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Installation Instructions for Rayburn 480G Central Heating Cooker

For use in GB and IE

Home on the Range.

PLEASE READ THESE INSTRUCTIONS BEFORE INSTALLING 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.

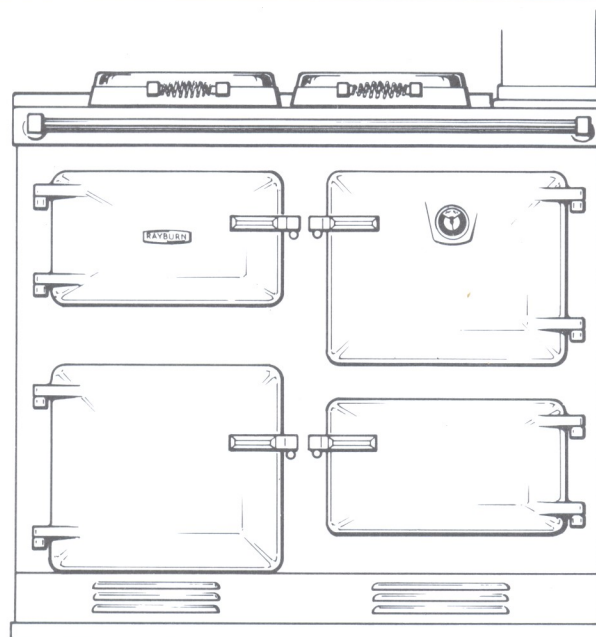
INTRODUCTION

The Rayburn 480G 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

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.



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AND OTHER GB & IE
PATENTS PENDING



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.

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 of 172cm².

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 (30m), 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.

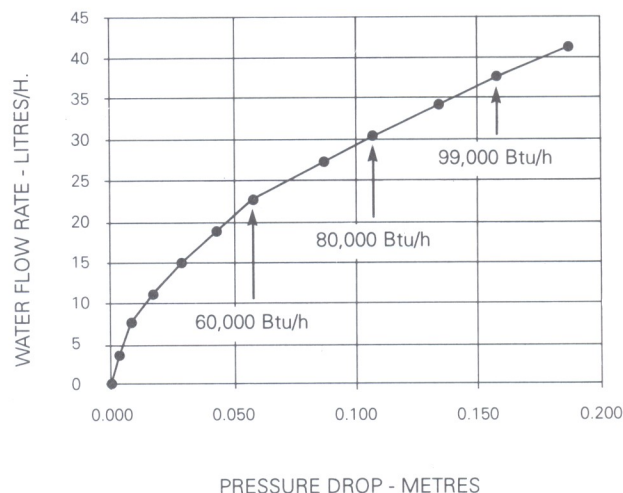


FIG. 1

Site requirements

HEATING CONTROLS

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

Channel 1 controls the cooker burner - Marked "COOKER".
Channel 2 supplies hot water - Marked "BOILER".

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.

