

## **WARNING**

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# Servicing Instructions for Rayburn 480G Central Heating Cooker

Home on the Range.

For use in GB and IE

## 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.

### Important.

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

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

**Firebricks, Fuel beds, 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 480G 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 480G cannot be serviced whilst hot, so both oven and boiler thermostats should be turned off on the evening before the service visit.

In your own interest, and that of safety to comply with the law, all gas appliances should be installed/maintained by a competent person, in accordance with the relative regulations.

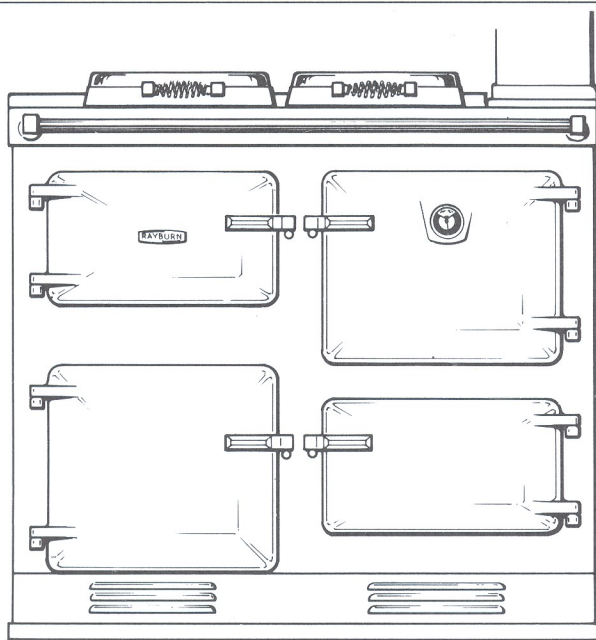
Failure to install/maintain appliances correctly could lead to prosecution.

On completion, test the gas installation for soundness.

## 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.
- RE-COMMISSIONING.
- REPLACEMENT PARTS.



DESN 510517

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

# Burner Removal

## BURNER ACCESS

**WARNING: BEFORE REMOVING SERVICE ACCESS COVERS ENSURE THAT ALL ELECTRICAL SUPPLIES TO THE APPLIANCE HAVE BEEN ISOLATED**

SEE FIG. 1

1. Open up 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.

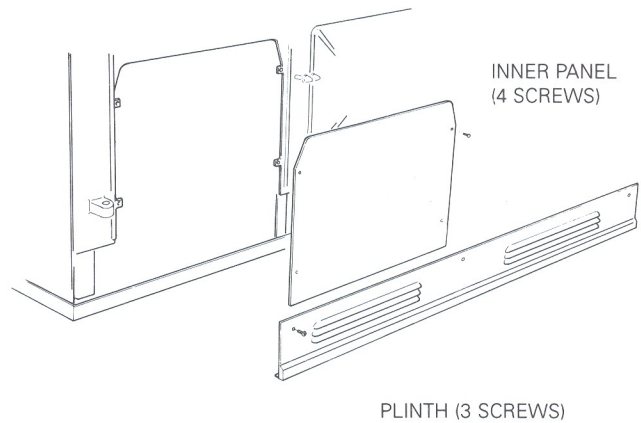


FIG. 1

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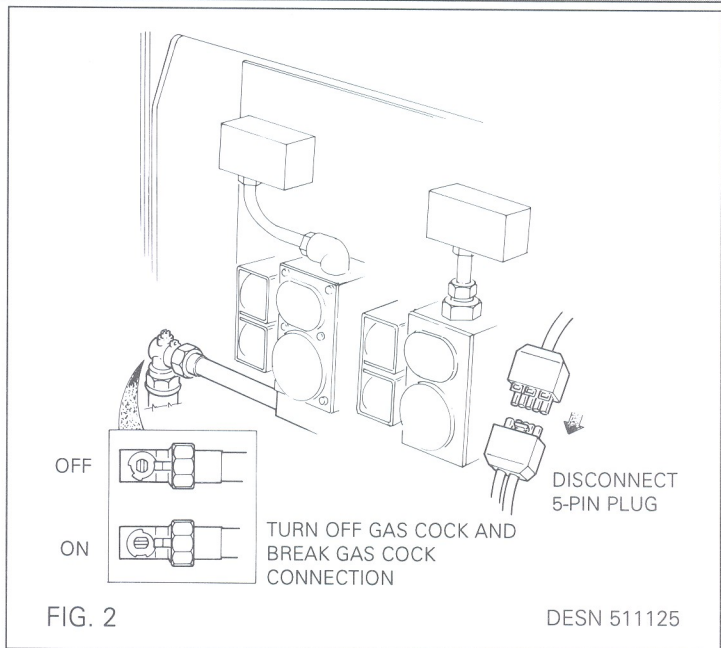
# Burner Removal

