

WARNING

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

This information refers to the following products

**Rayburn 460K, 480K,
499K**

Open Flue MX models

Fitted with Nu-Way burners

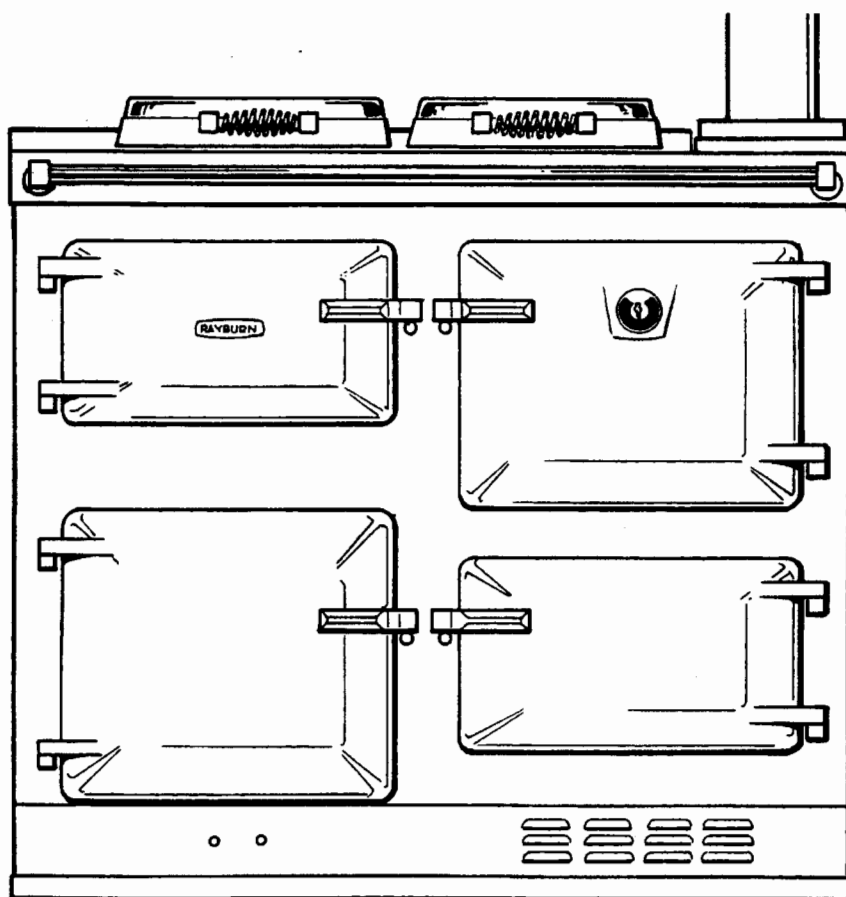
RAYBURN

Servicing Instructions

Home on the Range.

460/480/499K

For use in GB and IE



DESN 511593

PLEASE READ THESE INSTRUCTIONS BEFORE SERVICING THIS APPLIANCE

Consumer Protection

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

IMPORTANT NOTICE: Any alteration that is not approved by Aga-Rayburn could invalidate the approval of the appliance, operation of the warranty and could affect your statutory rights.

Health & Safety

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

Firebricks, Fuel beds, Artificial Fuels

When handling use disposable gloves.

Fire cement

When handling use disposable gloves.

Glues and Sealants

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

Glass Yarn, Mineral Wool, Insulation Pads, Ceramic Fibre

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

Kerosene and Gas Oil fuels (mineral oils)

1. The effect of mineral oils on the skin vary according to the duration of exposure.
2. The lighter fractions also remove the protective grease normally present on the surface of the skin. This renders the skin dry, liable to crack and more prone to damage caused by cuts and abrasions.
3. 'Oil acne' is recognised by the presence of skin rashes. The arms are most often affected, but may occur where there is contact with oil or oil clothing.
 - Seek medical attention for any rash.
 - Avoid skin contact with mineral oil or clothing containing mineral oil.
4. Inhalation of mineral oil vapours must be avoided. Never fire the burner in the open air as unburnt oil vapours are likely to occur.
5. Use a suitable barrier cream which will give protection against mineral oil, lanolin based hand cream are usually very effective.
6. Never syphon minerals oil by mouth. If accidentally swallowed, call a doctor, do not induce vomiting.

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.

INTRODUCTION

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

This appliance must be commissioned by a competent engineer, such as OFTEC approved or a commissioning as shown on the Rayburn list.

Failure to install and maintain the appliance correctly could lead to prosecution.

An additional flueway and combustion chamber clean halfway through the heating season may be necessary in some cases.

The Rayburn cannot be serviced whilst hot, so both oven and boiler thermostats should be turned off on the evening before the service visit.

SERVICE SCHEDULE

Annual Service

During annual service flexible oil line, burner nozzles and burner head seals **MUST BE CHANGED**.

WIRING: Ensure there is no damage or loose connections. This should be carried out by a competent engineer.

BURNER REMOVAL - for cleaning and inspection.

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

BURNER SERVICING.

OIL PUMP SERVICING - Cleaning of fuel line strainer.

RE-COMMISSIONING

REPLACEMENT PARTS

Additional Flueway Clean

It may be necessary in some installations to give the boiler flueways a clean out at the end of the heating season.

PREPARATION

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

The burners can be removed without disconnecting the oil supply pipe. However if the filters are being cleaned or a pressure gauge fitted to the pump then the oil supply should be turned OFF and arrangements made to catch any oil which will leak from the oil pump.

BURNER ACCESS

SEE FIG. 1

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

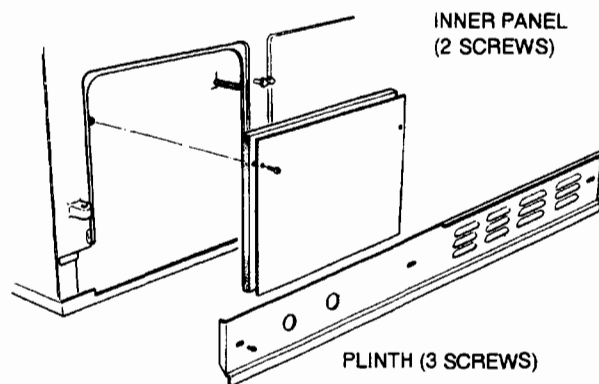


FIG. 1

DESN 511578

BURNER REMOVAL

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

SEE FIG. 2

1. Place a sheet on the floor in front of the cooker to act as a working area.
2. Disconnect the 5-pin plug underneath the burner..

DISCONNECT
5-PIN
PLUG

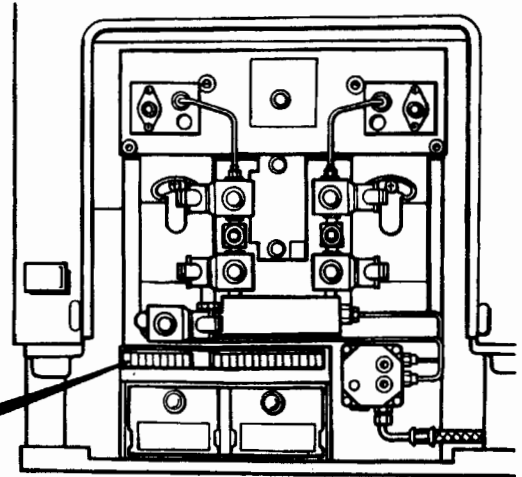


FIG. 2

DESN 511594

SEE FIG. 3

3. Undo the burner central locking nut.

UNDO CENTRAL
LOCKING NUT

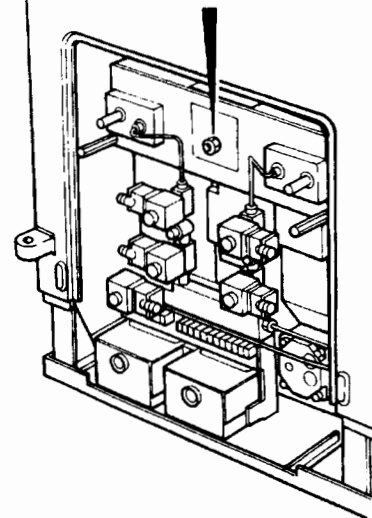


FIG. 3

DESN 511592

SEE FIG. 4

4. Withdraw the burner unit.

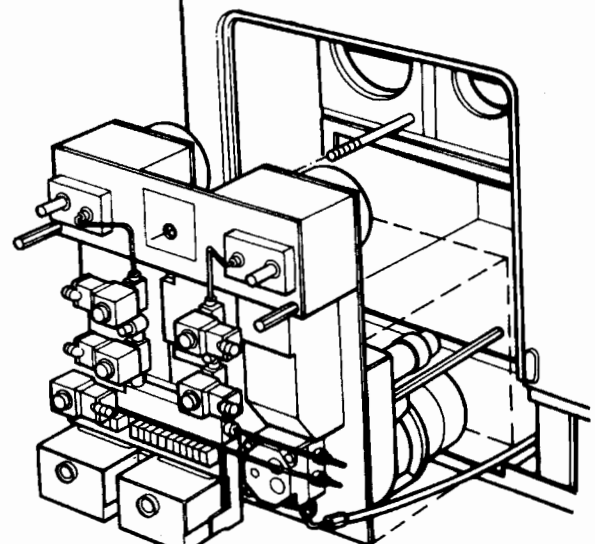


FIG. 4

WITHDRAW BURNER
UNIT

DESN 511591 A

HEAT EXCHANGER CLEANING

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

SEE FIG. 5

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

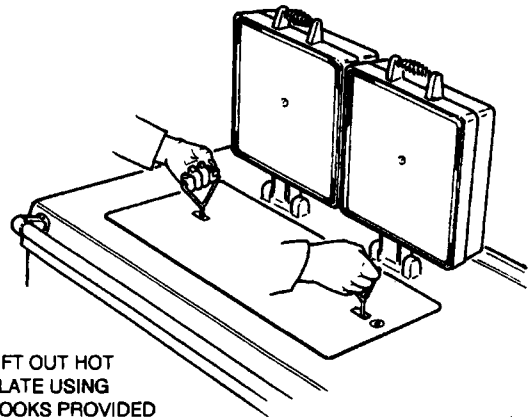


FIG. 5

DESN 510523

SEE FIG. 6

2. Remove the 4 flue cleaning access door securing bolts and remove door.
3. Using the rods provided remove the boiler flueway baffles from between boiler cross waterways.

NOTE: Lowest baffles are stainless steel and must be kept in this position, when re-assembling.

They are assembled in alternate directions to allow the gases to flow front to back through the assembly.

Each heat exchanger has two rows of baffles.

