



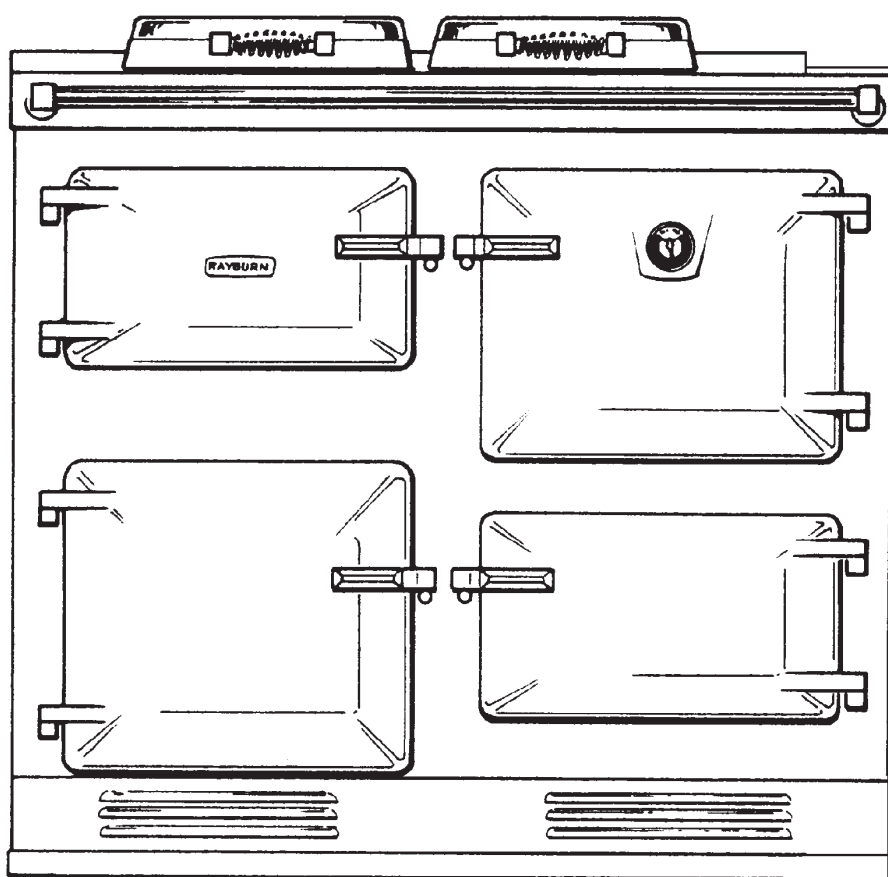
from **AGA**



Installation Instructions

Heatranger 480CD

For use in GB and IE



DESN 514712

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 required. Do not use reconditioned or copy parts that have not been clearly authorised by AGA.

PLEASE READ THESE INSTRUCTIONS BEFORE USING THIS APPLIANCE

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Consumer Protection

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 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.

Glues and Sealants

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

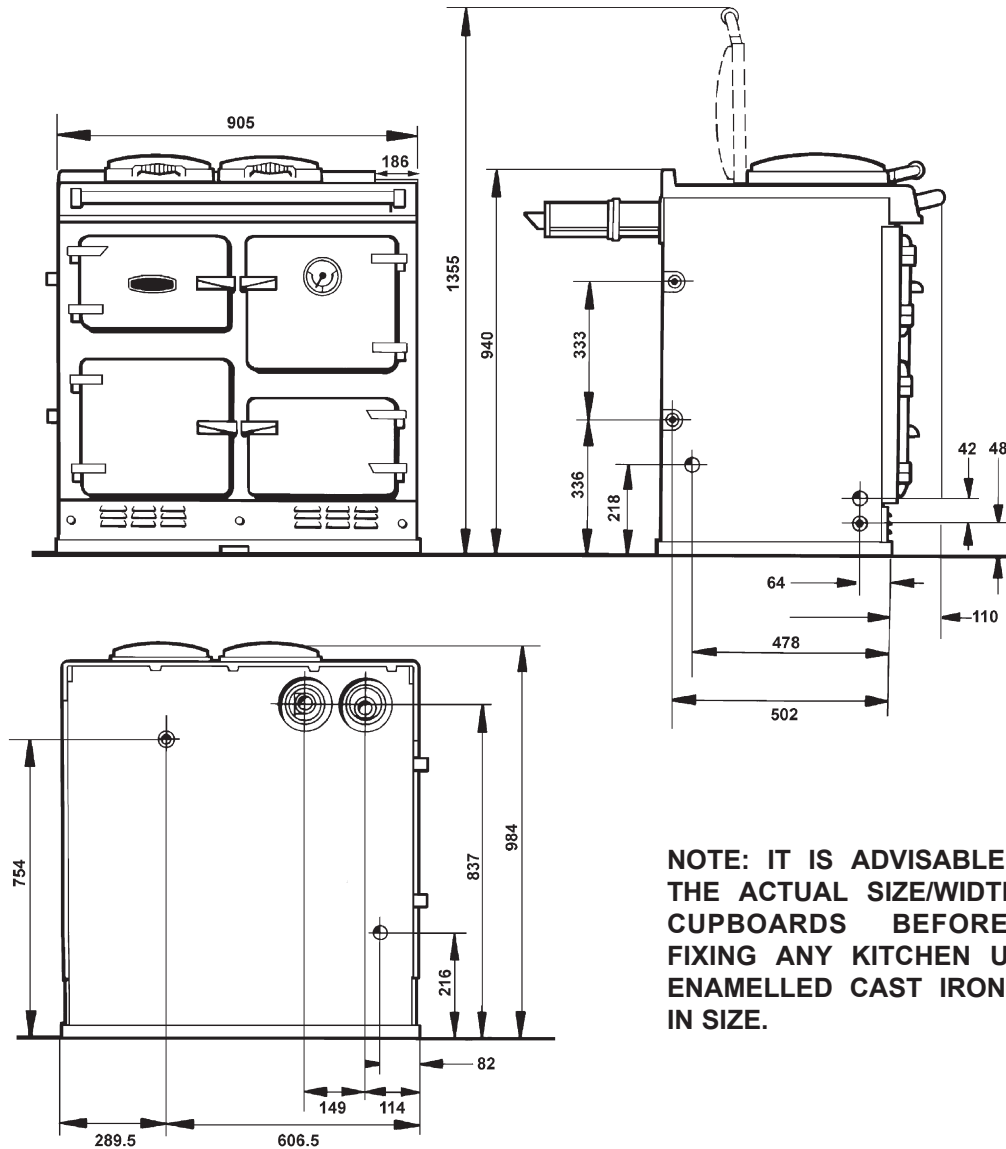
Glass Yarn, Mineral Wool, Insulation Pads, Ceramic Fibre

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

Specifications



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

Fig. 1

DESN 514853

480CD	NAT. GAS (G20)	TOTAL	BOILER	COOKER
Max. Heat Inputs - Gross		41.3 kW	26.7 kW	14.6 kW
Inlet Pressure		20 mbar		
Max. Boiler Output (80°/60°C) net			23.4 kW	
Min. Boiler Output (80°/60°C) net			6.9 kW	
CO ₂ % @ Max. Rate			8.8 - 10.2%	8.8 - 10.2%
CO ₂ % @ Min. Rate			8.8 - 10.2%	-
CO (PPM) Max. Rate			0 - 50	0 - 100
CO (PPM) Min. Rate			0 - 50	-

Gas Connection R1/2 (1/2" BSP TAPER)
 22mm Copper Pipe must be used to within 1metre of the appliance
Electrical Supply 230V~50Hz 3 amp Fused
Max. Working Pressure of Boiler:
Open Vent System 3 bar (30m)
Sealed System 3 bar (30m)
Max. Water Temp. 82°C + 3°C

Water Capacity 0.6 litre
Appliance weight 330Kg
Boiler Connections: **Flow** 22mm O/D Copper Tube
Return 22mm O/D Copper Tube
Flue Outlet - Concentric Flue 100mm/60mm (x2)
Max. Length 514mm
With Optional Extension 1000mm

INTRODUCTION

THIS APPLIANCE MUST BE INSTALLED IN ACCORDANCE WITH THE RULES IN FORCE AND USED ONLY IN A SUFFICIENT VENTILATION SPACE.