## BURNER REMOVAL

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

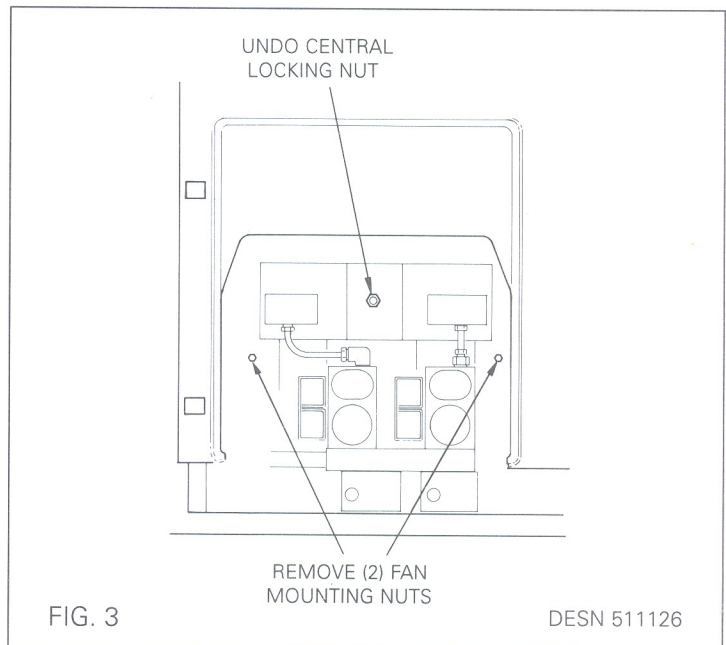
SEE FIG. 2

1. Turn off gas cock.
2. Break gas cock union connection.
3. Disconnect the 5-pin plug underneath the burner.



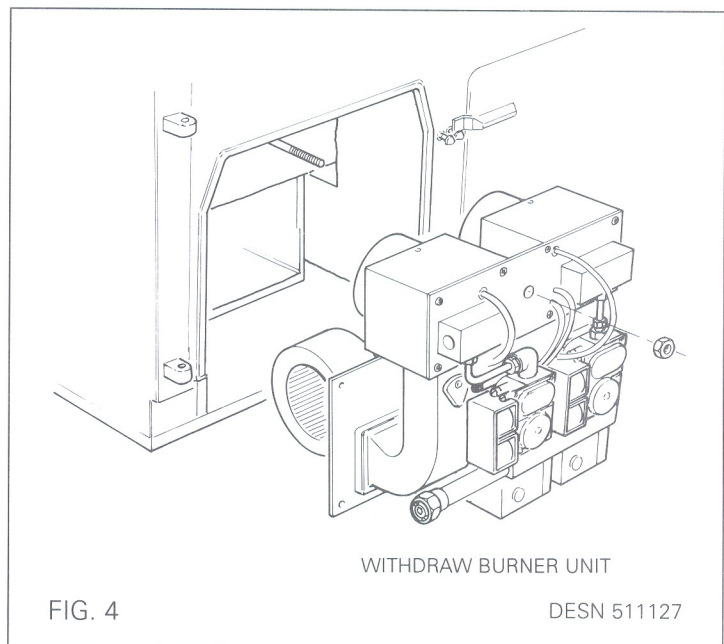
SEE FIG. 3

4. Undo the burner central locking nut
5. Remove (2) fan mounting plate nuts.



SEE FIG. 4

6. Withdraw the burner unit.



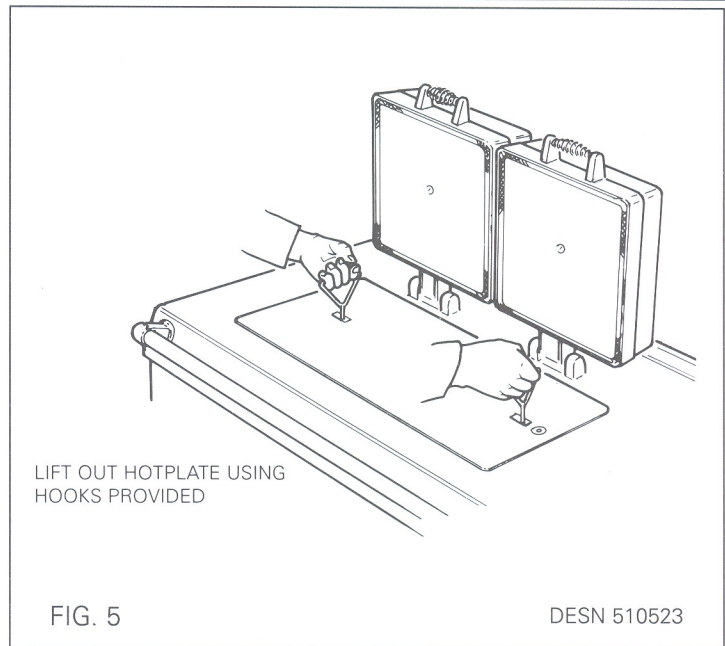
# Cleaning

## HEAT EXCHANGER AND HOTPLATE FLUEWAY CLEANING

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

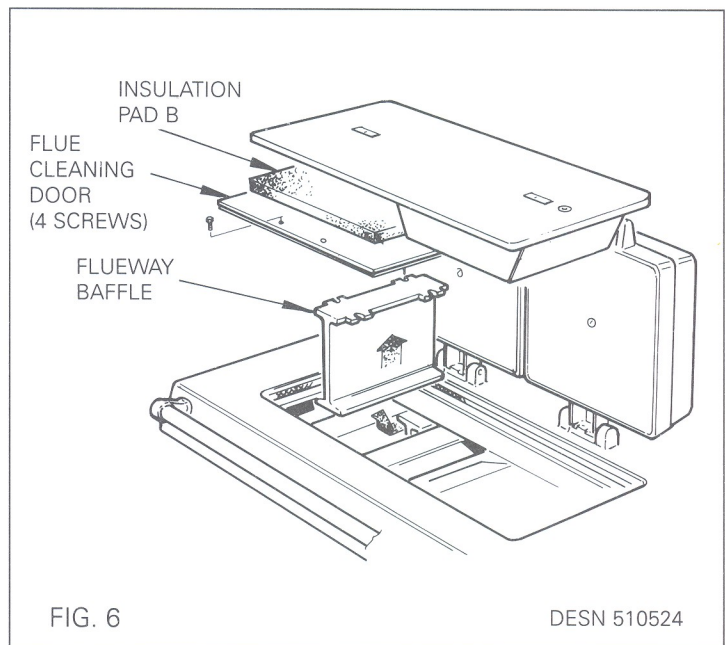
SEE FIG. 5

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



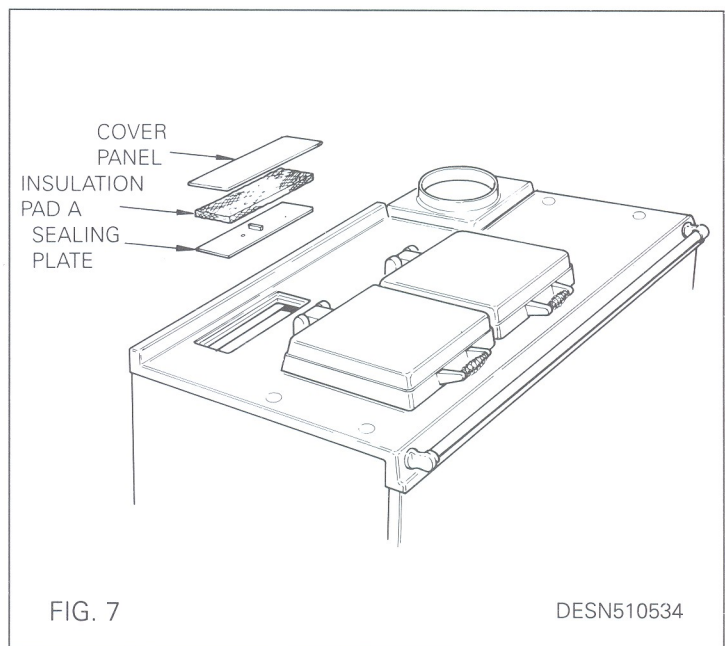
SEE FIG.6

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

1. Brush and clean in between hotplate ribs on underside.
2. Examine soft rope seal located around hotplate aperture in top plate. Replace if frayed or damaged.
3. Replace hotplate ensuring the underside ribs lie over the oven, and that it seals to the top plate.
4. Lift top plate enamelled cover panel (behind the L.H. insulating cover) remove insulation pad A and sealing plate.
5. Inspect and clean the boiler outlet flueway if necessary
6. Thoroughly clean boiler heat exchanger flueway.
7. Carefully vacuum any debris that has fallen down into the burner chamber.
8. Clean boiler flueway baffles.
9. Re-assemble in reverse order.



## INTRODUCTION

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

## BURNER HEAD CLEANING

1. Clean heads with soft brush and inspect for damage or wear.

## FAN CLEANING

1. Clean between the blades of the fan impeller with a small brush and tip upside down to remove any residue.
2. Spin the motor to make sure that it turns easily.

# Re-commissioning

## TEST BURNERS ON DRY RUN (NO GAS)

SEE FIG. 8

### Switch on electricity supply

#### BOILER BURNER

Set boiler burner time clock to continuous and turn the boiler thermostat to max. allowing the burner to start, the burner should go to lockout after the expiry of the ignition safety time. Lockout is indicated by illumination of the control box reset buttons. **IN THE EVENT OF LOCKOUT WAIT AT LEAST ONE MINUTE** then press the reset button.

#### COOKER BURNER

Follow procedure as above for boiler burner.

#### BOILER BURNER

Reset the control box, open the gas inlet cock, allowing the burner to restart.

When the burner is in 'run' condition close the inlet gas cock. When the flame is extinguished the gas valves solenoids on the burner should be de-energised almost immediately.

The control will then allow one restart attempt and should go to lockout after the expiry of the safety time.

#### COOKER BURNER

Repeat procedure as above for the boiler burner.

#### BOILER BURNER

Switch off the electric supply and disconnect the wire at the terminal 2 on the control box base.

Restore the electric supply and allow the burner to start. The burner fan should switch on, but a further operation of the control box should be halted. Switch off the electrical supply, replace the wire at terminal 2.

#### COOKER BURNER

Repeat the procedure as above for the boiler burner.

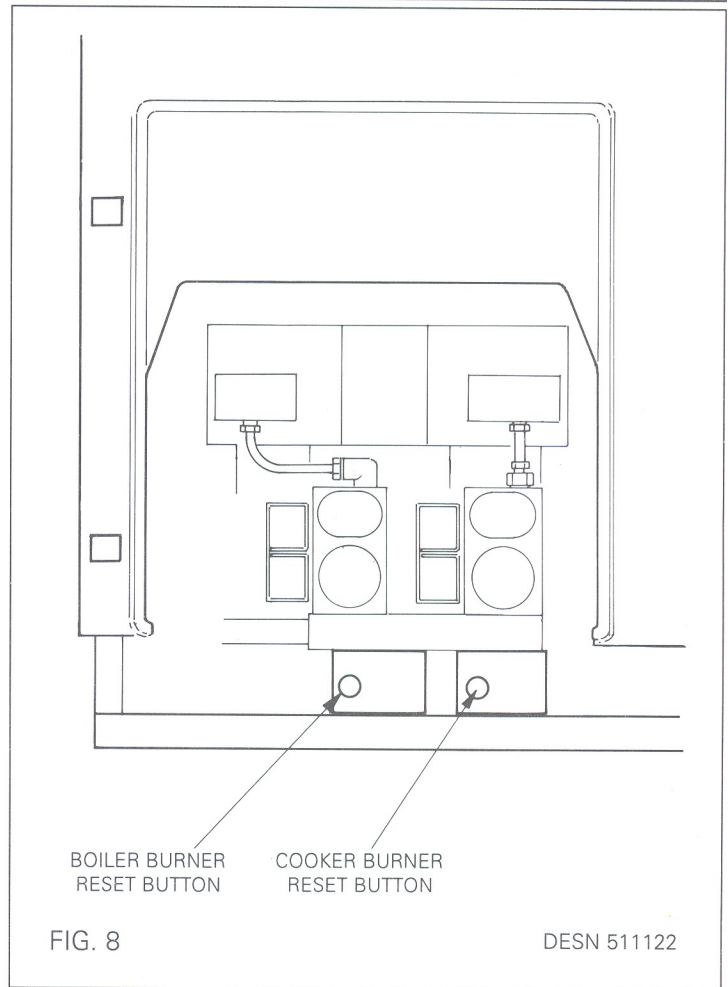


FIG. 8

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## SET COMBUSTION AIR

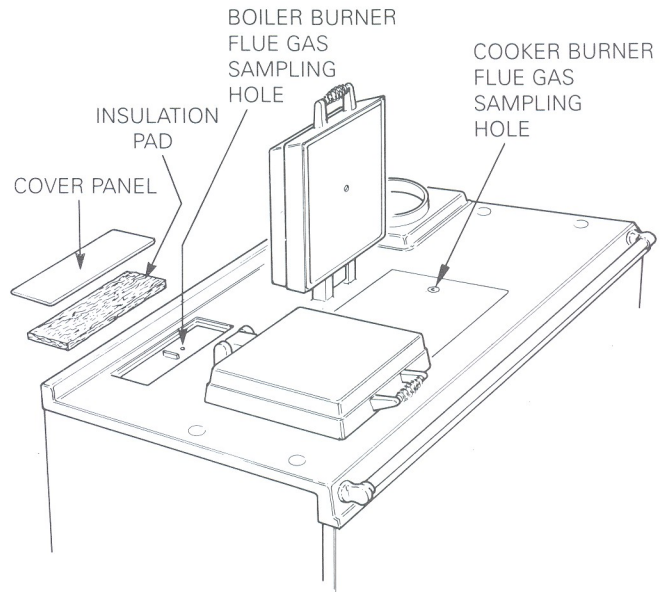
SEE FIG. 9

Remove the enamelled top cover panel and the insulation pad.

