



# ROBINSON WILLEY

## SALISBURY TURBO 2

### RADIANT CONVECTOR GAS FIRE

GC No. 32 689 37

## Installation and Servicing Instructions

**IMPORTANT THIS FIRE IS FOR USE ON NATURAL GAS ONLY**

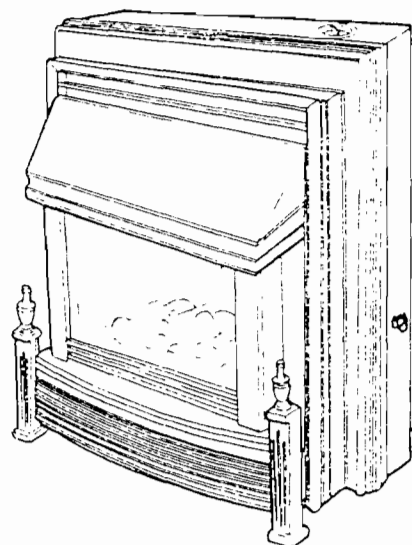
Cat. IN Gas Fire

Gas Safety (Installation and Use) Regulations 1994

It is the law that all gas appliances are installed by competent persons in accordance with technical requirements.

The following items relate to this appliance:

1. BS 5871 : Part 1 : 1991
2. BS 5440 : Part 1 : 1990 (Flues)
3. BS 5440 : Part 2 : 1989 (Air Supply)
4. BS 6891 : 1988 (formerly CP331 Part 3)
5. The Building Regulations issued by the Department of Environment and the Building Standards (Scotland) (Consolidation) Regulations issued by the Scottish Development Department.
6. Any other relevant British Standard Code of Practice and/or Local Building Regulations.
7. IEE Wiring Regulations.
8. These installations instructions.



LEAVE THESE INSTRUCTIONS WITH THE USER

## SECTION A - DESCRIPTION AND SPECIFICATION

### DESCRIPTION

In general it is necessary for wall heaters to be mounted on an external wall because the flue must be fitted directly through the wall. The Salisbury Turbo 2 can be mounted on any inside wall up to 4 metres from an outside wall. The flue, which is a 23mm CPVC tube, vents combustion products to a suitable terminal point on an external wall. The maximum length of flue is 4 metres plus 4 bends and the minimum length is 500mm.

Air for combustion is taken from the room. Two fans are used, a toroidal fan to evacuate products of combustion to the outside of the building and a convection fan which passes room air over the heat exchangers. The use of a fan to assist the flow of combustion products means that a small diameter flue can be used. The fan is connected to the outlet side of the fire, hence the combustion chamber and heat exchangers operate under negative pressures.

Salisbury Turbo 2 is designed to operate near its condensing point to achieve high efficiencies. The heat exchangers are vitreous enamelled.

The fire is protected against overheating caused by convection fan failure, blockage of outlet louvre or condensate in badly laid flue by thermal switches. It is fitted with a pressure switch to prove adequate flow of combustion products.

The fire is fitted with full sequence control unit which incorporates spark ignition, flame supervision by rectification, control of gas solenoid valve and convection fan.

### SPECIFICATION

|                            |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| Height:                    | 727mm (28 <sup>5</sup> / <sub>8</sub> in)                                    |
| Width:                     | 654mm (25 <sup>3</sup> / <sub>4</sub> in)                                    |
| Depth:                     | 331mm (13in)                                                                 |
| Weight:                    | 36kg (79.4lbs) gross; 34kg (75lbs) nett                                      |
| Gas Inlet:                 | Rp 1/4 (1/4in BSP internal)                                                  |
| Gas Supply:                | Natural Gas at 20mbar (8in wg)                                               |
| Flues:                     | Max 4m (13ft 2in) and 4 bends; Min 500mm (19 <sup>3</sup> / <sub>4</sub> in) |
| Burner Pressure (cold) NG: | 17.5 ± 1mbar (7.0 ± 0.4in w.g.)                                              |
| Main Injector:             | Robinson Willey N34                                                          |
| Flame Injector:            | Bray Cat 960/100                                                             |
| Spark Gap:                 | 3-4mm (1/8in) The gap is set by design and is not adjustable                 |
| Burner Aeration:           | Non adjustable                                                               |
| Electrical Supply:         | 240V AC 50Hz                                                                 |
| Rating:                    | 80 Watts                                                                     |
| Fuse Rating:               | 2A (Control Box), 3A (Supply)                                                |
| Max Heat Input:            | 3.4kW (11,600Btu/h) (with decorative flame on)                               |
| Min Heat Input:            | 1.33kW (4538Btu/h) (with decorative flame off)                               |
| Heat Output (max)          | 3kW                                                                          |

## SECTION B - INSTALLATION

CONDITIONS OF INSTALLATION: This appliance is for use on Natural Gas only.

WARNING: THIS APPLIANCE MUST BE EARTHED

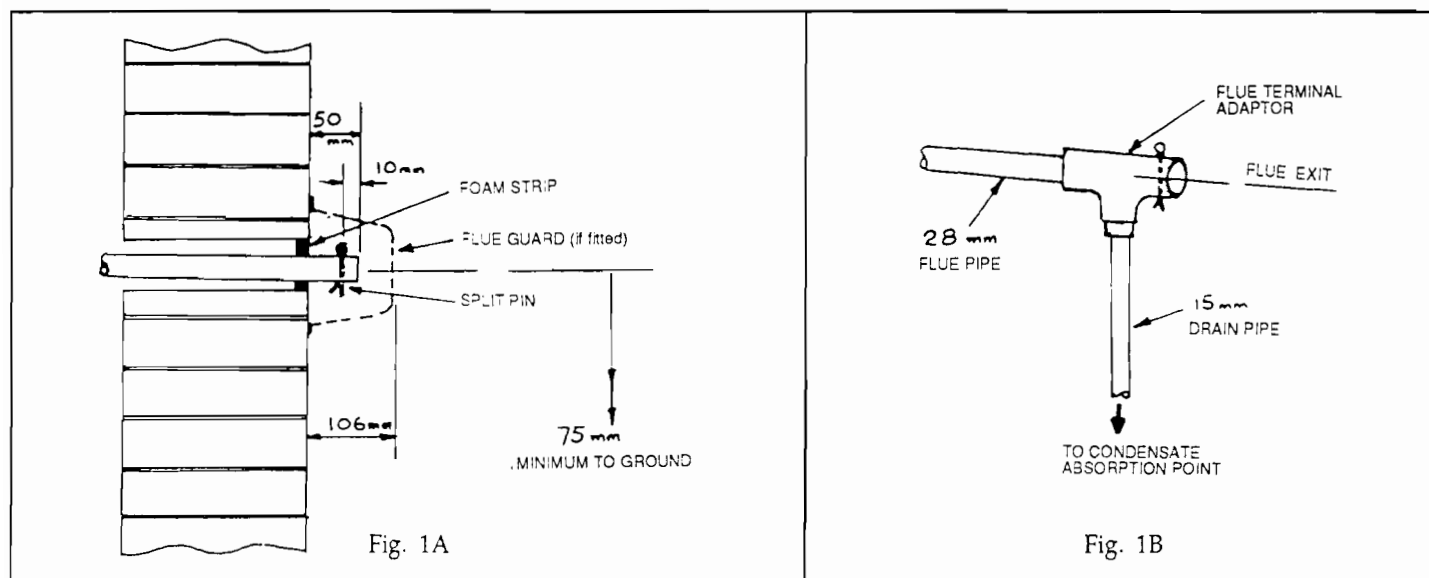
NOTE: If this appliance is installed in the same room as another appliance, ensure that the air supply is adequate for the two of them (See BS 5440 : Part 2).

### 1.0 SITING THE FLUE TERMINAL AND FIRE

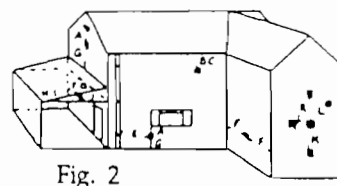
The following conditions must be met when deciding the positions of the flue terminal and the fire.

#### 1.1 Flue Terminal (Figs. 1A and 1B).

- (a) The terminal must be sited so that any condensation can drain onto soil, grass or to a condensation absorption point. Care should be taken to avoid discharge over solid areas to which any person has access to avoid injury due to condensation freezing over in bad weather. At levels higher than ground, a hopper or gutter could be used or a special 15mm drain kit consisting of 2 x 1 metre drain pipes, adaptors and connectors (not supplied) (See Fig. 1B). This can be purchased from Robinson Willey Ltd. The part number is 993904.
- (b) The flue pipe through the wall must protrude by at least 50mm (2in) from the external wall face and be at least 75mm (3in) above ground level.