This Rayburn Gas combination appliance is a combined cooker and hot water boiler providing central heating and domestic hot water, in addition to special cooking facilities.

The boiler has been designed for use in fully pumped systems. Two separate independent controlled gas burners provide heat, one to the boiler section, providing heat and domestic hot water, whilst the other provides heat to the cooker.

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 must be installed in a solid level floor or base of incombustible material which is capable of supporting the total weight.

The location chosen for the appliance must permit installation and provision of a satisfactory flue. The location must also provide space for servicing, including access to the flue for combustion setting/checking, and air circulation around the appliance.

Between wall and LH side of appliance	150mm
Between wall and RH side of appliance	10mm*

SHOULD THE WALL PROJECT BEYOND THE FRONT OF THE APPLIANCE. THEN IT MUST BE INCREASED to 50mm (SEE FIG. 2A, 2B & 2C).

Above the raised insulating cover handle
60mm

NOTE: Worktops may extend up to the side of the appliance, also an infill can butt up to LH side of the appliance, provided it can easily be removed for servicing the appliance.

In addition, adequate clearance must be available at the front of the appliance to enable it to be operated and serviced.

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.

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.

GAS SUPPLY

CHECK THAT THE GAS SUPPLY IS COMPATIBLE WITH THE INFORMATION ON THE DATA PLATE.

Pipework from the meter to the appliance must be of adequate size. It is recommended that a minimum of $\varnothing 22\text{mm}$ copper tubing is used. 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.

ELECTRICAL SUPPLY

THIS APPLIANCE MUST BE EARTHED.

External wiring must be correctly earthed, polarised and in accordance with current regulations. The main supply required is 230V, 50Hz fused at 3A.

NOTE: The method of connection to the electricity supply must facilitate complete electrical isolation of the appliance, preferably by the use of a fused three pin plug and unswitched shuttered outlet. Alternatively, connection may be made by a via a fused double pole isolator with a contact separation of at least 3mm in all poles and serving the appliance and system control only.

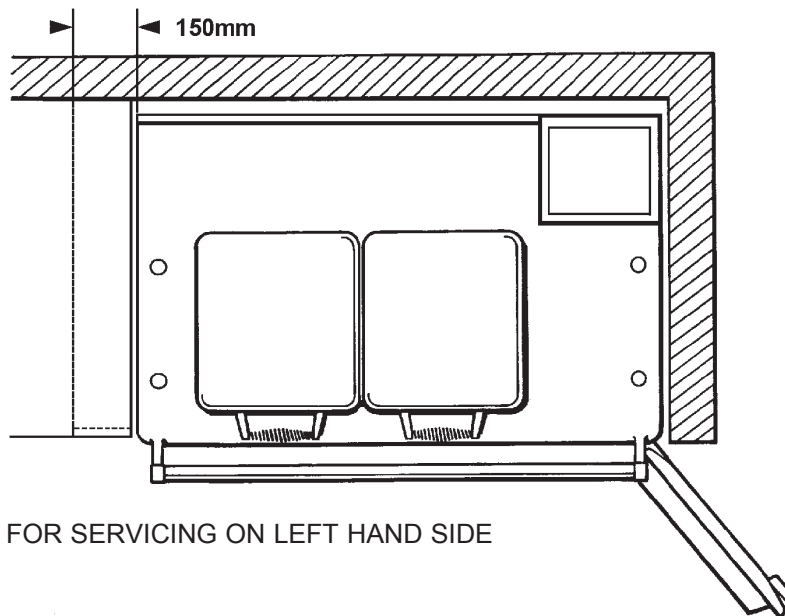


Fig. 2A

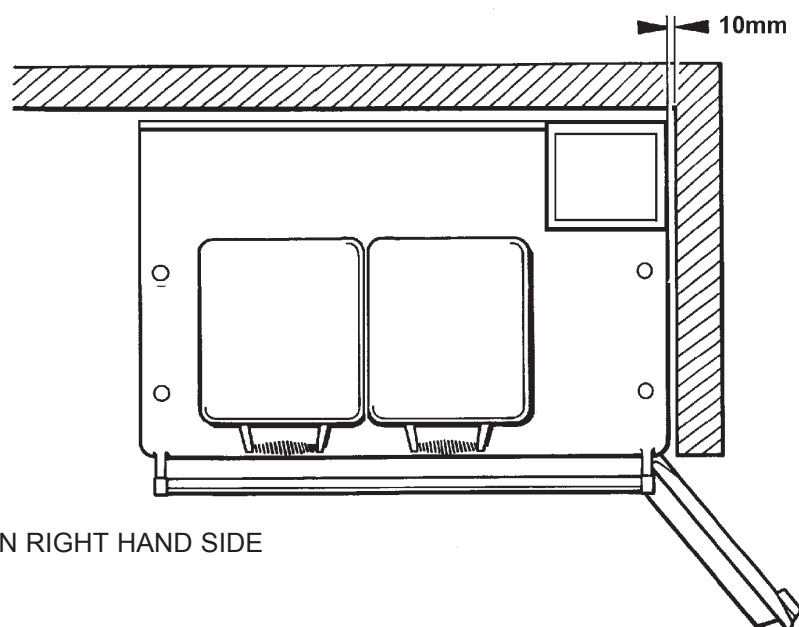


Fig. 2B

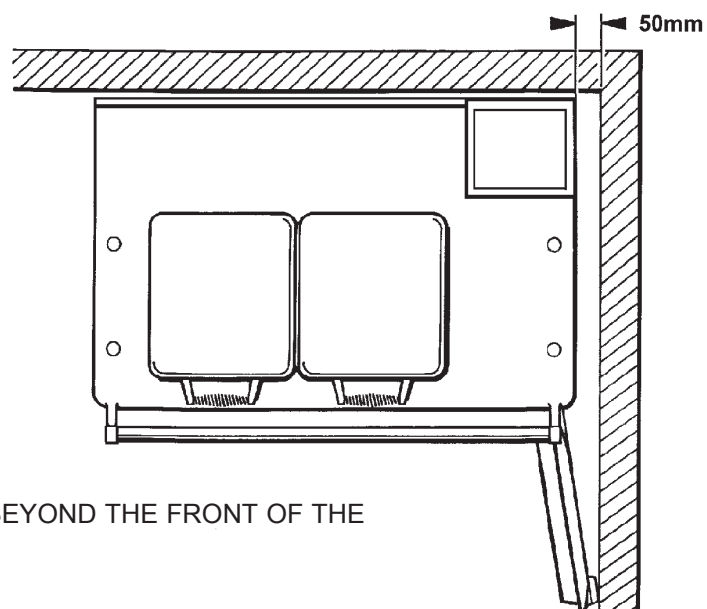


Fig. 2C

Site Requirements

CONTROLS

Independent temperature controls with time switch control are recommended for comfort from radiators.

Typical controls can be motorised valves operated by room thermostat and cylinder thermostat.

Thermostatic radiator valves may be fitted when required.

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

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

Refer to the control equipment manufacturers literature for information e.g. wiring.

The internal boiler/cooker wiring is shown in Fig. 9.

BALANCED FLUE SYSTEM

FLUE INSTALLATION

Plumbing will occur at the terminal so terminal positions where this could cause a nuisance should be avoided.

The flue must be installed in accordance with the recommendations of BS 5440-1: 2000. In IE refer to I.S. 813: 2002.

The following notes are intended for general guidance:

1. The appliance **MUST** be installed so that the terminal is exposed to external air.
2. It is important that the position of the terminal allows the free passage of air across it at all times.
3. Minimum acceptable spacing from the terminal to obstructions and ventilation openings are specified in Fig. 5.
- 3a. Ensure the two flues are cut to size using Fig 13, the boiler flue requires a 3° incline so that any condensate formed in the flue drops back into the heat exchanger. This is achieved by the design of the appliance, the boiler flue should be angled when simply pushed into place. This should result in the boiler flue being inclined and the cooker flue perfectly horizontal.
4. Ensure that the guard is fitted centrally. (See Fig. 16).
5. The flue assembly shall be placed or shielded as to prevent ignition or damage to any part of the building.

6. The air inlet/products outlet duct and the terminal of the boiler **MUST NOT** be closer than 25mm (1") to combustible material. Detailed recommendations on the protection of combustible material are given in BS. 5440-1:2000.