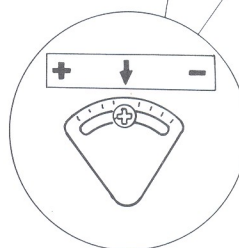
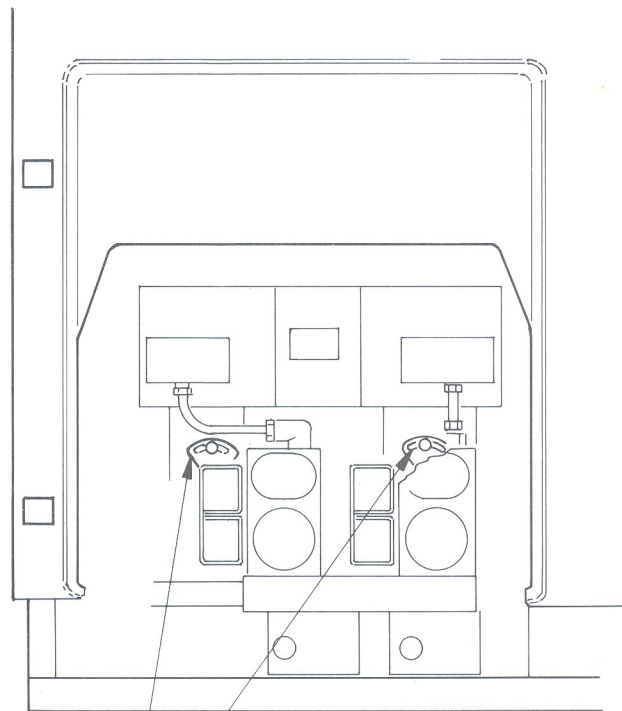
Remove the plugging screw and insert the sensing end of a portable indicator to check the CO<sub>2</sub> (Carbon Dioxide) level. Adjust the boiler burner air intake until the CO<sub>2</sub> /CO are as specified on page 2 of the Installation Instructions.

### Cooker Burner

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 as specified on page 2 of the Installation Instructions. 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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BURNER AIR INTAKE DAMPER CONTROLS

**IMPORTANT: ALWAYS LOCK IN POSITION AFTER SETTING**

FIG. 9

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# Replacement of parts (Burner)

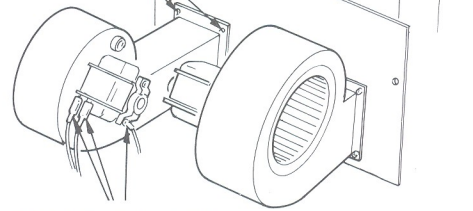
## FAN MOTOR

SEE FIG. 10

Follow instructions in sections BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 6.

1. Carefully remove 3 push on connectors (noting terminals) from fan motor.
2. Remove 4 securing screws.
3. Re-assemble in reverse order.

REMOVE (4) FAN  
SECURING SCREWS



REMOVE (3) PUSH-ON  
CONNECTORS  
(NOTE TERMINALS)

FIG. 10

DESN 511128

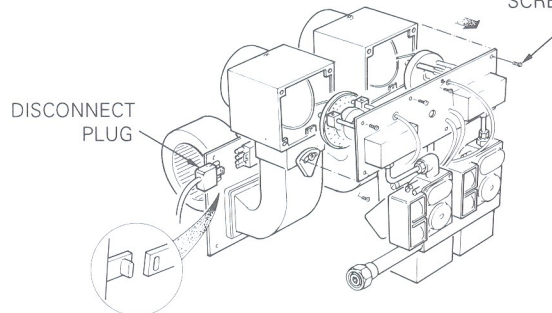
## DISMANTLE BURNERS

SEE FIG. 11

Follow instructions in sections BURNER ACCESS, Steps 1 to 3 and BURNER REMOVAL, Steps 1 to 6.

1. Remove 8 burner head securing screws
2. Disconnect plug on fan mounting plate..

REMOVE (8)  
BURNER HEAD  
SECURING  
SCREWS



DISCONNECT  
PLUG

NOTE: PUSH IN CLIP TO  
REMOVE PLUG

FIG. 11

DESN 511129

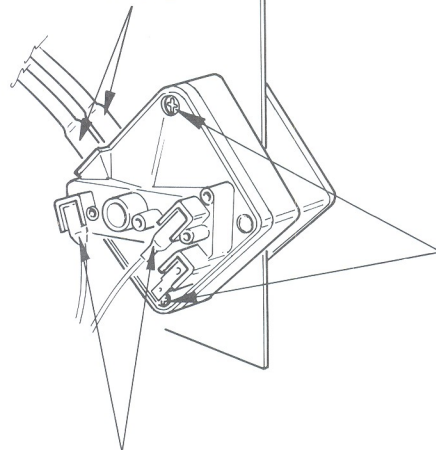
## AIR PRESSURE SWITCH

SEE FIG. 12

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Carefully remove 2 push on connectors on pressure switch
2. Carefully remove 2 air tubes.
3. Remove 2 air pressure switch securing screws and nuts.
4. Fit new switch , re-assemble in reverse order.

REMOVE (2)  
AIR TUBES



REMOVE (2)  
P. SWITCH  
SECURING  
SCREWS

REMOVE (2) PUSH-ON  
CONNECTORS

FIG. 12

DESN 511130

## Replacement of parts (Burner)

### IGNITOR ELECTRODE COOKER

SEE FIG. 13

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Remove securing nut and disconnect H.T. lead from ignition electrode.
2. Slacken nut and bolt on electrode clamp.
3. Slide electrode forward and away from clamp.
4. Fit new electrode in reverse order, set gap and position (See Fig.15).

**NOTE: DO NOT OVER TIGHTEN ELECTRODE CLAMP**

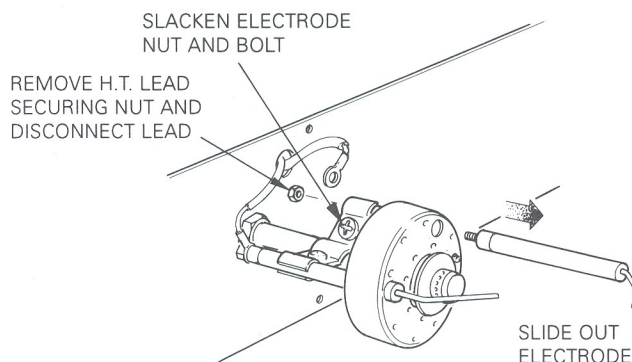


FIG. 13

DESN 511131

### FLAME SENSING PROBE COOKER

SEE FIG. 14

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Remove securing nut and disconnect H.T. lead from flame sensing probe.
2. Slacken nut and bolt on sensing probe clamp.
3. Slide sensing probe forward and away from clamp.
4. Fit new sensing probe in reverse order, set gap and position (See Fig. 15).

**NOTE: DO NOT OVER TIGHTEN SENSING PROBE CLAMP**

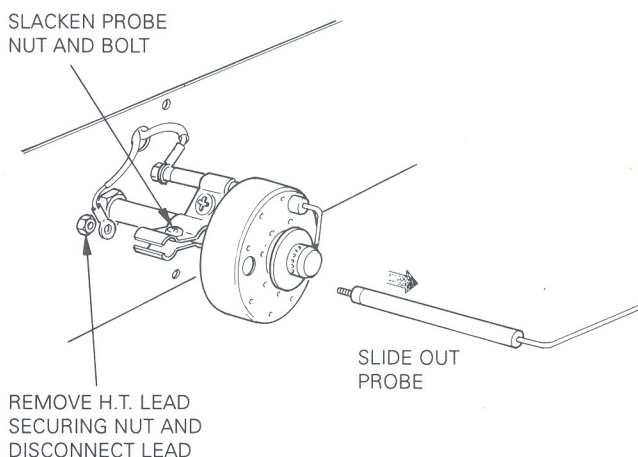


FIG. 14

DESN 511132

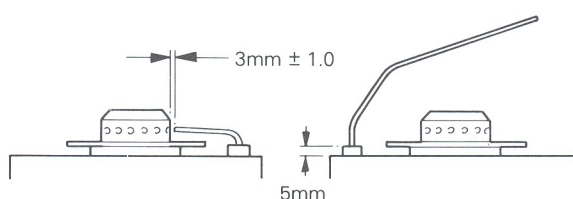


FIG. 15

DESN 511133

## Replacement of parts (Burner)

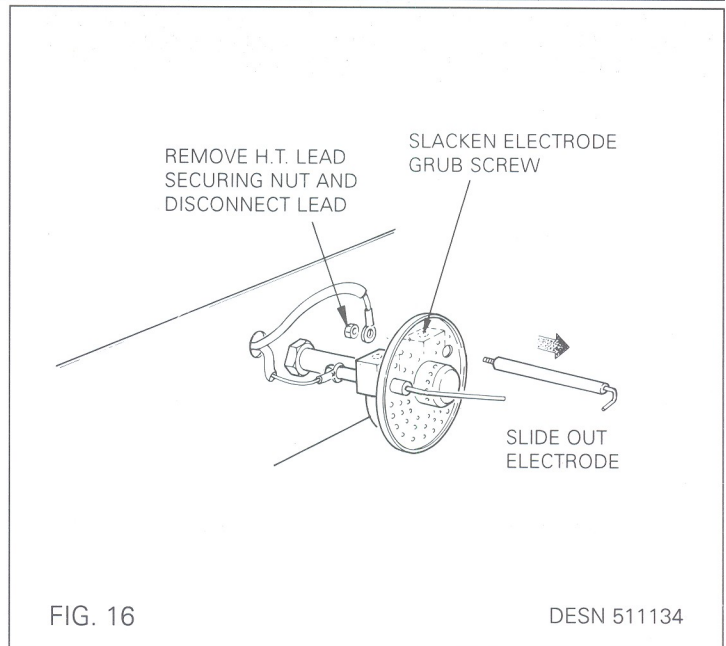
### IGNITOR ELECTRODE BOILER

SEE FIG. 16

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Remove securing nut and disconnect H.T. lead from ignition electrode.
2. Slacken grub screw.
3. Slide electrode forward and away from clamp.
4. Fit new electrode in reverse order, set gap and position (See Fig. 18).

