

**This information refers to the following products**

**Rayburn 499K MK1  
(Early models  
1994-5)**

**WARNING**

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



**Home on the Range.**

## Servicing Instructions for Rayburn 499k 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 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.

### 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, Fuel beds, Artificial Fuels** - when handling use disposable gloves.

**Fire cement** - when handling use disposable gloves.

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

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

## INTRODUCTION

To ensure the best performance from your Rayburn 499k it should be serviced once a year; preferably at the start of the heating season by a registered heating installer. An additional flueway and combustion chamber clean halfway through the heating season may be necessary in some cases. The 499k 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

**BURNER REMOVAL** - for cleaning and inspection.

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

**BURNER SERVICING.**

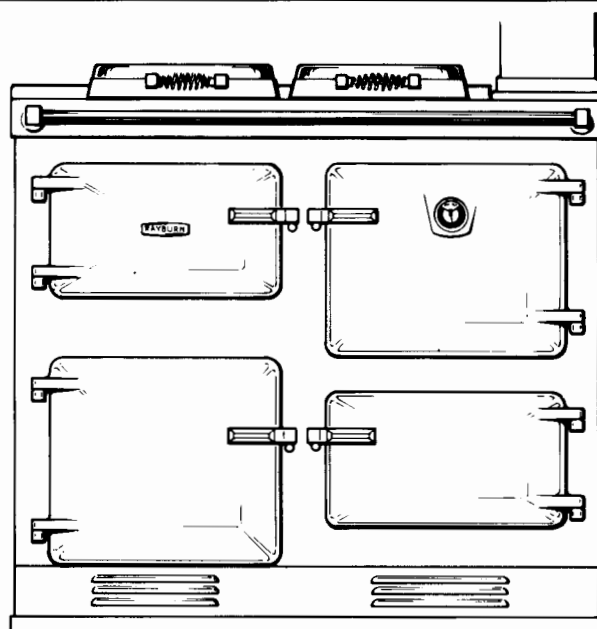
**OIL LINE SERVICING** - Cleaning of fuel line strainer.

**RE-COMMISSIONING.**

**REPLACEMENT PARTS.**

### Additional Flueway Clean

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



DESN 510517

PAT. APP 2 280 747  
AND OTHER GB & IE  
PATENTS PENDING

# Burner Removal

## 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 a pressure gauge is 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 the 4 inner panel securing screws and remove panel.
3. Remove the 3 plinth securing screws and remove plinth.

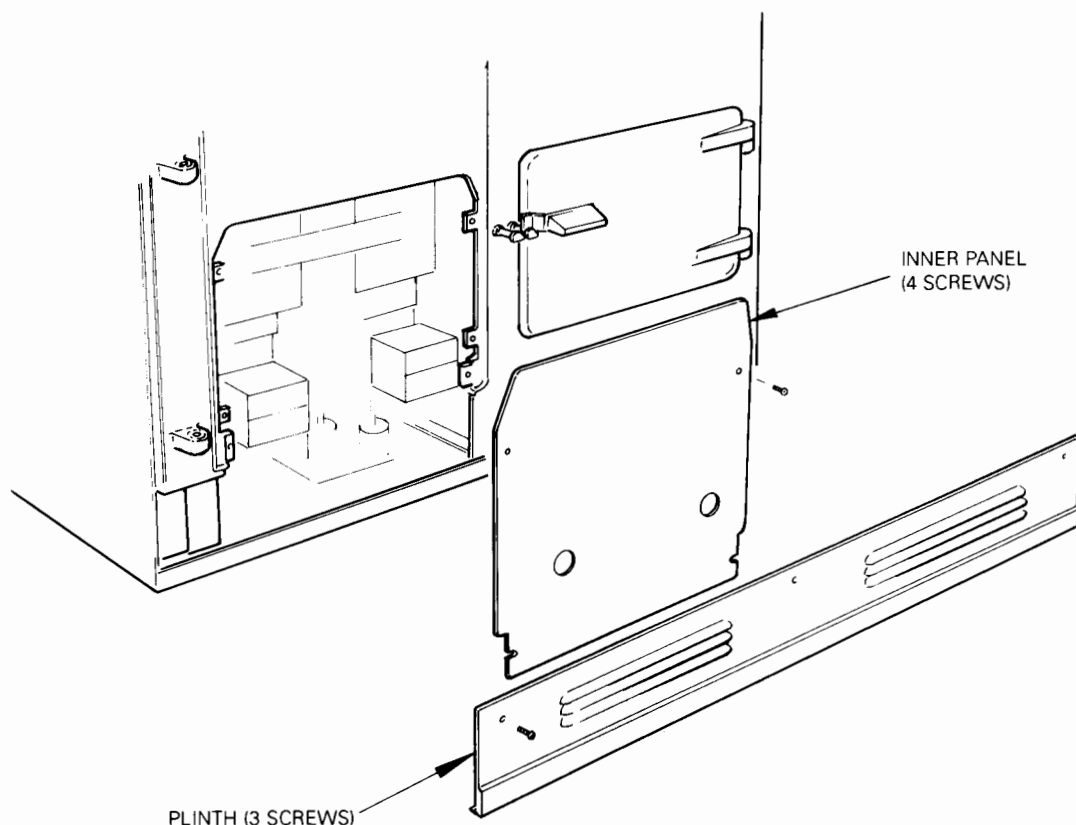


FIG. 1

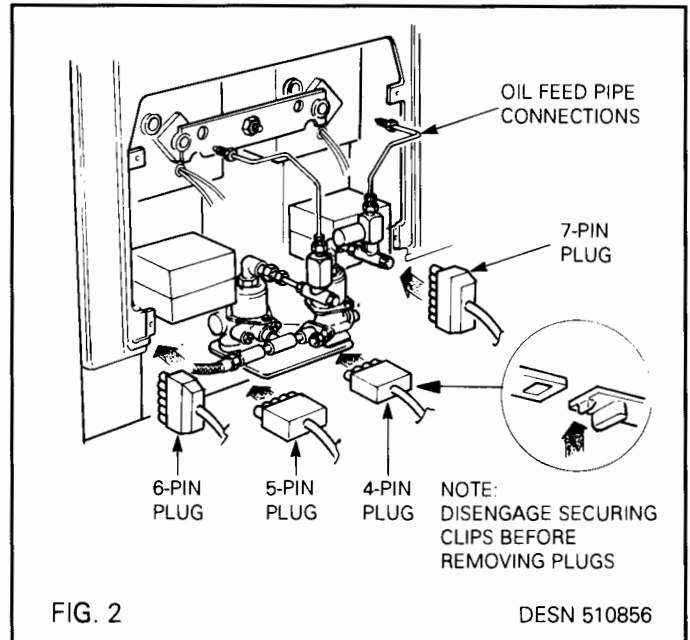
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## BURNER REMOVAL

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

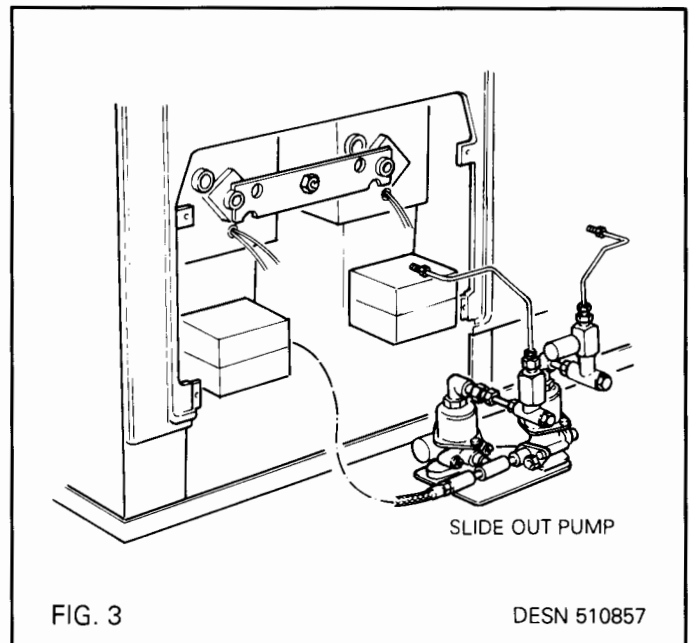
SEE FIG. 2

1. Place a sheet on the floor in front of the cooker to act as a working area
2. Undo the burner oil feed pipe connections from the solenoids to both burners.
3. Disconnect the 7-pin plug underneath the cooker burner control box.
4. Disconnect the 4-pin plug from the oil pump.
5. Disconnect the 5-pin from second oil pump
6. Disconnect the 6-pin plug underneath the boiler burner control box.



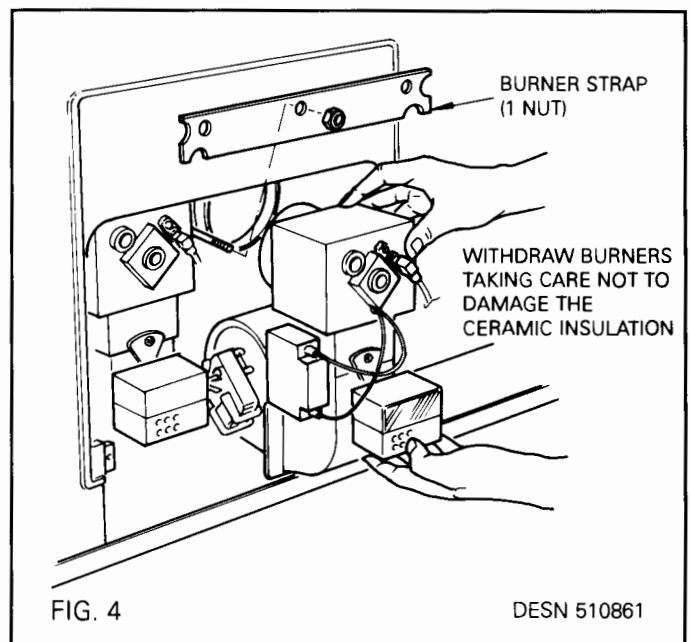
SEE FIG. 3

7. Withdraw the oil pump as far as the flexible pipe will allow.



SEE FIG. 4

8. Undo the central locking nut between the two burners and remove the strap holding the burners in position.
9. Withdraw the cooker burner first, taking care not to damage the insulation in the process.
10. Withdraw the boiler burner by pulling forward and twisting slightly to the right, again taking care not to damage the insulation in the process.

