

WARNING

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

The Rayburn Oil Nouvelle cooker has gone through several changes and modifications during its long history, particularly with regard to the boiler burner.

The actual product featured here, is the MK3 model, having separate solenoid valves for a pilot and main oil feed and using a fully electronic sequence controller.



THE RAYBURN OIL NOUVELLE

Operating Instructions for Rayburn Oil Nouvelle Central Heating Cooker

Consumer Protection Act 1987

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

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

Control of Substances - Health and Safety IMPORTANT:

This appliance may contain some of the materials that are indicated below. It is the Users/Installers responsibility to ensure that the necessary personal protective clothing is worn when

handling, where applicable, the pertinent parts that contain any of the listed materials that could be interpreted as being injurious to health and safety, see below for information.

Firebricks, Fuelbeds, Artificial Fuels - when handling use disposal gloves.

Fire Cement - when handling use disposable gloves.

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

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

The cooking performance features of the popular and proven solid fuel Rayburn Cookers have been preserved and integrated into the Rayburn Oil Nouvelle Cooker, burning 28 Seconds Kerosene to BS. 2869 Part 2: 1988 Class C2.

SUMMER USE

The cooker side provides domestic hot water and cooking facilities which consist of a large hotplate, main oven and warming oven. The independent oil burner is controlled by an electric thermostat operated by the control knob. The cooker burner should always be continuously burning at a low fire rate when not required for cooking. When cooking is required, the burner operates at a high fire rate under the control of the main oven thermostat control knob and its setting.

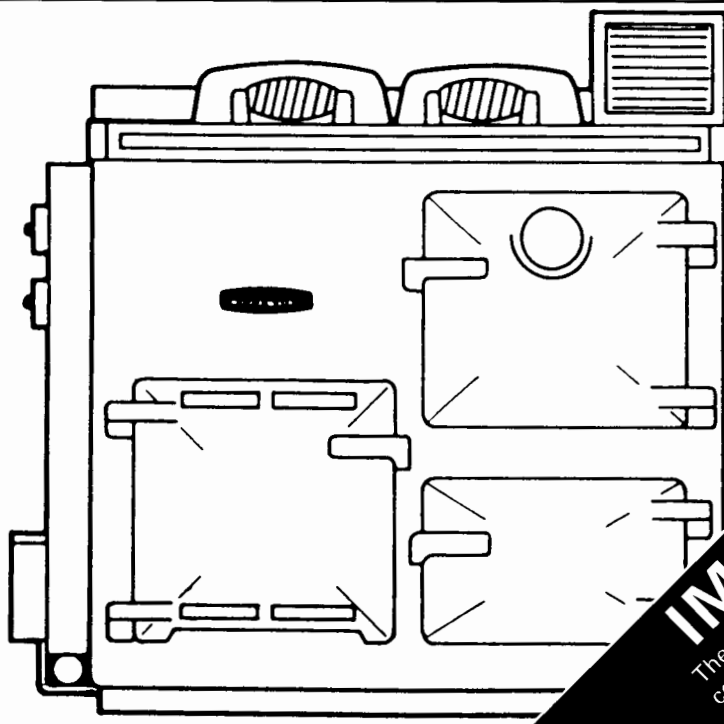
WINTER USE

An independent boiler oil burner controlled by an electric thermostat heats a hot water boiler to provide central heating in addition to the same cooker facilities provided in the summer. The boiler should be electrically controlled by a time switch or programmer to give selected heating use.

WARNING: IF THE APPLIANCE IS TO BE LEFT UNATTENDED FOR SEVERAL DAYS THEN THE COOKER BURNER SHOULD BE SWITCHED OFF.

Electrical Supply

WARNING: THIS APPLIANCE MUST BE EARTHED, AND HAVE ONLY ONE POWER SOURCE TO IT. THIS POWER SOURCE MUST BE CAPABLE OF BEING ISOLATED BY A SINGLE SWITCH.



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

The appliance is designed to operate on fully pumped systems with a time switch, gravity domestic hot water being provided by the cooker burner.

UNDER NO CIRCUMSTANCES SHOULD THE BOILER BURNER OPERATE WITHOUT THE PUMP RUNNING.

A 240v 50Hz electrical supply is required to the appliance. The unit is supplied with a 4 core 0.75mm² P.V.C cable x 3 metres long having a label attached to the end giving details of the colour coding and their function which MUST BE ADHERED TO. The appliance must be protected by a 5 amp fuse.

WHEN THE APPLIANCE IS BEING USED ON A TIME CLOCK IT MUST HAVE A FULLY PUMPED HEATING SYSTEM.

If the appliance is to be manually controlled without a time clock then it can be fitted with a 13 amp plug fused 5 amp and wired strictly in accordance to the installation instructions.

HOT BURNER: DO NOT TURN OIL ON UNTIL BURNER IS COOL.

BOILER BURNER: AN ILLUMINATED LOCK-OUT LAMP INDICATES A LOCK-OUT CONDITION. WAIT 3 MINUTES, THEN TURN THE BOILER THERMOSTAT KNOB 'OFF' THEN 'ON' TO RESTART BOILER BURNER CYCLE.

Cooking and Domestic Hot Water -Summer Use

1. Depress the trip lever **D** - see fig.1 on the front of the oil control valve **P** and turn the cooker oil control valve knob **C** to No.6 setting.
2. Switch power **ON** and set cooker thermostat knob **A** to No.6 setting. Allow 15 minutes for oil to enter and settle in cooker burner base.
3. Open outer burner door **E** adjacent to the bottom warming oven door, remove/lift out inner cooker burner door **F**.
4. Slide lighting cover **G** on the front of the burner shells, sideways to the left hand side and expose the three lighting ports.
5. Insert a lighted taper through the three lighting ports and light the front wicks, then close the lighting cover **G**.
6. Replace inner cooker burner door **F** and close outer burner door **E**.

NOTE: ENSURE INNER COOKER BURNER DOOR F IS CORRECTLY LOCATED AND SEALED.

7. Return thermostat knob **A** to its No.1 setting for about 20 minutes, until burner is hot, then re-set to No.6 for cooking.
 8. The cooker burner will gradually increase its oil rate, and raise the temperature of the oven, taking about 2½ hours from cold to attain an oven temperature of 200°C (400°F), leaving the cooker thermostat knob **A** at its No.6 setting.
- Re-set the cooker thermostat knob **A** to the desired setting and the oven temperature will continue to be thermostatically controlled.

NOTE: SEE COOK BOOK FOR RECIPES.

9. Set the cooker thermostat knob **A** to **LOW** which is the minimum setting when cooking is not required and idling rate is needed.
10. Ensure both hotplate insulating covers are closed down to conserve heat in hotplate.

Oven Thermostat Settings

The cooker thermostat control knob **A** is marked **LOW**, then 1 to 6, which provides various main oven temperatures with setting 6 being the highest temperature - see chart below.

Thermostat Setting	Main oven Temperature
LOW	LOW
1	140-160°C (284-320°F)
2	165-185°C (329-365°F)
3	190-210°C (374-410°F)
4	215-235°C (419-455°F)
5	240-260°C (464-507°F)
6	255-275°C (491-527°F)

Failure of Electrical Power

Should the failure of electrical power occur, it will not be possible to obtain thermostatic control over the cooking oven.

However cooking can be continued by manual control as follows:

1. High Fire rate can be obtained by engaging the actuating lever **B** on the top of the oil control valve **P** then push it to the left to engage in the notch of the cover.
Manual control can then be made by adjusting the cooker oil control valve knob **C** between the numbers 1 to 6 and re-setting the knob to suit the temperature indicator on the oven door corresponding with chart below.
2. Low Fire rate can be obtained by setting the cooker oil control valve knob **C** to No.1 setting where the oven temperature will be maintained at about 125°C (257°F).
With the restoration of electrical power, remember to reset the actuating lever **B** by disengaging it from the cover notch and setting the cooker oil control valve knob **C** to No.6 setting.
The thermostat will then control the oil rate.

Cooker Oil Control Valve Knob Setting	Oven Temperature
1	LOW
2	185-215°C (365-419°F)
3	215-240°C (419-464°F)
4	235-260°C (455-500°F)
5	255-280°C (491-536°F)
6	275-310°C (527-590°F)

To Turn Off Cooker Burner

- (a) With boiler burner not in use:
Lift the trip lever **D** on the front of the oil control valve **P** to shut off the oil supply the burner.
- (b) With boiler burner in use:
Turn the cooker oil control valve knob **C** anti-clockwise from No.6 setting to **OFF**.

WARNING: NEVER ATTEMPT TO RELIGHT A HOT BURNER. DO NOT TURN OIL ON UNTIL BURNER IS COLD.

To Heat the Top Main Oven and Increase Hotplate Temperature

Turn the cooker thermostat knob **A** to the required setting which will take up to 90 minutes to attain after initial warm up from cold.

When the top main oven temperature is reached, the required temperature will be maintained by the cooker thermostat.

HINT: THE COLD SOLID PLAIN SHELF CAN BE USED AS A HEAT DEFLECTOR, (AS WELL AS A BAKING SHEET), SLIDE ONTO THE RUNNERS TOWARDS THE TOP OF THE OVEN SO REDUCING TOP HEAT.

THE HOTPLATE

When the main oven is in use the hotplate will be hot enough for normal needs. The hotplate area above the main oven is used for simmering with the opposite end being the hottest.

At other times, increase the setting of the cooker thermostat knob **A** to increase the temperature of the hotplate.

Pans and kettles must have flat machined bases.

Use a wire brush to keep the hotplate clean.

WARMING OVEN

This is a low temperature suitable for warming serving plates and dishes. Although not intended as a cooking oven its temperature does vary with temperature of the main oven. As a guide, it is around a third the temperature of the main oven.

DOMESTIC HOT WATER ONLY (DHW)

The supply of domestic hot water to the cylinder is automatic and is at its maximum when the cooker thermostat knob **A** is on No.6, reducing as the cooker thermostat knob setting is reduced. The amount of hot water is increased if a considerable amount of cooking is performed. If more hot water is required overnight, set the cooker thermostat knob **A** to a higher setting than **LOW**, which is normally sufficient.

NOTE: IN THE CASE OF EXCEPTIONALLY HIGH DOMESTIC HOT WATER DEMANDS, IT IS RECOMMENDED THAT THE BOILER BURNER IS LIT VIA THE PROGRAMMER.

When the Cooker is Not in Use

During periods of the day when the cooker is not required, the cooker thermostat knob **A** should be set at

LOW to give the lowest burning rate which will in most cases give sufficient heat to the hotplate and hot water. Use the setting that meets your needs.

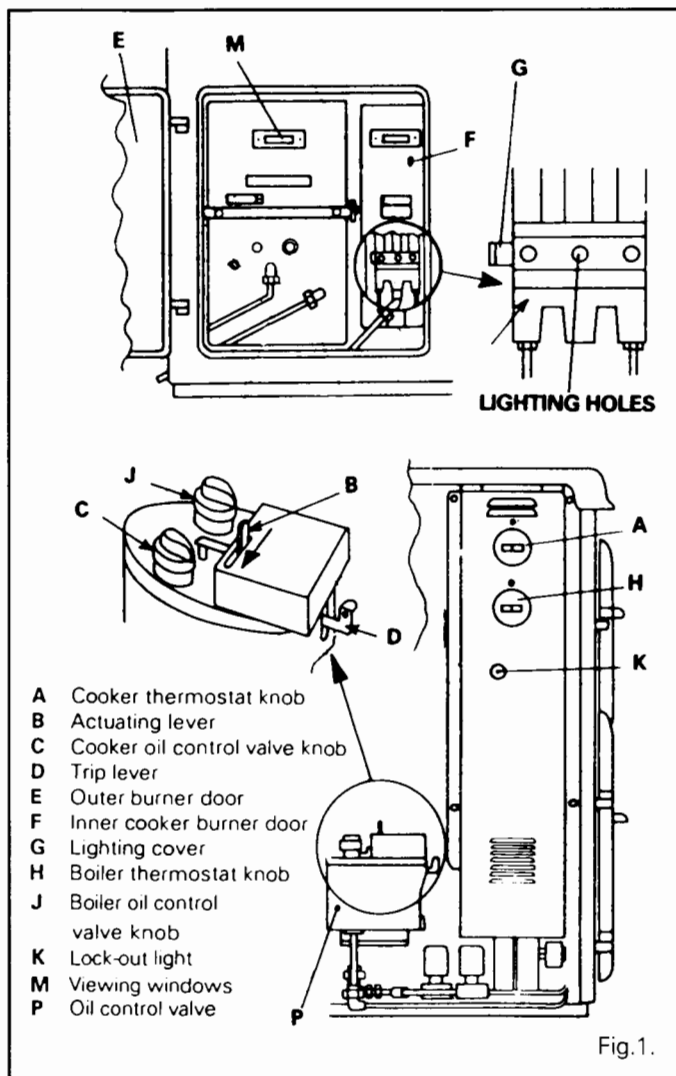


Fig.1.

Overnight

Turn the cooker thermostat knob **A** to **LOW** which gives the lowest burning rate and will maintain an oven temperature of about 125°C (257°F). At a higher setting the oil consumption will be higher, but the main oven, hotplate and domestic hot water will all be hotter.

Turn the cooker thermostat knob **A** to No.6 setting in the morning to increase the hotplate temperature and minimise the time to boil a kettle of water.

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

Cooking and Central Heating - Winter Use

Cooker Burner - Use as previously described.

LIGHTING THE BOILER BURNER

If a programmer or clock control is fitted to the installation, read the control instructions before lighting the boiler.

1. Ensure all oil valves are open and oil is in the oil control valve **P**.
2. Depress the trip lever **D** on the front of the oil control valve **P** and turn the boiler oil control valve knob **J** to No.6 setting.
3. Turn any time clock or programmer to **ON** and move any room thermostat pointer to a higher setting.

4. Switch **ON** the power supply and set the boiler thermostat knob **H** to a thermostat setting of 80°C (180°F) in cold weather and 60°C (140°F) in mild weather. THE LIGHTING SEQUENCE WILL NOW COMMENCE.

Lighting Sequence

- (i) Within 2½ minutes an ignited oil flame will be visible through the glass viewing window **M**.
- (ii) The flame will be confirmed and control passed to the boiler thermostat **H** until satisfied.
- (iii) The satisfied boiler thermostat will then shut-off the oil supply, but the fan remains energised on an overrun period of time 5-6 minutes and is then ready for the next cycle call.

Boiler Lock-out

Should this occur the boiler will cease to function and a lock-out light **K** will illuminate.

WAIT 3 MINUTES, TURN THE BOILER THERMOSTAT KNOB **H** 'OFF' THEN 'ON'

The lock-out light **K** will extinguish and the start-up cycle re-commence. Continued lock-out indicates a malfunction that requires qualified attention.

- 6. Set any programmer or room thermostat to the required setting and the boiler burner will come **ON** and **OFF** automatically upon heat demand.

TO TURN THE BOILER OFF

Turn **OFF** boiler thermostat knob **H**.
To relight, turn the boiler thermostat knob **H** to the required setting.

WARNING: IF AN EMERGENCY OCCURS LIFT THE TRIP LEVER **D OF THE CONSTANT LEVEL OIL VALVE, TO ISOLATE OIL FROM THE APPLIANCE.**

FROST PRECAUTIONS

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

BI-ANNUAL SERVICING

With normal use a boiler/cooker annual flueway clean and burner maintenance should be carried out immediately before and after the end of the heating season. An additional flueway clean half-way through the heating season may be necessary in some cases - see Servicing Instructions.

Both cooker **A** and boiler thermostat knobs **H** should be turned **OFF** by the User the night preceeding the day of servicing so that the appliance will have cooled down by the following morning. A hot appliance cannot be serviced.

CLEANING

REMEMBER TO BE CAREFUL OF THE HOT APPLIANCE.

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

If milk, fruit juice or anything containing acid is spilt on the top plate, or down the cooker, be sure to wipe it immediately or the vitreous enamel may be permanently discoloured.

The lining of both insulating covers should be raised and allowed to cool before cleaning with a soapy damp cloth.

DO NOT USE ABRASIVE PADS OR OVEN CLEANERS.

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

IMPORTANT: USE 28 SECONDS KEROSENE FUEL ONLY.

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



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AMENDMENT SHEET

REF PAGE 2

SECTION **Cooking and Domestic Hot Water
-Summer Use**

DELETE

7. Return thermostat knob A to its No. 1 setting for about 20 minutes, until burner is hot, then re-set to No. 6 for cooking.

8. The cooker burner will gradually increase its oil rate, and raise the temperature of the oven, taking about 2½ hours from cold to attain an oven temperature of 200°C (400°F), leaving the cooker thermostat knob A at its No. 6 setting.

Re-set the cooker thermostat knob A to the desired setting and the oven temperature will continue to be thermostatically controlled.

REPLACE WITH

7. Return thermostat knob A to its Low setting for about 20 minutes, until burner is hot, then re-set to MAX for cooking.

8. The cooker burner will gradually increase its oil rate, and raise the temperature of the oven, taking about 2½ hours from cold to attain an oven temperature of 200°C (400°F), leaving the cooker thermostat knob A at its MAX setting.

Re-set the cooker thermostat knob A to the desired setting and the oven temperature will continue to be thermostatically controlled.

