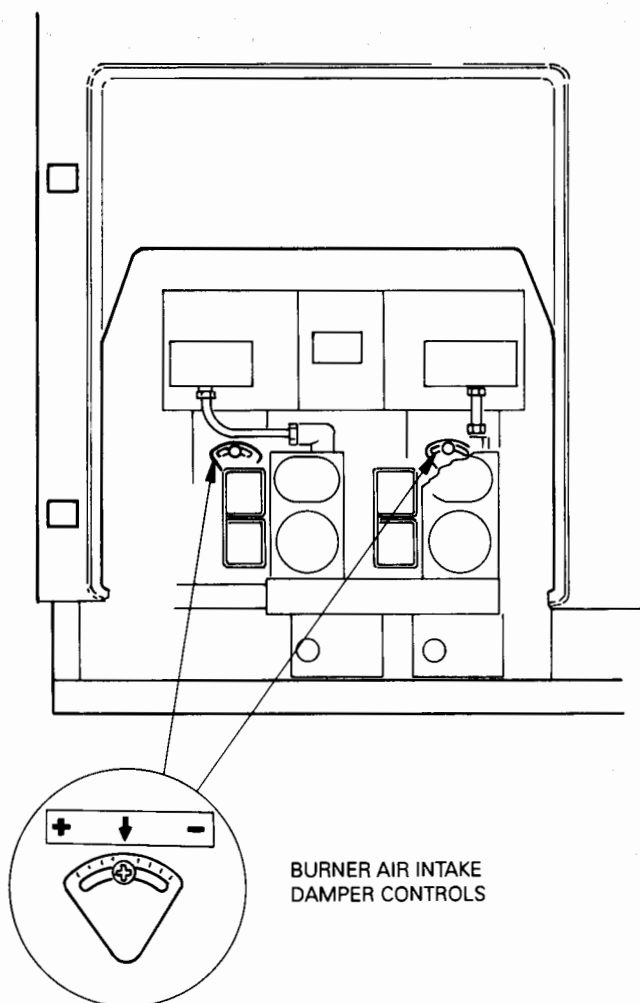
Switch off the boiler burner and repeat the above procedure with cooker burner. To sample the flue gases from the cooker burner lift up the R.H. insulating cover and remove the countersunk headed screw in the hotplate. The cooker burner should be set as specified as above. Replace the countersunk headed screw on completion ensuring that it will not interfere with any pots and pans placed on the hotplate.

When satisfied with combustion check refit burner door inner panel.

Refit outer burner door.



DESN 510531



IMPORTANT: ALWAYS LOCK IN POSITION AFTER SETTING

FIG. 11

DESN 511123

Commissioning Instructions

ANCILLARY CONTROLS CHECK

Before leaving the site, check the operation of programmer, control thermostats are working correctly and are capable of controlling the burners correctly. Check the operation of both burner control boxes. See 'RECOMMISSIONING' section in Servicing Instructions.

BOILER CONTROL CHECK

Check that:-

1. The boiler system is full of water and all the valves are fully open.
2. The programmer is set to continuous heating and the heating switch set to heating.
3. Ensure that the electricity supply is ON, that the pump, is running and the boiler thermostat is ON.
4. Allow the pump adjuster to maintain a boiler "flow and return" temperature differential of 10°C - 14°C.

Checks must be made by the installer to see that this differential is obtained after the boiler 'Flow' temperature is stabilised.

The system should be balanced by regulating the water flow rate through individual heat emitters to ensure a satisfactory water temperature at each emitter.

5. When the water system reaches working temperature check that the boiler thermostat operates satisfactorily.
6. Examine the system for water soundness. The system should then be turned off and rapidly drained whilst still hot. The system should again be filled and cleared of all air locks. Whilst refilling the system it is recommended that a suitable corrosion inhibitor is added to the feed water.

INSTRUCT THE USER

1. Advise the User of the precautions necessary to prevent damage to the heating system and to the building in the event of the heating season being inoperative during frost conditions.
2. Advise the User that, for continued efficient and safe operation of the appliance, it is important that adequate servicing is carried out at regular 12 monthly intervals.
3. Hand the Operating Instructions to the User and demonstrate the correct operation of the appliance and system controls.
4. Leave the Installation and Servicing Instructions with the User.

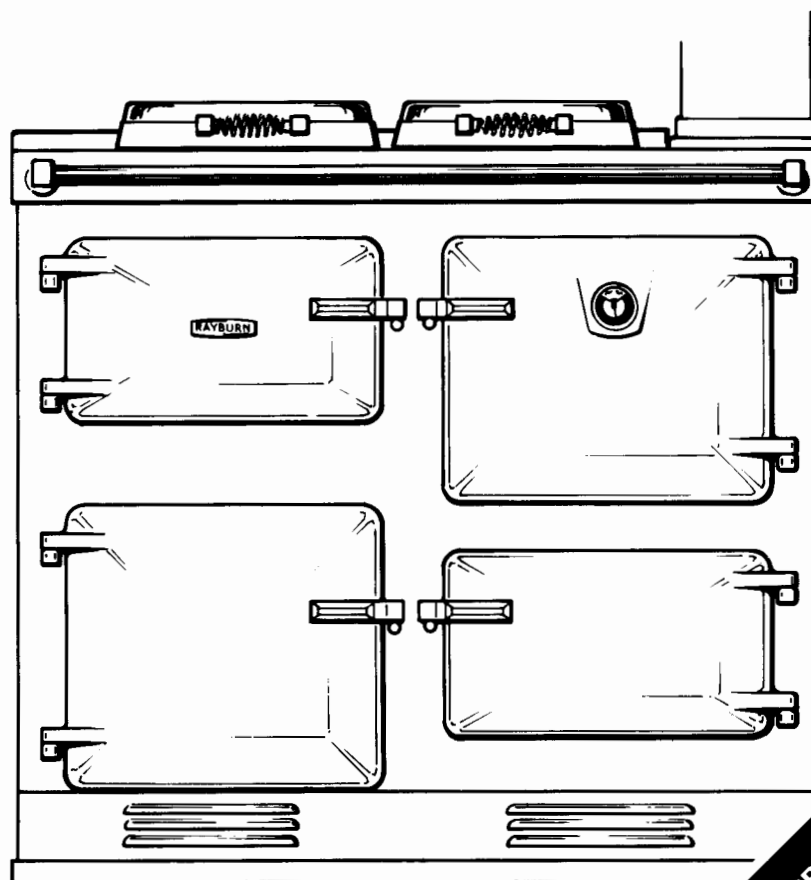


Home on the Range.

499G

Servicing Instructions

For use in GB and IE



DESN 510517

PAT. APP 2 280 747
AND OTHER GB & IE
PATENTS PENDING

PLEASE READ THESE INSTRUCTIONS BEFORE SERVICING THIS APPLIANCE



WP 1/97 EINS 511488

Consumer Protection

As manufacturers and suppliers of cooking and heating products. We take every care to ensure, as far as is reasonably practical, 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, operation of the warranty and could affect your statutory rights.

Health & Safety

This appliance may contain some of the materials that are indicated. 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.

Fire bricks, 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

May be harmful if inhaled. May be irritating to skin, eyes, nose and throat. When handling avoid 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

To ensure the best performance from your Rayburn it should be serviced once a year; preferably at the start of the heating season by a registered heating installer.

An additional flueway and combustion chamber clean halfway through the heating season may be necessary in some cases. The appliance cannot be serviced whilst hot, so both oven and boiler thermostats should be turned off on the evening before the service visit.

In your own interest, and that of safety to comply with the law, all gas appliances should be installed/maintained by a competent person, in accordance with the relative regulations.

Failure to install/maintain appliances correctly could lead to prosecution.

On completion, test the gas installation for soundness.

SERVICE SCHEDULE

Annual Service

BURNER REMOVAL - for cleaning and inspection.

CLEANING - Boiler heat exchanger flueways, oven and hotplate flueways together with ceramic fibre burner chambers.

BURNER SERVICING.

RE-COMMISSIONING.

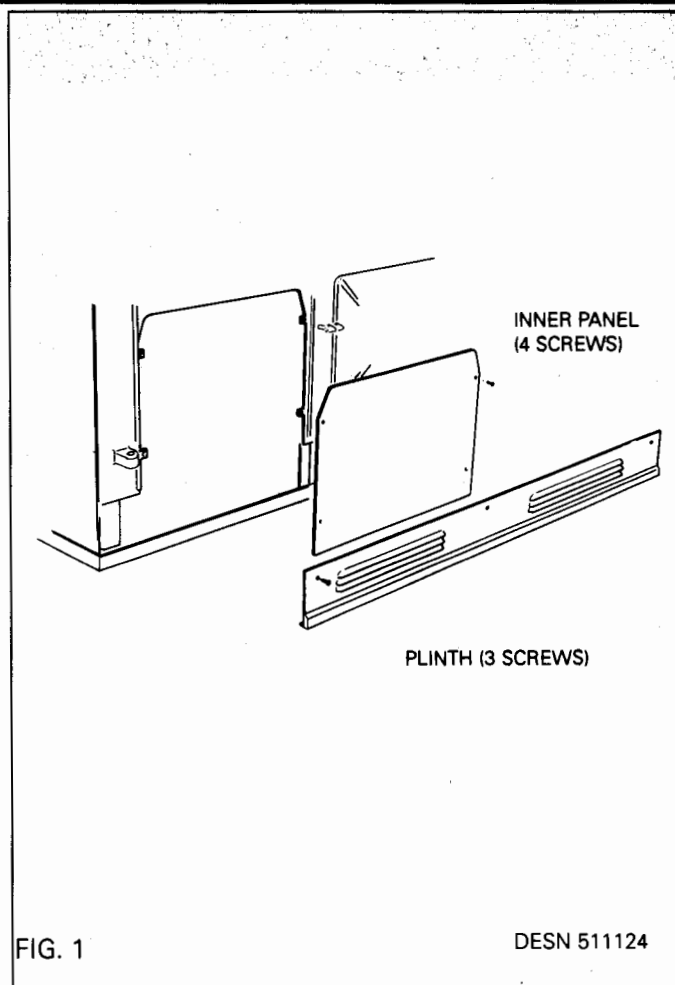
REPLACEMENT PARTS.