Total number of baffles fitted are:-

460 = 6	(2 x 3)
480 = 8	(2 x 4)
499 = 10	(2 x 5)

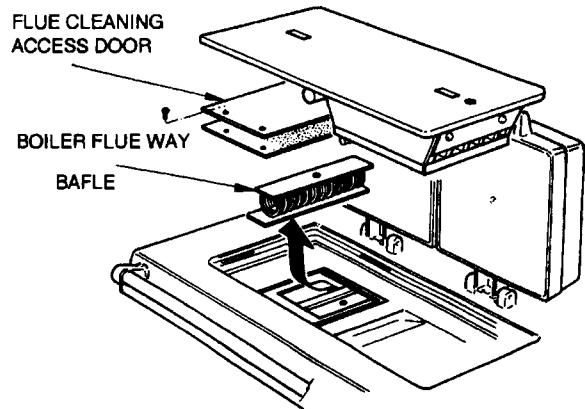
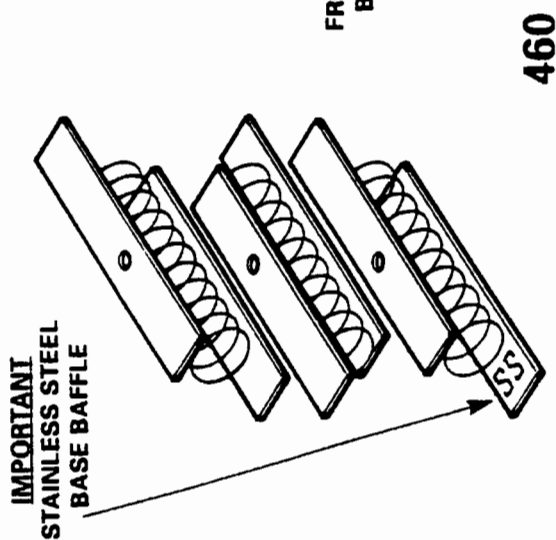
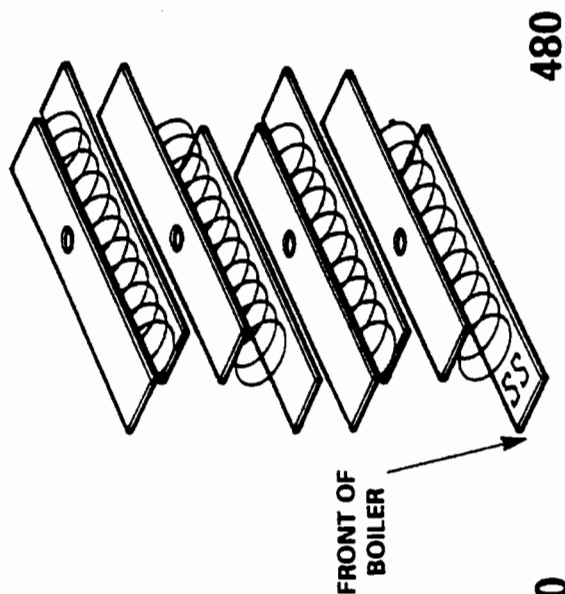
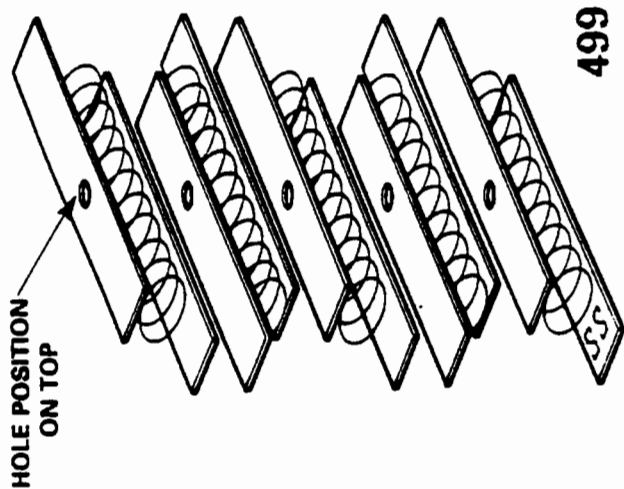


FIG. 6

DESN 511595



ALL BAFFLES MUST BE STACKED AS DIAGRAMS BELOW

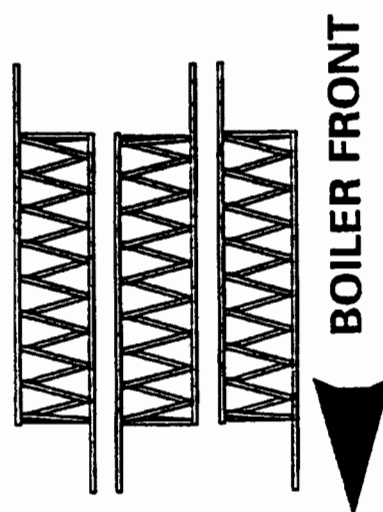
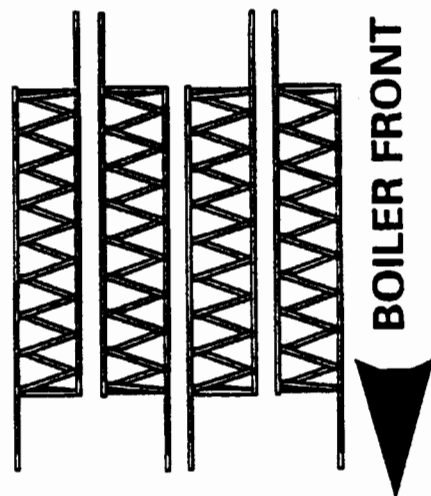
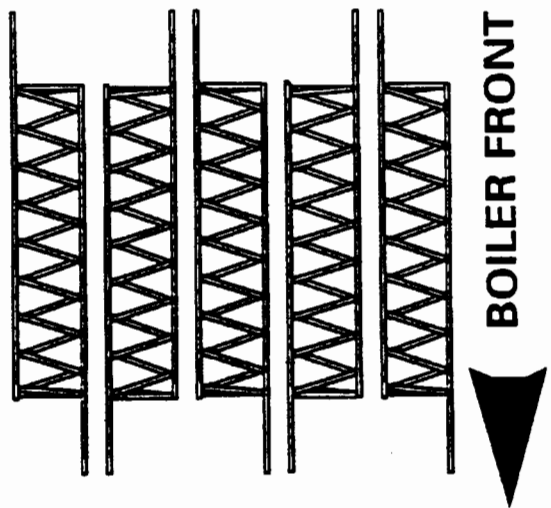


FIG. 6A

SEE FIG. 7

4. Lift top plate enamelled cover panel (behind LH insulating cover) remove insulation pad and sealing plate.
5. Clean the boiler outlet flueway by inserting the flexible brush through the top plate aperture, directing it towards the flue outlet. Scrape the deposits towards the heat exchanger.
6. Thoroughly clean boiler heat exchanger flueway.
7. Carefully vacuum any debris that has fallen down into the burner chamber.
8. Clean and replace boiler flueway baffles in reverse order. Locate boiler flue access door, secure.
9. Replace sealing plate, insulation pad and cover panel.

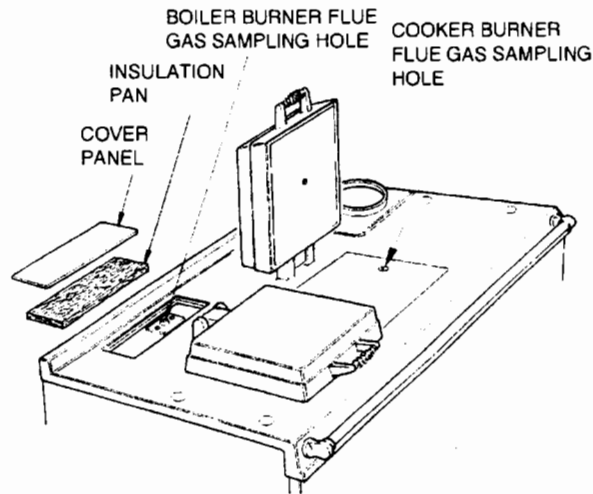


FIG. 7

DESN 511596

OVEN & HOTPLATE FLUEWAY CLEANING

SEE FIG. 8

1. Remove the top oven door and place in a safe position.
2. Remove side and base access doors use hex. driver.
3. Thoroughly clean top, side and base flueways through access apertures with brush.
4. Remove all debris with vacuum cleaner.
5. Replace side and base access doors. Secure in position using hex. driver.
6. Brush and clean in between hotplate ribs on underside.
7. Examine soft rope seal located around hotplate aperture in top plate and two rope seals on hotspot. Replace if frayed or damaged.
8. Replace hotplate ensuring the underside ribs lie over the oven, and that it seals to the top plate.

ACCESS
DOOR
(4 SCREWS)

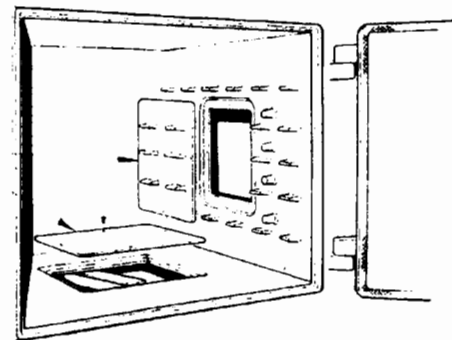


FIG. 8

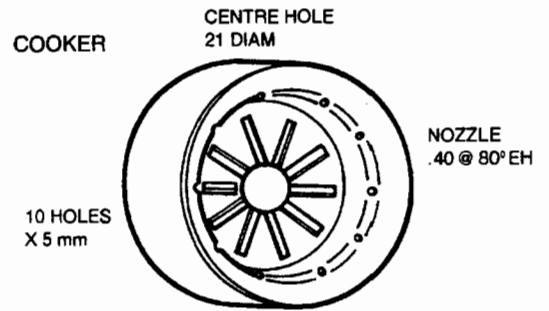
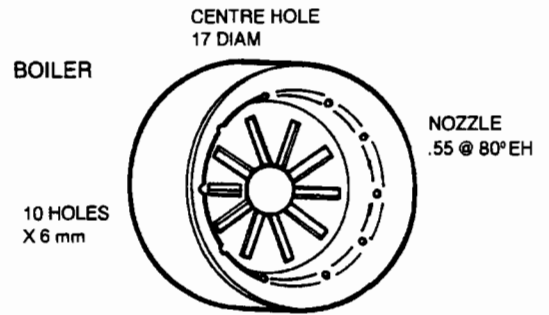
DESN 511596

INTRODUCTION

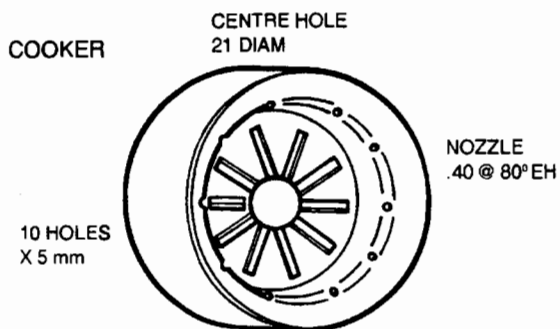
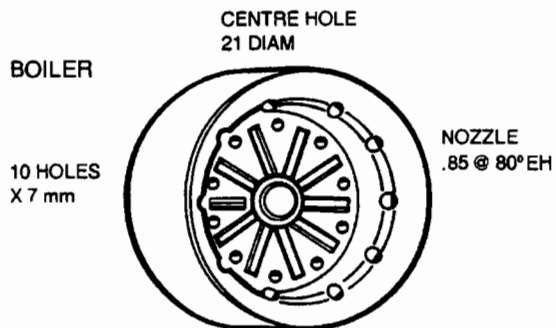
SEE FIG 9A & 9B

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

The correct combination of burner blast tubes are shown.

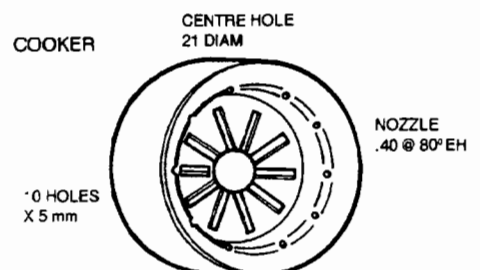
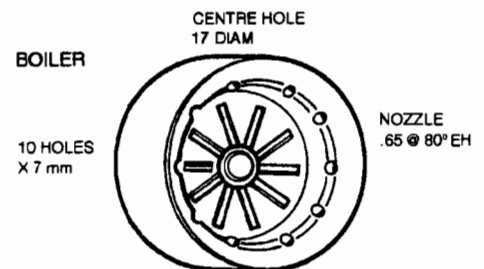


460K



499K

FIG. 9A



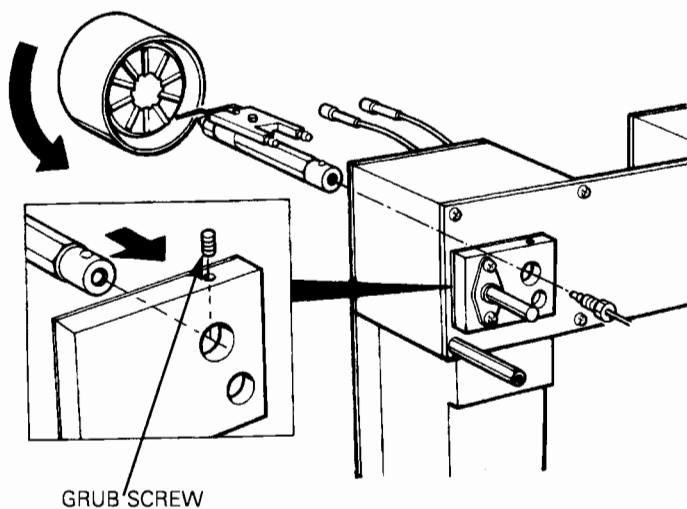
480K

FIG. 9A

BURNER NOZZLE REMOVAL

SEE FIG. 10

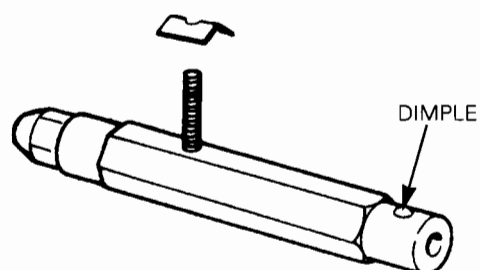
1. Remove blast tube by slackening three screws rotate tube to right, pull forward.
2. Undo burner feed pipe, slacken grub screw. Slide out nozzle holder and disconnect ignition leads.
3. Remove ignitor assembly by removing nut and two washers.
4. Unscrew nozzle from its holder with a correctly fitting tubular spanner to avoid damage to hexagon.