IMPORTANT: It is absolutely essential to ensure, in practice, that products of combustion discharging from the terminal cannot re-enter the building or any other adjacent building through ventilators, windows, doors and any other sources of natural air infiltration, or forced ventilation/air conditioning.

If this should occur the appliance **MUST** be turned **OFF**, labelled as 'unsafe' until corrective action can be taken.

7. A hole must be drilled for the vent pipe, the location of which can be seen on Fig. 1. which shows the appliances overall dimensions.
8. The oven vent terminal guard must also be fitted to prevent the copper outlet being touched. (See Fig. 17).

AIR SUPPLY

It is **NOT** necessary to have a purpose provided air vent in the room or internal space in which the appliance is installed.

SEE FIG. 3

The flue system must be installed in accordance with the regulations in force.

Terminal Position

The minimum acceptable spacings from the terminal to obstructions and ventilations openings are shown in Fig. 5. Where the terminal is within 1m of any plastic material, such material should be protected from the effects of the combustion products of the flue.

Terminal Protection

A terminal guard is supplied with the cooker and must be fitted. If the flue termination is less 2 metres above ground level, if damage could occur to the terminal or if there is the possibility of accidental damage by persons.

Maximum Flue Gas Temperature 260°C with the cooker burner on.

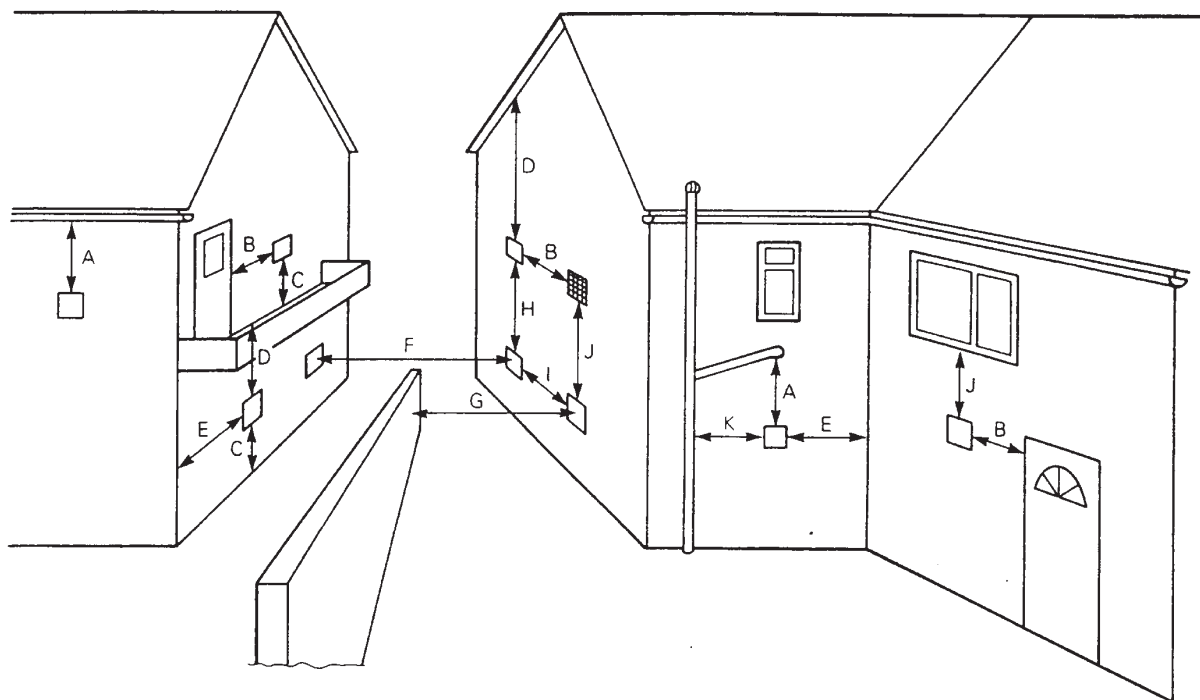


Fig. 3

A BELOW A GUTTER OR SANITARY PIPEWORK 600mm

B HORIZONTAL FROM OPENING, AIR BRICK, WINDOW ETC 600mm

C ABOVE GROUND OR BALCONY LEVEL 300mm

D BELOW EAVES OR BALCONY 600mm

E FROM AN INTERNAL OR EXTERNAL CORNER 300mm

F FROM A TERMINAL FACING A TERMINAL 1200mm

G FROM A SURFACE FACING A TERMINAL 600mm

H VERTICAL FROM TERMINALS ON THE SAME WALL 1500mm

I HORIZONTAL FROM TERMINALS ON THE SAME WALL 750mm

J BELOW AN OPENING, AIR BRICK, 600mm

Where the terminal is within 1 metre of any plastic material, such material should be protected from the effects of combustion products of fuel.

There are additional general requirements in most Regulations and Standards that the flue must be positioned so that it does not cause a nuisance and permits the dispersal of combustion products.

Consideration must be given, as to the possible adverse affects of combustion noise on adjoining properties, inherent with this type of product.

Site Requirements

WATER CIRCULATION SYSTEM

Space and water heating systems should be in accordance with the relevant recommendations of BS 5410: Part 1.

In a combined central heating and domestic hot water system, the hot water storage vessel must be of the indirect cylinder type to BS 1566: Part 1. The hot water storage vessel should be insulated with not less than 75mm thick mineral fibre or its equivalent.

Cisterns and pipework should not be situated in areas which may be exposed by freezing conditions and should be insulated.

Draining taps must be located in accessible positions which permit the draining of the whole system, including the heat storage vessel. Draining taps should be at least 1/2 in BSP nominal size and be in accordance with BS 2879.

The appliance boiler section should be connected to cistern water supply, subject to a maximum head of 3 bar (30m), minimum of .1 bar (1m).

The heating system must be designed (and adjusted if necessary) to give temperature differential across the boiler at full output of 10-14°C. Where horizontal runs are used 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 and therefore adequate to give the required temperature differential between the flow and return. (See Fig. 4).

The pump should be able to meet the requirements of the system design and fit 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

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.

Sealed System Requirements

See Pages 18 and 19.

Pressure Loss Curve

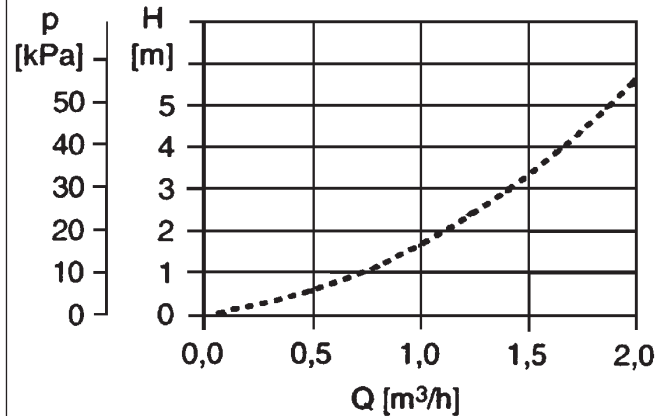


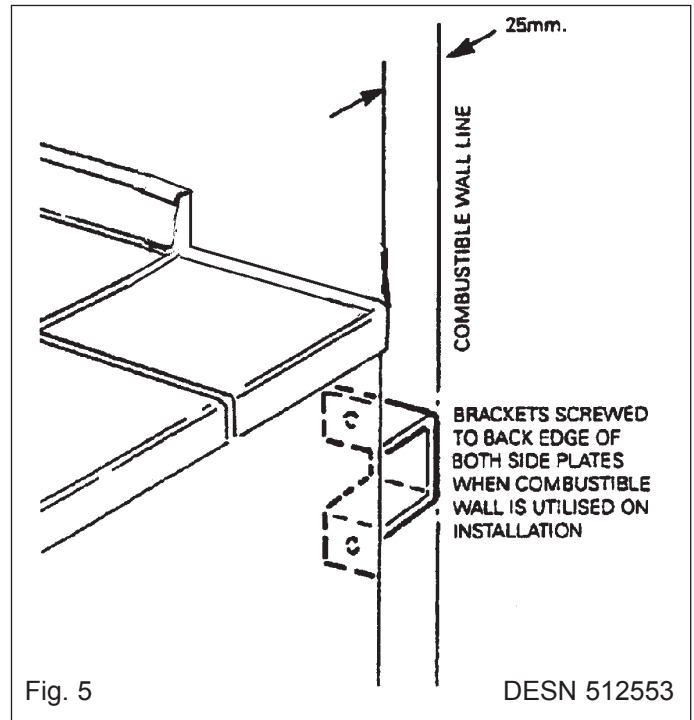
Fig. 4

SITE LOCATION

1. Remove the appliance assembly from the transit wooden pallet by the temporary location of a sloping ramp board between the pallet and the floor. With the appliance on the floor, lift the front of the appliance (manually or with a crowbar) and insert a 32mm x 1m long tube between the front of the appliance base plate and the floor.