BURNER ACCESS

WARNING: BEFORE REMOVING SERVICE ACCESS COVERS ENSURE THAT ALL ELECTRICAL SUPPLIES TO THE APPLIANCE HAVE BEEN ISOLATED

SEE FIG. 1

1. Open up burner access door. Remove door and put in a safe place.
2. Remove the 4 inner panel securing screws and remove panel.
3. Remove the 3 plinth securing screws and remove plinth.



BURNER REMOVAL

IMPORTANT: DURING BURNER REMOVAL CARE MUST BE TAKEN NOT TO DAMAGE THE CERAMIC FIBRE INSULATION.

SEE FIG. 2

1. Turn off gas cock.
2. Break gas cock union connection.
3. Disconnect the 5-pin plug underneath the burner.

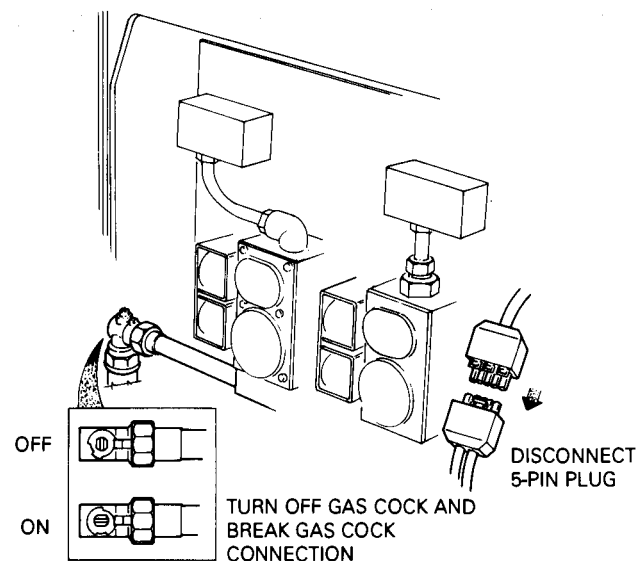


FIG. 2

DESN 511125

SEE FIG. 3

4. Undo the burner central locking nut
5. Remove (2) fan mounting plate nuts.

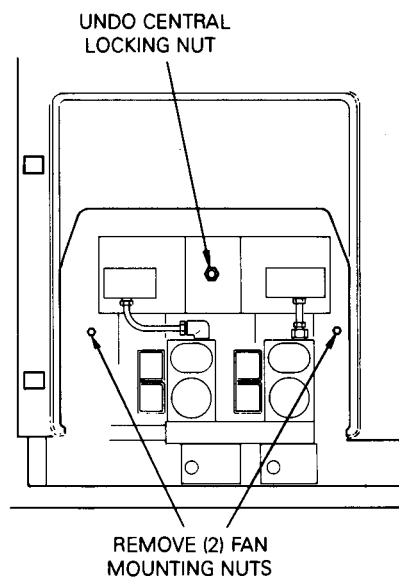


FIG. 3

DESN 511126

SEE FIG. 4

6. Withdraw the burner unit.

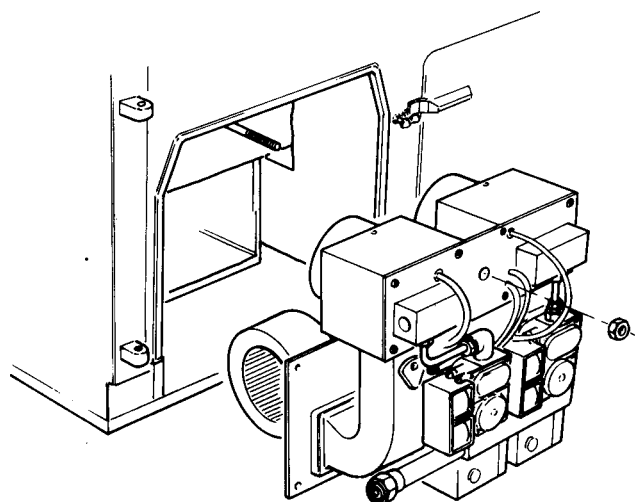


FIG. 4

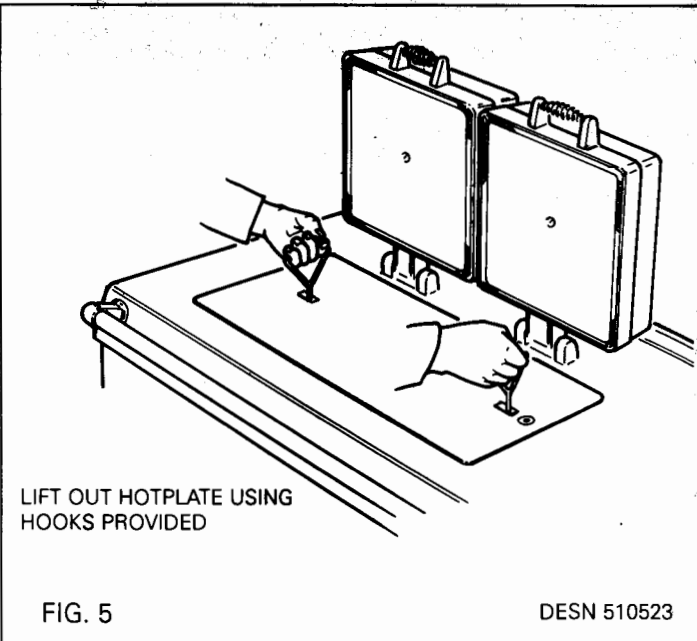
DESN 511127

HEAT EXCHANGER AND HOTPLATE FLUEWAY CLEANING

IMPORTANT: DURING CLEANING CARE MUST BE TAKEN NOT TO DAMAGE THE CERAMIC FIBRE INSULATION.

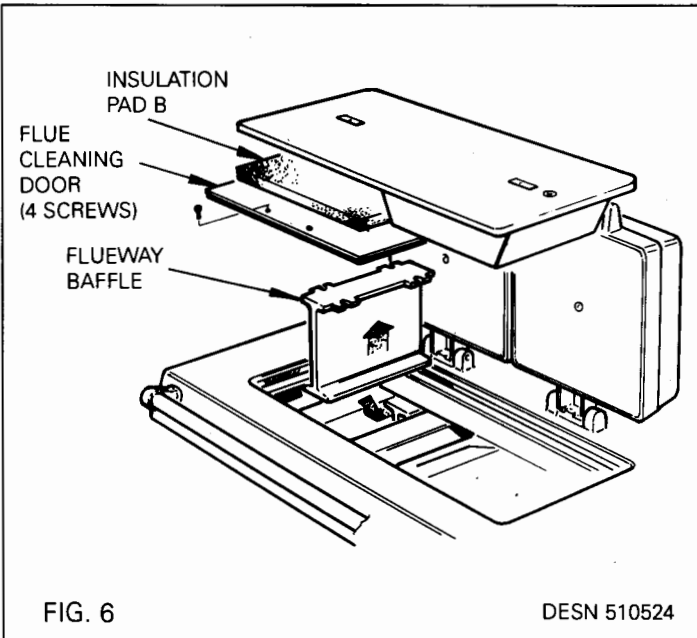
SEE FIG. 5

1. Lift insulation covers and remove hotplate using lifting hooks provided.



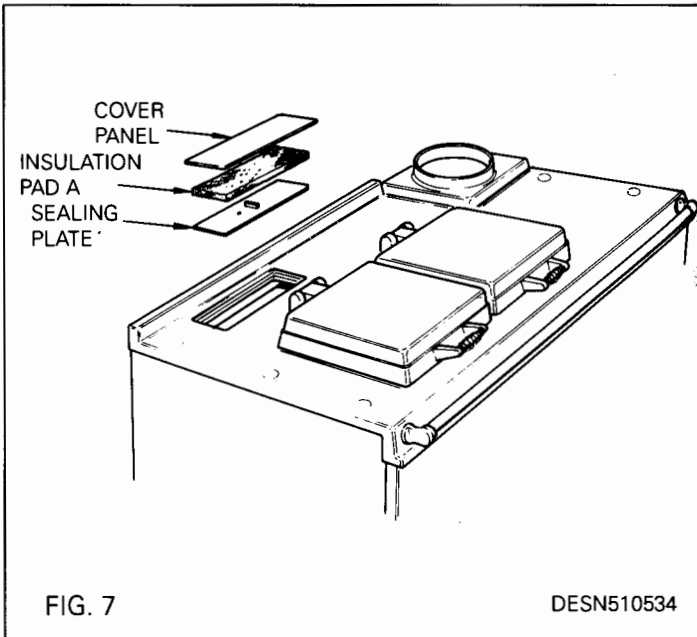
SEE FIG.6

2. Remove insulation pad B, remove the 4 flue cleaning access door securing bolts and remove door.
3. Using the rods provided remove the boiler flueway baffles from between the boiler cross waterways. Lift the front ones first and then pull the rear ones forward and then lift them out.