DESN 511597

REMOVE IGNITOR
SECURING NUT AND
WASHER

IGNITOR ASSEMBLY



DESN 511583 A

BURNER NOZZLE REPLACEMENT

SEE FIG. 10

1. Replace nozzle by a new one of the same make and specification.
2. Ensure that mating faces are clean.
3. Hold nozzle holder with correct spanner when tightening nozzle.
4. Typically finger tight plus 1/4 turn with spanner is sufficient.

DO NOT OVERTIGHTEN.

5. Ensure electrode gaps are correct.

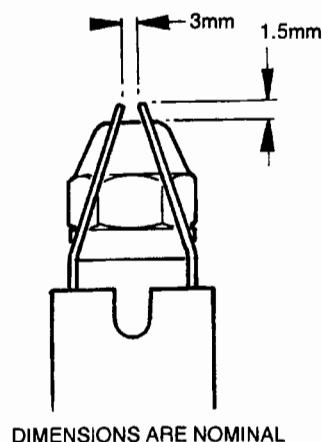


FIG. 10

DESN 510538

**PHOTO ELECTRIC CELL (PEC)
CLEANING**

SEE FIG. 11

Withdraw Photo Electric Cell from the burner head. Clean PEC sensing end with a soft cloth taking care not to scratch the light sensitive body. Re-insert PEC taking care to insert the correct way round.

Should the cell or the lead shown signs of distortion or cracking, replacement will be necessary. See PEC replacement, page 24.

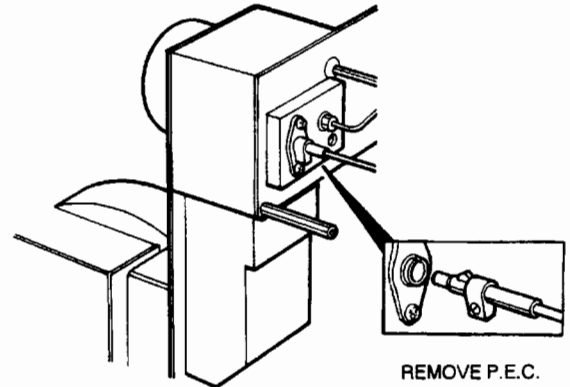


FIG. 11

DESN 511588

FAN CLEANING

1. Clean between the blades of the fan impeller with a small brush and remove any residue.

RE-ASSEMBLE BURNER

Re-assemble the burner in reverse order making sure that the fixing screw for the nozzle is correctly lined up with the respective hole in the body.

NOTE: Burner head gaskets should be renewed at each service

Oil Pump Servicing

INTRODUCTION

To carry out any servicing on the oil pump. Turn off the oil line isolating valve near to the appliance.

OIL PUMP STRAINER CLEANING

1. The oil pump strainer is situated on top of the pump.
2. Remove the cartridge filter with a hex. driver.
3. Wash with clean petrol or paraffin.
4. Re-assemble in reverse order.

OIL LINE FILTER CLEANING

1. Turn OFF the line isolating valve fitted prior to the oil line filter.
2. Follow manufacturer's instructions to remove filter element from the housing, taking care to collect Kerosene residue from the filter housing.
3. Wash filter thoroughly in clean petrol or paraffin.
4. Re-assemble in reverse order.

NOTE: Flexible fuel hose (s) must be replaced at each service.

SOLENOID TESTING

As both burners are fed by a common oil pump, but are controlled by an individual pair of solenoids on each burner, it is desirable to check the correct functioning of each valve during a routine service visit, particularly to ensure that no oil is being passed when closed. This is easy to carry out in the following manner:-

1. Attach pressure gauge to cooker test point (1/8" BSP Plugged Tee).
2. Start up **BOILER BURNER** and observe pressure gauge. There should be no rise in pressure, which should remain at zero. Any increase in pressure would indicate a leaking first stage solenoid.
3. Turn off **BOILER BURNER**, and start **COOKER BURNER**.
4. Check that pressure increases and burner fires.
5. Turn off **COOKER BURNER** and pressure should remain at operating level. Any fall off of pressure may be as a result of the second passing oil.

To check the boiler burner solenoids involves the same test principle.

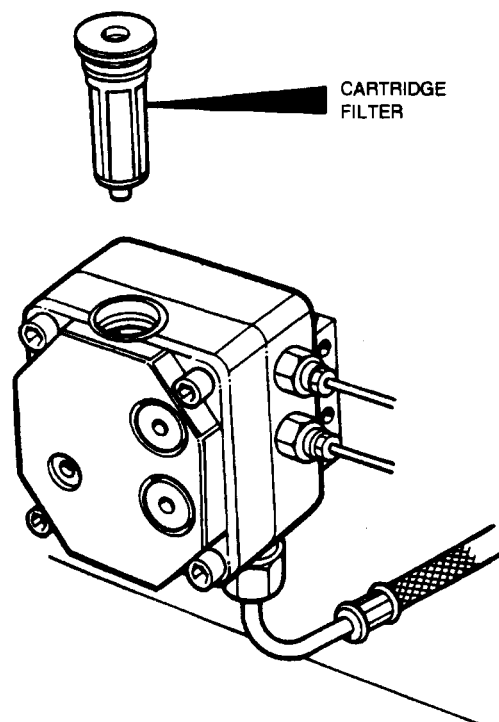


FIG. 12

DESN 511598

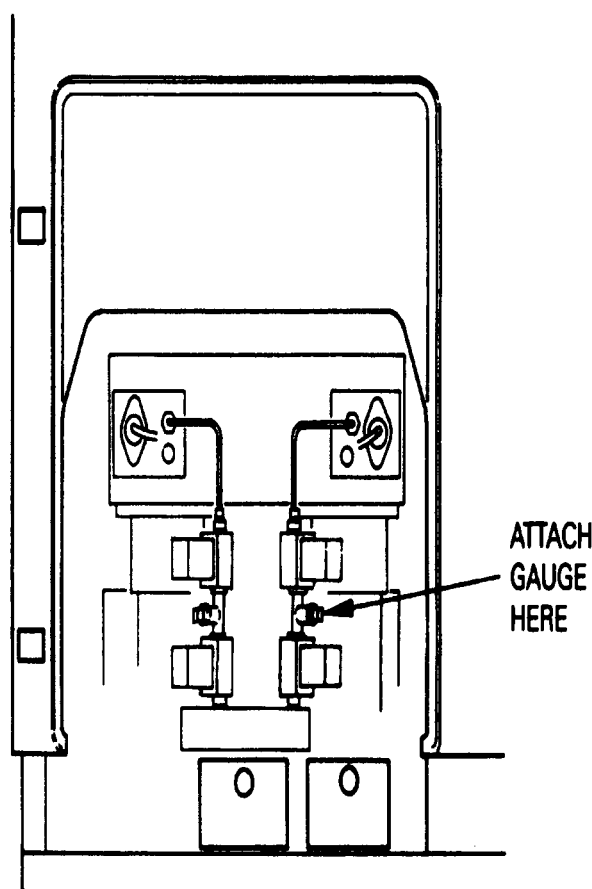


FIG. 12A

DESN 511236

BLEED AIR FROM OIL SUPPLY

SEE FIG. 13

Disconnect the flexible oil pipe line at the pump inlet, open the stop valve slowly and run off some of the oil into a receptacle to establish an air free supply to the pump. Remake the connection oil tight and leave valve open.

FIT PRESSURE GAUGE

SEE FIG. 13

Remove the bleed screw from the pump and fit an oil pressure gauge with R 1/8 connection to check the pump output pressure.

SWITCH ON ELECTRICITY

at the boiler burner time clock to continuous and turn the boiler thermostat to maximum. The boiler burner should run on pre-purge for 7 - 15 seconds. With the ignition spark energised. The oil solenoid valve should open allowing the burner on fire.

Until all the air from the oil pump is flushed out there may be some flame instability resulting in the burner locking out. This will be shown by the burner stopping and the illumination of the signal light in the reset button of the control box (see Fig. 14). **IN THIS EVENT, WAIT AT LEAST ONE MINUTE**, then press the re-set button to restart.

VENT OIL PUMP

SEE FIG. 13

Whilst the burner is running, vent air from the pump by slackening the pressure gauge port sufficient to allow air to bleed out. When bubble free oil seeps out re-tighten.

ADJUST OIL PRESSURE

SEE FIG. 13

With the burner running check the oil pressure on the pressure gauge.

If the pressure gauge is not indicating the correct reading then adjust the pressure by turning the pressure regulator clockwise to increase or anti-clockwise to decrease the pressure until the pressure gauge reads 10 bar (145 lbf/in²).

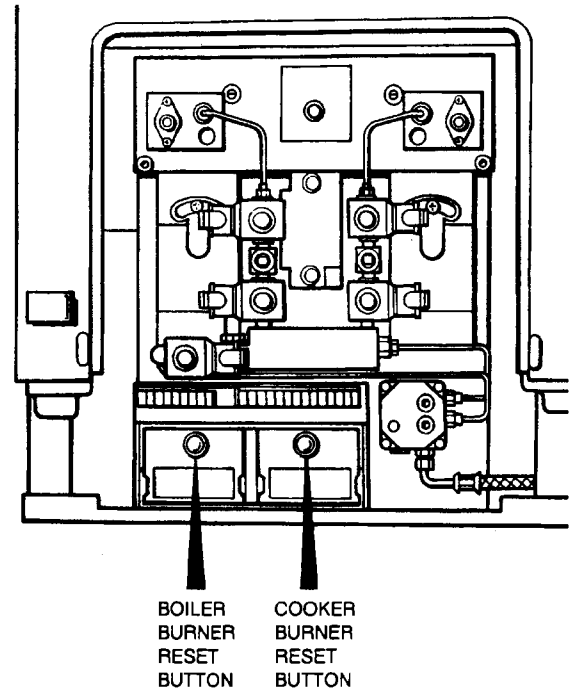


FIG. 13

DESN 511599

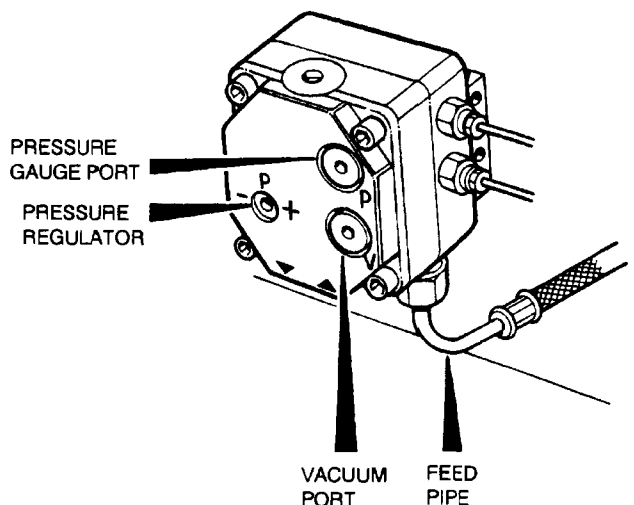


FIG. 14

DESN 511600

SET COMBUSTION AIR

SEE FIG. 15

After 15 minutes of the boiler burner running.