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

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



CLEARANCES

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

Between wall and LH side of appliance - 150mm

Between wall and RH side of appliance - 10mm*

SHOULD THE WALL PROJECT BEYOND THE FRONT OF THE APPLIANCE, WHEN IT MUST BE INCREASED TO 50mm (SEE FIG. 2A, 2B & 2c)

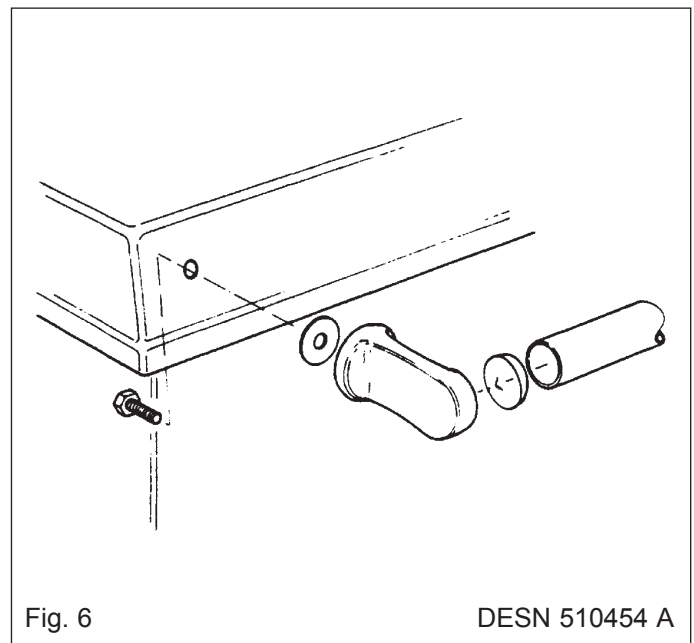
Above the raised insulating cover handle - 60mm

In addition the adequate clearance must be available at the front of the appliance to enable it to be operated and serviced.

PRELIMINARY INSTALLATION

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

1. Air Inlet Spigots/Concentric Balance Flue Kit
2. Appliance Rear Distance Bracket - (for use when appliance is installed (25mm) away from a rear wall of combustible material). See Fig. 5.
3. Handrail - The handrail brackets are held on the front ends of the cooker top-plate casting. Remove the travel nuts and replace with the handrail brackets ensuring the fibre protecting washers are in position. Insert the handrail with fitted endcaps in to the brackets, positioning them correctly, and tighten the locating bolts. (See Fig. 6).



Installation Instructions

GAS CONNECTION

1. Connect the gas supply to the 1/2" BSP tapered thread on the left hand side of the appliance. (22mm copper pipe must be used to within 1 metre of the appliance.
2. Test the hole of the gas installation including the meter and purge in accordance with the relevant recommendations.

WATER CONNECTIONS

The two 22mm flow and return connections are located towards the rear edge of the appliance left hand side panel.

SYSTEM SUITABILITY

THIS BOILER IS SUITABLE FOR FULLY PUMPED SYSTEMS ONLY.

For optimum operating conditions the heating system into which the boiler is installed, should include a control system.

Such a system will include a time switch and a room thermostat and/or cylinder thermostat.

The boiler should be controlled so that it is operated on demand only.

Operation of the system under control of the boiler thermostat only does not produce the best efficiency. Refer to the control equipment manufacturers literature for information e.g. wiring.

The internal boiler/cooker wiring is shown in Fig. 9.

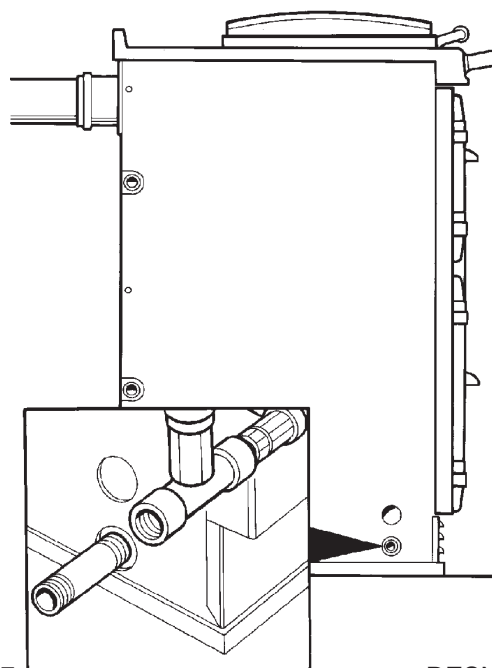


Fig. 7

DESN 514864

ELECTRICAL CONNECTIONS

The switch LIVE must be connected to the programmer or room stat.

The system pump and mains should be connected as shown in Fig. 8.

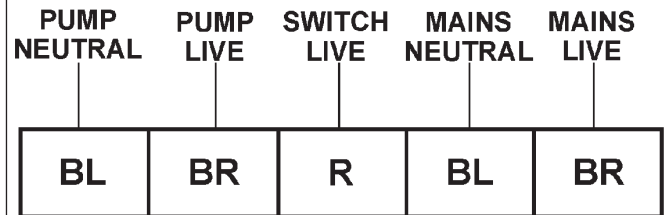


Fig. 8

DESN 514865

ELECTRICAL CHECKS

Checks to ensure electrical safety should be carried out by a qualified engineer.

