

The Space Heater, its gas supply, and flues for the products of combustion **must be** inspected in accordance with national regulations or if these do not exist, the Space Heater manufacturer's recommendations. Whale advises that this **must be** carried out at least annually.



Please note: The Space Heater and Ducts will become hot. Avoid anything directly touching the Space Heater or Ducts.

5. PARTS LIST

The Whale® Space Heater kit contains:

	SH2201 or SC2201	SH2211 or SC2211	SH2202 or SC2202
Space Heater and 4 screws	1		1
Space Heater and 10 screws		1	
Control Panel / Room Thermostat and 4 screws. Not SC models.	1		1
3.5m Control Panel cable (retail only)	1		1
Warranty Registration card	1	1	1
Instruction manual including installation templates	1	1	1
Instruction manual storage pocket, with adhesive fixing strip	1		1

Please note: The Whale® Space Heater requires a separate Flue Kit for installation.

Exhaust Flues are available in lengths of 1.25 metres and 2 metres.

Inlet Flues are available in lengths of 1.25 metres and 2 metres.

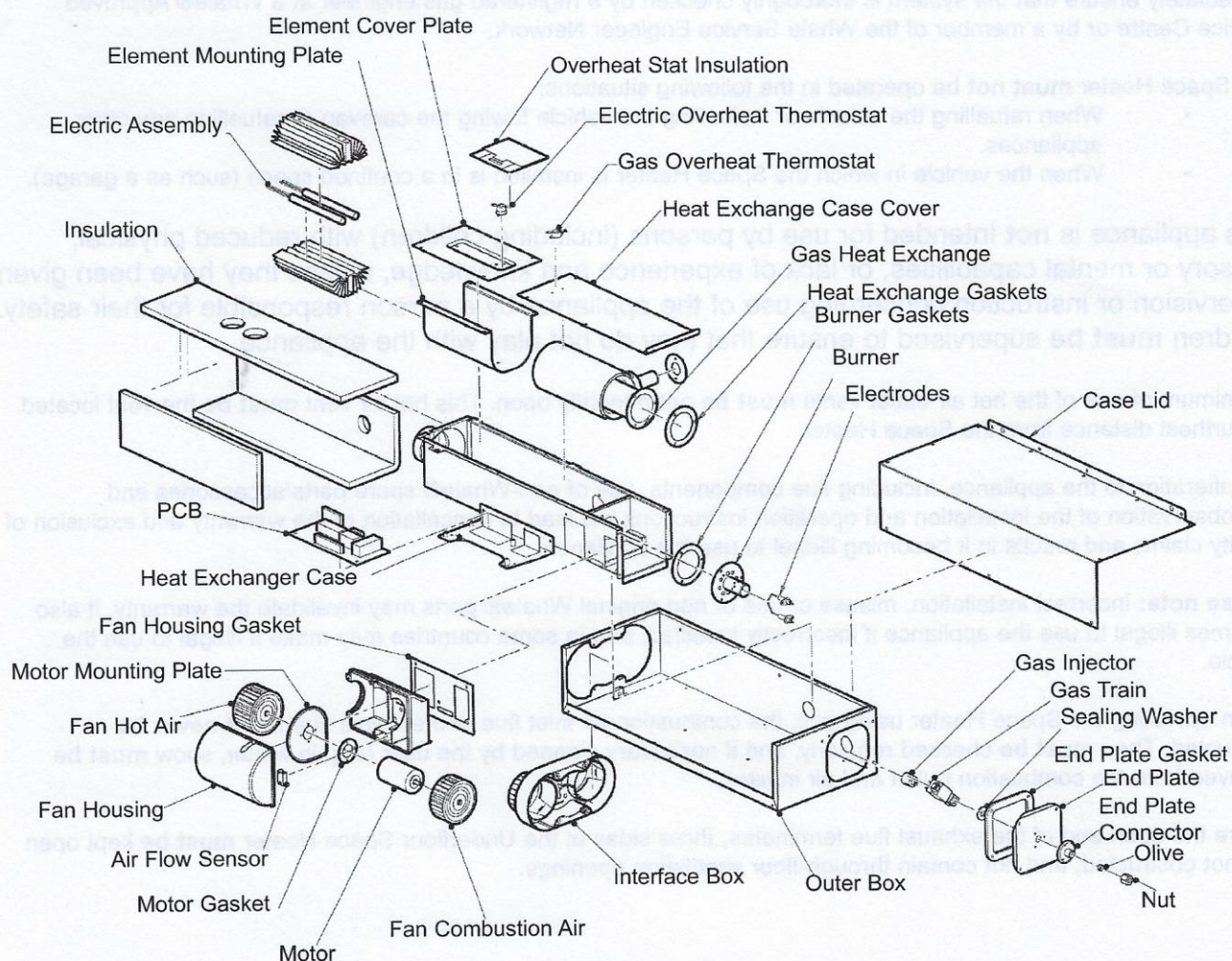


Fig. 1 Components Drawing

6. INSTRUCTIONS FOR INSTALLATION

The Whale® Space Heater can be installed either inside the vehicle, Part Number: SH2201 or SC2201 and SH2202 or SC2202 (as in Fig. 2) or under the floor, Part Number: SH2211 or SC2211 (as in Fig. 3).