REF PAGE 2

SECTION **Oven Thermostat Settings**

DELETE

Oven Thermostat Settings

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REPLACE WITH

Oven Thermostat Settings

The cooker thermostat control knob A is marked **LOW**, and with the main centre oven temperatures.

DELETE

The supply of domestic hot water to the cylinder is automatic and is at its maximum when the cooker thermostat knob A is on No. 6, reducing as the cooker thermostat knob setting is reduced. The amount of hot water is increased if a considerable amount of cooking is performed. If more hot water is required overnight, set the cooker thermostat knob A to a higher setting than **LOW**, which is normally sufficient.

REPLACE WITH

The supply of domestic hot water to the cylinder is automatic and is at its maximum when the cooker thermostat knob A is on highest setting reducing as the cooker thermostat knob setting is reduced. The amount of hot water is increased if a considerable amount of cooking is performed. If more hot water is required overnight, set the cooker thermostat knob A to a higher setting than **LOW**, which is normally sufficient.

DELETE**Overnight**

Turn the cooker thermostat knob A to **LOW** which gives the lowest burning rate and will maintain an oven temperature of about 125°C (257°F). At a higher setting the oil consumption will be higher, but the main oven, hotplate and domestic hot water will all be hotter. Turn the cooker thermostat knob A to No. 6 setting in the morning to increase the hotplate temperature and minimise the time to boil a kettle of water.

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

REPLACE WITH**Overnight**

Turn the cooker thermostat knob A to **LOW** which gives the lowest burning rate and will maintain an oven temperature of about 125°C (257°F). At a higher setting the oil consumption will be higher, but the main oven, hotplate and domestic hot water will all be hotter. Turn the cooker thermostat knob A to **MAX** setting in the morning to increase the hotplate temperature and minimise the time to boil a kettle of water.

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P.C.B.
2amp ANTI-SURGE

Installation and Servicing Instructions for Rayburn Oil Nouvelle Central Heating Cooker

Mk III

Consumer Protection Act 1987

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Control of Substances – Health and Safety

IMPORTANT:

This appliance could contain any of the materials that are indicated

FUSE

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

Firebricks – 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.

IMPORTANT: IN ORDER TO MAINTAIN OPTIMUM PERFORMANCE FROM THIS APPLIANCE, IT IS ESSENTIAL THAT THE INITIAL COMMISSIONING IS UNDERTAKEN BY SELECTED, TRAINED INSTALLATION/SERVICING ENGINEERS. YOUR RAYBURN STOCKIST WILL PROVIDE ADVICE ON THE LOCATION OF THE NEAREST INSTALLING ENGINEER, AND WE RECOMMEND YOU CONTRACT OUT THE PERIODICAL SERVICING OF THE APPLIANCE TO THIS ENGINEER.

INTRODUCTION

The Rayburn Oil Nouvelle is a combined cooker/boiler appliance, providing central heating, domestic hot water and cooking facilities.

It is available with a vertical flue outlet only. The cooker burner operates on natural draught. The boiler burner is fan assisted in conjunction with full sequential controls.

The boiler is designed for use with open vented water systems only. Operating either with gravity D.H.W. via the cooker burner (for Summer use) or a modified Fully Pumped Central Heating Systems as detailed in these instructions.

		Cooker Only LOW	Cooker Only HIGH	Cooker LOW Boiler ON	Cooker HIGH Boiler ON
Heat Input	kW Btu/h	2.9 9,870	8.2 28,000	26.6 90,900	31.97 110,100
Heat Input Water	kW Btu/h	0.85 2,900	2.5 8,530	18.4 62,900	20.0 68,530
Oil Input Rate	cc/minute	4.5 – 4.75	13.0 – 13.5	42.50 – 44.75	51.0 – 53.5

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.

Oil Valve Inlet Rp ¼ (¼in BSP int)

Flue Outlet Dia. 127mm (5in int)

Electrical Supply 240V ~ 50Hz 5 amp Fused

Weight Capacity of

Boiler 12.5 litres (2.75 galls)

Weight of

Appliance 348kg (766lb)

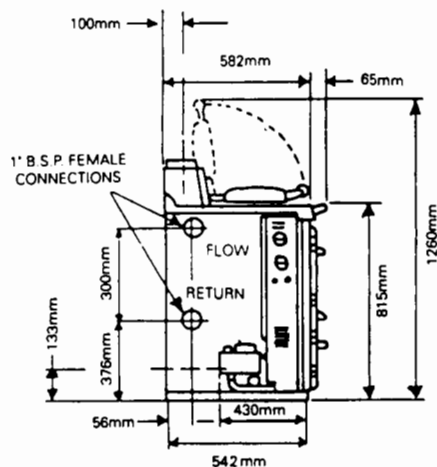
Appliance Overall Height: 975mm

Dimensions Width: 997mm

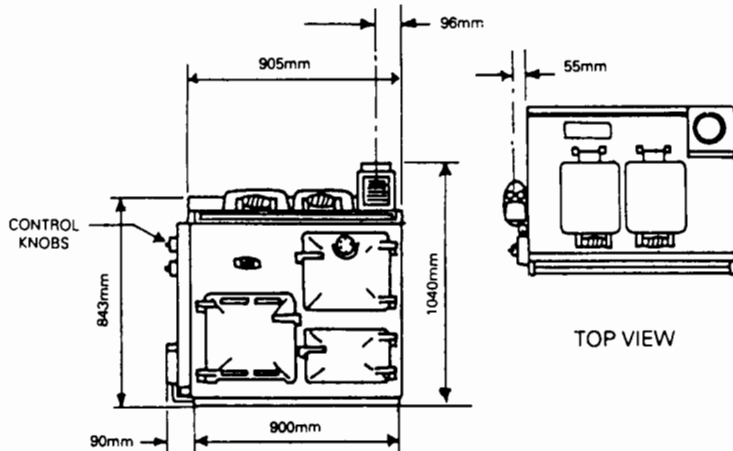
Depth: 647mm

FUEL - COMMERCIAL KEROSENE

28 Seconds to BS.2869: Part 2: Class C2.



END VIEW



FRONT VIEW

TOP VIEW

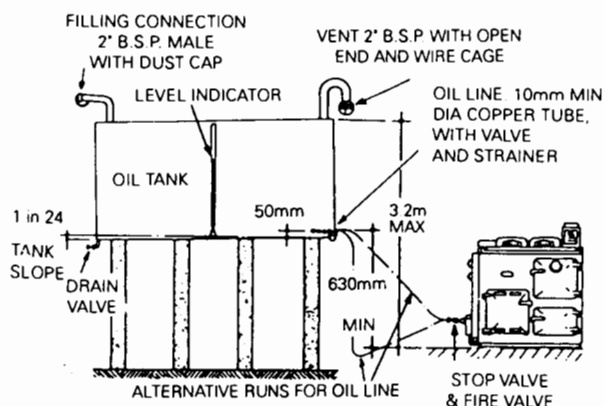


Fig.1 - Oil Storage Tank and Pipeline details

INSTALLATION INSTRUCTIONS

The installation of the appliance must be in accordance with the relevant requirements of the current Building Regulations, current I.E.E. Wiring Regulations and the byelaws of the local Water Authority. It should be in accordance with any relevant requirements of the Local Authority and the relevant recommendations of the following current British Codes of Practice:

BS. 5410 Installation of oil fired space heating and hot water supply purposes. Part 1. Boilers of rated output not exceeding 44kW.

BS. 5449 Central heating for domestic premises. Part 1. Forced circulation hot water systems.

Building Regulations

J/1/1/2 Provision for introduction of air supply and discharge of products of combustion for appliances. Section 1-Parts A and B.

BS. 4543 Specification for chimney for oil fired appliances. Part 3.

Building Regulations

J/1/2/3 Provision for protection against fire and heat.

EXTERNAL TERRAIN

Before commencing Installation assess the location of the site, whether there are tall trees, buildings or hills close by that may affect flue draughts as this will

determine the choice of flue terminal. See "Chimney Terminations".

Appliance Hearth

This appliance must be installed on a solid floor, base plinth made of incombustible material which is capable of supporting the total weight.

LOCATION

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

OIL STORAGE - see Fig.1

The minimum recommended oil tank size is 1400 litres (300 gallons) and the Codes of Practice governing its installation are covered by BS.5410.

The requirements for mild steel tanks should be to BS.799: Part 5 and advice should be sought from the manufacturers for the installation of Plastic Oil Tanks as an alternative consideration.

Oil Pipe Line

The oil line from the storage tank to the appliance **MUST** be fitted with a remote acting fire valve such as Teddington KBB 95.

A 5-10 micron oil filter should also be fitted in the oil line, and the minimum size of the copper oil pipe line should not be less than 10mm diameter.

A stop valve must be fitted near the appliance, in an accessible position.

FLUE SYSTEM - see Fig.2

Detailed recommendations for fluing are given in the current Building Regulations J/1/2/3.

The following notes are intended to give general guidance:-

The cross sectional area of the flue serving the appliance must be not less than the area of the flue outlet of the appliance and be at least 4.5m high. The flue pipe to be used must be not less than 125mm (in) internal diameter. Flue pipes and fittings should be constructed from one of the following materials:-

- a) Mild Steel with a wall thickness of 3mm minimum
- b) Stainless Steel to BS. 1449 Part 2
- c) Cast Iron to BS. 41
- d) Mild Steel, acid resistant vitreous enamel lined to BS. 1344 Part 2

This appliance requires a Class 1 flue.

CHIMNEYS

Chimneys should be built of masonry or be assembled from factory-made insulated components. Masonry chimneys may be built of any masonry material, with a lining, or if flue blocks, without a lining. The chimney lining should be 150mm minimum diameter and be formed of moisture and acid resistant liners to BS.1181 with rebated or socketed joints uppermost. Alternatively, linings may be imperforate clay flue pipes as described in BS.65 or flue blocks to BS. 1289 and installed to BS.6461 Part 1. An 150mm minimum diameter factory-made insulated chimney, complying to BS.4543 may be fitted and installed to BS. 7566 Parts 1 to 4.

Chimney Terminations

All chimneys should terminate above roof level in accordance with current Building Regulations and statutory requirements as outlined in BS. 6461: Part 1 and BS. 7566: Parts 1 to 4.

NOTE: If the house is subject to down draughts or if there are large buildings, hills, or tall trees close by that may cause down draughts then an anti-down draught cowl **MUST** be fitted. For standard chimneys this could be an OH or Marcone pot. If the flue is factory made prefabricated metal flue then a proprietary cowl can be used for this purpose.

Chimney Cleaning

Ensure there are accessible airtight flue cleaning doors in order to obtain cleaning access to the complete chimney. Providing the appliance is operating correctly, an annual chimney flue cleaning will suffice, but if in doubt, arrange for a half yearly clean, preferably at the beginning/end of the central heating season.

High Chimney Draughts

The appliance is fitted with an integral flue stabiliser, able to control the draught in the flue pipe to about 6.0mm w.g. A well sealed, tall exposed chimney on a hill, is an instance where generated draughts could be in excess of this figure.

Should this occur, a flue stabiliser must be fitted either in the flue pipe or chimney, but in the same room as the appliance.

Draughts in excess of 6.0mm w.g. must then be controlled by adjusting this additional stabiliser down to this figure.

AIR SUPPLY

Detailed recommendations for air supply are given in the current Building Regulations J/1/2/3.

The following notes are intended to give general guidance:-

The minimum effective area of the permanent air vent in the outside wall must be 82.5cm² (12.8in²).

Air Extract Fans

Building Regulations 1990 permit the installation of an air extract fan in a kitchen containing an oil fired appliance. The appliance must be able to operate effectively whether or not the fan is running as follows:-

1. Ensure the fan duty is capable of coping with the respective kitchen room volume. Avoid an oversize fan duty performance.
2. Follow the directions recommended by the fan manufacturer on the necessary air ingress needed for the fan or overhead cooker hood, then add this compensatory area to that recommended for the appliances primary air needs, to form a permanent air vent.
3. Ensure the wall location of the fan does not deprive the appliance of primary air.

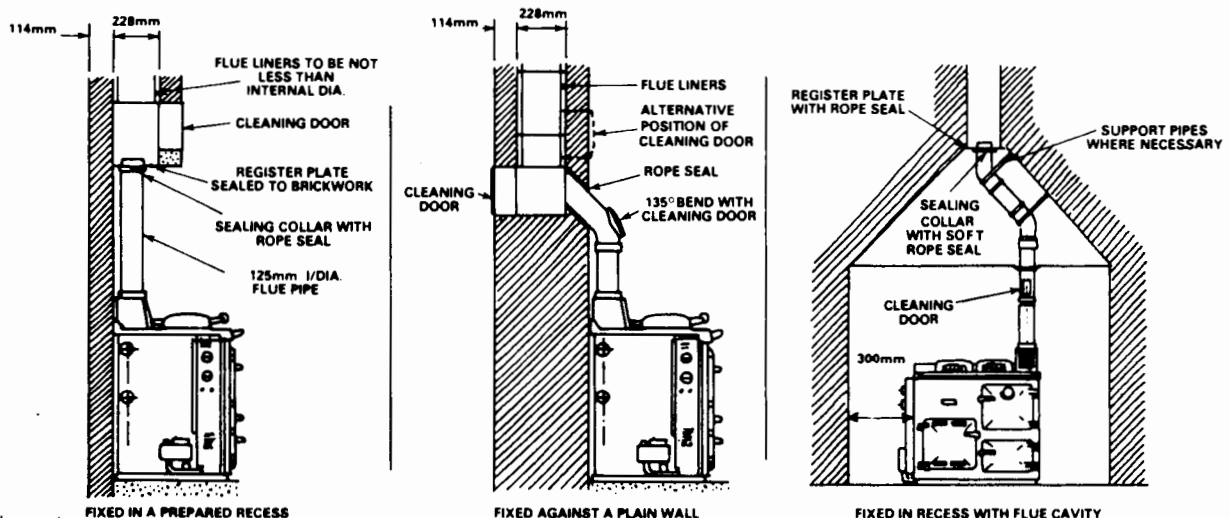


Fig.2 - Flue Layouts

WATER CIRCULATION SYSTEMS

Detailed recommendations for the water circulation system are given in BS.5449:1 (for smallbore and microbore central heating systems) and CP. 342.

Draining taps must be located in accessible positions which permit the draining of the whole system, including the appliance and hot water storage vessel. Draining taps should be at least ½in BSP nominal size and be in accordance with BS. 2879.

The appliance boiler section should be connected to a cistern water supply, subject to a maximum head of 18.25m.

A suggested fully pumped system is shown in Fig.3.

However when deciding on the type of system - **NOTE** the following requirements:-

1. The circulating pump **MUST** be running when the boiler burner is on.
2. The system **MUST** be capable of gravity feed to the domestic hot water tank without the pump running. This allows the cooker burner to provide domestic hot water without the aid of the pump for summer use, and in case of electrical power failures.

FAILURE TO DO THIS WILL INVALIDATE THE WARRANTY.

Boiler Output	17.6kW (60,000 Btu/h)
Temperature differential across the boiler	10°C - 14°C (18°F - 25°F)
Water Flow Rate	1091 - 1515 litres/h (240 - 333 galls/h)

Refer to boiler section pressure loss curve - Fig.4.

Circulation Pump

It is recommended that the selected pump be of a proprietary type and manufacture, and be 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 be fitted in a readily accessible position.

It may be positioned either on the boiler section flow or the return depending on the system design.

The boiler section pressure loss curve, see Fig.4 indicates the loss of head across the boiler section and should be considered when selecting the correct pump size.

Gravity Domestic Hot Water and Pumped Heating

The 28mm O.D. primary flow pipe must rise continuously from the boiler section to the cylinder to ensure good gravity circulation and extended to provide an open vent. The 28mm O.D. primary flow and return pipes must not exceed 10m in length. Pipe runs in excess of 5m must be lagged.

To obtain Domestic Hot Water gravity circulation with the circulating pump on, the special injector tee (supplied with the appliance) must be connected to the heating/cylinder return pipes with the outlet of the tee connected directly to the boiler return pipe within 600mm.

NOTE: THIS PROVIDES DOMESTIC HOT WATER FROM THE COOKER BURNER ONLY - WHEN THE BOILER IS GOING THE PUMP MUST BE RUNNING. UNDER NO CIRCUMSTANCES SHOULD THE BOILER BURNER OPERATE WITHOUT THE PUMP RUNNING.

Fully Pumped System

The domestic hot water flow pipes may be pumped provided that domestic hot water gravity circulation can take place in the event of pump failure or loss of electrical power or when the pump and boiler burner cuts out, either due to circuit satisfaction or end of programme. See Fig.3 for system schematic. The boiler section is suitable for use with most types of central heating control systems.

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.

Hot Water Storage Vessel

It is recommended that an indirect 190 litre (40 gallo.) hot water storage cylinder of the double feed type complying with the BS. 1566 Part 1: DF Type 10.