- (c) Outside: (Fig. 2) Check that the terminal location complies with the requirements of the table below.



| TERMINAL POSITION                                                       | MINIMUM DISTANCE |
|-------------------------------------------------------------------------|------------------|
| A - Directly below an openable window or other opening e.g. air brick   | 300mm            |
| B - Below gutters, soil pipes or drain pipes                            | 75mm             |
| C - Below eaves                                                         | 200mm            |
| D - Below balconies or car port roof                                    | 200mm            |
| E - From vertical drain pipes or soil pipes                             | 75mm             |
| F - From internal or external corners                                   | 75mm             |
| G - Above ground, roof or balcony level                                 | 75mm             |
| H - From a surface facing a terminal                                    | 75mm             |
| I - From a terminal facing a terminal                                   | 600mm            |
| J - From an opening in the car port (e.g. door or window) into dwelling | 600mm            |
| K - Vertically below a terminal on the same wall                        | 1500mm           |
| L - Horizontally from a terminal on the same wall                       | 300mm            |

NOTE : A terminal guard may be fitted to protect the flue terminal from accidental damage or vandalism (Fig. 1A).  
The G.C. Number is 393 555

## 1.2 Fire

The fire can be fitted to any wall providing that the following requirements are met:-

- There must be a continuous drop in the height of the flue tube, from the fire to the terminal, of at least 10mm (0.4in) per 1 metre (40in) length of flue.
- The flue can be connected to the left or the right hand side of the fire.. The other exit must be capped off.
- The flue must not be longer than 4m (13ft 2in) including a maximum of 4 elbows or shorter than 500mm (19<sup>3</sup>/<sub>4</sub>in). The flue length is measured from the fire outlet to the flue terminal (Fig. 3).
- Hearth Mounting:

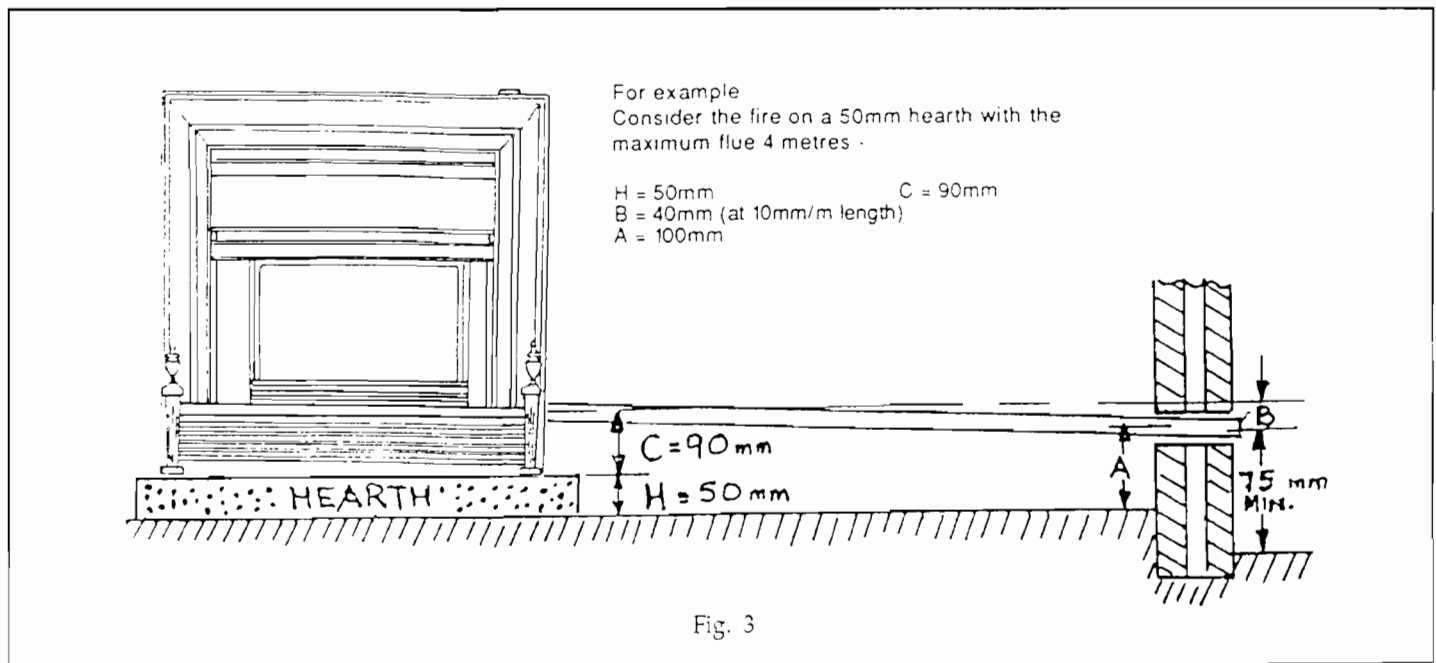
If the fire is to be hearth mounted, the hearth must be of non-combustible material at least 13mm (<sup>1</sup>/<sub>2</sub>in) thick and measuring at least 686mm (27in) wide by 305mm (12in) deep with the fire central. Its top surface should preferably be 50mm (2in) above the floor level to discourage placing of rugs or carpets over it. The fire can be fitted on suitable non-combustible fire surrounds rated 100°C or above. Levelling screws on the front of the legs can be adjusted to take up any irregularities on the hearth. To adjust, slacken the locknuts, adjust the levelling screws and tighten the locknuts.

Wall Mounting:

The fire may be fitted onto a suitable wall such that the bottom of the backplate of the fire is at least 75mm (3in) above the finished floor level.

NOTE: The minimum height 'H' at which the fire can be fitted depends on the flue layout. It must be calculated as follows, when the flue layout has been decided. The minimum height is calculated from three separate dimensions (See Fig. 3):-

- The height from the floor to the centre of the flue pipe at the point where the pipe goes through the wall.
  - The total fall over the length of the flue pipe.
  - The fixed distance from the bottom of the fire to the centre of the flue outlet which is 90mm.
- The minimum height 'H' is thus A+B+C provided this is at least 75mm for wall mounted fires.

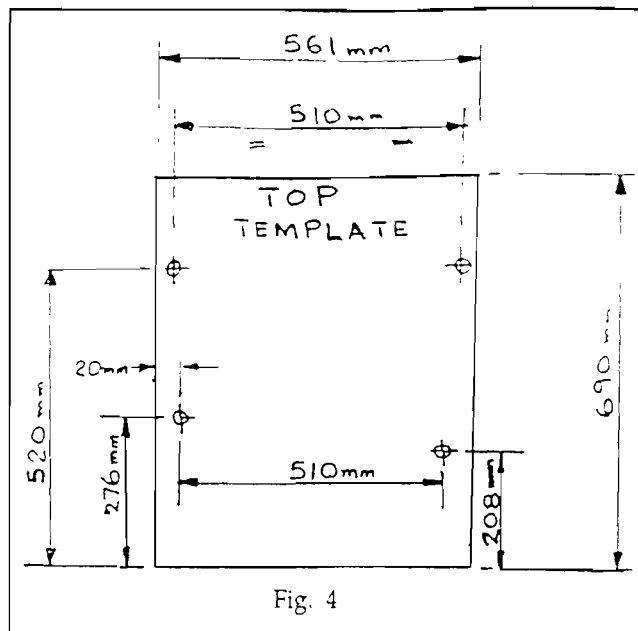


- Curtains should be at least 152mm (6in) above the heater.
- A clearance of 115mm (4<sup>1</sup>/<sub>2</sub>in) must be left at both sides of the fire in order to leave room for servicing.
- A wooden combustible shelf may be fitted over the fire. The minimum height of the underside of the shelf of 152mm (6in) depth must be 115mm (4<sup>1</sup>/<sub>2</sub>in). For shelves of greater depth, allow an additional clearance of 12.5mm (<sup>1</sup>/<sub>2</sub>in) for every 25mm (1in) additional shelf depth.
- The flue on the internal wall face may be boxed in or covered to protect it from being damaged. If the flue is to be boxed in some allowance must be made to provide access to the case securing screws for servicing, e.g. by fitting a short length of the box section next to the fire which can easily be removed. The cover could be plywood or plastic.

## 1.2 Unpacking

Remove the top fitment which contains 6 flue pipes and put in a safe place. Remove the template on top of the fire. Lift off the carton. Remove the front fitment containing the following items:-

- 1 x offset fitting
- 4 x No. 10 x 50mm screws and wall plugs for fixing the fire
- 2 x flange connectors
- 1 x flange gasket
- 2 x M4 screws and nuts
- 5 x straight connectors
- 4 x elbow connectors
- 6 x saddle clips
- 6 x No. 8 x 38mm screws and wall plugs
- 1 x tin of adhesive
- 1 x tin of solvent cleaner
- 1 x split pin
- 1 x 90mm foam strip



Check these items and keep in a safe place. The ceramic base, log bed and two logs are housed in the firebox.

## 2.0 FITTING THE FIRE

Plan the route of the flue, observing the conditions stated in Sections 1.1 and 1.2 previous.

Place the template against the wall ensuring that the top is level. Mark the positions of the four fixing holes (See Fig. 4) and remove the template. Drill the four fixing holes to a minimum depth of 57mm (2<sup>1</sup>/<sub>4</sub>in) using 6mm diameter masonry drill and insert the plugs.

### 2.1 Remove Outer Case

- (a) Remove the firebase assembly by first lifting upwards to clear the retaining pins and then swinging it out from the fire bottom first.
- (b) Pull off the control knob and the decorative flame knob.
- (c) Remove the four screws, two either side of the fire, securing the outer case.
- (d) Lift the outer case away from the fire left hand side first in order to clear the spindle on the right hand side and put in a safe place.

### 2.2 Remove Fuel Effect Components

- (a) First remove the glass door by releasing the two catches one on each side and pulling the door towards you at the bottom and downwards (See Fig. 5A).
- (b) Remove the packing in the firebox which contains the fuel effect components and put in a safe place.
- (c) Insert the two top wall fixing screws, leaving the plain shank projecting to allow the keyhole top fixing holes to go over them. Offer the fire unto the wall and hook the keyholes over the screws. Insert the lower wall fixing screws and secure all four screws.

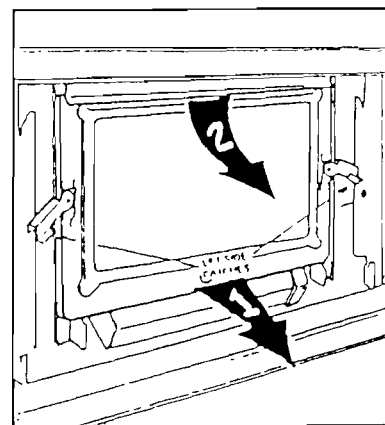


Fig. 5A

## 3.0 INSTALLATION OF FLUE (Fig. 5B)

NOTE: There must be a continuous drop of the flue from the fire to the terminal of at least 10mm per metre length of flue. flue routes under floorboards are permissible. Long flue runs on the outside wall should be avoided or adequately protected to guard against freezing over in bad weather.

- 3.1 Fit one of the flange connectors to the chosen flue exit on the fire. Fit the gasket and the other flange connector to this exit and secure with the M4 screws and nuts provided. Fit the offset fitting to set back the flue to the wall (Fig. 5C). When fitting in a deep fire surround, it may be advisable to bore a hole on the side of the surround for the flue pipe to pass through (Fig. 5C).
- 3.2 Make a hole 38mm (1<sup>1</sup>/<sub>2</sub>in) diameter at the flue terminal position. Repair any damage to the external brickwork etc. as necessary.