**NOTE: DO NOT OVER TIGHTEN GRUB SCREW.**



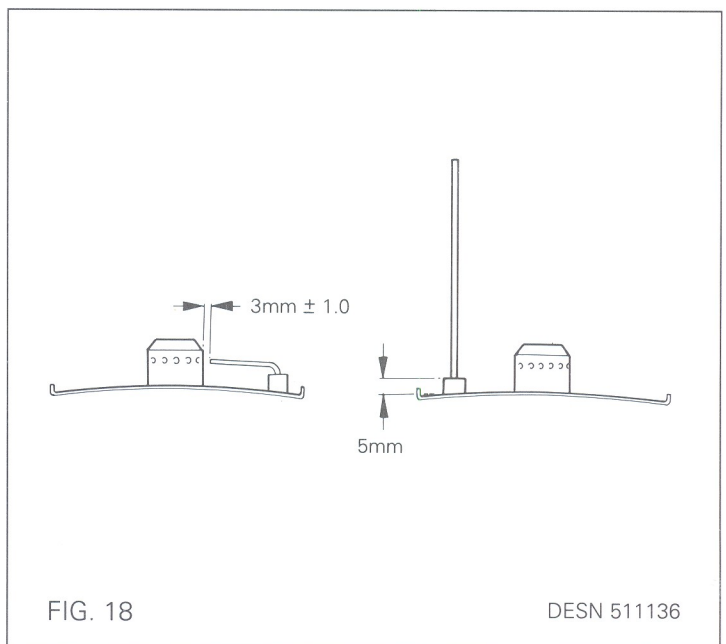
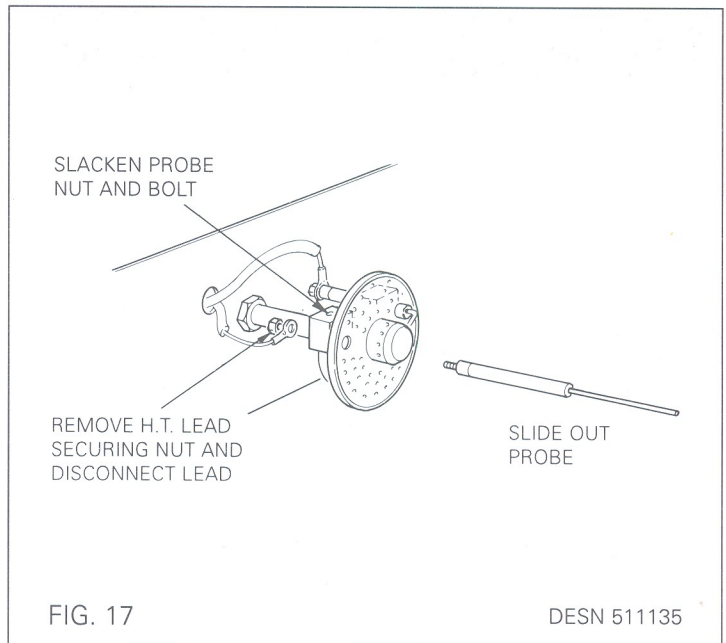
### FLAME SENSING PROBE BOILER

SEE FIG. 17

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Remove securing nut and disconnect H.T. lead from flame sensing probe.
2. Slacken nut grub screw.
3. Slide sensing probe forward and away from clamp.
4. Fit new sensing probe in reverse order, set gap and position (See Fig. 18).

**NOTE: DO NOT OVER TIGHTEN GRUB SCREW.**



## Replacement of parts (Burner)

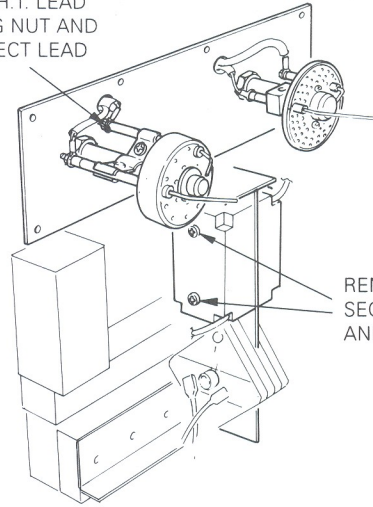
### IGNITOR

SEE FIG. 19

Follow instructions in sections BURNER ACCESS, Steps 1 to 3, BURNER REMOVAL, Steps 1 to 6 and DISMANTLE BURNERS Steps 1 to 2.

1. Remove securing nut and disconnect H.T. lead from ignition electrode.
2. Remove control box, 1 screw.
3. Disconnect live wiring to terminal 3.
4. Disconnect neutral wiring.
5. Disconnect earth wiring.
6. Remove 2 ignitor securing nuts and bolts.
7. Remove ignitor
8. Fit new ignitor, re-assemble in reverse order.

REMOVE H.T. LEAD  
SECURING NUT AND  
DISCONNECT LEAD



REMOVE (2) IGNITOR  
SECURING NUTS  
AND BOLTS

FIG. 19

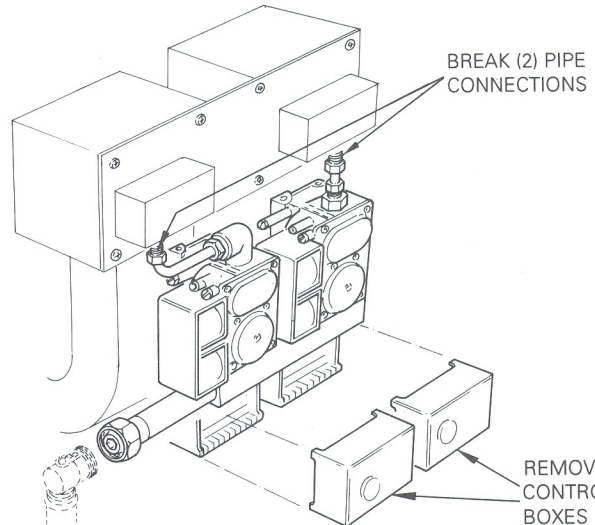
DESN 511137

### GAS VALVE ACCESS

SEE FIG. 20

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

1. Remove control boxes.
2. Break 2 gas pipe connections.
3. Lower gas valve assembly forward.



BREAK (2) PIPE  
CONNECTIONS

REMOVE  
CONTROL  
BOXES

FIG. 20

DESN 511138

### GAS VALVE REPLACEMENT

SEE FIG. 21

1. Remove 4 gas valve securing screws (gas valve to manifold).
2. Remove valve plug, 1 screw.
3. Remove appropriate pipework from valve, Fit to new valve.
4. Re-assemble gas valve in reverse order.

**NOTE: ENSURE 'O' RING IS LOCATED CORRECTLY IN MANIFOLD.**

**NOTE: ENSURE 'O' RING  
IS CORRECTLY LOCATED  
IN MANIFOLD**

VALVE PLUG

REMOVE VALVE  
SECURING SCREW

REMOVE (4) GAS VALVE  
SECURING SCREWS

FIG. 21

DESN 511139

## Replacement of parts (Electrical)

### 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. 22

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.

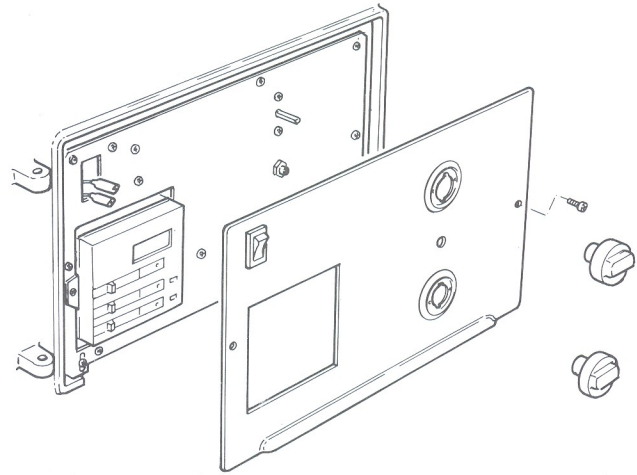


FIG. 22

DESN 510543 B

SEE FIG. 23

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.