Site requirements

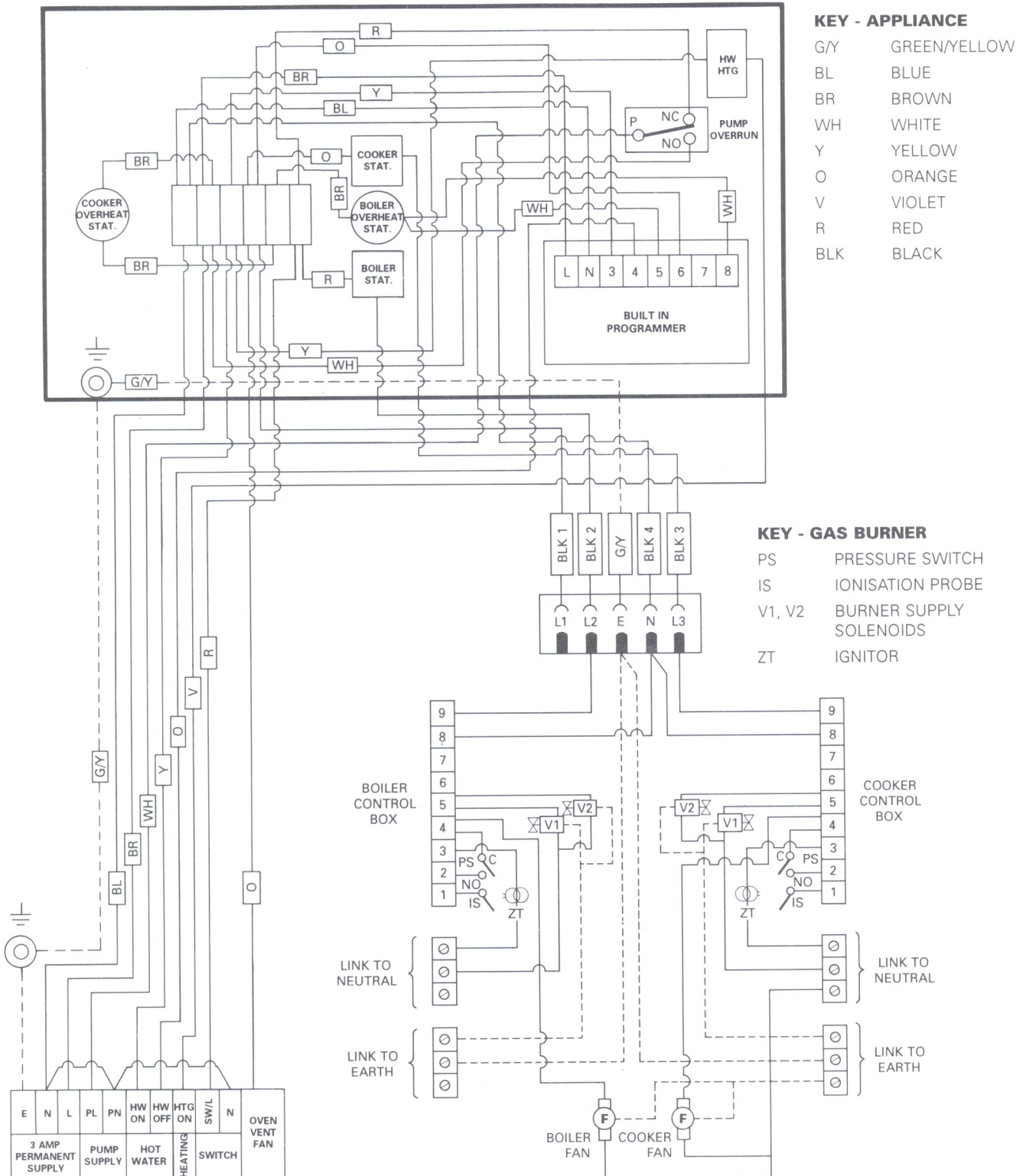


FIG.2

Installation Instructions

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:-

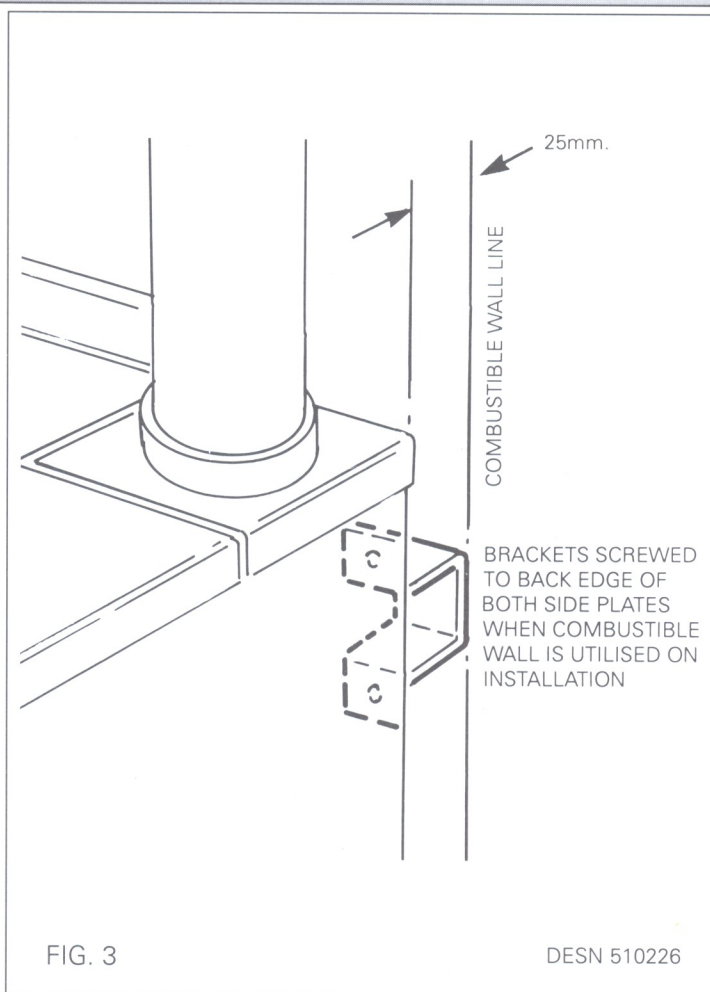
The appliance rear distance bracket.