- 3.3 Cut and fit the pipes to the planned route starting at the fire. It may be helpful to fit the pipes and fittings together dry before bonding them. Support the pipes using the saddle clips and fixings provided. One clip should be used for each length of flue pipe.

NOTE: The length of pipe running through the wall must be such that it protrudes by 50mm (2in) from the outside wall face. Drill a 3mm hole at the terminal end (See Fig. 1A). Insert and secure the split pin. Wrap the foam strip at the terminal end but do not remove the protective tape as the foam starts to expand once the tape is removed.

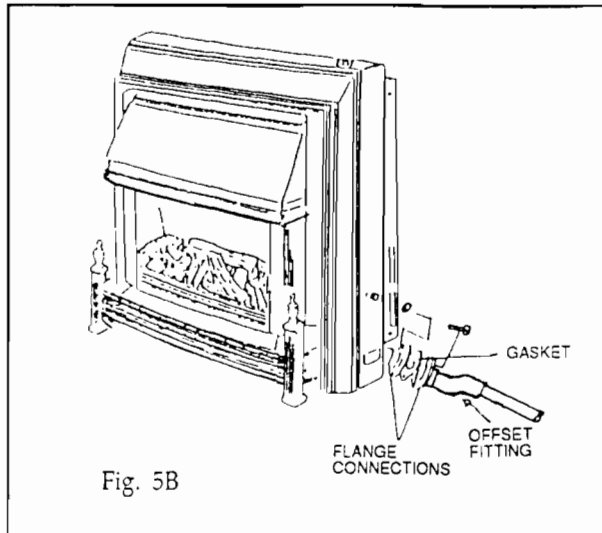


Fig. 5B

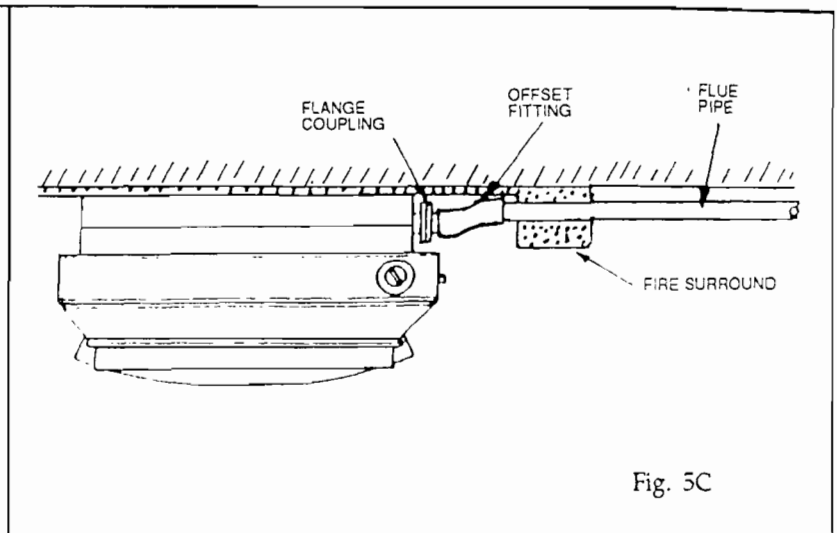


Fig. 5C

### 3.4 Jointing

When jointing CPVC pipes and fittings, follow the instructions below.

**WARNING:** The cement and solvent used in making the joints are flammable, so make sure there is ventilation and **DO NOT SMOKE**. The vapours are harmful. **DO NOT INHALE THEM**. Impervious gloves should be worn to avoid skin contact.

**NOTE:** The cement sets very rapidly.

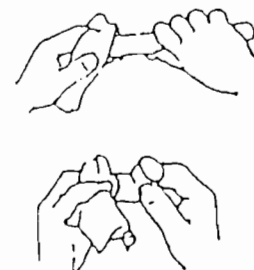
1. Cut pipe squarely, using a fine tooth saw or pipe cutter, allowing for depth of socket.



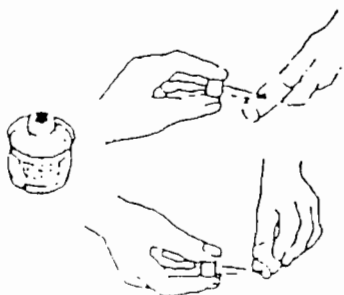
2. Remove all burrs and swarf with knife or file. Check pipe is a good fit in socket and that fitting is free from cracks and gouges. All fittings are designed to have an interference fit - do not force pipe into fitting when dry.



3. Apply the solvent cleaner to the surface of pipe and fitting. Wipe off thoroughly with a clean rag.



4. Follow immediately with C.P.V.C. Nova Weld C solvent cement, putting a liberal quantity on pipe and sparingly on socket.



5. Quickly push the pipe into the socket with a slight twisting motion until fully home. Adjustment for alignment should be made immediately. **DO NOT REMOVE SURPLUS CEMENT.**



6. Dispose of any surplus cleaner and cement safely.

Bond the flue connections, bond and cap-off the other flue exit not in use with flue cap provided.

NOTE: Before bonding and installing the terminal pipe, remove the protective tape on the foam strip. If necessary cement point the terminal

#### 4.0 GAS SUPPLY

- (a) Extend the gas supply to a point convenient to the heater and connect it to the Rp<sup>1</sup>/<sub>4</sub> (1/4 in BSP internal) inlet elbow at the bottom right hand side of the fire. A means of isolation must be fitted near the fire to facilitate maintenance.
- (b) Purge the system and test for gas soundness (Refer to Bs 6891 : 1988).

#### 5.0 ELECTRICITY SUPPLY

This appliance requires a 240 volt a.c. 50Hz electrical supply.

##### WARNING:

- 1 This appliance must be earthed.
- 2 All external wiring between the appliance and the electrical supply shall comply with current IEE wiring regulations.

The mains lead has the following specification:-

24/0.2mm 0.75mm circular 3 core flex cord to BS 6500 : 1975 Table 16 (Suitable for 3 amps).

A plug is already wired on to the mains lead. If the mains lead is too long remove the plug and cut the wire to length then follow the instructions below for rewiring the plug. If the appliance is to be wired direct to a double pole isolator then remove the plug and discard.

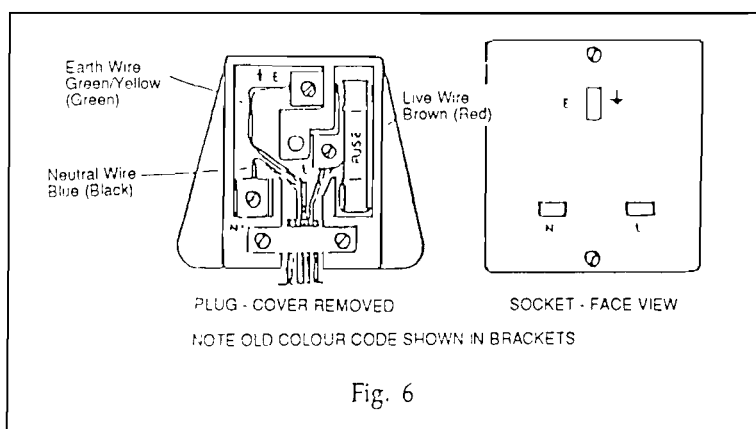
- 1 Provide an electrical supply socket, or fused spur nearby. **MAKE SURE THAT THE LIVE AND THE NEUTRAL POLES ARE CORRECTLY PHASED.** The method of connection to the electrical supply must facilitate complete isolation and should preferably be via a fused three pin plug and unswitched shuttered socket both complying with BS 1363 or alternatively via a double pole isolator having contact separation of at least 3mm in all poles.
2. Free the mains cable from the heater. One end is already attached to the heater and has a mains cable clamp fitted. the wires of the cable are coloured in accordance with the following code:-

|              |   |         |
|--------------|---|---------|
| Green/Yellow | - | Earth   |
| Blue         | - | Neutral |
| Brown        | - | Live    |

If these colours do not correspond with the colours identifying the terminals of the plug which is being fitted proceed as follows:-

- (i) Connect the wire which is coloured green/yellow to the terminal marked with the letter E or by the earth symbol - or coloured green.
- (ii) Connect the wire which is coloured blue to the terminal marked with the letter N or coloured black.
- (iii) Connect the wire which is coloured brown to the terminal which is marked with the letter L or coloured red. If the plug is unmarked, or if in any doubt, consult a qualified electrician.

Two pin plugs must not be used. If a fuse is fitted, it must have a 3 amp rating (See Fig. 6).



## 6.0 INSTALL FUEL EFFECT COMPONENTS

The fuel effect components are (See Fig. 7A):-

- (a) Ceramic Base.
- (b) Log Bed
- (c) Two logs numbered 1 and 2 on their underside faces.

Remove these components from their packs.

- (i) Place the base centrally on the firebox base so that the electrode lines up with its cut-out ensuring that the base is retained by the brackets on the firebox base (Fig. 7B) and the word TOP is uppermost.
- (ii) Locate the log bed as shown in Fig. 7C. Ensure that the front end is retained in the front rail recess and the back end rests on the ceramic base.
- (iii) Locate log number 1 as shown in Fig. 7D. Ensure that it is retained by the peg on the log bed. Then locate log number 2 in a similar manner.
- (iv) Replace the glass door.