SEE FIG. 7

1. Brush and clean in between hotplate ribs on underside.
2. Examine soft rope seal located around hotplate aperture in top plate. Replace if frayed or damaged.
3. Replace hotplate ensuring the underside ribs lie over the oven, and that it seals to the top plate.
4. Lift top plate enamelled cover panel (behind the L.H. insulating cover) remove insulation pad A and sealing plate.
5. Inspect and clean the boiler outlet flueway if necessary
6. Thoroughly clean boiler heat exchanger flueway.
7. Carefully vacuum any debris that has fallen down into the burner chamber.
8. Clean boiler flueway baffles.
9. Re-assemble in reverse order.



INTRODUCTION

It is recommended that each burner is serviced individually so as not to get the components from the two burners mixed up.

BURNER HEAD CLEANING

1. Clean heads with soft brush and inspect for damage or wear.

FAN CLEANING

1. Clean between the blades of the fan impeller with a small brush and tip upside down to remove any residue.
2. Spin the motor to make sure that it turns easily.

Re-commissioning

TEST BURNERS ON DRY RUN (NO GAS)

SEE FIG. 8

Switch on electricity supply

BOILER BURNER

Set boiler burner time clock to continuous and turn the boiler thermostat to max. allowing the burner to start, the burner should go to lockout after the expiry of the ignition safety time. Lockout is indicated by illumination of the control box reset buttons. **IN THE EVENT OF LOCKOUT WAIT AT LEAST ONE MINUTE** then press the reset button.

COOKER BURNER

Follow procedure as above for boiler burner.

BOILER BURNER

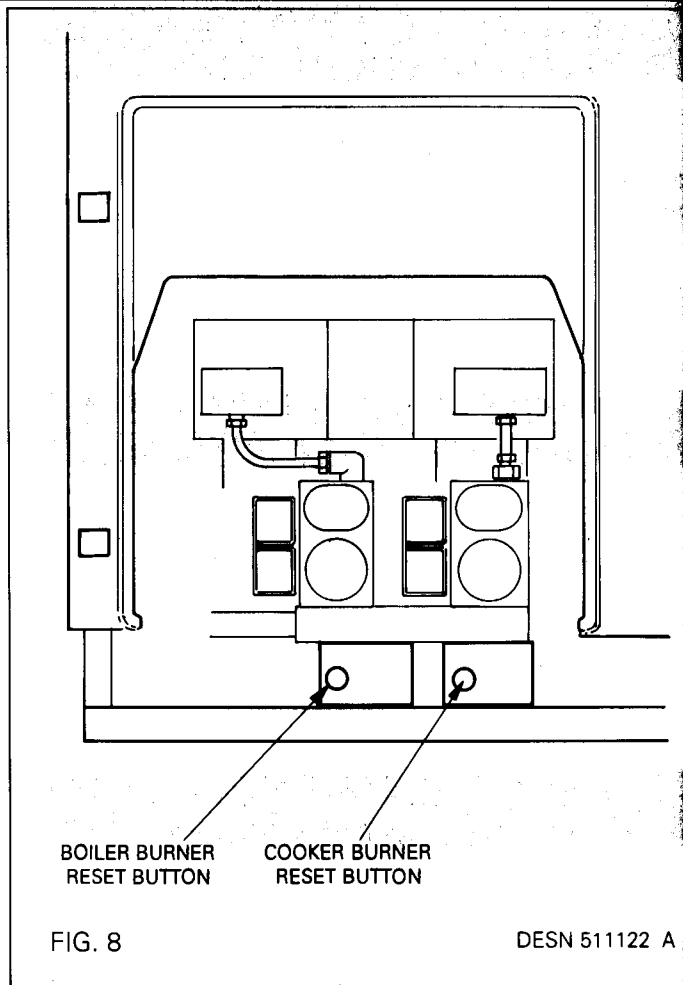
Reset the control box, open the gas inlet cock, allowing the burner to restart.

When the burner is in 'run' condition close the inlet gas cock. When the flame is extinguished the gas valves solenoids on the burner should be de-energised almost immediately.

The control will then allow one restart attempt and should go to lockout after the expiry of the safety time.

COOKER BURNER

Repeat procedure as above for the boiler burner.



SET COMBUSTION AIR

SEE FIG. 9

After 15 minutes remove the enamelled top cover panel and the insulation pad.

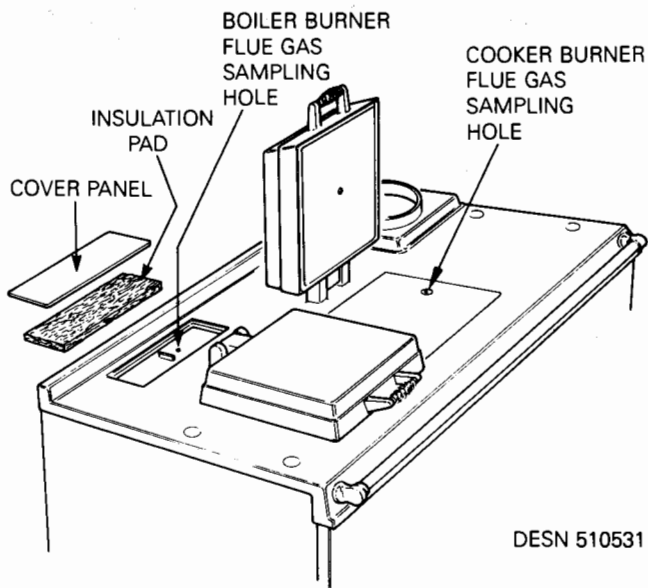
Remove the plugging screw and insert the sensing end of a portable indicator to check the CO₂ (Carbon Dioxide) level. Adjust the boiler burner air intake until the CO₂ /CO are as specified:-

CO% 93 ppm (MAX)

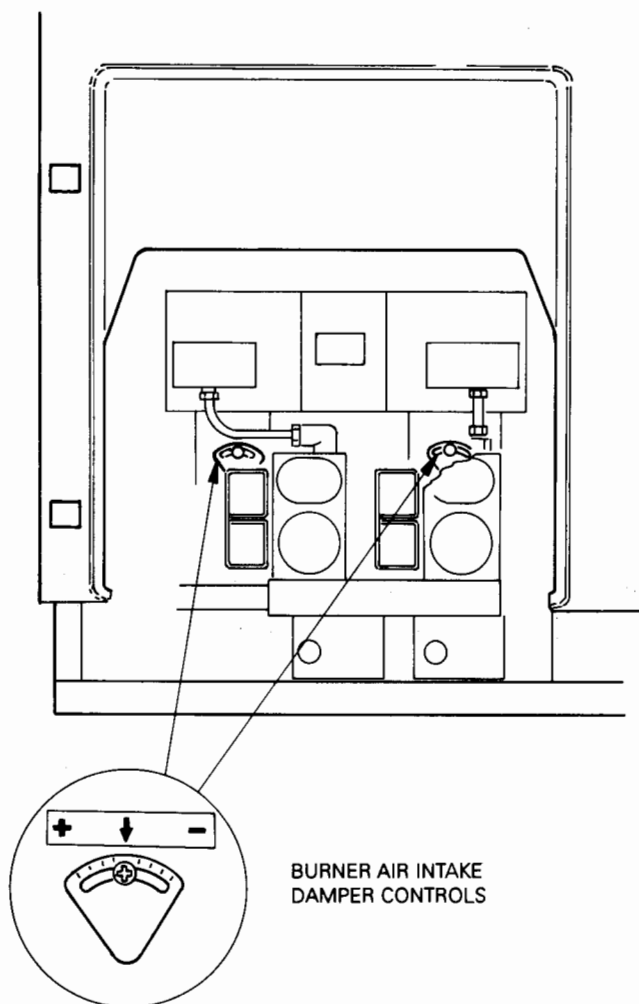
CO₂% 8.5 - 9.0

Cooker Burner

Switch off the boiler burner and repeat the above procedure with the cooker burner. To sample the flue gases from the cooker burner lift up the R.H. insulating cover and remove the countersunk headed screw in the hotplate. The cooker burner should be set as specified above. Replace the countersunk headed screw on completion ensuring that it will not interfere with any pots and pans placed on the hotplate.



DESN 510531



IMPORTANT: ALWAYS LOCK IN POSITION AFTER SETTING

FIG. 9

DESN 511123

Replacement of parts (Burner)

FAN MOTOR

SEE FIG. 10

Follow instructions in sections BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 6.

1. Carefully remove 3 push on connectors (noting terminals) from fan motor.
2. Remove 4 securing screws.
3. Re-assemble in reverse order.

REMOVE (4) FAN
SECURING SCREWS

REMOVE (2) PUSH-ON
CONNECTIONS
(NOTE TERMINALS)

UNPLUG RIBBON
STRIP

FIG. 10

DESN 511128 A

DISMANTLE BURNERS

SEE FIG. 11

Follow instructions in sections BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 6.

