

Temcana Kestrel 150S
Temcana Kestrel 250S

Powered Flued
Fanned Convectors Heaters
Installation and Servicing Instructions

Please leave these instructions adjacent to the gas meter or with the site engineer

Vulcana Gas Appliances Limited
Bridge Road
Haywards Heath
West Sussex RH16 1TX
Tel: 01444 415871
Fax: 01444 441433
email: vulcanagas@pavilion.co.uk
web: www.vulcanagas.co.uk

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1.0 INTRODUCTION

These appliances have been tested and certificated for use on natural gas (G20 at a supply pressure of 20mbar) and propane (G31 at a supply pressure of 37mbar) in GB and IE.

Temcana Kestrel 150S and 250S are powered flued appliances with fanned convection discharge.

They are designed to be floor standing and do not require any special floor or wall protection. They must be flued directly to external air using only the flue components provided.

With the standard kit provided (see Fig. 1) the heater must be installed with the centre of the hole through the wall as shown in Fig. 3.

An additional kit is available (optional extra) so that the heater may be fitted with the flue assembly sited as illustrated in Fig. 7 and Fig. 8 either left hand, right hand or above the heater. The maximum extension is 3m from the sides or top of the heater, when flued through a wall 1 metre thick. In addition, two 90° bends may be used.

This appliance must be installed by a competent person in accordance with:-

Gas Safety (Installation and Use) Regulations: 1998.

B.S. 6891: 1988

B.S. 5871: Part 1: 1991

B.S. 5440: Part 1: 1990

B.S. 5440: Part 2: 1989

Local Building Regulations

I.E.E. Wiring Regulations

Health and Safety at work etc. Act: 1984

Any local Gas Region or Local Authority requirements must also be taken into account.

2.0 WARRANTY

Warranty will be invalidated if:-

- a) The internal wiring is modified in any way.
- b) The appliance is not installed and adjusted according to the following instructions or the foregoing requirements.

