



from **AGA**

Installation Instructions. Rayburn Heatranger 345W Wood Burning Cooker



Consumer Protection Act 1987

As responsible manufacturers, we take care to make sure that our products are designed and constructed to meet the required safety standards when properly installed and used.

IMPORTANT NOTICE: PLEASE READ THE ACCOMPANYING

WARRANTY: Any alteration that is not approved by AGA, could invalidate the approval of the appliance, operation of the warranty and could also affect your statutory rights.

All local regulations including those referring to national and European standards need to be complied with when installing the appliance.

Control of Substances - Health and Safety

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, Fuels - when handling use disposable gloves.

Fire Cement - when handling use disposable gloves.

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

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

PERFORMANCE

WARNING

THE ASHPIT AND FIREBOX DOORS MUST BE LOCKED CLOSED AT ALL TIMES DURING NORMAL USE, EXCEPT WHEN LIGHTING OR RE-FUELLING.

REMEMBER, when replacing a part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by AGA.

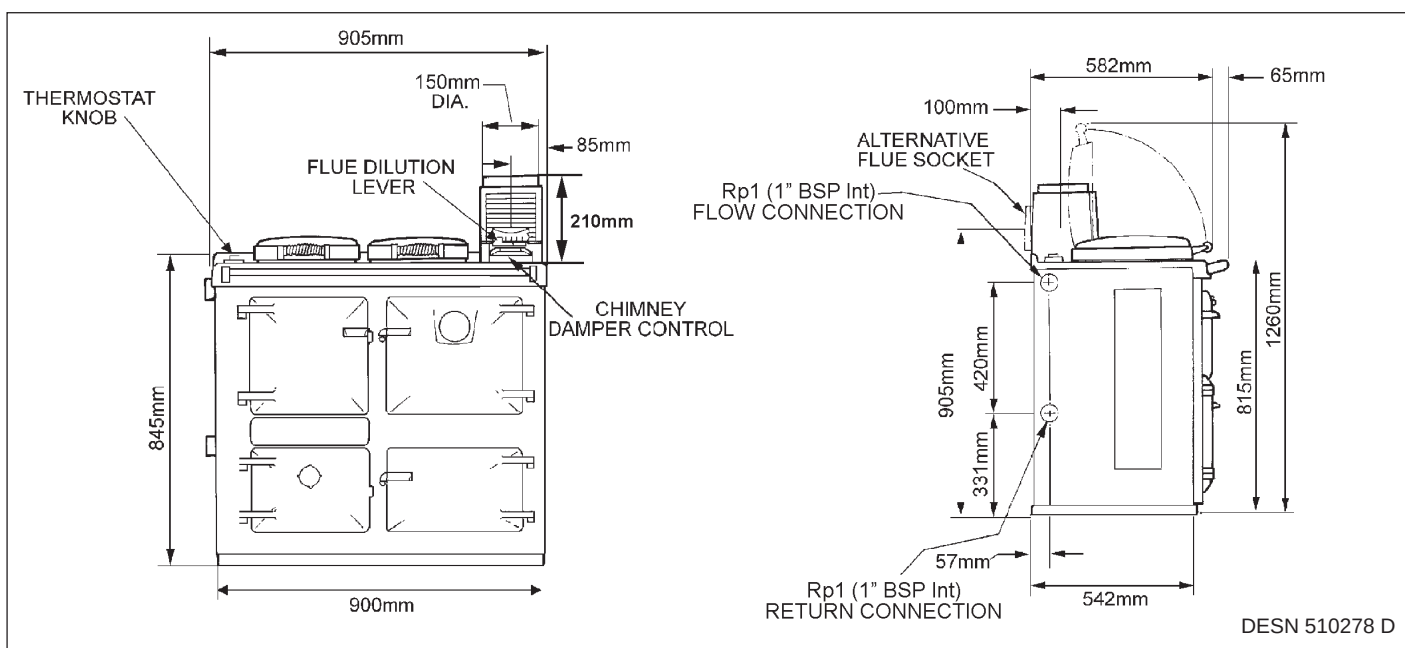
This appliance has been tested using wood logs only. It is not suitable to burn solid mineral fuel as the excessive heat will damage the appliance. The nominal heat output is indicated in the table below. Other wood fuels may give a slightly different result. These outputs were achieved using a 1.5 hour re-fuelling cycle.