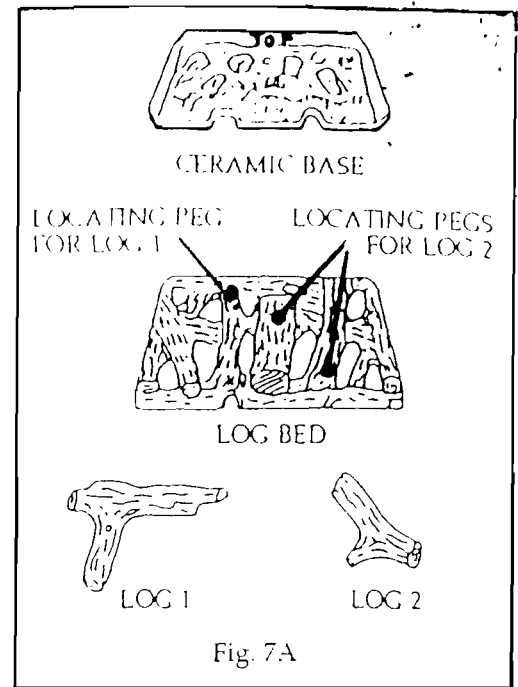


Fig. 7A

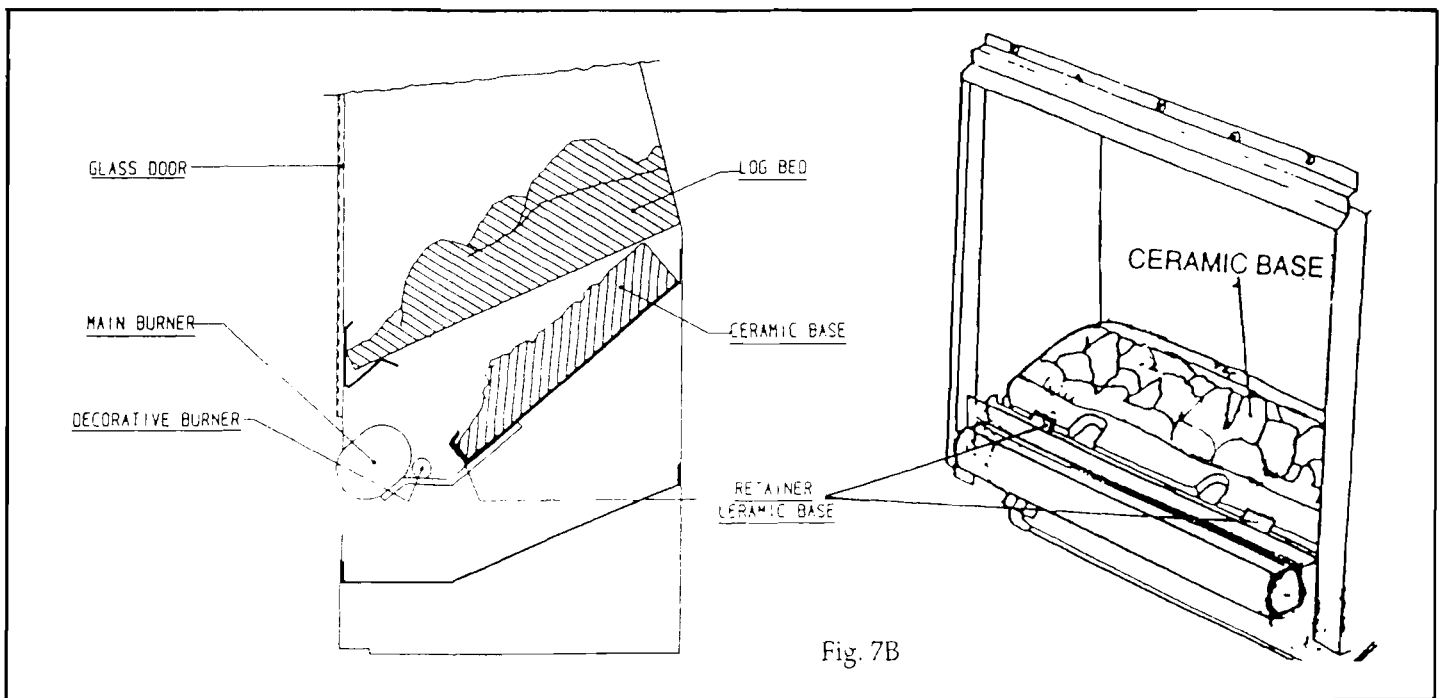


Fig. 7B

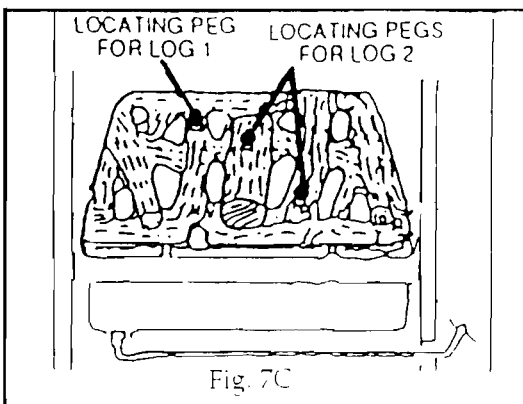


Fig. 7C

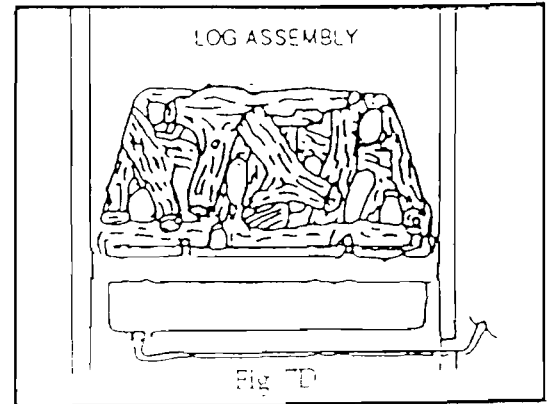


Fig. 7D

## 7.0 COMMISSIONING

### 7.1 Check Gas Pressure

Remove the pressure test point sealing screw located on the right hand side of the main burner and connect a pressure gauge to the test point. Temporarily fit the control and flame knobs. The control knob is located at the top right hand of the fire and the decorative flame knob at the right hand side.

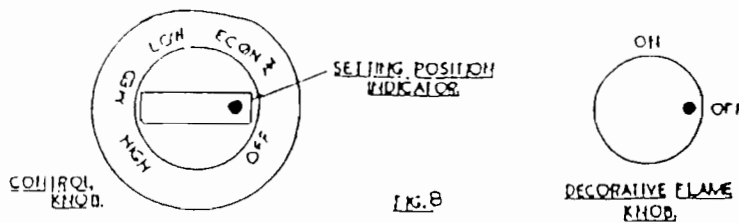


FIG. 8

#### Control Knob Positions

Position OFF  
Position ECON  
Position LOW  
Position MED  
Position HIGH

#### Decorative Flame Knob Positions

Position OFF  
Position ON  
NB Flame is variable at all control knob settings.

Turn on the gas supply and the electricity supply.

#### LIGHTING THE FIRE:

##### *THIS FIRE CANNOT BE LIT WITH A MATCH OR SPILL*

The fire is lit by simply depressing the control knob and turning it anticlockwise to the desired setting. The fire will light in approximately 12-20 seconds.

If the burner does not light, turn off by depressing the control knob and turning it fully clockwise. Wait approximately 40 seconds until the fans have stopped. Repeat the lighting sequence.

Turn the control knob to HIGH and the decorative flame knob to ON position.

Check that the burner pressure is  $17.5\text{mbar} \pm 1.0\text{mbar}$  (7.0in w.g.  $\pm 0.4$ ) cold. The fire is designed to give the correct heat input on Natural Gas at 20mbar (8in w.g.) inlet pressure and no adjustment is provided in the fire. Turn off the fire. Remove the pressure gauge and replace the pressure test screw. Relight the fire and test for gas soundness around the sealing screw using a suitable leak detection fluid.

To Turn Off: Push in the control knob slightly and turn it clockwise to OFF position.

NOTE: It is not necessary to turn the decorative flame knob to OFF position.

NOTE: When changing settings always depress the control knob before turning.

IMPORTANT: Before fitting the outer case the installer should check all sections of the plastic flue both inside and outside the appliance for damage, leaking joints etc.

## 7.2 Test for Spillage

A spillage test must be made before the installed fire is left with the user. This is carried out in the following manner. Light the fire and leave on at the full rate. Close all doors and windows in the room and after the fire has been alight for 5 minutes insert a lighted smoke match into the opening below the burners (See Fig. 9). It is important to insert the smoke match by this amount, as shown, to prevent the test being influenced by air currents at the front of the fire. It may be necessary to hold the match with a pair of pliers or in a metal tube. If the smoke is drawn into the fire the installation is satisfactory.

If there is a fan or a fan operated appliance in a nearby room, then the spillage test must be repeated with the fan running and all inter-connecting doors between the fan and the fire left open.

If the fan and the fire are in the same room, close all windows and doors connected to the room, switch on the fan and repeat the spillage test. If there is spillage, the cause must be rectified.

**IF THE FAULT CANNOT BE RECTIFIED, THE APPLIANCE MUST BE DISCONNECTED AND EXPERT ADVICE SOUGHT.**

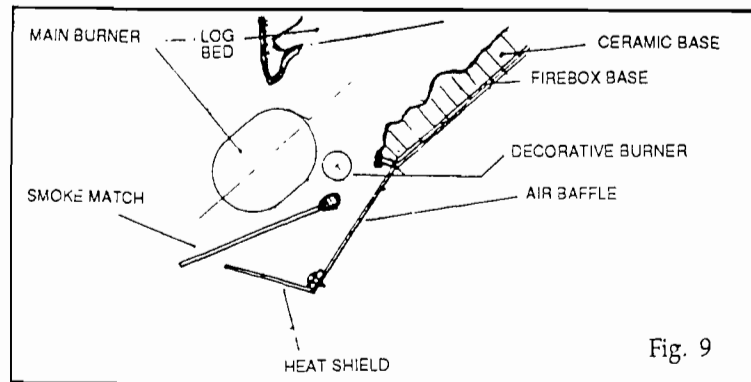


Fig. 9

Check operation of FSD as follows: With the fire still running on HIGH after the spillage test, turn the gas service cock off. The fire will attempt to ignite for 5 to 10 seconds, then the sparking will stop. Turn on the gas service cock again and if there is no gas flow through the fire the FSD is operating satisfactorily. Turn the control knob on the fire to the off position.