Installation Instructions

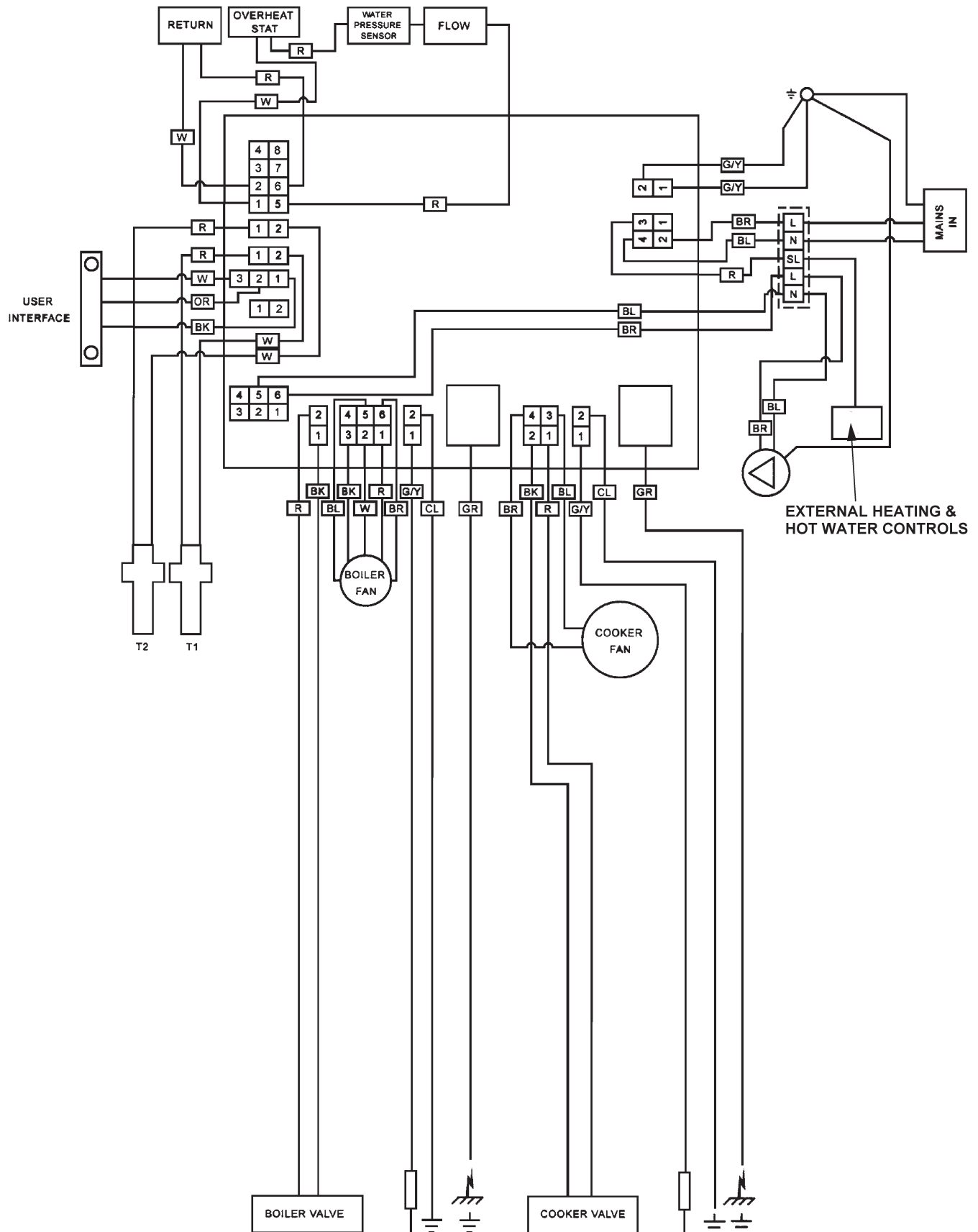


Fig. 9

CONDENSATE TRAP

This appliance has a built-in condensate trap, which eliminates the need for any external traps. The flexible drain hose is located on the underside of the boiler. This should be routed through the cutout in the side or back of the appliance. Connect to the flexible and extend the pipe run away from the appliance with a continuous fall of $2\frac{1}{2}^\circ$ (or 20mm in every metre).

Once the pipe has been positioned, ensure that the pipe is still connected fully to the outlet of the trap.

Before initial firing of the boiler, the condensate trap must be filled with water to prevent the escape of flue gases. On the underside of the boiler, unscrew the transparent glass of the drain connection, fill the trap to half with water, before re-assembling.

CONDENSATE PIPE

The condensate pipe may terminate into any four areas:-

1. Into an internal waste system, with the end of the pipe into a gully below ground level, but above the water line.
2. Into an external waste system, with the end of the pipe into a gully below ground level, but above the water line.
3. Into an internal soil and vent stack.
4. Into an external purpose-made soakaway.

As external condensate pipe runs may be susceptible to freezing during very cold weather, it is advisable to terminate the pipe into an internal waste system where possible.

1. The pipework should be insulated with the weather-proof material to prevent the condensation from freezing.
2. The pipe run should turn the shortest practical route.
3. The pipe should terminate as close as is possible to the ground/drain, while still allowing for the safe dispersal of the condensation.
4. All pipework and fittings in the condensate drain system must be made of plastic. No other materials may be used.

When insufficient head is available a proprietary condense lift pump may be used.

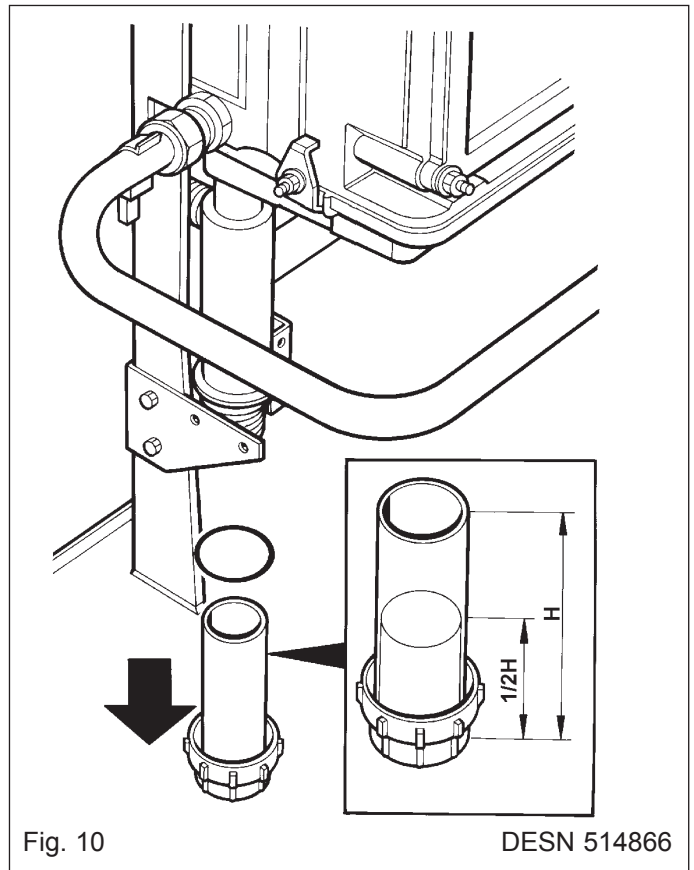


Fig. 10

DESN 514866

Balanced Flue Installation

EXHAUST DUCT

THIS APPLIANCE MUST BE INSTALLED WITH THE DUCTS AND TERMINALS SUPPLIED.

- It is recommended to fit the spigots to the appliance before putting it into position for ease of fitting.
- Locate and secure 100mm air inlet spigots, 1 gasket and 4 screws. (See Fig. 11). It is advisable to stick the gaskets to the appliance using a sealant to ease the fitting.
- Screw in tap tight screws to secure spigots.

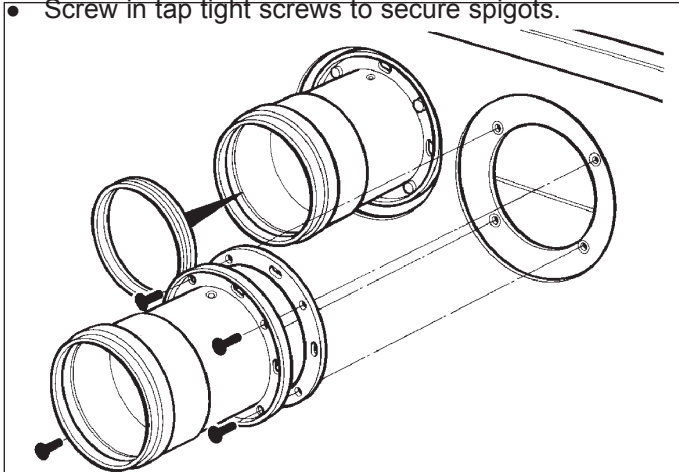


Fig. 11

DESN 514867

- Using Fig. 12, measure from the outside of the wall to the end of the recess on the 100mm spigot, this will be the same for both the cooker and boiler flues, then cut the 100mm tube to this length. Then cut the 60mm pipe to 120mm. (See Fig. 13).

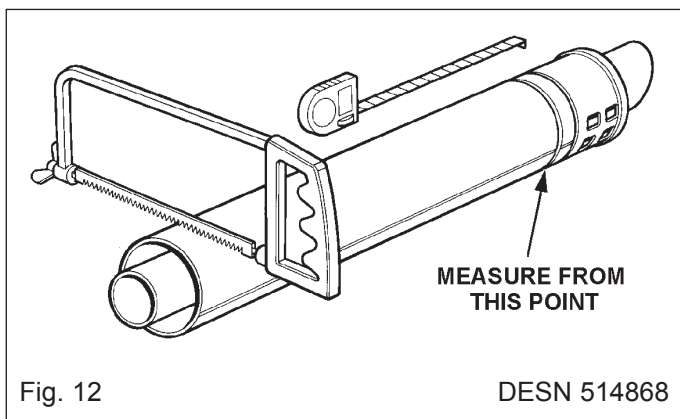


Fig. 12

DESN 514868

Once both flues have been cut to size, file any burrs away and chamfer the 60mm pipe ends to allow easier fitting into the couplings.

N.B. It may also be possible to use a high temperature grease to allow easier fitting.

To ensure the boiler flue has been fitted correctly into the boiler flue outlet, remove the glass control facia and brackets behind. The boiler elbow can then be adjusted if required and a correct fitting can also be checked of the flue. The covering plate supplied can then be mounted on the wall.