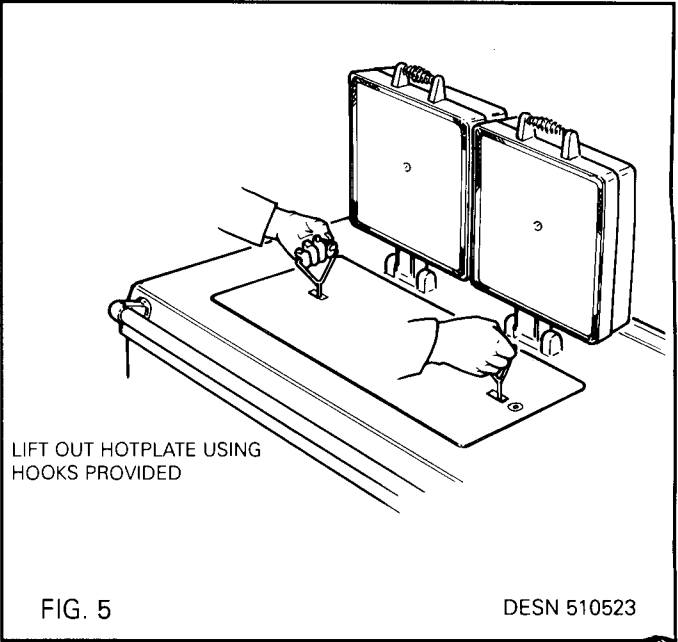


## HEAT EXCHANGER CLEANING

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

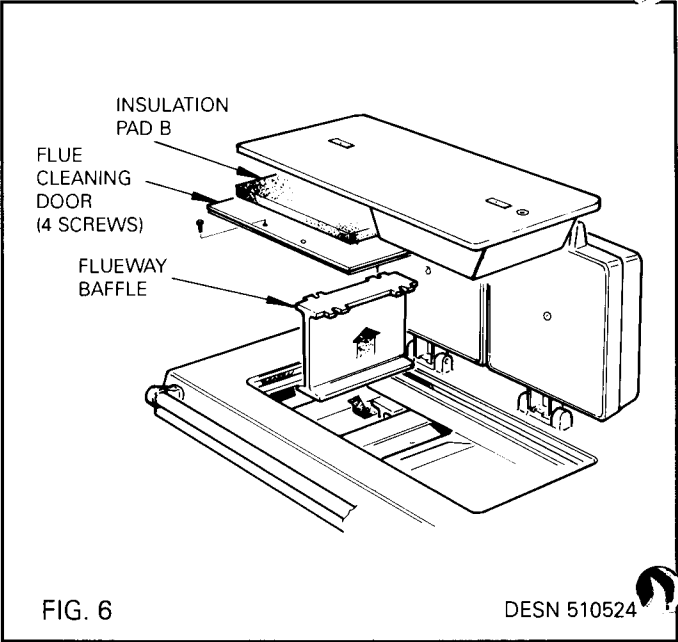
SEE FIG. 5

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



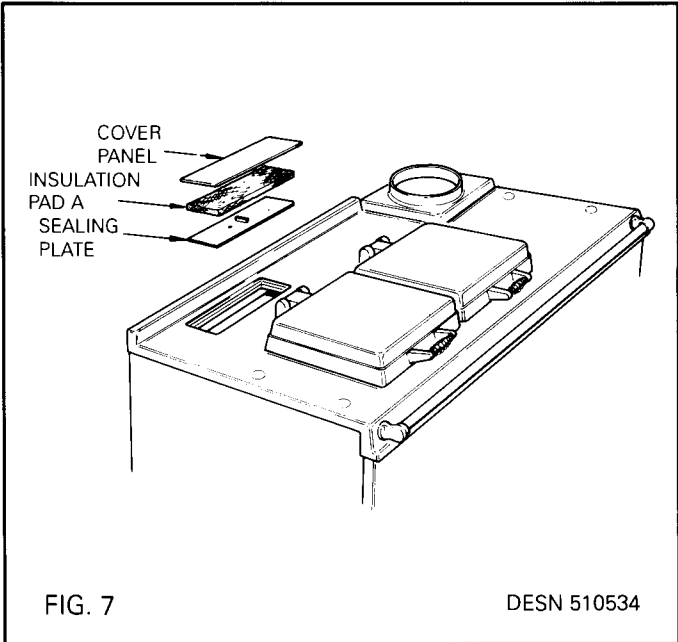
SEE FIG. 6

2. Remove insulation pad B, remove the 4 flue cleaning access door securing bolts and remove door.
3. Using the rods provided remove the boiler flueway baffles from between the boiler cross waterways. Lift the front ones first and then pull the rear ones forward and then lift them out.



SEE FIG. 7

4. Lift top plate enamelled cover panel (behind the L.H. insulating cover) remove insulation pad A and sealing plate.
5. Clean the boiler outlet flueway by inserting a flexible rake through 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 and replace ceramic fibre pad B.
9. Replace sealing plate, insulation pad A and cover panel.



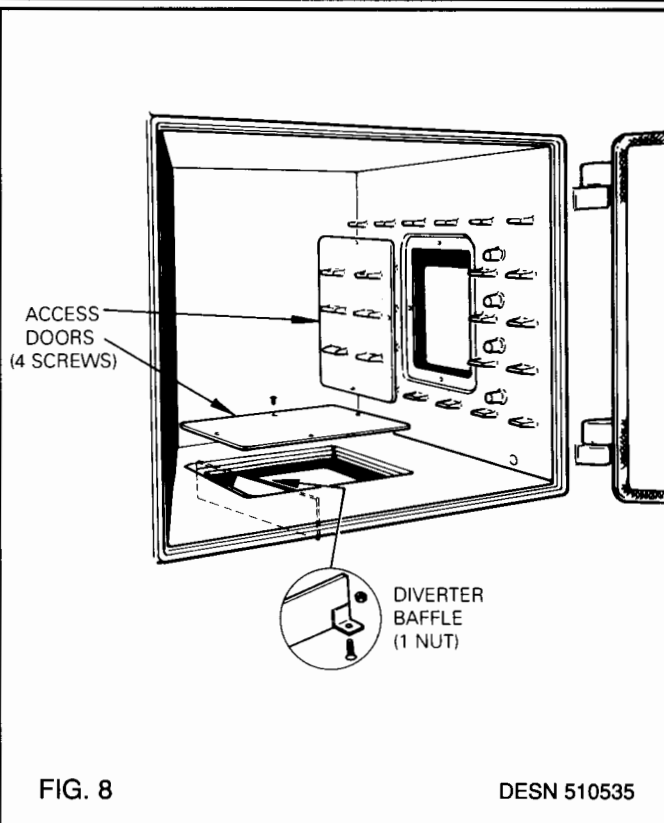
## OVEN & HOTPLATE FLUEWAY CLEANING

SEE FIG. 8

1. Remove the top oven door and place in a safe position.
2. Remove side and base access doors using 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.

**NOTE:** Further access to base flueway is available if diverter baffle is removed (replace baffle if removed).

6. Brush and clean in between hotplate ribs on underside.
7. Examine soft rope seal located around hotplate aperture in top plate. Replace if frayed or damaged.
8. Replace hotplate ensuring the underside ribs lie over the oven, and that it seals to the top plate.

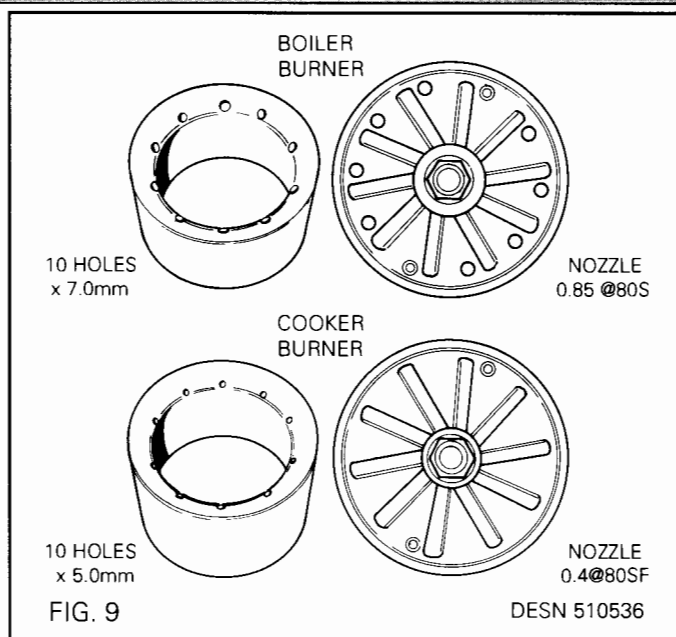


# Burner Servicing

## INTRODUCTION

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 and diffusers are shown in Fig. 9.



## BURNER NOZZLE REMOVAL

SEE FIG. 10

1. Slacken the grub screw in the bottom of the centre boss.
2. Disconnect the two leads from the transformer and gently tap the centre oil inlet boss.
3. The complete nozzle assembly should now move through the Burner sleeve.  
It would be advisable to disconnect the igniter leads to enable the assembly to be completely withdrawn.
4. Clean the diffuser and ignition electrodes taking care not to wipe the nozzle tip itself.
5. Check electrode gap and reset if necessary.

N.B. Nozzles should not be replaced or dismantled for cleaning nozzle filters unnecessarily. This should normally only be done if, after carrying out the routine service, the combustion check does not give acceptable results.

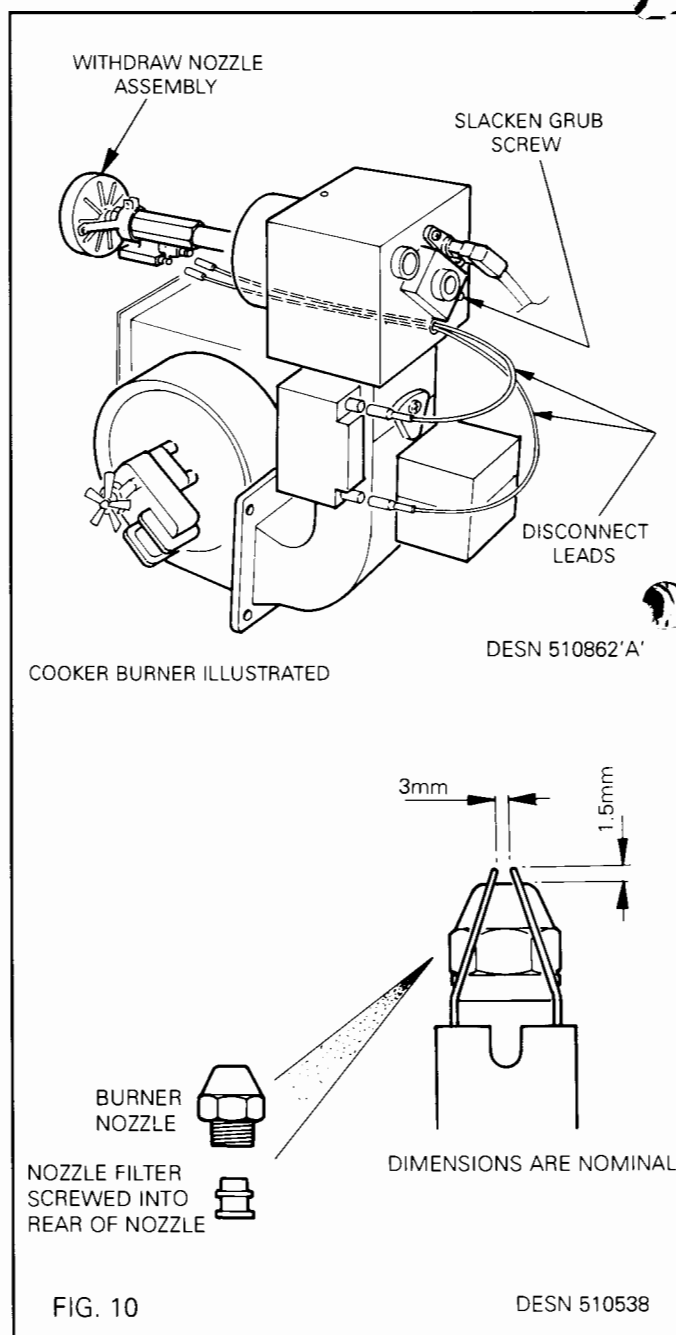
Nozzles should be handled with great care, using clean tools and clean hands.

1. Unscrew nozzle from its holder with a correctly fitting tubular spanner to avoid damage to hexagon.
2. Replace nozzle by a new one of the same size, spray angle and spray pattern.