The cooker handrail.

SEE FIG. 3

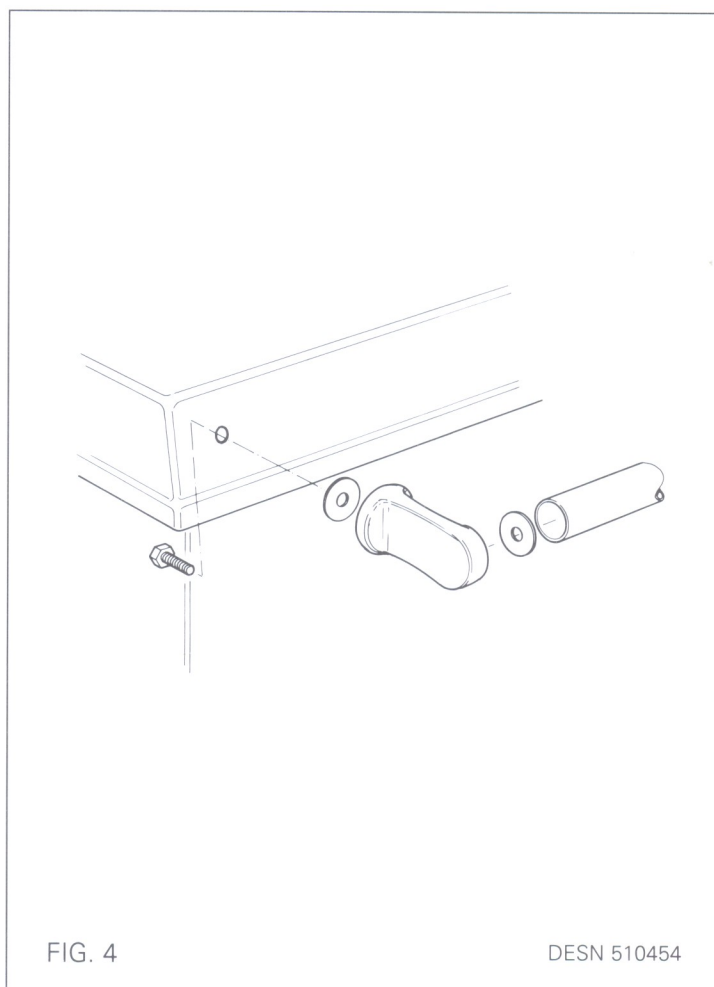
Appliance rear distance bracket: if the rear wall is of combustible material, there must be an air gap of 25mm between the wall and the rear of the cooker. Fit the rear distance brackets as shown. Whenever possible it is recommended that the skirting board is removed for the width of the appliance to 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 handrail brackets ensuring the fibre protecting washers are in position. Insert the handrail 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.

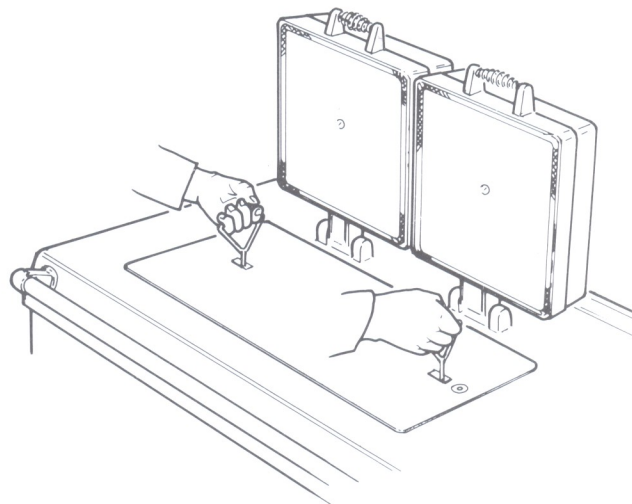


FIG. 5

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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.