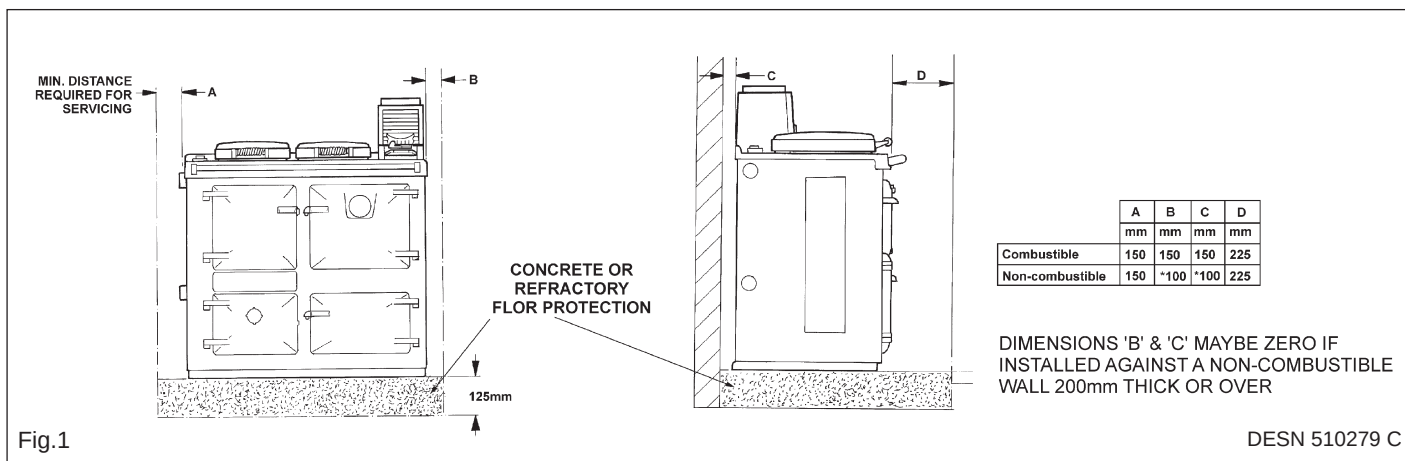
Total weight of appliance - 370 Kg.

Although there is no requirement for an electrical power supply, a low limit thermostat is incorporated in the boiler and must be earthed.

Fuel	Mode	Total (kW)	To Space (kW)	To water (kW)	Flue Gas Mass Flow
Wood Logs	Winter	14.1	5.0	9.1	14.0 g/s

Re-fuel period is 1 1/2 hours.





The Rayburn 345W is intended to supply heating for:-

- Cooking and domestic hot water.
- Cooking, domestic hot water and central heating.

WARNING: THIS APPLIANCE MUST NOT BE USED WITHOUT WATER CONNECTED, OTHERWISE DAMAGE TO THE BOILER MAY BE CAUSED AND/OR HEAT DAMAGE TO THE SURROUNDING SURFACES.

Air for combustion within the firebox is obtained from two sources.

- When the appliance is being used for cooking and domestic hot water only, the rate of burning is determined by the manually operated spinwheel control on the ashpit door.
- When central heating is also required, close the spinwheel control and operate the burning rate by means of the boiler thermostat.

The cooker has both boiler and cooker flues which are opened/closed by internal dampers working in conjunction and operated manually by the cooker/boiler damper at the front of the cooker.

The setting should be relative to the services required, **H** for all services, **C** for cooking and domestic hot water only.

When using this appliance all the grate plates must be installed on the grate. **This appliance is not suitable for burning solid mineral fuels or bituminous coal.**

Grate riddling is not required under normal burning conditions but is provided for grate cleaning. Do not allow ash to build up under the firebox and as a general rule check the ashpan at each re-fuelling. Empty as necessary.

PREPARATION OF SITE

The non-combustible hearth must be solid and level and together with the walls adjacent to the cooker and chimney, conform to current Building Regulations.

The cooker and chimney flue installation should be in accordance with the relevant recommendations of the British Codes of Practice BS 8303, BS 6461 Part 1 and BS 7566 Parts 1 to 4 respectively and the central heating system to BS 5449 Part 1. The boiler installation section must also be in accordance with the byelaws of the local Water Undertaking, Regulations for the Electrical Equipment of Buildings - published by the Institute of Electrical Engineers and any relevant requirements of the Local Authority. Ensure that any electrical wiring is correctly earthed.

COOKER POSITION

When the cooker is installed in a recess it must be 'freestanding' and not built-in solid at the sides. Ensure that any combustible material e.g. kitchen furniture is spaced away from the cooker to the recommended distances. See Fig. 1.