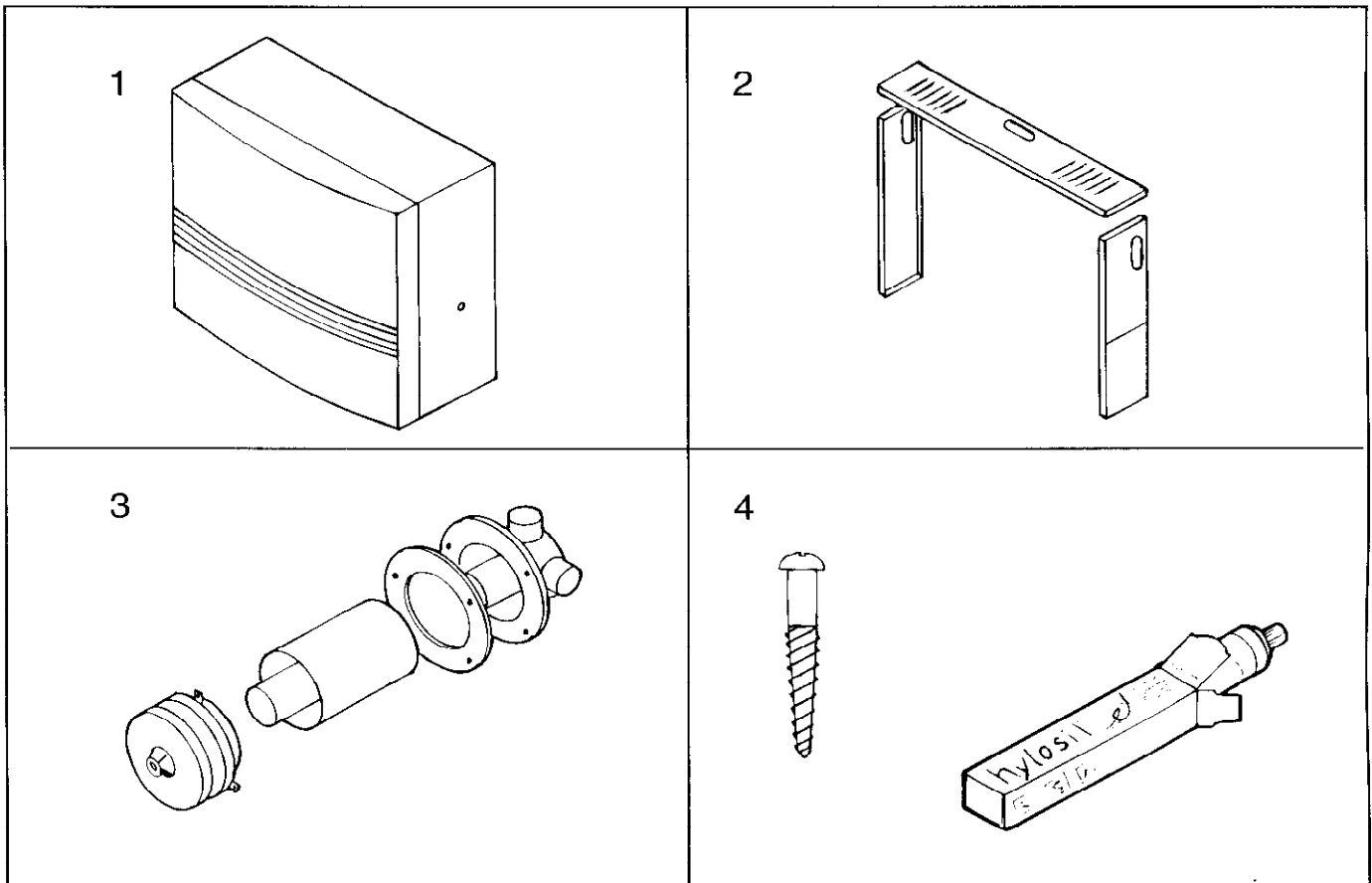


Figure 1

3.0 CONTENTS LIST

The appliance is despatched as an assembled heater unit complete with accessories.

Identify the various components from Fig. 1 and check to ensure that they are complete and undamaged.

1. Heater Unit
2. Top, L.H.S. and R.H.S. infill panels
3. Flue Assembly
4. Pack of Screws/Silicone sealant

4.0 TECHNICAL DATA

(A) Natural Gas

	Kestrel 150	Kestrel 250
Heat Input	5.35 kW (18 250 Btu/h)	8.90kW (30 360 Btu/h)
Heat Output	4.39 kW (15 000 Btu/h)	7.33 kW (25 000 Btu/h)
Injector Dia. (mm)	1.9	2.4
Burner Pressure (mbar)	12.5	13.4
Electrical Supply	230 Volt 50Hz ~	
Electrical Loading (W)	100	120

(B) Propane

	Kestrel 150	Kestrel 250
Heat Input	5.35 kW (18 250 Btu/h)	8.90 kW (30 360 Btu/h)
Heat Output	4.39 kW (15 000 Btu/h)	7.33 kW (25 000 Btu/h)
Injector Dia. (mm)	1.1	1.5
Burner Pressure (mbar)	35	35
Electrical Supply	230 Volt 50Hz ~	
Electrical Loading (W)	100	120

4.1 Propane Heaters

Warning – The propane gas supply to the heater must be regulated to an inlet pressure of 37 mbar. Failure to regulate the pressure may result in damage to the control valve.

5.0 SITING THE HEATER

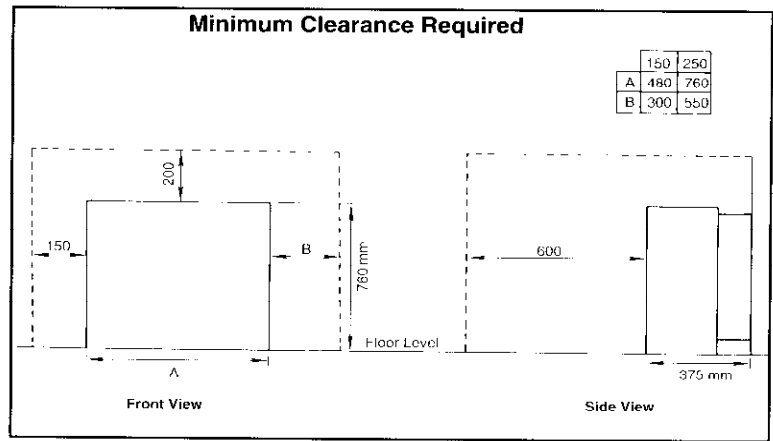


Figure 2

When selecting the site for the heater it is essential to ensure that the flue terminal will also be sited correctly externally (see 6.0 Terminal Position).

- a) Fig. 2 shows the minimum clearances required to gain access to and allow possible removal of components. These clearances are also necessary for the normal operation of the heater.
- b) Generally, the best position for the heater is mid-way along a wall of the room that the heater is to serve. This gives the best circulation effect.
- c) Care must be taken to ensure that no curtains can be hung over, or near the heater, nor any door swung in front of it.

6.0 TERMINAL POSITION

6.1 Siting

- a) The terminal must be positioned such that the products of combustion can disperse freely at all times.
- b) In certain weather conditions the terminal may emit steam and positions where this could cause a nuisance should be avoided.
- c) The base of the terminal must be a minimum of 300mm above the external ground level.
- d) The flue terminal should not be installed in any position that will allow the products of combustion to feed back into adjacent doors or windows. Where the terminal is wholly or partly beneath any opening (that is to say any part of a window capable of being opened, or any ventilator, inlet to a ventilation system or similar openings) ensure that no part of the terminal flue outlet is within 300mm, measured vertically, to the bottom of that opening.
- e) If a terminal is fitted within 850mm of a plastic gutter, an aluminium shield 1.5 metre long should be fitted to the underside of the gutter, immediately above the terminal position.
- f) Where the terminal outlet of the appliance is less than 2m above the level of any ground, balcony, flat roof or space to which any person has access and which adjoins the wall to which the terminal is fitted, the terminal must be protected by a guard of durable material. (Available as an optional extra).