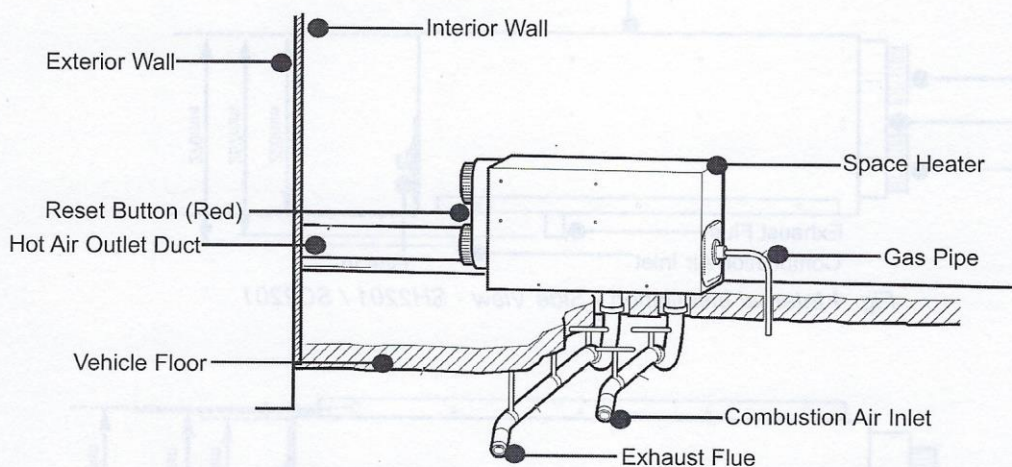


Fig. 2 Internal Installation - SH2201, SC2201, SH2202 or SC2202

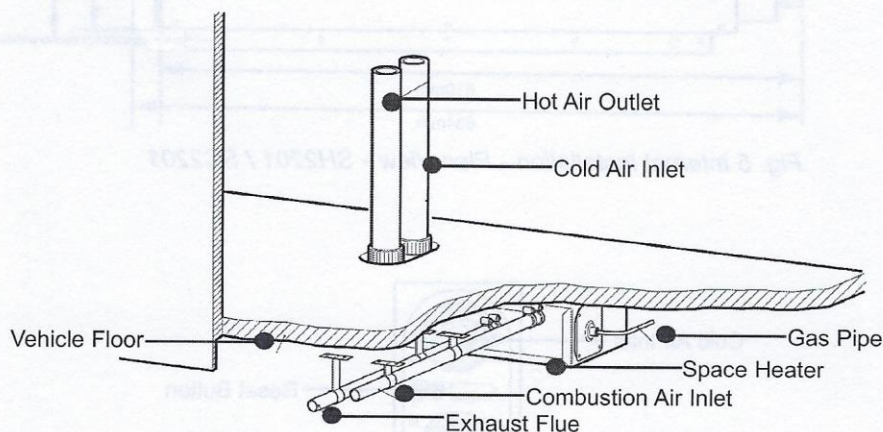


Fig. 3 External Installation - SH2211 or SC2211

To the Fitter:

Installation and servicing of this appliance **must only be** carried out by competent persons registered with the Gas Safe Register (GB) or the relevant national organisation, in accordance with the relevant regulatory and safety requirements.

Before installation, you **must** ensure that the appliance has been supplied in good condition and if damaged **do not** install.

A competent person **must** install the appliance in accordance with the appliance installation instructions. This appliance is for use with LPG (see appliance data plate) and mains electric. Please check that the product is suitable for the intended application. In particular, the installer **must check** the compatibility of the data plate information with the LPG supply requirements of the vehicle.

Follow these installation instructions and ensure that all relevant personnel read the points listed below. Also ensure that these operating instructions are passed on to the end user.

Please note: The appliance **must be** installed in accordance with any relevant regulations in the country where the appliance is installed. For this appliance in Europe, the standard is BS EN 1949:2011 "Specification for the Installation of LPG Systems for Habitation Purposes in Leisure Accommodation Vehicles and in Other Road Vehicles".

Ventilation **must** comply with relevant national and/or local requirements.

Step 1 Find Suitable Location For Space Heater Installation

Consider the following points:

- i. For weight distribution in caravans, position the Space Heater as close to the axle as possible. You **must** avoid locating the Space Heater at the very rear or very front of the vehicle.
- ii. If mounting under the floor, the Space Heater **must be** positioned within the chassis members and close to the axle to help protect the appliance.
- iii. Please note: The Space Heater, ducts and flues will become hot. Avoid anything directly touching these.
- iv. Ensure that the position of the Space Heater allows access for servicing and that there is a minimum of 25mm distance around the Space Heater to adjacent walls.
- v. The hot air outlet of the Space Heater **must be** fitted to the hot air ducting system. The Space Heater **must be** positioned to minimise the amount of ducting required. Sharp bends in the ducting **must be** avoided.
- vi. In selecting the position of the Space Heater, ensure that the exhaust flue and combustion air inlet flue can be installed avoiding all chassis members and gas pipes etc. that are located underneath the floor. For SH2202 and SH2201, use flue template supplied.
- vii. The open end of the exhaust flue **must not be** fitted at the side of the caravan / motorhome where an awning may be fitted. It is recommended that the Space Heater is installed on the opposite side of the caravan / motorhome to avoid routing the exhaust flue to the far side of the caravan/motorhome.
- viii. Only Whale® supplied flue components are permitted to be used. The open end of either flue **must not be** positioned within 500mm of a refuelling point or fuel tank breather outlet or any ventilator from the fuel system(s). The exhaust flue **must not be** fitted within 300mm of a ventilator for the living space or an opening part of a window. The open end of the exhaust flue **must be** positioned at least 500mm from the open end of the combustion air intake flue and be pointing in the same direction. The exhaust flue **must be** positioned at the side or end of the caravan / motorhome. The exhaust flue **must only be** positioned vertically below an opening part of a window if the appliance is fitted with an automatic shut-off device to prevent operation when the window is open.