## NOZZLE FILTER CLEANING

SEE FIG. 10

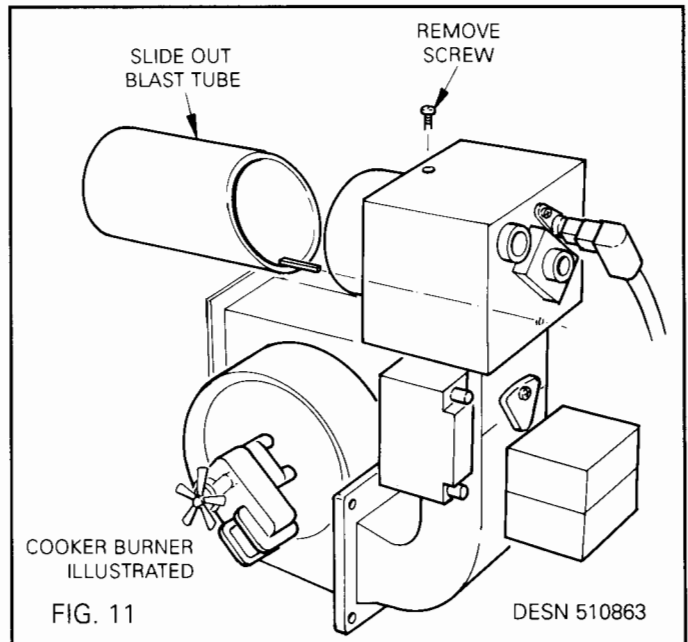
1. Remove nozzle as above.
2. Unscrew filter assembly from the rear of the nozzle.
3. Wash filter assembly in clean petrol or paraffin.
4. Refit filter assembly to nozzle in reverse order of removal.
5. Refit nozzle taking care not to over tighten.



## BLAST TUBE CLEANING

SEE FIG. 11

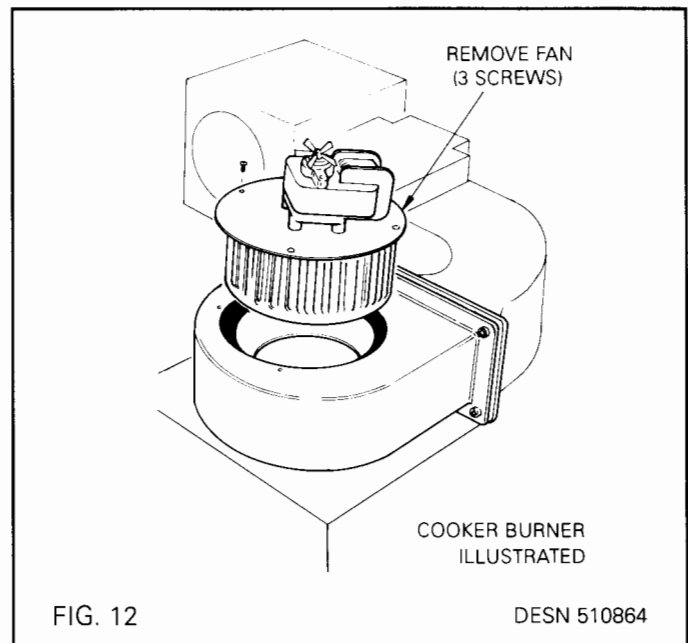
1. The blast tube is held in position by one screw in the top of the burner housing. Undo the screw and remove the blast tube taking note of how it fits into the burner housing. i.e. with the longest length of tube at the bottom.
2. Clean off any deposits on the surface or in the holes of the blast tube.



## FAN CLEANING

SEE FIG. 12

1. Undo the three screws, on the motor side of the fan, and withdraw the fan and motor complete.
2. Clean between the blades of the fan impeller with a small brush and tip upside down to remove any residue.
3. Spin the motor to make sure that it turns easily.
4. Re-assemble fan unit.



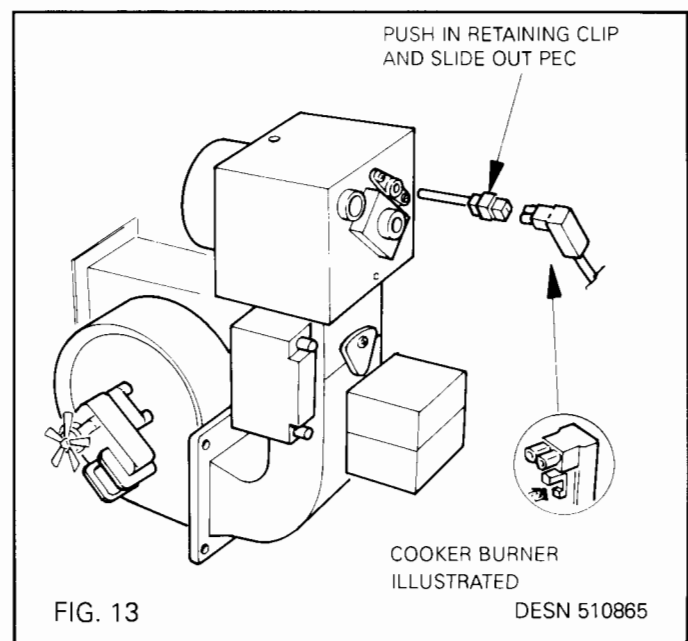
## PHOTO ELECTRIC CELL (PEC) CLEANING

SEE FIG. 13

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.

## RE-ASSEMBLE BURNER

Re-assemble the burner in reverse order making sure that the fixing screws for the blast tube and the nozzle assembly are correctly lined up with the respective holes in the body.



### INTRODUCTION

Turn OFF the oil line isolating valve near to the appliance.

### 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 filter in reverse order of removal.

## BLEED AIR FROM OIL SUPPLY

SEE FIG. 14

Disconnect the flexible oil pipe 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. 14

Remove the bleed screw from the boiler oil pump and fit an oil pressure gauge with R1/8 connection to check the pump output pressure.

## ELECTRICAL CHECK

### Switch on electricity

Set the boiler burner time clock switch to continuous and turn the boiler thermostat to maximum. The boiler burner should run on pre-purge for 7 to 15 seconds, with the ignition spark energised. The oil solenoid valve should open allowing the burner to 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. 15). **IN THIS EVENT, WAIT AT LEAST ONE MINUTE**, then press the re-set button to restart.

## VENT OIL PUMP

SEE FIG. 14

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

## ADJUST OIL PRESSURE

SEE FIG. 14

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 9.9 bar (144 lb/in<sup>2</sup>) for the boiler burner

### COOKER PUMP

Repeat sections 'BLEED AIR FROM OIL SUPPLY', 'FIT PRESSURE GAUGE', 'ELECTRICAL CHECK', 'VENT OIL PUMP' and 'ADJUST OIL PRESSURE' to 9.0 bar (130lb/in<sup>2</sup>).

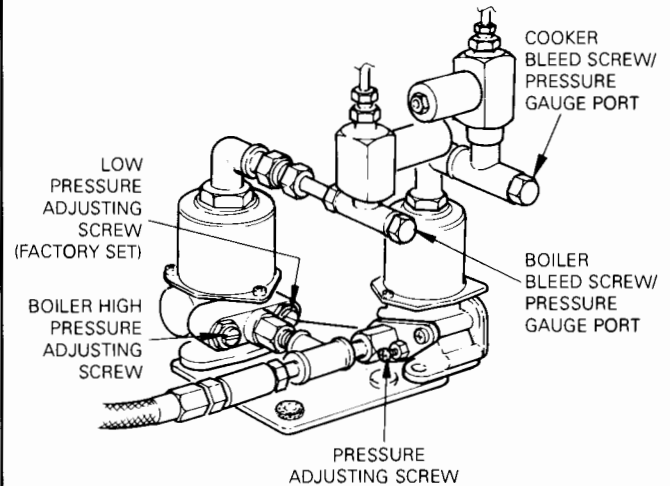


FIG. 14

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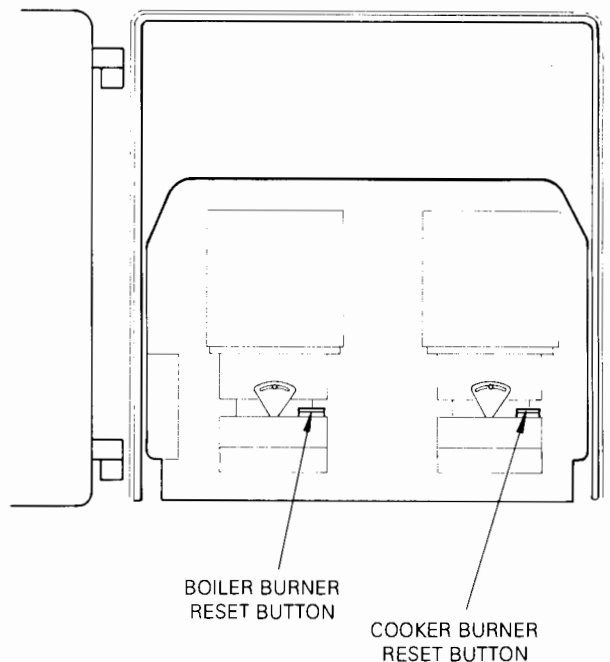


FIG. 15

DESN 510859

# Re-commissioning

## SET COMBUSTION AIR

SEE FIG. 16

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 CO<sub>2</sub> (Carbon Dioxide) level. Adjust the boiler burner air intake until a reading of 12.0% CO<sub>2</sub> is recorded on the indicator.

## CHECK SMOKE

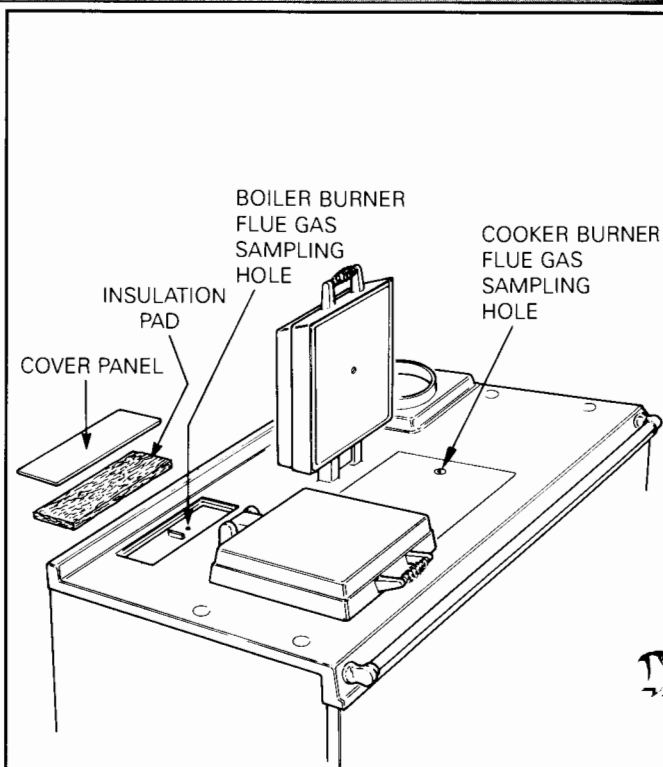
SEE FIG. 16

Remove the CO<sub>2</sub> 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.

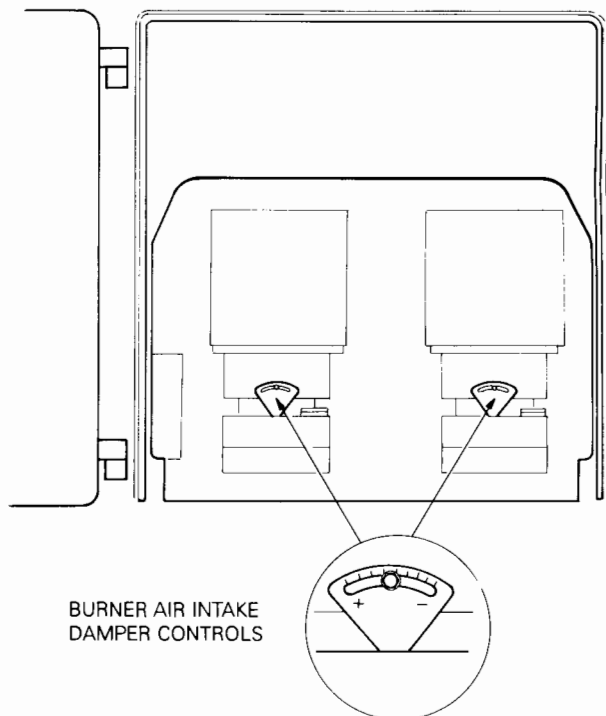
Replace the plugging screw, insulation pad and cover panel.

