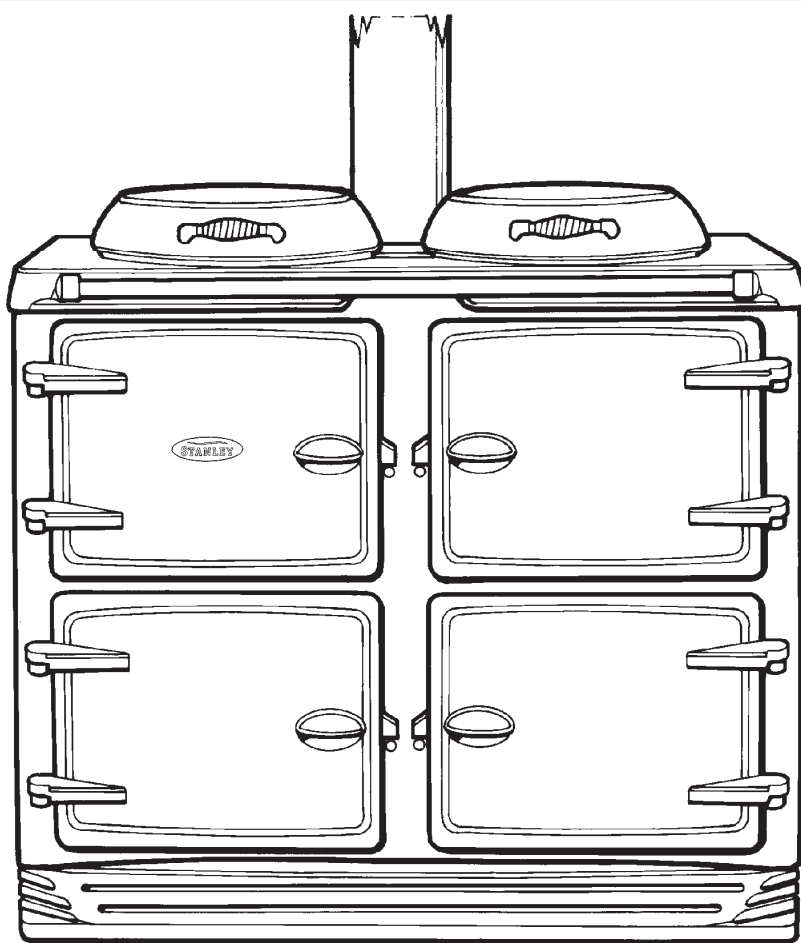

STANLEY

TURNING YOUR HOUSE INTO A HOME

Alpha 120/150K



Servicing Instructions

REMEMBER, when replacing a part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Waterford Stanley.

PLEASE READ THESE INSTRUCTIONS BEFORE SERVICING THIS APPLIANCE

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Consumer Protection

As responsible manufacturers we take care to make sure that our products are designed and constructed to meet the required safety standards when properly installed and used.

IMPORTANT NOTICE: PLEASE READ THE ACCOMPANYING WARRANTY.

Any alteration that is not approved by Waterford Stanley 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, Insulation 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 Stanley Alpha it should be serviced once a year; preferably at the start of the heating season.

This appliance must be commissioned by an approved engineer.

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 Stanley Alpha 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 burner nozzles and burner head seals **MUST BE CHANGED**. Flexible oil lines must be changed every 2 years.

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 insulation 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.

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 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.

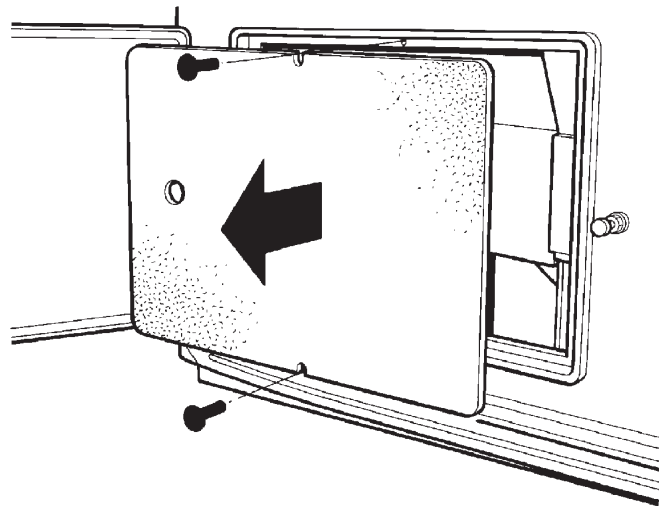


FIG. 1

DESN 514813

BURNER REMOVAL

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

SEE FIGS. 2, 3 & 4

1. Undo the burner locking nut and remove head retaining bar.
2. Withdraw burner head.

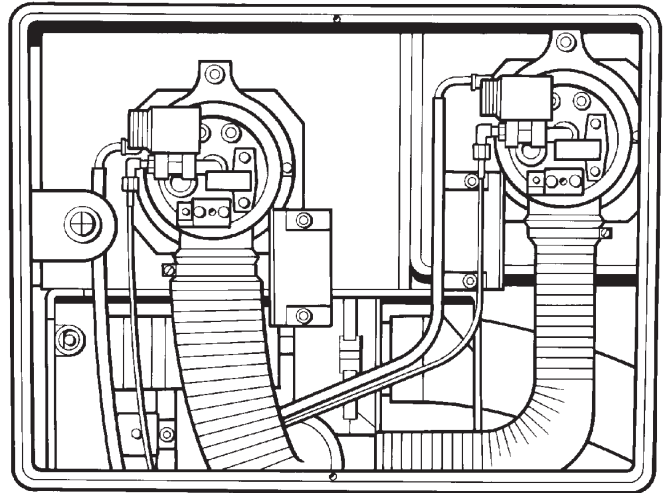


FIG. 2

DESN 514814

BURNER HEAD REMOVAL

SEE FIG. 3

3. Place a sheet on the floor in front of the cooker to act as a working area.
4. Disconnect the 12-pin plug from above the burner.
5. Disconnect air intake.