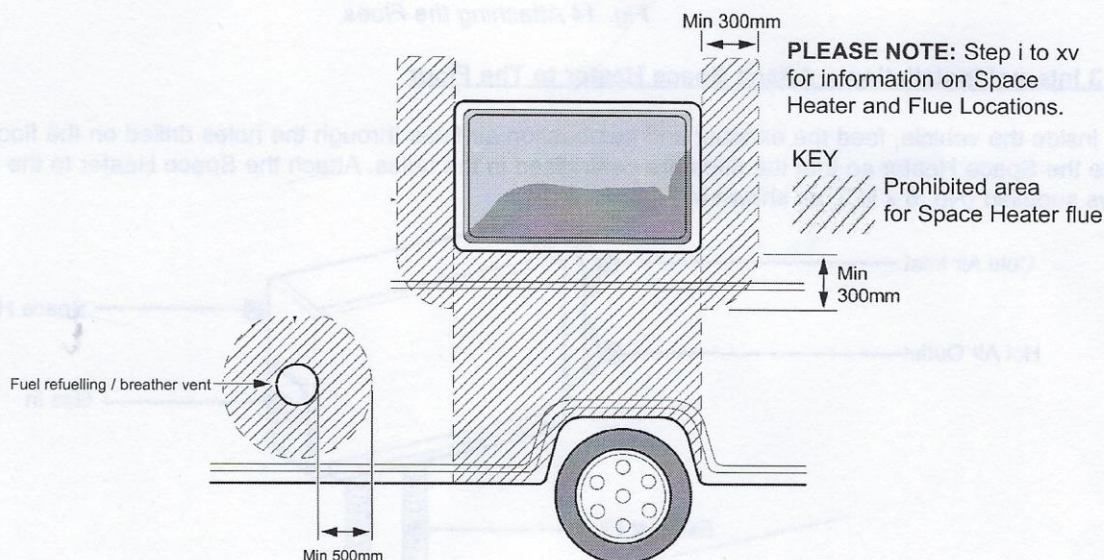


Fig. 13 Flue Locating Diagram

- ix. The combustion air inlet flue can be terminated underneath the vehicle. The open end of it **must be** at least 500mm away from the open end of the exhaust flue, and pointing in the same direction. Care **must be** taken to ensure that both flues have a slight downward slope from as close to the Space Heater as possible to prevent any possibility of water traps. Ensure that neither the exhaust nor the combustion air inlet flues are terminated in an underfloor box section.
- x. The minimum length of the exhaust flue is 1.25 metres, and the maximum length is 2 metres. The minimum length of the combustion air inlet flue inlet must be 1.25 metres, and the maximum length is 2 metres.
- xi. When operating the Space Heater using gas, the combustion air inlet flue and outlet openings for the products of combustion (exhaust flue) **must never be** obstructed. They **must be** checked regularly, and if necessary cleaned by the user (e.g. in winter, snow **must be** removed from the

- combustion flue outlet and combustion air inlet flue).
- xii. Where the open end of the exhaust flue terminates, three sides of the underfloor space **must be** kept open and not obstructed, and **must not** contain through-floor ventilation openings.
- xiii. The Space Heater, its gas supply, ducting and flues **must be** inspected in accordance with national regulations or if these do not exist, the Space Heater manufacturer's recommendations. Whale advises that this **must be** carried out at least every year.
- xiv. The Space Heater **must not** be used when the vehicle is in motion (unless a vehicle in motion kit is fitted - see Appendix).
- xv. The user **must** have access to the reset button, if applicable.

If installing under the floor of the vehicle, please skip Steps 2 and 3.

Step 2 Internal Installation - Cut Out Holes for Exhaust and Combustion Air Flues

Position the Flue Template on the floor where the Space Heater is to be mounted. Mark the position of the two holes for the combustion air inlet and exhaust flues, then drill holes with a 51mm (2") minimum diameter hole saw. Push on the ends of the flues with the blue adaptor to the pipes on the underside of the Space Heater ensuring that they are fully pushed on, and secure with the supplied hose clips.