Tiling

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.**

BUILDERS OPENING

The fireplace recess should comply with current building regulations, and have an opening of 1,080mm wide minimum, by 343mm deep minimum and 1,680mm high minimum from floor is recommended.

NOTE: (SEE FIG. 1) PLEASE NOTE: IT IS ADVISABLE TO CHECK THE SIZE/WIDTH OF YOUR APPLIANCE BEFORE FINALLY FIXING ANY KITCHEN UNITS SINCE ENAMELLED CAST IRON CAN VARY IN SIZE.

THE CHIMNEY

The minimum chimney draught requirement at nominal total heat output is 20 Pa/.08" WG.

The mean flue gas temperature directly downstream of the flue spigot at nominal heat output is 308°C.

This appliance is not suitable for installation in a shared flue system.

The minimum clearance to combustible materials is 150mm.

Checking existing chimney

The internal and external condition of the chimney should be checked **before** the appliance is installed and rectification made where necessary to prevent leakage or porosity. The soundness of the chimney which should have a minimum flue dimension of 175mm square or 185mm diameter can be confirmed by smoke testing. Advice on the test method can be obtained from HETAS.

When repairing or re-using chimneys its recommended that the building control office be consulted before the commencement of work with particular attention to the chimney height and its termination.

The chimney must be swept before installation.

Erecting New Chimney

The flue through the chimney should be formed with pre-cast moisture and acid-resistant liners with a minimum internal dimension of 185mm square and all in accordance with the current Building Regulations (England and Wales) and in Scotland the Building Standards (Scotland) (Consolidation) Regulations and the Codes of Practice for chimneys and flues BS. 6461 Part 1 and BS 7566 Parts 1 to 4.

Ensure the chimney liners are free of projecting internal building jointing composition before the appliance is installed.

Factory made Insulated Chimneys

It is recommended the chimney be ceramic lined and comply with BS. 4543.

The minimum diameter for a straight chimney is 175mm and if offsets are fitted the recommended minimum diameter is 200mm.

There are two Isokern pumice liners which are also recommended. One is the standard 175mm diameter and the other is a 170mm thin wall. The thin wall has a smaller outer diameter and is designed to fit an existing chimney system. Both have a lifetime guarantee.

IN ALL TYPES OF CHIMNEYS THE MINIMUM HEIGHT FOR CORRECT OPERATION OF THE COOKER IS 4.8m AND SHOULD TERMINATE ABOVE THE ROOF IN ACCORDANCE WITH REGIONAL STATUTORY REQUIREMENTS.

RECOMMENDED FLUE DRAUGHT - 20Pa/.08 WG MINIMUM. THE APPLIANCE SHOULD BE INSTALLED AND CONFORM TO THE CURRENT CODES OF PRACTICE FOR INSTALLATION OF DOMESTIC HEATING AND COOKING APPLIANCES BURNING SOLID FUEL - BS 8303.

ALWAYS ADVISE THE USER TO CLEAN THE COOKER FLUES IN ACCORDANCE WITH THE OPERATING INSTRUCTIONS AND TO HAVE THE CHIMNEY SWEEPED AT A MINIMUM OF 6 MONTHLY INTERVALS AFTER THE COOKER IS COMMISSIONED. A VISUAL INSPECTION SHOULD BE CARRIED OUT MONTHLY.

WARNING: PROLONGED SOOT FORMATION MAY RESULT IN THE FLUEWAYS BECOMING BLOCKED AND COULD GIVE RISE TO THE RELEASE OF CARBON MONOXIDE, A POISONOUS GAS, INTO THE ROOM.

COOKER FLUE CONNECTION

The position of available types of flue layouts are shown in Figs. 2, 3 and 4, the cooker flue chamber is adaptable to provide either top or back flue outlets, by means of the reversible loose socket.

(a)Rear Flue Outlet

This must only be used where there is a brick flue immediately behind the cooker. Provision must be made for a condensate collecting vessel and cleaning door. See Fig. 3.

NOTE: EXTENDED REAR FLUE PIPE AND BENDS ARE NOT RECOMMENDED.

(b)Top Flue Outlet

The cooker should be connected to the main flue via a 150mm minimum diameter cast iron pipe or appropriately sized vitreous enamelled mild steel pipe and be sealed to the cooker flue chamber with soft rope and fire cement. Any bends in the flue pipe must be not less than 135° (45° from horizontal) and be complete with a cleaning door.