1. Remove 8 burner head securing screws
2. Disconnect plug on fan mounting plate..

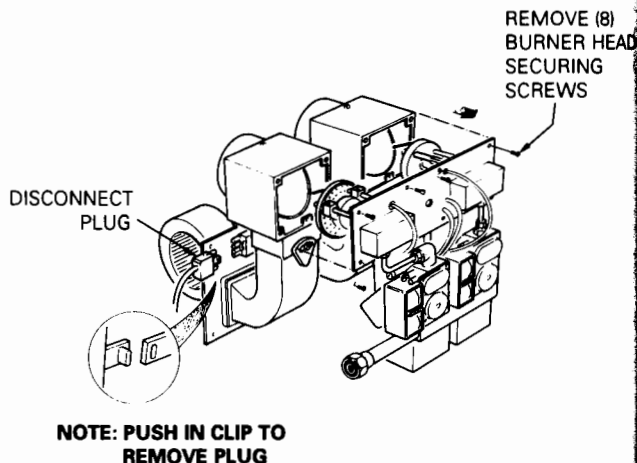


FIG. 11

DESN 511129

AIR PRESSURE SWITCH

SEE FIG. 12

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Carefully remove 2 push on connectors on pressure switch.
2. Carefully remove 2 air tubes. Note correct positions.
3. Remove 2 air pressure switch securing screws and nuts.
4. Fit new switch , re-assemble in reverse order.

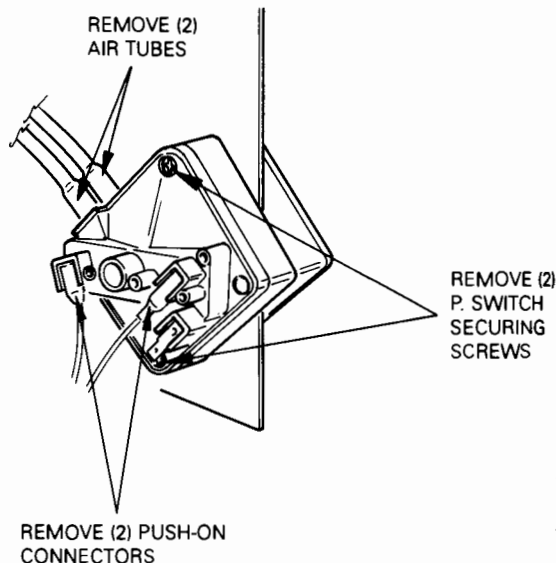


FIG. 12

DESN 511130

IGNITOR ELECTRODE COOKER

SEE FIG. 13 & 15

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Remove securing nut and disconnect H.T. lead from ignition electrode.
2. Slacken nut and bolt on electrode clamp.
3. Slide electrode forward and away from clamp.
4. Fit new electrode in reverse order, set gap and position (See Fig.14).

NOTE: DO NOT OVER TIGHTEN ELECTRODE CLAMP

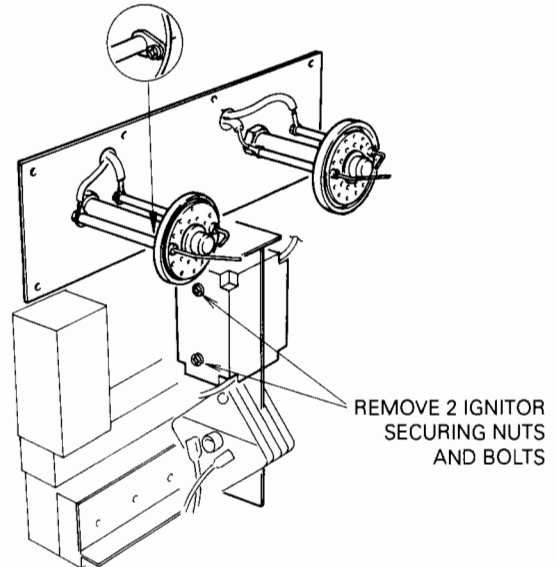


FIG. 13

DESN 511410

FLAME SENSING PROBE COOKER

SEE FIG. 13

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Remove securing nut and disconnect H.T. lead from flame sensing probe.
2. Remove fixing screw.
3. Slide sensing probe forward and away from clamp.
4. Fit new sensing probe in reverse order, set gap and position (See Fig. 14).

NOTE: DO NOT OVER TIGHTEN SENSING PROBE CLAMP

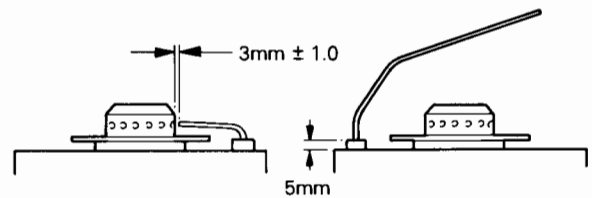


FIG. 14

DESN 511133

Replacement of parts (Burner)

IGNITOR

SEE FIG. 15

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Remove securing nut and disconnect H.T. lead from ignition electrode.
2. Remove control box, by inserting screwdriver as directed on control box.
3. Disconnect live wiring to terminal 7.
4. Disconnect neutral wiring.
5. Disconnect earth wiring.
6. Remove 2 ignitor securing nuts and bolts.
7. Remove ignitor
8. Fit new ignitor, re-assemble in reverse order.

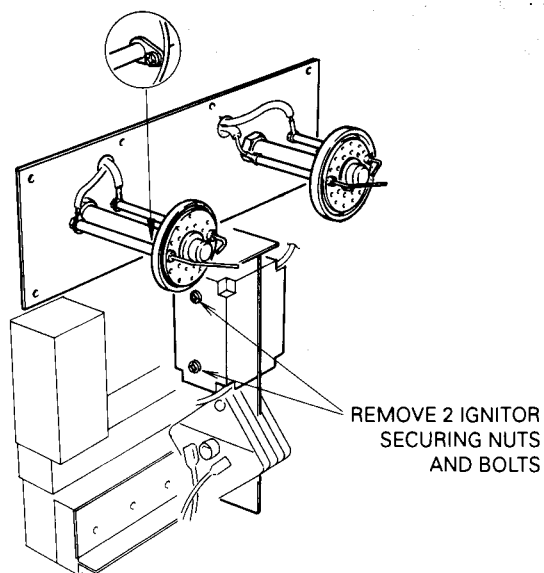


FIG. 15

DESN 511410

GAS VALVE ACCESS

SEE FIG. 16

Follow instructions in sections BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 3

1. Remove control boxes.
2. Break 2 gas pipe connections.
3. Lower gas valve assembly forward.

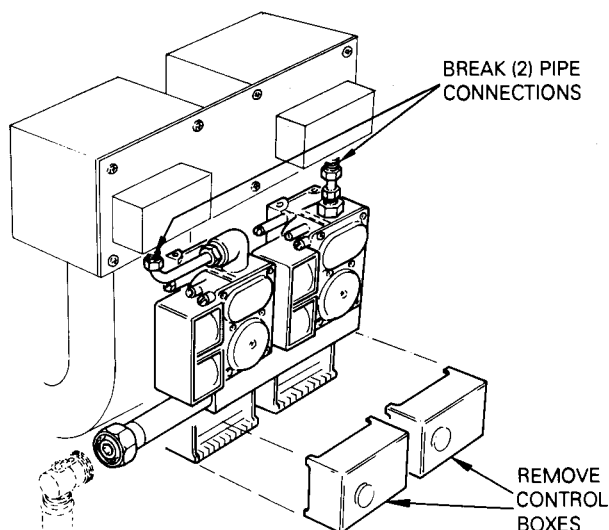


FIG. 16

DESN 511138

GAS VALVE REPLACEMENT

SEE FIG. 17

1. Remove 4 gas valve securing screws (gas valve to manifold).
2. Remove valve plug, 1 screw.
3. Remove appropriate pipework from valve, Fit to new valve.
4. Re-assemble gas valve in reverse order.

NOTE: ENSURE 'O'RING IS LOCATED CORRECTLY IN MANIFOLD.

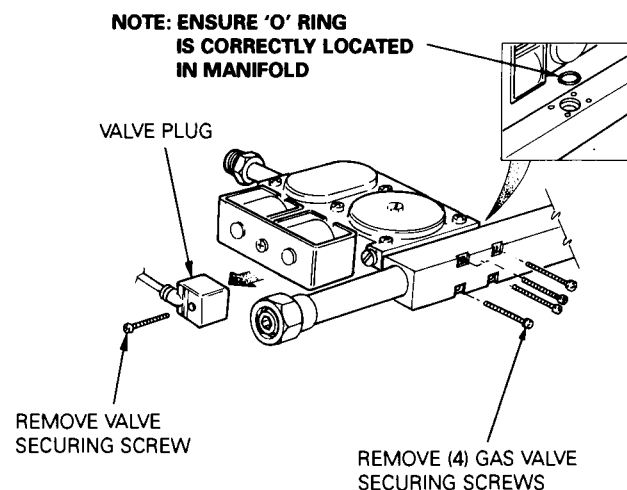


FIG. 17

DESN 511139

ELECTRICAL COMPONENT ACCESS

BEFORE REMOVING SERVICE ACCESS COVERS ENSURE THAT ALL ELECTRICAL SUPPLIES TO THE APPLIANCE HAVE BEEN TURNED OFF (SWITCH OFF AND REMOVE PLUG).

SEE FIG. 18

1. Remove the controls door and place in a safe position.
2. Remove both thermostat control knobs.
3. Remove the 2 cover panel fixing screws.
4. Remove cover panel. It will be necessary to disconnect the push on tags from the selector switch.