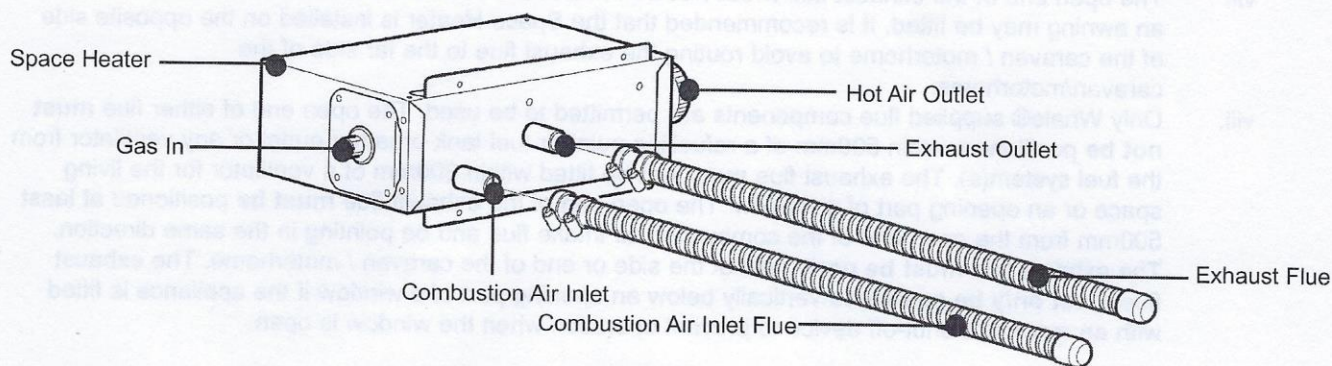


Fig. 14 Attaching the Flues

Step 3 Internal Installation - Attach Space Heater to The Floor

From inside the vehicle, feed the exhaust and combustion air flues through the holes drilled on the floor. Locate the Space Heater so that the flues are centralised in the holes. Attach the Space Heater to the floor with 4 screws supplied (No. 8 x 3/4"), as shown in Figs. 15 & 16.

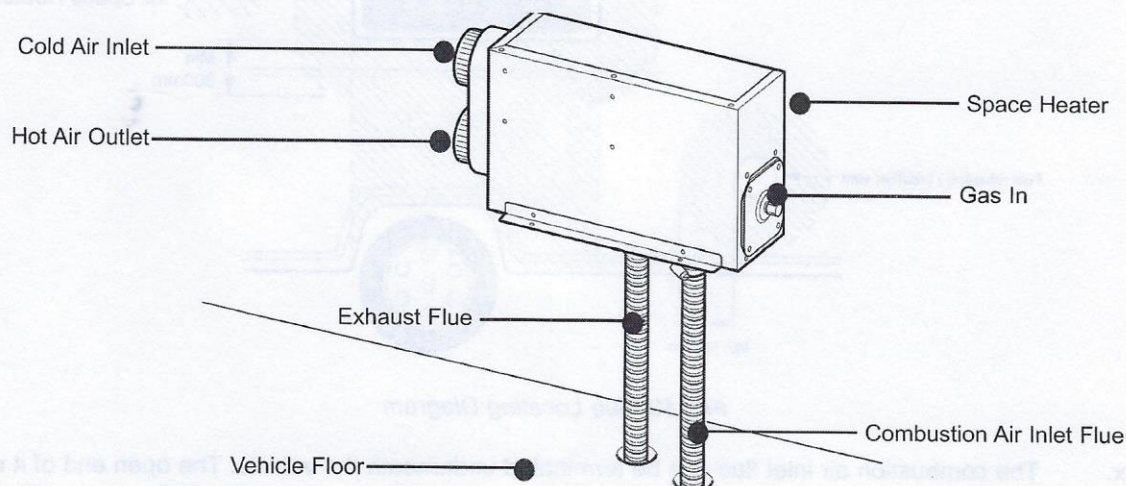


Fig. 15 Locating the Space Heater

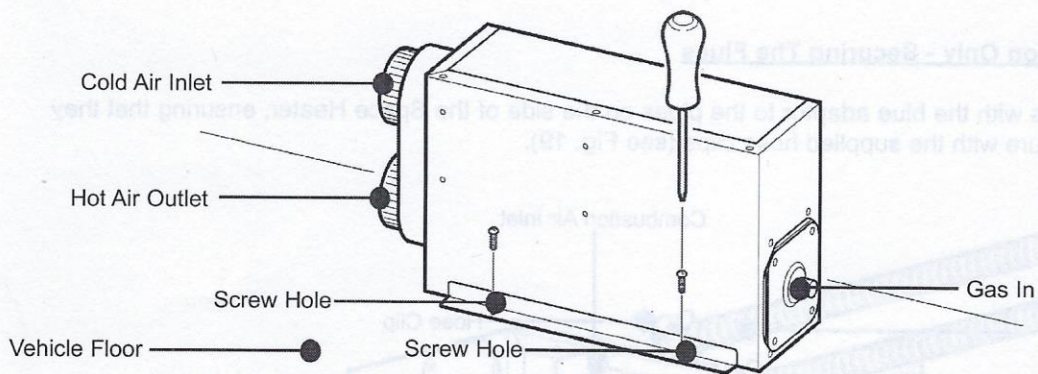


Fig. 16 Installation and Securing the Space Heater

For internal installation, please proceed to Step 6.