## 7.3 Refit Outer Case and Remaining Components

Pull off the knobs. Peel off PVC covering on outer case. Refit the outer case by placing it over the fire right hand side first. Ensure that the tap spindles are centrally located in the knob openings. Secure the outer case by refitting the 4 screws 2 each side of the case. Replace the knobs. Refit the firebar assembly.

For hearth mounted fires, the fender dogs can be adjusted to touch the hearth if necessary. Slacken the two securing screws at the rear of each dog and adjust the height as required. Tighten the screws.

## 7.4 Instruct User (Refer to User Instructions)

Make sure that the user understands the following:-

- How to light and operate the fire.
- Demonstrate the removal and replacement of the glass door and the removal and replacement of the ceramics. Advise on the need to clean these items regularly.
- Advise the user to run the fire regularly with the decorative flame off in order to reduce the need to clean the firebox and ceramics.
- Advise that for safe and efficient operation, the fire should be serviced annually by British Gas or CORGI Registered service agent.
- When the fire is first lit a slight smell may be noticed but this will quickly clear away with use. Hand over the Users Instructions.

# SECTION C - SERVICING INSTRUCTIONS

## GENERAL NOTES

Before removing the case to carry out any servicing or maintenance operation, always turn off the gas and electricity supplies. A competent person can operate the heater with the case removed provided that due care is exercised. Do not attempt to remove components with the supplies switched on. After removing or replacing any gas carrying component, always test for gas soundness. Make sure all screws and washers are replaced and firmly tightened. Always use pliers to pull off tag connectors. To avoid damage to or dislodging of fuel effect components during servicing, it is recommended that these are removed and kept in a safe place. Servicing the fire is recommended once a year. Servicing consists of removing dust and any lint from the convection fan rotors and the fire generally, cleaning the burner, checking for gas soundness and visual inspection of the heat exchangers and flue.

## IMPORTANT

Ensure that the aeration hole in the decorative flame burner is clear and free from lint.

## 1. REMOVAL OF THE OUTER CASE

Turn off the gas and disconnect the electrical supply

- (a) Remove the firebase assembly by first lifting upwards to clear the retaining pins and then swinging out from the fire bottom first.
- (b) Pull off the control knob and decorative flame knob.
- (c) Remove the 4 screws, 2 either side at the bottom rear and top of the fire securing the outer case.
- (d) Lift the outer case away from the fire left hand side first in order to clear the spindle on the right hand side and put in a safe place.

When the outer case is removed, the following parts can be serviced or replaced as described below.

## 2. GAS TAP ASSEMBLY

- (a) Removal: Pull off the tag connectors to the ON/OFF switch. Withdraw the spring clip securing the extension spindle assembly to the gas tap spindle and the extension spindle assembly. Undo the union nuts on the inlet and outlet ports of the gas tap. Remove the two screws securing the gas tap bracket to the support bracket on the fire. Ease off the pipe end while withdrawing the gas tap downward out of the fire.
- (b) Servicing: Ensure that the gas tap is in the OFF position by turning the spindle clockwise as far as possible. Remove the circlip and microswitch. Remove the two screws securing the mounting plate/niting plate to the tap body. The tap plug is now accessible for cleaning and re-greasing with a suitable plug grease. Note the position of the plug slot relative to the body before removing. When re-assembling, ensure that the plug is in the correct position and check the alignment of the spindle pin with the slot when re-fitting the niting plate. Refit the tap using the reverse procedure to its removal. Refit the spindle assembly.

NOTE: With the tap in the OFF position, the flat of the spindle extension faces to the right of the fire. Refit the microswitch and connectors ensuring that the side with the name LICON is uppermost. Check that the tap functions correctly.

- (c) Renewal: Remove tap, 2(a) above. Refit in the reverse order to removal. Check that the tap functions correctly.

## 3. DECORATIVE FLAME TAP

Exchange: If the tap is to be renewed, undo the inlet and outlet olive nuts and ease out the gas pipes. Slacken the locknut on the side of the mounting bracket and withdraw the control. Fit a new control and re-assemble in the reverse manner to its removal noting that the locknut is on the part with the longer threaded port.

## 4. SOLENOID VALVE

Note the position and orientation of the valve assembly (coils about 30 degs in). Note the positions of the six wires connected to the valve assembly. Carefully remove the spade connectors using pliers. Disconnect the tubing nut connections to the solenoid assembly. Disconnect the gas inlet connection and slacken the pipe retaining clamp screws. Remove the solenoid assembly and replace with a new one. Tighten the tubing nut connections. Re-connect the gas inlet and tighten the pipe retaining clamp screws. Refit the six wires (note reference can be made to the circuit diagrams in the instructions or fitted to the case assembly).

## 5. CONTROL BOX

Disconnect the HT lead from the control box. Remove the two bottom screws holding the control box to the side plate of the fire. Remove the wiring connection. Other than changing the fuse there is no maintenance that can be done.

Fuse: Remove the metal heat shield by undoing the two securing screws. To replace the fuse, undo the screw on the underside of the box securing the top cover and remove this cover. Remove the fuse from its holder and replace with a fuse of the correct type - 2A to BS 4265 (IEC27) 20mm long. Refit in the reverse manner.

NOTE: If the fuse has blown, check the wiring and components external to the circuit board before replacing the fuse. Fuse G.C. Number 204 005, RW Number 810 576.

To replace the control box, first transfer the metal heat shield to the new board and then refit in the reverse manner.

## 6. OVERHEAT THERMOSTAT

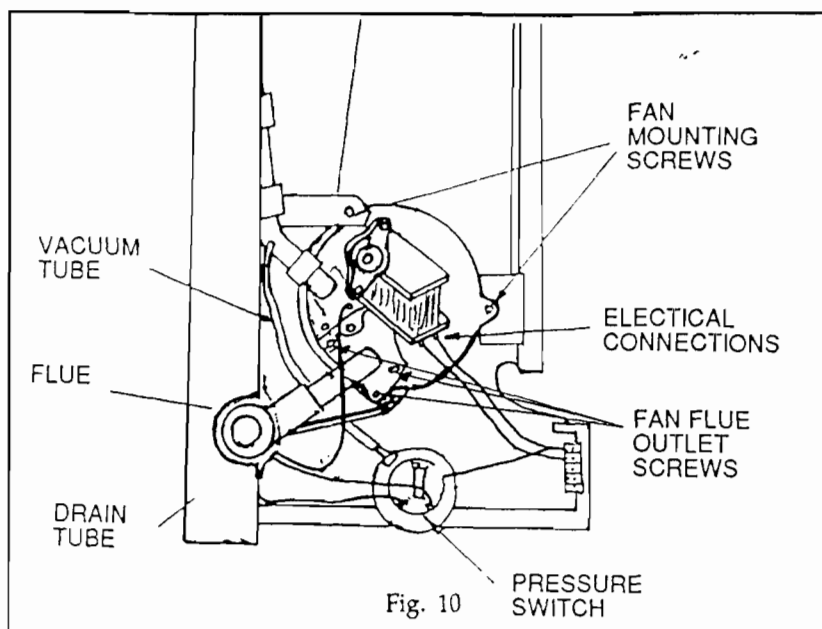
Remove the bracket securing the switch to the heat exchanger by undoing the two screws. Pull off the tag connectors. Replace with a new one and remake the connections. Ensure that the switch makes a good contact with the heat exchanger.

## 7. COMBUSTION FAN (Fig. 10)

Pull off the tag connections. Remove the three screws securing the flue outlet pipe. Disconnect the drain pipe at the bottom of the fan. Undo the two screws securing the fan bracket to the firebox bracket. Undo the top screw securing the fan to the other bracket. Ease out the fan assembly. Transfer the bracket, inlet and outlet manifolds, and gasket to the new fan. NB: It is advisable to renew the gasket to achieve an air-tight joint. Engage the fan assembly and remake all the connections. The operation of the fan is not affected by the polarity of live and neutral connections.

## 8. PRESSURE SWITCH (Fig. 10)

Disconnect the electrical connections and plastic tube on the pressure switch. Undo the two bottom screws securing the switch mounting bracket to the leg of the fire. Remove the pressure switch by undoing the two screws at the back of the mounting bracket. Refit with a new pressure switch and remake all the connections. Refer to Fig 13 for the electrical connections noting that the red wire from TB2 is connected to terminal 3 of the pressure switch, the white wire from the overheat thermostat to terminal 2 and the brown/white from cable harness to terminal 1 of the pressure switch.



#### 9. DECORATIVE FLAME BURNER INJECTOR

Pull out the aeration hole cover (if fitted). Carefully undo the flare nut securing the burner to its gas inlet pipe (Note: It is necessary to arrest any movement of the thin inlet pipe by securing the injector adaptor when undoing the flare nut). Undo the inlet pipe connection at the tap end and withdraw the inlet pipe and injector assembly. Replace the injector and re-assemble in the reverse manner.

#### 10. FUEL EFFECT COMPONENTS

First remove the glass door by releasing the two side catches by pushing them outwards (See Fig. 11). Pull the door outwards at the bottom and then downwards. The fuel effect components and the door are now accessible for cleaning or replacement. (Refer to Users Instructions).

#### 11. SPARK ELECTRODE.

Proceed as detailed in 10 above to remove the fuel effect components. Undo the screw securing the electrode to the firebox base and ease out the electrode. Transfer the spark lead to the new electrode and refit in the reverse manner. Ensure that the spark lead is away from the convection fan blades.

#### 12. BURNER ASSEMBLY INCLUDING BURNER INJECTION

Proceed as detailed in Section 10 above to remove the fuel effect components. Remove the front rail by undoing the two screws securing it to the firebox. Remove the aeration hole cover. Undo the union nut of the main burner inlet gas pipe at control end and the flare nut to the decorative flame burner below the main burner. Undo the four screws securing the burner brackets to the firebox base. Withdraw the assembly comprising the main burner and decorative burner.