Remove the enamelled top cover panel and the insulation pad.

Remove the plugging screw and insert the sensing end of a portable indicator to check the CO² (Carbon Dioxide) level. Adjust the boiler burner air intake until a reading of 11.0/11.5% is recorded on the indicator.

CHECK SMOKE

SEE FIG. 15

Remove the CO² sampling tube and using the same hole for flue sampling insert the sensing end of a Baccarach Smoke Pump and check that the smoke in the boiler flue ways does not exceed No. 2 on the scale.

Replace the plugging screw, insulation pad and cover panel.

Switch off the boiler burner.

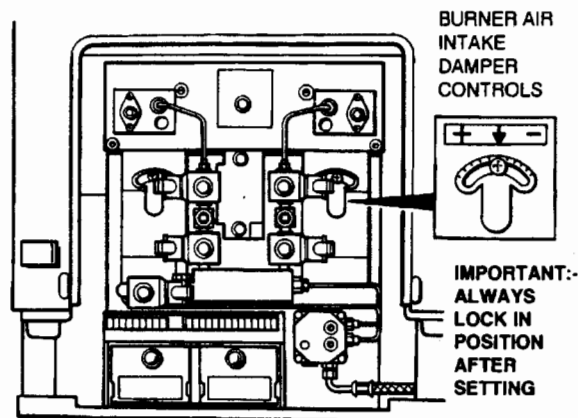
COOKER BURNER - SEE FIG. 15

Switch on cooker burner.

After 15 minutes of the cooker burner running.

Repeat the above procedures for the cooker burner. To sample the flue gases from the cooker burner lift up the R.H. insulating cover and remove the countersunk headed screw in the hotplate. The cooker burner should be set to 11.0/11.5% maximum Smoke No. 2.

Replace the countersunk headed screw on completion ensuring that it will not interfere with any pots and pans placed on the hotplate.



DESN 511576

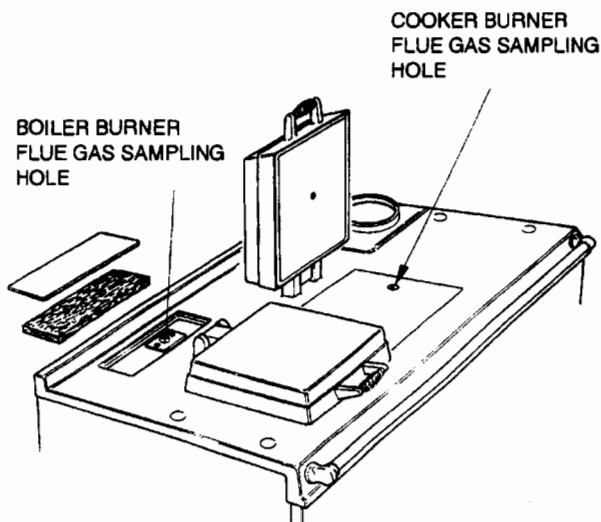


FIG. 15

DESN 511588

ELECTRICAL COMPONENT ACCESS

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

SEE FIG. 16

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

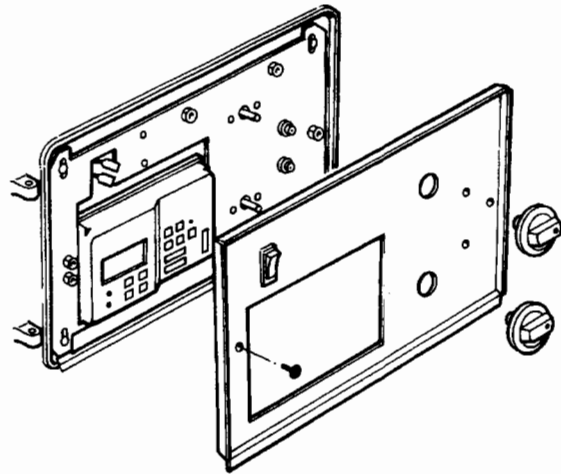


FIG. 16

DESN 511586

SEE FIG. 17

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

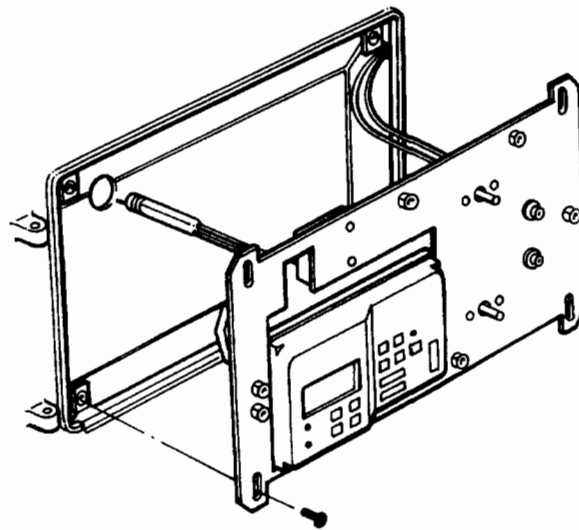


FIG. 17

DESN 511587

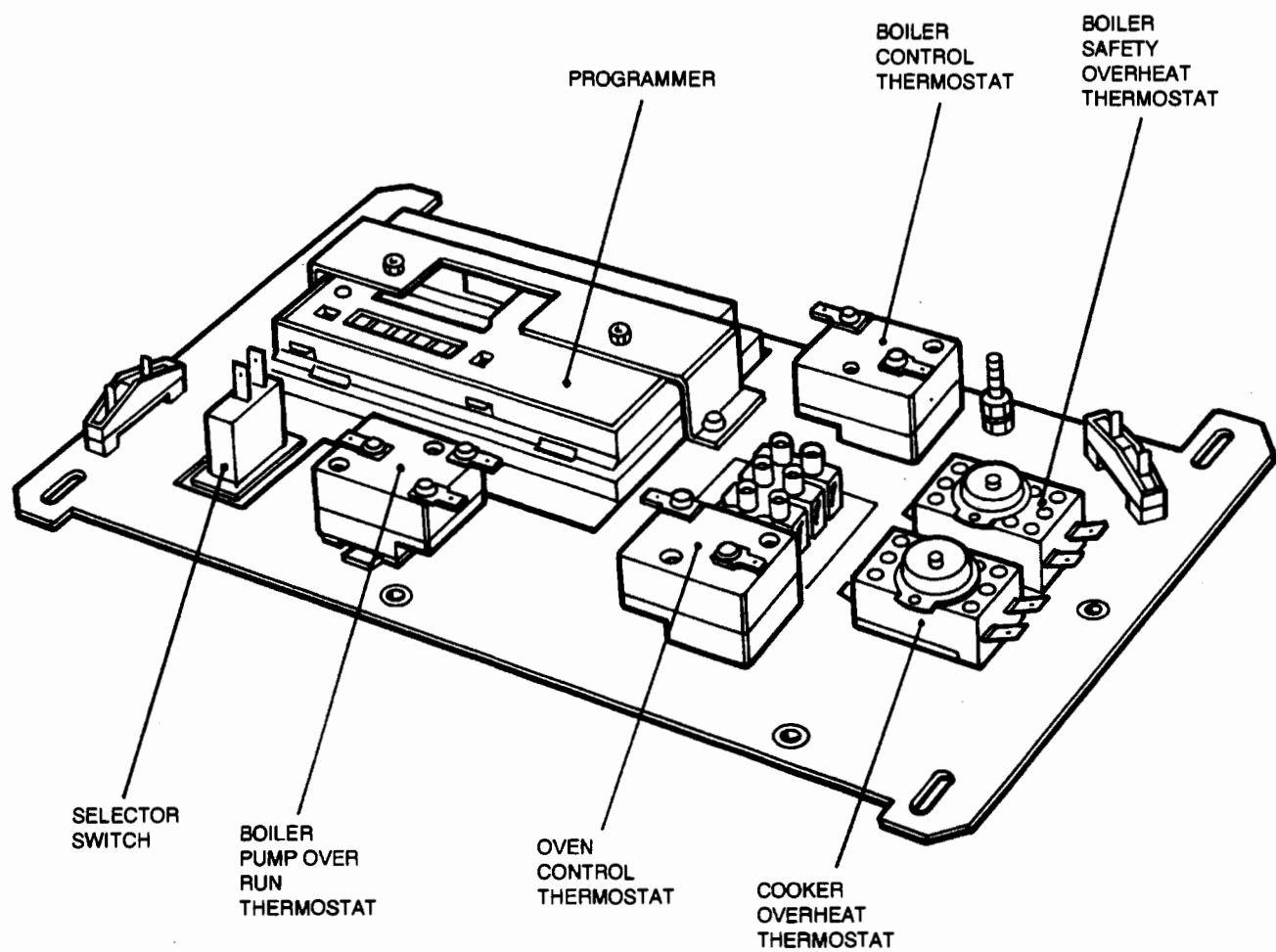


FIG. 18

DESN 511601

TO FIT NEW BOILER CONTROL THERMOSTAT

SEE FIG. 19

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

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

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

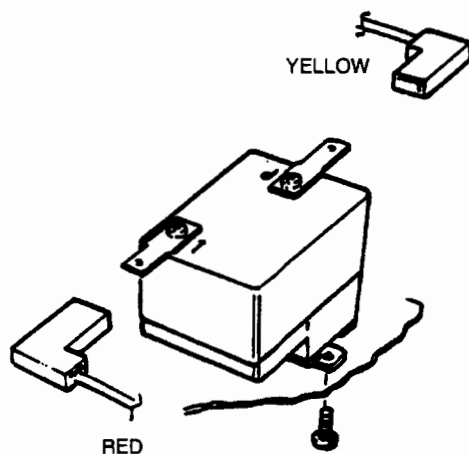


FIG. 19

DESN 510546 A

TO FIT NEW BOILER PUMP OVERRUN THERMOSTAT

SEE FIG. 20

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

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

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

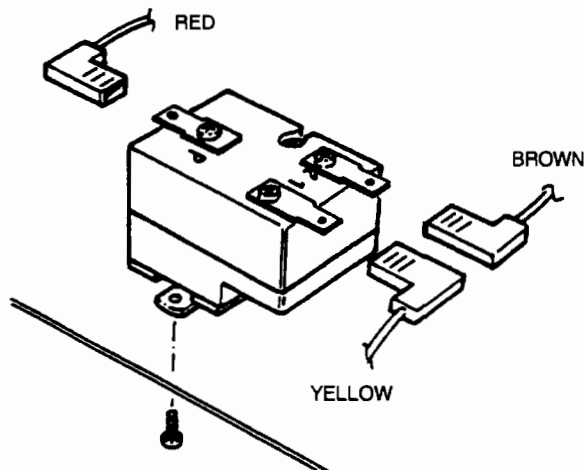


FIG. 20

DESN 510547 A

TO FIT NEW COOKER SAFETY OVERHEAT THERMOSTAT

SEE FIG. 21

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

1. Undo the central hexagon nut on the front of the chassis which holds the thermostat in place.
2. Remove the two push on connectors from the back of the thermostat. Open oven door to access the thermostat phial which passes into the oven at top LH corner.
3. Remove LH side plate, slacken screw where the phial passes through RH side and rotate. Slacken screw front phial mounting bracket rotate.
4. Replace thermostat, thermostat phial should be repositioned in the same position as removed.