COOKER BURNER - SEE FIG. 16

Switch off the boiler burner and repeat the procedure with 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 12.0% CO<sub>2</sub> with a maximum Smoke No. of 2. Replace the countersunk headed screw on completion ensuring that it will not interfere with any pots and pans placed on the hotplate.



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IMPORTANT: ALWAYS LOCK IN POSITION AFTER SETTING

FIG. 17

DESN 510860

## ELECTRICAL COMPONENT ACCESS

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

SEE FIG. 17

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. Remove cover panel. It will be necessary to disconnect the push on tags from the selector switch.

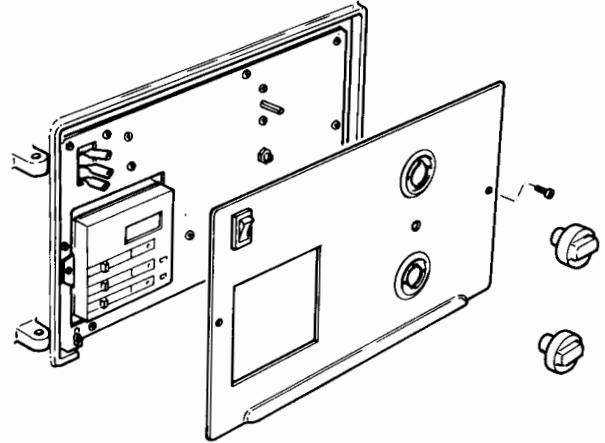


FIG. 17

DESN 510543'A'

SEE FIG. 18

5. Remove the four control panel fixing screws.
6. Tilt the chassis forwards from the top and lift out. To fully access the rear of the control chassis, the thermostat capillaries should be removed from their pockets.
7. To access the controls remove the insulation panel (4 nuts and washers).

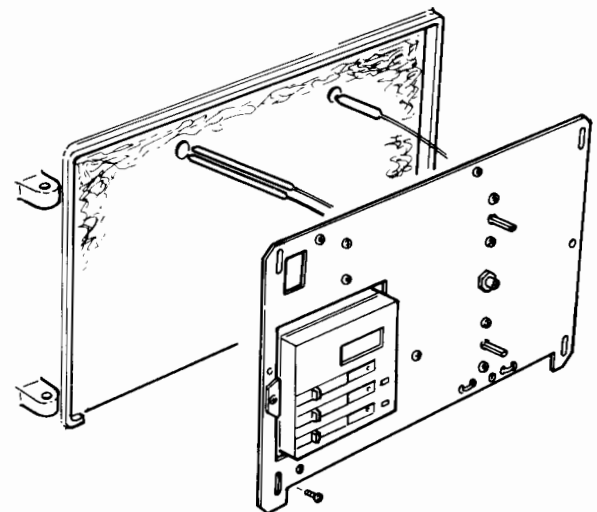


FIG. 18

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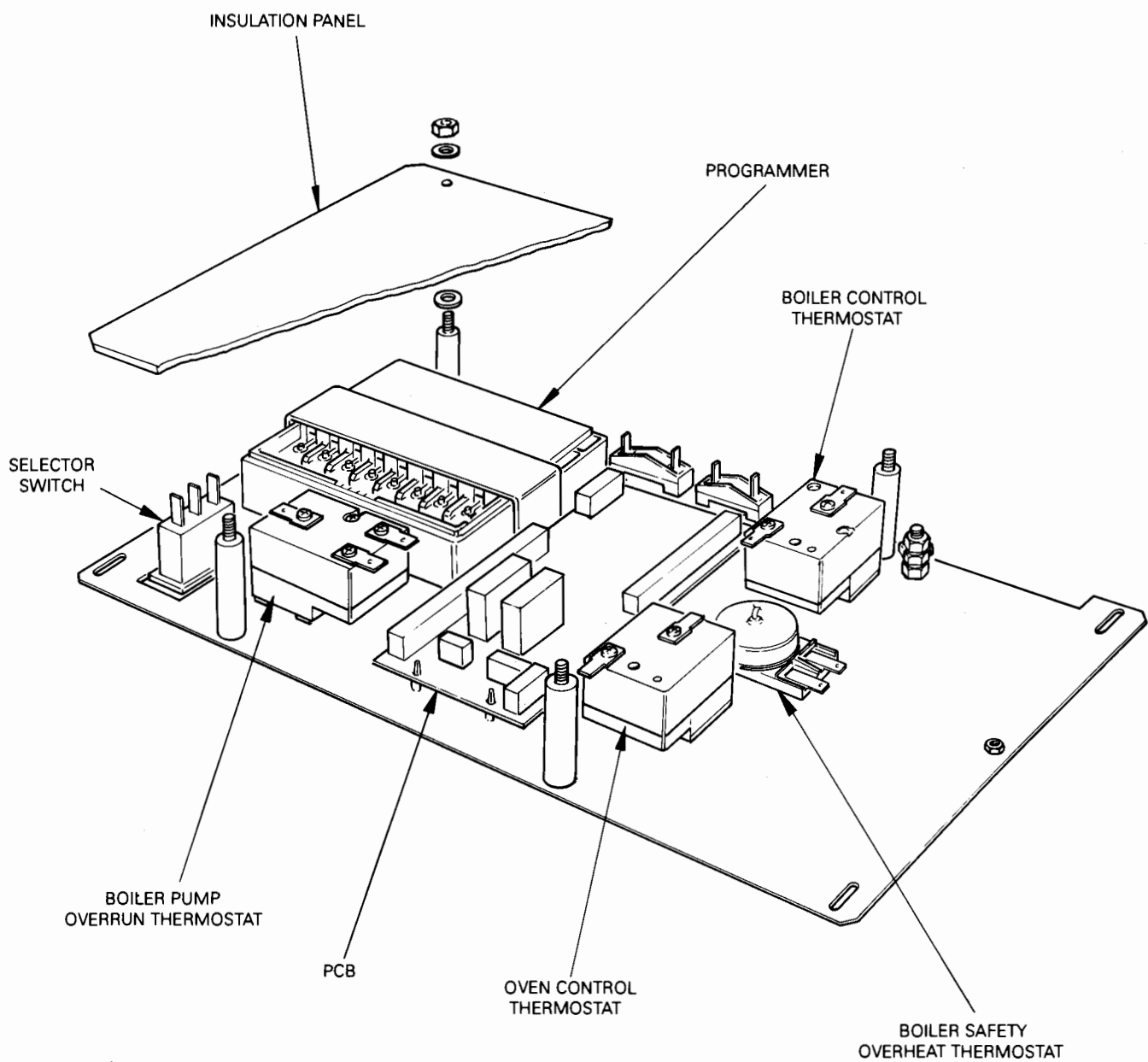


FIG. 19

DESN 510866

## TO FIT NEW BOILER CONTROL THERMOSTAT

SEE FIG. 20

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 7.

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 bottom.
4. Re-connect push on connector wires. The RED wire to P and BROWN wire to 1.

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

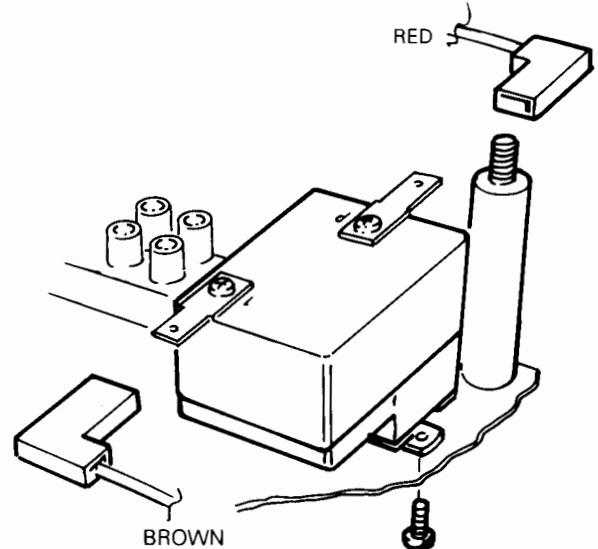


FIG. 20

DESN 510546

## TO FIT NEW BOILER PUMP OVERRUN THERMOSTAT

SEE FIG. 21

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 7.

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. The thermostat should be mounted with tag P at the right hand side (looking from back). Take care to push thermostat phial correctly into the pocket provided.
4. Re-connect push on connector wires. The WHITE wire from the over heat thermostat to P, and the other WHITE wire to 2.

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

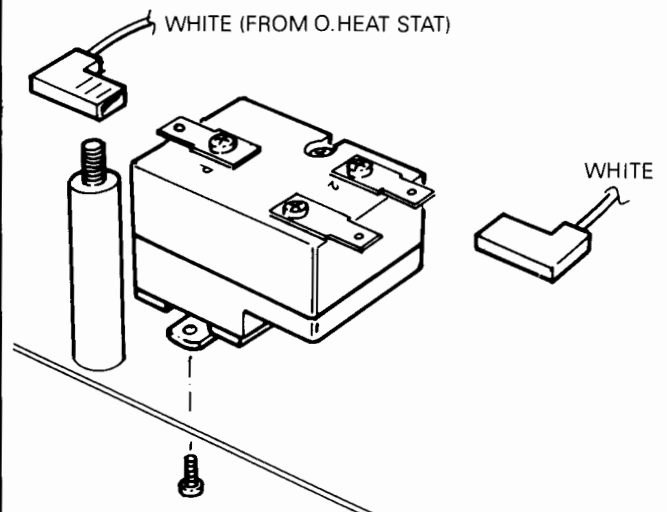


FIG. 21

DESN 510547

## TO FIT NEW BOILER SAFETY OVERHEAT THERMOSTAT

SEE FIG. 22

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 7.

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 back of thermostat.
3. Replace thermostat. The thermostat should be mounted with tags 21 and 22 at the left hand side (looking from back). Take care to push thermostat phial correctly into the pocket provided.
4. Re-connect push on connector wires. The BROWN wire to tag 22 and the BROWN wire to tag 21.

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

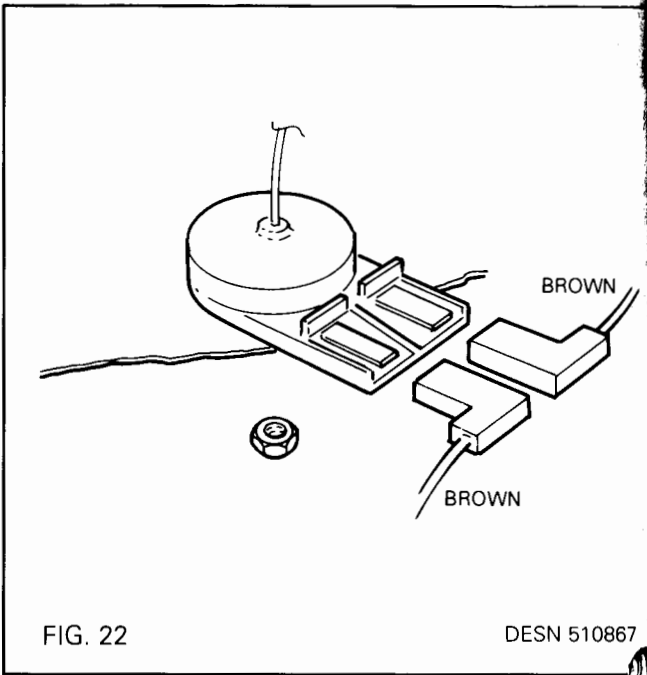


FIG. 22

DESN 510867

## TO FIT NEW OVEN CONTROL THERMOSTAT

SEE FIG. 23

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 7.