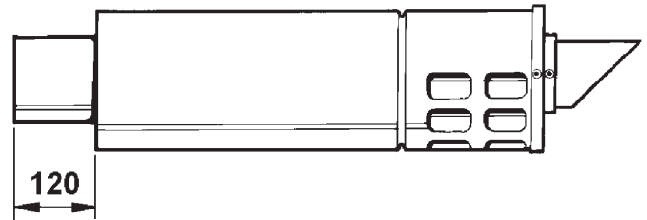


Fig. 13

DESN 514869 A

TERMINAL GUARD

- Locate terminal guard to wall, mark location of securing holes, remove guard.
- Drill holes and fit rawlplugs.
- Locate and secure terminal guard to wall (4 screws).

NOTE: The guard must be fitted where the terminal is below 2m above the ground level or where the terminal can be touched either intentionally or accidentally eg. window cleaning or painting.

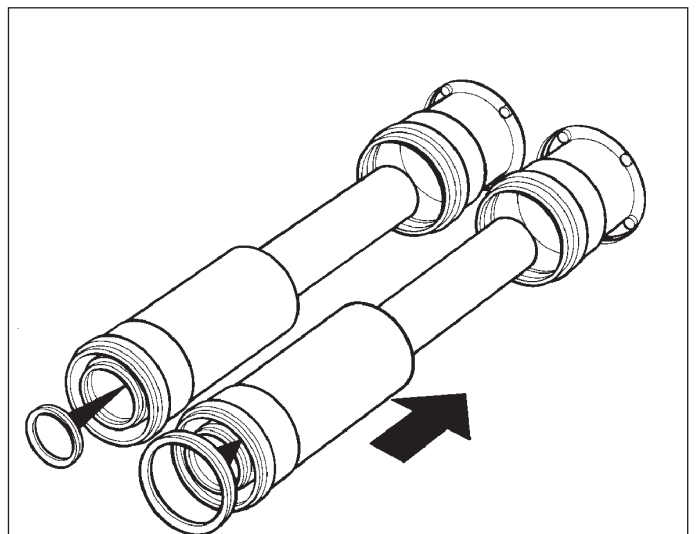


Fig. 14

DESN 514870

Balanced Flue Installation

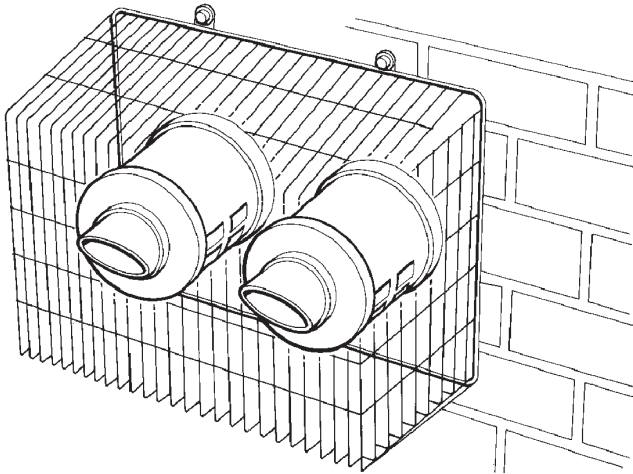


Fig. 15

DESN 514871

If the house wall is thicker than 500mm, an extension kit will be needed (to be ordered separately). The two extensions supplied are the same size, one will fit into the boiler without cutting. The cooker flue will need the 60mm diameter pipe reducing to 120mm. The two standard flues will now fit into the extensions.

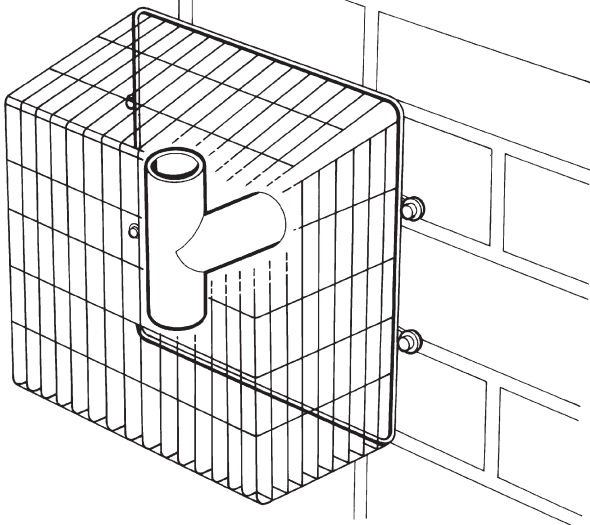


Fig. 16

DESN 514991

CUT TO LENGTH

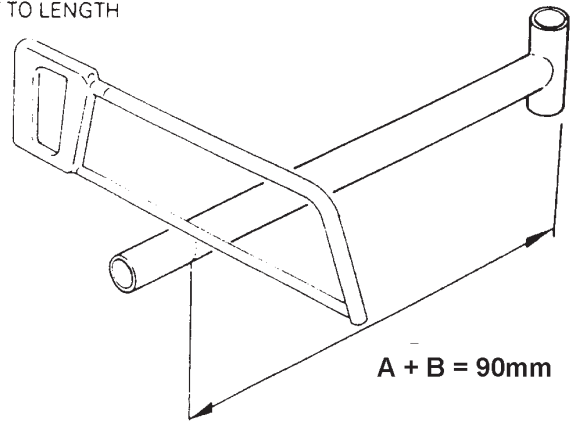


Fig. 17

DESN 511273

VENT PIPE GUARD

A vent pipeguard is supplied with the cooker and must be fitted if the vent termination is less than 2 metres above ground level, or subject to damage.

When fitted, it must be positioned to provide a minimum of 50mm clearance from any part of the terminal and be central over the terminal.

VENT PIPE

- Mark and cut pipe to length.

A (Wall thickness) + B (internal spacing) + 90mm

- Locate vent pipe to appliance

Sealed System

SEALED SYSTEM REQUIREMENTS

See Fig. 19

- a. The installation must comply with the requirements of BS 6798 and BS 5449. Maximum water 82°C temperature.
- b. A safety valve set to operate at 2 bar (30lbf/in²) shall be fitted in the flow pipe close to the boiler. There must not be any valve between the safety valve and the boiler. The valve should be positioned on a discharge pipe fitted to prevent any discharge or creating a hazard to occupants or cause damage to electrical components and wiring.
- c. A pressure gauge covering at least the range 0 to 4 bar (0 to 60 lbf/in²) shall be fitted in the system, in a visible position.
- d. A diaphragm type expansion vessel to BS 4814 shall be connected at a point in the return pipe close to the boiler. The vessel must be chosen to suit the volume of water in the cistern and the system charge must not be less than the static head at the point of connection. Further details can be obtained from 'British Gas Specification for Domestic Wet Central Heating Systems Part 3 Sealed Systems'.

Safety Valve Setting	2.0 bar	
Vessel charge and initial system pressure	0.5 bar	1.0 bar
Multiplying Factor	0.09	0.16
Expansion Vessel volume (litres) = System volume Vs x factor	L Vs x 0.09	L Vs x 0.16

Vs = System Volume Litres

- e. The hot water cylinder shall be either the indirect coil type or a cylinder fitted with a calorifer which is suitable for the system pressure.

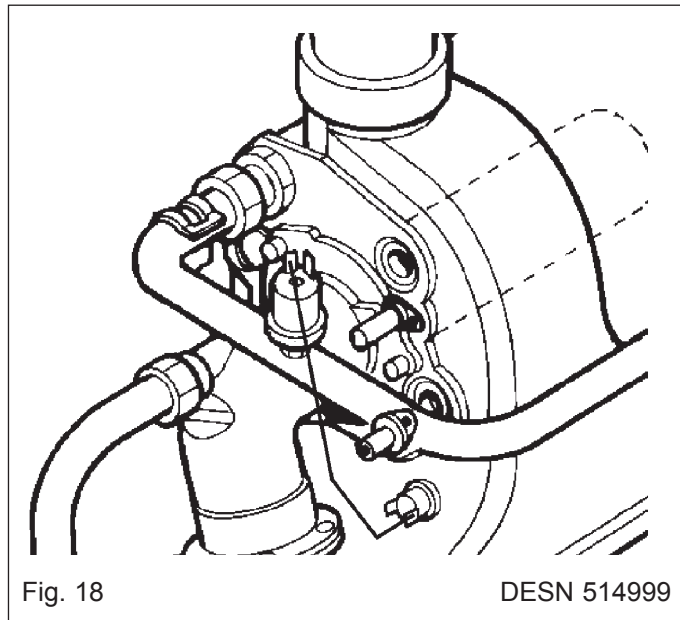
f. The Make-Up System

Provision shall be made for replacing the lost water from the system by either of the following methods:

- a) From a make-up vessel or tank, and connected through a non-return valve to the system on the return side of the hot water cylinder or return side of all heat emitters or radiators.
- b) Where access to a make-up vessel would be difficult, by a remote automatic pressurisation and make-up unit.