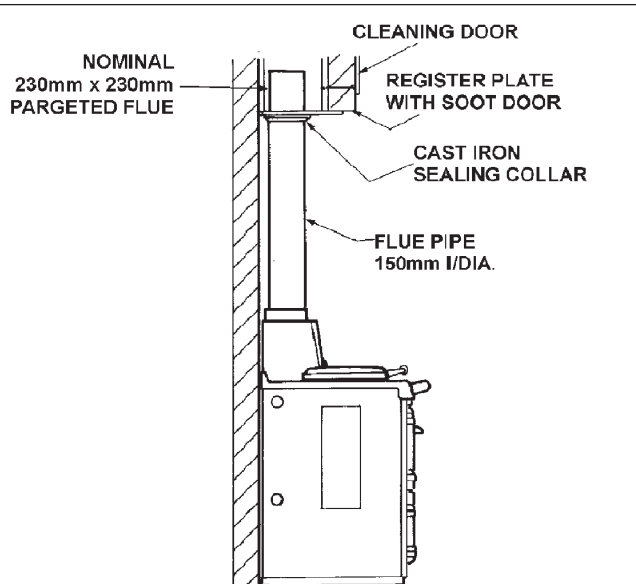


Fig. 2

DESN 515206

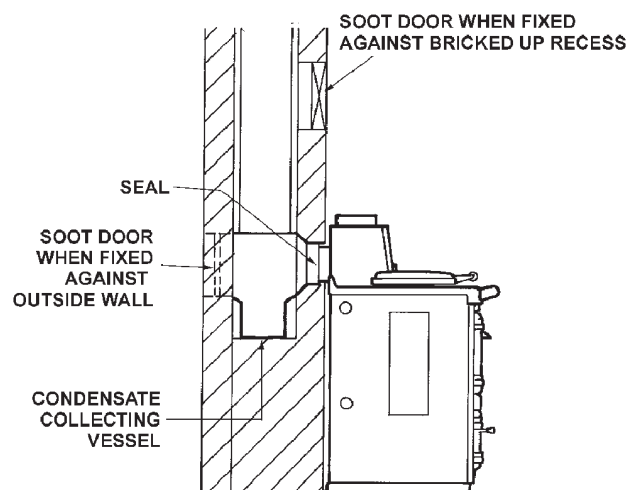


Fig. 3

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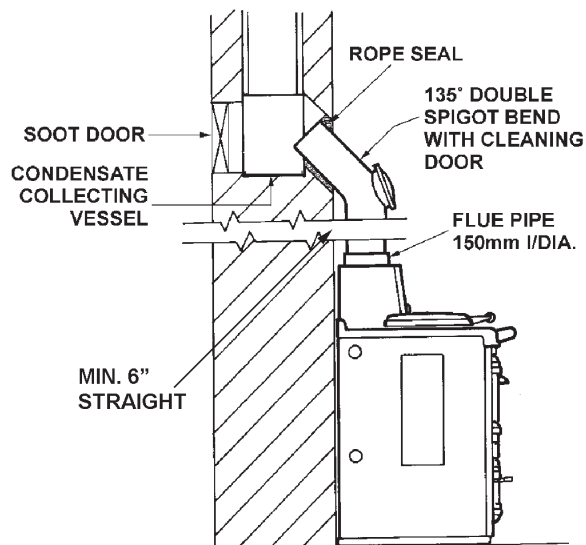


Fig. 4

DESN 515208 A

A minimum 6" vertical length of flue pipe must be fitted before any bend is included.

FLUE LAYOUTS

In Fig. 2. the cooker is installed in an existing recess. There must be a clearance of not less than 150mm between the top of the flue pipe and any overhanging brickwork.

Any cavities or pockets above the register plate should as far as possible be filled and if necessary the flue pipe should be extended into the throat of the chimney and soot door provided for chimney sweeping.

If a flue liner or insulated chimney is used, the size should not be less than 185mm square or 200mm diameter, and 175mm diameter respectively.

There are two Isokern pumice liners which are also recommended. One is the standard 175mm diameter and the other is a 170mm thin wall. The thin wall has a smaller outer diameter and is designed to fit an existing chimney system. Both have a lifetime guarantee.

In Fig. 3, the cooker is connected direct to a brick flue.

Horizontal pipe runs between cooker and brick flue **must not** be used.

In Fig. 4, the cooker is connected to an existing brick flue with a length of flue pipe. Square bends and horizontal runs **must not** be used. There must be a cleaning door at every bend.

NOTE: WHATEVER METHOD OF INSTALLATION IS EMPLOYED, AIR MUST NOT BE ALLOWED TO ENTER THE CHIMNEY EXCEPT THROUGH THE COOKER. ALL JOINTS MUST BE AIR-TIGHT.