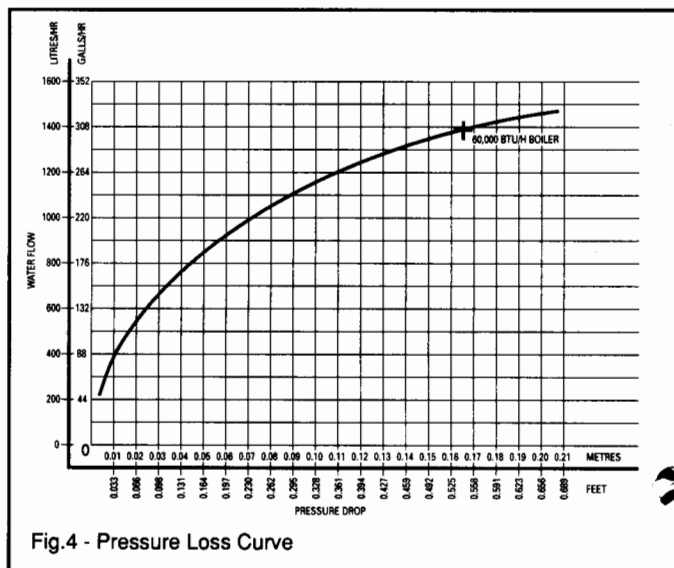
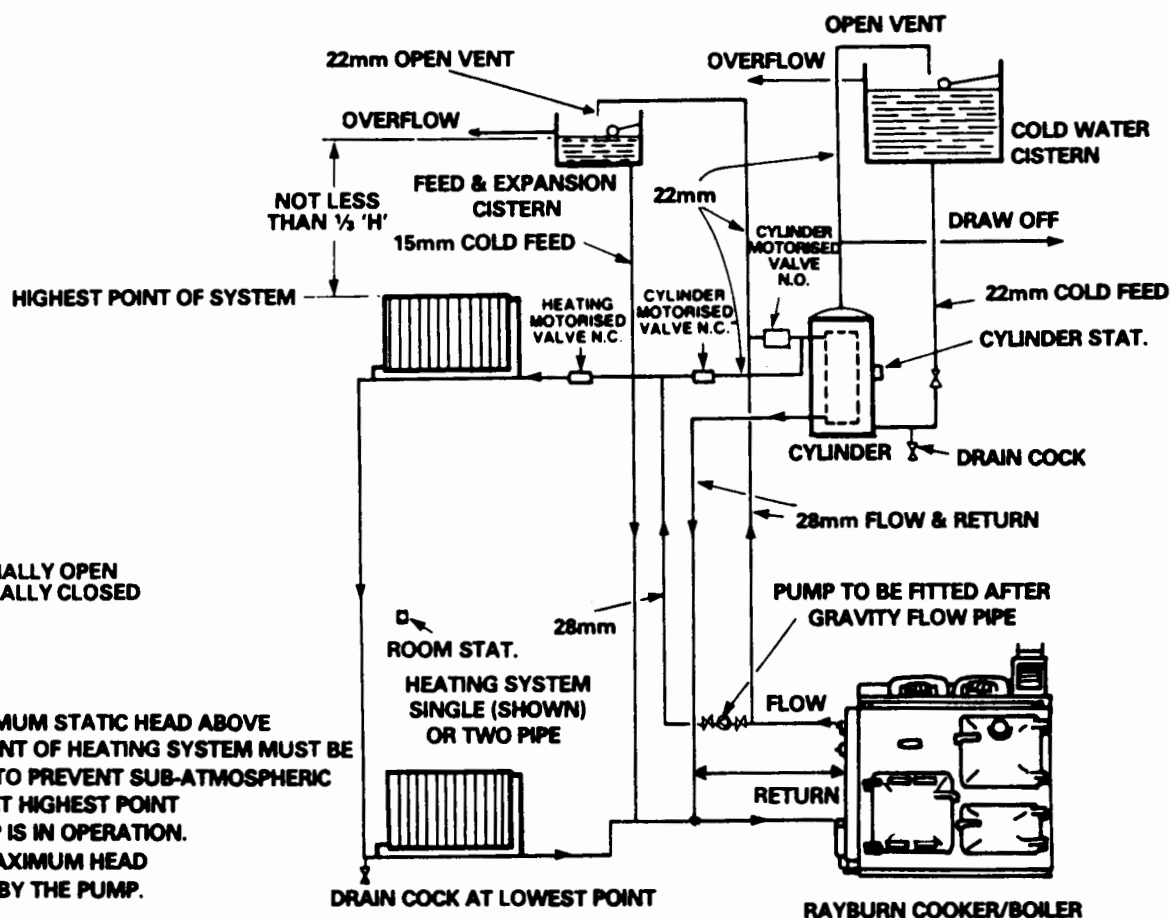
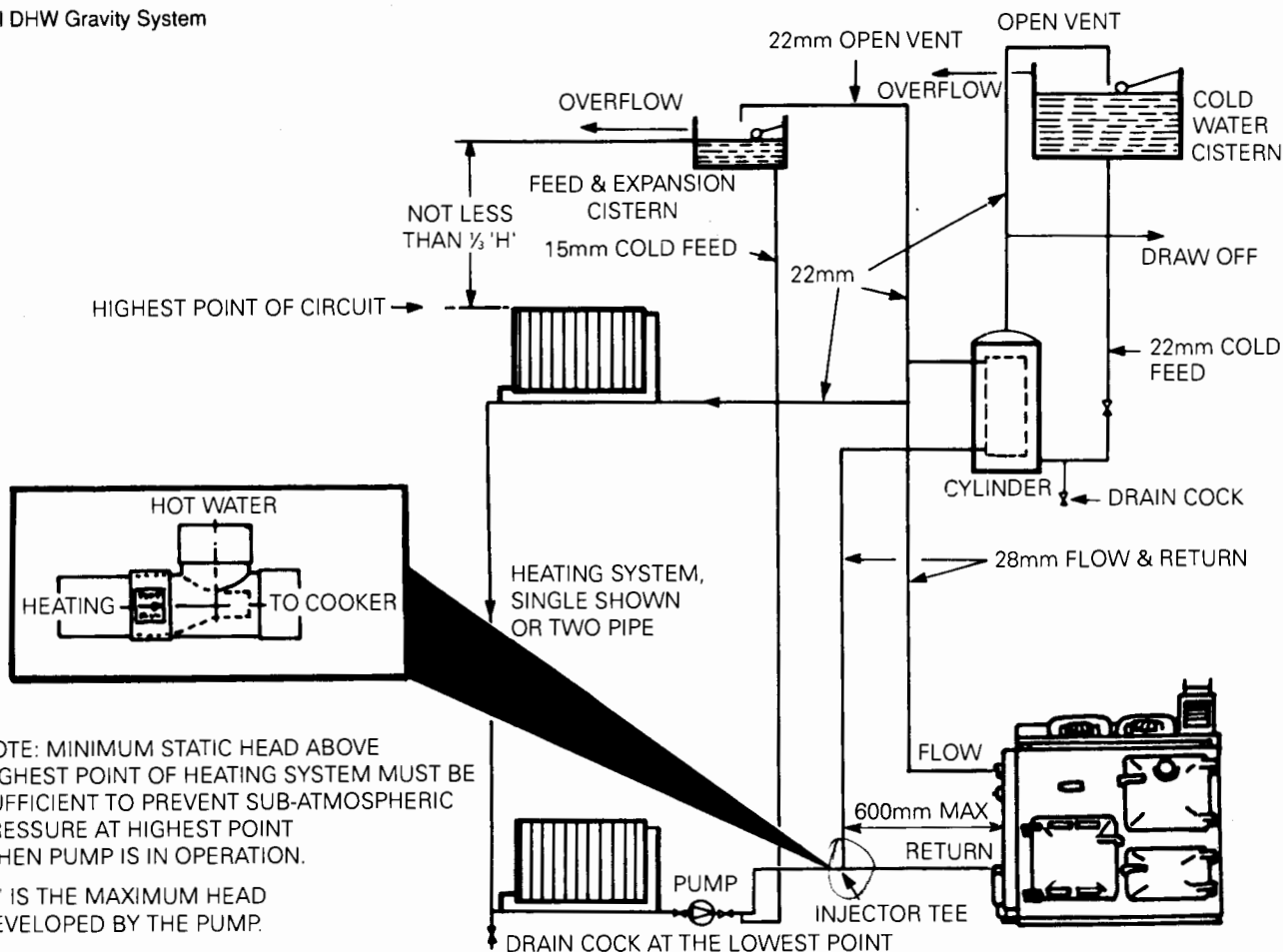


Fig.4 - Pressure Loss Curve

Typical DHW Gravity System



N.O. = NORMALLY OPEN
N.C. = NORMALLY CLOSED

NOTE: MINIMUM STATIC HEAD ABOVE HIGHEST POINT OF HEATING SYSTEM MUST BE SUFFICIENT TO PREVENT SUB-ATMOSPHERIC PRESSURE AT HIGHEST POINT WHEN PUMP IS IN OPERATION.

'H' IS THE MAXIMUM HEAD DEVELOPED BY THE PUMP.

IMPORTANT: UNDER NO CIRCUMSTANCES SHOULD THE GRAVITY SYSTEM BE ISOLATED WHEN HEATING AND CYLINDER MOTORISED VALVES ARE CLOSED ON PUMPED PART OF CIRCUIT.

Fig. 3 - Typical Pumped System

ELECTRICAL SUPPLY

Wiring external to the appliance must be installed in accordance with the current I.E.E. Wiring Regulations and any local regulations which apply. The boiler is supplied for 240 volt, 50 Hz and fuse rating of 5 amps.

The method of connection to the mains electricity supply should facilitate complete electrical isolation of the appliance, preferably by the use of an unswitched shuttered socket-outlet in conjunction with a fused three-pin plug both complying with the requirements of BS.1363 and controlled by a 30 mA Residual Current Circuit Breaker (R.C.C.B.).

Alternatively, a fused double-pole switch having a contact separation of at least 3mm serving only the appliance may be used.

The point of connection to the mains should be readily accessible and adjacent to the appliance.

For wiring instructions, see Fig.6.

NOTE: THE OIL FEED LINE MUST BE EARTHED TO THE FUSEBOARD.

ELECTRICAL CONNECTIONS

A 240v - 50Hz electrical supply is required near to the appliance. The appliance is designed for use with a timer and thermostats for the best control and economy, as a result the appliance is supplied with a 3 metre of 0.75mm² - 4 core cable which must be connected as described below and under "Electrical Supply":

A label attached to the end of the flexible cable gives details of the cable core colour coding and their function must be strictly adhered to.

When connecting the appliance to the timer observe the following colour sequence.

1. The wire coloured green and yellow is the Earth going to the common earth in the timer marked E.
2. The Blue coloured wire is the Neutral and must be connected to the terminal marked N or coloured Black.
3. The Brown wire is the live and must be connected to the terminal marked L or Red on the timer.
4. The Black wire is the switched live. This wire is connected to the output of the timer. This will put power on to the boiler burner.

NOTE: WHEN WIRING THE INSTALLATION IT MUST BE REMEMBERED THAT THE PUMP MUST BE ON WHILE THE BOILER BURNER OPERATES.

5. The wiring of the pump is dependant on its position relative to the appliance. Where it is close to the appliance then it can be wired directly into terminals on the control panel, marked PUMP.
6. Details of the wiring of the appliance and system are given in figures 5 and 6.
7. UNDER NO CIRCUMSTANCES SHOULD THE APPLIANCE HAVE MORE THAN ONE POWER SOURCE. ALL POWER TO THE APPLIANCE MUST GO THROUGH ONE SINGLE 5 AMP FUSED ISOLATOR SWITCH.

8. The four core cable supplied with the cooker is connected from oil valve L and N on terminal block and 2 and 3 on electric head.

INSTALLATION OF APPLIANCE

General

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

Between wall and L.H. side of appliance

300mm

Between wall and R.H. side of appliance

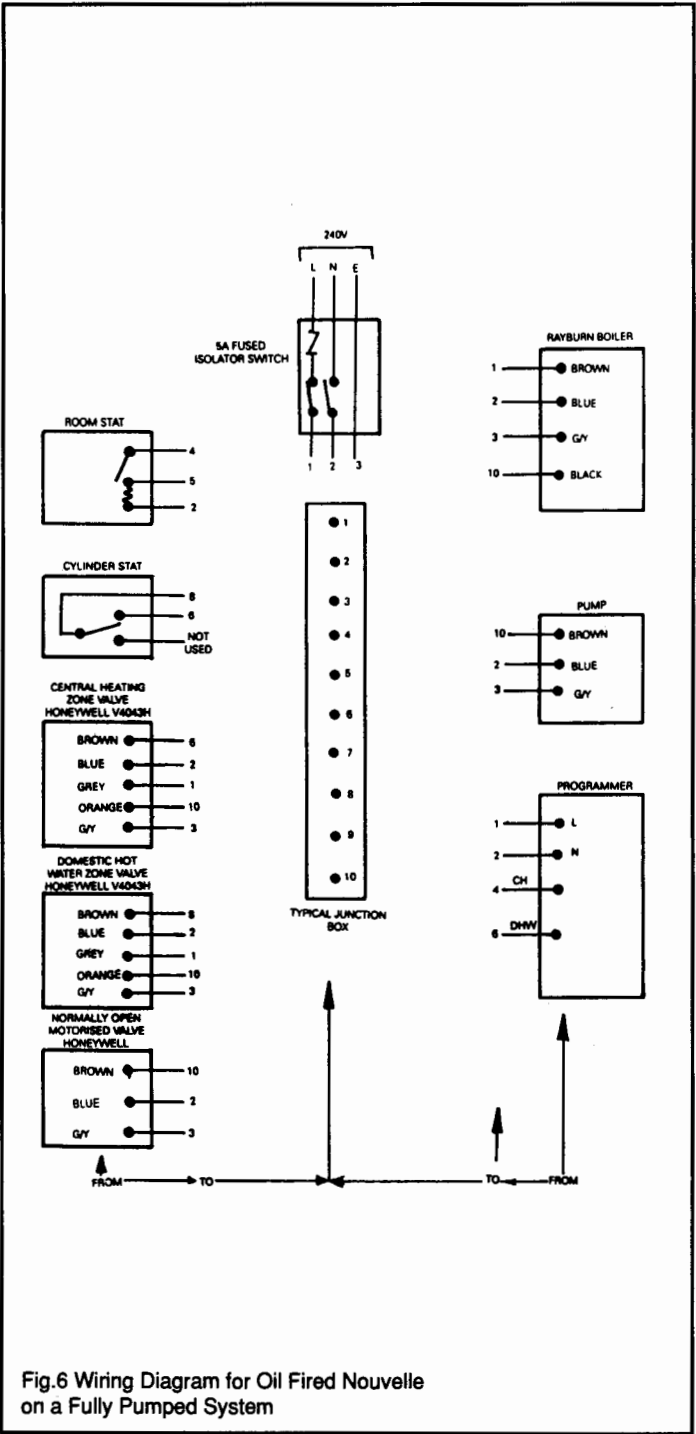
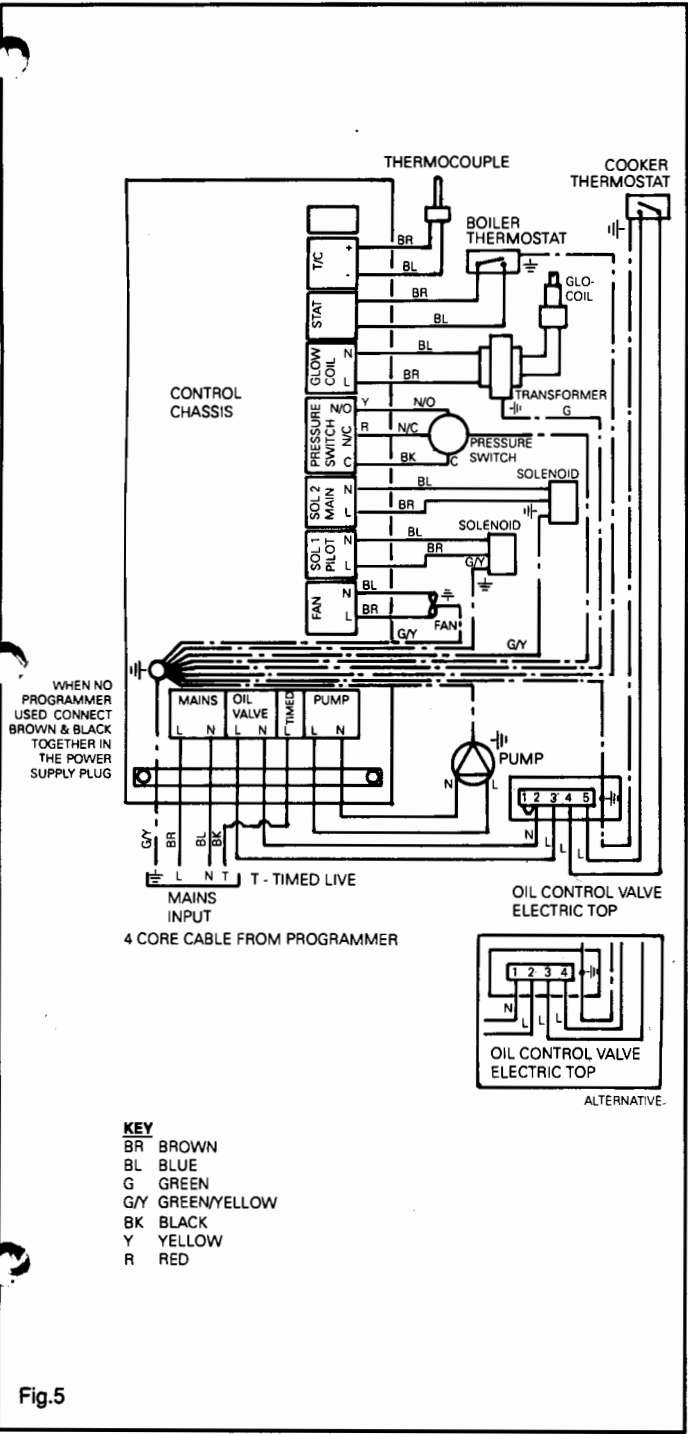
Zero

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.