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. Open Roasting Oven door to access the thermostat phial and capillary which pass into the oven at the top, left hand front corner. The thermostat phial is located in a slot at the top front of the oven.
4. Slacken the single screw where the phial passes through the roasting oven side and rotate the cover plate to open up the access hole.
5. Slack the two screws in the top of the roasting oven at the front and rotate the two retaining clips.
6. Allow the thermostat phial to drop down and withdraw the thermostat capillary out of the oven.
7. Replace thermostat. The thermostat should be mounted with tag P at the bottom. Reposition the phial in same position as removed. Ensure that the insulation, spacer tubes are correctly fitted.
8. Re-connect push on connectors. The BLACK (4) wire to P and BLACK (2) wire to 1.

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

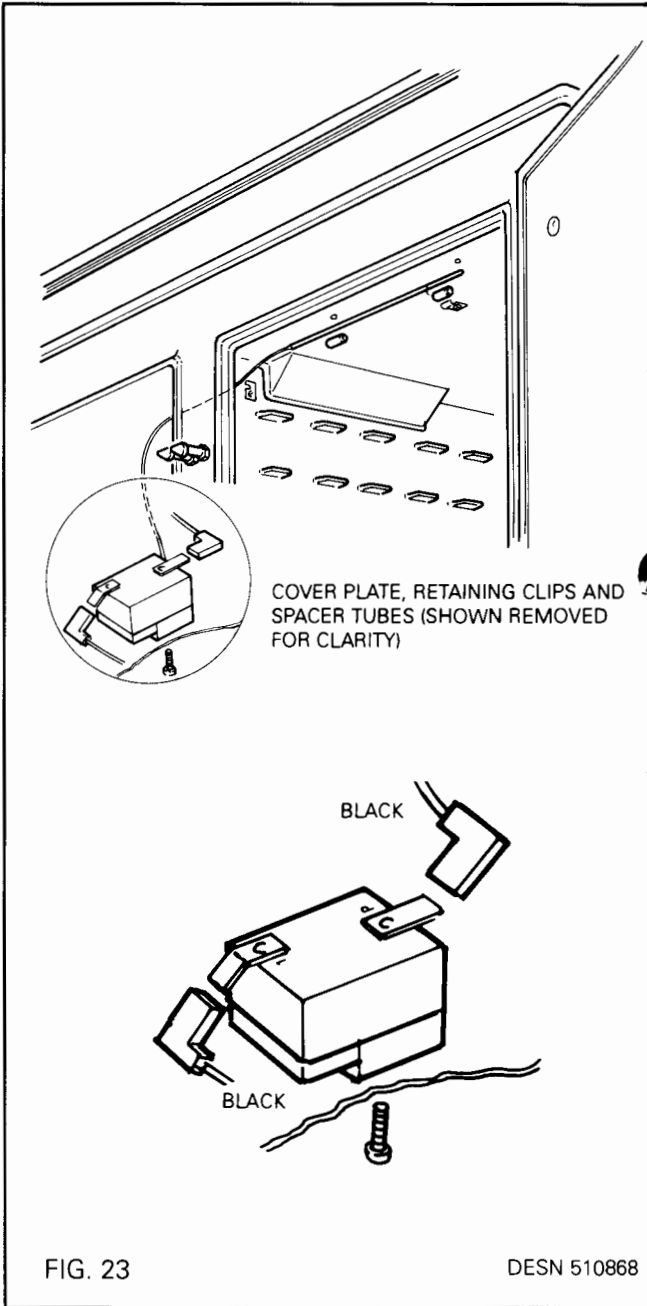


FIG. 23

DESN 510868

## TO FIT NEW P C B

SEE FIG. 24

Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 7.

1. Remove lead connections.
2. Remove PCB from chassis.
3. Fit new PCB.
4. Refit lead connections to new PCB, refer to fig. 31 for wiring details.

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

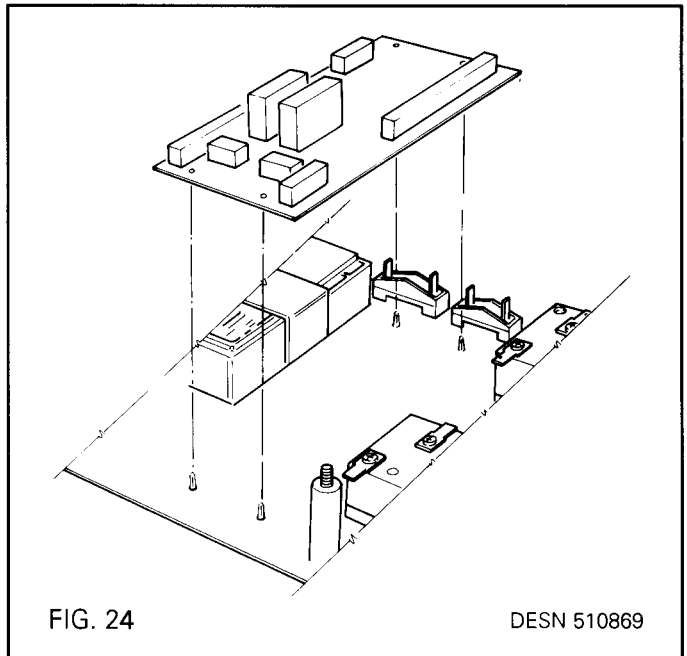


FIG. 24

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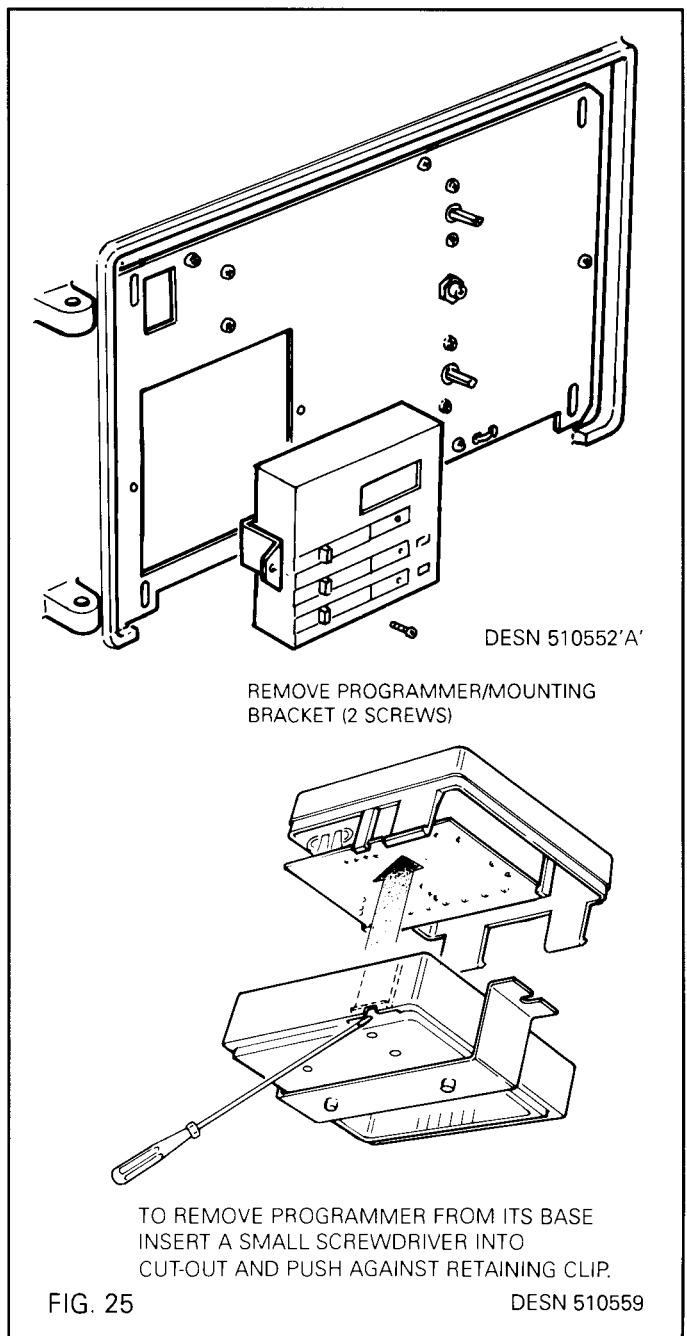
## TO FIT NEW PROGRAMMER

SEE FIG. 25

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

1. Remove the two screws holding the mounting bracket to the control chassis.
2. Pull the programmer forward to access the rear casing.
3. Insert a small screwdriver into cut-out and push against the retaining clip.
4. The programmer can now be pulled away from its base at the bottom. The top retaining clips can now be pulled out freeing the programmer.
5. Replace with the new programmer inserting the top clips first and then locking the programmer inserting the top base with the bottom clip.
6. Refix the mounting brackets to the control chassis.

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



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REMOVE PROGRAMMER/MOUNTING BRACKET (2 SCREWS)

TO REMOVE PROGRAMMER FROM ITS BASE  
INSERT A SMALL SCREWDRIVER INTO  
CUT-OUT AND PUSH AGAINST RETAINING CLIP.

FIG. 25

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## Replacement of parts

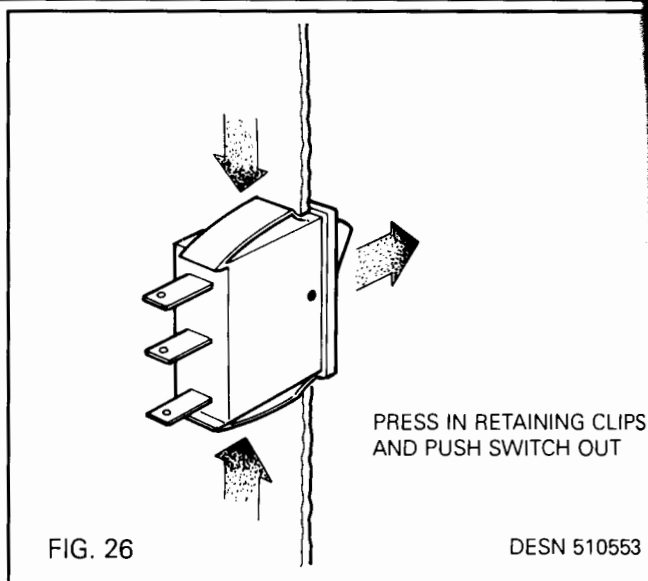
### TO FIT NEW SELECTOR SWITCH

SEE FIG. 26

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

To remove switch of the cover panel press the two toggles, at top and bottom of switch, simultaneously and push switch through panel. 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.



### RE-ASSEMBLE

1. Refix insulation panel on the pillars at the rear of the control chassis, making sure that it is the correct way round for the boiler thermostat phials to line up with the pockets.
2. Locate the base of the control chassis into the bottom of the doorway aperture, tilt the chassis backwards into position and secure with the four screws.
3. Thread the four 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 RED wire on 1, the PURPLE wire on 2 and the BLUE wire to 3.
4. Refix the outer panel in position and secure with the 2 screws.
5. Replace the thermostat knobs.
6. Replace the controls door.

## PUMP ACCESS

SEE FIG. 27

Follow instructions in section BURNER ACCESS, steps 1 to 3.

Follow instructions in section BURNER REMOVAL, steps 1 to 7.

1. Isolate fuel supply.
2. Disconnect flexible hose.
3. Remove pumps from base, 4 screws and washers.
4. Remove solenoids from pumps, 2 nuts and washers.
5. Unscrew cooker pump from tee connector.