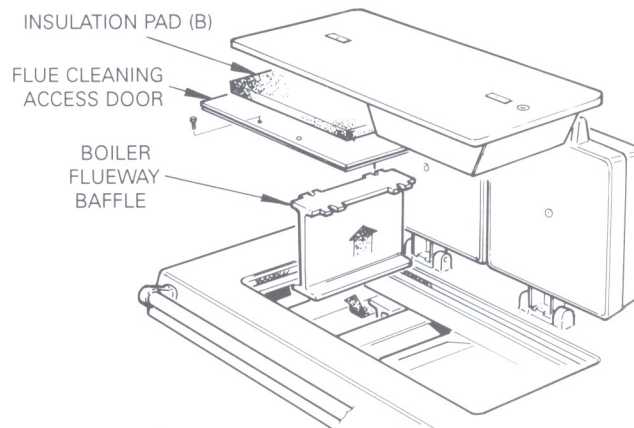


FIG. 6

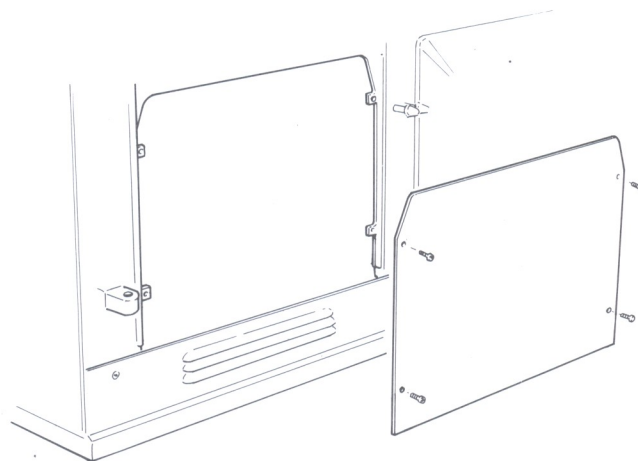
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Commissioning Instructions

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.



INNER PANEL
(4 SCREWS)

FIG. 7

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ELECTRICAL CONNECTION

SEE FIG. 8

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

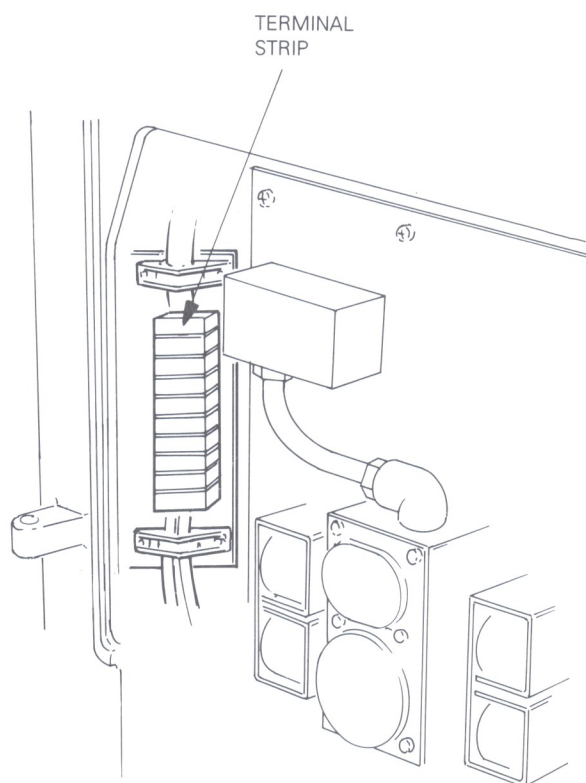
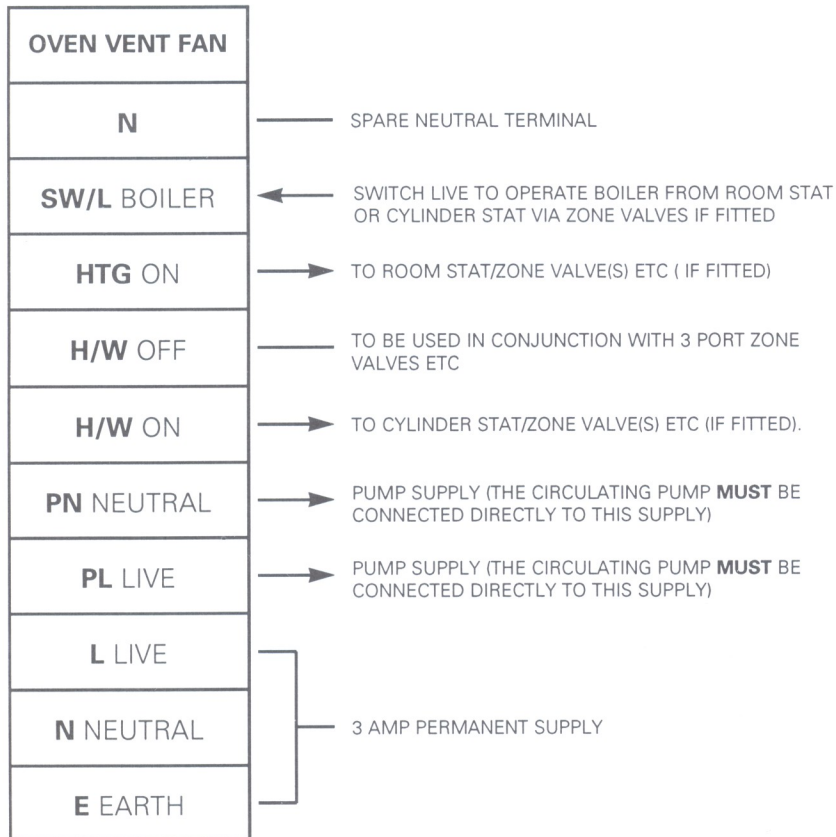