Step 4 Underfloor Installation - Underfloor Heater Location

For underfloor installation, the floor of the vehicle **must be** manufactured as per Fig. 18. Wooden batons **must be** incorporated in the floor's construction to secure the screws into.

Locate the Space Heater in position so that the screws will enter the wooden batons, and attach the Space Heater with the 10 screws (No. 8 x 5/8") provided.

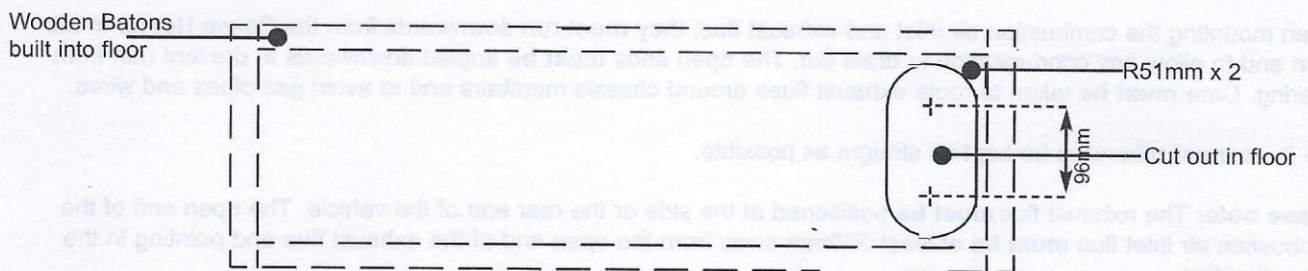


Fig. 17 Securing the Space Heater (Plan View)

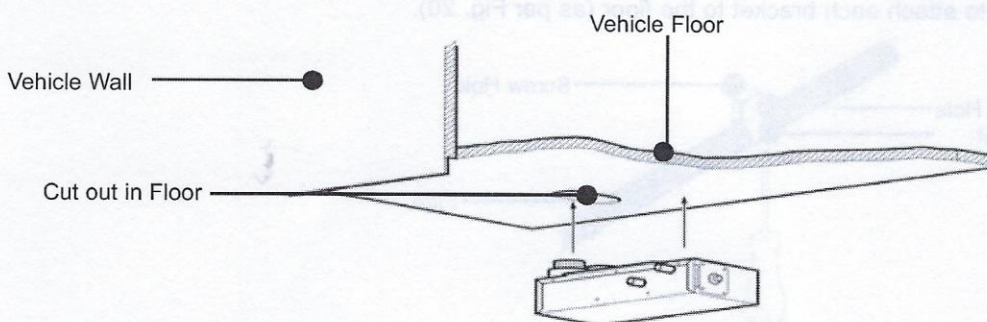


Fig. 18 Attaching the Underfloor Space Heater

Step 5 Underfloor Installation Only - Securing The Flues

Push on the ends of the flues with the blue adaptor to the pipes on the side of the Space Heater, ensuring that they are fully pushed on, and secure with the supplied hose clips (see Fig. 19).

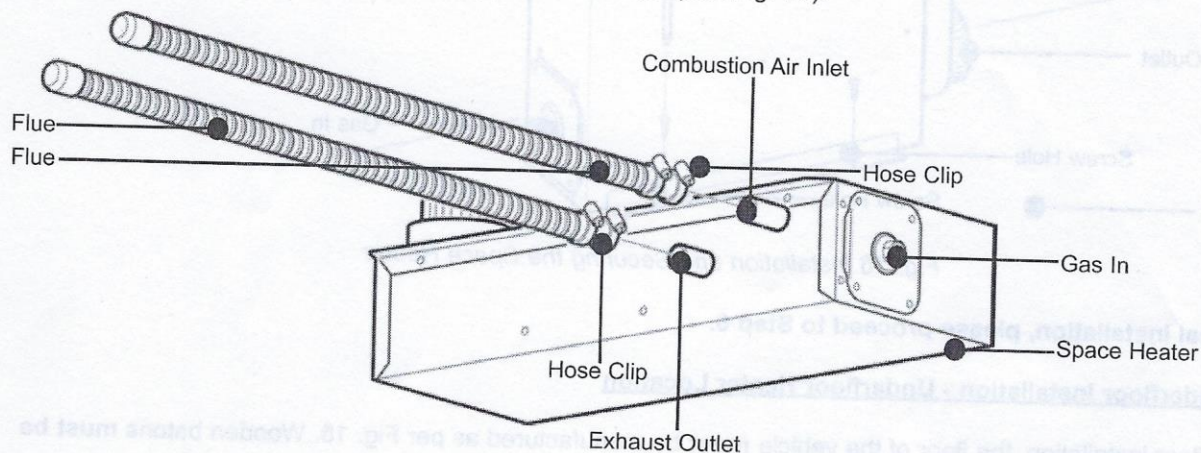


Fig. 19 Attaching the Flues

Step 6 Internal and Underfloor Installation - Mounting The Flues

When mounting the combustion air inlet and exhaust flue, they **must** run downwards from the Space Heater to the open end to allow any condensation to drain out. The open ends **must be** angled downwards to prevent rain from entering. Care **must be** taken to route exhaust flues around chassis members and to avoid gas pipes and wires.