If the chimney is unlined, and there is any doubt about its condition, it should be lined in accordance with current Building Regulations.

PROVISION MUST ALWAYS BE MADE FOR SWEEPING THE CHIMNEY.

IMPORTANT: CEMENT TYPE PIPES AND FITTINGS MUST NOT BE USED WITHIN 2m. OF THE COOKER. CHIMNEYS OF PLAIN PIPE ARE NOT RECOMMENDED BUT CERTAIN PROPRIETARY MAKES OF INSULATED CHIMNEY ARE SUITABLE.

AIR SUPPLY

Provision must be made for a permanent unobstructed air vent having a minimum effective area of 50cm² communicated directly to outside air or an adjacent room which itself has a permanent air vent of at least this size direct to outside air.

If a flue draught stabiliser is fitted in the flue this appliance requires a permanent open air vent of 92 cm².

Any air inlet grilles must be positioned so that they are not liable to blockage.

It is not permissible to use an air extraction device in the same room as the appliance, unless additional ventilation is provided to prevent any adverse effect on the flue.

Effect of Extractor Fan

Avoid if possible the installation of an extractor fan in the same room as the cooker. Compensating air inlets must be introduced equivalent to the capacity of the fan when fitted.

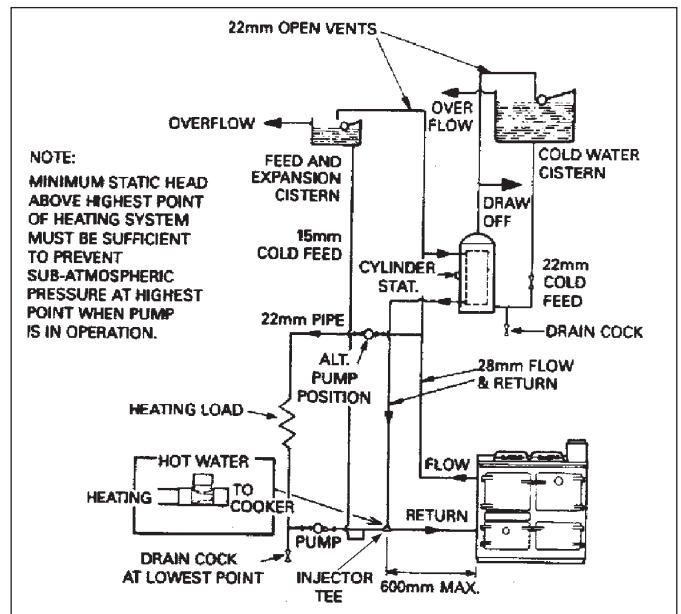


Fig. 5 Typical Central Heating/Hot Water System

DESN 510284'A'

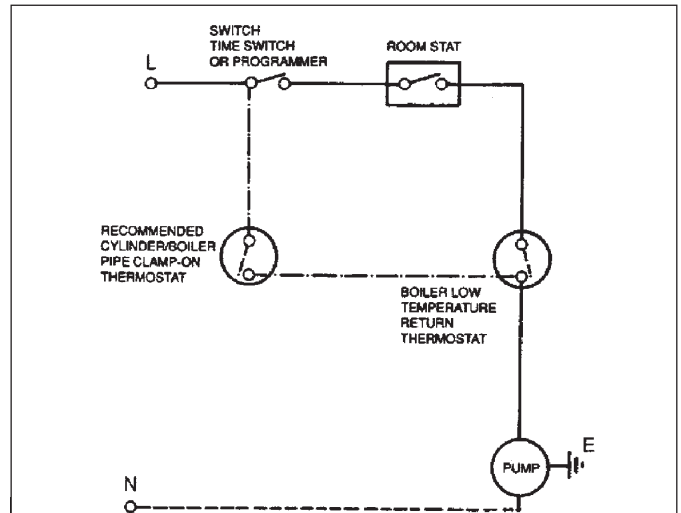


Fig. 6 Typical Wiring Diagram

DESN 510285 A

CENTRAL HEATING AND HOT WATER SYSTEM

THIS APPLIANCE MUST NOT BE USED WITHOUT WATER CONNECTED.

It is recommended that a 190 litre (40 galls) indirect hot water storage cylinder of the double feed type e.g. (Manufactured by Albion Cylinders, complying with BS. 1566 Part 1:DF Type 10) should be lagged and fixed vertically as near as possible to the cooker.

The 28mm minimum diameter primary flow and return pipes must not exceed 10m in length and pipes longer than 5m must be lagged.

Ensure that the flow pipe has an open vent and rises continuously from the boiler to the cylinder to ensure good gravity circulation.