- Main Burner: Undo the two nuts securing the main burner to the baffle plate. Undo the two screws securing the inlet gas pipe and injector to the burner. Transfer the baffle plate to the new burner. Refit in the reverse manner to removal.
- Main Burner Injector: Proceed as detailed above to withdraw the burner assembly. Undo the two screws securing the inlet pipe and injector to the main burner. Replace the injector and refit in the reverse manner.
- Decorative Flame Burner: Proceed as detailed above to withdraw the burner assembly. Undo the two nuts securing the main burner to the decorative burner brackets. Refit the main burner to the new decorative burner and bracket and re-assemble in the reverse manner.

#### 13. CONVECTION FAN

Proceed as detailed in Section 12 above to remove the burner assembly. Remove the decorative burner gas supply by undoing the olive nut at the tap end. Remove the control box (Section 5). Undo the live and neutral connections to the right hand side terminal block TBI. Undo the nut securing the earth lead and disconnect the lead. Remove the spark electrode (Section 11). Undo the three screws securing the black heat shield to the air baffle plate and remove. Undo the five screws securing the baffle plate to the appliance and remove. Undo the centre screw underneath the fan. Ease out the bottom plate and the fan assembly.

- Cleaning: Use a soft brush to remove dust and any lint from the blades. The fan does not need lubricating. Re-assemble in the reverse manner.
- Replacement: Undo the two screws securing the fan assembly to the bottom plate. Refit with a new fan assembly and re-assemble in the reverse manner.

NOTE (for fans with black leads): The operation of the fan is not affected by the polarity of live and neutral connections.

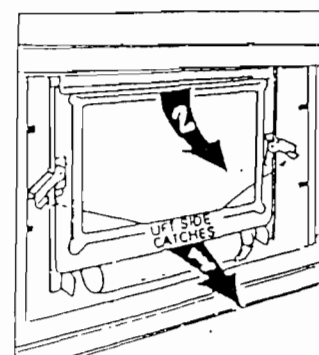
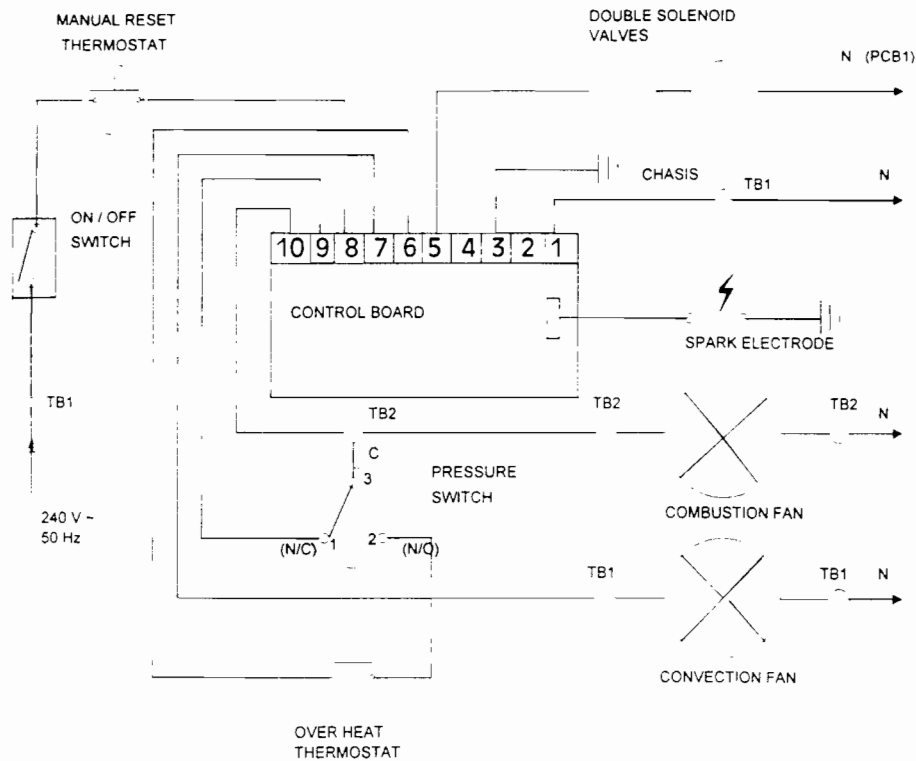


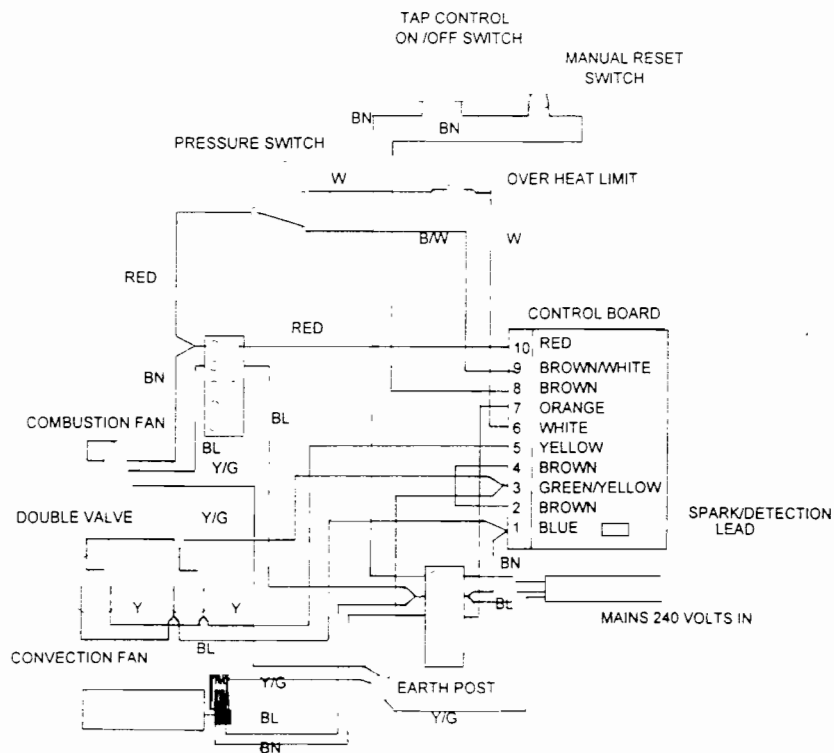
Fig. 11

#### 14 MANUAL RESET THERMOSTAT

First displace the control box by undoing the two bottom screws securing it to the sideplate of the fire in order to gain access to the switch securing screws. Undo the two screws securing the thermostat to the firebox. Transfer the electrical connections to the new thermostat and refit in the reverse manner.



**FUNCTIONAL FLOW DIAGRAM**



**SALISBURY TURBO 2 WIRING DIAGRAM**

## HINTS ON FAULT FINDING

### NORMAL OPERATION:

In order to find faults successfully, it is necessary to know how the appliance operates when it is running normally. Assuming that the gas and electricity supplies are switched on, turn the control knob to any of the ON positions. The ON/OFF switch on the control spindle is now in the ON position and supplies power via the manual reset thermostat to the PCB which supplies power to;

- (i) the normally open contact of the pressure switch via the overheat thermostat, and;
- (ii) the combustion fan via the normally closed contact of the pressure switch.

The fan starts to run to;

- (i) purge the combustion chamber and heat exchangers, and;
- (ii) generate adequate air flow to operate the pressure switch which switches over to the normally open contact to maintain the supply to the combustion fan and signal the PCB to proceed to the next stage.

This is the purge period and lasts about 12 seconds.

The PCB then supplies power to:

- (i) the solenoid valve assembly which opens to let gas to the burners, and;
- (ii) the spark electrode to light the main burner.

This is the ignition period and may last up to 10 seconds.

When the flame is detected by the spark electrode which now acts as a detection electrode, the PCB then;

- (i) supplies power to the convection fan;
- (ii) maintains power to the solenoid valve assembly, and;
- (iii) cuts off power to the spark electrode.

The fire operates normally according to the knob setting until it is manually turned off.

This is the normal operation.

#### FAULTY OPERATION:

First of all switch the fire off for a minute if it is not already off, then switch back on again. Check how much of the sequence described previously has been completed, then look for the fault. A multimeter is very useful for checking voltages and continuity. Refer to the circuit diagram.

The fire is protected by a number of safety devices. If the electricity supply should fail with the fire set on any of the ON positions, the fire will shut off safely. When the supply is restored, the fire will switch on again automatically. If the gas supply is interrupted or any other failure causes the burner flames to go out, the fire will make one attempt to re-light and, if this fails, will shut off safely leaving the combustion fan running. This is 'lockout' condition. To clear the 'lockout', turn the control knob to the OFF position, wait for 40 to 60 seconds for the fan to stop (the pressure switch to reset) before attempting to re-light the fire.

If the overheat thermostat opens due to overgassing and/or faulty convection fan, the fire will shut off temporarily leaving the combustion fan running and will re-light automatically on cooling down. If the manual reset thermostat opens, the fire will shut off completely and will not function until the thermostat is reset manually.

Some possible faults are as follows. Check the items noted and repair or replace the parts as necessary.

#### FAULT:

Combustion fan does not start.

#### CHECK:

Power supply.  
Wiring.  
Fuse in the control box.  
Manual reset thermostat.

Combustion fan starts but no spark.

Wiring.  
Pressure switch and connections.  
Flue blockage.  
Faulty combustion fan.

Combustion fan starts but stops immediately.

Control box faulty.

Burner does not light.

Gas supply.  
Solenoid valve assembly (sticking).  
Spark electrode.

Burner lights but does not stay lit for more than 10 seconds.

Detection electrode lead.  
Control box.  
(NB: Flame detection current should be approximately 6uA).  
Earth continuity in the building.

Fire runs for a while and switches off leaving combustion fan on (Lockout condition).

Overheat thermostat.  
Convection fan.  
Gas supply (interruption) (overgassing).  
Flue blockage.

Fire operates normally on HIGH, MED and ECON but not on LOW.

Spark electrode not in contact with flame on LOW.  
Polarity of the wiring, ensure that live and neutral are correctly phased.