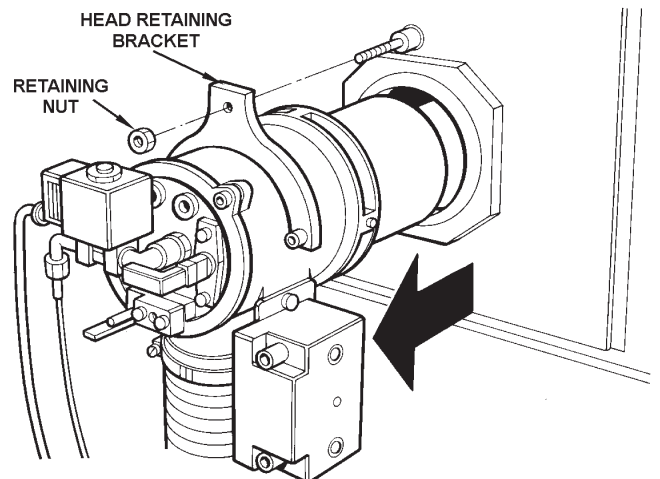


FIG. 3

DESN 514847

SEE FIG. 4

6. Slacken 2 M6 fixings and remove flue safety thermostat.
7. Withdraw burner unit.

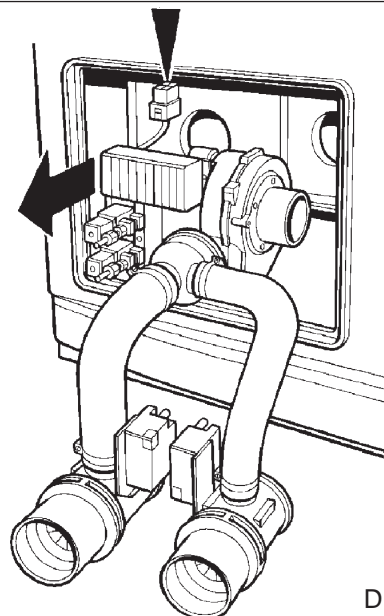


FIG. 4

DESN 514815

Cleaning

HEAT EXCHANGER CLEANING

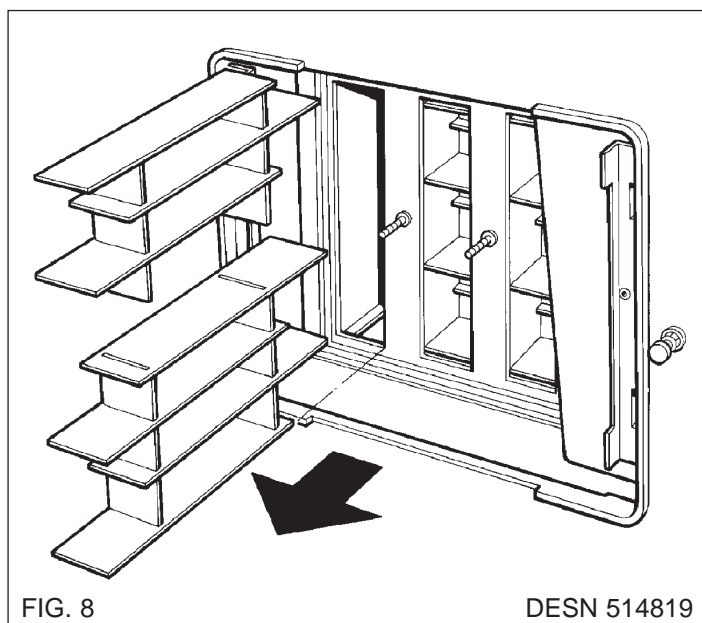
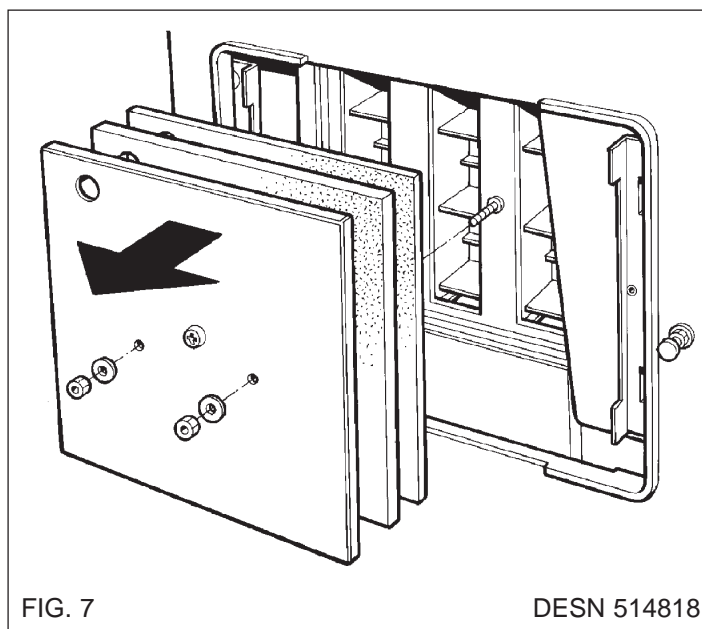
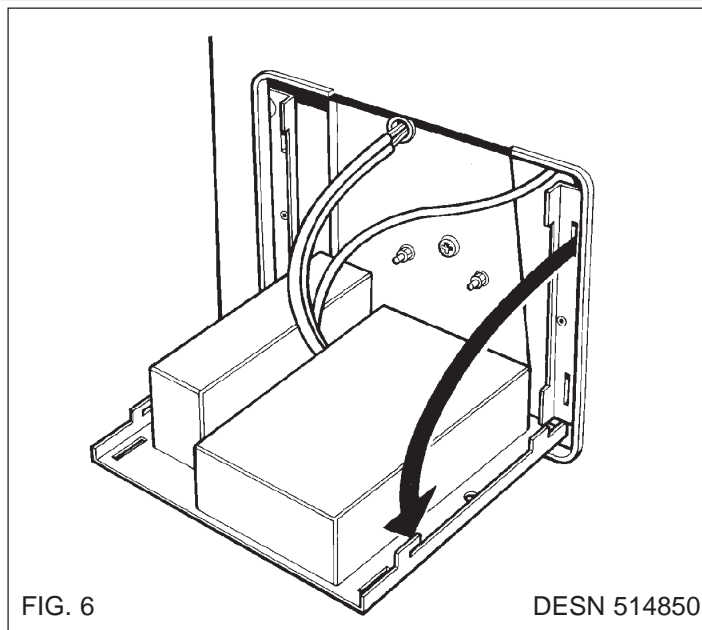
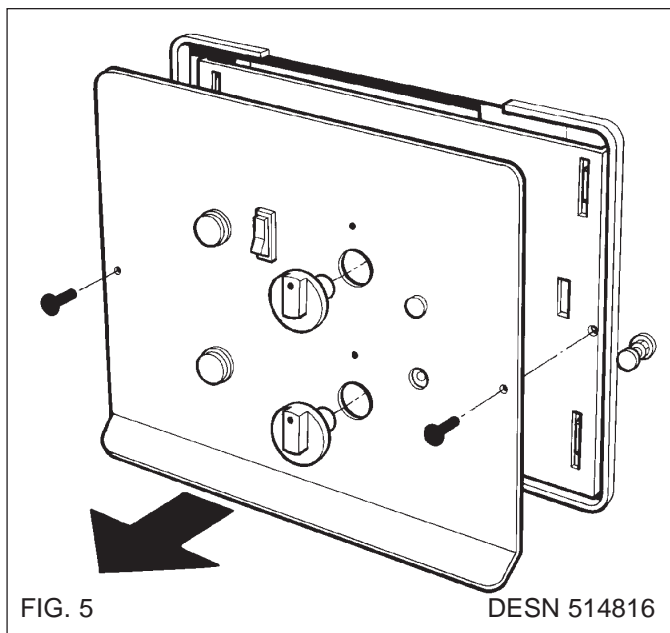
IMPORTANT: DURING CLEANING CARE MUST BE TAKEN NOT TO DAMAGE THE INSULATING BOARDS.

Boiler access is made by opening the top left hand control door.

1. Remove two cooker control knobs.
2. Remove 2 retaining screws and lift the control panel free of the aperture.
3. Remove 2 retaining nuts and withdraw burner access panel.
4. The baffles are assembled in two stacks, it maybe necessary to slightly lift the top stack of baffles and withdraw bottom baffle stack first, then withdraw the second stack of baffles.
Each heat exchanger has 3 rows of baffles.
5. Ensure baffles and flueways are clear of debris and re-fit baffle stacks as illustrated in Fig 8.

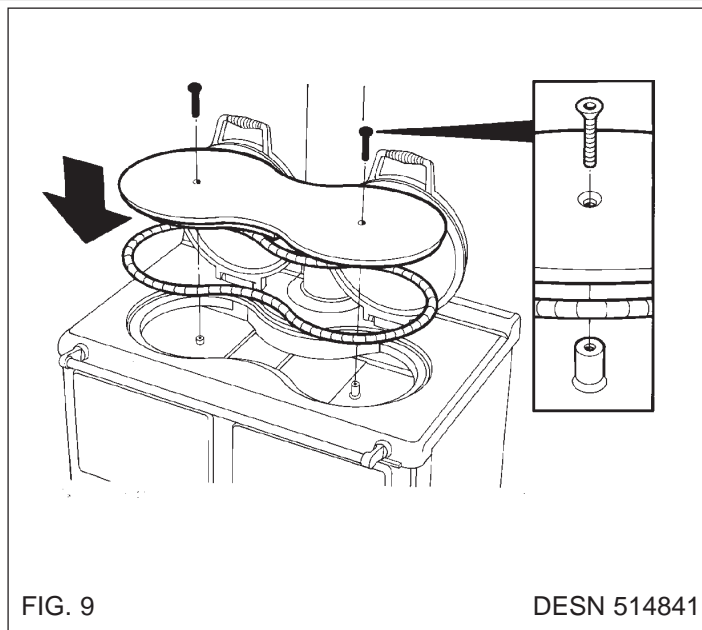
NOTE: One baffle configuration for all three models.

6. Carefully vacuum any debris that has fallen into the burner chamber.
7. Re-assemble in reverse order.



HOTPLATE REMOVAL

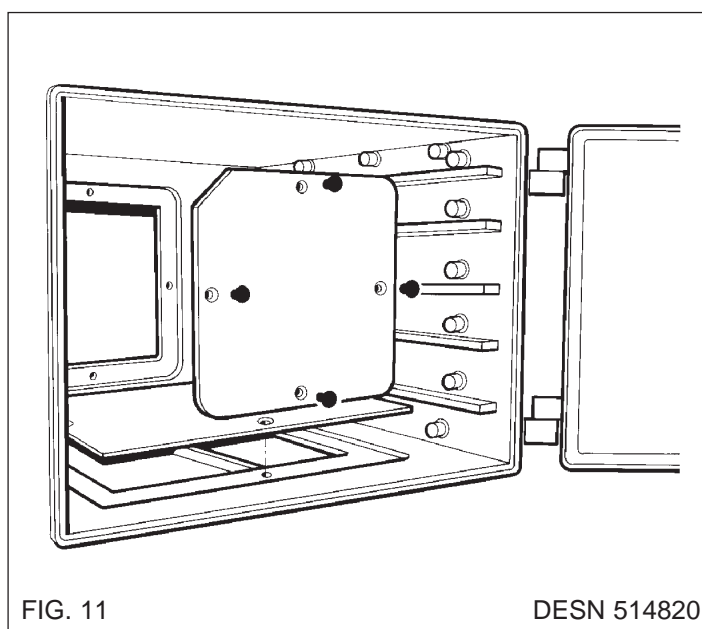
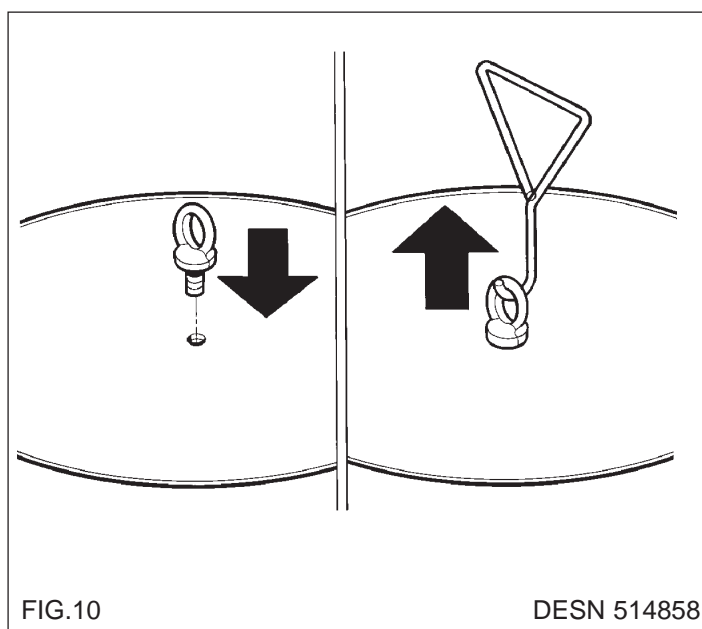
1. Lift up two insulating lids on the top of the cooker.
2. Using a 7mm allen key, unscrew 2 countersunk retaining bolts. (See Fig. 9).
3. Insert M12 eye hooks into hotplate. (See Fig. 10).
4. Using lifting hooks, lift hotplate vertically and withdraw.
5. Re-assemble in reverse order, noting that it is recommended to coat the countersunk bolts with anti-seize compound prior to fitting.



OVEN & HOTPLATE FLUEWAY CLEANING

SEE FIG. 11

1. Remove the top oven door and place in a safe position.
2. Remove rear 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 rear 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 rope seal on hotspot. Replace if frayed or damaged.
8. Replace hotplate ensuring the underside ribs lie over the boiler and that it seals to the top plate.



Burner Servicing

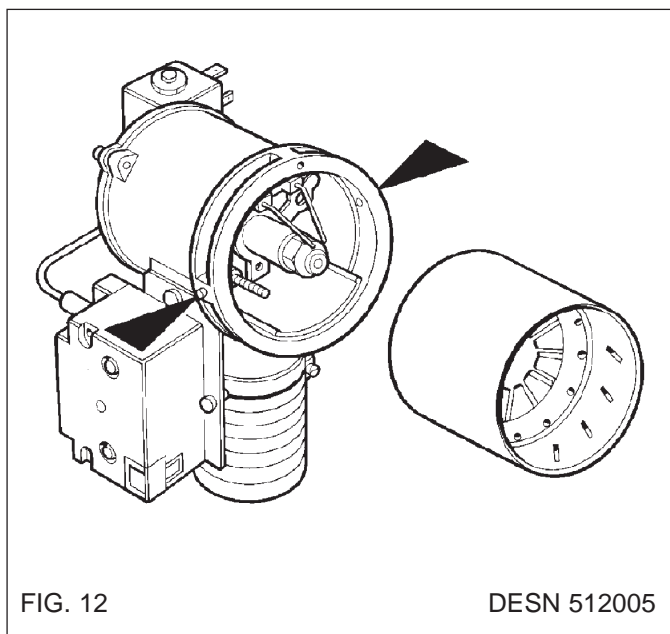
INTRODUCTION

SEE FIG 12, 13A & 13B

It is recommended that each side of the 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.