6.2 Balanced Flue Terminal Position Guide

Terminal Position	Recommended Clearance Min.
i) Directly below an openable window or other opening e.g. air brick	300mm
ii) Below guttering (see also note (e) above)	75mm
iii) Below eaves or balconies	200mm
iv) Above adjacent ground or balcony level	300mm
v) From drain or soil pipes	75mm
vi) From a surface facing the terminal	600mm
vii) From a terminal facing the terminal	1200mm
viii) From internal or external corners	300mm

7.0 INSTALLATION (using the standard flue kit Fig 1)

As viewed from front of heater

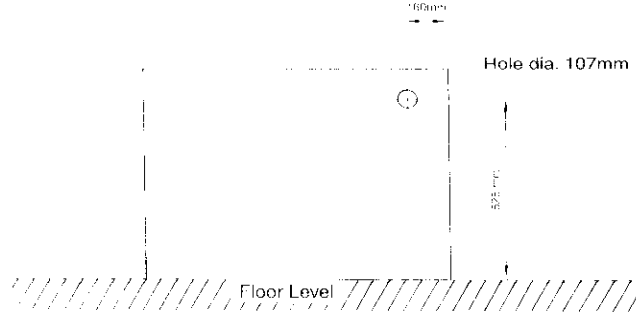


Figure 3

- 7.1 Having chosen the location for the flue assembly and the heater, mark the position for the "hole through the wall" (Fig. 3) on the inner wall face.
- 7.2 Drill a hole 107mm diameter (from inside the building) horizontally right through the wall.
If a core drill is not available, cut a hole as neatly as possible, right through the wall and make good after fitting the flue assembly.
- 7.3 Temporarily fit the air inlet duct to the manifold, then fit the manifold/air inlet duct to the wall. Ensure that the flue connection of the manifold, marked "F", is horizontal and facing the flue outlet, then mark the positions for the three fixing screws.
- 7.4 Remove the manifold/air inlet duct and drill and plug the wall as marked to accept the three screws provided.
- 7.5 Fit the gasket to the manifold as shown in Fig 4, then replace the manifold as in 7.3 and secure with the three screws.
- 7.6 From outside the building, insert the plastic air duct through the hole and locate it into the flue manifold; push the air duct fully into the manifold.
- 7.7 Whilst holding the duct square and level, mark it for correct length, i.e. to finish flush with the outside wall surface when cut.
- 7.8 Remove the air duct and cut it to the marked length; make sure that it is cut square and remove any rough edges.
- 7.9 Apply a bead of silicone sealant to the outside surface of one end of the air duct.
- 7.10 Re-insert the air duct and push the end with the sealant firmly into the manifold.
- 7.11 Insert the stainless steel flue tube through the hole and push it firmly onto the flue spigot on the manifold.

- 7.12 Mark the position of the outside wall surface onto the tube (Fig. 4).

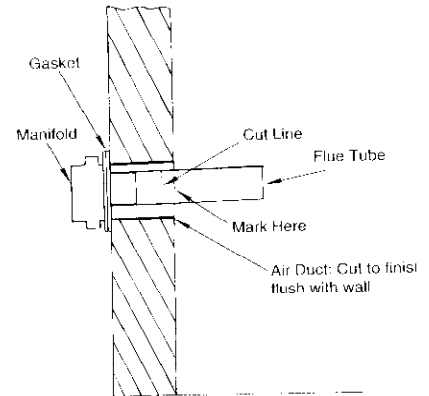


Figure 4

- 7.13 Remove the flue tube and mark a further position 10mm from the previous mark i.e. so that the flue tube will be 10mm short of the outside wall surface when cut.
- 7.14 Cut the flue tube to the correct length. Make sure that it is cut square and remove any rough edges.
- 7.15 Apply a bead of silicone sealant to the inside surface of one end of the flue tube.
- 7.16 Re-insert the flue tube through the hole and push the end with the sealant firmly onto the flue spigot on the manifold.
- 7.17 Place the flue terminal into position, ensuring that the flue and air pipes enter their respective spigots: Mark the position for the three fixing holes and remove the terminal.
- 7.18 Drill and plug the wall in the marked positions to accept the three woodscrews provided.
- 7.19 Apply a bead of silicone sealant to the inside surface of the flue socket and the outside surface of the air spigot on the terminal.
- 7.20 Replace the flue terminal as in 7.17 above and secure it with the three screws provided.