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

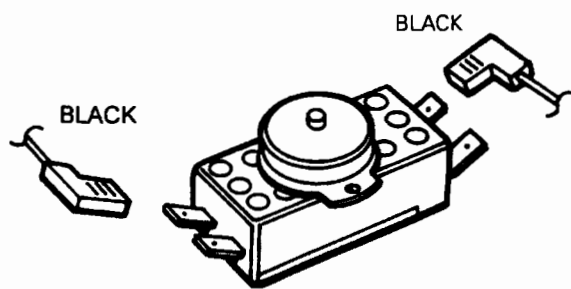


FIG. 21

DESN 511585

TO FIT NEW BOILER SAFETY OVERHEAT THERMOSTAT

SEE FIG. 22

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

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

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

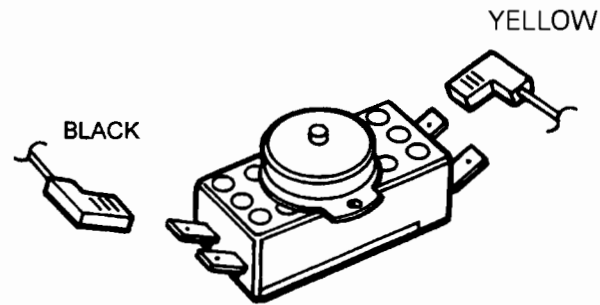


FIG. 22

DESN 511585

TO FIT NEW OVEN CONTROL THERMOSTAT

SEE FIG. 23

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

1. Undo the two screws on the front of the chassis which holds the thermostat in place.
2. Remove the two push on connectors from back of thermostat.
3. Open roasting oven door to access the thermostat phial and capillary which pass into the oven at the top, left hand corner.
4. Remove LH side plate. Slacken the screw where the phial passes through the roasting oven side and rotate the cover plate to open up the access hole. Slacken screw front phial, mounting bracket and rotate.
5. Replace thermostat. The thermostat should be mounted with tag P at the right hand side. Reposition the phial in same position as removed.
6. Re-connect push on connector. The VIOLET/BLACK wire to 1 and BLACK (3) wire to P.

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

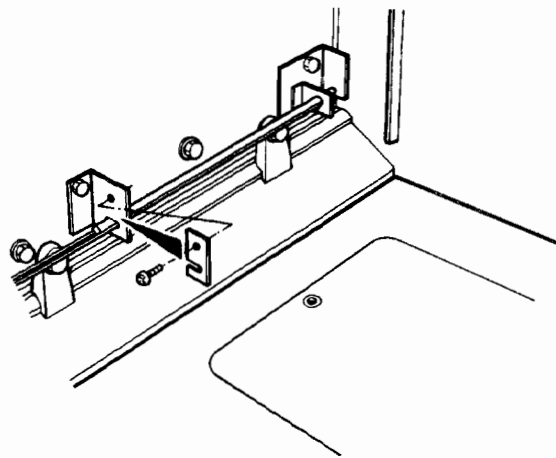


FIG. 23

DESN 511584

TO FIT NEW PROGRAMMER

SEE FIG. 24

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

1. Slacken two screws at bottom of programmer.
2. Pull the bottom of the programmer forward and lift.
3. Replace with new programmer. Clip onto the hinges at the top. Press bottom into place. Tighten two securing screws.

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

TOP HINGES

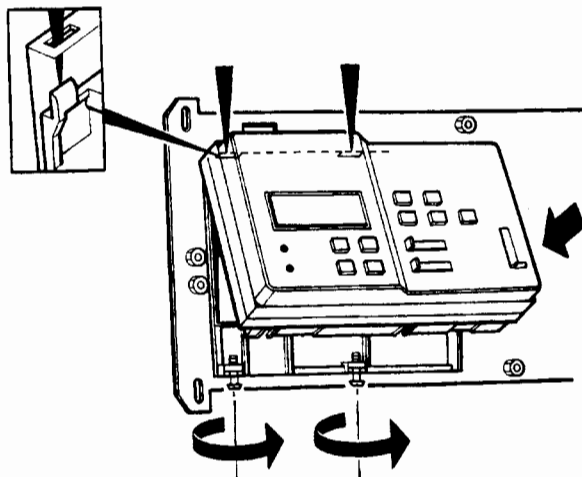


FIG. 24

DESN 511602

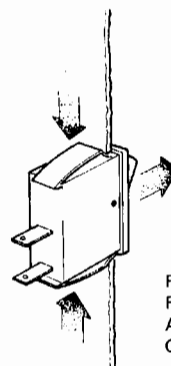
TO FIT NEW SELECTOR SWITCH

SEE FIG. 25

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

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

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



PRESS IN
RETAINING CLIPS
AND PUSH SWITCH
OUT

FIG. 25

DESN 510553 A

RE-ASSEMBLE

1. Locate thermostat phials into boiler pocket.
2. Locate the base of the control chassis into the bottom of the door way aperture, tilt the chassis backwards into position and secure with the four screws.
3. Thread the two wires for the selector switch through the aperture and connect them onto the rear of the selector switch fitted in the outer panel. Connect the ORANGE wire on 1 and the PURPLE wire on 2.
4. Refix the outer panel in position and secure with the 2 screws.
5. Replace the thermostat knobs.
6. Replace the controls door.

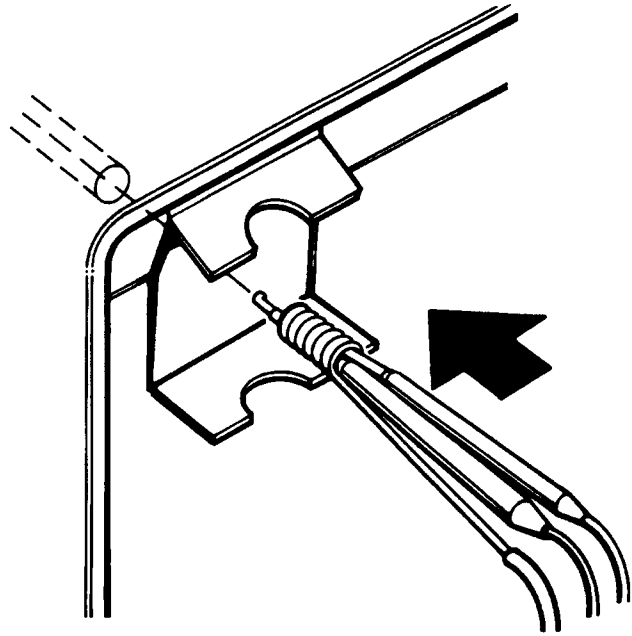


FIG. 12A

DESN 511673

Replacement of parts (Burner)

FAN MOTOR

SEE FIG 26A & 26B

Follow instructions in sections BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 5.

COOKER FAN

- 1. Remove fan box cover, 2 screws.
- 2. Remove three pin plug.
- 3. Remove two push on connectors from capacitor, BROWN to 1 and BLACK TO 2.
- 4. Remove two securing screws, slide off motor.
- 5. Check drive, replace if worn or damaged. Reassemble in reverse order.

BOILER FAN

- 1. Remove fan box cover, two screws.
- 2. Unscrew Hex. bar.
- 3. Remove fan silencer, three screws.
- 4. Disconnect, live, neutral and earth from terminal strip (noting connections).
- 5. Remove two screws from bottom of fan. Slacken two screws top of fan, slide down to remove.
- 6. Replace fan. Reassemble in reverse order.

BOILER FAN RESISTOR

Follow instructions in sections BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 5.

- 1. Remove fan box cover, two screws.
- 2. Unscrew Hex. bar.
- 3. Remove fan silencer, three screws.
- 4. Disconnect leads from terminal strip (noting connections).
- 5. Remove two securing screws.
- 6. Fit new resistor of same value (see table).
- 7. Re-assemble in reverse order.

460	25W	470R	PURPLE LEADS
480	25W	330R	ORANGE LEADS
499	25W	220R	BLACK LEADS

IGNITION ELECTRODES

SEE FIG. 27

Follow instructions in BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 5 and BURNER NOZZLE REMOVAL, Steps 1 to 4.

- 1. Remove blast tube by slackening three screws. Rotate tube to right, pull forwards.
- 2. Remove ignition electrode assembly, by removing nut.
- 3. Fit new ignition electrode assembly, re-assemble in reverse order.
- 4. Check electrode gap and reset if necessary.

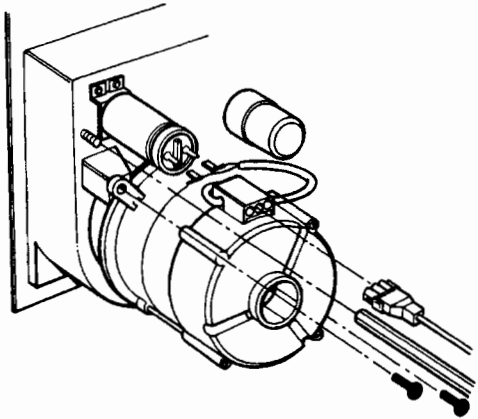


FIG. 26 A

DESN 511603

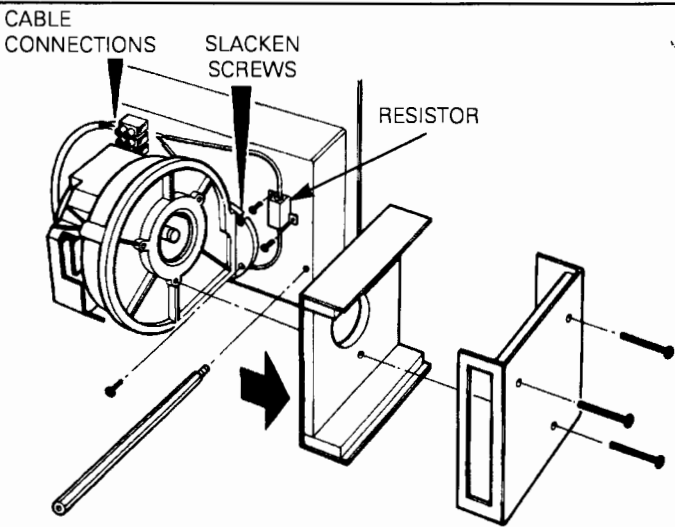


FIG. 26 B

DESN 511655

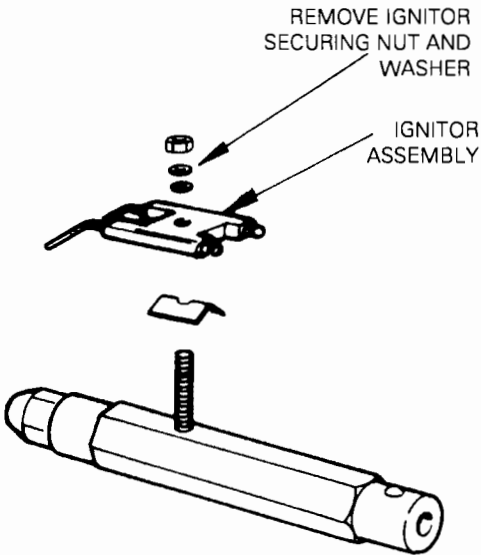


FIG. 27

DESN 511583 A

DISMANTLE BURNERS

SEE FIG. 28

Follow instructions in sections BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 5.

1. Disconnect four pin plug (second from left).
2. Disconnect feed and return pipes from pump.
3. Remove fixing screw above control box, remove six screws and two Hex. bars from head.
4. Withdraw complete assembly.

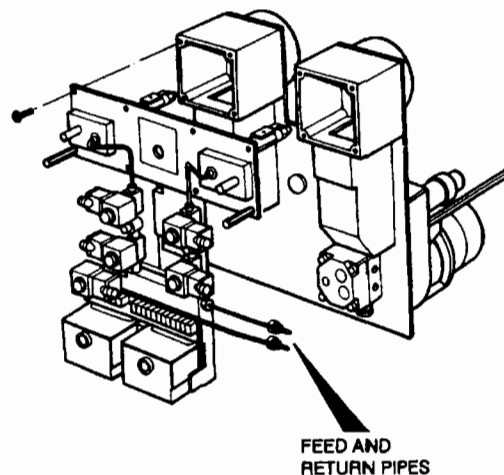


FIG. 28

DESN 511607

AIR PRESSURE SWITCH

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 5 and DISMANTLE BURNERS 1-4.

1. Disconnect oil feed from heads.
2. Disconnect feed and return from pump.
3. Remove the fixing screws from manifold and lift off assembly.
4. Lift off pressure switch cover. Remove two push on connectors (noting connections).
5. Remove two tubes (noting connections). Remove the securing nuts and bolts.
6. Replace switch. Re-assemble in reverse order.