For System Wiring Diagram See below. UNDER NO CIRCUMSTANCES SHOULD THE APPLIANCE HAVE TWO SEPARATE POWER SOURCES. ALL POWER MUST GO THROUGH ONE SINGLE 5A FUSED ISOLATOR SWITCH.

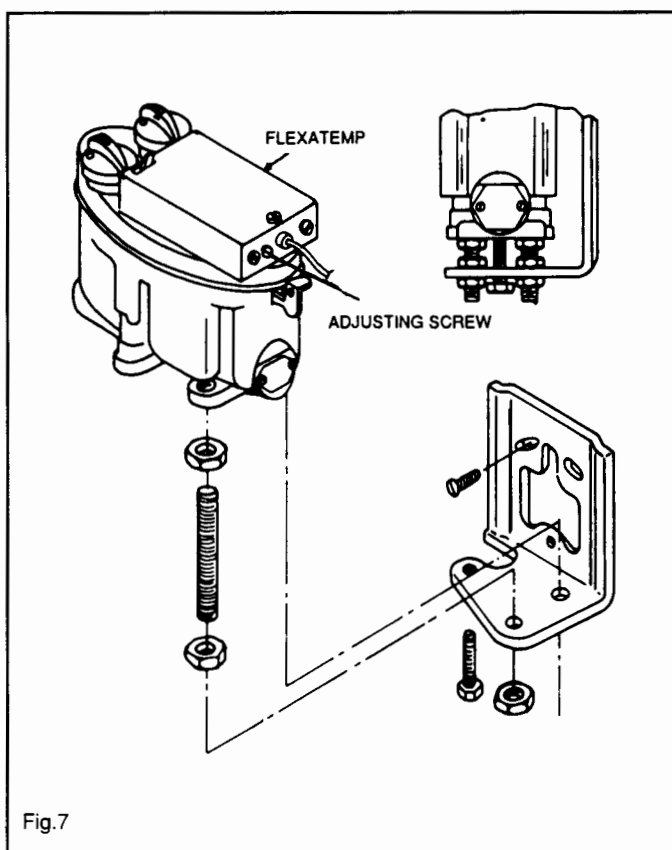


OIL CONTROL VALVE INSTALLATION

1. Fit and lightly secure oil control valve support bracket to cooker LH side panel. See Fig.7.
Using a spirit level, check that the horizontal face of the support bracket is level in all directions, then tighten and secure bracket fixing screws.
2. Fit and align boiler burner feed, minus the solenoids to the oil control valve outlet.
3. Mount oil control valve on support bracket and adjust its height (via locknuts) so that the "OIL LINE" mark on the LH side of the oil control valve body, measures a vertical height of 182mm from the valve body "mark" to the floor.
4. Refit solenoids.

NOTE: IF THE APPLIANCE IS MOUNTED ON A PLINTH, ADD THE HEIGHT OF THE PLINTH TO THE DIMENSION GIVEN. CHECK USING A SPIRIT LEVEL, THAT THE TOP OF THE VALVE IS LEVEL IN ALL DIRECTIONS.

DO NOT FIT FLEXATEMP AT THIS POINT



BURNER INSTALLATION

Although the boiler burner has been approximately set, it will be necessary to check the levelling of the burner and the oil depth within it. The cooker burner must also be checked for being level in ALL directions and oil depth. This is necessary to ENSURE a boiler burner pot oil depth of 15-17mm, and a cooker burner oil depth of 10mm.

Boiler Burner

1. Open the outer burner door E, and remove. Lift off, the cooker burner door F. Remove knobs and electrical cover panel on L.H. side. See fig.10.
2. (i) Unscrew the pinch screw locating the Flame sensor and withdraw it from the burner front plate. See fig.10.
(ii) Detach the electrical connections to the glo-coil. See fig.10.
3. Slacken off bolts on tie bar retaining the boiler burner, and remove tie bar.
4. Holding the strap handle on the front of the burner withdraw horizontally until clear of the appliance. See fig.12.
5. (i) Lift out top Vee baffle.
(ii) Remove the two end baffles and inter stage baffles from within the boiler burner.
(iii) Check that the wick on the glo-coil is attached to the glo-coil bracket and that the free end is well down and in contact with the pot reservoir.

WICK MUST NOT TOUCH COIL - 2-3mm CLEARANCE.

CHECKING THE BOILER BURNER OIL LEVEL

- (iv) Check that burner base plate in combustion chamber is level. Remove hot plate. Remove boiler cover plate. Remove the two front centre bricks from the boiler heating exchanger.
- (v) In order to check level of burner it is recommended that a flat plate of metal approximately 135mm x 250mm, is placed on the top of the pot and a right angle spirit level laid on this.
- (vi) Insert the boiler burner (minus any baffles) ensuring it is fully engaged.
- (vii) Fit tie bar - Holding down burner front tighten tie bar bolts.
- (viii) Viewing from above check level of burner. If not level then remove boiler burner again and adjust the burner base plate accordingly. Then re-check the levelling as before.
- (ix) Connect the main oil feed pipe between the oil control valve and the appliance.

NOTE: IN ALL CASES, BOTH OIL PIPES MUST RISE CONTINUOUSLY FROM THE LOWEST POINT AVOIDING PIPE KINKS. ON INITIAL COMMISSIONING AIR MAY HAVE TO PURGED FROM BOTH PIPES TO OBTAIN OIL FLOW.

(x) Connect oil supply pipe from tank to inlet of Oil Control Valve. - open all oil valves to allow oil into the control valve.

(xi) Depress trip lever D on the front of the oil control valve P (See Fig.10) and turn on the boiler oil control knob J to No.6 setting.

(xii) Connect MAIN burner solenoid to 13A plug and extension lead - switch on power to solenoid.

This will allow oil to flow to the burner without activating the main controller.

(xiii) Wait about 10-15 minutes until the depth of oil within the burner settles. Lower a dip stick through the hot plate aperture, until it seats onto the burner base at its centre. Remove the dip stick and measure the depth of oil which must register 15-17mm depth.

To Correct Oil Depth

For small adjustments (1-2mm) - adjust oil control valve height - for adjustments greater than this it may be necessary to adjust the height of the burner base plate. Should this be necessary then switch off the solenoid - disconnect the pipe work and remove the burner - release the locking bolts on the base plate and turn the slotted setting screws to the required position - recheck levelling of base plate, - replace burner and pipe work - switch on solenoid and recheck oil depth.

When correct connect oil solenoids to the control panel.

WHEN CORRECT ENSURE THE VALVE IS LEVEL IN ALL DIRECTIONS AND SECURE - INCLUDING THE REAR SUPPORT SCREW. THIS MUST BE FITTED AND SUPPORTING THE REAR OF THE VALVE. OTHERWISE OIL RATES CAN CHANGE OVER A PERIOD OF TIME.

(xiv) Disconnect main solenoid from power supply and wire it and the pilot solenoid into the control panel.

(xv) Turn Boiler knob J to OFF Fig.9, disconnect the main inlet oil feed and the pilot feed at the front of the burner. Collect the oil spillover into a receptacle, then proceed to withdraw the boiler burner as previously indicated.

(xvi) Replace the two interstage baffles, the end baffles, and the top VEE baffle. ENSURING THE CORRECT LOCATION OF EACH BAFFLE.

(xvii) Re-insert the boiler burner into the combustion chamber ensuring it is fully engaged, refit the tie bar and secure with the tie bolts - DO NOT ALLOW THE BURNER FRONT TO LIFT AS IT IS TIGHTENED UP.

(xviii) Re-connect the main and pilot oil feed pipes as previously described.

(xix) Re-connect electrical cables to glo-coil terminals, ensuring that the shakeproof washer is fitted under the Glo-Plug Locking Nut. - Insert Flame Sensor into burner front plate and secure.

Adjust fire bricks so that there is a gap between them in the centre.

(xx) Replace boiler front fire bricks, boiler cover plate and hot plate assembly. Ensure boiler cover plate is down correctly, that the front screw is secure and that the rope gasket is sealing.

(xxi) Check oil flow rate to main burner. - This should be 8 - 40 cc/min as measured by the DRIP FEED METHOD. FOR SETTING THE OIL RATES SEE SECTION ON SETTING THE OIL CONTROL VALVE.

COOKER BURNER

1. Open outer burner door and lift/remove R.H. cooker inner burner door.

2. Remove combustion chamber blanking plate and disconnect oil feed pipe.

3. Remove burner base and air spreader plate

4. Check length of rear pin, this should be 67mm if necessary adjust accordingly. See Fig.10.

5. Replace burner base into combustion chamber and check base is level in all directions. ENSURE THAT THE LEGS OF THE BASE ARE ENGAGED IN THE ROUND RECESSES PROVIDED.

There are three - two at the front and one at the rear.

It is essential this is done or any adjustment on height or level of the burner WILL BE WRONG.

6. Connect oil supply pipe and turn cooker control knob to No.6 this will allow oil into the burner base. Allow approximately 10-15 minutes for the oil level to stabilise. - then test oil depth this should settle to a depth of 10mm.

7. To correct oil depth, slacken the nuts securing the threaded support legs and adjust leg height to suit.

Re-check that the burner is level in all directions.

8. With the burner level and a constant oil depth of 10mm tighten the locking nuts on the oil burner levelling screws.

IMPORTANT: THE COOKER BURNER BASE MUST BE LEVEL IN ALL DIRECTIONS AND THE OIL DEPTH STABLE AT 10MM.

Switch off oil, drain and disconnect.

Remove cooker burner base

Fit the vapourising chamber plate to the oil burner base then place the burner shell assembly **B** on to the burner base **G** and locate same. Check that the joint between the oil burner base and burner shells, is near airtight, otherwise, unacceptable air gaps may result in burner light-back with ignited fuel occurring below the oil burner base. Remove the shells, replace wicks in oil burner wick grooves and ensure vapourising chamber plate is seated correctly. Refit burner shells, ensuring correct fit and location, then place burner assembly in combustion chamber base.

Reconnect the cooker oil feed pipe **J** to burner oil feed pipe elbow **H** and tighten.

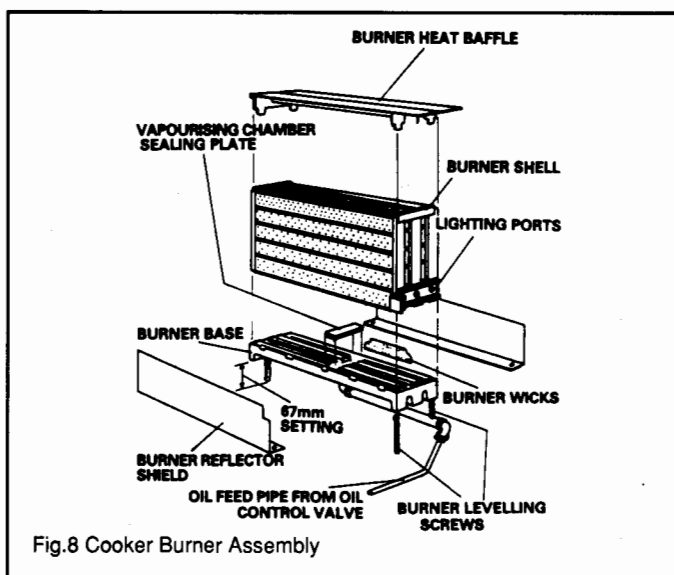


Fig.8 Cooker Burner Assembly

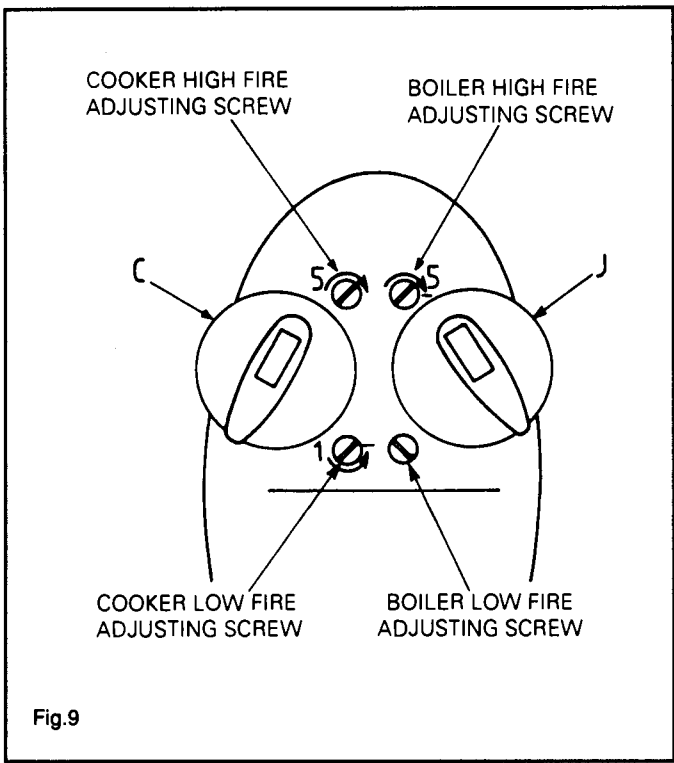


Fig.9

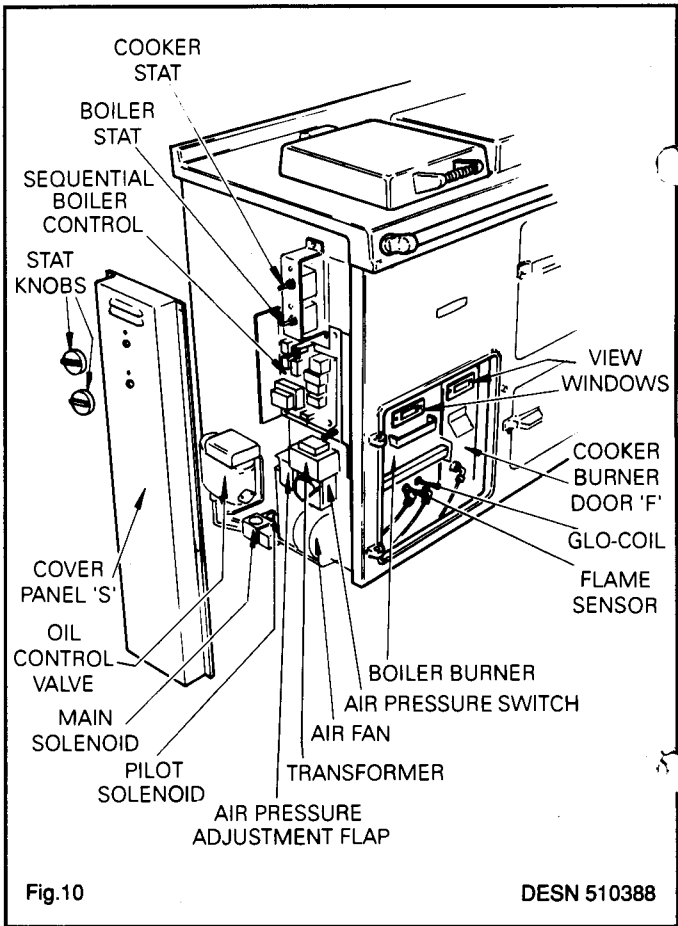


Fig.10

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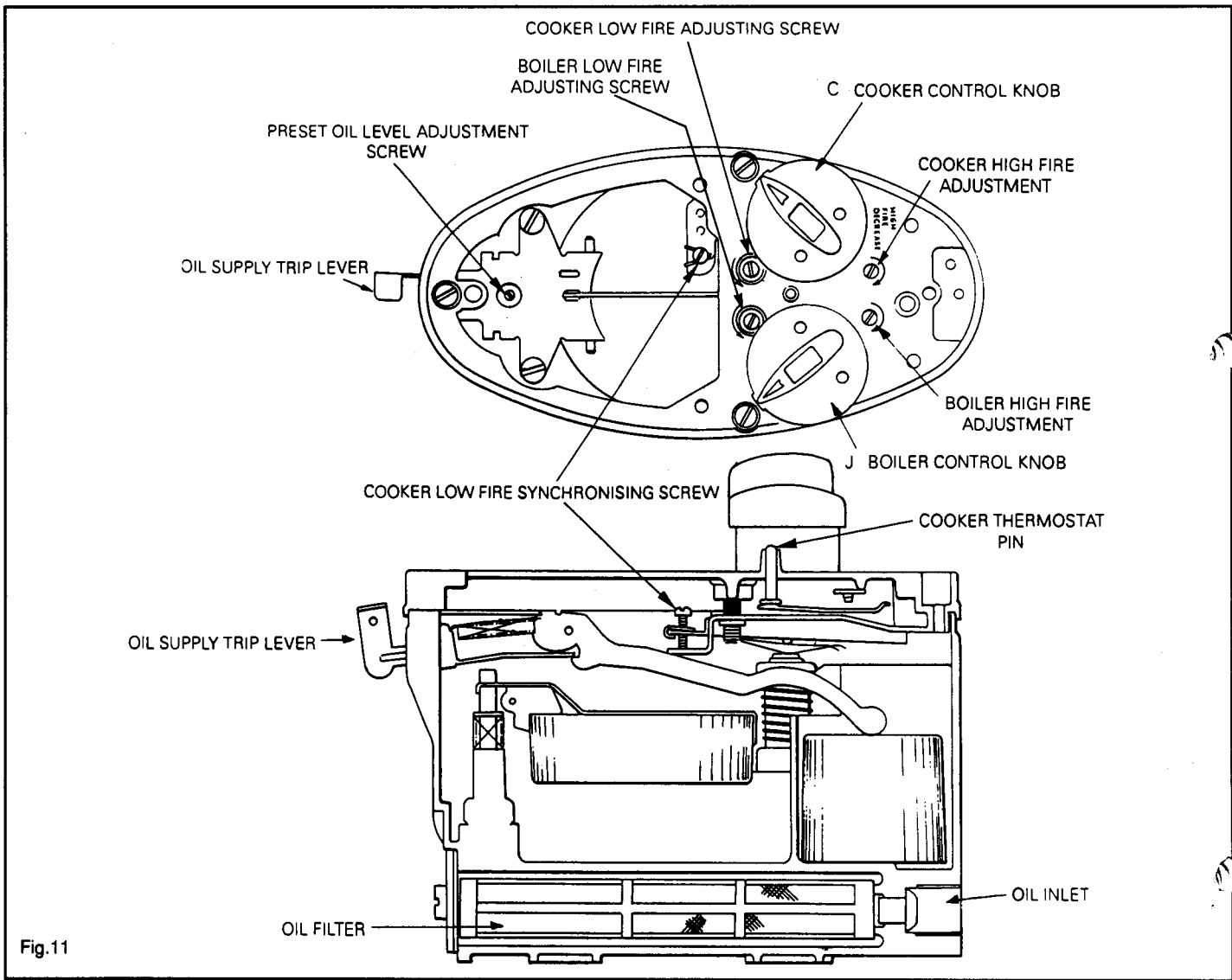