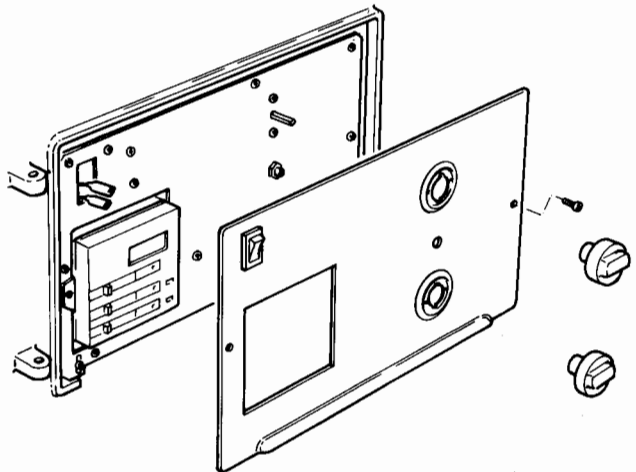


FIG. 18

DESN 510543 B

SEE FIG. 19

5. Remove the four control panel fixing screws.
6. Tilt the chassis forwards from the top and lift out. To fully access the rear of the control chassis, the thermostat capillaries should be removed from their pockets.

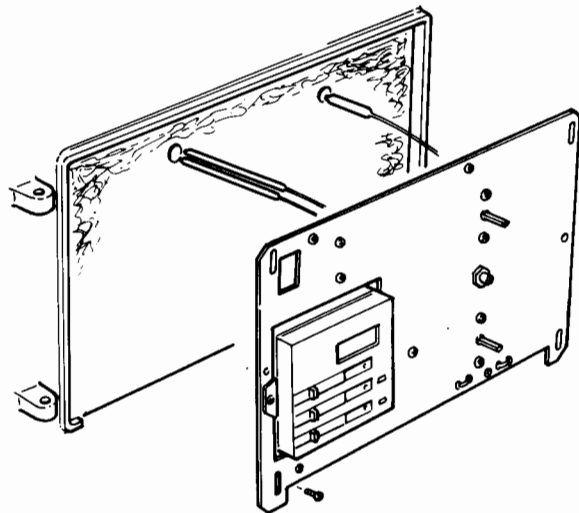


FIG. 19

DESN 510544 A

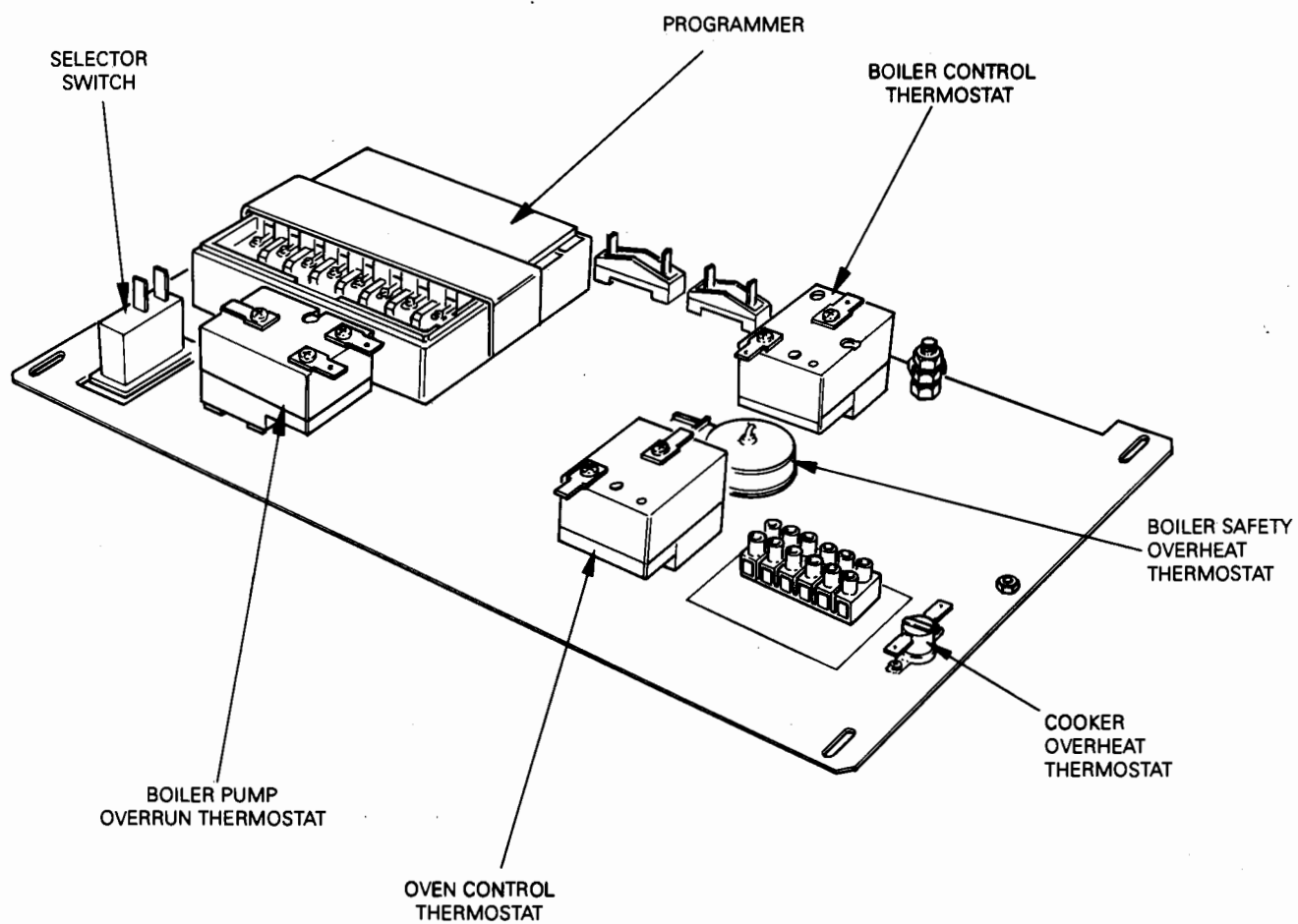


FIG. 20

DESN 511140

TO FIT NEW BOILER CONTROL THERMOSTAT

SEE FIG. 21

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 6.

1. Undo the two screws on the front of the chassis which hold the thermostat in place.
2. Remove the two push on connectors from back of thermostat.
3. Replace thermostat. Take care to push thermostat phial correctly into the pocket provided. The thermostat should be mounted with tag P at the bottom.
4. Re-connect push on connector wires. The RED wire to P and BLACK wire to 2.

To complete follow instructions in section RE-ASSEMBLE, Steps 1 to 6.

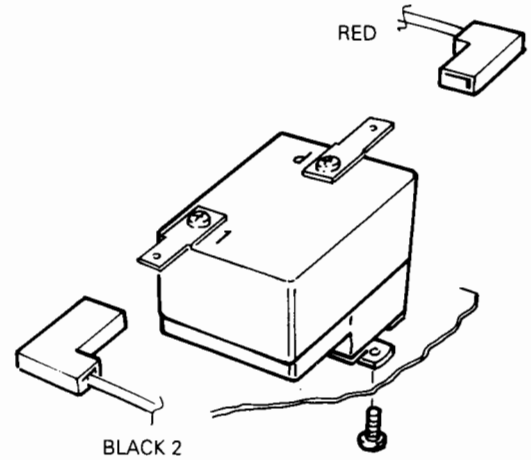


FIG. 21

DESN 510546 A

TO FIT NEW BOILER PUMP OVERRUN THERMOSTAT

SEE FIG. 22

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 6.

1. Undo the two screws on the front of the chassis which hold the thermostat in place.
2. Remove the three push on connectors from back of thermostat.
3. Replace thermostat. The thermostat should be mounted with tag P at the right hand side (looking from back). Take care to push thermostat phial correctly into the pocket provided.
4. Re-connect push on connector wires. The WHITE wire from the pump PL to P, the other WHITE wire to 2 and the RED to 1.

To complete follow instructions in section RE-ASSEMBLE, Steps 1 to 6.

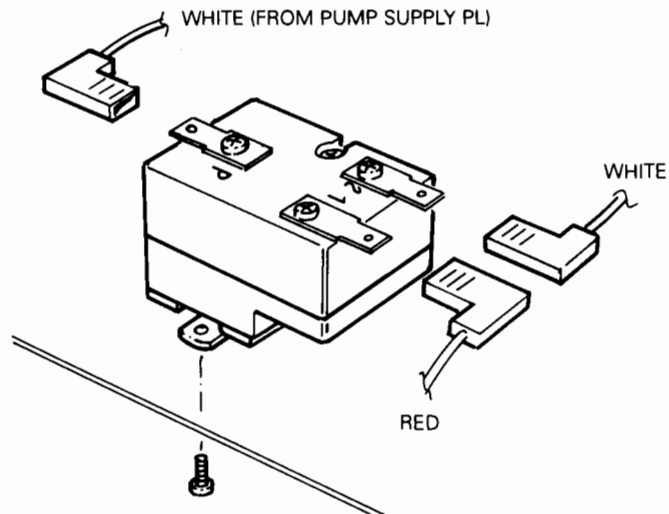


FIG. 22

DESN 510547 A

TO FIT NEW COOKER SAFETY OVERHEAT THERMOSTAT

SEE FIG. 23

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 6.

1. Remove the two push on connectors from the thermostat.
2. Undo the two screws and nuts which hold the thermostat in place.
3. Replace thermostat. Take care to push thermostat phial correctly into pocket provided.
4. Re-connect push on connector wires.