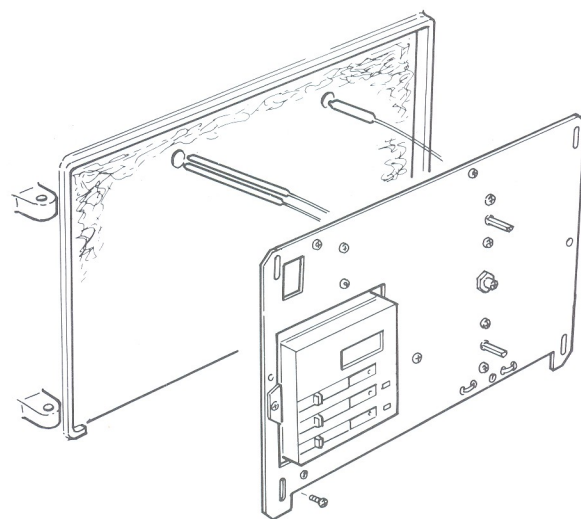


FIG. 23

DESN 510544 A

# Replacement of parts (Electrical)

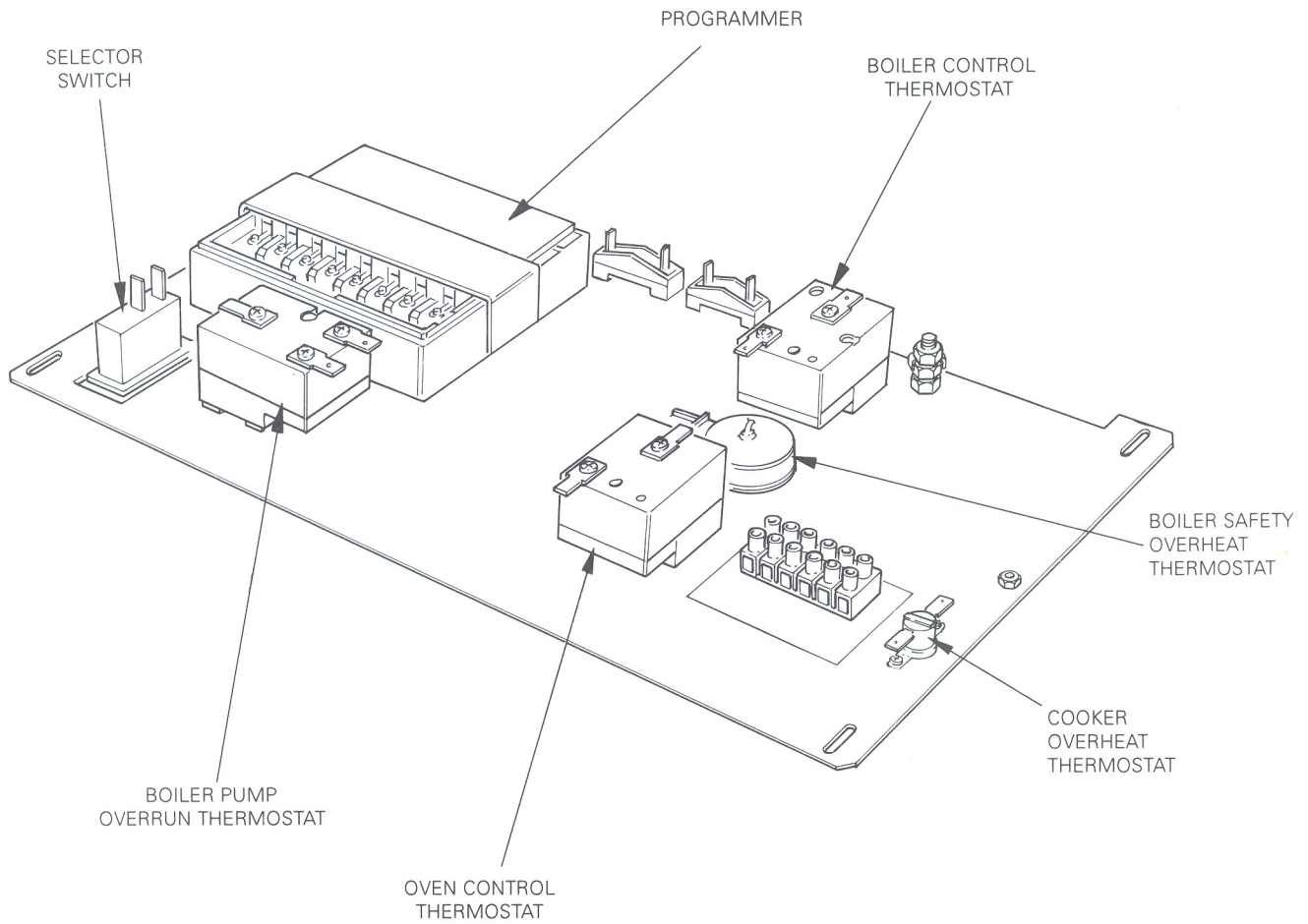


FIG. 24

## Replacement of parts (Electrical)

### TO FIT NEW BOILER CONTROL THERMOSTAT

SEE FIG. 25

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 bottom.
4. Re-connect push on connector wires. The RED wire to P and BLACK wire to 2.

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

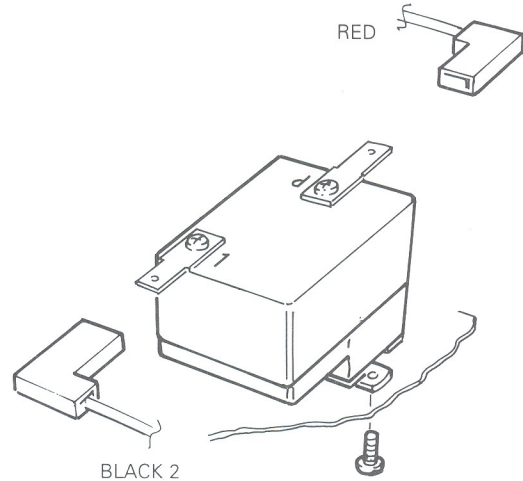


FIG. 25

DESN 510546 A

### TO FIT NEW BOILER PUMP OVERRUN THERMOSTAT

SEE FIG. 26

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 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 pump PL to P, the other WHITE wire to 2 and the RED to 1.

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

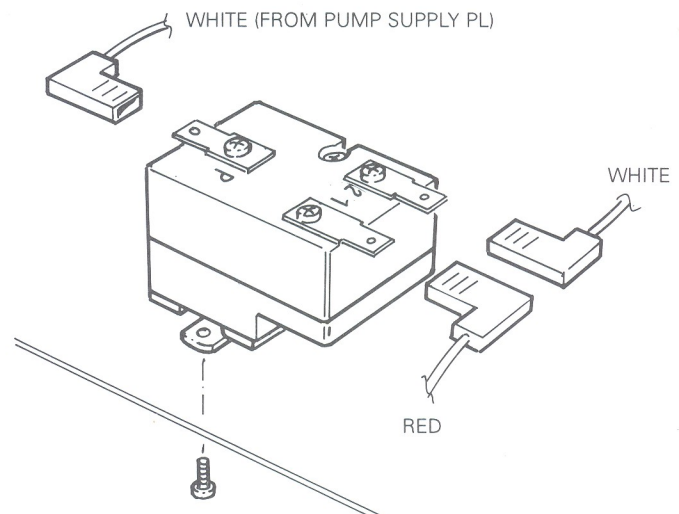


FIG. 26

DESN 510547 A

## Replacement of parts (Electrical)

### TO FIT NEW BOILER SAFETY OVERHEAT THERMOSTAT

SEE FIG. 27

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

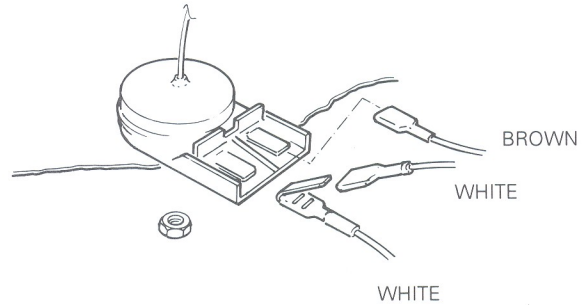


FIG. 27

DESN 511141

### TO FIT NEW OVEN CONTROL THERMOSTAT

SEE FIG. 28

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. 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 connector. The ORANGE wire to 1 and BLACK (3) wire to P.

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

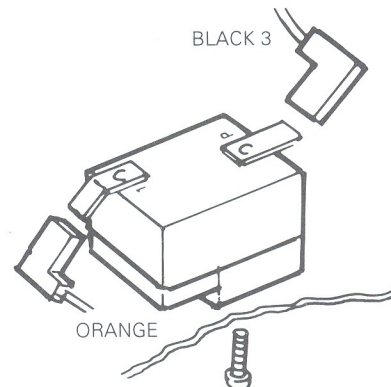
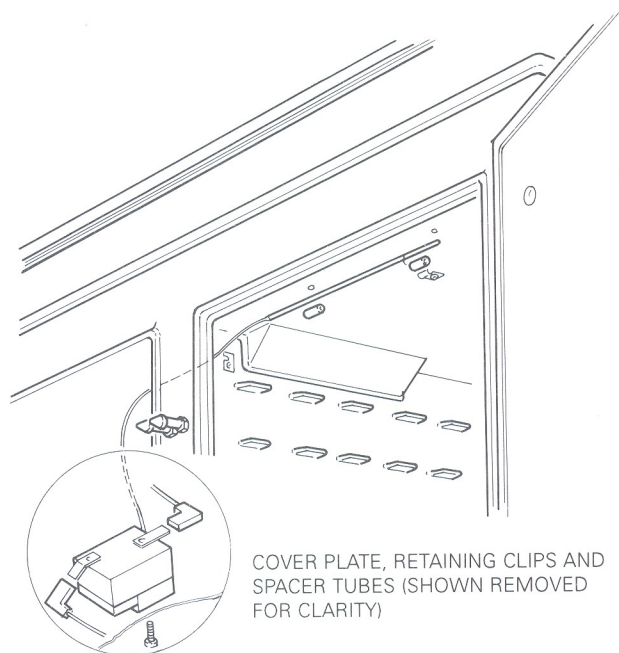