Fig.11

SETTING OF OIL CONTROL VALVE

General

1. As directed earlier the support bracket when fitted to the appliance must be level in all directions, and rigid.
2. Fit the support pins to the valve and set the height. The correct height of this valve is 182mm from the base of the appliance to the oil level mark on the valve body. See Fig.13.

NOTE: IF THE APPLIANCE IS MOUNTED ON A PLINTH, ADD THE HEIGHT OF THE PLINTH TO THE DIMENSION GIVEN. SCREW IN THE REAR SUPPORT PIN SO THAT THE VALVE IS RIGIDLY SUPPORTED. CHECK THAT THE VALVE IS NOW LEVEL IN ALL DIRECTIONS.

3. Do not fit Flexatemp B at this point.

WE WILL NOW CARRY OUT THE SETTING OF THE CONTROL IN THE CORRECT ORDER WHEN COMMISSIONING THE APPLIANCE.

We will start with the boiler burner - the reason for this is that it can be run to warm the flue before lighting the cooker burner - thus eliminating excessive fumes into the room.

Boiler Burner

- a. Connect oil pipe work and solenoids between the oil control valve and the boiler burner.
- b. Ensure that both pipes rise steadily without kinks from the lowest point.
- c. Disconnect main burner oil feed and fit adaptor for measuring oil rates by the DRIP FEED METHOD.
- d. Put tray under adaptor outlet and turn boiler control knob J to No.6 setting (full on).
- e. Connect main burner solenoid to a separate power supply via a 13A plug, and turn on power.
- f. Allow oil to flow for about 10 min before taking the rate. The reason for this is to allow the flow from the valve to stabilise as there is an initial surge.
- g. Take oil rate this should be 38-40cc min. If the setting is wrong then adjust it accordingly by turning the high fire setting screw as shown in Fig.11.
- h. If the rate is wrong and adjustment is required then allow 2-3 minutes between resetting and taking the next rate. Failure to do so will result in inaccurate oil rates.
- i. Switch off power to main solenoid and disconnect.
- j. Connect cable to pilot solenoid.
- k. Reconnect the main oil feed to the burner and disconnect the pilot feed pipe.
- l. Fit adaptor to pilot pipe to check pilot feed. Set height to level of pilot inlet pipe.
- m. Switch on power to pilot solenoid via separate feed.
- n. THERE MAY BE TENDENCY FOR THE PILOT FEED TO AIR LOCK SO BLEED THIS PIPE FREE OF AIR AS IT MAY AFFECT THE PILOT IGNITION.
- o. After 4 min check oil rate it should be a minimum of 20cc min. If this is not obtained then there is still air in the pipe work And must be cleared.
- p. If correct then switch off power to solenoid and reconnect pilot feed pipe.

- q. Connect both solenoids to control panel in correct order.

- r. The boiler burner can now be operated at this point set the burner air control to maximum.

This will need to be adjusted as the unit warms up and finally set with the cooker burner on high.

COOKER BURNER

- a. After checking the burner is level and that the oil is the correct depth in the burner disconnect the oil feed pipe to the burner and attach adaptor for measuring oil rates by the DRIP FEED METHOD.

- b. Remove Aluminium Cover Plate to valve, and screw the synchronising screw just clear of plate. See Fig.11.

- c. Turn cooker control knob on the oil control valve to No.6 setting to get the oil flowing allow 2 min. Always set low fire rate first.

- d. Turn cooker control knob on the oil control valve to No.1 setting - check low fire fire setting - this should be 4.75 cc/min. but no lower than 4.5cc/min.

NOTE: ALLOW 7 MINUTES FOR THE FLOW TO STABILISE BEFORE TAKING THE RATE. IF THE RATE IS INCORRECT THEN ALLOW 2 MINUTES BETWEEN RESETTING AND THE NEXT RATE.

- e. If the rate is incorrect then turn the low fire setting screw as shown on the cover plate to increase or decrease the flow. See Fig.11.

- f. NOW ADJUST THE LOW FIRE SYNCHRONISING SCREW SUCH THAT IT JUST TOUCHES THE STOP PLATE - THERE SHOULD NOT BE ANY MOVEMENT OF THE SCREW WHEN PRESSED LIGHTLY. See Fig.11.

- g. Now turn control knob on the oil control valve to No.6 (High Fire) and check rate - AGAIN ALLOW TIME AS ABOVE FOR THE OIL RATE TO SETTLE AS FOR BOILER. If incorrect adjust high fire rate by turning the high fire setting screw as shown on the cover plate. This should be 13cc/min to 13.5cc/min. ALLOW TIME FOR RATE TO SETTLE.

- h. Replace the Aluminium cover plate and fit Flexatemp.

- i. Cycle flexatemp a couple of times to check operation. This should be the same as manual. If not adjust Flexatemp setting screw. See Fig.7.

Now check high fire automatic. This again should be as manual.

COMMISSIONING AND TESTING

ELECTRICAL INSTALLATION

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

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 and air locks cleared. Vent all heat emitters and check for water soundness.

LIGHTING THE BOILER BURNER

Check that:-

1. The boiler system is full of water and all valves are fully open.
2. Any room thermostat is **ON**.
3. Any programmer or time switch is set at continuous heating.
4. Ensure the electricity supply is **ON**, that the pump is running.

5. Lighting Sequence

(i) Set the boiler thermostat knob **H** to a thermostat setting of 80°C (180°F) whereupon the airfan unit will become operative, the ignition glo-coil **K** will start to heat up.

(ii) After 1 minute, the pilot oil solenoid will energise and allow pilot oil supply to the boiler burner. Entry and rate of pilot oil flow is dependant on a small static head of oil from the constant level oil valve.

Reduction or loss of this head, will result in pilot oil starvation e.g. low constant oil valve location or conversant, high burner pot location.

(iii) The pilot oil supply will ignite within 30 seconds of oil flow, and be recognised by the thermocouple, which switches the pilot solenoid and glo-coil **OFF**, and switches the main oil flow solenoid **ON**. The boiler will fire and run.

(iv) The activated boiler thermostat isolates power from the main oil solenoid, to interrupt the oil supply, but the fan remains energised on an overrun period time of about 5 minutes, depending on the length of **ON** time boiler cycle. This enables all the oil in the burner to be burned and also the cooling of the flame sensor, which then isolates power from the fan, ready for the next cycle call.

With the call for hot water, the boiler thermostat re-activates, and the complete cycle starts again.

(v) Allow the boiler burner to operate for 2 to 3 cycles, then during a boiler **ON** period, proceed with the following checks.

CHECKING THE BOILER BURNER FAN PRESSURE

1. Connect pressure gauge to nipple **N**. Initial cold start should indicate a cold pressure reading of 3.1mm w.g. (0.125in w.g.) which on hot cycling, should rise to a stable 4.1mm w.g. (0.165in w.g.).

2. Adjust excess air pressure via air pressure adjustment flap on top of air duct at the L.H. side of cooker. (See fig.12.) No adjustment of the air pressure switch is needed.

If pressure is low, remove plastic sensor tubes from Fan Scroll and Fan Duct, and connect a differential pressure gauge across the nipples. This reading should register between 9-11mm water gauge with duct fully open. This should confirm whether the fan performance is adequate.

If the fan performance is not confirmed, there must be a windbox air leak. Investigate by removal of the boiler burner assembly for examination of the underside gasket seal.

IMPORTANT: BEFORE COMMENCING, ISOLATE THE ELECTRICITY SUPPLY (SWITCH OFF AND REMOVE PLUG) THEN TURN OFF THE OIL SUPPLY AT THE ISOLATING VALVE NEAR TO THE APPLIANCE.

3. Disconnect pressure gauge and replace plug nipple.

BOILER BURNER LOCKOUT

Fail-safe protection has been built into the Sequential Control so that in the event of any deviation from the timing programme, or component malfunction, a lock-out condition occurs, with the display of lamp **L**.

Interruption of the Sequential Control power with the exception of the continuous running fan.

To cancel the lock-out condition, turn the boiler thermostat knob from **ON** to **OFF**, then back to **ON**. The cycle will then re-commence.

WAIT 3 MINUTES BEFORE TURNING THE THERMOSTAT KNOB ON.

Continued lock-out indicates a malfunction that requires qualified inspection - See Fault Finding Chart.

SERVICING INSTRUCTIONS

Twice Yearly Servicing

It is important that service cleaning is carried out at least twice yearly by a competent service engineer, and it is recommended that a contract be made with a registered heating installer. With normal use, a boiler/cooker half yearly flueway clean and burner service should be carried out immediately at the commencement and end of the heating season. An additional flueway clean half-way through the heating season may be necessary in some cases.

The householder should be advised to turn **OFF** both cooker and boiler control knobs **A** and **H** (Fig.1) the night preceding the day of service, so that the appliance will have cooled down by the following morning, in readiness for servicing.

Before commencing any servicing, isolate the electricity supply (switch **OFF** and remove plug) then turn **OFF** the oil supply at the isolating valve near to the appliance.

Standard Half Yearly Service Schedule

- Remove and clean Flue Draught Stabiliser.
- Service clean of complete boiler heat exchanger over flueways, oven and hotplate flueways together with boiler firebricks - Section 4.
- Service clean of complete cooker and boiler oil burner - Sections 2, 3a and 3b.
- Detailed examination of glo-coil and clean.
- Remove and clean boiler burner fan.

NOTE: DEPENDING ON USAGE, GLO-COILS MAY DETERIORATE (HEAT OXIDING) AND REQUIRE REPLACEMENT AT THE END OF RESPECTIVE HEATING SEASON.

Standard Yearly Service Schedule

- Remove and clean Flue Draught Stabiliser unit and check that it moves freely.
- Service maintenance check of cooker and boiler thermostat - Sections 5 and 6.
- Service maintenance check of boiler combustion fan unit, air pressure switch and oil solenoid - Sections 8, 9 and 10.
- Service maintenance check of boiler flame sensor, oil valve and its electric top - Section 11.
- Check on cooker and boiler oil flow rates - Section

"Post Servicing Checks"

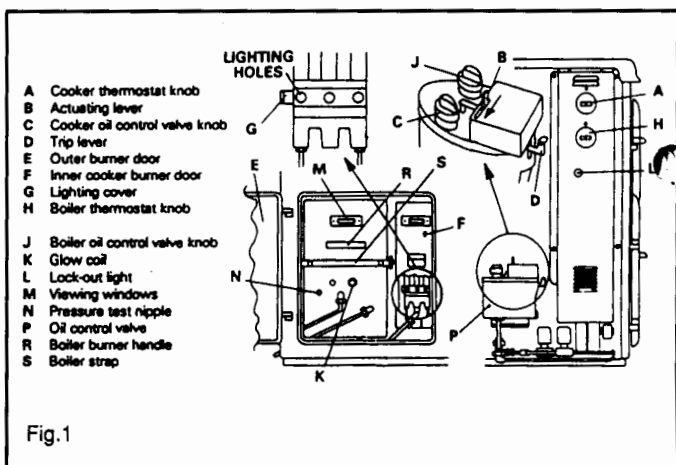
To Obtain Servicing Access

To obtain servicing access to boiler heat exchanger, oven and hotplate flueways, boiler firebricks and both oil burners, proceed as follows:

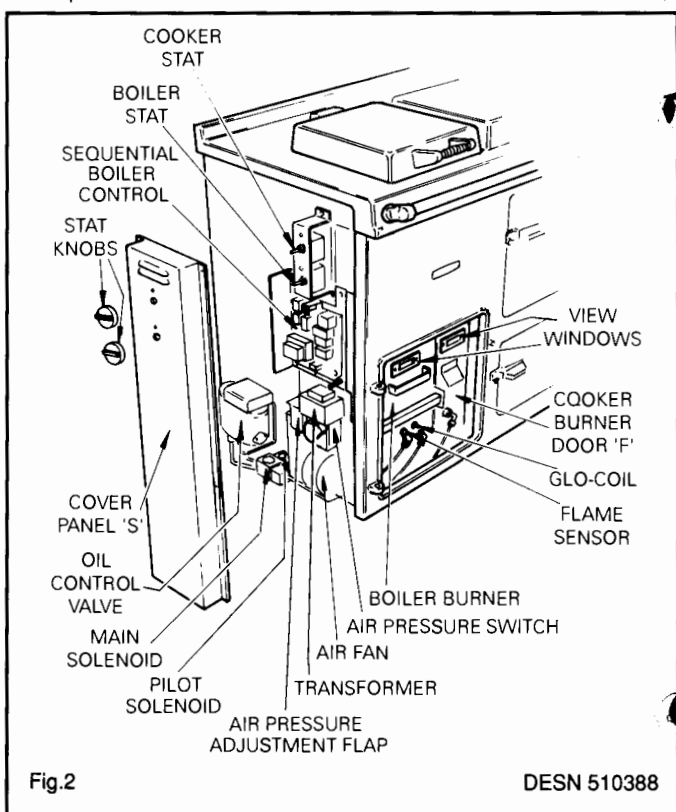
- Lift out the hotplate via lifting tools - See Fig.3.
- Lift out boiler combustion separator baffle and remove boiler flueway firebricks - See Fig.4.
- Open outer burner door **E** - See Fig.1.
- Lift off cooker burner door **F** - See Fig.1.

To Remove Cooker and Boiler Burners - See Fig.1.

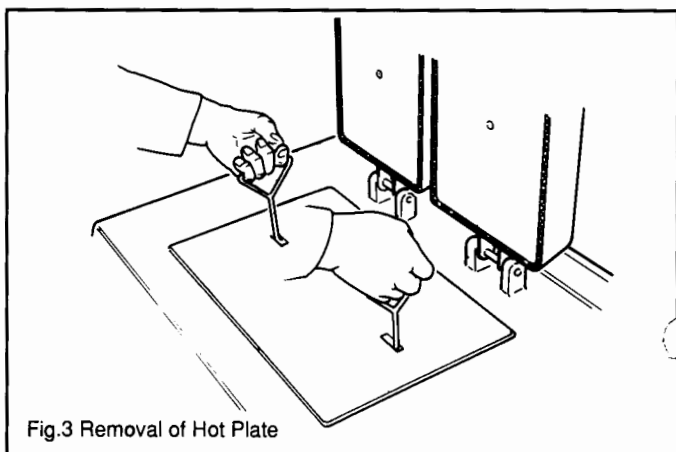
- Ensure isolation of the electrical supply (switch **OFF** or remove plug).