To complete follow instructions in section RE-ASSEMBLE, Steps 1 to 6

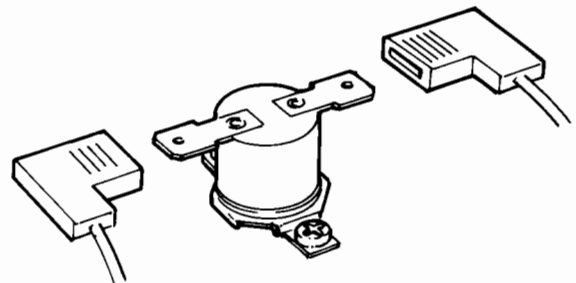


FIG. 23

DESN 511244

Replacement of parts (Electrical)

TO FIT NEW BOILER SAFETY OVERHEAT THERMOSTAT

SEE FIG. 24

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 6.

1. Undo the central hexagon nut on the front of the chassis which holds the thermostat in place.
2. Remove the two push on connectors from back of thermostat (noting tags for re-connection).
3. Replace thermostat. Take care to push thermostat phial correctly into the pocket provided.
4. Re-connect push on connector wires.

To complete follow instructions in section RE-ASSEMBLE, Steps 1 to 6.

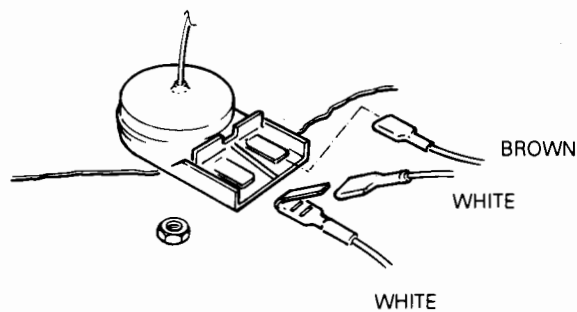


FIG. 24

DESN 511141

TO FIT NEW OVEN CONTROL THERMOSTAT

SEE FIG. 25

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 6.

1. Undo the two screws on the front of the chassis which hold the thermostat in place.
2. Remove the two push on connectors from back of thermostat.
3. Open Roasting Oven door to access the thermostat phial and capillary which pass into the oven at the top, left hand front corner. The thermostat phial is located in a slot at the top front of the oven.
4. Slacken the single screw where the phial passes through the roasting oven side and rotate the cover plate to open up the access hole.
5. Slack the two screws in the top of the roasting oven at the front and rotate the two retaining clips.
6. Allow the thermostat phial to drop down and withdraw the thermostat capillary out of the oven.
7. Replace thermostat. The thermostat should be mounted with tag P at the bottom. Reposition the phial in same position as removed. Ensure that the insulation, spacer tubes are correctly fitted.
8. Re-connect push on connector. The ORANGE wire to 1 and BLACK (3) wire to P.

To complete follow instructions in section RE-ASSEMBLE, Steps 1 to 6.

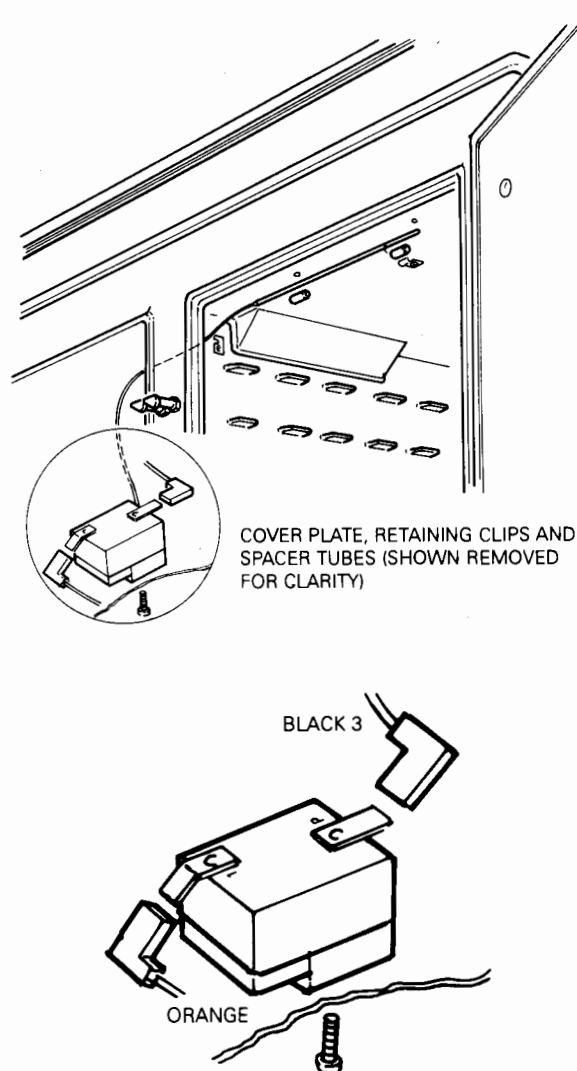


FIG. 25

DESN 510868

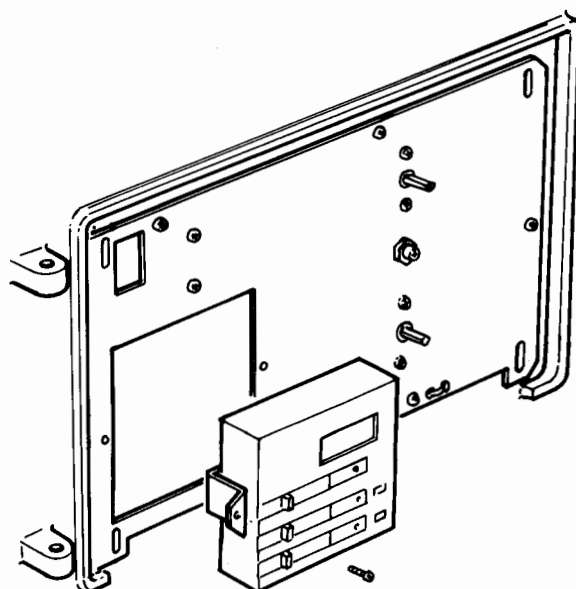
Replacement of parts (Electrical)

TO FIT NEW PROGRAMMER

SEE FIG. 26

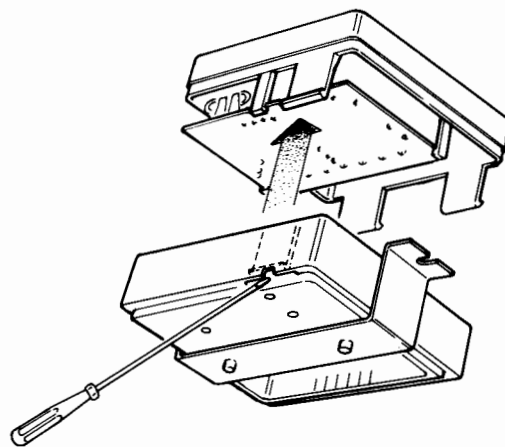
Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 4.

1. Remove the two screws holding the mounting bracket to the control chassis.
2. Pull the programmer forward to access the rear casing.
3. Insert a small screwdriver into cut-out and push against the retaining clip.
4. The programmer can now be pulled away from its base at the bottom. The top retaining clips can now be pulled out freeing the programmer.
5. Replace with the new programmer inserting the top clips first and then locking the programmer inserting the top base with the bottom clip.
6. Refix the mounting brackets to the control chassis.
To complete follow instructions in section RE-ASSEMBLE, Steps 3 to 6.



REMOVE PROGRAMMER/MOUNTING
'BRACKET (2 SCREWS)

DESN 510552 'A'



TO REMOVE PROGRAMMER FROM ITS BASE
INSERT A SMALL SCREWDRIVER INTO
CUT-OUT AND PUSH AGAINST RETAINING CLIP.

FIG. 26

DESN 510559

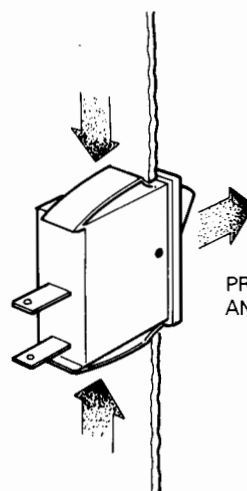
TO FIT NEW SELECTOR SWITCH

SEE FIG. 27

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 4.

To remove switch of the cover panel press the two toggles, at top and bottom of switch, simultaneously and push switch through panel. Push replacement switch into aperture and click into place. The switch should be fitted with terminal 1 at the top.

To complete follow instructions in section RE-ASSEMBLE, Steps 3 to 6.



PRESS IN RETAINING CLIPS
AND PUSH SWITCH OUT

FIG. 27

DESN 510553 A

RE-ASSEMBLE

1. Locate thermostat phials into boiler pockets, the pump overrun and boiler stats into the LH pocket and the overheat stat into the RH pocket.
2. Locate the base of the control chassis into the bottom of the doorway aperture, tilt the chassis backwards into position and secure with the four screws.
3. Thread the two wires for the selector switch through the aperture and connect them onto the rear of the selector switch fitted in the outer panel. Connect the YELLOW wire on 1 and the VIOLET wire on 2.
4. Refix the outer panel in position and secure with the 2 screws.
5. Replace the thermostat knobs.
6. Replace the controls door.

PUMP OVERRUN FACILITY

When the programmer switches off the BOILER channel then the water circulating pump will be switched off. If during the period shortly after this the residual heat in the appliance causes the water temperature in the boiler to rise above 65°C then the pump overrun thermostat will change-over. This will switch on the circulating pump.