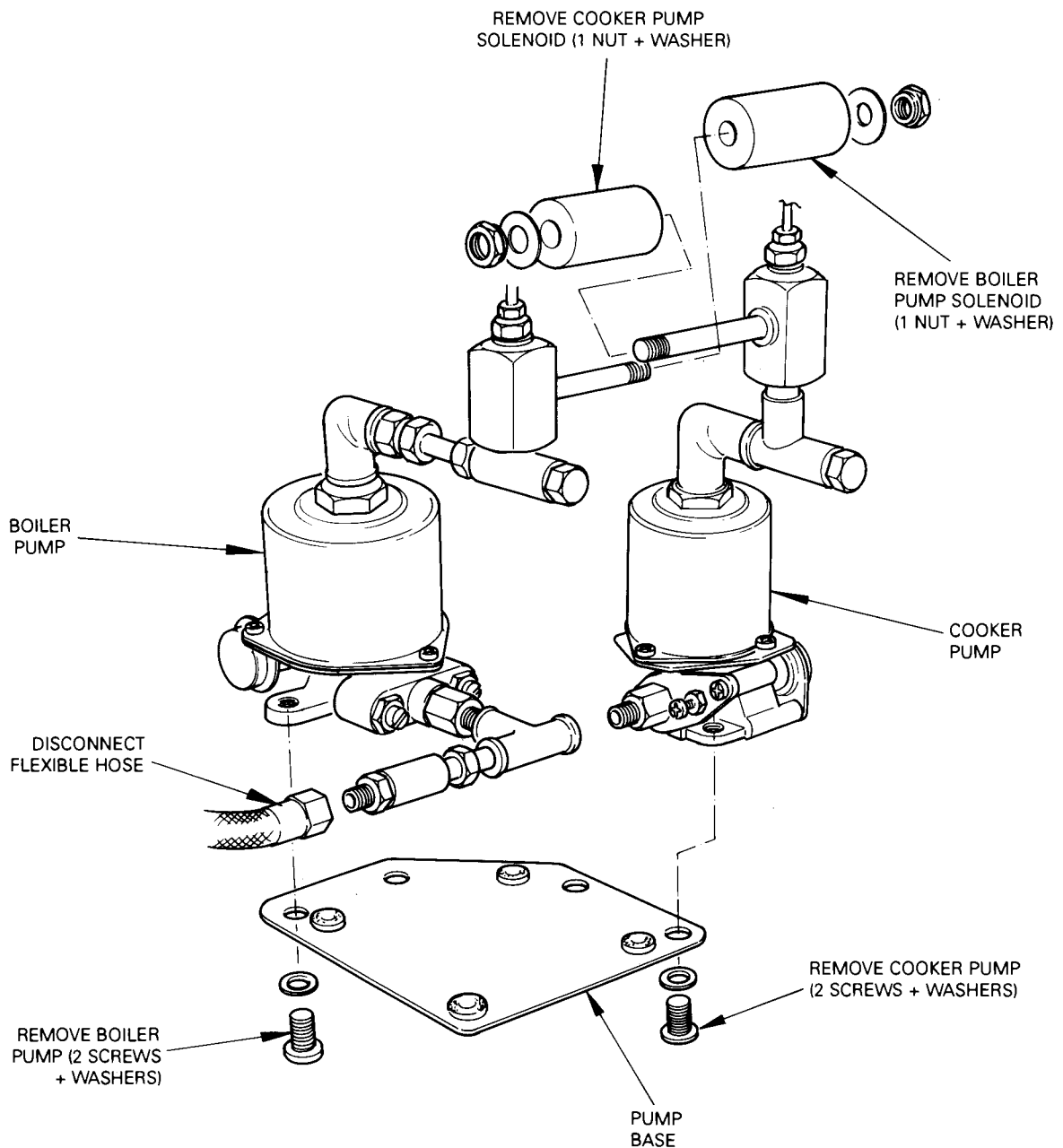


FIG. 27

DESN 510870

## Replacement of parts

### BOILER PUMP FILTER REPLACEMENT

SEE FIG. 28

1. Unscrew tee connector from boiler pump.
2. Remove filter.
3. Remove O ring.
4. Fit new filter.
5. Fit new O ring.
6. Reconnect tee connector.

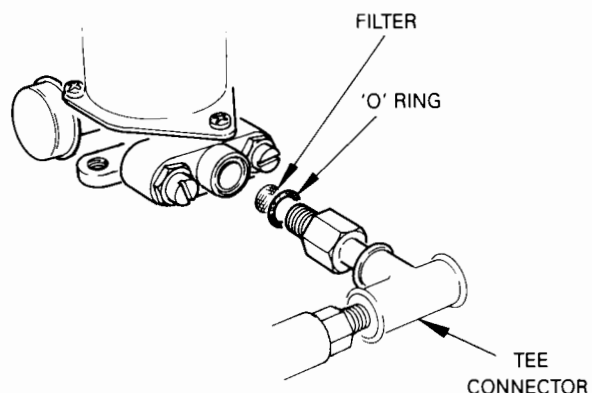


FIG. 28

DESN 510871

### COOKER PUMP FILTER REPLACEMENT

SEE FIG. 29

1. Remove pressure adjusting screw.
2. Remove filter locating plate screws.
3. Remove filter locating plate.
4. Pull out union.
5. Remove filter.
6. Remove O ring.
7. Fit new filter.
8. Fit new O ring.
9. Reassemble in reverse order.

### RE-ASSEMBLE

1. Reassemble pumps in reverse order, ensuring that all joints are sealed.

**WARNING: THE PRESSURE MUST BE RESET ON THE COOKER BURNER ON COMPLETION OF REASSEMBLY.**

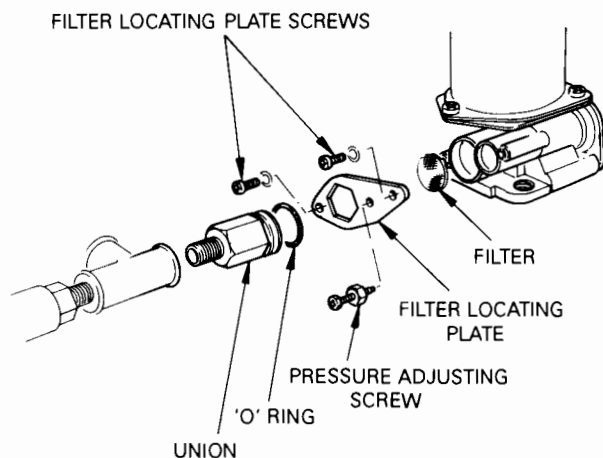


FIG. 29

DESN 510872

### CONTROL CIRCUIT DESCRIPTION

SEE FIG. 30

The external connections to the appliance are situated at the front left hand corner of the burner chamber behind the bottom front plinth.

The mains line voltage is applied to terminal L on the connector block. From the connector block it is fed to the Programmer clock connection (L), to the Safety cut-out connection (22) and to the common connection (P) of the pump overrun thermostat.

From the switched connection (21) of the Safety cut-out power is fed and to the N/O connection of the water circulating pump control relay and to the common connection of both channels of the programmer. Terminal (8) for the cooker and terminal (5) for the boiler.

The two channels switch independently of one another, but must use the same pre-set timed control settings.

From the N/O connection of the pump overrun thermostat power is fed to the N/C connection of the water circulating pump control relay.

### 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 through the N/C connections of the water circulating control relay.

If during a normal programmer COOKER 'ON' period the boiler flow temperature rises above 65°C then the pump overrun thermostat operates and switches on the pump until the overrun thermostat switches back.

### OVERHEAT SAFETY THERMOSTAT

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.

# Replacement of parts

## BOILER PUMP FILTER REPLACEMENT

SEE FIG. 28

1. Unscrew tee connector from boiler pump.
2. Remove filter.
3. Remove O ring.
4. Fit new filter.
5. Fit new O ring.
6. Reconnect tee connector.

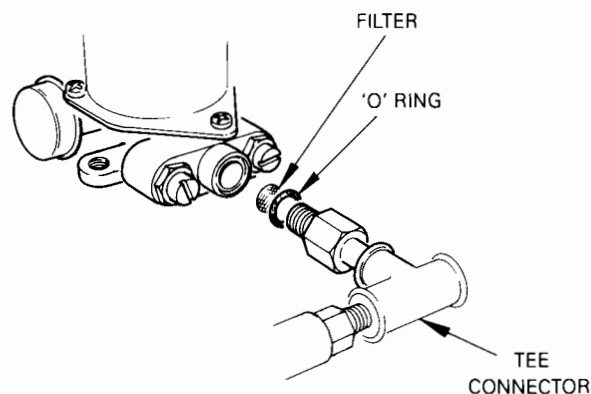


FIG. 28

DESN 510871

## COOKER PUMP FILTER REPLACEMENT

SEE FIG. 29

1. Remove pressure adjusting screw.
2. Remove filter locating plate screws.
3. Remove filter locating plate.
4. Pull out union.
5. Remove filter.
6. Remove O ring.
7. Fit new filter.
8. Fit new O ring.
9. Reassemble in reverse order.

## RE-ASSEMBLE

1. Reassemble pumps in reverse order, ensuring that all joints are sealed.

**WARNING: THE PRESSURE MUST BE RESET ON THE COOKER BURNER ON COMPLETION OF REASSEMBLY.**

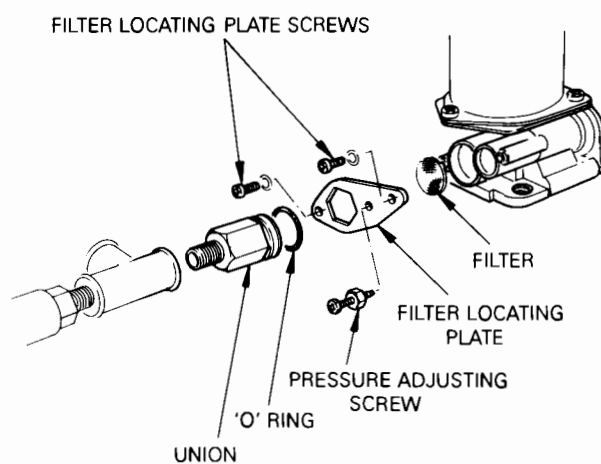
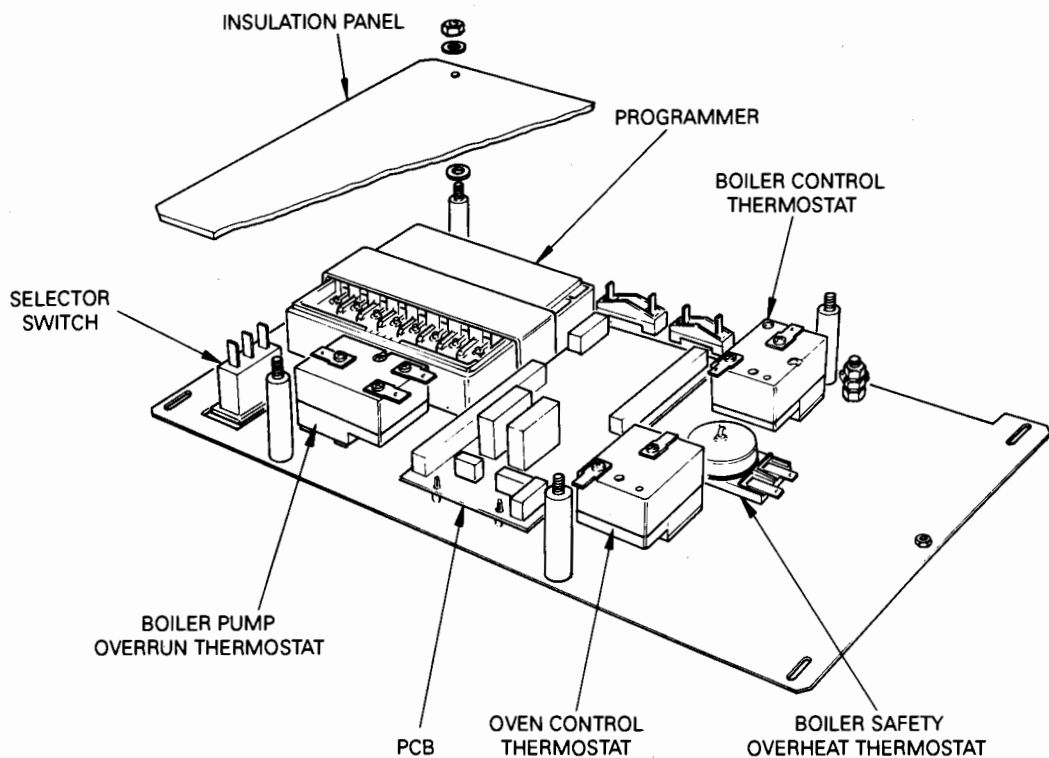