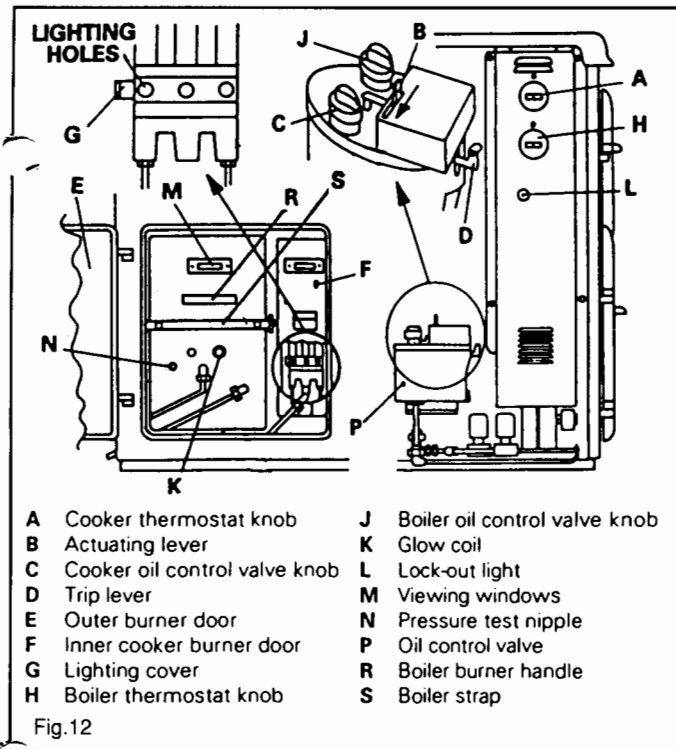


- Ensure that the oil line isolating valve, near to the appliance is turned **OFF** and the trip lever on the appliance **D** is lifted up.
- Set boiler and cooker oil control valve knobs **C** and **J** from position 6 to **OFF**.



- To Remove Cooker Burner
 - Break the cooker oil feed pipe at inlet joint **H** (Fig.5) taking care to collect Kerosene residue from burner oil pipe when inlet joint is separated.





BOILER CONTROL CHECK

Check that:-

1. The boiler system is full of water and all valves are fully open.
2. Any room thermostat is **ON**.
3. Any programmer or time switch is set at continuous heating.
4. Ensure the electricity supply is ON, that the pump is running and the boiler thermostat set at 80°C (180°F).
5. Allow the heating system to warm up then set the pump adjuster to maintain a boiler "flow and return" temperature differential of 10°-14°C (18°-25°F). 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. A system balance must also be made, so that the minimum flow required through the boiler is achieved when supplying D.H.W. only.

6. When the water system reaches working temperature, check that the boiler thermostat operates satisfactorily.

Check that any room temperature controls and programmer or time switch are fully operative.

7. Examine the system for water soundness. The system should then be turned off and rapidly drained while still hot.

The water system should again be filled and cleared of all air locks.

It is recommended that a corrosion inhibitor is added to protect the heat exchanger and pipe work.

LIGHTING THE COOKER BURNER

1. Depress the trip lever **D** on the front of the oil control valve and turn the cooker oil control knob **C** to No.6 setting.

NOTE: THE ACTUATING LEVER B ON THE ELECTRIC TOP MOUNTED ON THE OIL CONTROL VALVE TOP, PERMITS MANUAL CONTROL TO OBTAIN MAXIMUM OIL FLOW RATES IN THE EVENT OF POWER FAILURE AND DEPRIVATION OF THERMOSTAT USE. ENGAGE THE ACTUATING LEVER B BY PUSHING TO THE LEFT AND ENGAGING IN THE NOTCH OF THE COVER. THIS ALLOWS THE ACTUATING PLUNGER BUTTON TO EXTEND UPWARD AND GIVE HIGH FIRE OIL RATE.

USE ACTUATING LEVER WITH POWER FAILURE ONLY.

2. Switch power **ON** and set oven thermostat knob **A** to maximum.
 3. With the outer door **E** open, remove/lift out the cooker burner door **F**.
 4. After allowing 15 minutes for oil to settle in the cooker burner base, slide lighting cover **G** on front of burner shells to the left to expose three lighting ports. Fig. 12.
 5. Light the 3 front wicks through the lighting ports and close the horizontal lighting cover.
- Replace cooker burner door **F** and outer door **E**.
6. The cooker burner will gradually increase its oil rate, yet under the control of the oven thermostat, taking 2½ hours to attain 200°C (400°F) from cold.

Appliance and Flue Pipe Draught

(i) Flue Pipe Draught

The draught must be measured in the flue pipe above the flue chamber, and must not exceed 6mm w.g. (0.24in w.g.) at any time.

Should excessive draughts occur, a flue stabiliser should be fitted on the flue pipe between the top of the flue chamber and the kitchen ceiling, for controlling the excessive draught down to 6mm w.g.

(iii) Appliance Draught

The draught in the boiler and cooker flues should be collectively checked, and for optimum performance, draught measurements with respect to Flue Pipe Draughts, should be as indicated in Fig.13.

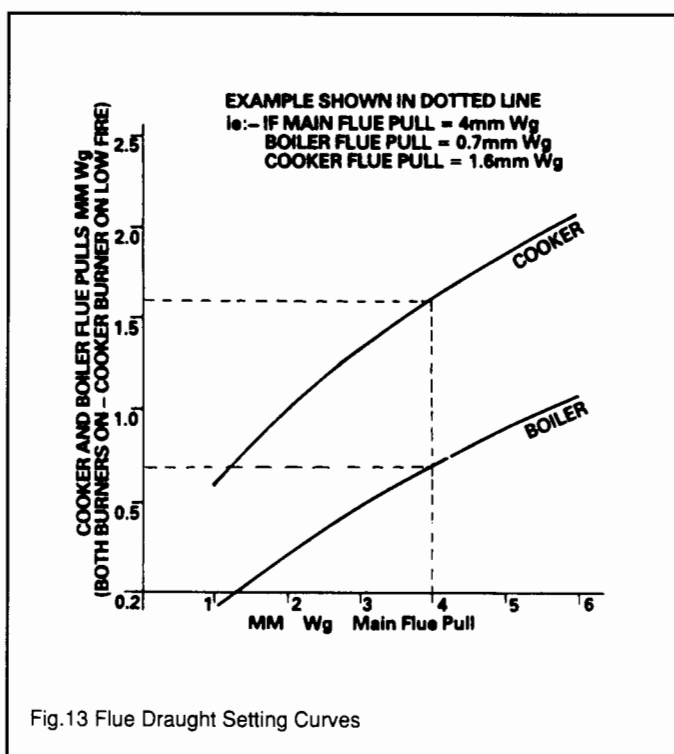


Fig.13 Flue Draught Setting Curves

(ii) Carefully lift complete oil burner assembly (See Fig.5) out of combustion chamber, and stand on servicing surface.

e. To Remove Boiler Burner - See Fig.1.

Slacken off boiler strap retaining bolts and remove boiler strap **S**.

(ii) Disconnect electric ignition glo-coil at terminal connections on boiler burner front, then push the connecting leads backwards to provide burner withdrawal access.

(iii) Remove flame sensor via location on boiler burner front.

(iv) Break the boiler pilot and main oil feed pipes at burner pot inlet joints, taking care to collect Kerosene residue from burner oil pipe when the inlet joints are separated. Push pipework down.

(v) Place hand on boiler burner handle **R** and carefully, but forcefully, draw burner assembly forward from cooker, and lift out onto servicing area.

To Clean Cooker Burner - See Fig.5

(i) Remove and brush clean, the top heat baffle **A** free of soot, etc. on both surfaces.

(ii) Remove burner shell assembly **B** and check that any heat deformation is minimal, the assembly is free of heat oxidised surfaces, and is interlocked together. Remove any internal/external surface deposits with soft brush.

(iii) Remove the six wicks **C** and vapourising chamber plate **D** from oil burner box.

If the wicks are badly charred or heat hardened, prepare replacements and clean vapourising chamber lid free of carbon deposit.

(iv) Carefully remove any carbon deposit on machined surfaces of oil burner base which provide seating for burner shell assembly.

Remove any internal/external surface deposits on burner reflector shields **K** with a soft brush.

DO NOT MARK OR DAMAGE MACHINED SURFACE.

Scrape and remove carbon deposit from burner base wick grooves.

(v) Detach burner oil feed pipe **E** from burner base elbow **F** and scrape/brush the internal core of the burner base elbow **F** until it is free of deposit.

Use pipe cleaner to brush open end of oil feed pipe **E** free of deposit, then reconnect to burner base, using an oil resistant sealant.

NOTE: ENSURE ELBOW AT OPPOSITE END OF OIL FEED PIPE E IS ORIENTATED CORRECTLY TO THE BURNER BASE ELBOW, AND THAT PIPE E SLOPES UPWARDS OR LEVEL TO BURNER BASE ELBOW.

(vi) Fit the vapourising chamber plate to the oil burner base then place the burner shell assembly **B** on to the burner base **G** and locate same. Check that the joint between the oil burner base and burner shells, is near airtight, otherwise, unacceptable air gaps may result in burner light-back with ignited fuel occurring below the oil burner base.

(vii) Remove the shells, replace wicks in oil burner wick grooves and ensure vapourising chamber plate is seated correctly. Refit burner shells, ensuring correct fit and location, then place burner assembly in combustion chamber, locating support legs in recess of combustion chamber base.

Reconnect the cooker oil feed pipe **J** to burner oil feed pipe elbow **H** and tighten.

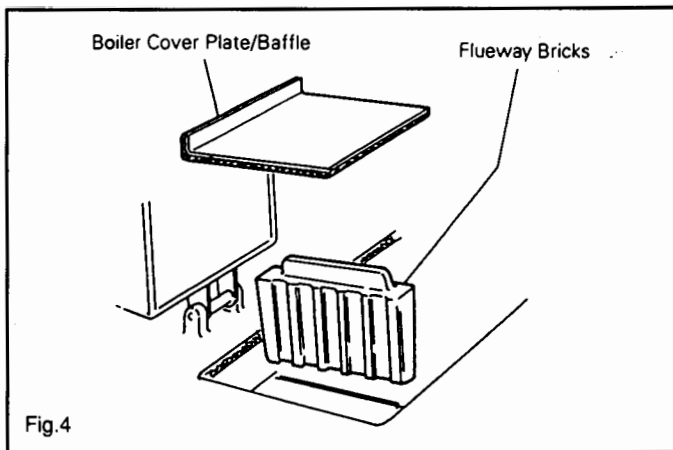


Fig.4

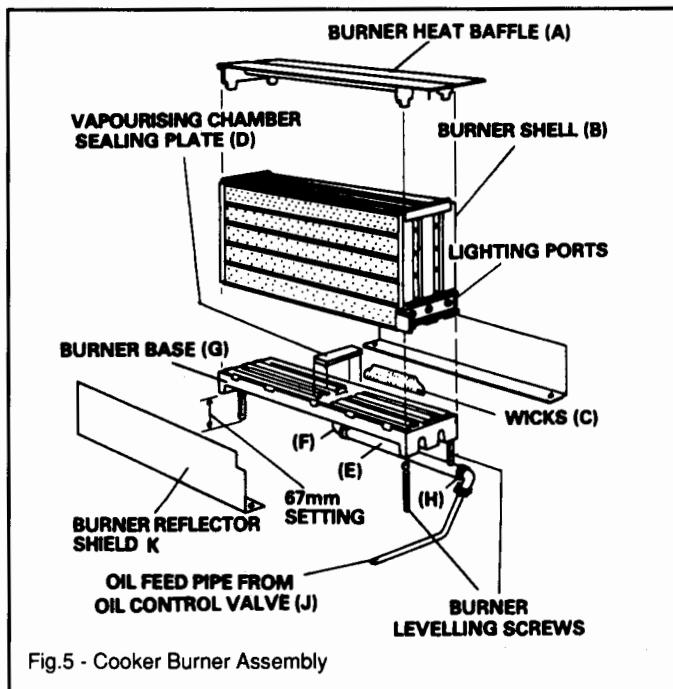


Fig.5 - Cooker Burner Assembly

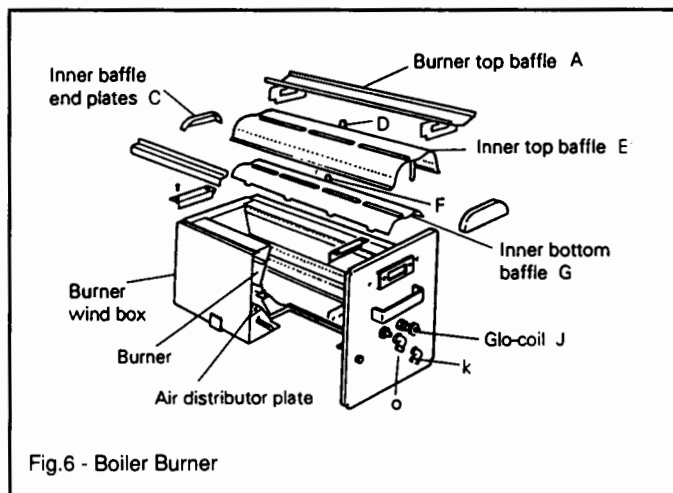


Fig.6 - Boiler Burner

The cooker burner is now ready for re-lighting.

To Clean the Boiler Burner - See Fig.6

(i) Remove the top burner baffle **A** and brush clean both surfaces free of soot, etc.

(ii) Lift and remove front and back interstage end sealing plates **C**.

(iii) Holding the finger grip **D** of the now exposed top interstage burner baffle **E** tilt it slightly and lift out clear of burner.

Brush clean both surfaces free of soot.

(iv) Holding the finger grip **F** of the bottom internal burner baffle **G** tilt it and lift out clear of burner.

Brush clean both surfaces free of soot.

(v) Temporarily plug the main and pilot oil inlet hole in the burner base bottom and brush/scrape the internal faces of oil burner and then tip the debris out of the burner. Withdraw glo-coil igniter **J**, brush and lightly clean.

Examine coil for deterioration by heat oxidation, and if in doubt, replace igniter.

(vi) Remove plug from oil inlet holes, then clean each end section of the oil feed pipes **K** and **O** with a pipe cleaner, tipping the debris via the inlet end. (Ensure hole is clear).

(vii) With the glo-coil igniter surface clean, check and ensure that the ignition wick is touching the oil burner base at the front. Replace if worn. Wick must not touch glo-coil. **THIS IS IMPORTANT.**

(viii) Replace all interstage baffles and other baffle plates, etc., in a reverse order of dis-assembly.

(ix) Lift the complete oil burner assembly into the boiler chamber and push inwards on the reverse manner of withdrawal.

Before replacing the fire bricks, check that the boiler burner is level.

Reconnect the oil feed pipe and electrically reconnect the flame sensor and ignition glo-coil igniter in reverse order of dis-assembly. Replace boiler strap and secure tightly with retaining bolts.

The boiler burner is now ready for re-lighting.

NOTE: ENSURE BOTH PILOT AND MAIN FEED PIPES RISE CONTINUALLY FROM THE LOWEST POINT TO AVOID AIR LOCKING PROBLEMS.

To Clean the Boiler Heat Exchanger and Cooker Flueways - See Figs.8 and 9.

(i) Remove the cooker and boiler burners as described under Sections 2d and 2e.

(ii) Place a layer of paper on the boiler and cooker combustion chamber base area to collect debris when brushing commences.

(iii) Use the rake and brush to ensure that the flueway above the oven top is clear and any deposit is removed - See Fig.8.

(iv) Lift top plate enamelled cover panel **A** (behind the L.H. insulating cover) and remove. Remove sealing plate **B** - See Fig.9.

Insert flexible rake through exposed top plate aperture, directing it towards the flue chamber. Clean the boiler outlet flueway, by scraping the deposits towards the boiler heat exchanger and vigorously brush if necessary. Additional access can be obtained via the front of the flue chamber by removal of the flue chamber door, unscrewing the four screws securing the flue stabiliser its sealing plate.

(v) Thoroughly brush boiler heat exchanger cross firebrick ducts and cooker flueways from the top and bottom of the heat exchanger until free of debris - See Fig.8

(vi) Brush and clean in between hotplate ribs on underside. Examine soft rope seal located on underside of hotplate baffle plate and replace if worn or frayed.

(vii) Examine soft rope seal located around hotplate aperture in top plate.

Replace if frayed or damaged.

(viii) Remove layer of paper in combustion chamber base with fallen debris.