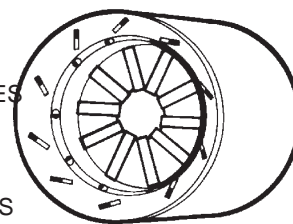
To remove blast tube, slacken two grub screws, pull forward.



BOILER 10 VANES

5mm HOLES

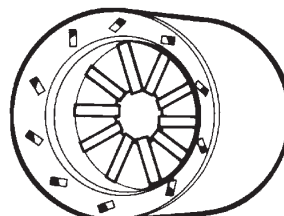
10 LARGE SLOTS



COOKER 10
VANES

FIG. 13A

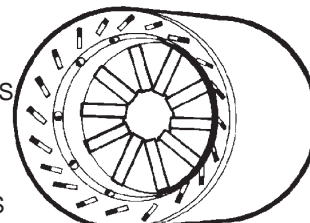
120K



BOILER 10 VANES

5mm HOLES

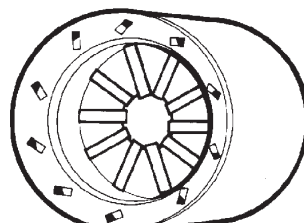
20 LARGE SLOTS



COOKER 10
VANES

FIG. 13B

150K



BURNER NOZZLE REMOVAL

SEE FIG. 14

1. Disconnect ignition leads.
2. Remove two socket head screws.
3. Remove head assembly complete.
4. Remove ignitor assembly, by removing countersunk screw and clamp.
5. Unscrew nozzle from its holder with a correctly fitting tubular spanner to avoid damage to hexagon.

IGNITOR REMOVAL

Follow instructions in BURNER ACCESS, Steps 1 to 2, and BURNER NOZZLE REMOVAL, Steps 1 to 5.

SEE FIG. 14

1. Disconnect ignition leads.
2. Remove 2 socket head screws.
3. Remove head assembly complete.
4. Remove ignitor assembly by removing countersunk screw and clamp.
5. Fit new ignition electrode assembly, re-assemble in reverse order.
6. Check electrode gap and re-set if necessary.

BURNER NOZZLE REPLACEMENT

SEE FIG. 15

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.

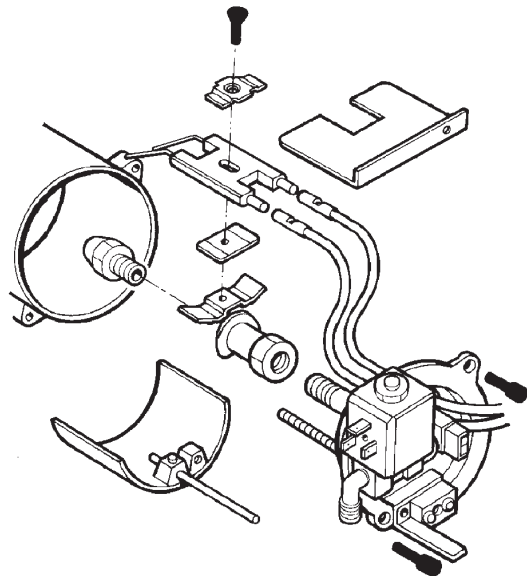
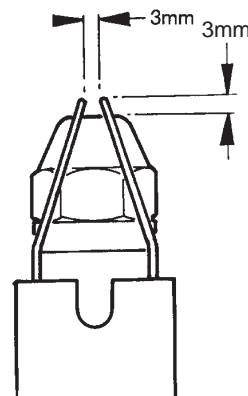


FIG. 14

DESN 514823



DIMENSIONS ARE NOMINAL

FIG. 15

DESN 510538

Burner Servicing

PHOTO ELECTRIC CELL (PEC) CLEANING

SEE FIG. 16

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 show signs of distortion or cracking, replacement will be necessary. See 'PEC Replacement' - Page 17.

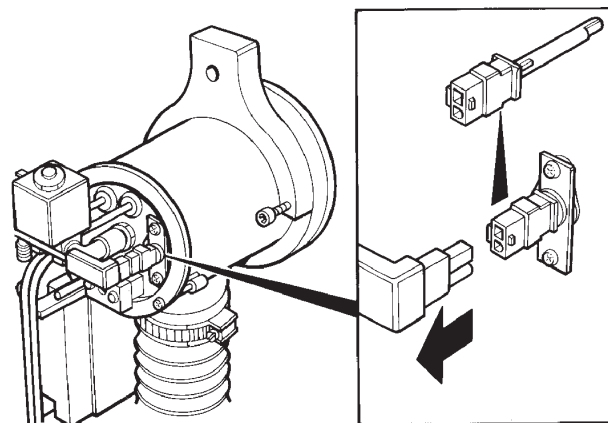


FIG. 16

DESN 514848

FAN CLEANING

SEE FIG. 17

1. Remove pozi screws, pull off fan case inlet.
2. Clean between the blades of the fan impellor with a small brush and remove any residue.

RE-ASSEMBLE BURNER

Re-assemble the burner in reverse order.

NOTE: Burner head gaskets should be renewed at each service.

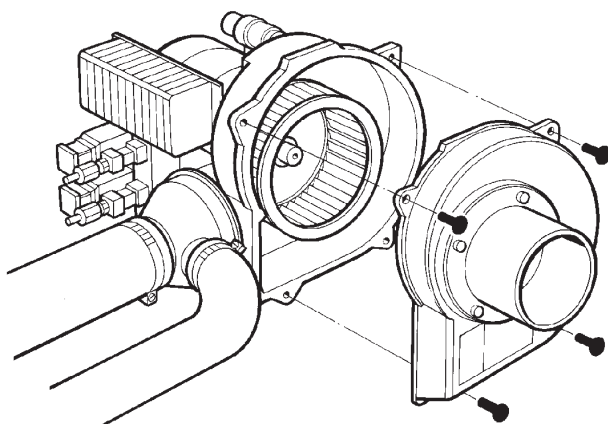


FIG. 17

DESN 514824

INTRODUCTION

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

OIL PUMP STRAINER CLEANING

SEE FIG. 18

1. Remove 4 socket head screws
2. Remove filter.
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 manufacturers 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 every 2 years.

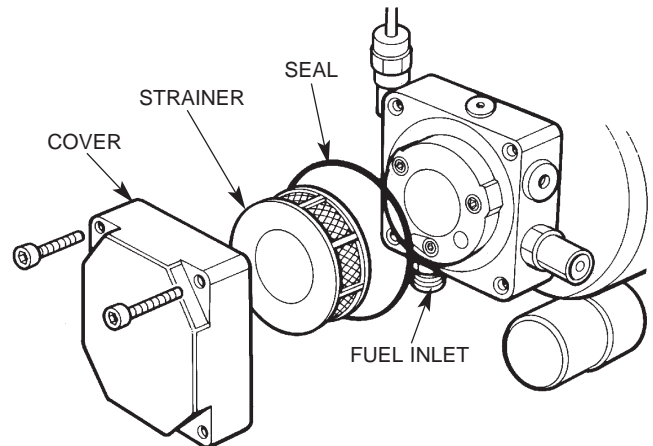


FIG. 18

DESN 512002

Re-commissioning

BLEED AIR FROM OIL SUPPLY

SEE FIG. 20

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. 19

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

SWITCH ON ELECTRICITY

Set 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 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 reset button will be illuminated in the control box. **IN THIS EVENT, WAIT AT LEAST ONE MINUTE**, then press the reset button to restart. (See Fig. 21).

VENT OIL PUMP

SEE FIG. 19

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. 20

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 (145lb/in²).

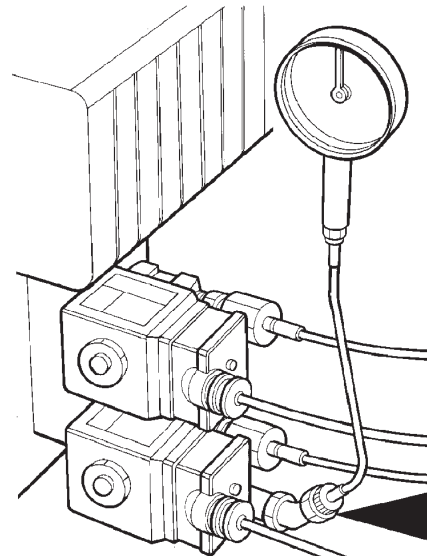


FIG. 19

DESN 514825

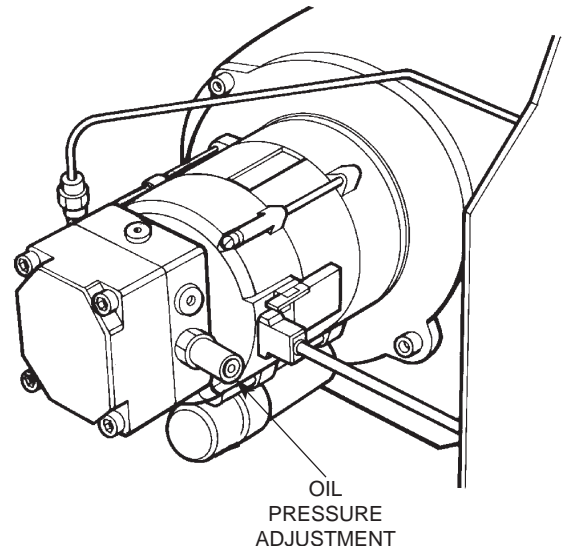


FIG. 20

DESN 511997

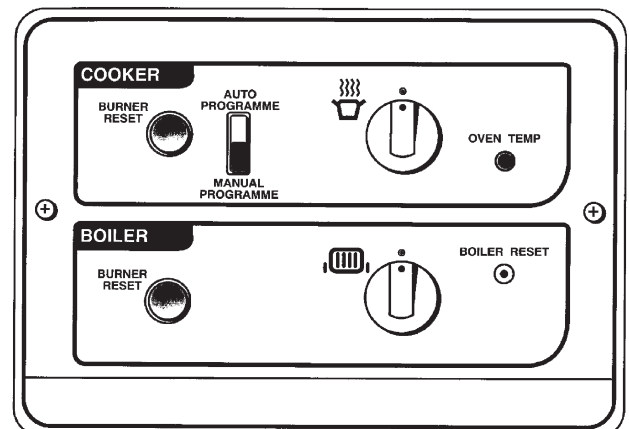


FIG. 21

DESN 514807

SET COMBUSTION AIR

SEE FIG. 22

After 15 minutes of the boiler burner running.