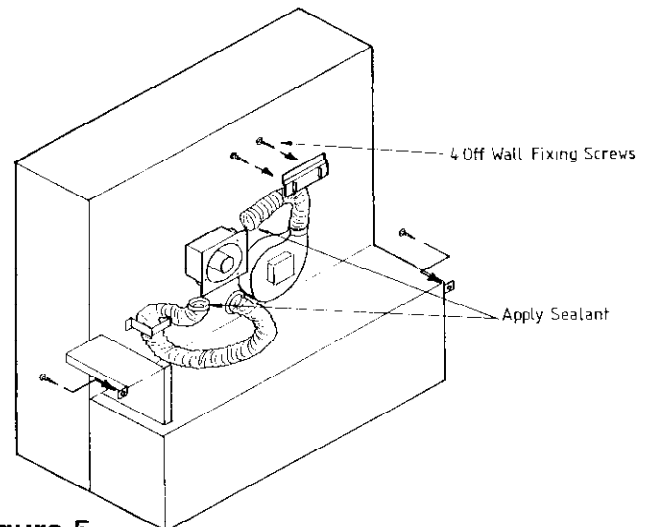


Figure 5

- 7.21 Remove the heater front panel (see 11.1e)
- 7.22 Place the heater into its correct position relative to the hole through the wall (see Fig. 3).
- 7.23 Mark a line on the wall, level with the top infill panel, then remove the three infill panels and the user access door.
- 7.24 Mark the positions for the two lower fixing brackets and remove the heater from the wall.
- 7.25 Hold the upper restraining bracket approximately 2mm below the line marked in 7.23 as shown in Fig. 5 and mark the positions for the two fixing holes.
- 7.26 Drill and plug the wall in the marked positions to accept the four woodscrews provided.
- 7.27 Secure the upper restraining bracket to the wall.
- 7.28 Replace the heater as in 7.22 and secure to the wall via the two lower fixing brackets.
- 7.29 Apply a bead of silicone sealant to the inside surface of the flexible aluminium flue hose and connect the hose to the flue connection of the manifold (marked 'F'). Push the hose firmly onto the flue connection, then tighten the hose clip.
- 7.30 Apply a bead of silicone sealant to the inside surface of the flexible aluminium air inlet hose and connect the hose to the air inlet connection of the manifold. Push the hose firmly onto the air inlet connection, then tighten the hose clip.
- 7.31 If a terminal guard is to be fitted (see 6.1f) it must be positioned centrally over the terminal.

8.0 GAS CONNECTION

The gas connection is Rc $\frac{1}{2}$ (1/2in B.S.P. internal thread).
It is essential that a suitable union isolating tap is fitted to the supply in an accessible position adjacent to the heater.

The installation serving the heater must be in accordance with BS 6891: 1988 (For propane BS 5484 Pt.1).

Upon completion, pressure test the gas installation for soundness.

9.0 ELECTRICAL

IMPORTANT – this appliance must be earthed.

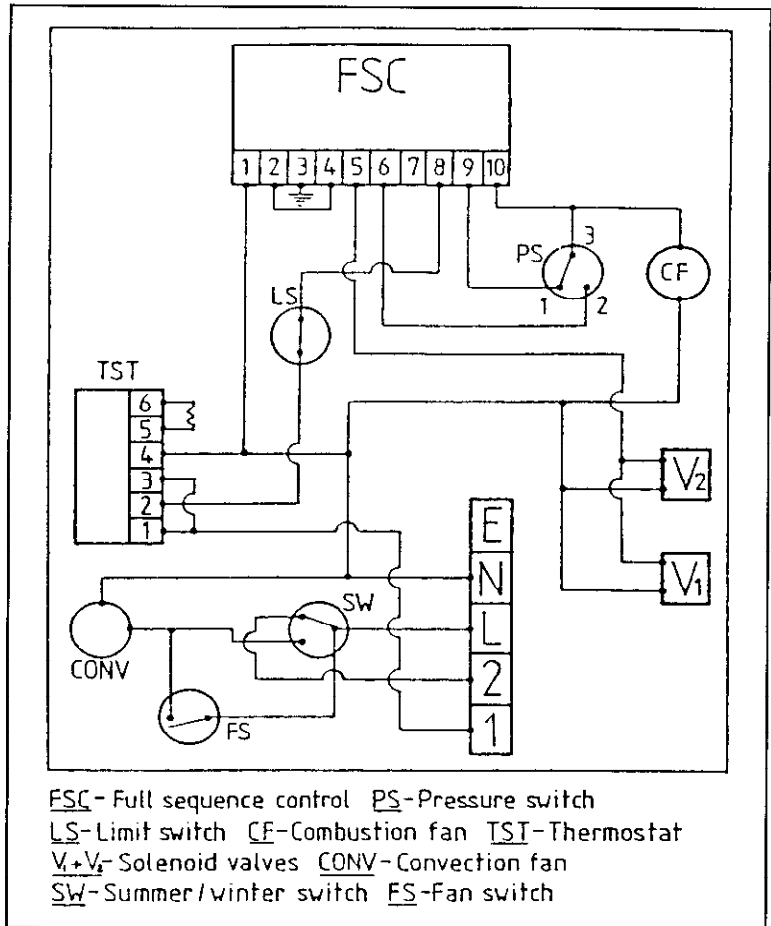
All external wiring to the heater must be in accordance with I.E.E. wiring regulations and any local regulations which apply.