NOTE: BURNER SHOULD BE IN NORMAL POSITION INSIDE THE BOILER BEFORE CHECKING THE OIL LEVEL

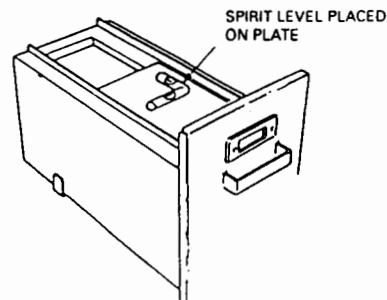


Fig.7 Burner oil level checking method

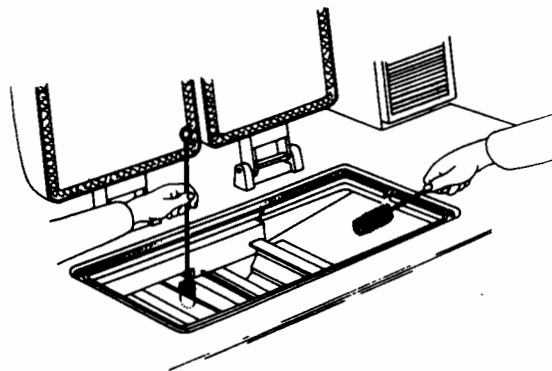


Fig.8

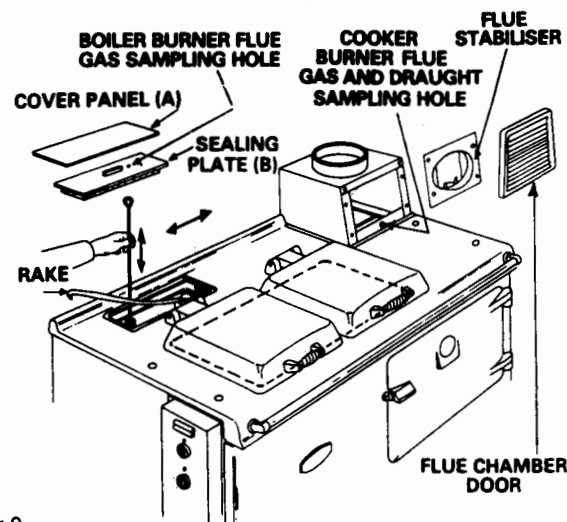


Fig.9

(ix) Replace boiler flueway firebricks in reverse manner of withdrawal, then locate boiler combustion separator baffle in original position.

(x) Replace hotplate ensuring the underside ribs lie over the combustion chamber, and that it seals to the top plate.

(xi) Replace both oil burners and remake all connections, etc., in the reverse manner of dismantling as described under Section 2 - **"TO REMOVE COOKER AND BOILER BURNERS"**

To Remove Cooker Thermostat - See Fig.10.

a. Isolate the electricity supply (switch **OFF** and remove plug).

- Pull off the two thermostat knobs. Remove four screws securing control panel cover to L.H. side plate and remove cover.
 - Disconnect two electrical leads thermostat body and earth terminal. See Fig.14 for connections.
 - Remove two securing screws holding thermostat body mounting plate. Unscrew thermostat spindle locknut to detach thermostat **A** from mounting bracket.
 - Open top oven door and using a screwdriver, remove two fixing screws securing inner L.H. side to expose the located thermostat phial - See Fig.10.
 - Unclip thermostat phial from L.H. side of roasting oven and reset phial to face across the oven width instead of facing in depth.
- Withdraw thermostat phial and capillary tube clear of oven and cooker front plate until it is fully exposed at L.H. side of appliance.
- Fit replacement thermostat and assemble in reverse order of dismantling. Electrical leads to be reconnected as previously - See Fig.14 for connections.

To Remove Boiler Thermostat - See Fig.10

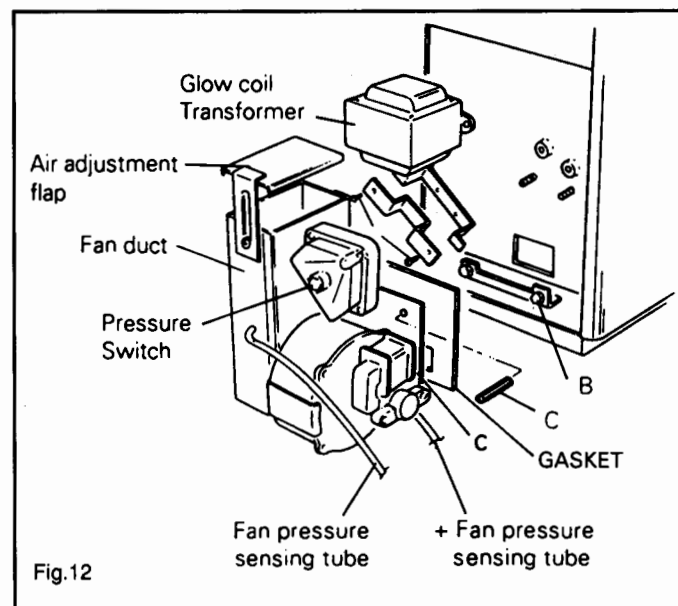
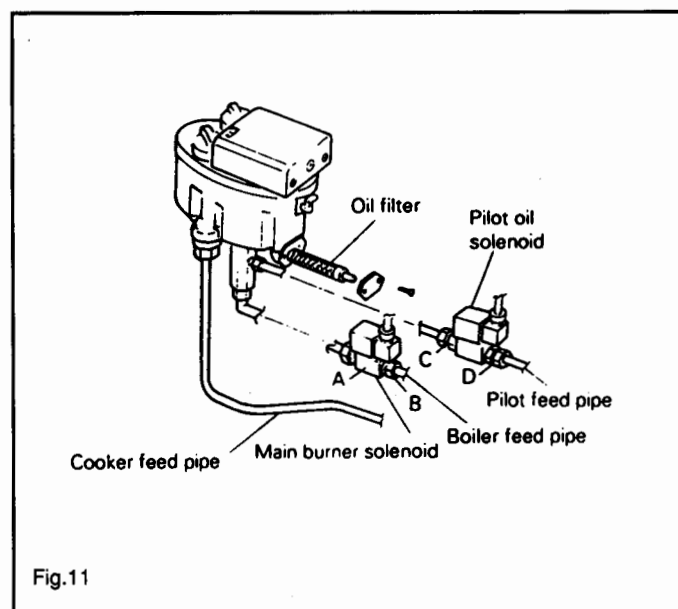
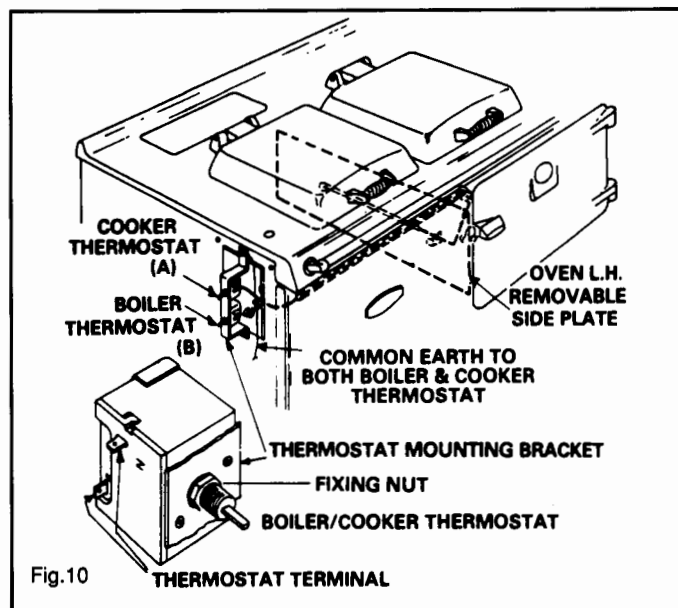
- Isolate the electricity supply (switch **OFF** and remove plug).
- Pull off the two thermostat knobs. Remove four screws securing control panel cover to L.H. side plate and remove cover.
- Remove split pin from boiler thermostat pocket.
- Remove and withdraw boiler thermostat phial from boiler phial pocket.
- Disconnect two electrical leads from thermostat body and earth terminal. See Fig.14 for connections.
- Unscrew thermostat spindle locknut to detach thermostat **B** from mounting plate.
- Fit replacement thermostat and assemble in reverse order of dismantling. Electrical leads to be reconnected as previously. See Fig.14 for connections.

To Remove Oven Temperature Indicator

- Open roasting oven door fully and remove four screws securing inner lining panel to outer door.
- Remove inner lining panel and slagwool insulation.
- Unscrew two hexagon nuts securing indicator to outer door and remove indicator.
- Fit replacement indicator in reverse order of dismantling.

To Remove Main Oil Solenoid - See Fig.11

- Isolate the electricity supply (switch **OFF** and remove plug), remove the side cover panel **S** via its fixing screws. See Fig.2.
 - Detach solenoid cable connection from terminal block.
 - Isolate oil supply by turning **OFF** isolating valve on inlet to oil control valve. (Operate trip).
 - Ensure boiler oil control valve knob **F** is set at **OFF**.
 - Place a small tray receptacle on floor beneath the main oil solenoid. Break inlet/outlet connections of main oil solenoid at points **A** and **B** and allow surplus oil to run into tray receptacle.
 - Remove inlet/outlet connection fittings from main solenoid, clean threaded ends and re-coat with oil sealant. Refit to new solenoid.
 - Re-assemble in reverse of dis-assembly and reconnect electrical cable leads to terminal block.
- The main oil solenoid valve is now ready for use.



To Remove Pilot Oil Solenoid - See Fig.11

- Isolate the electricity supply (switch **OFF** and remove plug), remove the side cover panel **S** via its fixing screws. See Fig.2.
- Detach pilot solenoid cable connections from terminal block.

- c. Isolate oil supply by turning OFF isolating valve on inlet to oil control valve. (Operate trip).
 - d. Ensure boiler oil control valve knob **F** is set at **OFF**.
 - e. Place a small tray receptacle on floor beneath the pilot oil solenoid.
- Break inlet/outlet connection of pilot oil solenoid at points **C** and **D** and allow surplus oil to run into tray receptacle.
- f. Remove inlet/outlet connection fittings from pilot solenoid, clean threaded ends, and re-coat with oil sealant. Refit to new solenoid.
 - g. Re-assemble in reverse order of dis-assembly and re-connect electrical cable leads to terminal block.
- The pilot oil solenoid valve is now ready for use.

To Remove Airfan - See Fig.12

- a. Isolate the electricity supply (switch **OFF** and remove plug), remove the side cover panel **S** via its fixing screws. Disconnect oil lines at burner inlets and depress downwards for fan access. Remove cable lead connected to terminal block position '**FAN**' on sequential control box - See Fig.14.
- b. Using box spanner, slacken and remove two top nuts **A** and also slacken two bottom locknuts and screws **B** securing mounting plate **C** to boiler side.
- c. Detach air pressure plastic tubes from air pressure switch. + and -.
- d. Tilt and lift complete fan assembly away from appliance.
- e. Remove the two screws securing the fan assembly to the mounting plate.

CHECK THE GASKET SEAL IS INTACT AND REPLACE IF NECESSARY.

- f. Re-assemble in reverse order of dis-assembly and reconnect electrical terminals.
- The airfan is now ready for use.

To Remove Air Pressure Switch - See Fig.12.

- a. Isolate the electricity supply (switch **OFF** and remove plug), remove the side cover panel **S** via its fixing screws. See Fig.2.
- b. Detach and remove two plastic tubes from pressure switch. + and -.
- c. Remove three sleeved electrical terminations from micro-switch noting order of connection.
- d. Remove two fixing screws securing pressure switch to strap.

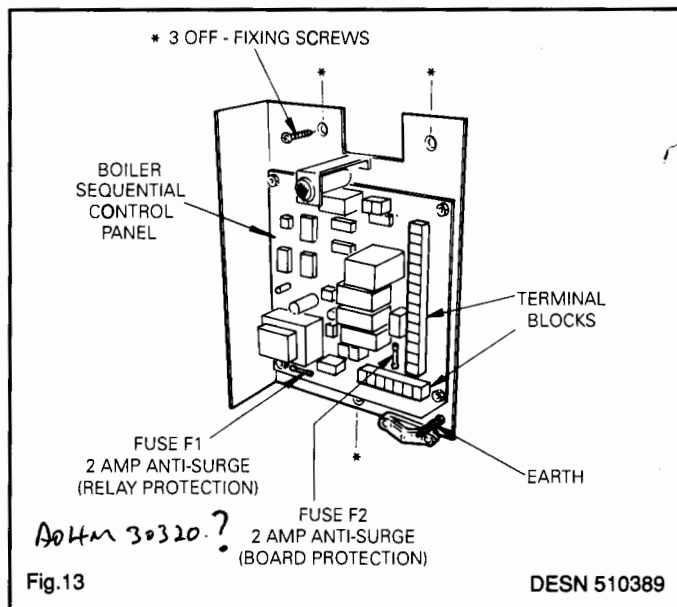
NOTE: CHECK BOTH PLASTIC TUBES ARE INTACT/AIRTIGHT AND REPLACE IF NECESSARY.

Replace switch assembly in reverse manner of dis-assembly and remake electrical terminations. Although the air pressure switch is now ready for use, adjustments must be made to the switch for pressure activation as follows:

- i) Connect air pressure gauge to windbox nipple.
- ii) Switch **ON**, and initial cold start should indicate a cold pressure reading of 3.1mm w.g. (0.125w.g.) which on hot cycling should rise to a stable 4.1mm w.g. (0.165in w.g.). With duct fully open 9-11mm w.g. across fan.
- iii) Adjust excess air pressure via air pressure adjustment flap on top of air duct, adjacent to fan.

To Remove Flame Sensor - See Fig.2

- a. Isolate the electrical supply (switch **OFF** and remove



plug) remove the side cover panel **S** via its fixing screws. See Fig.2.

- b. Open outer burner door **E**.
 - c. Slacken off pinch screw securing flame sensor to location by bush.
 - d. Withdraw flame sensor from location bush and detach cable leads at terminal block. (Clean hole).
 - e. Refit flame sensor and re-assemble in reverse manner of dis-assembly, and remake cable terminations.
- The flame sensor is now ready for use.

To Remove Ignition Transformer - See Fig 12

- a. Isolate the electricity supply (switch **OFF** and remove plug), remove the side cover panel **S** via its fixing screws.
- b. Open outer burner door **E**.
- c. Remove glo-coil cable locking nut and detach both cable leads from glo-coil termination spindle.
- d. Detach transformer primary cable leads from terminal block with earth lead.
- e. Remove transformer securing screws and withdraw transformer.
- f. Replace transformer in reverse manner of dis-assembly and remake electrical connections.

To Remove Glo-Coil Igniter - See Fig 2.

- a. Isolate the electrical supply (switch **OFF** and remove plug).
- b. Open outer burner door **E**.
- c. Remove glo-coil cable locking nut and detach both cable leads from glo-coil termination spindle.
- d. Using a spanner on hexagon skirt of glo-coil body, slacken and withdraw glo-coil.
- e. Replace with new glo-coil in reverse manner of dis-assembly and remake electrical connections.

To Remove Sequential Control Panel - See Fig13.

- a. Isolate the electrical supply (switch **OFF** and remove plug).
- b. Pull and remove two thermostat knobs **A** and **H** - Fig.2 or 2.
- c. Remove side cover panel **S** via its four fixing screws - Fig.2.

- d. Remove the cable clamp straps via fixing screws.
 - e. Disconnect all electrical connections on terminal blocks and the nuts on earth posts.
 - f. Slacken the two top screws and one bottom screw securing the control panel B to the L.H. side plate.
 - g. Fit replacement control box in reverse order of dismantling, ensuring that all the cable connections are fitted to their respective terminal strip positions.
- Finish re-assembly of appliance.

COOKER OPERATING SEQUENCE

With the oil valve trip lever depressed **ON**, the L.H. knob in the oil control valve set No.6, oil will flow to the cooker burner. It is intended that the cooker burner be operated on a 'high-low' oil rate basis, with idling oven temperatures obtained by a thermostat knob setting of '**LOW**' (oven temperature 135°C approx.), without the use of electrical power.

Setting the thermostat knob from 1-6 setting will cause the thermostat to switch electrical power **ON-OFF** automatically and vary the oil rate to provide a selected oven temperature, thermostatically controlled.

Setting No.6 is the maximum oven temperature and maximum oil rate obtainable with reduced knob settings, providing reduced temperatures/oil rates.

See Users Instructions for details of thermostat knob settings and oven temperatures.

ELECTRICAL POWER FAILURE

Despite the loss of electrical power, high oven cooking temperatures can still be obtained, but oven temperature control must be manual only.

Method: Holding the actuating lever on the top of the oil control valve, push it to left and engage it in the notch of the cover.

Ensure the L.H. knob on the oil control valve is set at No.6 setting to obtain maximum oil rate and adjust later to suit temperature requirements.

Electrical thermostat control will not be possible until the actuating lever is dis-engaged and the oil control valve knob is returned to No.6 setting.

COOKER ELECTRICAL FAULTS

Because the control system is basically simple, only two electrical malfunctions are likely to occur, namely:-

1. Oven thermostat malfunctions and must be replaced.
2. Oil control valve electric top, bi-metal heater element fails. The complete electric top must be replaced.

BOILER OPERATING SEQUENCE

The operation of the boiler burner is under the overall control of an electronic sequential control box, whose function is to provide the following service:-

1. A purpose-made orderly timing sequence of electrical signals, to various electrical controls, to enable the boiler to cycle upon boiler thermostat demand.

To recognise an electrical control malfunction or condition, and prevent the timing sequence continuing, by causing a lock-out condition.

With the oil valve trip lever depress **ON**, the R.H. knob on the oil control valve set at No.6, oil will exit from the oil control valve as far as the de-energised main and pilot solenoid valves only.

NOTE: WHERE THERE IS A LIKELIHOOD OF AIRLOCKING SUCH AS INITIAL COMMISSIONING OR REPLACEMENT OF CONTROLS, PREPURGE THE PILOT AND MAIN OIL FEED PIPES OF AIR BY BREAKING THE PIPE JOINTS AT THE BOILER BURNER FRONT.

LIGHTING SEQUENCE

1. To start the boiler sequence cycle, set the boiler thermostat knob to 80°C. The glo-coil ignition and airfan become energised with switch-on.