If during a normal programmer COOKER 'ON' period the boiler flow temperature rises above 65°C then the pump overrun thermostat operates and switches on the pump until the overrun thermostat switches back.

OVERHEAT SAFETY THERMOSTATS

BOILER

This thermostat is a safety cut-out device which is intended to operate if the other controls fail. This control will "lock-out" and switches everything off except for the programmer clock and the "Pump Overrun" facility.

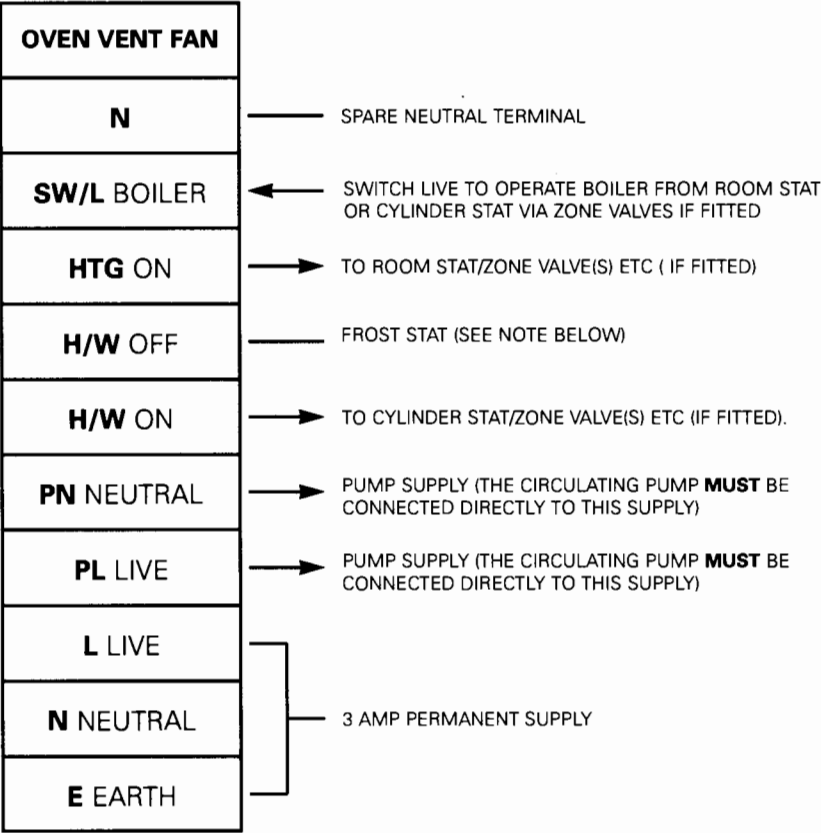
This thermostat has to be manually reset once the temperature has cooled down.

COOKER

This thermostat is a safety cut-out device which operates if the control thermostat fails. This device automatically resets.

CONTROL CIRCUIT-EXTERNAL

TERMINAL STRIP CONNECTIONS

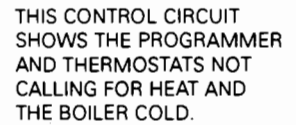


NOTE:

If no Hot Water System Controls are used a link **MUST** be fitted between **H/W ON** and **SW/L BOILER**.

If no Central Heating System Controls are used a link **MUST** be fitted between **HTG ON** and **SW/L BOILER**.

If a Frost Thermostat is fitted it **MUST** be connected to **SW/L BOILER** and **H/W OFF**.



IF NO CENTRAL HEATING CONTROLS ARE USED, A LINK
MUST BE FITTED BETWEEN HTG ON AND SW/L BOILER.

WIRING DIAGRAM - BURNER ONLY



PS	PRESSURE SWITCH
IS	IONISATION PROBE
V1, V2	FUEL SUPPLY
ZT	IGNITOR

FIG. 30

WIRING DIAGRAM - APPLIANCE

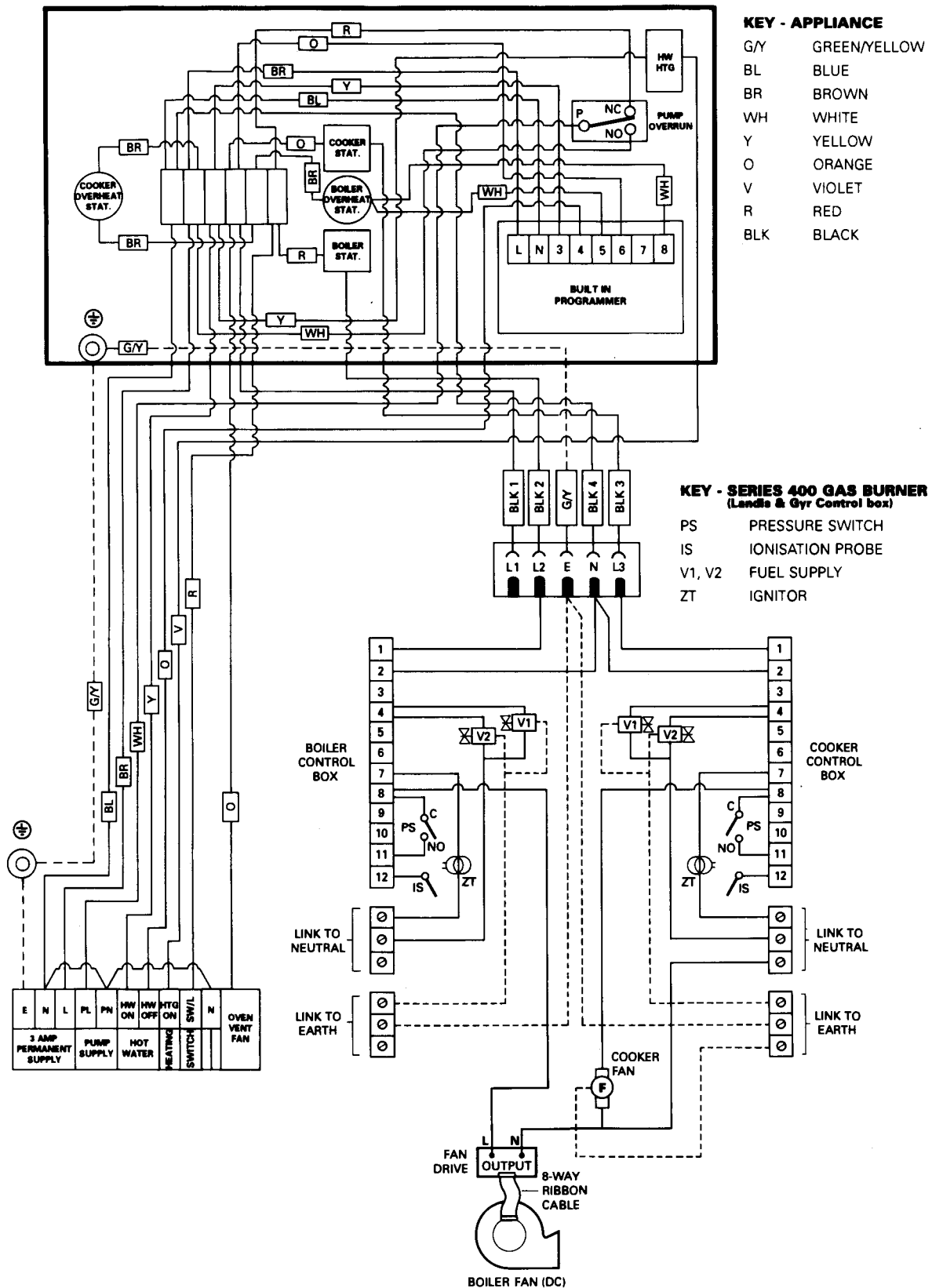
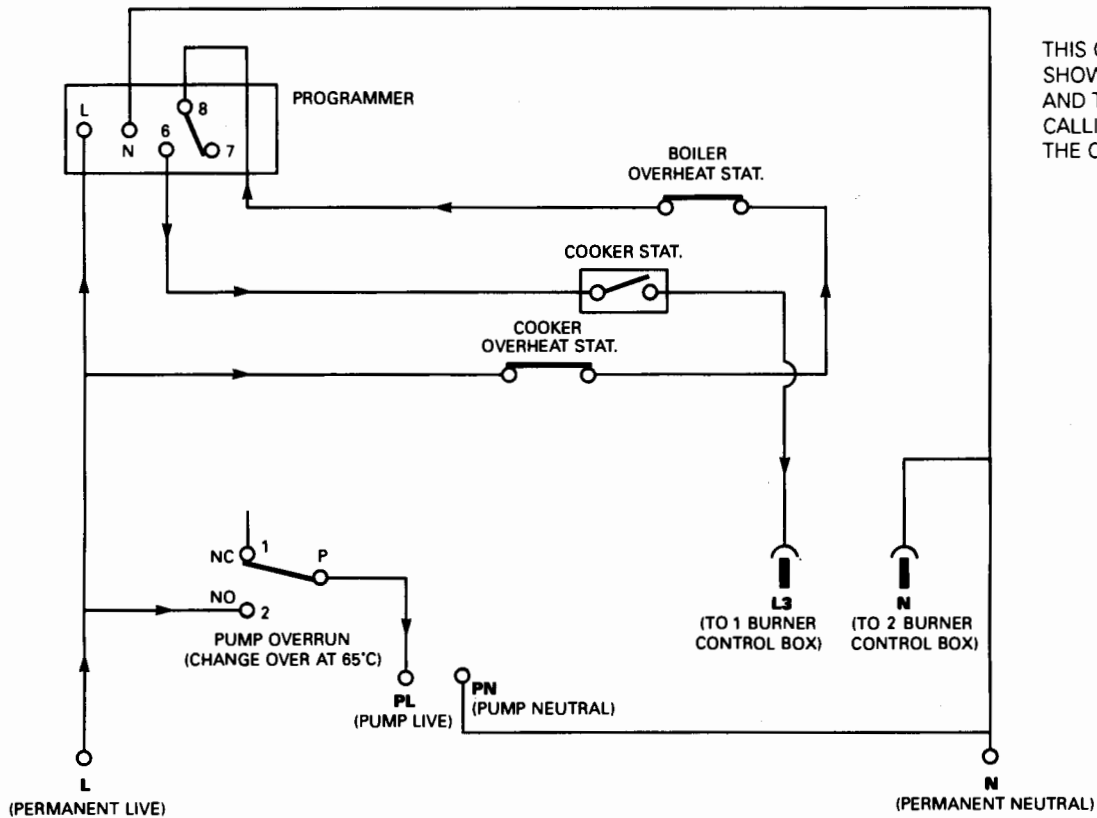