FIG. 28

DESN 510868



## Replacement of parts (Electrical)

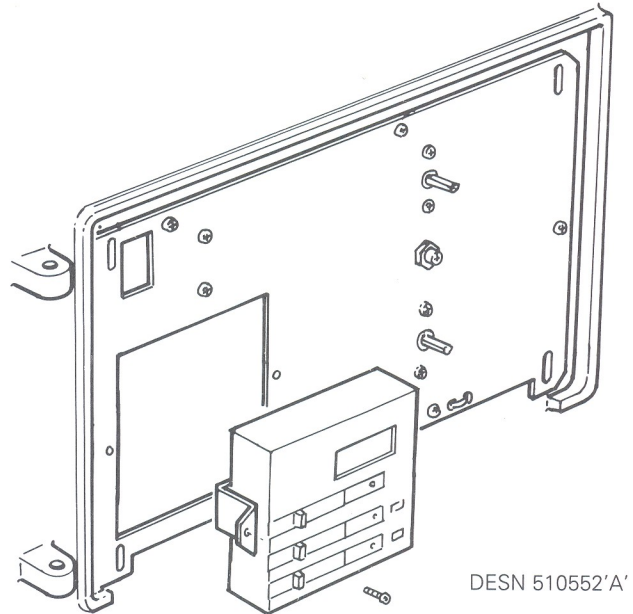
### TO FIT NEW PROGRAMMER

SEE FIG. 29

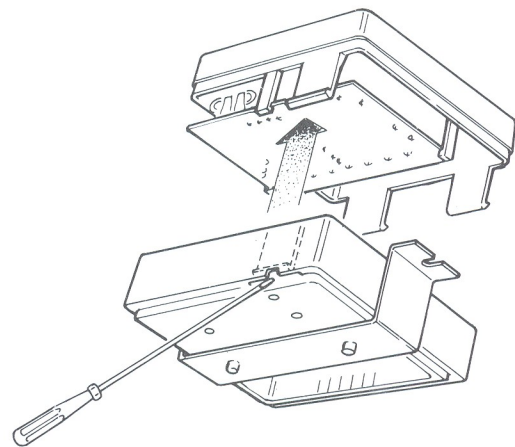
Follow instructions in section ELECTRICAL COMPONENT ACCESS, Steps 1 to 4.

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.



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. 29

DESN 510559

### TO FIT NEW SELECTOR SWITCH

SEE FIG. 30

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.

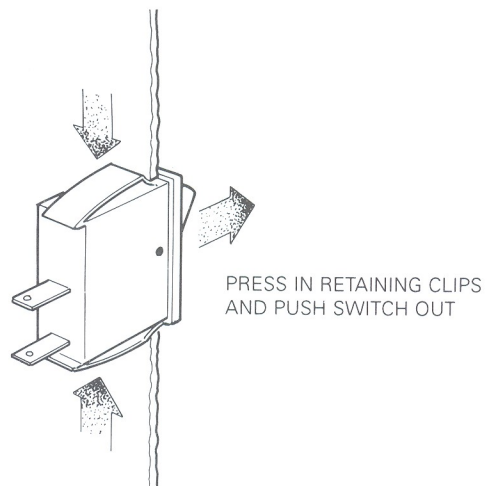


FIG. 30

DESN 510553 A

### RE-ASSEMBLE

1. Locate thermostat phials into boiler pockets, the pump overrun and boiler stats into the LH pocket and the overheat stat into the RH pocket.
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 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 YELLOW wire on 1 and the VIOLET 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.

## Electrical Controls

### 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.

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 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.

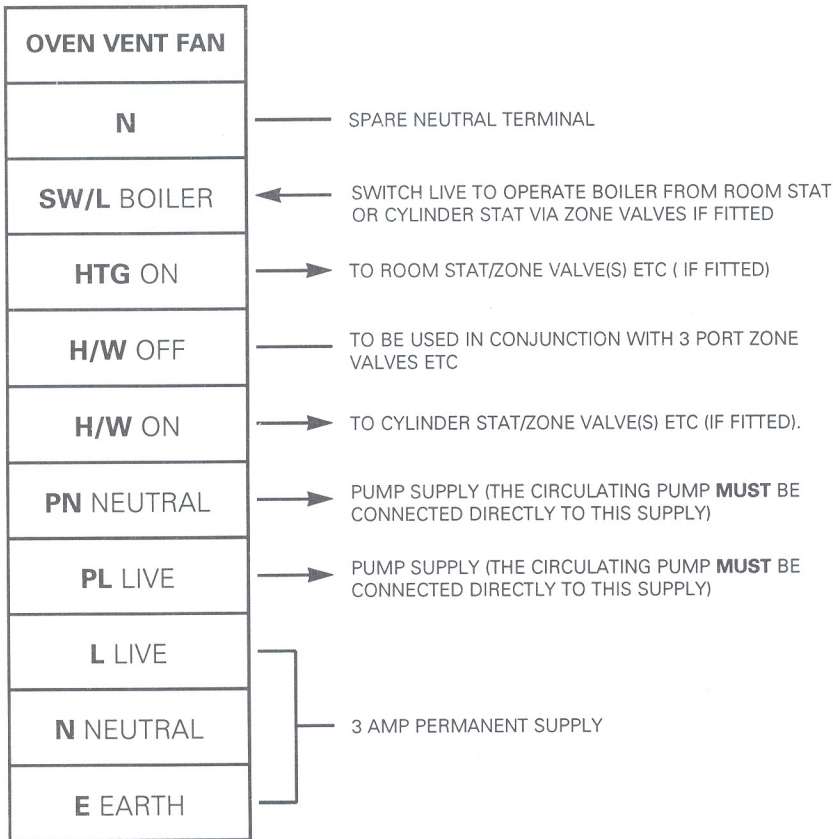
This thermostat has to be manually reset once the temperature has cooled down.

#### COOKER

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

## CONTROL CIRCUIT-EXTERNAL

### TERMINAL STRIP CONNECTIONS



#### NOTE:

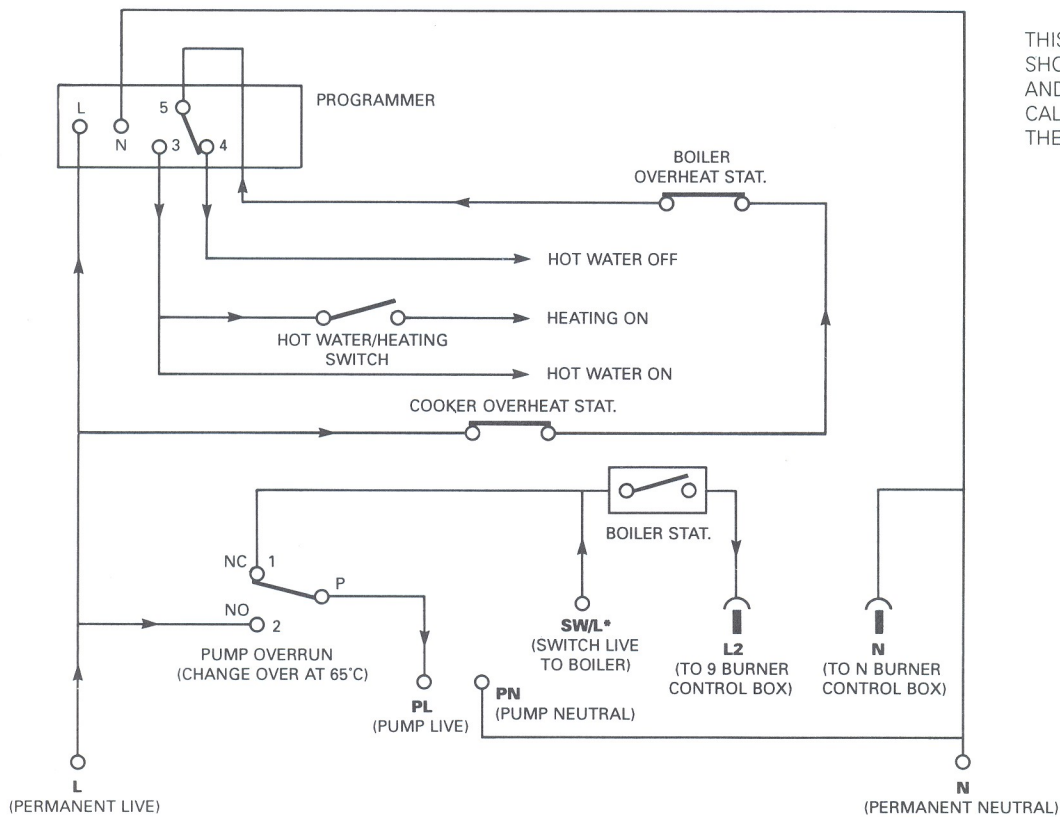
If no Hot Water System Controls are used a link **MUST** be fitted between **H/W ON** and **SW/L BOILER**.

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**.