The electrical supply required is:-
230 Volt 50Hz ~ Fused at 3A.

The electrical supply to the heater must not be switched off except when servicing the heater or in an emergency.

If a frost thermostat is to be fitted, this must be wired across terminals L and 1 on the terminal block. The wiring must pass through the cable gland at the inlet to the heater and through the grommet in the bracket below the terminal block, before entering the terminal block.

There must be no excess cable between the terminal block and the cable gland at the inlet to the heater.

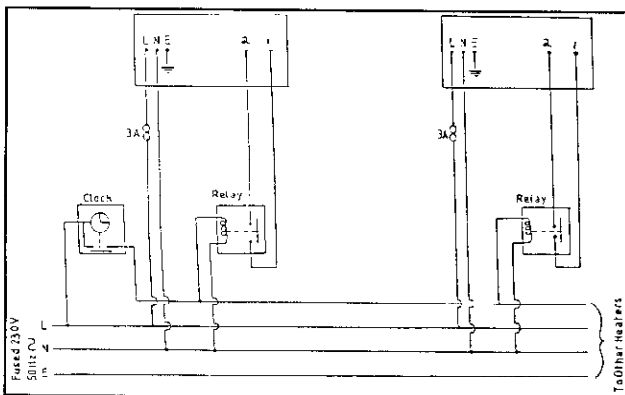


FSC - Full sequence control PS - Pressure switch
LS - Limit switch CF - Combustion fan TST - Thermostat
V₁ + V₂ - Solenoid valves CONV - Convection fan
SW - Summer/winter switch FS - Fan switch

9.1 Controlling the Heater

- a) A terminal block is provided with two terminals, marked 1 and 2, for the connection of an external switching device e.g. time switch. These terminals are linked to allow the heater to be commissioned using a temporary lead. The link must be removed when an external switching device is incorporated.
- b) Do not connect an additional switched live to the heater – terminal 2 is linked, via the summer/winter switch to live for this purpose.
- c) If connecting more than one heater to a single time switch, or other external switching device, relays must be incorporated, as shown in the external wiring diagram, in order to avoid electrical feed back between heaters.
- d) The fan may be operated in the warmer months by setting the summer/winter switch to the SUMMER position. With the switch in this position, the convection fan will operate irrespective of the room thermostat setting.

EXTERNAL WIRING DIAGRAM



10.0 INSTALLATION USING THE ADDITIONAL FLUE FITTING KIT

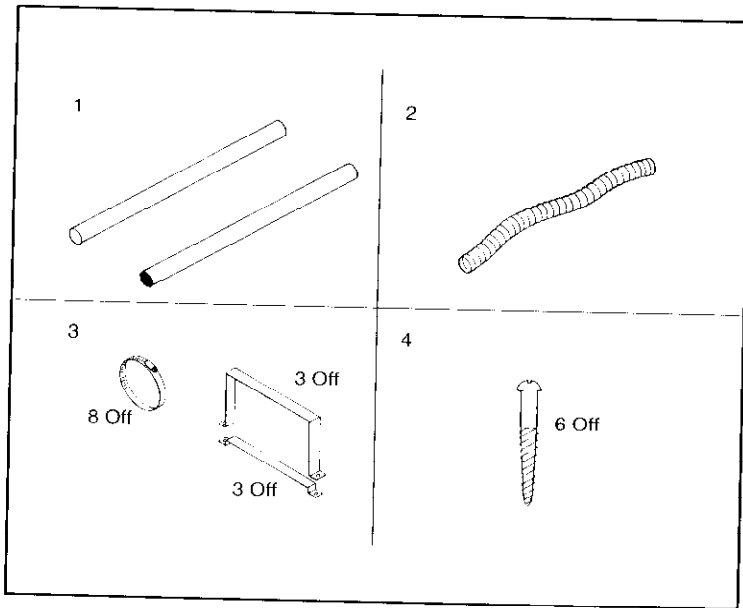


Figure 6

- a) The flue assembly may be positioned to the left, right or above the heater, and also to an adjacent wall (see example in Figs. 7 & 8).
- b) Having chosen the position for the flue assembly, which should be 680mm from floor level to flue centre line, follow instructions 7.1 to 7.20 to complete the fitting of the flue assembly.
- c) Remove the appropriate infill panel from the heater, and replace with the one provided with the additional flue fitting kit.
- d) Fit the heater in the desired position as in 7.21 to 7.28.
- e) Refit the appropriate infill panel(s), and connect the additional flue fitting kit between the heater and the previously fitted flue assembly (see Figs. 7 & 8). Ensure that when connecting any stainless steel pipe into flexible aluminium hose, a bead of silicone sealant is applied to the pipe before insertion, and that the pipe is inserted at least 30mm into the hose before tightening the hose clip. Also ensure that the hose/pipe assembly from the combustion fan is connected to the manifold spigot marked "F".
- f) Protect the flue assembly and additional flue kit with a suitable cover (available as an optional extra).