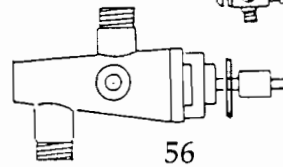
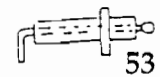
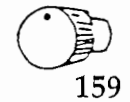
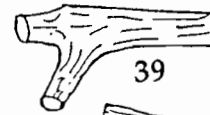
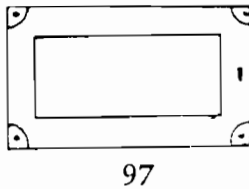
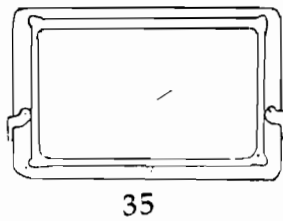
Fire operates for a while and switches off completely (manual reset thermostat has operated).

Gas supply (overgassing).  
Heat exchanger.  
Combustion fan.

The above list is not exhaustive, but gives a good outline of possible faults.

## SHORT LIST OF PARTS

| KEY NUMBER | G. C. NUMBER | MAKERS PART NUMBER | DESCRIPTION           |
|------------|--------------|--------------------|-----------------------|
| 36         | 154 885      | 993967             | Ceramic Base          |
| 38         | 154 887      | 993966             | Log Bed               |
| 158        | 154 752      | 994690             | Control Knob          |
| 35         | 154 535      | 995159             | Door Assembly         |
| 53         | 385 840      | 822053             | Spark Electrode       |
| 39         | 154 888      | 993965             | Log Number 1          |
| 40         | 154 889      | 993964             | Log Number 2          |
| 97         | 385 846      | 822056             | Control Box           |
| 64         | 386 761      | 822026             | Decorative Flame Tap  |
| 56         | 154 931      | 822038             | Gas Tap Assembly      |
| 159        | 154 529      | 995425             | Decorative Flame Knob |



992112  
JAN 95

Robinson Willey Ltd.  
Mill Lane  
Old Swan  
Liverpool L13 4AJ  
Telephone: 051-228 9111



THE GAS CONSUMERS' COUNCIL (GCC) IS AN INDEPENDENT ORGANISATION WHICH PROTECTS THE INTEREST OF GAS USERS. IF YOU NEED ADVICE, YOU WILL FIND THE TELEPHONE NUMBER IN YOUR LOCAL TELEPHONE DIRECTORY UNDER GAS.

# ROBINSON WILLEY

## SALISBURY TURBO 2 RADIANT CONVECTOR GAS FIRE

GC No. 32 689 37

### Users Operating Instructions

#### INTRODUCTION

In your own interest and that of safety, it is the law that all gas appliances are installed by competent persons in accordance with Gas Safety (Installation and Use) Regulations 1994 and IEE Wiring Regulations. Failure to install appliances correctly could lead to prosecution. This appliance must be installed according to the Installation Instructions. The appliance must ONLY be used on Natural Gas. It is recommended that the appliance be serviced at 12 monthly intervals.

Salisbury Turbo 2 is an easily controlled, highly efficient decorative live fuel effect gas fire. It can be mounted on an inside wall up to 4 metres away from the outside wall.

Air for combustion is taken from the room. The appliance is fitted with two fans: a fan which evacuates the products of combustion via a small diameter plastic tube to the outside of the building and a convection fan which circulates warm air round the room.

The fire is fitted with a full sequence control unit and operates automatically when it is switched on to any of the four heat settings. It is also fitted with safety devices to protect it against overheating, fan failure or failure of gas or electricity supply.

At the HIGH setting the fire gives an output of 3.0kW. It will cost 5p/h (based on cost of gas at 1.477p/kW ex. VAT).

When the fire is first used, a slight smell may be given off but this will soon disappear.

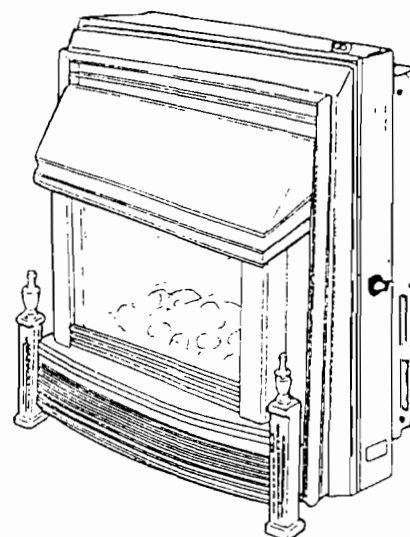
NOTE: This appliance will not operate without an electrical supply.

#### GENERAL REQUIREMENTS

Do not hang clothes, towels etc. over or near to the heater as you will cause overheating and possibly damage. Do not obstruct the space beneath the heater.

Curtains must not hang closer than 152mm (6in) to the top of the heater or within 50mm (2in) of the sides.

NOTE: After the fire has been installed you may wish to fix a shelf of combustible material e.g. veneered chipboard, above. This is quite acceptable, provided you use a shelf of not more than 152mm (6in) depth from the back. Keep a gap of at least 115mm (4½in) between the top of the fire and the underside of the shelf. For deeper shelves, allow an increase of 13mm (½in) in shelf height for every 25mm (1in) increase in depth as shown in the table.



| Depth of Shelf |    | Height of Shelf |    |
|----------------|----|-----------------|----|
| mm             | in | mm              | in |
| 152            | 6  | 115             | 4½ |
| 165            | 6½ | 122             | 4¾ |
| 178            | 7  | 128             | 5  |
| 191            | 7½ | 135             | 5¼ |
| 203            | 8  | 141             | 5½ |

A clearance of 115mm (4½in) must be left at both sides of the heater in order to leave room for servicing. The flue tube is sufficiently strong to withstand normal wear and tear but it is advisable to protect it against accidental knocks etc. by using a cover. Such a cover could consist of a timber frame with hardboard or plywood sheet covering. Various proprietary covers in wood or plastic are also available from Builders Merchants. On the outside, do not obstruct the flue terminal. Clear away any debris, such as leaves, which may collect. Water will drip from the terminal. this is caused by condensation of the flue products and is quite normal.

WARNING: The glass door becomes very hot when the fire is in use and must not be touched.

The glass door on this appliance conforms to the requirements of BS 1945 : 1991 and satisfies the Heating Appliances (Fireguard- (Safety) Regulations 1991. IT DOES NOT GIVE FULL PROTECTION FOR YOUNG CHILDREN, THE ELDERLY OR THE INFIRM. Extra security can be provided by fitting a fireguard which complies with BS 6539 : 1984 (fireguards for use with solid fuel appliances).

THE FIRE MUST NOT BE USED WITHOUT THE GLASS DOOR IN POSITION OR WITH THE GLASS DAMAGED.  
IT MUST NOT BE USED WITH DAMAGED, DISLODGED OR INCORRECT FUEL EFFECT COMPONENTS.

"Soft furnishings" such as blown vinyl wallpaper are easily affected by heat and may become discoloured if fitted close to a heating appliance. Please bear this in mind when installing a heating appliance and when re-decorating.

For the continued efficient and safe operation of this fire it is recommended that the fire is operated regularly with the decorative flame knob set at the OFF position in order to reduce the need to clean the firebox and fuel effect components.

## CONNECTIONS

**Gas:** There will be a gas supply pipe fitted to the fire at the right hand side.

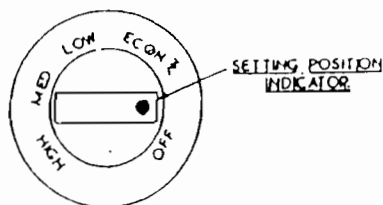
**Electricity:** The electrical supply will come from a nearby socket which should be left switched ON. Connection of the fire may be via a 13A (B.S. 1363) plug with a 3A fuse.

WARNING: This appliance must be earthed.

## OPERATING THE FIRE

The control knob is located at the top right hand side of the fire and the decorative flame knob at the right hand side.

CONTROL KNOB



DECORATIVE FLAME KNOB

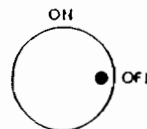


Fig. 1

| Control Knob Positions | Heat Input (kW) |
|------------------------|-----------------|
| OFF                    | NIL             |
| ECON                   | 2.92            |
| LOW                    | 2.37            |
| MED                    | 3.1             |
| HIGH                   | 3.4             |

Decorative Flame Knob Positions

Position OFF

Position ON

NB Flame is variable at all heat settings.

### NOTE:

1. The above inputs are with the flame knob at ON position.
2. The lowest setting is LOW with the flame knob at the OFF position. The input is 1.33kW.

## LIGHTING THE FIRE

### THIS FIRE CANNOT BE LIT WITH A MATCH OR SPILL

Ensure that the electrical supply is switched on. It is suggested that the decorative flame knob is turned to the ON position before lighting the fire. This enables the flames to be seen more easily once the fire is lit.

The fire can be lit by simply depressing the control knob and turning it anti-clockwise to the desired setting. The fire will light in approximately 12-20 seconds.

When changing settings always depress the control knob before turning. If the burner does not light, turn off by depressing the control knob and turning it fully clockwise. Wait approximately 40 seconds until the fans have stopped. Repeat the lighting sequence. To Turn Off: Push in the control knob slightly and turn it clockwise to the OFF position.

NOTE: It is not necessary to turn the decorative flame knob to the OFF position.

Always turn the fire off using the control knob. Do not switch off by using the mains socket switch only.

WARNING: In the unlikely event of the flame being extinguished whilst the fire is set at any of the ON positions, turn off using the control knob. Wait three minutes before re-lighting.

Your fire is protected by a number of safety devices. If the electricity supply should fail with the fire set on any of the ON positions, the fire will shut off safely. When the supply is restored, the fire will switch on again automatically. If the gas supply is interrupted or any other failure causes the burner flames to go out, the fire will make one attempt to re-light and, if this fails, will shut off safely leaving the combustion fan running. Turn off the fire to stop the fan.

If the fire will not light or will not re-light after 3 minutes, as above, consult your installation/servicing agent or British Gas.