OPEN SYSTEM REQUIREMENTS

If you are using an open system, the pressure sensor on the flow pipe needs to be wired out of the system. This is achieved by removing the RED link wire which connects between the pressure sensor and the overheat sensor. The remaining wire on the pressure sensor should now be moved onto the spare terminal on the overheat sensor.



N.B. It is very common on initial filling and commissioning that air locks will cause the overheat sensor to trigger a fault (A3). It is advisable to temporarily connect the pump to the permanent Live and Neutral so that it is continually running to vent the air. To re-set the A3 fault, press the **REPEAT** button, once the flow temperature drops below 60°C the boiler vents all the air. You **MUST** re-connect the Pump Live and Neutral into the correct terminals.

COMMISSIONING

Follow the commissioning instructions as for open vented systems. See Section Commissioning Instructions with the following additions:-

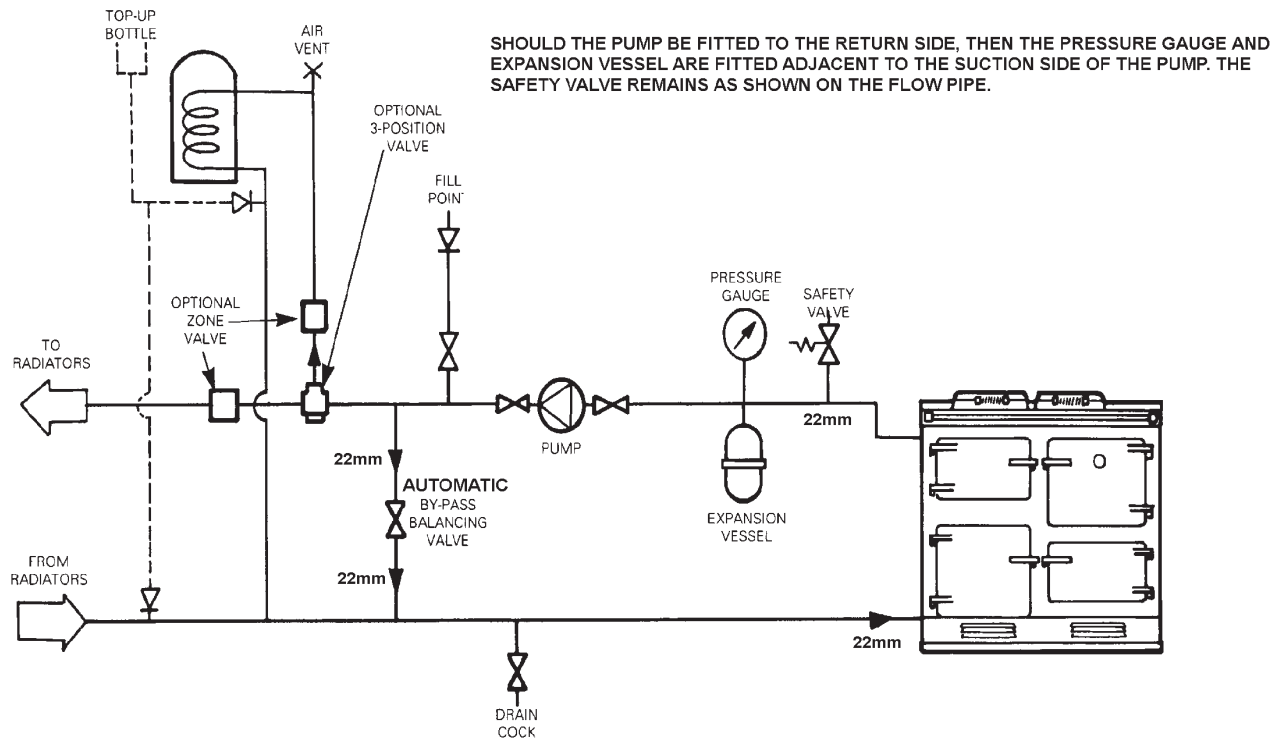
Fill the system until the pressure gauge registers 1.5 bar (22 lbf/in²). Clear any airlocks and check for water soundness.

Check the operation of the safety valve, by allowing the water pressure to rise until the valve opens. The valve should open with ± 0.3 bar (± 4.35 lbf/in²) of the pre-set pressure. If this is not possible conduct a manual check and test.

Release cold water for initial filling pressure.

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

Typical Sealed System



Typical Open Vented System

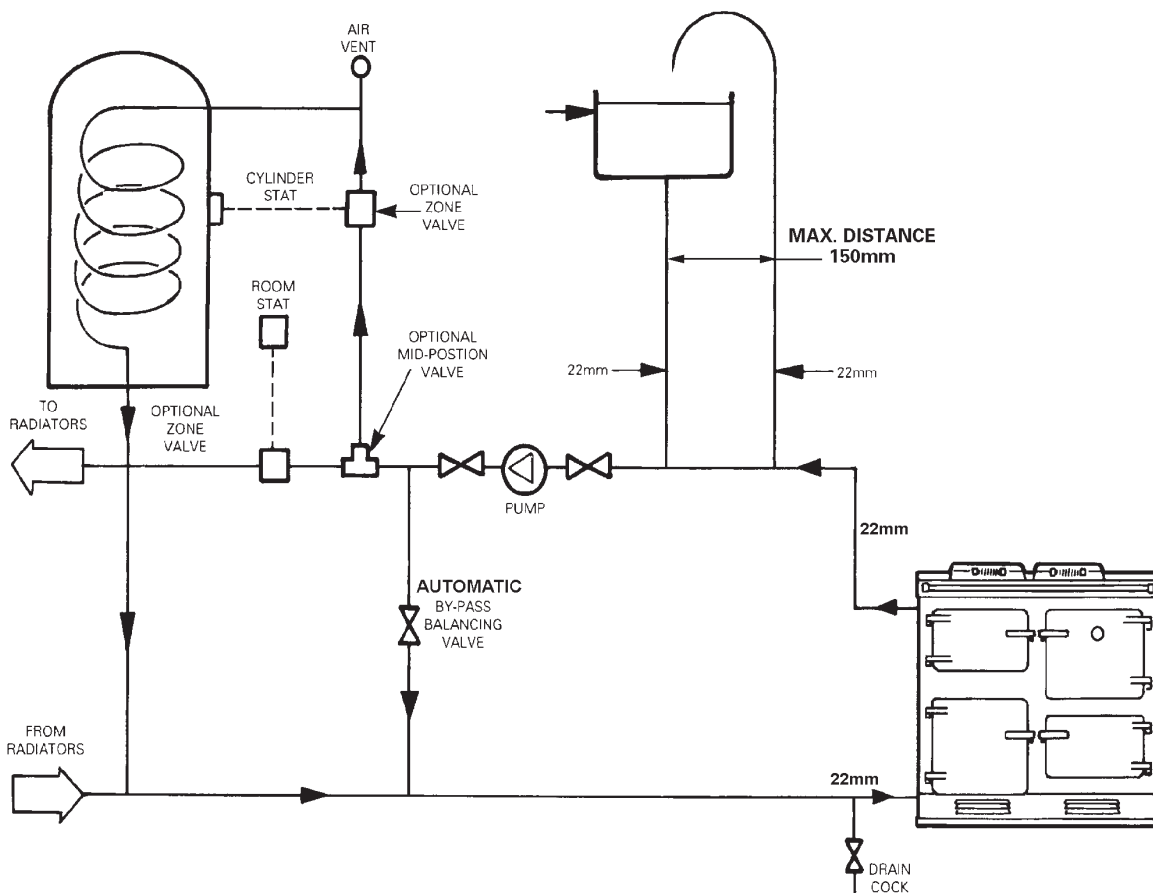


Fig. 19

Commissioning

ELECTRICAL INSTALLATION

Checks to ensure electrical safety should be carried out by a competent person i.e. earth continuity, polarity and resistance to earth.