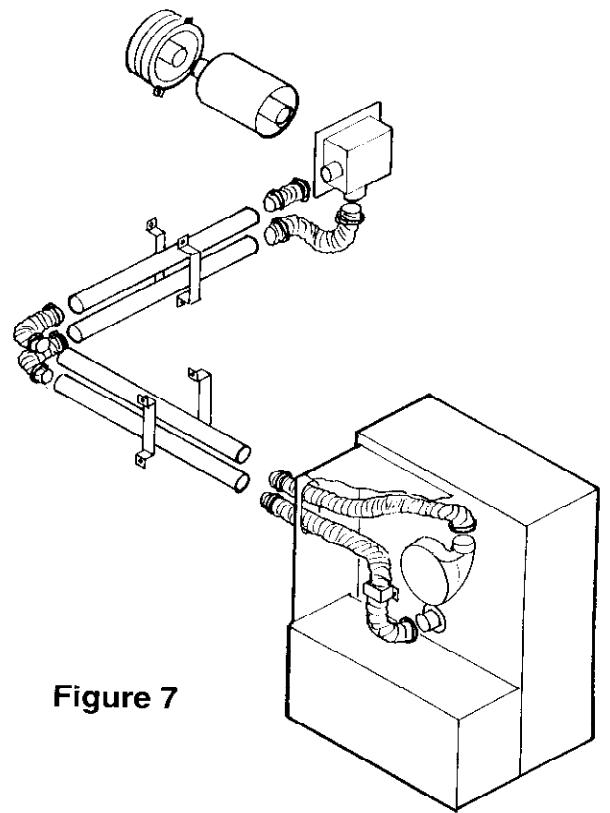


Figure 7

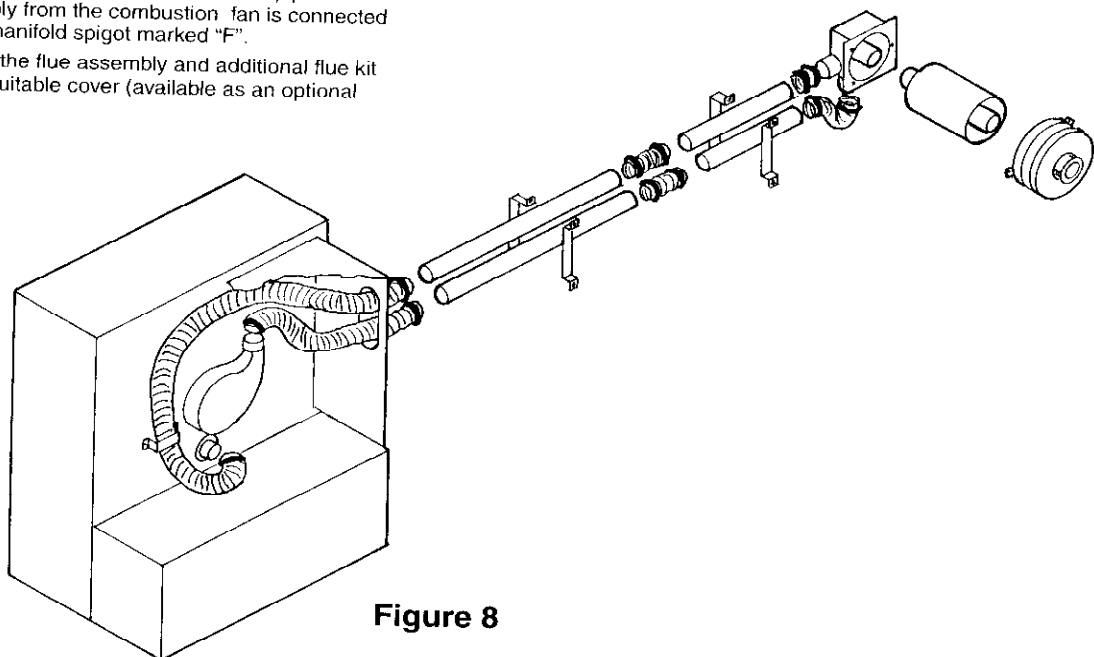


Figure 8

11.0 COMMISSIONING AND TESTING

Note

The convection fan will not operate until the heater has warmed.