# Electrical Controls

## CONTROL CIRCUIT-BOILER



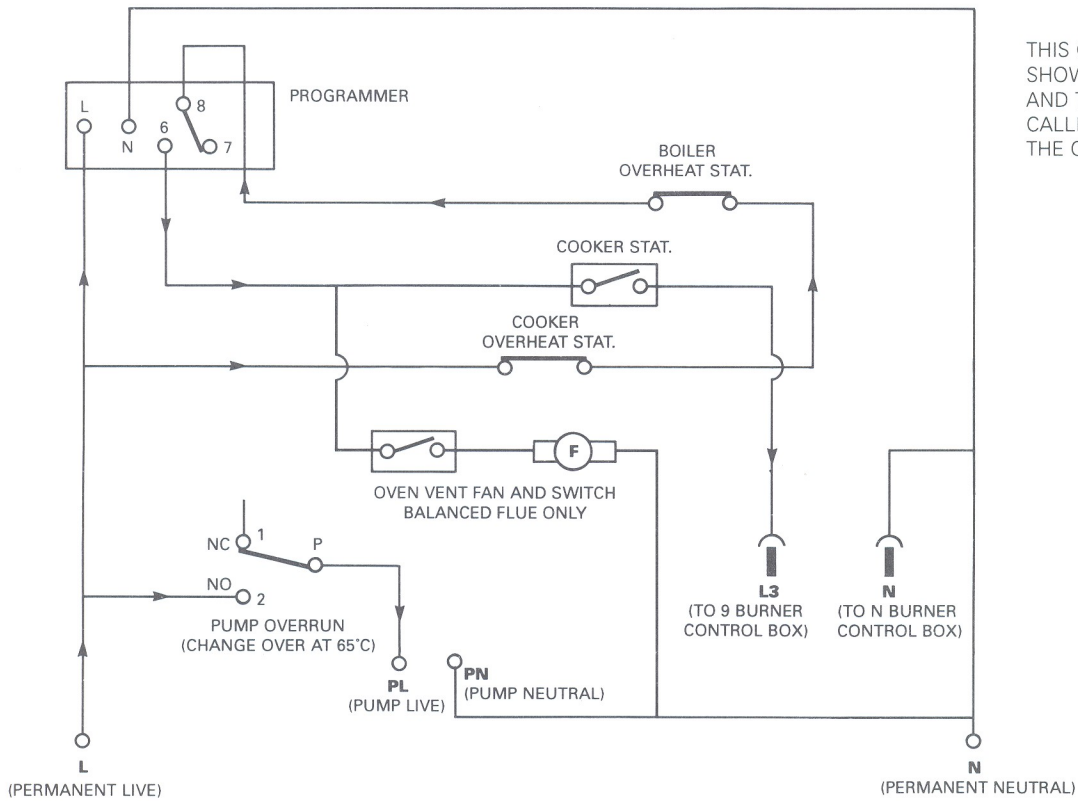
**\*NOTE:** SW/L TO OPERATE BOILER FROM ROOM STAT. OR CYLINDER STAT. VIA ZONE VALVES (IF FITTED).

IF NO HOT WATER SYSTEM CONTROLS ARE USED, A LINK MUST BE FITTED BETWEEN H/W AND SW/L BOILER.

IF NO CENTRAL HEATING CONTROLS ARE USED, A LINK MUST BE FITTED BETWEEN HTG ON AND SW/L BOILER.

FIG. 31

## CONTROL CIRCUIT-COOKER



THIS CONTROL CIRCUIT SHOWS THE PROGRAMMER AND THERMOSTATS NOT CALLING FOR HEAT AND THE COOKER COLD.

**NOTE:** IF WHEN THE COOKER ONLY IS OPERATING AND THE TEMPERATURE OF THE WATER IN THE BOILER REACHES 65°C ABOVE, THE PUMP OVERRUN WILL CUT IN AND SWITCH ON THE PUMP.