Gain access to the front of the boiler, 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. 23

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 flueways does not exceed No. 2 on the scale. Replace the plugging screw. Switch off the boiler burner.

COOKER BURNER - SEE FIG. 23

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.

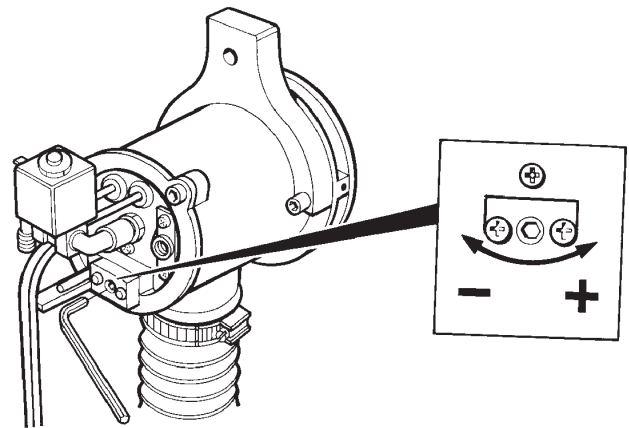


FIG. 22

DESN 514826

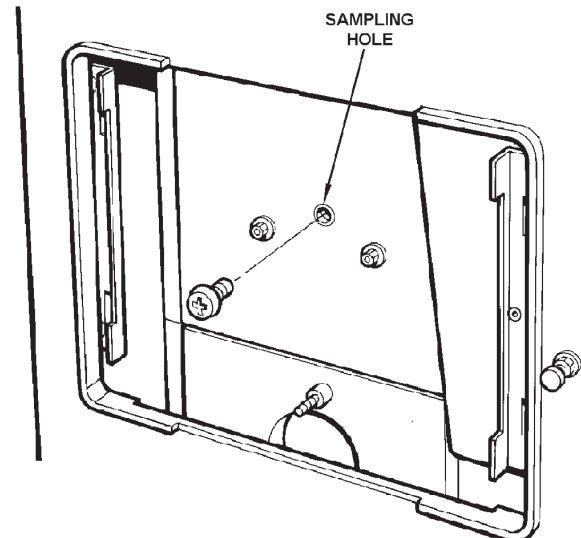


FIG. 23

DESN 514827

Replacement of parts (Burner)

FAN MOTOR

SEE FIG. 24

1. Remove 3-pin plug.
2. Disconnect oil pipe.
3. Remove 4 pozi drive screws, remove fan case inlet.
4. Undo grub screw, remove fan.
5. Remove 4 fixings, withdraw motor.
6. Re-assemble in reverse order.

NOTE: Ensure that gaskets and seals are in place and in good condition.

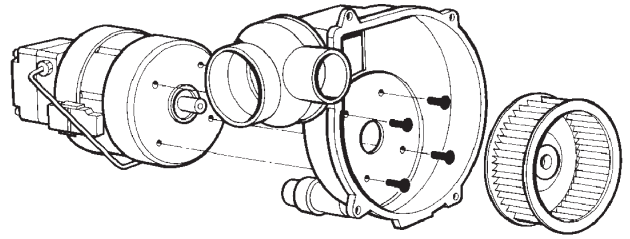


FIG. 24

DESN 514828

IGNITOR PACK

SEE FIG. 25

Follow instructions in sections BURNER ACCESS, Steps 1 to 2, BURNER REMOVAL, Step 4.

1. Remove both HT leads from ignitor.
2. Remove mains plug from ignitor.
3. Remove earth screw.
4. Remove 2 ignitor securing screws.
5. Remove ignitor.
6. Fit new ignitor, re-assemble in reverse order.

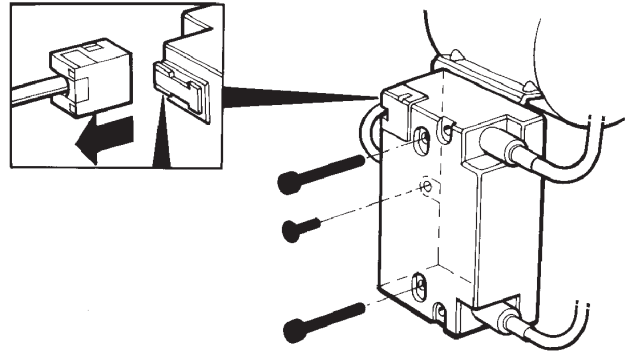


FIG. 25

DESN 514849

RELAY

1. Open and remove top left hand control door, remove 2 retaining screws and cooker control knobs.
2. Lift and withdraw control panel and turn over.
3. Remove push-on connectors (noting position of each connector).
4. Remove 2 relay fixing screws.
5. Fit new relay.
6. Re-assemble in reverse order.

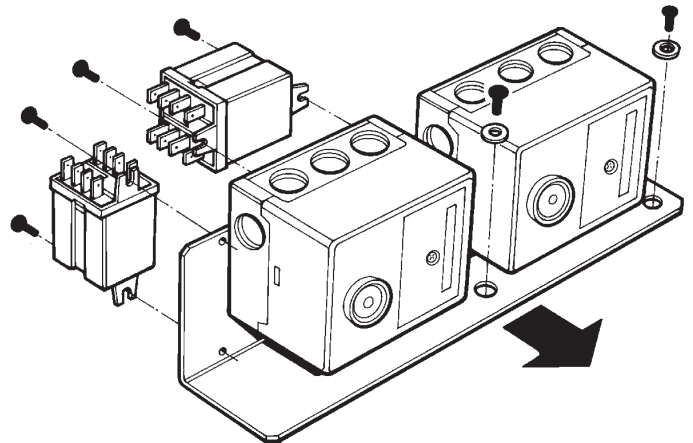


FIG. 26

DESN 511991

SOLENOID COIL

SEE FIG. 27

Follow instructions in sections BURNER ACCESS, Steps 1 to 2, 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.

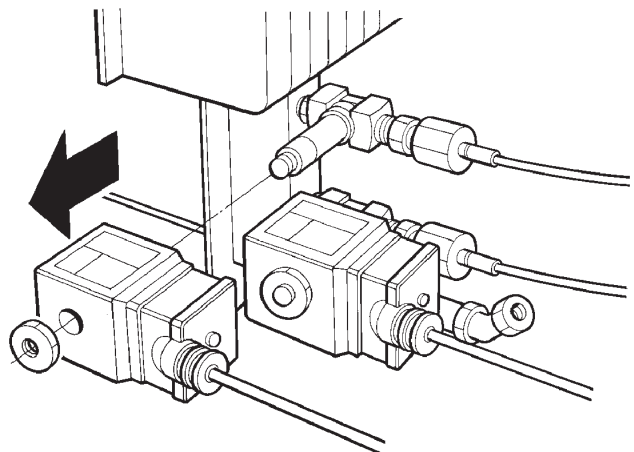


FIG. 27

DESN 514829

Replacement of parts (Burner)

CONTROL BOX

SEE FIG. 28

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

1. Undo centre fixing screw.
2. Gently pull control box away from base.
3. Fit new control box and re-assemble in reverse order.

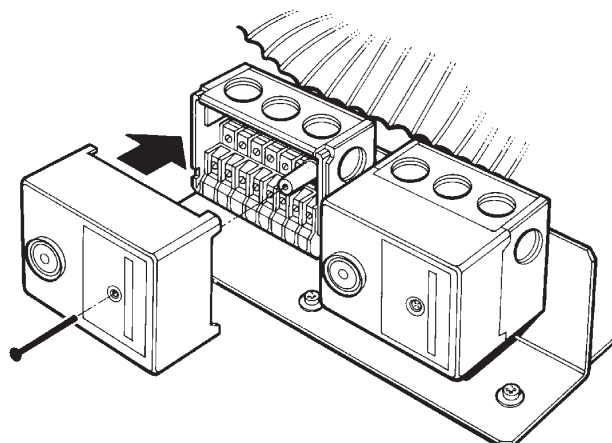


FIG. 28

DESN 511992

PEC

SEE FIG. 29

Follow instructions in BURNER ACCESS, Steps 1 to 2.

1. Withdraw PEC from burner head.
2. Push in retaining clip and slide PEC out.
3. Fit new PEC.
4. Re-insert PEC taking care to insert the correct way round.

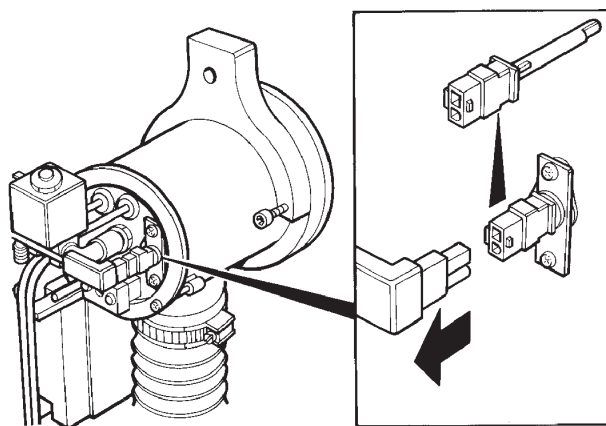


FIG. 29

DESN 514848

PUMP ACCESS

SEE FIG. 30

Follow instructions in section BURNER ACCESS, Steps 1 to 2 and BURNER REMOVAL, Steps 1 to 5.

1. Isolate fuel supply.
2. Disconnect flexible hose. (This must be replaced every 2 years.)
3. Remove solenoid plug.
4. Remove feed pipe.
5. Slacken three securing screws and remove pump.
6. Check drive, replace if worn or damaged.
7. Replace pump, re-assemble in reverse order.