WATER CIRCULATION SYSTEM

The whole of the system should be thoroughly flushed out with cold water without the pump in position. Ensure that all valves are open. With the pump fitted, the system should be filled.

Vent all heat emissions and check for water soundness.

Insert condensate trap.

COMMISSIONING THE COOKER AND BOILER

Isolate electricity supply at the wall socket. Turn the cooker and boiler control knob to off.

After ensuring gas is available to the appliance, loosen joint and purge any air from the supply pipe.

WARNING: NO SMOKE OR NAKED LIGHTS.

Tighten joint and check gas service cocks are in the ON position. Check for gas soundness up to the gas valves.

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 system being inoperative during frost conditions.
2. Advise the User 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 Users Instructions to the User and demonstrate the correct operation of the appliance and system controls.
4. Leave the Installation, Servicing and Users instructions with the User.
5. **Gas Safety** - Show the user the procedure for isolating the appliance from the gas and electric supply. As referred to in the Users Instructions - Ref. Gas Leak or Appliance Fault.

LIGHTING THE BOILER BURNER

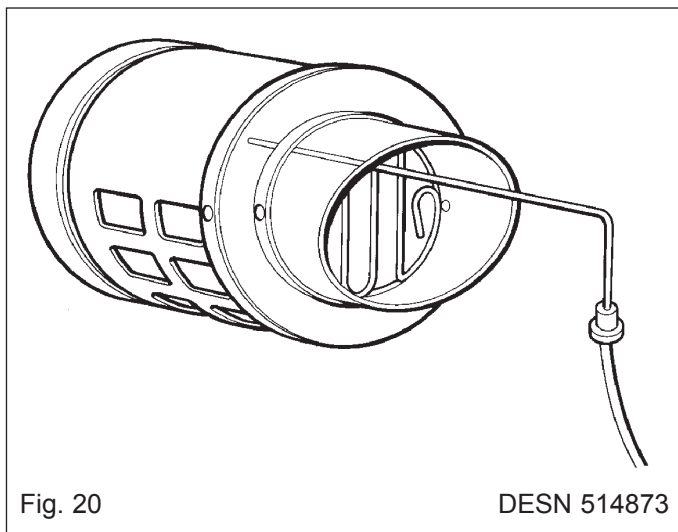
To light the burner - turn the boiler thermostat to maximum and create a demand on the room thermostat.

BOILER OUTPUT SETTING

Check the gas consumption and ensure it is $\pm 5\%$ of the nominal, 26.7 kW.

BOILER COMBUSTION

Connect a suitable analyser to the flue outlet of the boiler. (See Fig. 20).



Although the appliance is pre-set check that the CO₂/CO levels are within tolerances.

CO₂ 8.8 - 10.2%

CO 0-50ppm

To check the levels at full rate, turn the boiler knob fully clockwise.

To check the levels at the low rate, turn the boiler knob to the first segment of the dial.

If these levels are within the tolerance, no further action is required with the boiler.

If levels are not within tolerance check for possible causes e.g. blocked flue, faulty fan etc. If non other fault can be detected, the gas valve needs to be adjusted manually.

To do this, turn the boiler knob fully clockwise to create the highest possible demand.

Turn the gas valve regulator A (See Fig. 21) in the appropriate direction. Turning clockwise will decrease the CO₂ turning anti-clockwise will increase the CO₂. Please note that due to the sensitivity of the screw, only small adjustments will be necessary.

COOKER BURNER LIGHTING

Turn the cooker burner to mark H and ensure programmer is set to **MANUAL**, the burner should light within 60 seconds.

COOKER OUTPUT

Check within 5 minutes that the gas consumption is $\pm 5\%$ of the stated heat input. 14.6 kW.

COMBUSTION

Connect a suitable gas analyser to the sample point on the hob or flue outlet. Ensure the CO/CO₂ content is:

CO ₂	8.8 - 10.2%
CO	0 - 100ppm

If these levels cannot be obtained, check gas rate and adjust the throttle screw if required and allow readings to stabilise. (See Fig. 22).

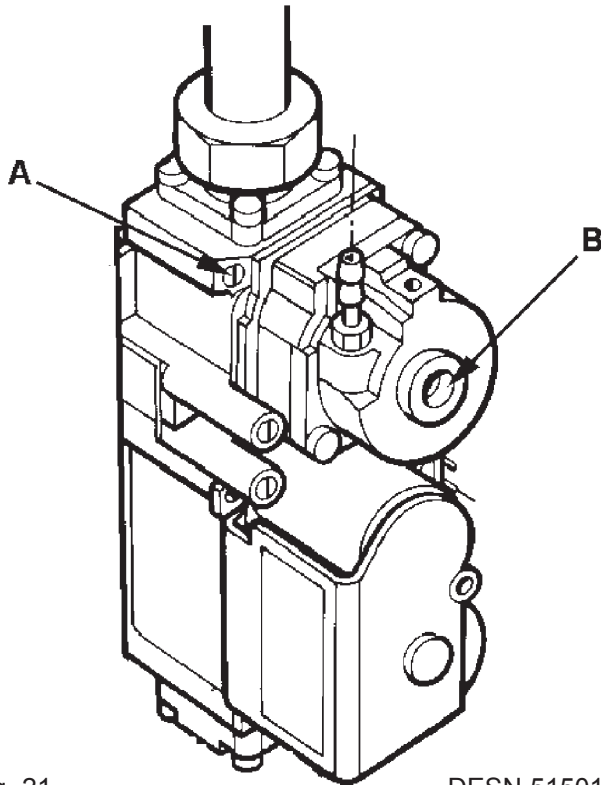


Fig. 21

DESN 515016

Once adjustment has been made, wait until CO₂ level stabilises and recheck the combustion. Repeat the above steps as necessary.

Check that CO₂ levels are within stated levels at minimum rate, turn knob to first segment on the display.

Using the method detailed above, run the boiler at its minimum output. Wait for the boiler to stabilise and perform the combustion analysis, check the results.

If found to be inconsistent, turn the gas valve regulator B (See Fig. 21) in the appropriate direction. Turning clockwise will increase the CO₂ turning anti-clockwise will decrease the CO₂. Please note that due to the sensitivity of the screw, only small adjustments will be necessary (1/8 of a turn).

Once adjustment has been made, wait until the CO₂ level stabilises and recheck combustion. Repeat the above steps as necessary.

After completion of calibration, recheck the CO₂, at maximum output.

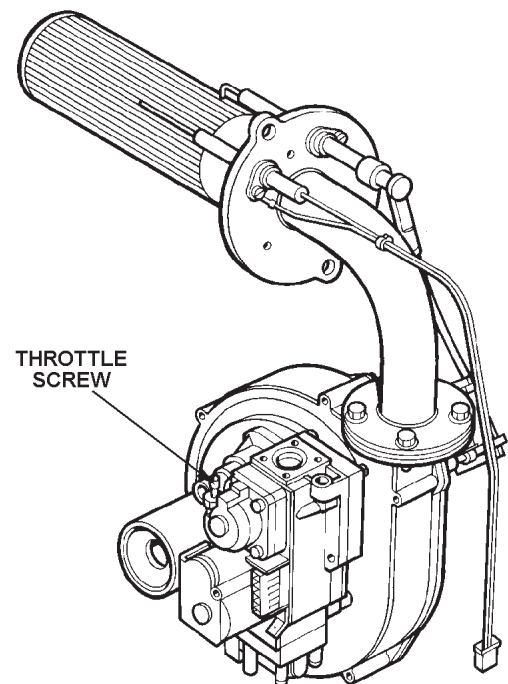


Fig. 22

DESN 514881

For further advice or information contact your
local distributor/stockist

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



from The word "from" is in a lowercase sans-serif font, followed by the AGA logo, which is the word "AGA" in a white sans-serif font inside a black oval.

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