FIG. 8

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Commissioning Instructions

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 9 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 4).

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 3), at the same time the twin gas valve solenoids are energised (supplied from terminal 5).

Providing the start gas flame is established within 3 seconds and detected by the flame detection probe (connected to terminal 1), 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.

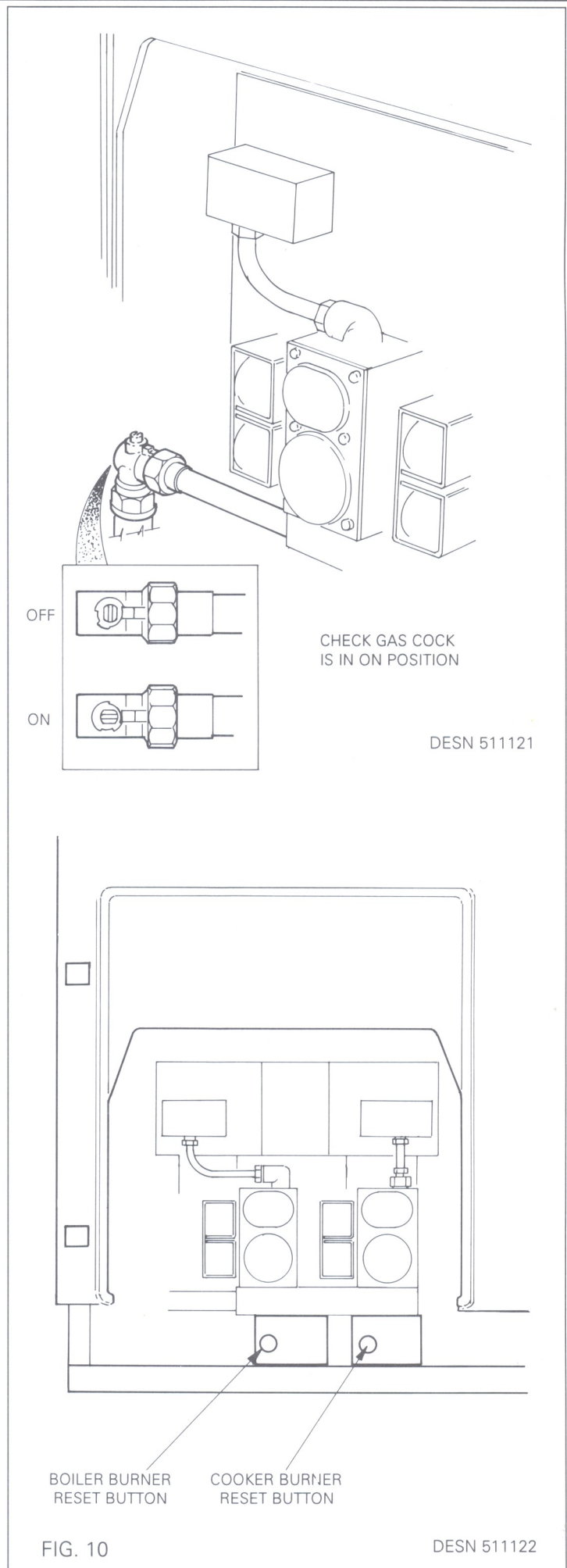
Check gas cock is in the on position.