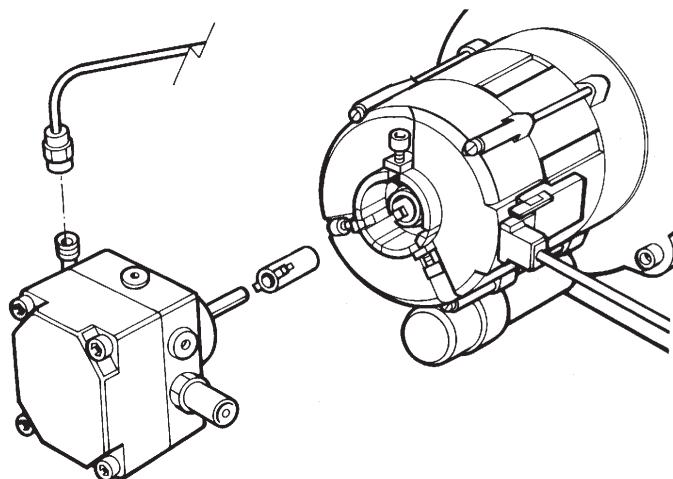


FIG. 30

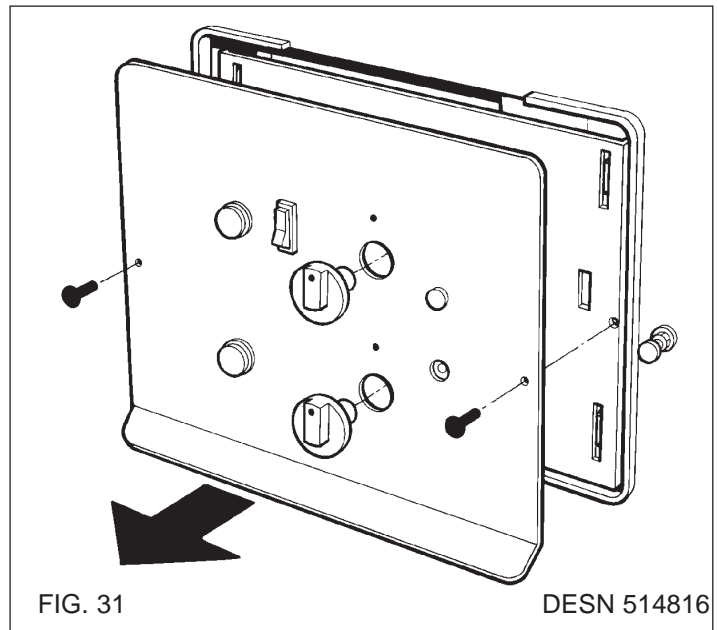
DESN 511995

ELECTRICAL COMPONENT ACCESS

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

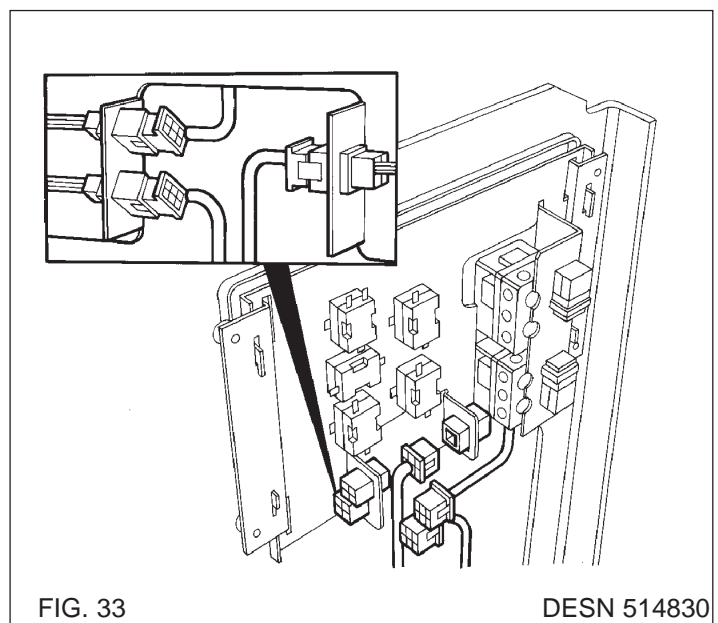
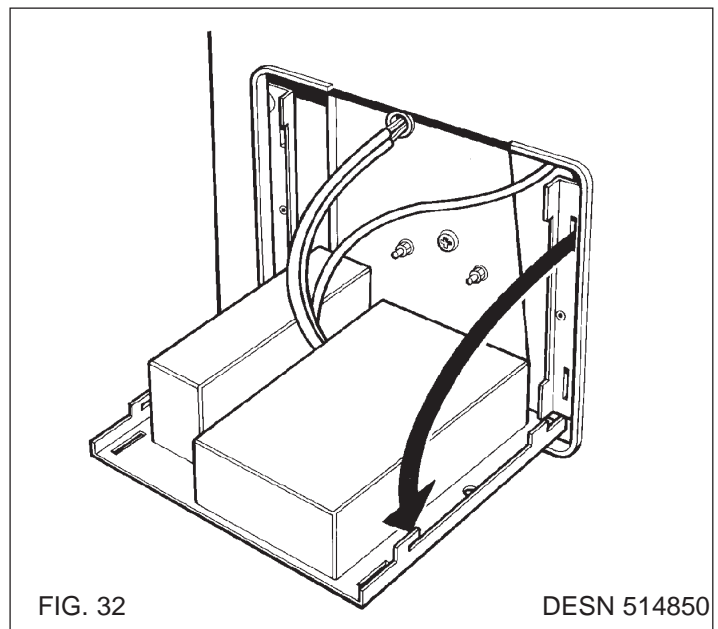
SEE FIG.31 & 32

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 and cooker 'ON' neon.



SEE FIG. 33

5. Lift control panel chassis and withdraw from aperture.
6. To fully access the rear of the control chassis, the thermostat capillaries should be removed from their pocket.



Replacement of parts (Electrical controls)

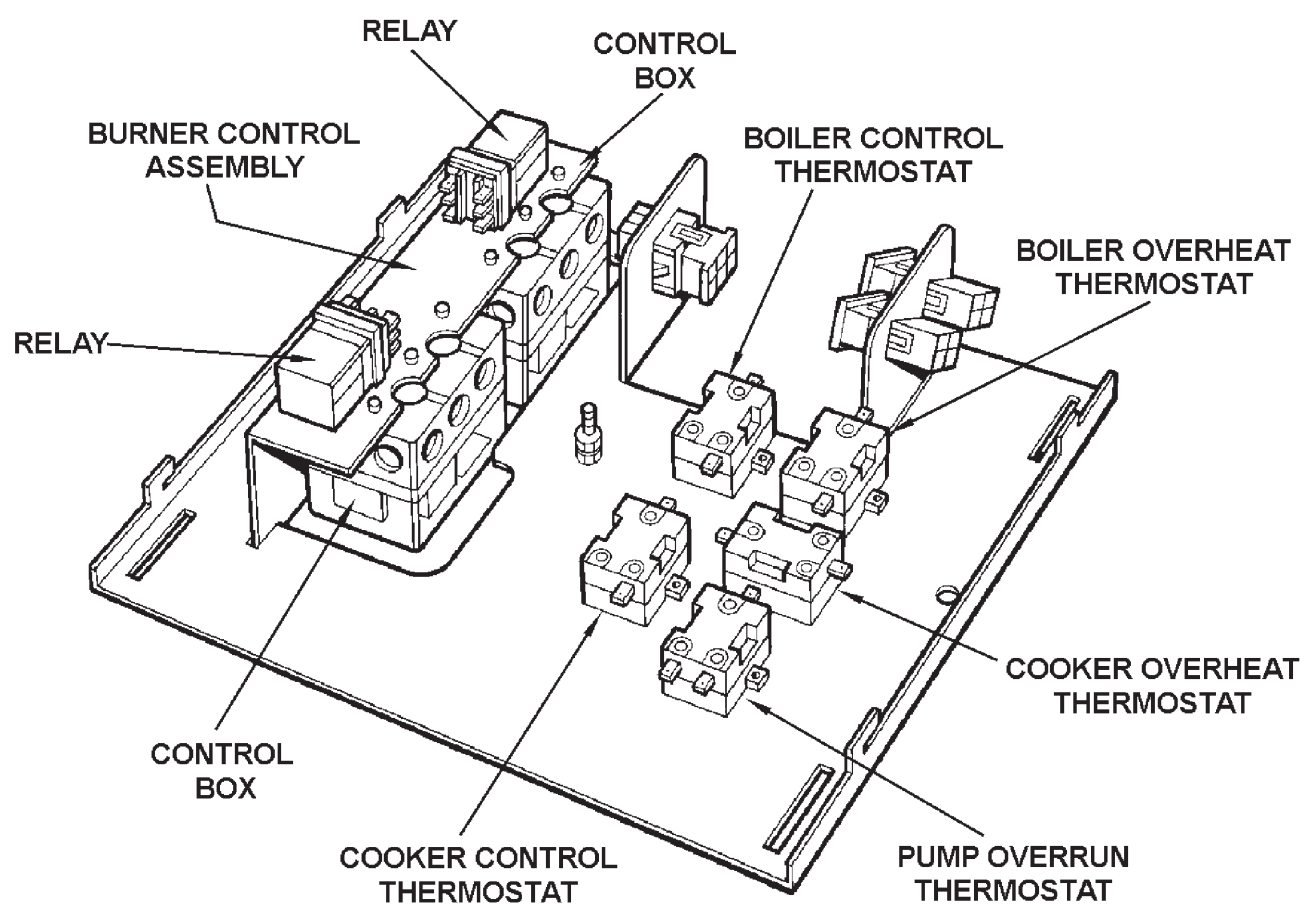


FIG. 34

TO FIT NEW BOILER CONTROL THERMOSTAT

SEE FIG. 35

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 GREY wire to 1 and WHITE wire to P.

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

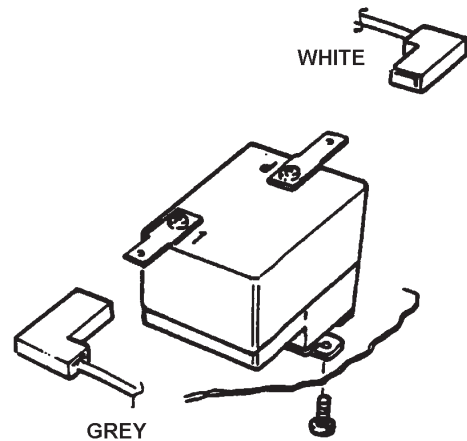


FIG. 35

DESN 514747

TO FIT NEW BOILER PUMP OVERRUN THERMOSTAT

SEE FIG. 36

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 GREY 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.

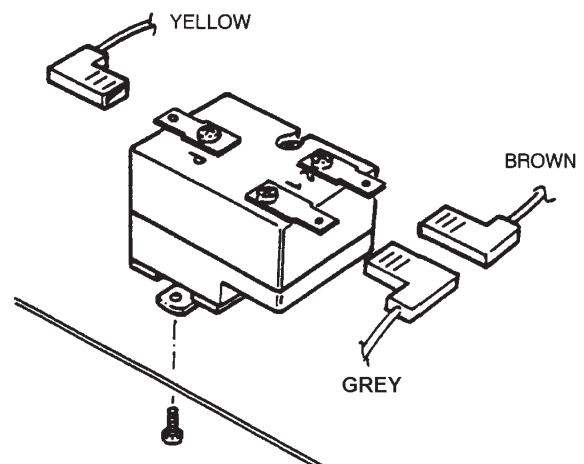


FIG. 36

DESN 514851

Replacement of parts (Electrical controls)

TO FIT NEW COOKER SAFETY OVERHEAT THERMOSTAT

SEE FIG. 37

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 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 and rotate.
4. Replace thermostat, thermostat phial should be re-positioned in the same position as removed.