11.1 INITIAL LIGHTING

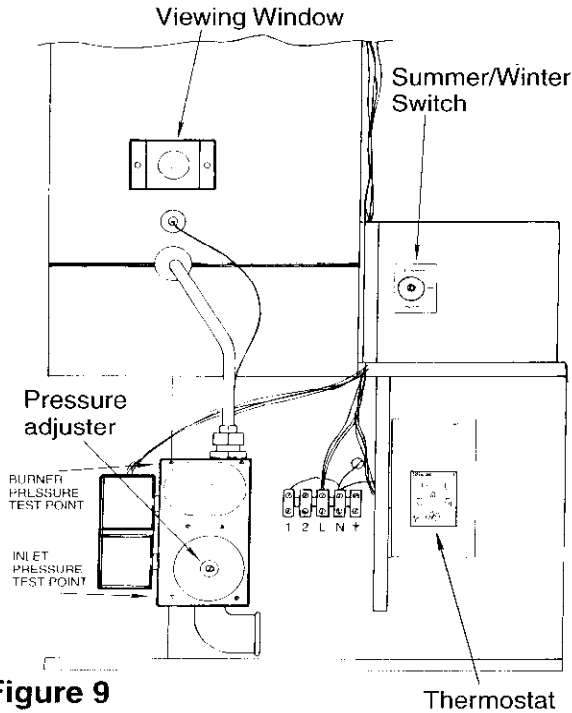


Figure 9

- Ensure that the electrical supply to the heater is switched off.
 - Unlock and remove the thermostat/clock access panel.
 - Turn the thermostat knob to the highest setting and switch the summer/winter switch to winter.
 - Turn on the gas supply and purge any air from the line.
 - Remove the two retaining screws securing the front panel at the lower left and right of the heater. Carefully pull the panel forward at the bottom and lift clear.
 - Remove the burner pressure test point sealing screw from the gas control valve and attach a suitable pressure gauge.
 - Switch on the electrical supply to the heater.
 - Ensure that the clock, or other external switching device, is set to an on period or switched on.
 - The automatic ignition sequence will now commence and the burner should ignite within approximately 10 seconds; this can be verified by looking through the burner viewing window.
- N.B. If the main burner does not ignite during the ignition sequence for any reason, e.g. air in the system, it will be necessary to reset the control unit by switching the electrical supply to the heater off and then on again. This can be achieved by switching the summer/winter switch to the off (centre) position, then back to the winter position.

11.2 Testing and Adjusting

- With the heater operating, test for gas soundness around all internal gas carrying components. Use a suitable soap solution or leak detection fluid.
- Check that the burner pressure is correctly set (see 4.0 Technical Data). If adjustment is necessary, remove the pressure adjuster cover and turn the pressure adjuster (clockwise to decrease). Replace the cover after adjustment.
- Switch off the electrical supply to the heater.
- Remove the pressure gauge and replace the pressure test point sealing screw, ensuring that it is gas tight.

11.3 Setting the Room Thermostat

- Lift the plastic cover to expose the setting dial.
- Turn the large dial so that the desired temperature in degrees celsius is opposite the line above the dial.
- Ensure that the smaller dial at the bottom of the window is set to 1.
- Close the plastic cover.

11.4 Completion

- Replace the heater front panel:-
Hook the top edge of the panel over the turned edge on the heater top panel. Carefully push the front panel towards the heater at the bottom and secure with the two screws.
- Fit the top and side infill panels not fitted during installation using the screws provided. Ensure that the rear of the top infill panel engages behind the upper restraining bracket.
- Carry out a final ignition check and ensure that the burner ignites smoothly.

12.0 USER INSTRUCTIONS

Instruct the user in the operation of the heater and hand over the User Instructions.

Advise the user that for the continued efficient and safe operation of the heater, it is important that annual servicing is carried out.

13.0 SERVICING INSTRUCTIONS

IMPORTANT - ALWAYS ISOLATE THE GAS AND ELECTRICAL SUPPLIES TO THE HEATER BEFORE CARRYING OUT ANY SERVICING.

Upon completion of servicing ensure that:-

- The heater is tested for gas soundness using a suitable soap solution or leak detection fluid.
- The burner pressure is correct (see installation instructions - commissioning and testing).

13.1 General Access for Servicing

Before any servicing can be carried out, the front panel, and in some cases, also the right hand side panel must be removed:

A) To Remove the Front Panel

- Remove the two screws securing the front panel at the lower left and right of the heater
- Lift the panel clear at the top and away from the heater.

B) To Remove the Right Hand Side Panel.

- Remove the front panel as in 13.1A above.
- Remove the screw securing the top front of the panel to the top panel.
- Remove the two screws securing the panel at the bottom; pull the panel out slightly at the bottom and lift clear.

13.2 To Remove the Left Hand Side Panel

- Gain general access as in 13.1A above.
- Remove the screw securing the top front of the panel to the top panel.
- Remove the two screws securing the panel at the bottom; pull the panel out slightly at the bottom and lift clear.