FIG. 31

CONTROL CIRCUIT-COOKER



COOKER CONTROL CIRCUIT (Landis & Gyr)

NOTE: IF WHEN THE COOKER ONLY IS OPERATING AND THE TEMPERATURE OF THE WATER IN THE BOILER REACHES 65°C ABOVE, THE PUMP OVERRUN WILL CUT IN AND SWITCH ON THE PUMP.

FIG. 29

BURNER DOES NOT START

Burners

Check that the burners have not gone to lock-out.

Causes of lockout can be-

- ☐ No ignition, ignition electrode incorrectly positioned or insulation cracked, spark generator faulty.
- ☐ No gas supply.
- ☐ Poor combustion
- ☐ Flame probe incorrectly positioned, cracked insulation, flame probe in contact with earth, moisture present on probe affecting insulation.
- ☐ Live and Neutral connections reversed.
- ☐ Inadequate earth contact with flame.
- ☐ Ignition interference to flame signal.
- ☐ Gas valves not properly closed in shutdown position.
- ☐ Faulty control box..

REFER TO FLOW DIAGRAM FOR ELIMINATION PROCEDURES

General

You can carry out some checks on the controls before you need to access the controls compartment behind the controls door.

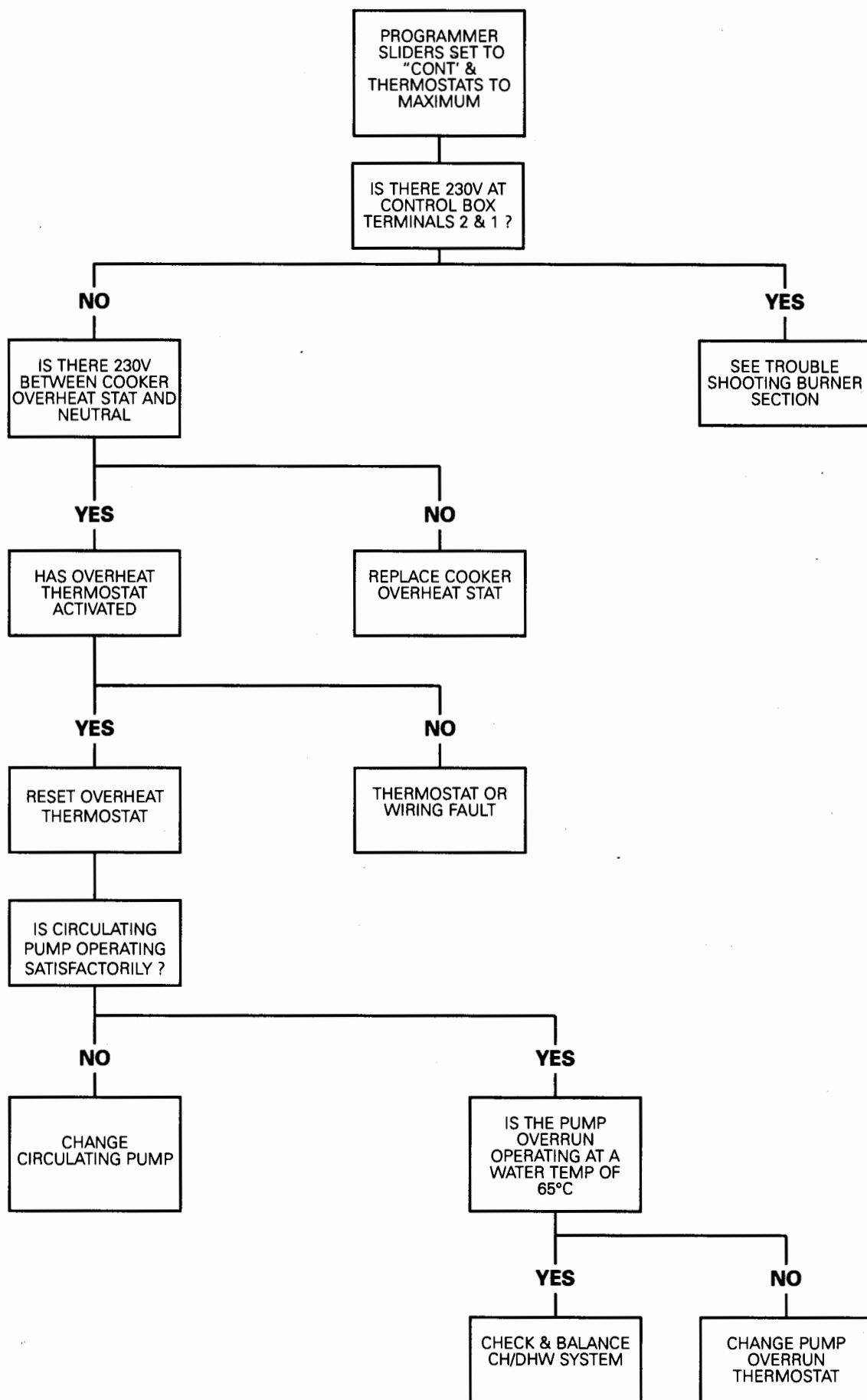
If only one of the burners is not running then the fault must be after the safety overheat thermostat.

Conversely if both burners are affected then the fault usually lies before the programmer connections.

For access to individual controls refer to section on Replacement Parts and for wiring continuity checks refer to Figs. 32, 33, 34 and 35 for detailed and schematic wiring layouts.

1. To check out the electrical wiring at the burners you will first have to have access to the burner chamber. Use the following procedure:-
Isolate the electrical power supply.
Open up the bottom burner access door. Remove door and put in a safe place.
2. Unscrew the 4 screws holding the inner panel in place and remove panel.
3. Unscrew the 3 screws holding the louvered plinth in place and remove plinth.

The external mains connections are made to a terminal block situated in the front left-hand corner of the burner chamber. Re-connect the electrical supply and check that there is a 230V power supply available across the mains input connections L & N on the terminal block. If not then check connecting leads, fuse and whether power is available at mains plug. If power is available across L & N then check to see whether the overheat cut-out switch has cut-out, if it has then reset by pushing in the centre with a small, round tool i.e. a pencil.



TROUBLESHOOTING-BURNER

BURNER WILL NOT START

- 1 Check that external wiring is correct.
- 2 Check for 230v supply on terminal 1 at control box base, this will also determine if the thermostats are calling for heat.
Check that incoming Neutral conductor is correctly wired onto terminal 2.
- 3 Press reset button to ensure that the control box has not gone to lockout.
- 4 Check air pressure switch is in provide air condition and fan is running.
- 5 If burner still refuses to start, change control box.

BURNER FAN RUNS WITH CONTINUOUS PRE-PURGE

- 1 Check wiring to air pressure switch across terminals 8 & 11 at control box base.
- 2 Check air pressure switch.
- 3 Check fan inlet ducts and fan for blockages.
- 4 Check plastic air tubes are correctly connected.

BURNER STARTS, FLAME NOT ESTABLISHED, CONTROL BOX GOES TO LOCKOUT AFTER END OF SAFETY

- 1 Check gas supply to valves is on.
- 2 Check ignition is present after end of pre-purge period.
- 3 Check start gas valve is energised and is opening during safety time.
- 4 If necessary change control box.

BURNER STARTS FLAME ESTABLISHED, CONTROL BOX GOES TO LOCKOUT

- 1 Check polarity of wiring for Live and Neutral to control box base. live to terminal 1, Neutral onto terminal 2 at control box base.
- 2 Check flame detection probe is correctly positioned. Ensure that the probe insulation is sound, free from cracks or moisture.
Check that the probe is not in contact with other metallic parts of the burner.
- 3 Check the burner is effectively earthed and bonded to the incoming earth wire from the mains supply.
- 4 Check for interference to the flame signal from the ignition spark. This can be determined with a d.c micro-ammeter (μA). Connect the meter between terminal 12 and the incoming wiring to the flame probe. Correct polarity of the meter connections must be correctly observed, with the positive side of the meter connected onto terminal 12 at the control box wiring base. If flame is established and the meter tends to move in a reverse direction this can be an indication that the ignition is causing interference to the flame signal. It may also be an indication that there is insufficient earth contact with the flame. A correct reading should be approximately 15 - 20 μA .
- 5 Change control box if necessary.