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

TO FIT NEW BOILER SAFETY OVERHEAT THERMOSTAT

SEE FIG. 38

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 push on connectors from back of thermostat.
3. Replace thermostat. Take care to push thermostat phial correctly into the pocket provided.
4. Re-connect push on connector wire as Fig. 33.

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

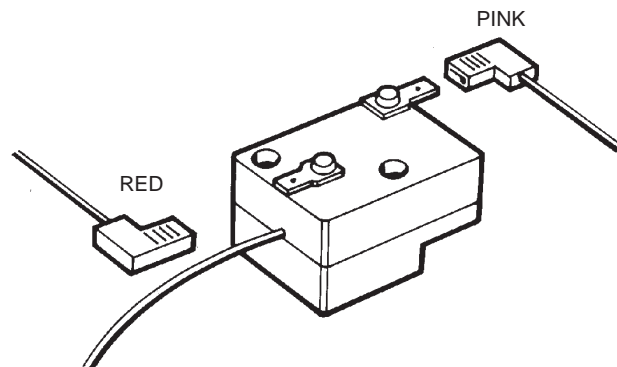


FIG. 37

DESN 514747

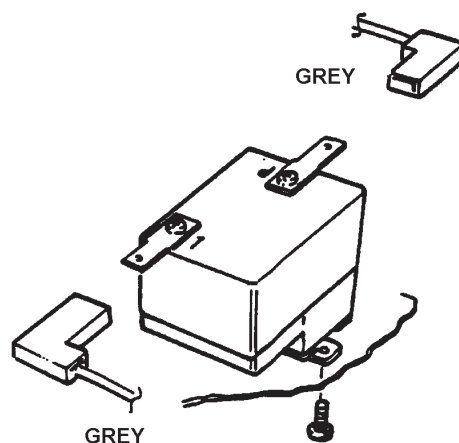


FIG. 38

DESN 514852

TO FIT NEW OVEN CONTROL THERMOSTAT

SEE FIG. 39

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 thermostat phial and capillary which will pass into the oven at the top.
4. Where the phial passes through the roasting oven side, 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 to P2, PINK to P and BLACK to P1.

NOTE: Ensure phials do not make contact with oven castings.

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

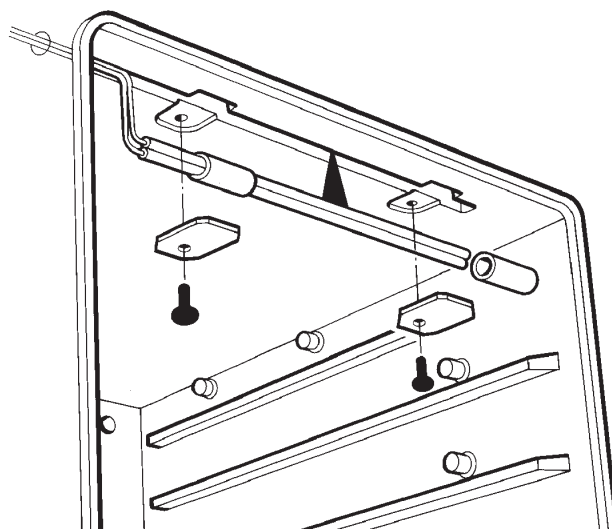


FIG. 39

DESN 514831

TO FIT NEW SELECTOR SWITCH

SEE FIG. 40

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 the instructions in section RE-ASSEMBLE, Steps 3 to 6.

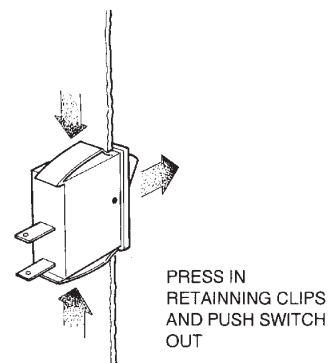


FIG. 40

DESN 510553 A

Replacement of parts (Electrical controls)

RE-ASSEMBLE

1. Locate thermostat phials into boiler 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 VIOLET and BLUE wires to the COOKER ON neon. 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.

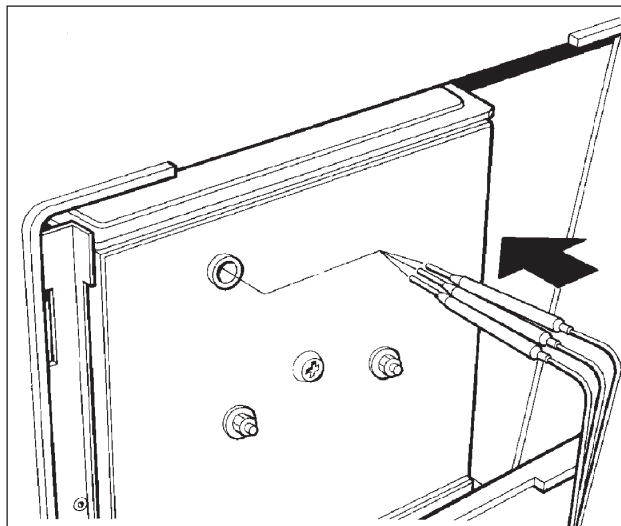


FIG. 41

DESN 514832

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 automatically resets once the temperature has cooled down.

TERMINAL STRIP CONNECTIONS

SW/L COOKER	COOKER SWITCHED - LIVE
N/A	DO NOT USE
SW/L BOILER	BOILER SWITCHED - LIVE
N/A	DO NOT USE
PL - LIVE	EXTERNAL PROGRAMMER - LIVE - MUST BE CONNECTED DIRECTLY TO THIS SUPPLY
PN - NEUTRAL	EXTERNAL PROGRAMMER - NEUTRAL
PL - LIVE	PUMP SUPPLY - LIVE (THE CIRCULATING PUMP MUST BE CONNECTED DIRECTLY TO THIS SUPPLY)
PN - NEUTRAL	PUMP SUPPLY - NEUTRAL (THE CIRCULATING PUMP MUST BE CONNECTED DIRECTLY TO THIS SUPPLY)
L LIVE	3 AMP PERMANENT SUPPLY
N NEUTRAL	
E EARTH	

NOTE:

The 3 channel programmer **LIVE** must be connected directly to the programmer **LIVE** supply from the cooker.

FIG. 42

Fault Finding

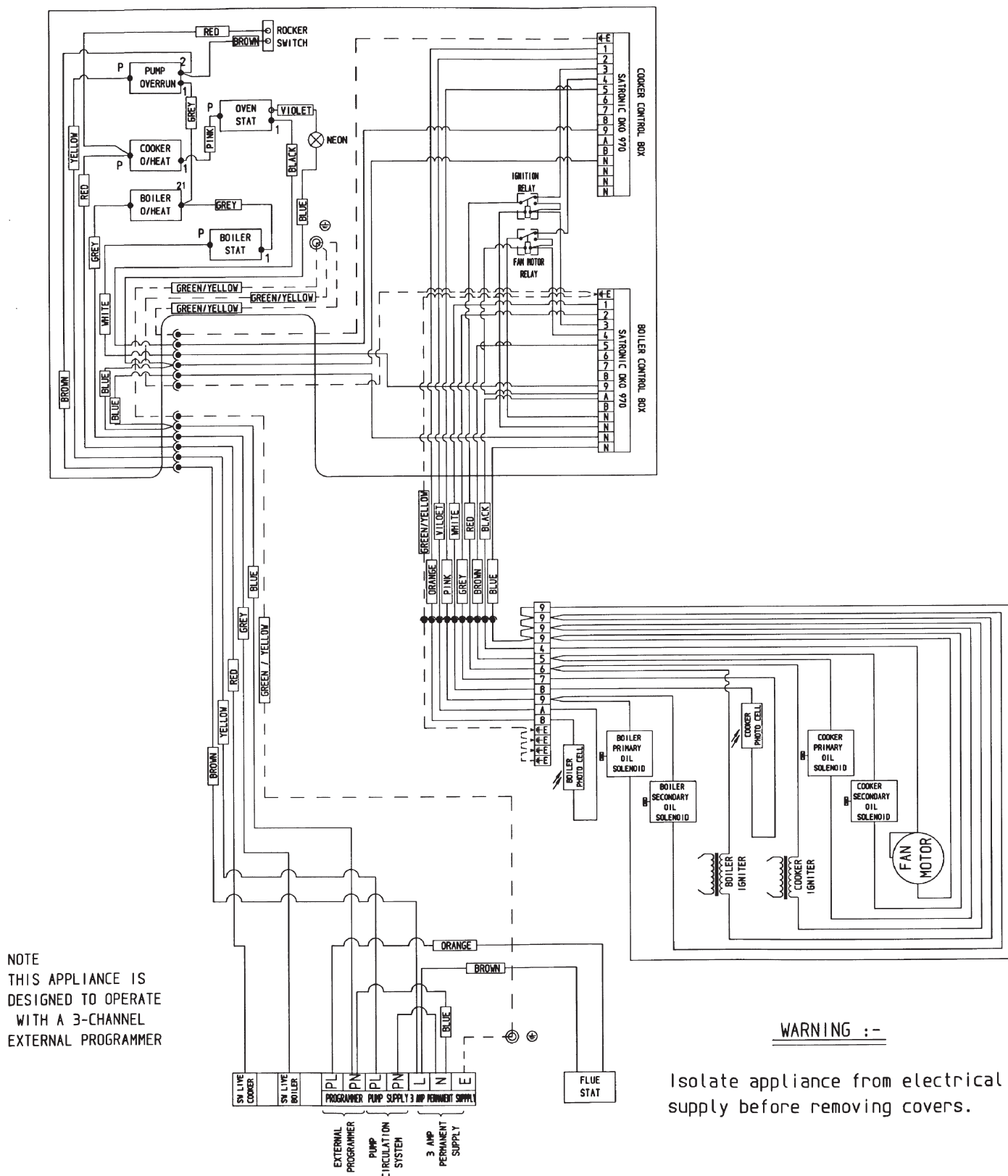


FIG. 43

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.
- Faulty relays.

REFER TO FLOW DIAGRAMS FOR ELIMINATION PROCEDURES.

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 Figs. 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 2 screws holding the inner panel in place and remove panel.

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 that there is 230V power supply available across the mains input connection 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.