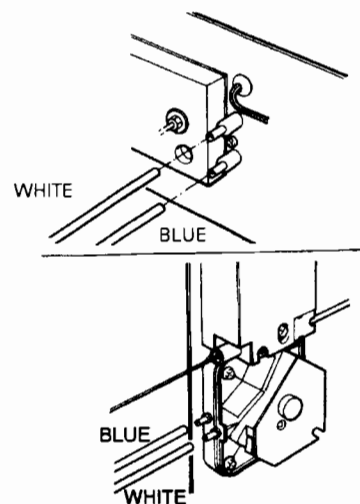


FIG. 29

DESN 511605

Replacement of parts (Burner)

IGNITOR

SEE FIG. 30

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 5 and DISMANTLE BURNERS, Steps 1 to 4.

1. Remove both HT leads from ignitor,
2. Remove mains plug from ignitor.
3. Remove 2 ignitor securing nuts and bolts.
4. Remove ignitor.
5. Fit new ignitor, re-assemble in reverse order.

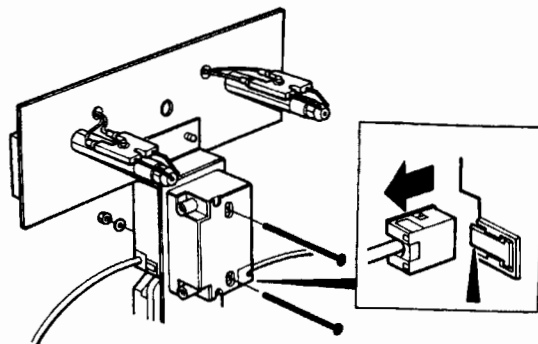


FIG. 30

DESN 511582

RELAY

SEE FIG. 31

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 5.

1. Remove control boxes.
2. Remove plugs noting connections.
3. Remove two base securing nuts and bolts.
4. Fit new base, reassemble in reverse order.

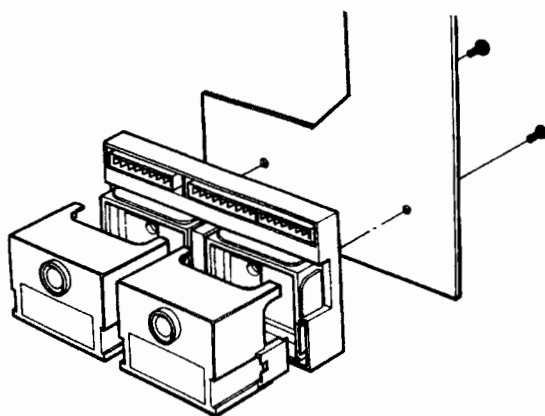


FIG. 31

DESN 511606

SOLENOID COIL

SEE FIG. 32

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 5.

1. Slacken solenoid plug securing screw.
2. Remove plug.
3. Remove solenoid securing nut and washer.
4. Remove solenoid coil.
5. Fit new solenoid coil, re-assemble in reverse order.

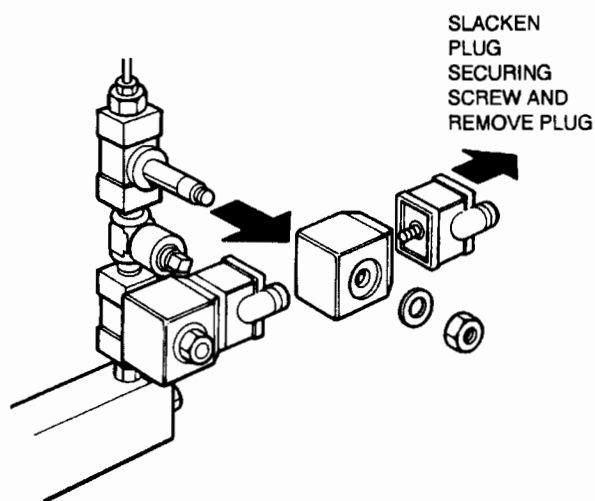


FIG. 32

DESN 511581

CONTROL BOX

SEE FIG. 33

Follow instructions in sections in BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 5.

1. Insert a flat bladed screwdriver in LH side of c. box, as diagram.
2. Repeat as above for RH side.
3. Gently pull c. box away from base.
4. Fit new c. box, re-assemble in reverse order.

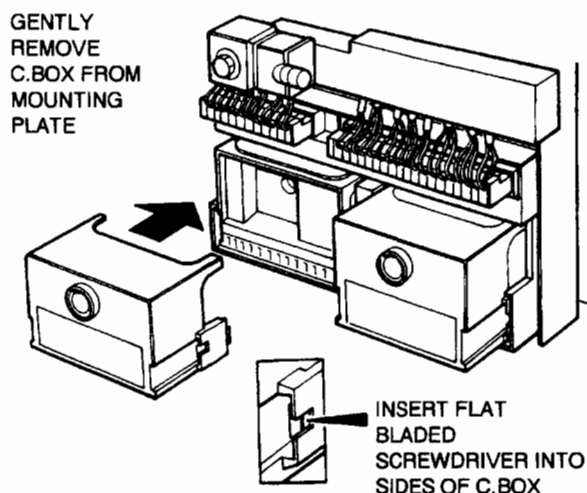


FIG. 33

DESN 511580

PEC

SEE FIG. 34

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 5.

1. Unplug PEC.
Disconnect two pin plug from top of base.
3. Withdraw PEC cable.
4. Slacken and remove PEC clip (note orientation of clip).
5. Transfer and secure clip to new PEC.
6. Fit new PEC, re-assemble in reverse order.

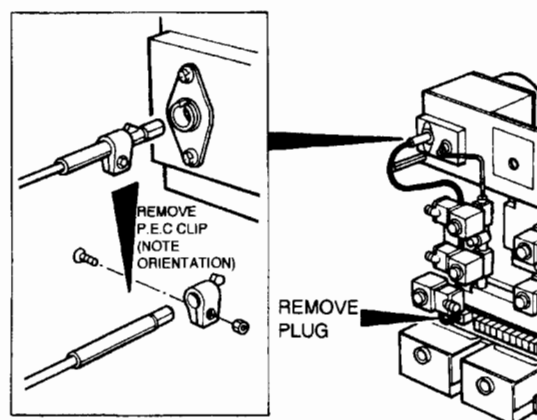


FIG. 34

DESN 511579

PUMP ACCESS

SEE FIG. 35

Follow instructions in section BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 5.

1. Isolate fuel supply.
2. Disconnect flexible hose. (This must be replaced annually).
3. Remove fan box cover, 2 screws.
4. Remove three pin plug.
5. Remove two push on connectors from capacitor BROWN to 1 and BLACK to 2.
6. Remove two securing screws, slide off motor and drive.
7. Slacken grub screw. Remove fan.
8. Disconnect feed and return pipes from pump.
9. Slacken two grub screws in pump mounting plate. Remove pump.
10. Replace pump, check drive. Replace if worn or damaged. Re-assemble in reverse order.

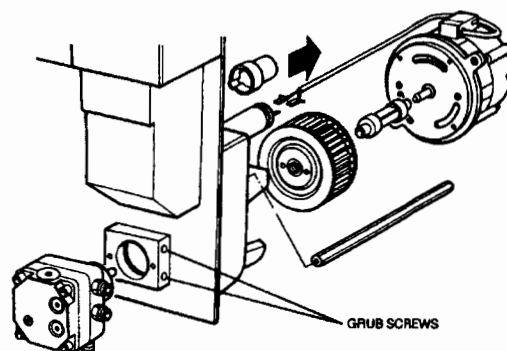


FIG. 35

DESN 511607

PUMP OVERRUN FACILITY

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

OVERHEAT SAFETY THERMOSTATS

BOILER

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

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

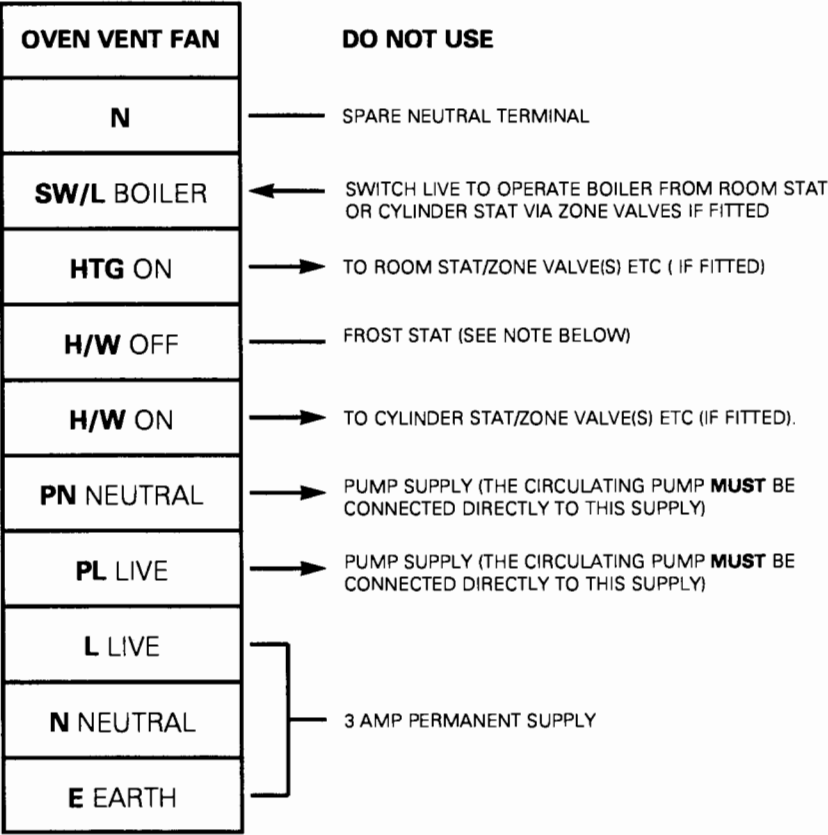
COOKER

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

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

CONTROL CIRCUIT-EXTERNAL

TERMINAL STRIP CONNECTIONS



NOTE:

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

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

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

CONTROL CIRCUIT-BOILER

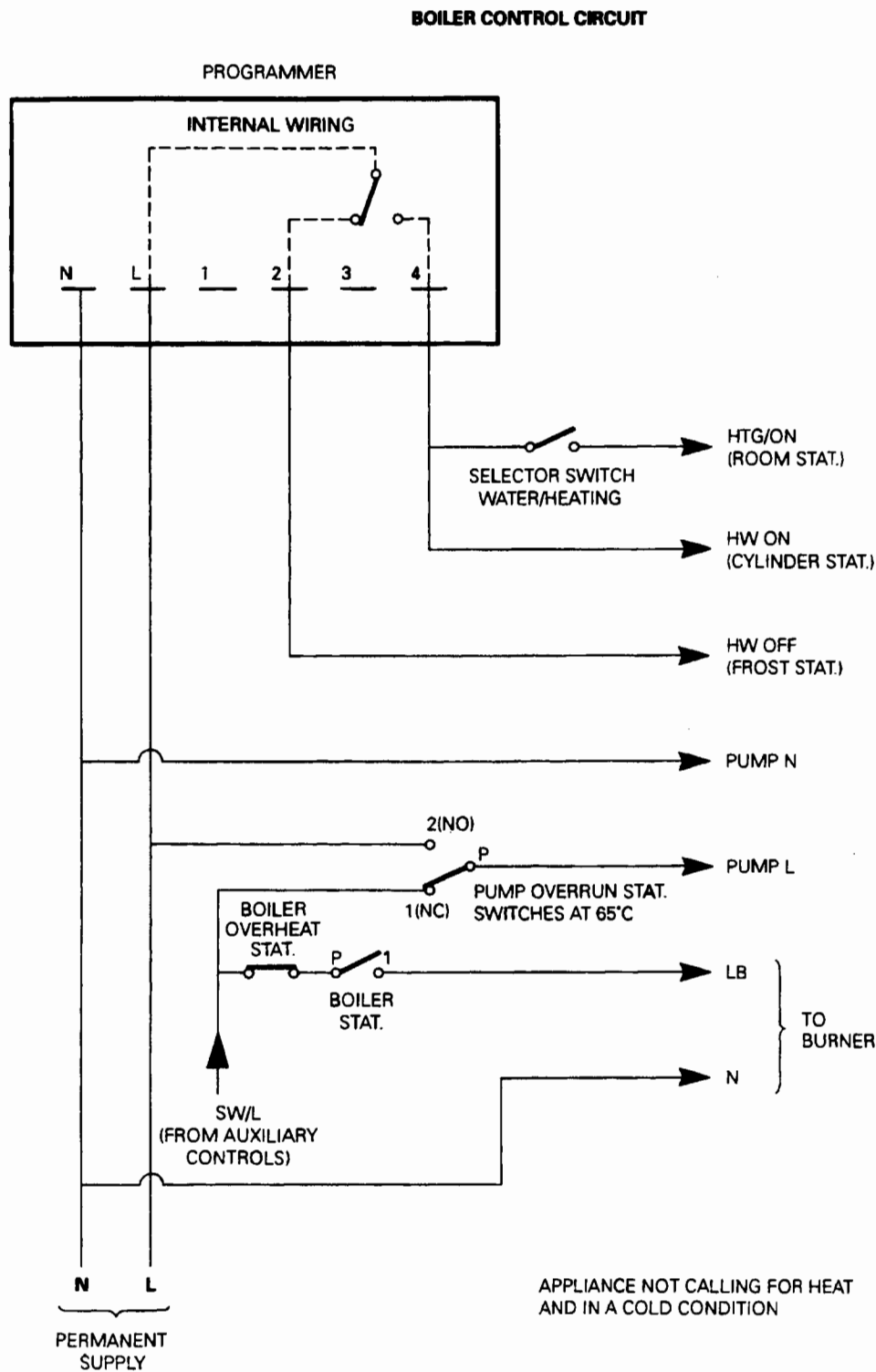


FIG. 36

CONTROL CIRCUIT-COOKER

COOKER CONTROL CIRCUIT

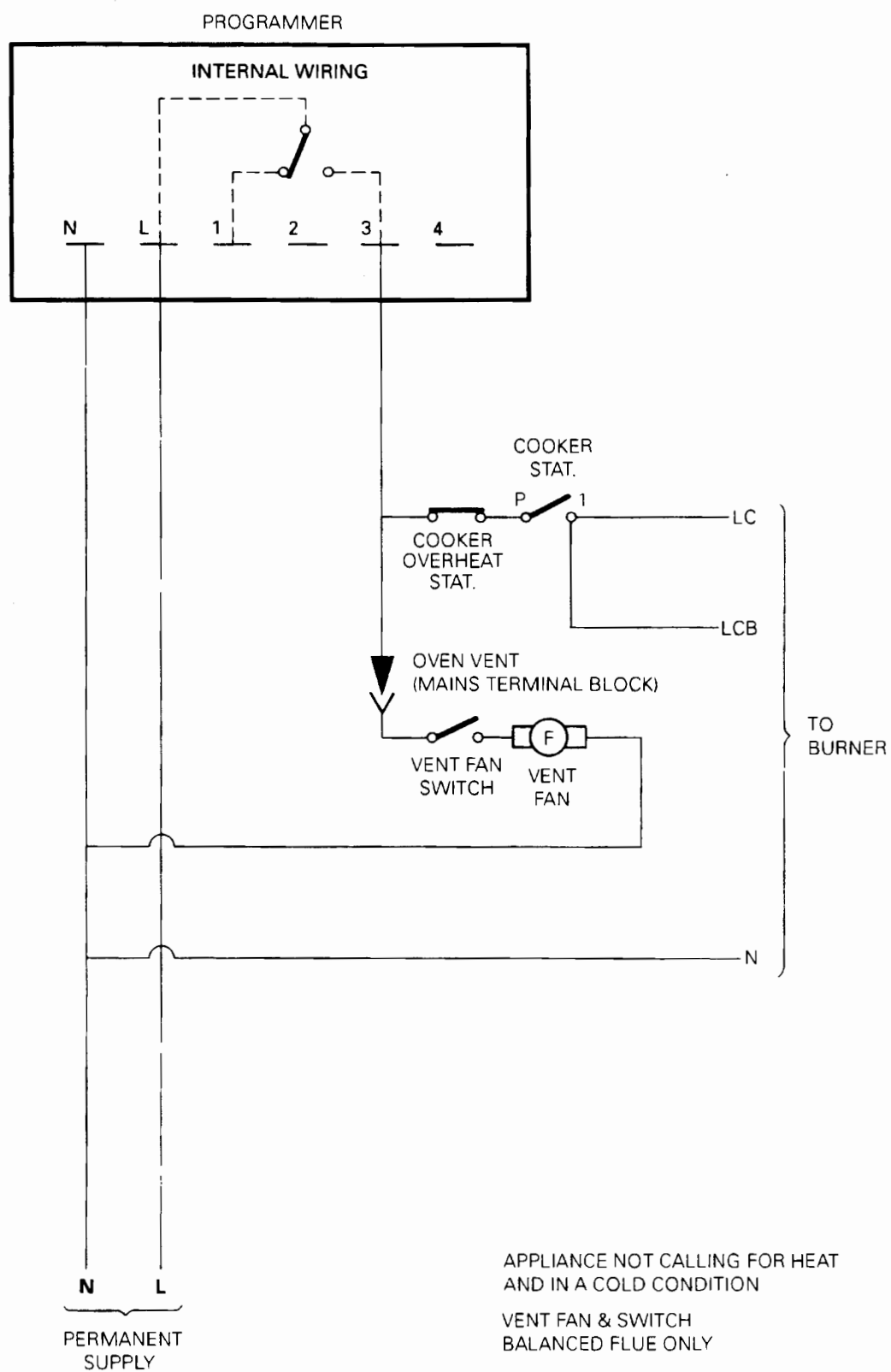


FIG. 37

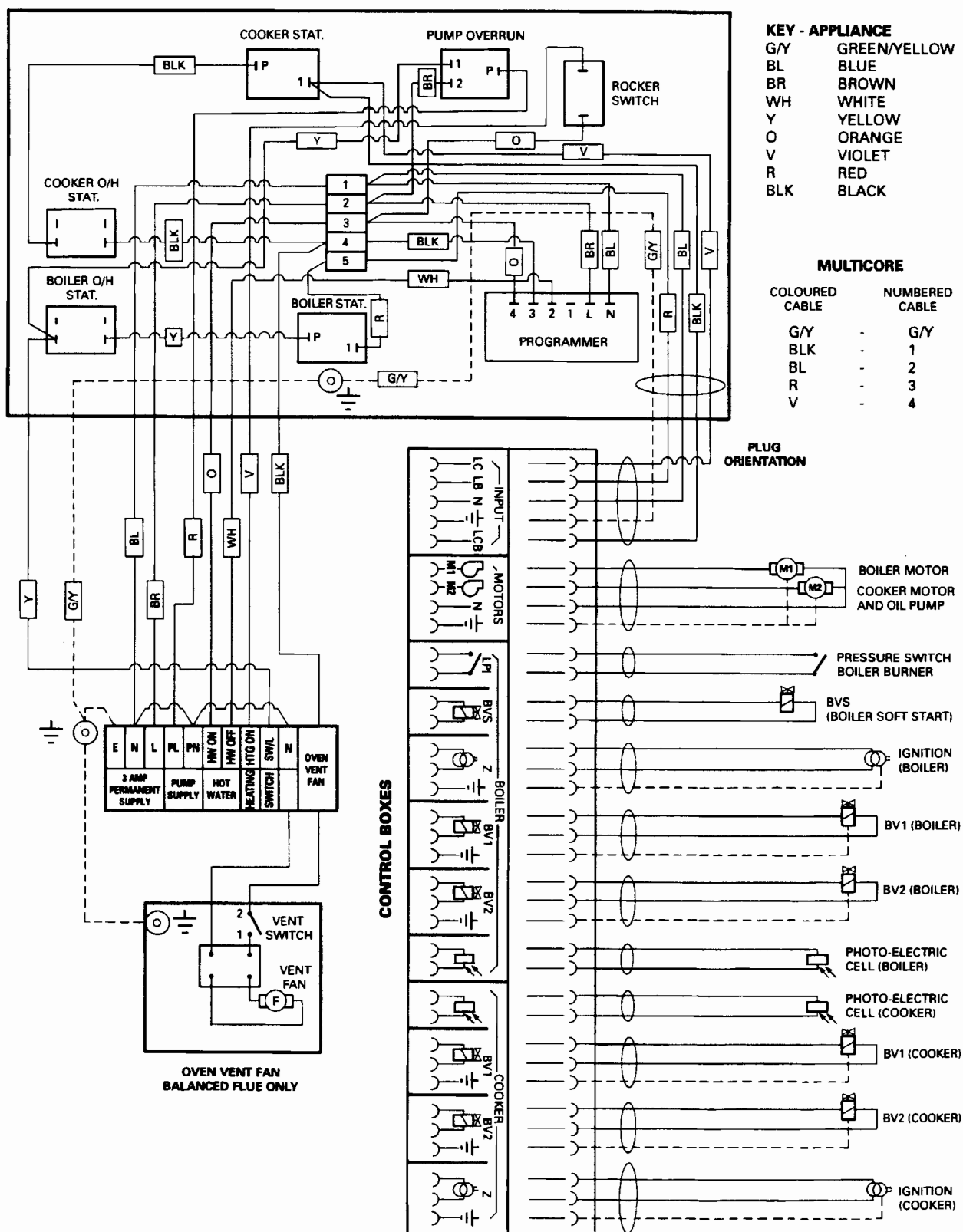


FIG. 38

BURNER DOES NOT START

Burners

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

Causes of lock-out can be:-

- ☐ No ignition, ignition electrode incorrectly positioned or insulation cracked, spark generator fault.
- ☐ No oil supply.
- ☐ Poor combustion.
- ☐ Photo electric cell incorrectly positioned, cracked or needs cleaning.
- ☐ Live and Neutral connections reversed.
- ☐ Faulty control box.
- ☐ Faulty fire valve.

REFER TO FLOW DIAGRAM FOR ELIMINATION PROCEDURE.

General

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

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

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

For access to individual controls refer to section Replacement Parts and for wiring continuity checks refer to Fig, 34, 36, 37 and 38 for detailed and schematic wiring diagrams.