The flues **must** otherwise be kept as straight as possible.

Please note: The exhaust flue **must be** positioned at the side or the rear end of the vehicle. The open end of the combustion air inlet flue **must be** at least 500mm away from the open end of the exhaust flue and pointing in the same direction.

The combustion air inlet flue is attached to the underside of the floor with two of the brackets (supplied). The remaining two brackets (supplied) are used to attach to the exhaust flue. Clip the bracket around the flue and use the two screws (No.8 x $\frac{3}{4}$ ") to attach each bracket to the floor (as per Fig. 20).

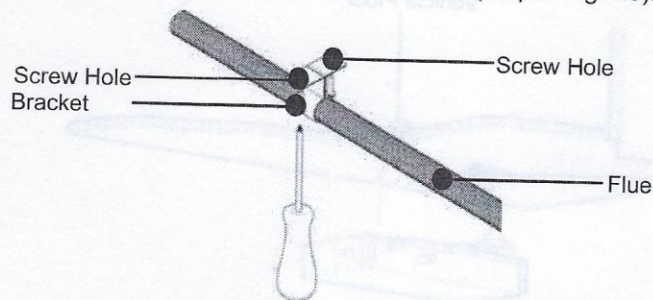


Fig. 20 Securing the Flue Brackets

Step 7 Internal and Underfloor Installation - Connect to Gas Supply

The appliance **must be** installed by a competent person in accordance with the installation instructions and comply with any relevant regulations in the country where the appliance is installed.

The Space Heater is supplied with a compression nut and olive for 8mm ($\frac{5}{16}$ ") pipe. The supply pipe **must be** checked and **must be** free from dirt or other particles before connecting to the compression joint on the Space Heater. The supply pipe **must be** routed so that the appliance can be removed for servicing.

A gas shut off valve **must be** located in the vicinity of the Space Heater and all connections **must be** kept to a minimum.

A Gas Pressure Test Point **must be** fitted to the inlet of the appliance.

When the gas line is complete, all joints **must be** tested for leaks using Leak Detection Solution.

N.B. Never with a naked flame.

The gas pressure **must be** verified at the pressure test point.

Please note: The operating pressure for the gas supply **must be** either 28-30mBar Butane or 30mBar-37mBar Propane.

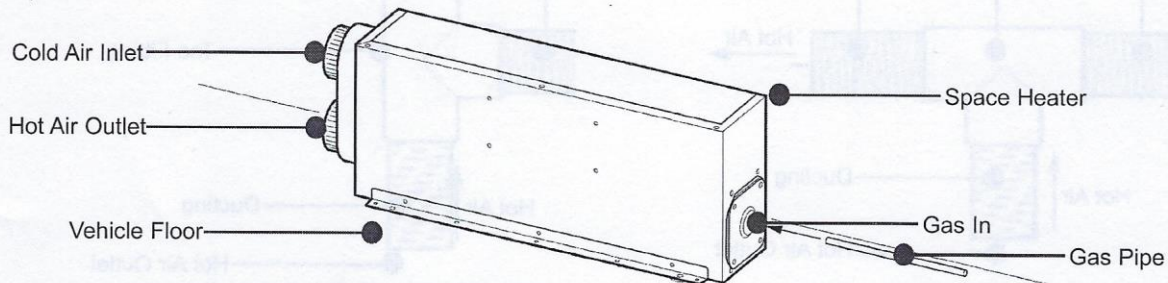


Fig. 21 Internal Installation - Connect to Gas Supply

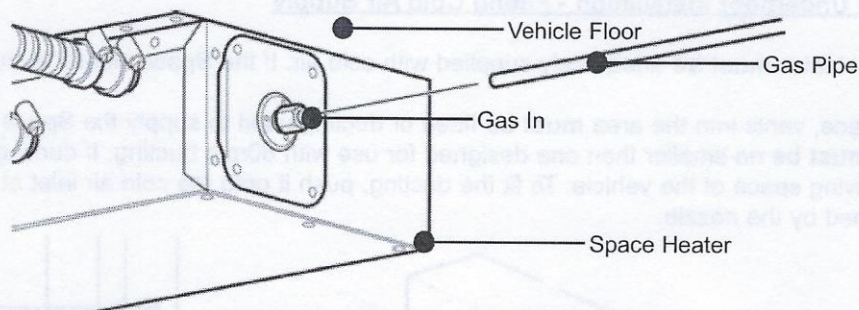


Fig. 22 Underfloor Installation - Connect to Gas Supply

Step 8 Internal and Underfloor Installation - Fitting Hot Air Ducts

To fit the ducting, push it onto the 'hot air outlet', where it will be gripped by the nozzle.