FIG. 29

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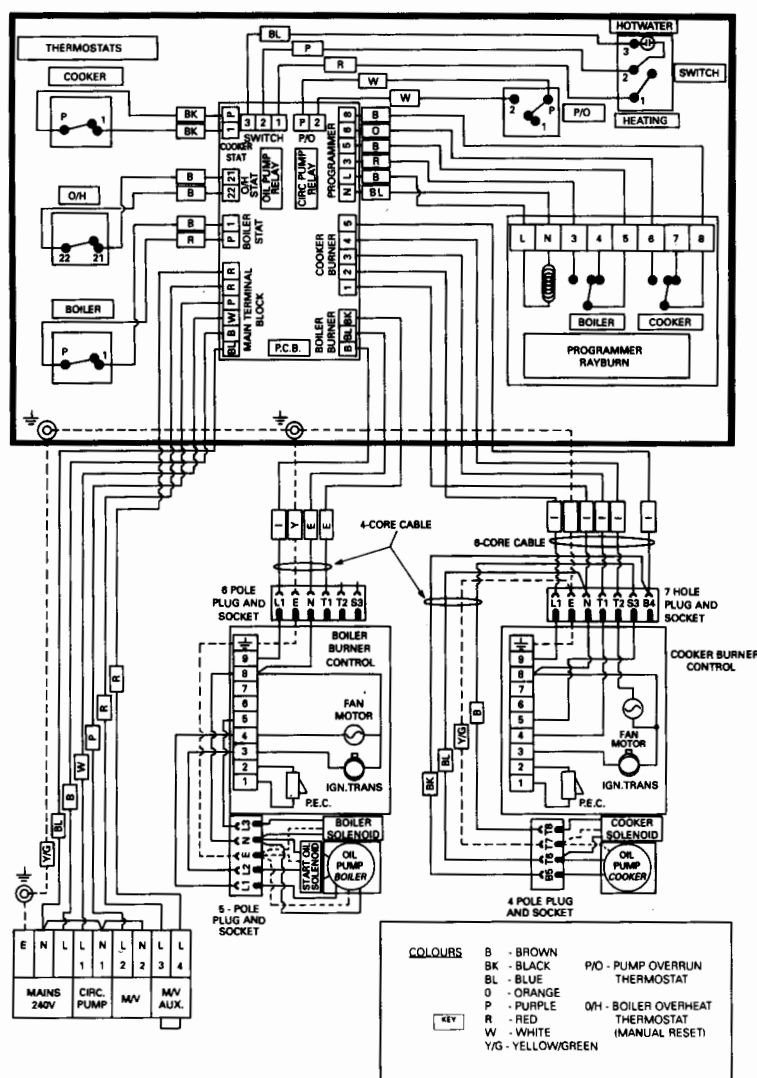


FIG. 30

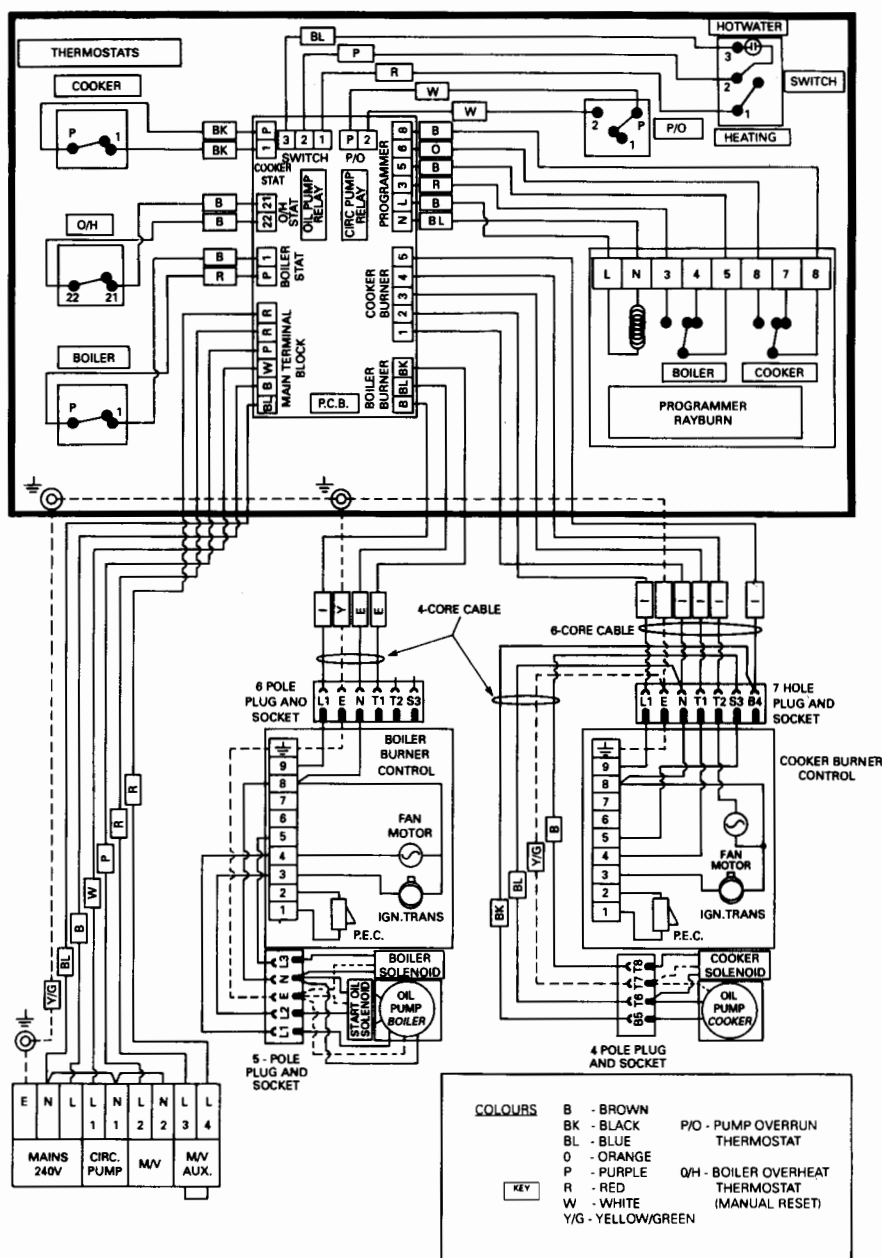
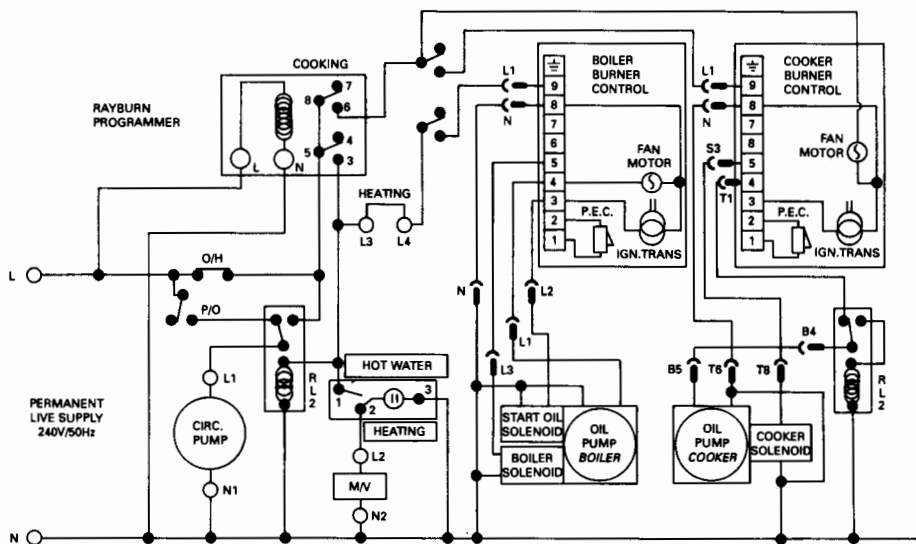


FIG. 31

## BURNER DOES NOT START

### ELIMINATION PROCEDURES

#### General

1. To check out the electrical wiring at the burners you will first have to have access to the burner chamber. Use the following procedure:-  
Isolate the electrical power supply.  
Open up the bottom burner access door. Remove door and put in a safe place.
2. Unscrew the 4 screws holding the inner panel in place and remove panel.
3. Unscrew the 3 screws holding the louvered plinth in place and remove plinth.

The external mains 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 230/240V power supply available across the mains input connections L & N on the terminal block. If not then check connecting leads, fuse 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 then reset it, pushing in the centre with a small, round tool i.e. a pencil.

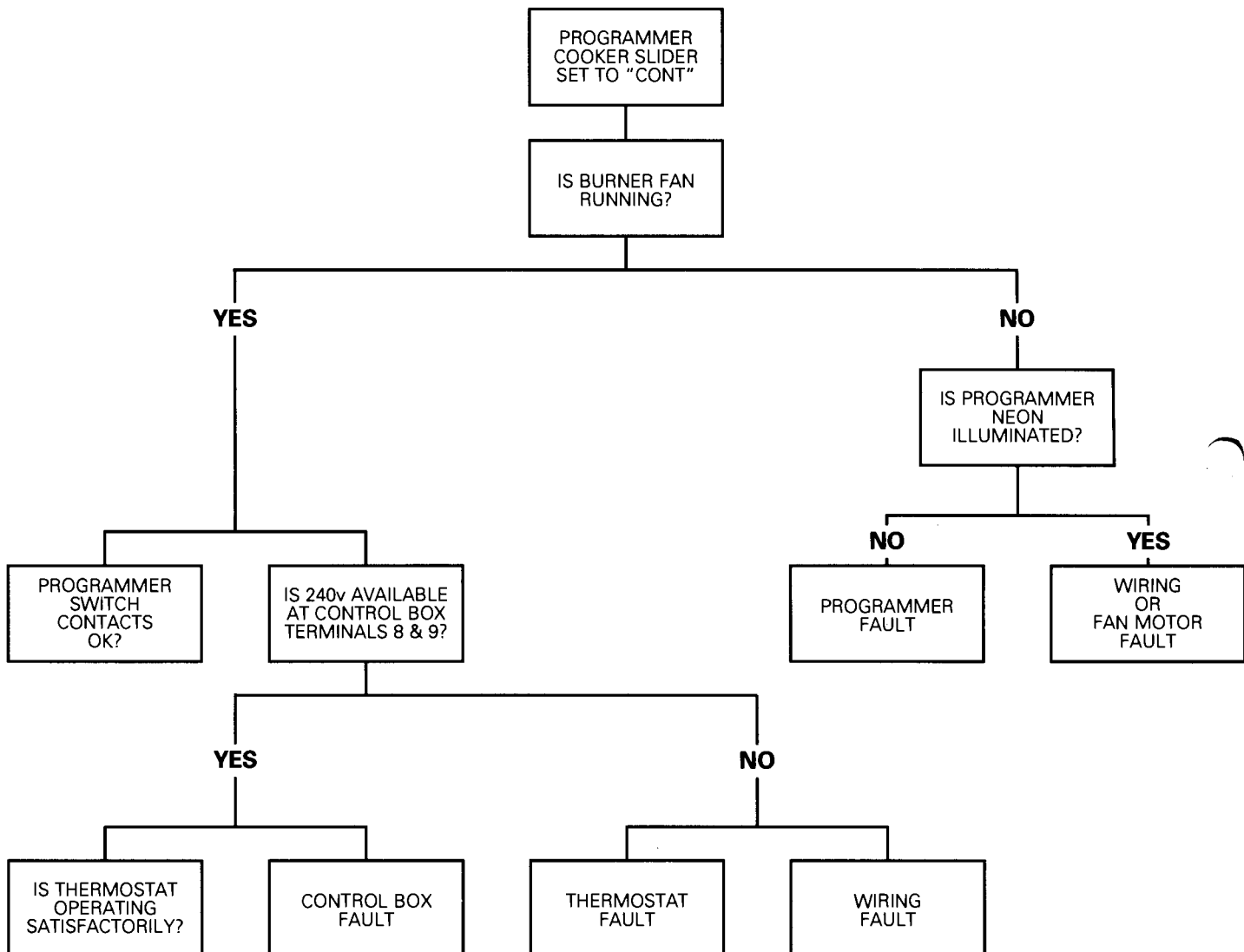
You can carry out some checks on the controls before you need to access the controls compartment behind the controls door.