## CLEANING

**SWITCH OFF THE ELECTRICAL SUPPLY AT THE MAINS SOCKET AND/OR REMOVE THE PLUG.**

All cleaning should be carried out when the fire is cold. As the fire is used, the bright metal finish around the log bed will darken. There is no need to use metal polish on these parts as the discolouration is normal. Generally the fire would only need dusting. Any painted surface or metal part may be cleaned with a damp cloth. Any stains on the glass door can be removed with a non-abrasive cleaner, or ceramic hob cleaner. NOTE: As with all glass surfaces regular cleaning is important. The fuel effect components may be cleaned with a soft brush. The inside of the fire can be cleaned periodically with a damp cloth. It is recommended that a vacuum cleaner is not used.

## TO REMOVE THE GLASS DOOR (Fig. 2)

Lift the firebar assembly until the cut-outs on the sides are clear of the retaining pins (Fig. 2A). Pull the firebar assembly towards you at the bottom and then slide it downwards ensuring that it clears the lower trim (Fig. 2B). Release the two side catches on the glass door surround by pushing outwards (See Fig. 2C). Pull the glass door towards you at the bottom and then downwards to clear the top retaining channel and into the space behind the lower trim. Lift off the glass door and put it in a safe place. To refit the glass door, first insert it in the space behind the lower trim and secure in the reverse manner to its removal. Refit the firebar assembly.

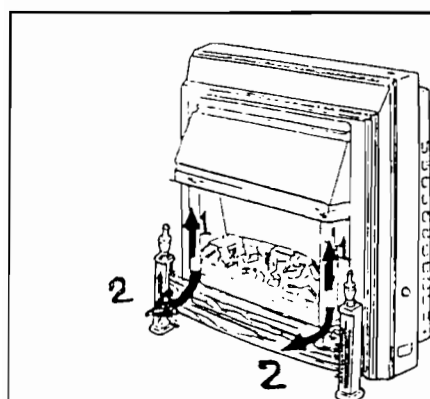
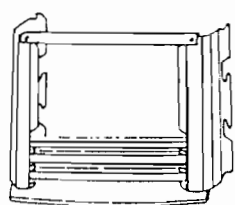


Fig. 2A



FIREBAR ASSEMBLY

Fig. 2B

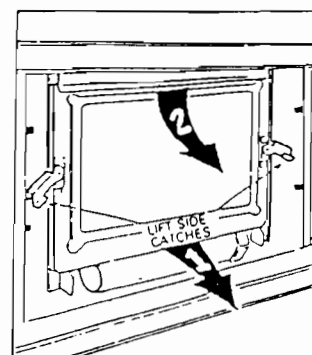


Fig. 2C

## FUEL EFFECT COMPONENTS

The fuel effect components consist of (Fig. 3A):-

- (a) 2 log pieces numbered 2 and 1 on their underside faces.
- (b) 1 log bed.
- (c) 1 ceramic base.

To take out these components for cleaning or otherwise, first remove the glass door and remove them in the order stated above.

To replace them:-

- (i) Place the base centrally on the firebox base so that the electrode lines up with its cut-out ensuring that the base is retained by the raised lip of the brackets on the metal base (Fig. 3B) and the word TOP is uppermost.
- (ii) Locate the log bed as shown in Fig. 3C. Ensure that the front end is retained in the front rail recess and the back end rests firmly on the ceramic base.
- (iii) Replace log number 1 ensuring that it is retained by the peg on the log bed (Fig. 3D). Then replace log number 2 in a similar manner.

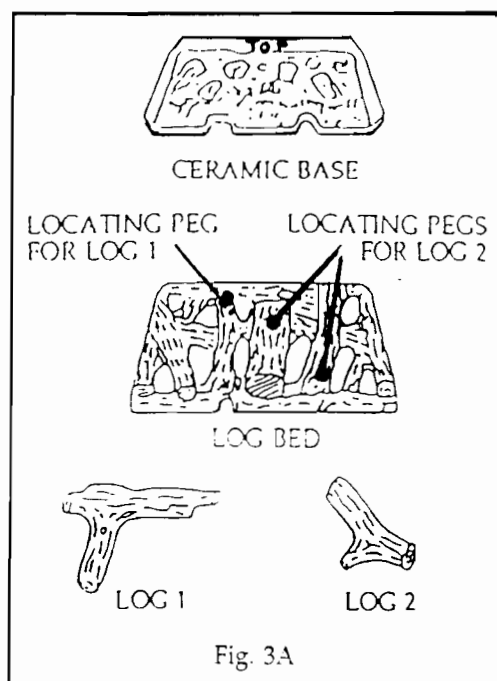


Fig. 3A

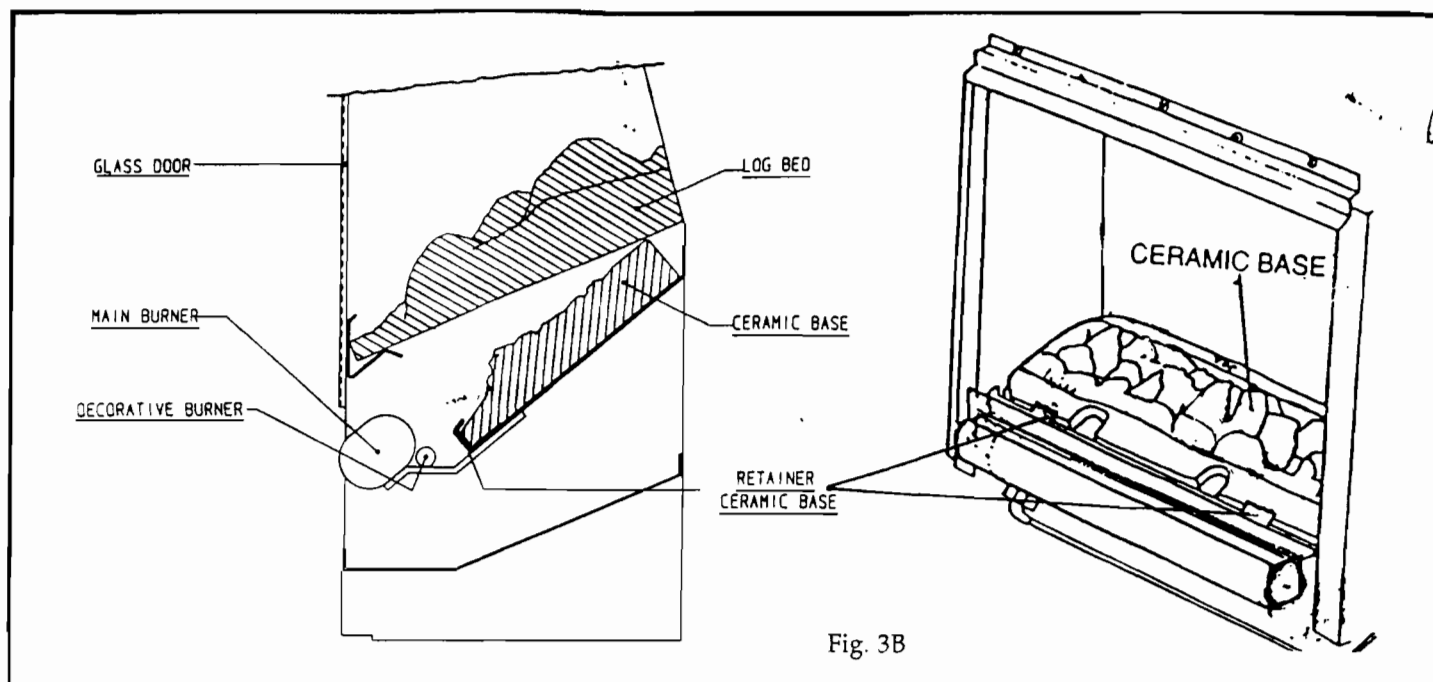


Fig. 3B

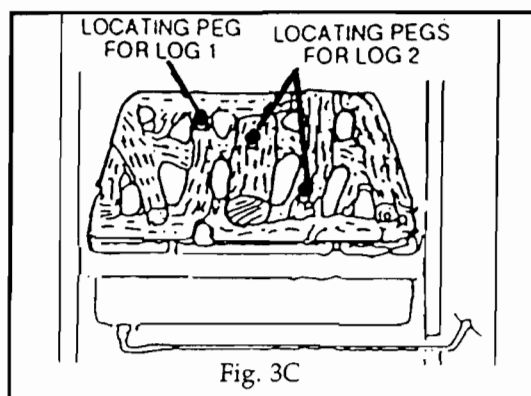


Fig. 3C

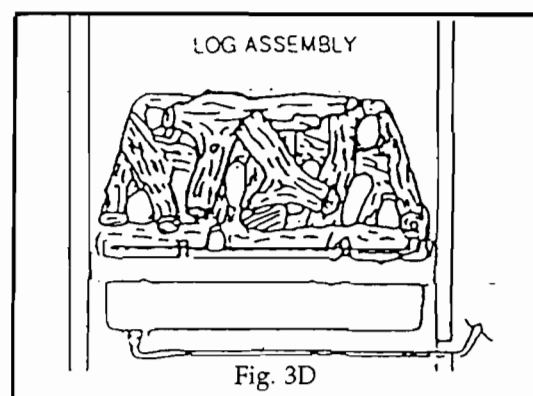


Fig. 3D

## SPARES AND SERVICE

For spares and service apply to your local supplier or installer, stating that the appliance is a SALISBURY TURBO 2, the appliance G.C. No. is 32 689 37 and the serial number. All on the label on the right hand side  
ADVANTAGE SHOULD BE TAKEN OF REGULAR SERVICING/INSPECTION FOR GAS APPLIANCES

## SHORT LIST OF PARTS REPLACEABLE BY THE USER

| G. C. PART NUMBER | MAKERS PART NUMBER | DESCRIPTION           |
|-------------------|--------------------|-----------------------|
| 154 885           | 993967             | Ceramic Base          |
| 154 887           | 993966             | Log Bed               |
| 154 888           | 993965             | Log Number 1          |
| 154 889           | 993964             | Log Number 2          |
| 154 752           | 994690             | Control Knob          |
| 154 529           | 995425             | Decorative Flame Knob |

992101

JAN 95

Robinson Willey Ltd.  
Mill Lane  
Old Swan  
Liverpool L13 4AJ  
Telephone: 051-228 9111