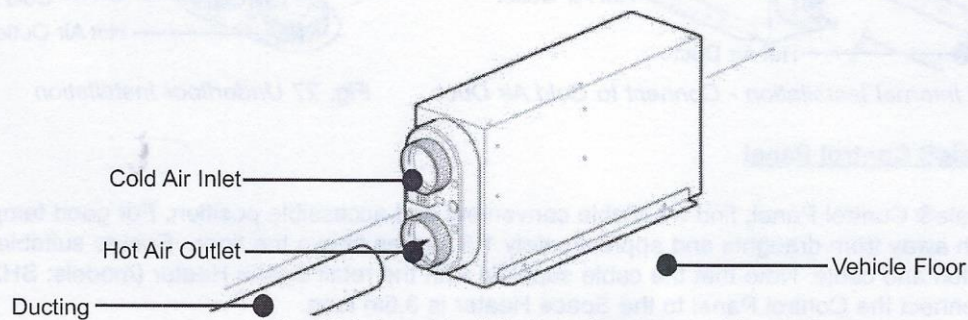


Fig. 23 Internal Installation - Connect to Hot Air Duct

If fitting the Space Heater underfloor, fit the air duct into the hot air outlet on the Space Heater as shown in Fig. 24.

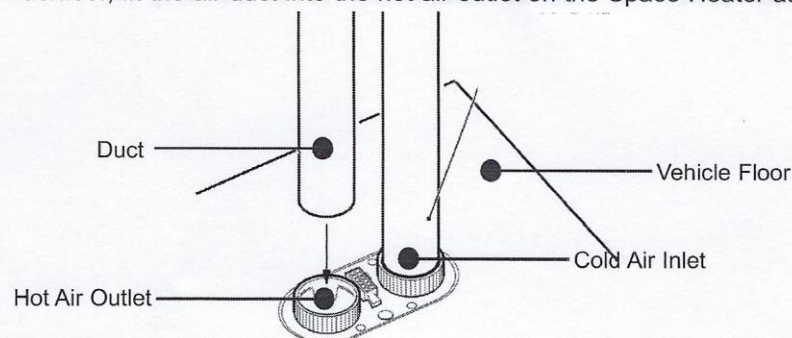


Fig. 24 Underfloor Installation - Connect to Hot Air Duct

Important: At least one hot air outlet vent **must be** permanently open. The hot air duct **must not** be fed into the centre branch of a T fitting (see Fig. 25).

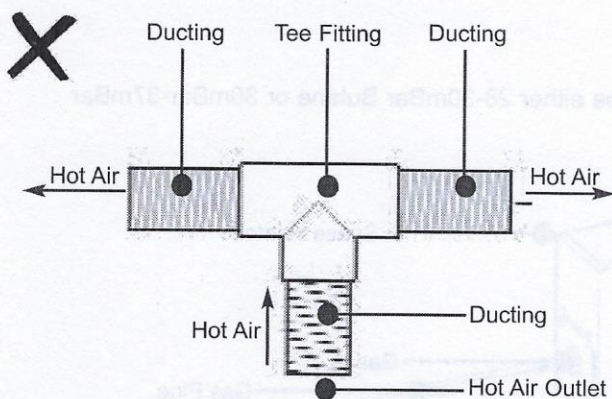


Fig. 25a Incorrect Tee Fitting Orientation

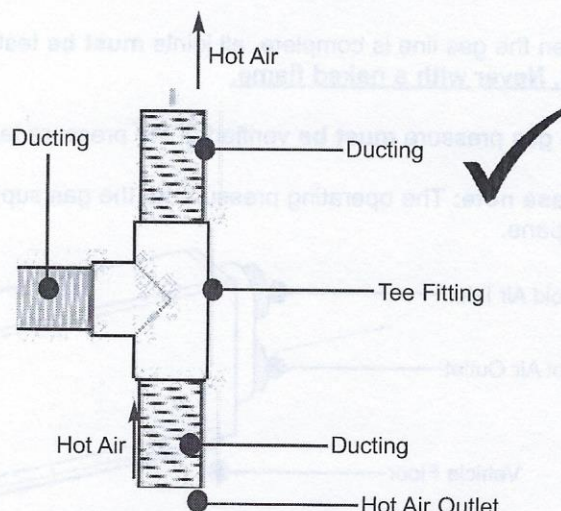


Fig. 25b Correct Tee Fitting Orientation

Step 9 Internal and Underfloor Installation - Fitting Cold Air Supply

The Whale® Space Heater **must be** adequately supplied with cold air. If the Space Heater is installed in a bed box or another confined space, vents into the area **must be** fitted or ducting used to supply the Space Heater with cold air. If a vent is fitted, it **must be** no smaller than one designed for use with 60mm ducting. If ducting is fitted, it **must** supply air from the living space of the vehicle. To fit the ducting, push it onto the cold air inlet at the Space Heater where it will be gripped by the nozzle.