13.3 To Remove the Full Sequence Control Unit

- a) Gain general access as in 13.1A above.
- b) Pull off the connecting block from the unit.
- c) Pull off the igniter cable from the unit.
- d) Remove the two screws securing the unit to the lower inner front panel and remove the unit.

13.4 To Remove the Convection Fan Assembly

- a) Gain general access as in 13.1A and B above.
- b) Remove the two screws securing the full sequence control unit to the fan access panel and carefully place the unit to the right hand side of the heater.
- c) Remove the two screws securing the fan access panel to the heater and remove the panel.
- d) Note their relative positions, then disconnect the black and green/yellow wires from the left hand side of the terminal block near the convection fan and pull off the black wire from the resistor.
- e) While supporting the fan, remove the four screws and shakeproof washers securing the convection fan to the heater.
- f) Carefully pull the convection fan forward and clear and remove it from the heater.

13.5 To Remove the Combustion Fan Assembly.

- a) Remove the two screws securing the top infill panel to the left hand and right hand infill panels and remove the top infill panel.
- b) Pull off the red and blue wires and the earth wire from the combustion fan motor.
- c) Pull off the plastic tube from the steel tube on the combustion fan.
- d) Slacken the hose clip securing the flue outlet hose to the combustion fan and remove the hose.
- e) Remove the three screws securing the combustion fan assembly to the rear of the heater and withdraw the assembly, taking care not to damage the gasket.

REASSEMBLING NOTE

When re-fitting ensure that the fan outlet is facing upward.

13.6 To Remove the Burner

- a) Gain general access as in 13.1A and B above.
- b) Pull off the spark/sensor lead.
- c) Remove the screws securing the panels covering the electrode/probe and burner flange and remove the panels.
- d) Disconnect and remove the burner supply tube.
- e) Remove the four screws securing the burner to the heat exchanger and carefully withdraw the burner, taking care not to damage the gasket.

13.7 To Remove the Electrode/Flame Sensor Probe

- a) Remove the burner as in 13.6 above.
- b) Remove the nut and screw securing the electrode/probe to the burner securing plate and remove the electrode/probe.
- c) When replacing the electrode/probe, set the gap between the lip and the burner to 5mm.

13.8 To Remove the Burner Injector.

- a) Follow steps a) and b) in 13.7 above.
- b) Unscrew and remove the injector holder.
- c) The injector may now be unscrewed from the holder.
- d) When cleaning the injector, do not use a hard sharp object.

13.9 To Remove the Combustion Fan Pressure Switch Assembly.

- a) Gain general access as in 13.1A and B above.

- b) Take note of their relative positions, then pull off the wires and the plastic tubes from the switch.
- c) Remove the two screws securing the pressure switch to the side of the heater and remove the pressure switch.

13.10 To Remove the Gas Control Valve

- a) Gain general access as in 13.1A and B above.
- b) Disconnect and remove the burner supply tube.
- c) Pull off the electrical plug supplying the gas control valve.
- d) Disconnect the union at the inlet to the heater.
- e) Remove the four screws securing the gas control valve mounting bracket to the heater.
- f) Remove the four screws securing the control valve to the bracket and remove the valve.

REASSEMBLING NOTE

When fitting a replacement valve, the fittings at the inlet and outlet must be transferred from the old valve.

13.11 To Remove the Overheat Switch and/or the Fan Switch.

- a) Gain general access as in 13.1A and B above.
- b) Both switches are located at the upper right hand side of the inner right hand panel. The overheat switch is to the left of the fan switch.
- c) Pull off the wires from the appropriate switch.
- d) Remove the two screws securing the appropriate switch and remove the switch.

13.12 To Remove the Thermistor

- a) Gain general access as in 13.1A and B above.
- b) Pull the thermistor sensing head out of its clip (positioned on base of heater at extreme right hand rear).
- c) Disconnect the thermistor from connections 4 and 5 on the thermostat and remove the thermistor.

13.13 To Remove the Thermostat

- a) Remove the thermostat/clock access panel.
- b) Remove the screw securing the thermostat cover and remove the cover.
- c) Release the spring loaded catch securing the thermostat to its fixing rail at the bottom and carefully withdraw the thermostat.
- d) Take note of their relative positions, then remove the wires from the thermostat.

13.14 To Remove the Summer/Winter Switch

- a) Remove the thermostat/clock access panel.
- b) Remove the screw securing the bottom of the upper right hand side infill panel to the heater.
- c) Remove the screw securing the top of the upper infill panel to the top infill panel, lift the top infill panel just sufficient to clear the side infill panel, then remove the side infill panel.
- d) Take note of their relative positions, then pull off the electrical connectors from the rear of the switch.
- e) Unscrew and remove the nut securing the switch to the clock mounting panel and remove the switch.

13.15 To Remove Filter

- a) Unlock and remove the control access panel on right hand side of heater.
- b) Pull out filter.
- c) Ensure filter is clear of dust etc.