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 must lie before the programmer connections.

For access to individual controls refer to section on Replacement Parts and for wiring continuity checks refer to Fig. 31 for detailed and schematic wiring layouts.

## COOKER BURNER REFUSES TO ATTEMPT TO START



## BOILER BURNER REFUSES TO ATTEMPT TO START

PROGRAMMER BOILER SLIDER SET TO "CONT" AND  
PRIORITY SWITCH SET TO "HEATING / HOT WATER"

IS PRIORITY  
SWITCH NEON  
ILLUMINATED

**YES**

**NO**

PROGRAMMER  
SWITCHING  
CORRECTLY

CHECK  
OVERHEAT  
THERMOSTAT

IS  
CIRCULATING  
PUMP  
WORKING

IS THERE  
240v  
ACROSS  
TERMINALS  
L4/N1

IS  
CIRCULATING  
PUMP  
WORKING

**YES**

**NO**

**YES**

**NO**

**YES**

**NO**

WATER  
PUMP  
CONTROL  
CIRCUIT  
OK

IS THERE  
240v  
ACROSS  
TERMINALS  
L1/N1

IS THERE  
240v  
ACROSS  
8 & 9 IN  
CONTROL BOX

IS THERE  
240v  
ACROSS  
TERMINALS  
L3/N1

PROGRAMMER  
SWITCHING  
CORRECTLY

PRIORITY  
SWITCH  
OR  
WIRING  
FAULT

PROGRAMMER  
FAULT

WIRING  
FAULT

**YES**

**NO**

**YES**

**NO**

**YES**

**NO**

PUMP  
OR  
WIRING  
FAULT

FAULT IN  
CIRCULATING  
PUMP RELAY  
CIRCUIT

THERMOSTAT  
OPERATING  
CORRECTLY

THERMOSTAT  
OR  
WIRING  
FAULT

CHECK LINK  
ACROSS  
TERMINALS  
L3/L4

WIRING  
FAULT

IS CIRC.  
PUMP  
RELAY  
ACTIVATED

CONTROL  
BOX  
FAULT

IF M/V AUXILIARY  
SWITCHES ARE  
CONNECTED  
ACROSS  
L3/L4  
CHECK  
SWITCHING WHEN  
VALVES OPERATE

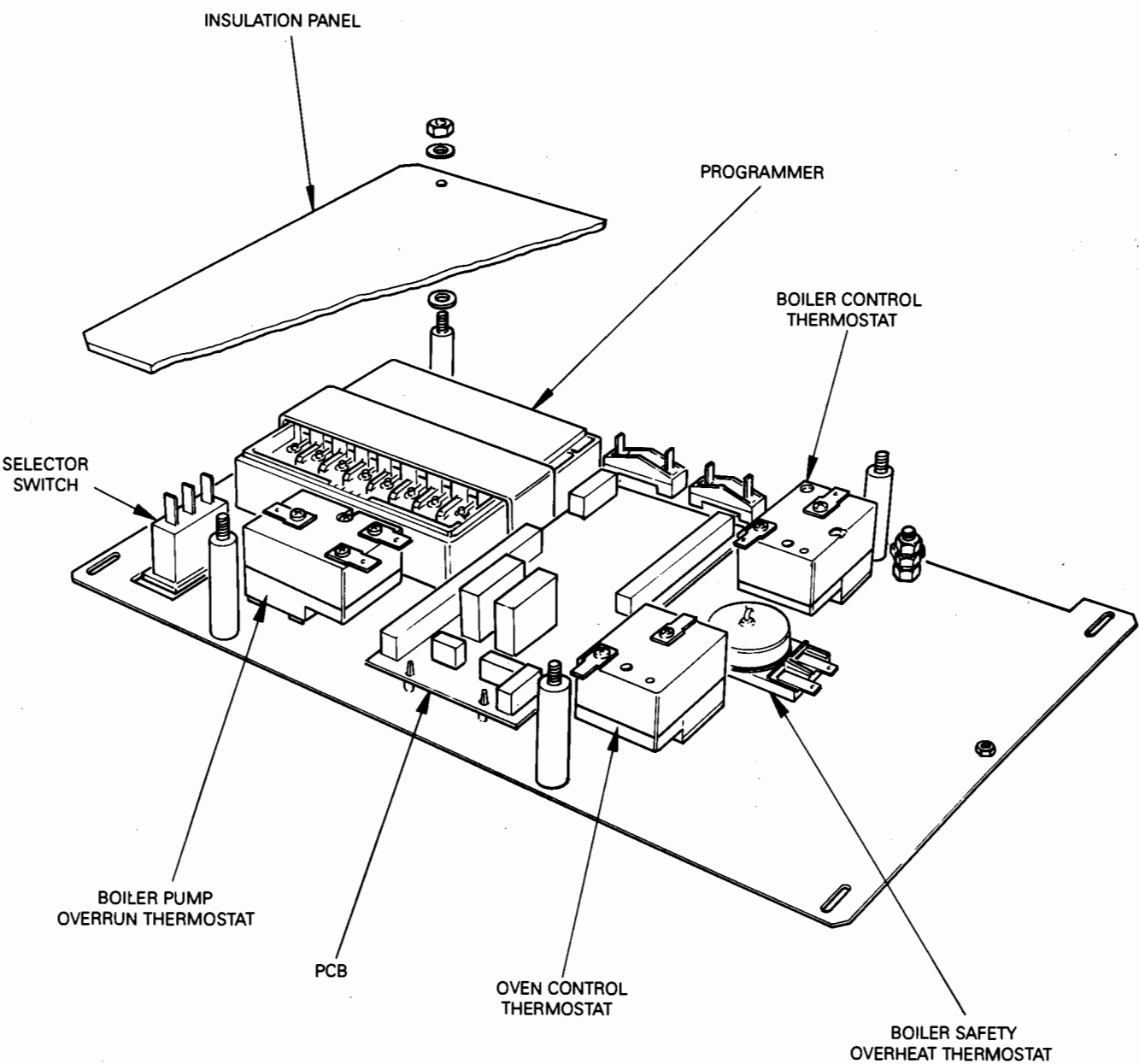
IS THERE  
240v  
AT  
RELAY COIL

**YES**

**NO**

CHANGE  
RELAY

WIRING  
FAULT



## SET COMBUSTION AIR

SEE FIG. 16

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  $\text{CO}_2$  (Carbon Dioxide) level. Adjust the boiler burner air intake until a reading of 12.0%  $\text{CO}_2$  is recorded on the indicator.

## CHECK SMOKE

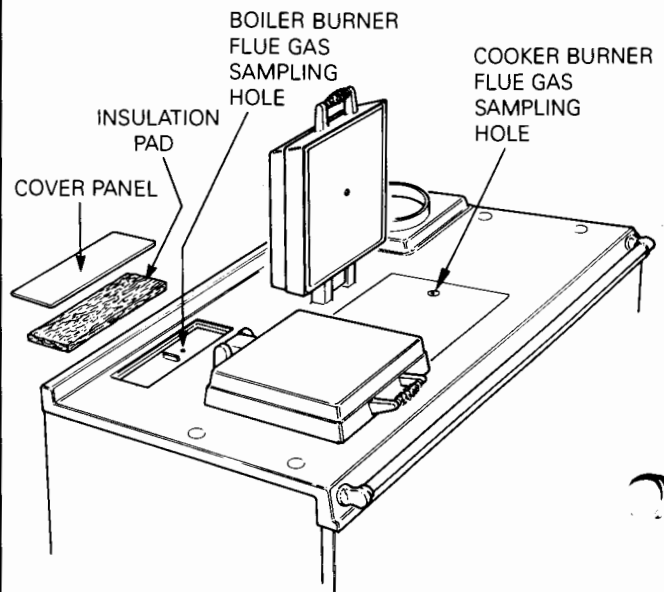
SEE FIG. 16

Remove the  $\text{CO}_2$  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.

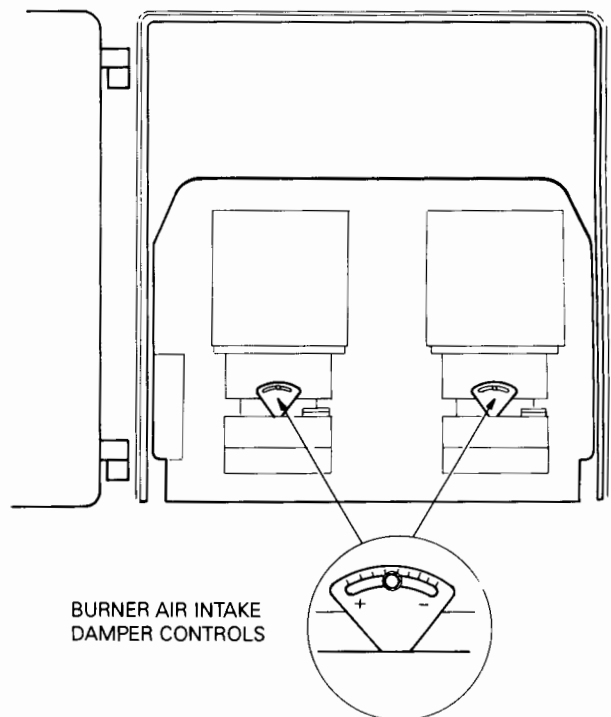
Replace the plugging screw, insulation pad and cover panel.

COOKER BURNER - SEE FIG. 16

Switch off the boiler burner and repeat the procedure with 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 12.0%  $\text{CO}_2$  with a maximum Smoke No. of 2. Replace the countersunk headed screw on completion ensuring that it will not interfere with any pots and pans placed on the hotplate.



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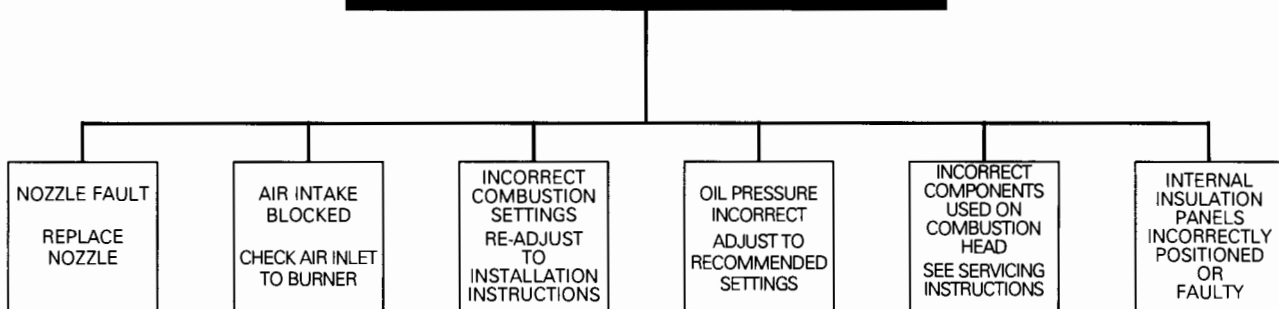


IMPORTANT: ALWAYS LOCK IN POSITION AFTER SETTING

FIG. 17

DESN 510860

## HIGH SMOKE NUMBERS



## OIL SMELLS