In combined systems, the water draw-off pipes to the taps must be dead-leg connection from the vent/expansion pipe.

There are only two boiler tapings on this cooker and a typical design layout is shown in Fig. 5.

An injector tee is provided which must be fitted to ensure adequate primary flow circulation when the water circulator is operating, otherwise there may be a lack of domestic hot water. The heating flow and return pipes may be 22mm, the return pipe being connected to the 28mm primary return by the injector tee, and the tee outlet connected to the boiler return pipe.

All installations must be fitted with a drain tap at the lowest point of the system.

Inhibitor

A corrosion inhibitor **MUST** be added to the heating system to protect the heat exchanger and pipework. Inhibitor must also be replaced if the system is drained after installation. As a precaution, the heating system **MUST** also be flushed out prior to the addition of the inhibitor to ensure any flux, debris is removed.

BOILER - Control

In order to maximise the life of your boiler body, an electrical thermal re-set low temperature boiler thermostat has been fitted within the appliance, behind the LH side removable cover, whose purpose is to isolate the electrical power from the water circulator when the boiler thermostat falls below 60°C (140°F) and thus minimise harmful condensation on the boiler surfaces. The 3 core 0.75mm² cable lead from the appliance must be connected to/from the water circulator as indicated on the 'Typical Wiring Diagram' in Fig. 6. Marked 'Boiler Low Temperature Return Thermostat' - This switch is normally closed during cooker operation and will open when the water temperature falls preventing chilling of the boiler.

NOTE: IF THERE IS A POSSIBILITY OF BOILING TAKING PLACE A REVERSE ACTING THERMOSTAT SHOULD BE FITTED TO THE DOMESTIC HOT WATER CYLINDER OR BOILER PRIMARY FLOW PIPES, AND ELECTRICALLY CONNECTED TO THE CENTRAL HEATING PUMP, THIS WILL SWITCH THE PUMP 'ON' TO PREVENT BOILING. AT LEAST ONE RADIATOR (USUALLY THE BATHROOM) SHOULD **NOT** BE FITTED WITH A TRV (THERMOSTATIC RADIATOR VALVE), TO ACT AS A HEAT LEAK, SHOULD THE BOILER OVERHEAT AND THE PUMP FAIL TO START.

HIGH UPDRAUGHTS

Tall chimneys may develop excessively high updraughts which prevent the appliance operating correctly.

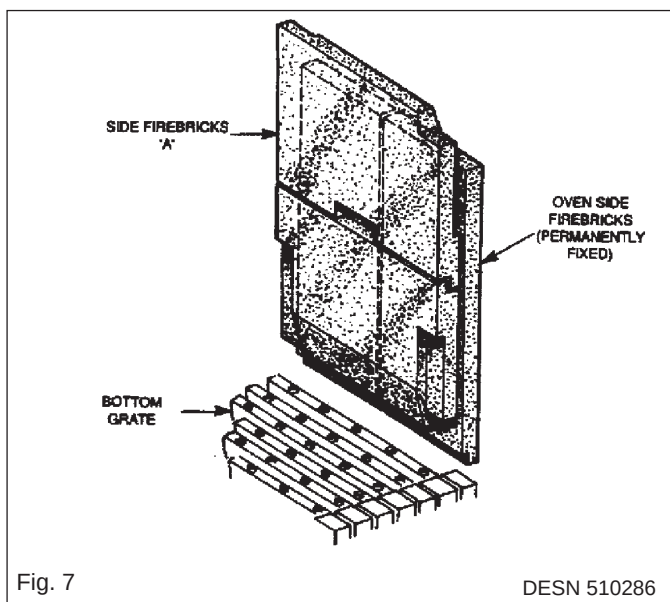
It is recommended that a proprietary brand adjustable flue draught stabiliser having an openable cross sectional area of 182.5sq cm (6"Ø pipe) be fitted above the flue pipe connection, either in the brickwork or into a right angle 'T'; fitting in the flue pipe position that will not inconvenience appliance operation or maintenance.