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.



SET COMBUSTION AIR

SEE FIG. 11

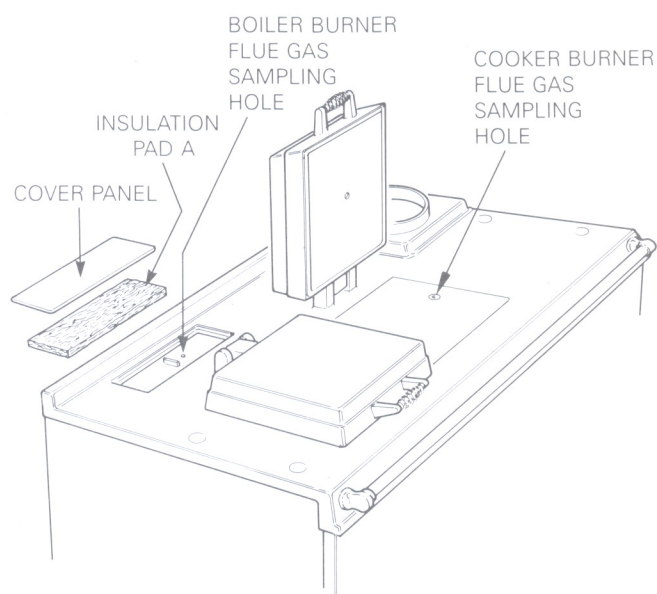
Remove the enamelled top cover panel (behind the L.H. insulating cover) and remove the insulation pad A. Remove the plugging screw and insert the sensing end of a portable indicator to check the CO₂ (Carbon Dioxide) level. Adjust the boiler burner air intake until the CO₂ / CO are as specified on page 2.

Cooker Burner

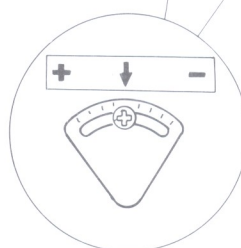
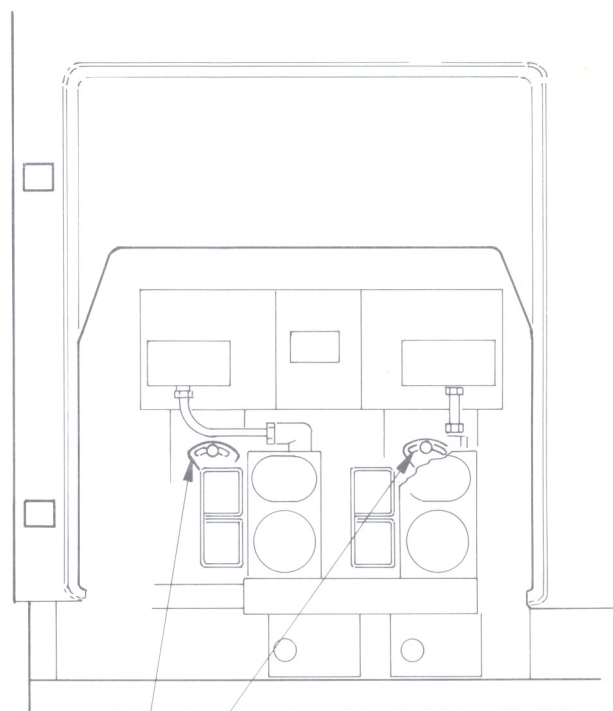
Switch off the boiler burner and repeat the procedure with cooker burner. To sample the flue gases from the cooker burner lift up the R.H. insulating cover and remove the countersunk headed screw in the hotplate. The cooker burner should be set as specified on page 2. Replace the countersunk headed screw 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.



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IMPORTANT: ALWAYS LOCK IN POSITION AFTER SETTING

FIG. 11

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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.