Fault Finding

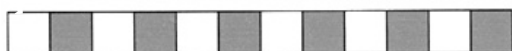
Information system

The information system communicates with the outside world using a LED (the used Flash-Code is similar to the Morse Code). The messages are optically transmitted by flashing appropriately a LED. Using an (optional) additional terminal the messages can be recorded and displayed in easily readable form.

Programming sequence display

The built-in microprocessor controls not only the programming sequence but the information system too. The individual phases of the programming sequence are displayed as Flash-Code. The following messages can be distinguished:-

Satronic DKO 970 Control Box --- Flash codes



During burner firing normally ... 1 short flash + 1 short pause

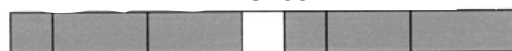


During burner start up --- Pre-ignition stage
4 short flashes + 1 short pause

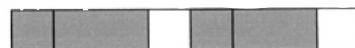


During burner start up --- Safety testing stage
1 long flash + 1 short flash + 1 short pause

FIG. 38



During burner start up --- Low mains voltage defect
1 short flash + 2 long flashes + 1 short pause



During burner start up --- Internal control box defect
1 short flash + 1 long flash + 1 short pause



After a Lock-out has occurred --- Loss of flame signal
Steady red 10secs + 1 short flash + 4 long flashes, then repeated



After a Lock-out has occurred --- Stray light reaching photocell
Steady red 10secs + 2 short flashes + 3 long flashes, then repeated



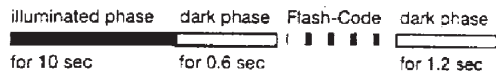
After a manual Lock-out has occurred ---
Steady red 10secs + 2 short flashes + 8 long flashes, then repeated

FIG. 44

Lock-out diagnoses

In case of a failure the LED is permanently illuminated. Every 10 seconds the illumination is interrupted by a flash code which indicates the cause of the error. Therefore the following sequence is performed which is repeated as long as the unit is not reset.

Sequence:



Error diagnosis

Error message	Flash-Code	Possible fault
lockout	■ ■ ■ ■	within lock out safety time no flame establishment
stray light	■ ■ ■	stray light during monitored phase, detector may be 'faulty

Flash-Code for manual lock out

manual/external lock out	■ ■ ■ ■ ■ ■ ■ ■
--------------------------	-----------------

(see also 3. lock out and reset)

Stray Light Monitoring

The stray light check is performed as the end of the pre-purge time for the duration as mentioned in the table of timings.

Low-voltage protection

at 220 / 240V nominal voltage

The mains voltage has to be more than $187V_{eff}$ ($94V_{eff}$) in order to allow the unit to perform a start-up.

The mains voltage is not only monitored in the start-up phase but also permanently during operation. If the voltage drops below $<160V_{eff}$ ($80V_{eff}$) during start-up or run time the control box goes into lock-out mode. If the voltage rises again, the control box performs automatically a start-up as soon as the mains voltage is $>187V_{eff}$ ($94V_{eff}$)

Table of timings (sec.)

Model	Pre-purge and pre-ignition time tv1	stray light monitoring tf	safety time ts	post-ignition time after V1 tn	delay time to V2 DKO 972 only tv2
05	15	5	5	7	20

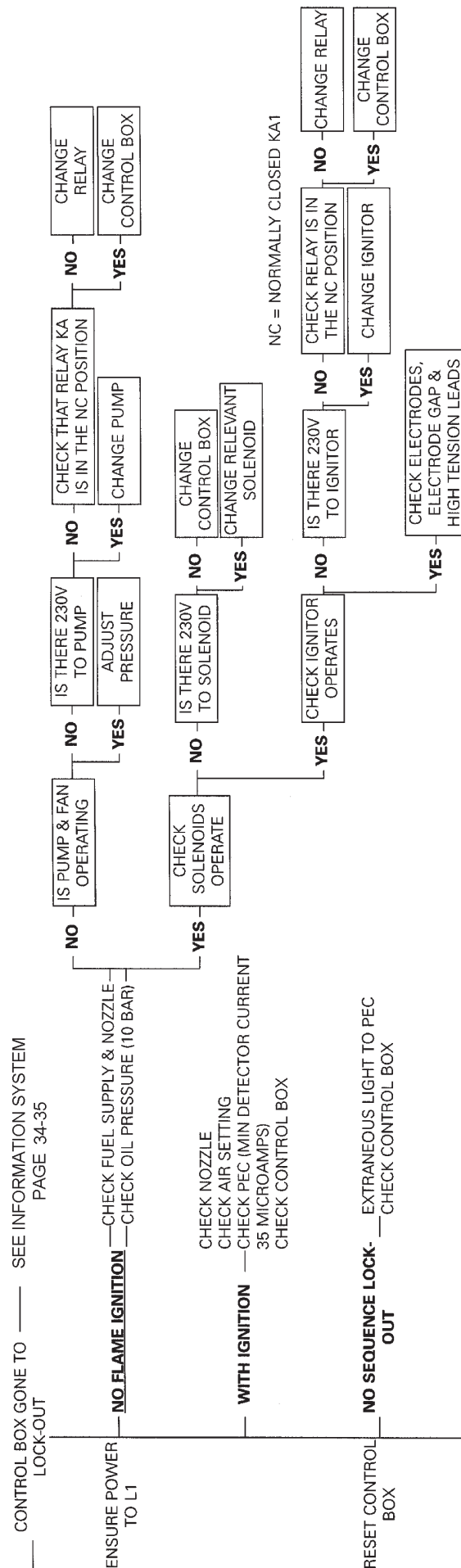
FAULT FINDING (BOILER)

IS THERE 230V TO THE APPLIANCE

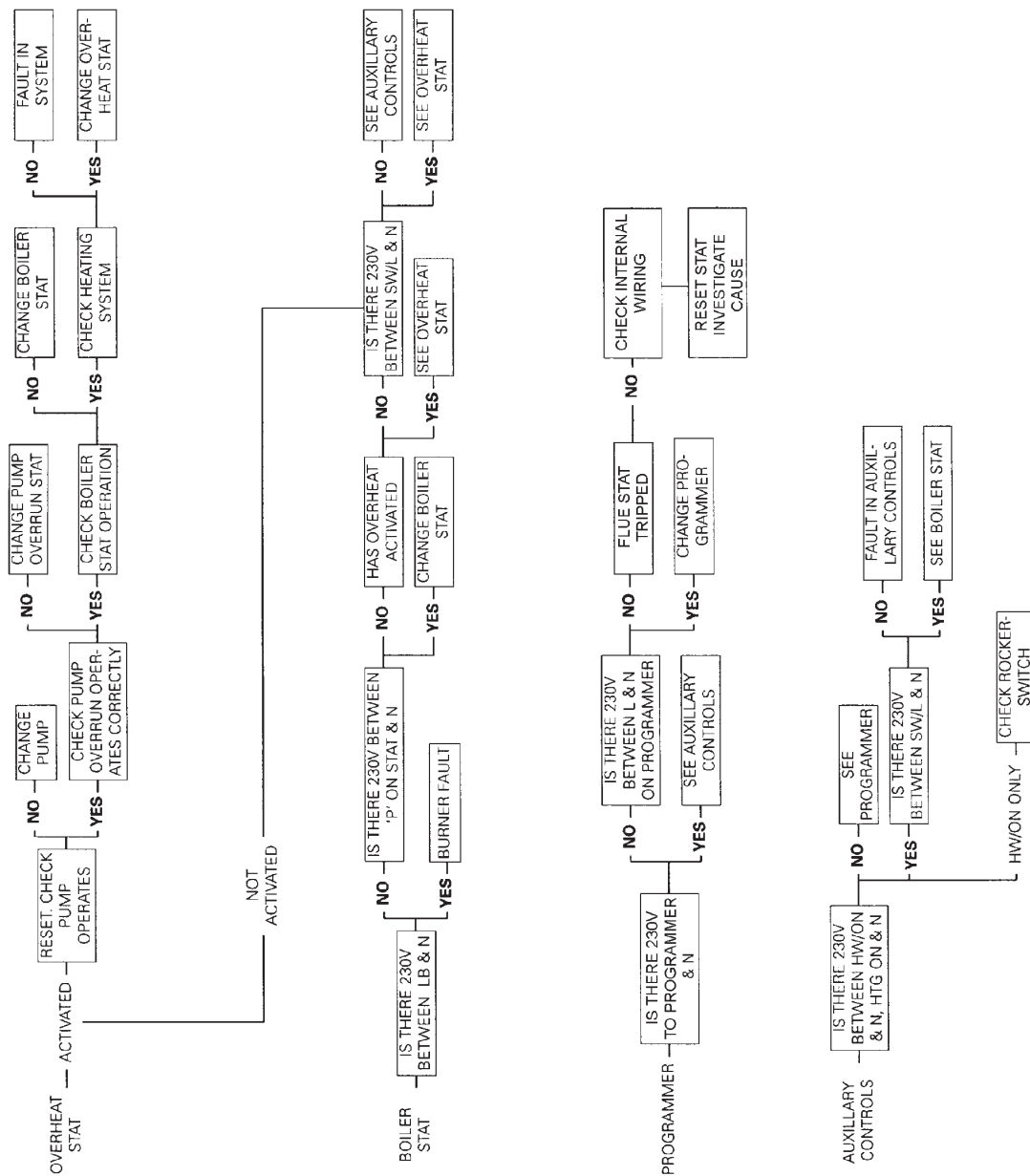
TESTING:

POWER SUPPLIED
PROGRAMMER BOILER SLIDER SET TO 'CONT';
BOILER STAT SET TO MAX.
AUXILIARY CONTROLS CALLING FOR HEAT
FLUE STAT CLOSED CIRCUIT