GENERAL - Firebrick Positions and Replacement

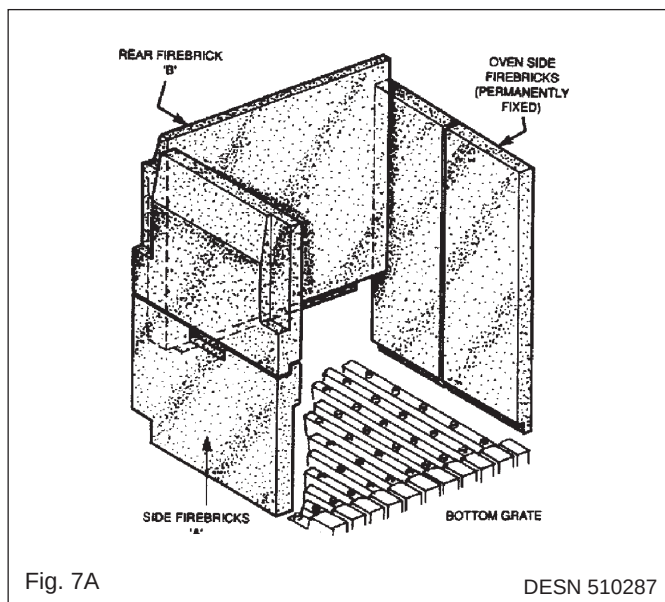
The Rayburn 345W is delivered complete including a set of boiler removable firebricks where positional location determines the amount of hot water supplied in winter and summer seasons.

The oven side and firebox front firebricks are permanently fixed with fire cement, whilst the two boiler face side bricks and boiler back brick are located for the summer season thereby providing domestic hot water only. For winter use or central heating facilities, the boiler face rear brick is removed and the boiler face side bricks are transferred to locate on/over the oven side firebricks. See Fig. 7 & 7A.

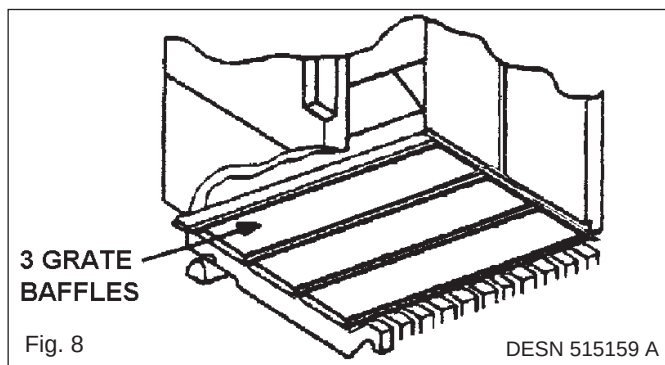
The firebricks fitted to the Rayburn Cookers are of first quality manufacture, and providing the cooker has been installed and used correctly will have a reasonable life. These are, however, expendable items and in time will require renewal. The renewal of firebricks is not a major operation and can be carried out by the average handyman. Replacement bricks either in sets or singly can be obtained from your Rayburn Distributor. Quote the serial number which will be found on the appliance data plate.



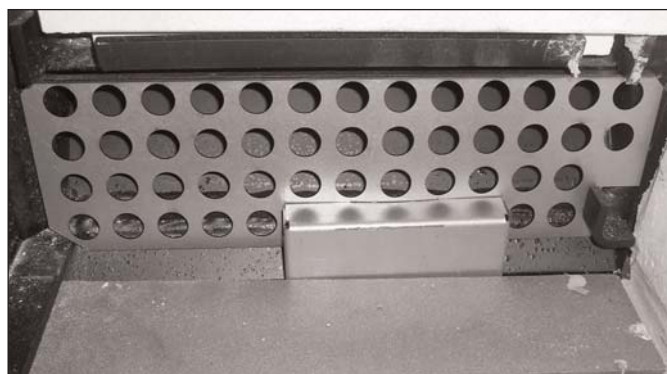
WINTER USE (DOMESTIC HOT WATER & CENTRAL HEATING) SIDE FIREBRICKS 'A' MOUNTED IN RIGHT HAND SIDE OF FIREBOX OVER PERMANENTLY FIXED OVEN SIDE FIREBRICKS & REAR FIREBRICK 'B' REMOVED.



SUMMER USE (DOMESTIC HOT WATER ONLY) SIDE FIREBRICKS 'A' MOUNTED IN LEFT HAND SIDE OF FIREBOX & REAR FIREBRICK 'B' IN POSITION.



ENSURE THE THREE GRATE BAFFLES ARE IN PLACE BEFORE FIRING.



FLUE RESTRICTOR PLATE

To be fitted before placing baffles and firebricks in position.

INSTALLATION

Place the cooker in the intended position and lift out the surface ground hotplate, checking that the joint between the underside of the hob and the top of the cooker is intact.

Any joints which have opened should be made good with fire cement provided.