FIG. 32

# Electrical Controls

## WIRING DIAGRAM - BURNER ONLY

### KEY - GAS BURNER

- PS PRESSURE SWITCH
- IS IONISATION PROBE
- V1, V2 BURNER SUPPLY SOLENOIDS
- ZT IGNITOR

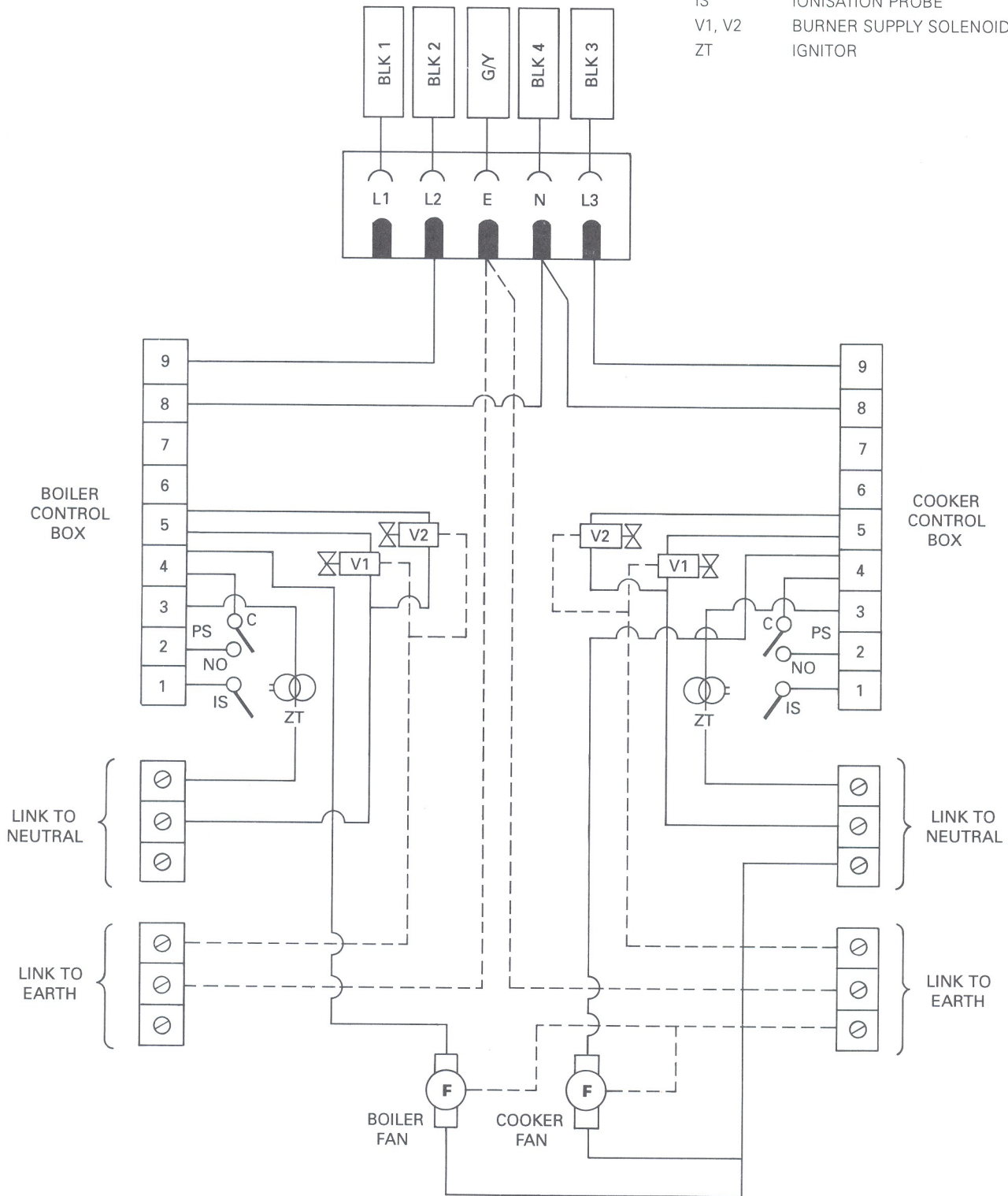


FIG. 33

## WIRING DIAGRAM - APPLIANCE

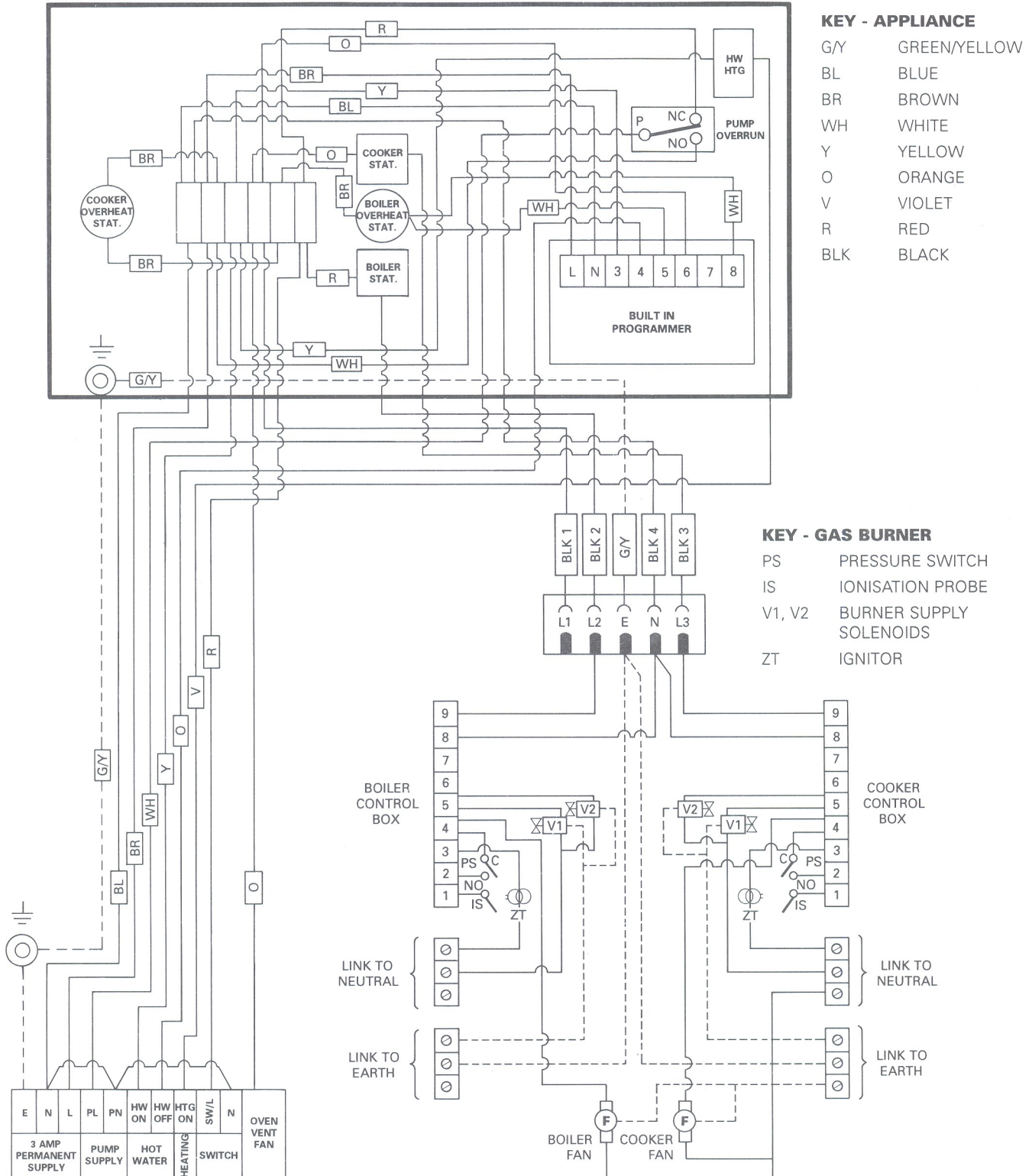


FIG. 34



# Fault Finding

## BURNER DOES NOT START

### Burners

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

Causes of lockout can be-

- No ignition, ignition electrode incorrectly positioned or insulation cracked, spark generator faulty, check for 230v at spark generator.
- No gas supply.
- Poor combustion
- Flame probe incorrectly positioned, cracked insulation, flame probe in contact with earth, moisture present on probe affecting insulation.
- Live and Neutral connections reversed.
- Inadequate earth contact with flame.
- Ignition interference to flame signal.
- Gas valves not properly closed in shutdown position.
- Faulty control box..

REFER TO FLOW DIAGRAM FOR ELIMINATION PROCEDURES

### General

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

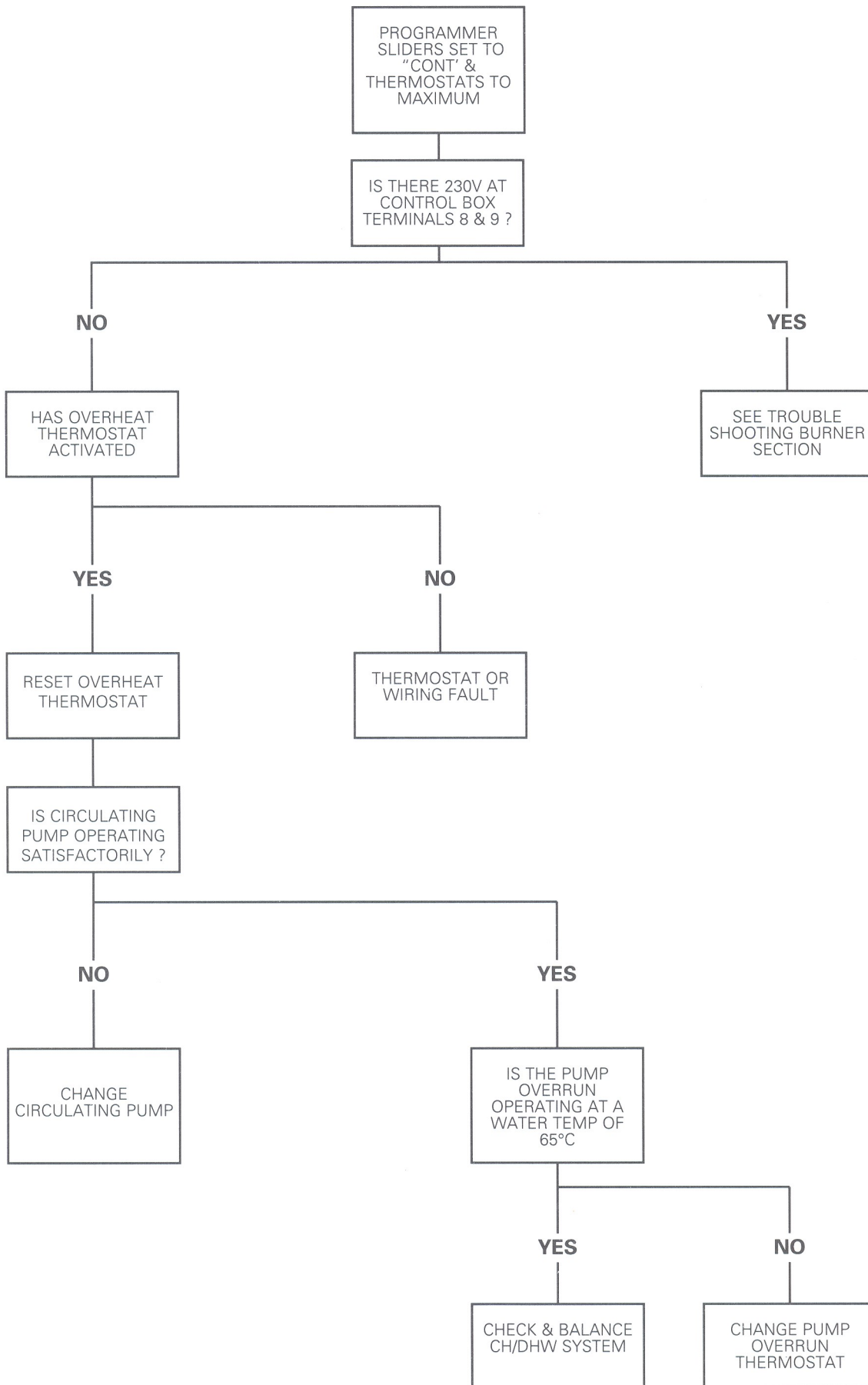
If only one of the burners is not running then the fault must be after the safety overheat thermostat. Conversely if both burners are affected then the fault usually lies before the programmer connections.

For access to individual controls refer to section on Replacement Parts and for wiring continuity checks refer to Figs. 31, 32, 33 and 34 for detailed and schematic wiring layouts.

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 230V 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 by pushing in the centre with a small, round tool i.e. a pencil.

# Fault Finding



# Fault Finding

## TROUBLESHOOTING-BURNER

### BURNER WILL NOT START

- 1 Check that external wiring is correct.
- 2 Check for 230v supply on terminal 9 at control box base, this will also determine if the thermostats are calling for heat.  
Check that incoming Neutral conductor is correctly wired onto terminal 8.
- 3 Press reset button to ensure that the control box has not gone to lockout.
- 4 Check air pressure switch is in provide air condition and fan is running.
- 5 If burner still refuses to start, change control box.

### BURNER FAN RUNS WITH CONTINUOUS PRE-PURGE

- 1 Check wiring to air pressure switch across terminals 2 & 4 at control box base.
- 2 Check air pressure switch.
- 3 Check fan inlet ducts and fan for blockages.
- 4 Check plastic air tubes are correctly connected.

### BURNER STARTS, FLAME NOT ESTABLISHED, CONTROL BOX GOES TO LOCKOUT AFTER END OF SAFETY

- 1 Check gas supply to valves is on.
- 2 Check ignition is present after end of pre-purge period.
- 3 Check start gas valve is energised and is opening during safety time.
- 4 If necessary change control box.

### BURNER STARTS FLAME ESTABLISHED, CONTROL BOX GOES TO LOCKOUT

- 1 Check polarity of wiring for Live and Neutral to control box base. live to terminal 9, Neutral onto terminal 8 at control box base.
- 2 Check flame detection probe is correctly positioned. Ensure that the probe insulation is sound, free from cracks or moisture.  
Check that the probe is not in contact with other metallic parts of the burner.
- 3 Check the burner is effectively earthed and bonded to the incoming earth wire from the mains supply.
- 4 Check for interference to the flame signal from the ignition spark. This can be determined with a d.c micro-ammeter ( $\mu\text{A}$ ). Connect the meter between terminal 1 and the incoming wiring to the flame probe. Correct polarity of the meter connections must be correctly observed, with the positive side of the meter connected onto terminal 1 at the control box wiring base. If flame is established and the meter tends to move in a reverse direction this can be an indication that the ignition is causing interference to the flame signal. It may also be an indication that there is insufficient earth contact with the flame. A correct reading should be approximately 15 - 20  $\mu\text{A}$ .
- 5 Change control box if necessary.