BOILER BURNER NOT OPERATING



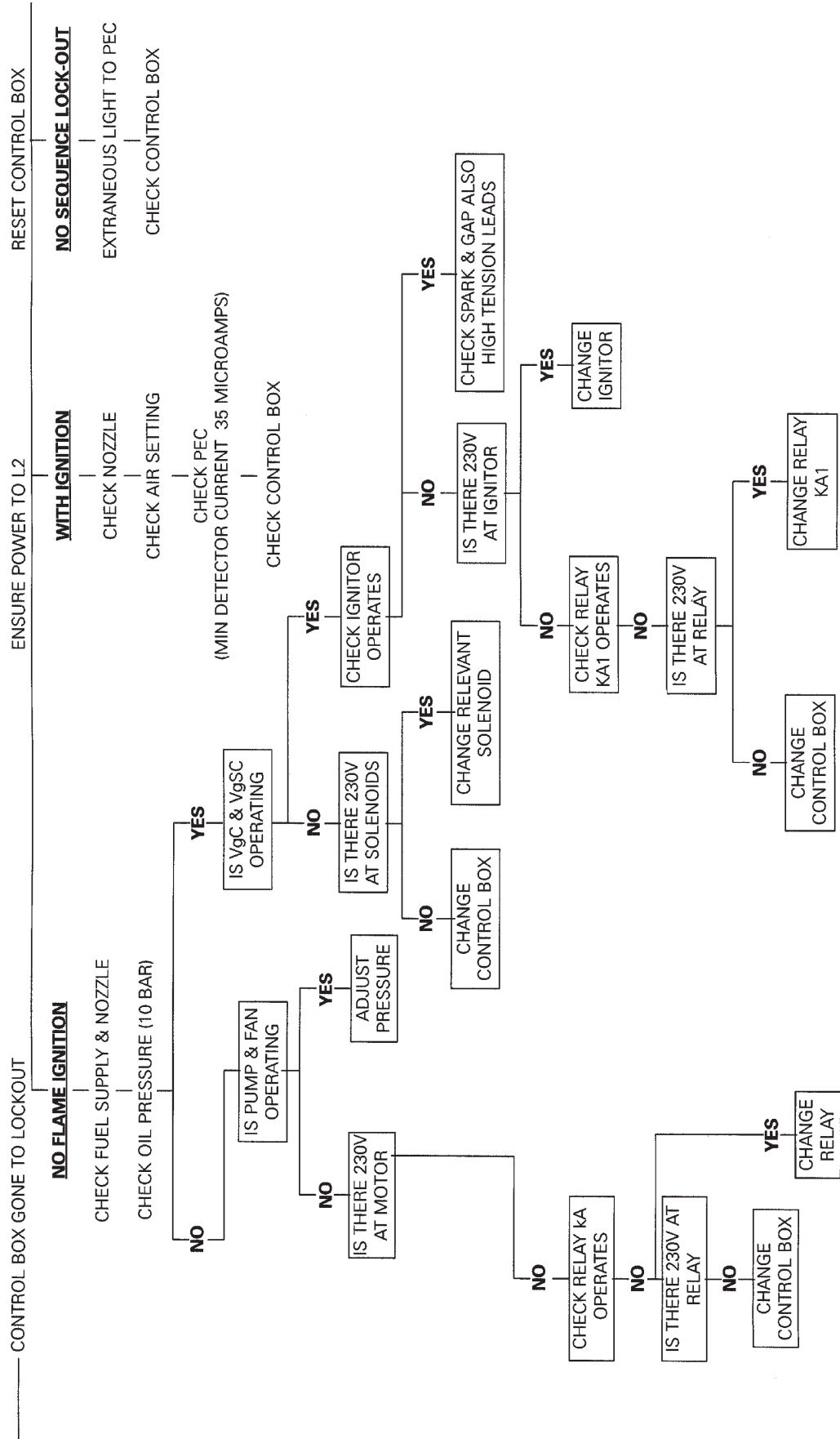
Fault Finding



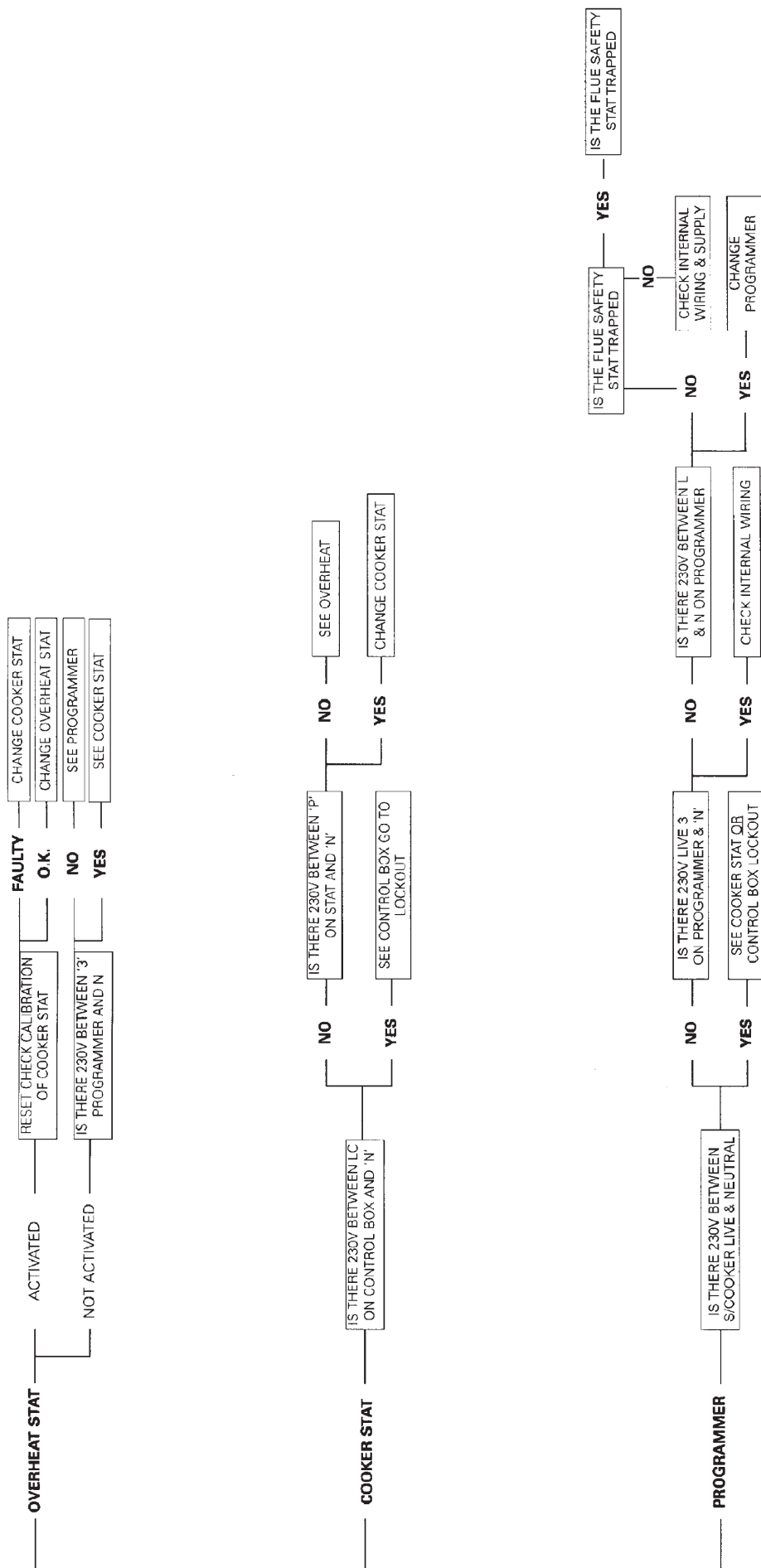
FAULT FINDING - COOKER

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

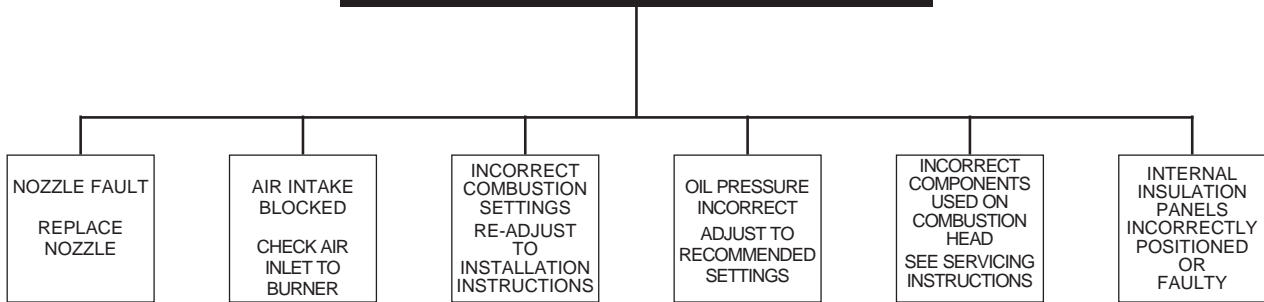
COOKER BURNER NOT OPERATING — SEE INFORMATION SYSTEM
PAGE 34-35



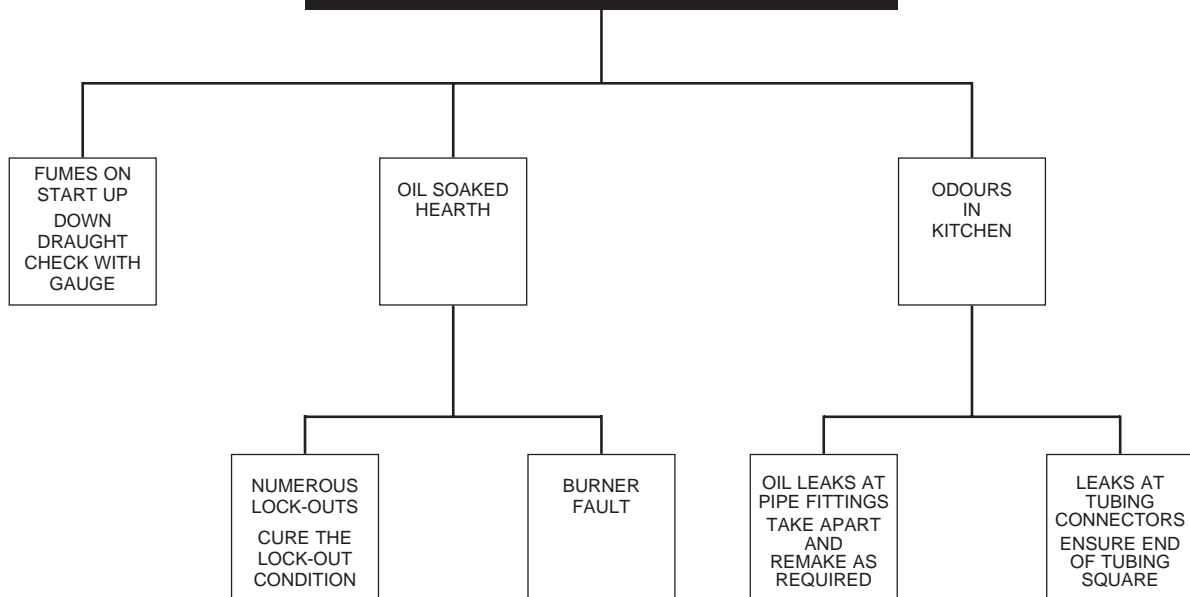
Fault Finding



HIGH SMOKE NUMBERS



OIL SMELLS



For further advice or information contact your
local distributor/stockist

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