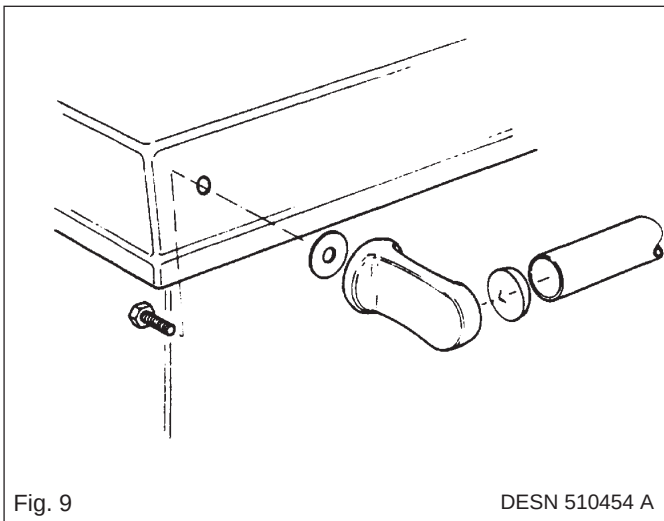
If the appliance is installed near combustible material then as well as adhering to minimum clearances in Fig. 1 additional non-combustible insulation must be fitted to the wall to protect the area around the flue and fluebox. The insulation must reach a minimum distance of 150mm either side of the flue/flue box and follow the line of the flue. The minimum specification for this material is Superwool 607 LTI with a density of 320kg/m³, a thickness of 10mm and a self finish. There must be a minimum 16mm air gap between the insulation board and an adjacent combustible wall surface. A higher specification material may be used but the air gap must be maintained.

Check that the boiler/cooker flueway dampers operate correctly by turning the knob on the front plate adjacent to the top left hand corner of the roasting oven door.

NOTE: IT IS NOT VISUALLY POSSIBLE TO SEE THE BOILER DAMPER AND THIS SHOULD BE CHECKED BY FEELING THROUGH THE HOTPLATE APERTURE TO THE BACK OF THE COOKER. THE COOKER DAMPER SPINDLE OPERATES THE BOILER DAMPER WHICH CAN BE FELT BY INSERTING HAND INTO FLUEWAY.

Replace the hotplate making sure that it is seating evenly on the soft rope and that it is approximately 1.5mm proud of the enamelled top plate, with an equal space all round.

1. Connect pipework to boiler flow and return tappings.
2. Fit the flue chamber which should have a rope seal already installed. The flue chamber is screwed to the cooker making a good seal as any air leak at this point will impede the working of the cooker.
3. Open the firebox and ashpit doors and check that the reciprocating bottomgrate bars are in position, and the 3 grate plates are in place. The riddling lever will not operate fully as these plates, if fitted correctly, will lock the reciprocating bars.
4. Turn the boiler thermostat knob at the rear left hand corner of the top plate from No.1 (low) to No.8 (high).



NOTE: THE HIGHER THE NUMBER, THE HIGHER THE WATER TEMPERATURE.

The handrail brackets are held on the front ends of the cooker top-plate casting. Remove the travel nuts and replace with the handrail brackets ensuring the fibre protecting washers are in position. Insert the handrails with fitted endcaps into the brackets, positioning them correctly, and tighten the locating bolts (Fig. 9).

TESTING AND COMMISSIONING

After completing the installation, the heating contractor should demonstrate to the user the operation of the appliance and the routine cleaning method.

The protective grease should be removed from the hotplate before lighting.

Check that the system is full of water and free from air locks.

When lighting, check that the cooker flueway damper is set to 'C' cooker, the flue box damper is fully out and the chamber door is closed. The thermostat should be at 8, maximum and the spinwheel open. The secondary air slide inside the firebox door should be set to open. These settings will allow maximum draught for the firebox and flue. The cooker must not be left in this condition, as the open spinwheel is not controlled thermostatically.

The firebox door and the ashpit door are interlocked so the top door has to be opened before the bottom. Add paper and kindling to the grate and light. Close both doors. After a few minutes the fire should pick up and gradually add larger pieces of fuel. Allow the cooker to establish the fire and gradually reduce the amount of air going into the firebox. Start closing down the spinwheel, so that the cooker is working on the thermostat. It may be that in normal running the spinwheel needs to be slightly open depending upon the heat requirement.

For the first couple of days do not overfire. The cast iron inside the cooker will build up heat gradually and overfiring may cause damage.

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 or windows to allow for ventilation. Lift the lids to prevent staining the linings.

For further advice or information contact your
local distributor/stockist

With AGA's policy of continuous product
improvement, the Company reserves the right to
change specifications and make modifications to
the appliance described at any time.



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