2. After 1 minute of energisation, the pilot solenoid valve opens, and admits a pilot supply of oil into the pilot reservoir at the front of the boiler burner.

3. The pilot oil supply becomes ignited within 30 seconds of entry, and this pilot fire then progressively heats an adjacent thermocouple until a temperature of about 300°C is attained by the thermocouple after about 1 minute of flame.

4. This temperature confirmed, the thermocouple switches the main oil solenoid **ON** to admit oil at full rate, which then cross lights from the pilot flame.

At the same time, power is isolated from the glo-coil and pilot solenoid valve, resulting in a pilot oil shut-off condition.

5. The burner continues to run at main oil rate, under control of the boiler thermostat until satisfied.

NOTE: IF FOR ANY REASON, ONE OF THE FUNCTIONS ARE NOT CARRIED OUT IN POINTS 1-4, A LOCK-OUT CONDITION WILL OCCUR AT THE END OF THE TIMING SEQUENCE, OR, THE SEQUENCE WILL NOT COMMENCE.

6. With boiler thermostat interruption, power is isolated from the main oil solenoid valve, but the fan remains energised on an overrun, to burn all the oil in the burner and cool the thermocouple down in temperature, taking about 5-6 minutes.

With reduction in temperature of the thermocouple, the fan becomes de-energised, and power is isolated, until the boiler thermostat calls for heat. With thermostat call, the sequence re-commences.

POST SERVICE CHECKS

Confirmation of oil rates and combustion must be made as a final check.

These can be carried out using the Drip Feed Method.

COOKER

1. Confirm the cooker burner base is level in all directions.

2. Confirm the static oil depth in the cooker burner box is 10mm ($1\frac{1}{2}$ in) after a 15-20 minute period.

3. Check low fire oil rate - 4.75cc/min on low.

4. Check high fire rate - 13.0-13.5cc/min.

5. Assemble burner and light.

After 30 minutes on high fire, sample the flue products in the flue chamber for a Smoke Test which should indicate a Baccarach Smoke No.0-1.

6. Leave the cooker thermostat knob set to No.6.

DELETE

1. Confirm the cooker burner base is level in all directions.
2. Confirm the static oil depth in the cooker burner box is 10mm (13/32in) after a 15-20 minute period.
3. Check low fire oil rate - 4.75cc/min on low.
4. Check high fire rate - 13.0-13.5cc/min.
5. Assemble burner and light.
After 30 minutes on high fire, sample the flue products in the flue chamber for a Smoke Test which should indicate a Baccarach Smoke No. 0-1.
6. Leave the cooker thermostat knob set to No. 6.

REPLACE WITH

1. Confirm the cooker burner base is level in all directions.
2. Confirm the static oil depth in the cooker burner box is 10mm (13/32in) after a 15-20 minute period.
3. Check low fire oil rate - 4.75cc/min on low.
4. Check high fire oil rate - 13.0-13.5cc/min.
5. Assemble burner and light.
After 30 minutes on high fire, sample the flue products in the flue chamber for a Smoke Test which should indicate a Baccarach Smoke No. 0-1.
6. Leave the cooker thermostat knob set to **MAX.**

AMENDMENT SHEET

REF PAGE 19

SECTION

COOKER OPERATING SEQUENCE

DELETE

With the oil valve trip lever depressed **ON**, the L.H. knob in the oil control valve set No. 6, oil will flow to the cooker burner. It is intended that the cooker burner be operated on a 'high-low' oil rate basis, with idling oven temperatures obtained by a thermostat knob setting of '**LOW**' (oven temperature 135°C approx.), without the use of electrical power.

Setting the thermostat knob from 1-6 setting will cause the thermostat to switch electrical power **ON-OFF** automatically and vary the oil rate to provide a selected oven temperature, thermostatically controlled.

Setting No. 6 is the maximum oven temperature and maximum oil rate obtainable with reduced knob settings, providing reduced temperatures/oil rates.

See Users Instructions for details of thermostat knob settings and oven temperatures.

REPLACE WITH

With the oil valve trip lever depressed **ON**, the L.H. knob in the oil control valve set No. 6, oil will flow to the cooker burner. It is intended that the cooker burner be operated on a 'high-low' oil rate basis, with idling oven temperatures obtained by a thermostat knob setting of '**LOW**' (oven temperature 135°C approx.), without the use of electrical power.

Setting the thermostat knob from **LOW** to **MAX** will cause the thermostat to switch electrical power **ON-OFF** automatically and vary the oil rate to provide a selected oven temperature, thermostatically controlled.

See Users Instructions for details of thermostat knob settings and oven temperatures.

CONTINUED OVERLEAF

BOILER

1. Check main burner oil rate - 38-40cc/min.
2. Check pilot burner oil rate - 20cc/min minimum.
3. Connect oil supply pipes.
4. Connect manometer tube to test point nipple.
5. Switch ON power supply and set boiler thermostat knob to 80°C, whereupon the glo-coil igniter and airfan will become energised.
6. Confirm the initial cold windbox air pressure of 3.1mm w.g. (0.125in w.g.) which on hot cycling, should rise to a stable 4.1mm w.g. (0.165in w.g.).

NOTE: LOW PRESSURE INDICATES A LEAKING GASKET SEAL BELOW THE WINDBOX OR AROUND ITS FRONT DOOR.

7. Adjust excess air pressure via air pressure adjustment flap on top of air duct at L.H. side of appliance, disconnect manometer and re-plug the test nipple.

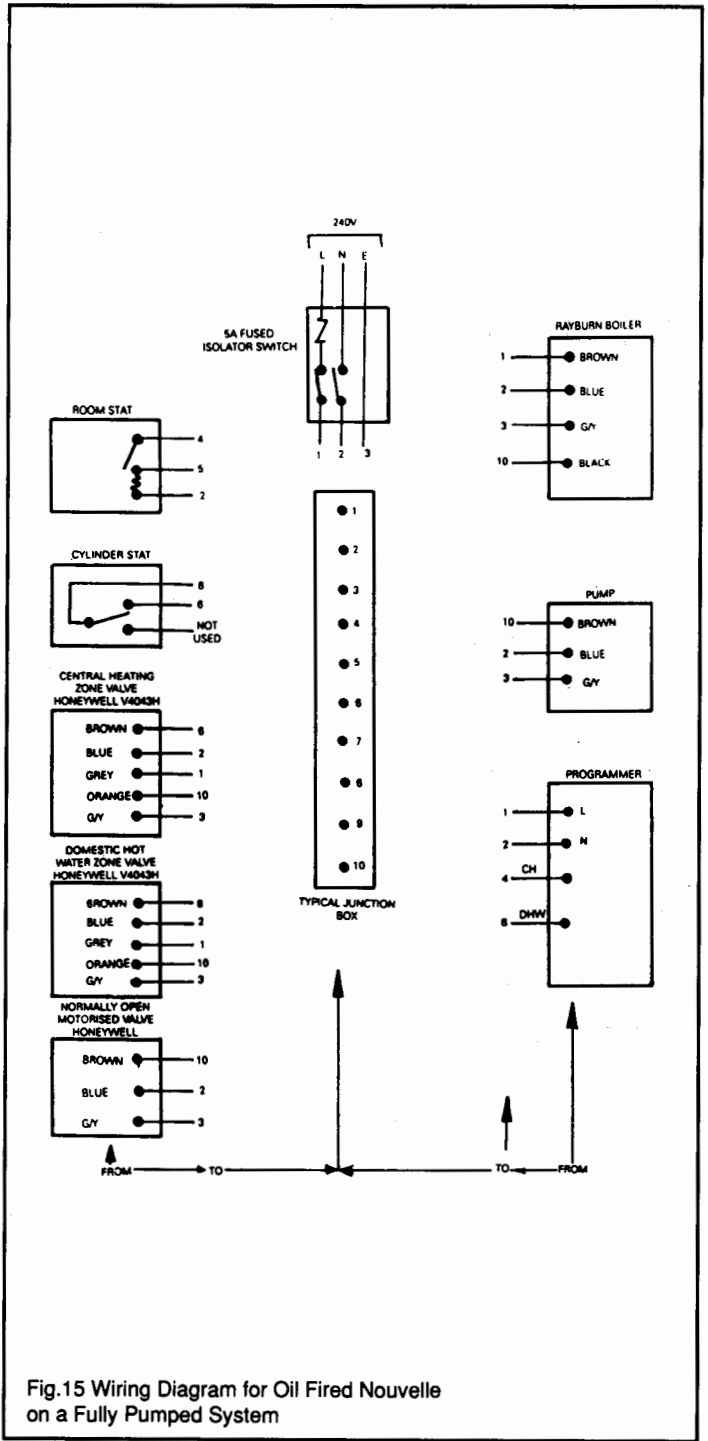
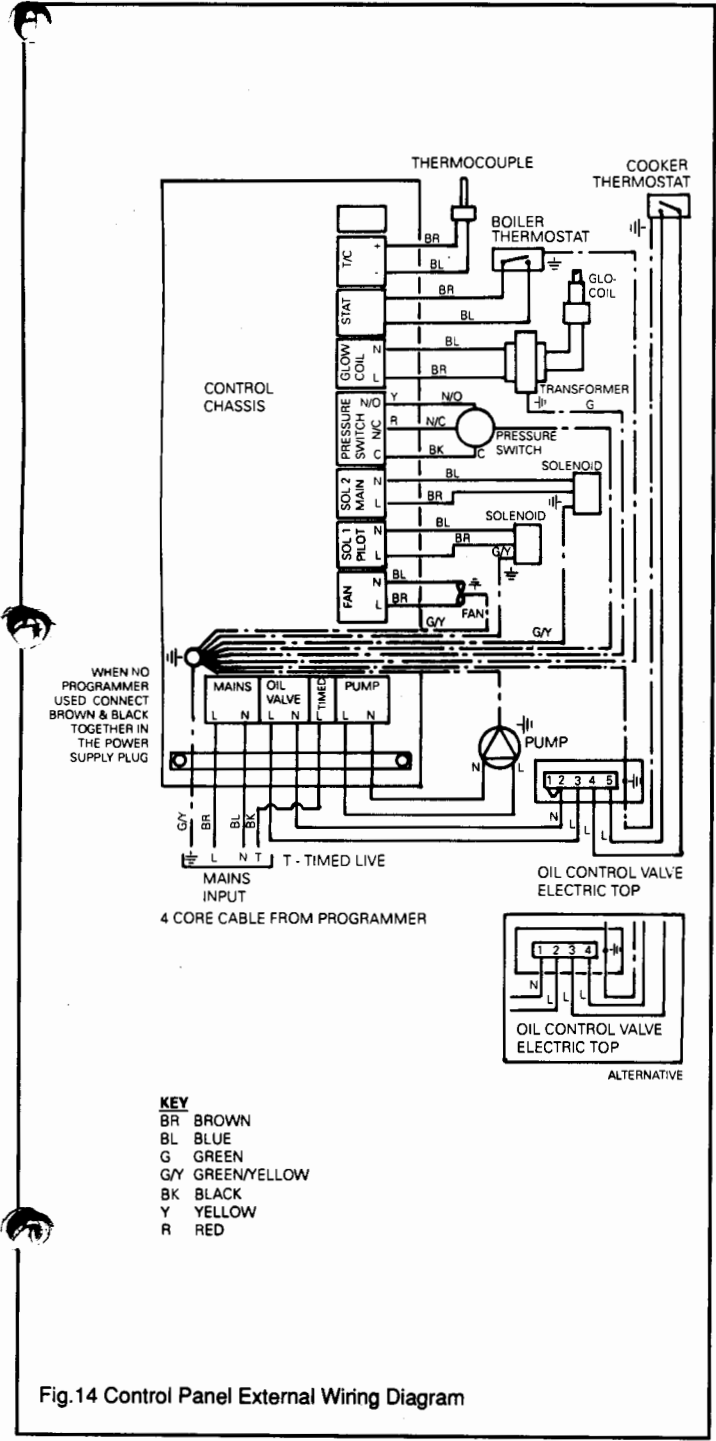
8. Allow the boiler burner to operate for 2-3 cycles, then during a boiler **ON** period, sample the flue products within the boiler flue chamber where a Baccarach Smoke No.0-1 should be confirmed.

9. Combustion Analyser

Using the Combustion Analyser in the boiler flue duct sampling hole, the following readings should be achieved:

CO ²	9 - 9.5%
CO	PPM 15-20
O ₂	8 - 9%

For System Wiring Diagram See Page below. UNDER NO CIRCUMSTANCES SHOULD THE APPLIANCE HAVE TWO SEPARATE POWER SOURCES. ALL POWER MUST GO THROUGH ONE SINGLE 5A FUSED ISOLATOR SWITCH. *



FAULT FINDING BOILER BURNER

SYMPTOMS	CAUSE	REMEDY
SWITCH ON		
- nothing happens.	No power to unit.	Check mains supply, time clock, external thermostat.
No output from PCB	Fuse (F2) failure.	Check for wiring failure to PCB, replace fuse, If fuse fails replace PCB.
	Boiler thermostat off.	Switch on.
	Faulty thermostat.	Replace thermostat.
	Fuse (F1) failure.	Check for component failure e.g. glow plug and replace fuse.
FAN NOT RUNNING		
	Fault with air pressure.	Check pressure has not been tampered with. Sensing tube positioned correctly, change pressure switch.
	PCB fault.	No power to fan, change PCB.
	Fan unit fault.	Change fan.
FAN ONLY		
- Fan and glo-plug energised/ No pilot/Lock out/ Glo-plug De-energised/Fan continues running.	Pilot solenoid failure.	Replace pilot solenoid.
	PCB fault.	Replace PCB.
	Pressure switch not operating.	Clear blockage or Replace pressure switch.
-Fan, glo-plug, pilot solenoid Energised/Pilot flame/No main solenoid.	Thermocouple fault.	Replace thermocouple.
	Main solenoid fault.	Replace main solenoid.
	PCB fault.	Replace PCB.
-Solenoid and glo-plug de-energised/ Fan runs on/Lock out light.	PCB fault.	Replace PCB.
FAN and GLO-PLUG on CONTINUOUSLY		
- Fan and glo-plug on/pilot solenoid does not open.	PCB fault.	Replace PCB.
PILOT BURNER DOES NOT LIGHT		
- Glo-plug energised/power to pilot but does not open.	Pilot solenoid fault.	Replace solenoid.
	Pressure switch fault.	Check setting of pressure switch. Replace pressure switch.
	Air lock in pilot oil feed pipe.	Check oil pipe rises steadily over whole length.
	Glo-plug not working.	Check Volts to Glo-plug. Check contacts on Glo-plug terminals. Replace if required.
	Transformer fault.	Check Volts In/out. Replace if required.
	Wick displaced.	Check wick in burner replace if required.
	Glo-coil touching wick	Adjust wick to be 2-3mm clear of glo-coil
	Long timer fault.	Replace PCB.
	Short timer fault.	Replace PCB.
PILOT FLAME ONLY		
- Lack of oil to main burner	Air lock in oil feed pipe.	Remove air lock/ensure gradual rise on pipe-work
	No power to main solenoid.	Replace main solenoid <i>PCB</i>
	Main solenoid fault.	Replace main solenoid.
LOW AIR PRESSURE FROM FAN		
	Air adjustment cover on fan duct set wrongly.	Reset air adjustment cover on fan duct.
	Wind box leak.	Replace gasket.
	Fan speed too low	Replace fan unit.
NO FLAME SENSING		
- Goes to lockout	Thermocouple fault.	Replace thermocouple.
	PCB fault.	Replace PCB.

FAULT FINDING COOKER BURNER

SYMPTOMS	CAUSE	REMEDY
 BURNER WILL NOT LIGHT.	Check wicks in position. Lack of oil to burner.	Fit wicks. Check oil valve switched on. Check oil valve trip is down. Check oil feed pipe gradient ensure steady rise.
NO HIGH FIRE.	Control valve setting wrong. Sticking control valve pin.	Check control valve knob is set at maximum. Replace control valve top.
SOOTY FLAME-LOW FIRE.	Poor fitting burner shells. Low fire oil rate incorrect.	Check set of shells seating properly Replace set of shells. Check burner base, replace if necessary. Reset oil rate.
SOOTY FLAME-HIGH FIRE.	Oil rate too high. Down Draughts. Poor fitting burner shells.	Re-adjust high fire oil rate. Check flue for down draughts and eliminate them. Check set of shells seating properly Replace set of shells. Check burner base, replace if necessary.
 CONTINUOUS LOW FIRE.	Power failure. Cooker thermostat fault. Oil valve electric top fault. Oil valve control pin stuck.	Check mains supply: if power cut use manual control. Replace cooker thermostat. Replace electric top. Free using manual control lever. Replace oil valve top.
CONTINUOUS HIGH FIRE.	On manual over ride. Cooker thermostat fault. Oil valve electric top fault.	Return manual over ride lever to low position. Replace cooker thermostat. Replace electric top.
ABNORMALLY LOW OVER NIGHT TEMPERATURE.	Oil starvation. Air lock in oil feed pipe. Air lock in burner feed pipe.	Check oil supply. Check oil feed pipe rises over whole length. Check burner feed pipe gradient and cleanliness.