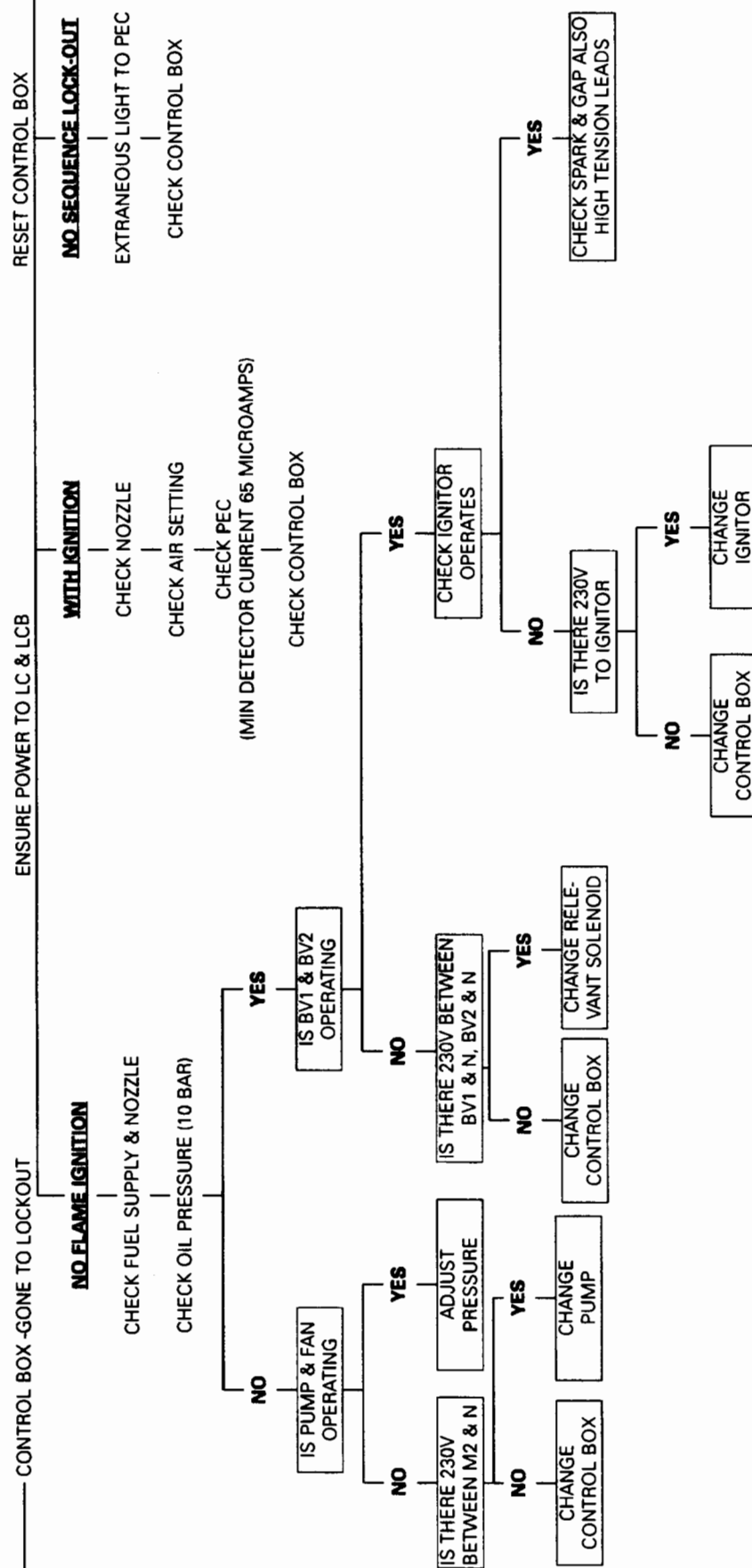
To check out the electrical wiring at the burners you will first have to access the burner chamber. Use the following procedure:-

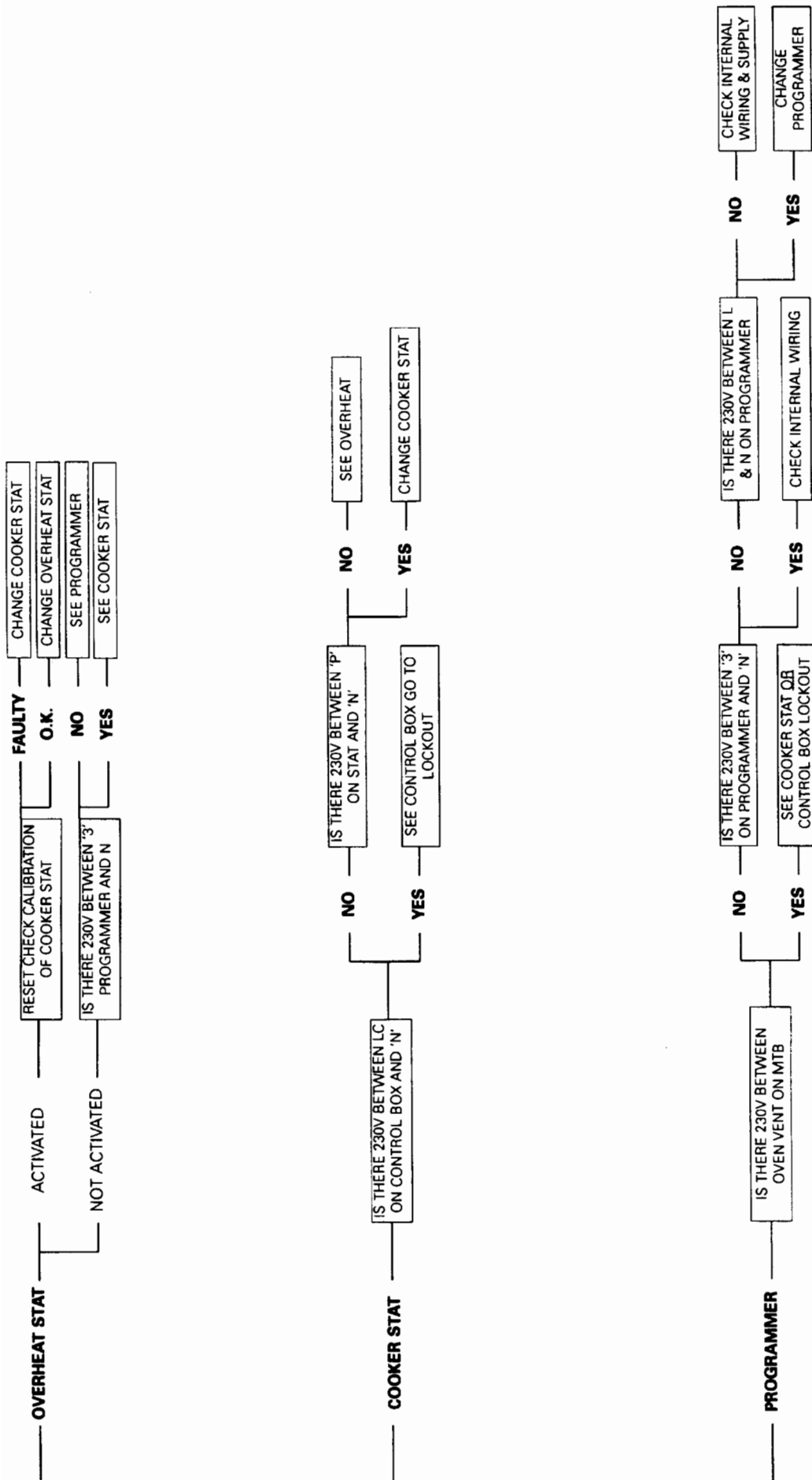
1. Isolate the electrical power supply.
2. Open up the bottom burner access door. Remove door and put in a safe place.
3. Unscrew the 4 screws holding the inner panel in place and remove panel.
4. Unscrew the 3 screws holding the louvered plinth in place and remove plinth.

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

TESTING: POWER ON
PROGRAMMER COOKER SET TO 'CONT'
COOKER STAT SET TO MAX.

COOKER BURNER NOT OPERATING





—

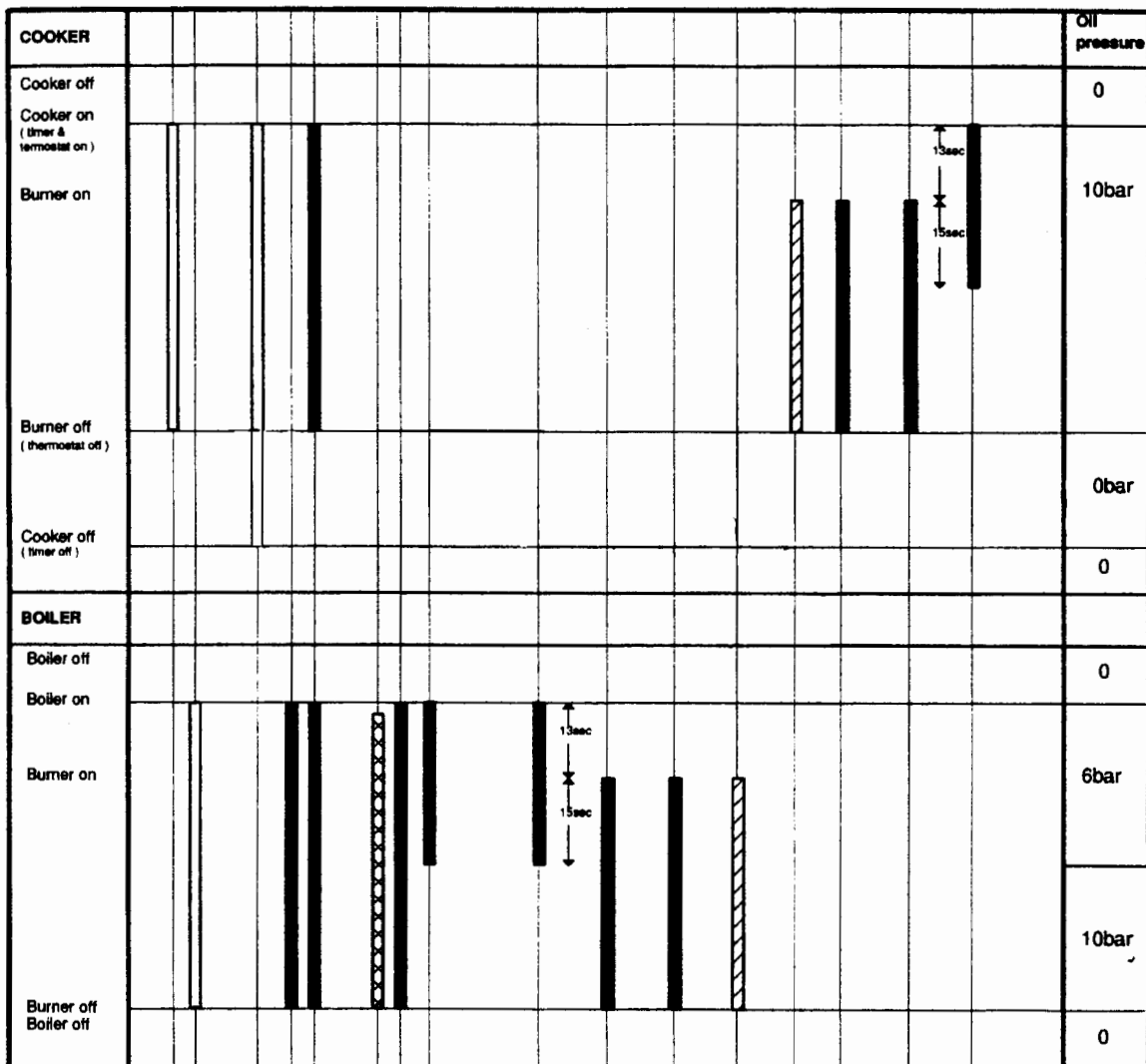
3

TESTING: POWER SUPPLIED





BURNER OPERATING SEQUENCE



☐ Live input

Live output

 Flame detected

 Air pressure switch made

Control functions in the event of faults

Extraneous light / premature flame signal

During the pre-purging and/or pre-ignition period there must never be a flame signal. If there is a signal during this period, caused possibly by premature ignition due to leaking oil valves, extraneous light, a short-circuit in the detector or its wiring, a fault in the flame signal amplifier, etc., the control locks out on expiry of the pre-purging (13sec) and safety period (15sec). Under these circumstances the oil valves do not open during the safety period.

Non-appearance of the flame signal

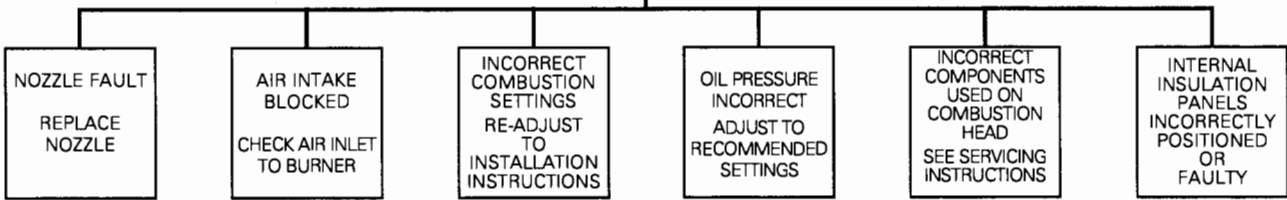
If no flame signal has appeared by the end of the safety period, the control immediately locks out.

Flame failure during operation

On flame failure during operation the control immediately shuts down the fuel supply, automatically recycles and the control performs the full starting sequence.

With every lock out terminals are de-energised in less than 1 second. Resetting the control is possible only when, after lock out, at least 50 seconds have elapsed.

HIGH SMOKE NUMBERS



OIL SMELLS