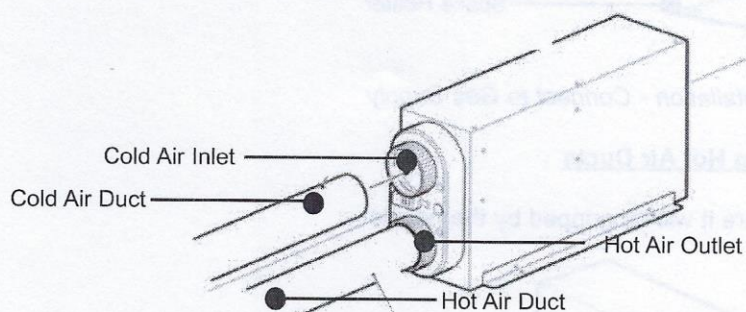


Fig. 26 Internal Installation - Connect to Cold Air Duct

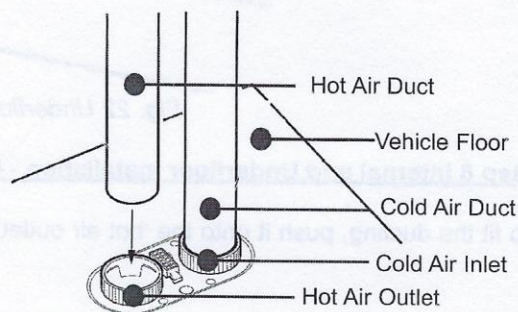


Fig. 27 Underfloor Installation

Step 10 Installing Whale® Control Panel

When installing the Whale® Control Panel, find a suitable convenient and accessible position. For good temperature control, select a position away from draughts and approximately 1.5 metres above the floor. Ensure suitable access for wiring loom connection and cable. Note that the cable supplied with the retail Space Heater (models: SH2201, SH2202, SH2211) to connect the Control Panel to the Space Heater is 3.5m long.

The minimum depth behind panel for wiring **must be** 40mm. If using a Control Panel specific to the manufacturer of the vehicle, the electrical connections **must be** made in accordance with Step 11.

- Option 1 - Installing Whale Space Heater Control Panel
- Option 2 - Installing Whale Duo Control Panel
- Option 3 - Installing Whale iVan Control Panel
- Option 4 - Installing Vehicle Manufacturer Control Panel

Option 1 - Installing Whale Space Heater Control Panel

The Whale Space Heater Control Panel requires a cut out 95mm wide x 42mm high. Feed the wires through the cut out in the wall and locate into desired position. Secure with 4 screws (No.4 x $\frac{3}{8}$ ") provided, then clip on the surround frame.

In some instances, it may be necessary to make the wiring connections in Step 9, before securing the Control Panel to the wall.

Please note: It may be possible to retrofit the Whale® Control Panel into existing frames.

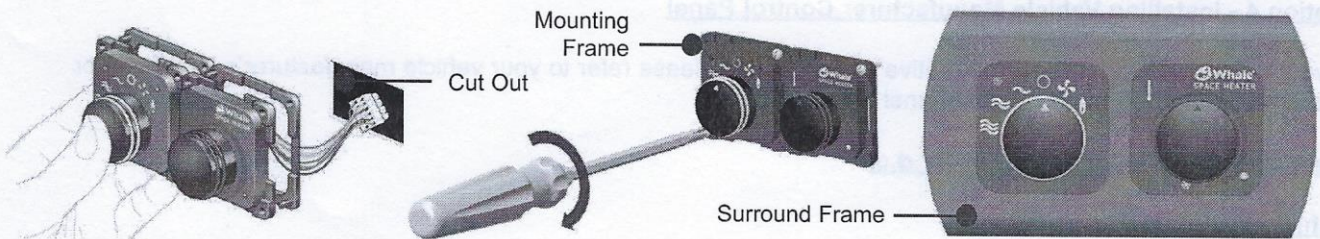


Fig. 28 Insert Control Panel

Fig. 29 Secure Control Panel

Fig. 30 Installed Control Panel

Option 2 - Installing Whale Duo Control Panel

The Whale Duo Control Panel requires a cut out 118mm wide x 64mm high. Feed the wires through the cut out in the wall and locate into desired position. Secure with 2 screws (No.4 x $\frac{3}{8}$ ") provided, then clip on the Surround Frame.

In some instances, it may be necessary to make the wiring connections in Step 9 before securing the Whale Duo Control Panel to the wall.

Option 3 - Installing Whale iVan Control Panel

When installing the Whale iVan® Control Panel, find a suitable convenient and accessible position.

For good temperature control, select a central position away from draughts, direct sunlight and approximately 1.5 metres above the floor. Ensure suitable access for connecting to the 12V d.c. supply. The minimum panel cut out depth for the controller and wiring **must be** 15mm.

- i. Position the supplied cutting template in the chosen location and temporarily secure with low tack adhesive. Using a suitable 10mm drill bit, drill through the template and the panelling behind, in the four corners marked on the template. Then cut out the rectangular shape by cutting along the dotted lines. Finally, drill the 4 screw holes with a 2mm drill bit. Discard the remains of the cutting template.
- ii. Feed the wires through the newly cut hole, and position the controller so that the screw holes line up with those that have been drilled. Secure in place with the 4 small screws supplied (No.6 x $\frac{5}{8}$ " pan head screws).
- iii. Connect the positive and negative wires from the back of the controller into the vehicle's electrical system through a 1 Amp automotive fuse.

Please Note: The manufacturer cannot be held responsible for claims arising from incorrect installation, unauthorised modification or misuse of this product.

Reconnect / turn on the power supply. The Control Panel should turn on. You will be asked to set the time.

To Set the Time:

- Press and hold the Home Button to enter the 'Setup and Options' screen
- Touch 'Set Clock'
- Adjust the time with the + and - keys, and select to adjust hours or minutes with the left and right arrows.
- Press the 'Home' button to return to the 'Home' screen.

Connecting iVan® to the Heaters:

Turn on the Water Heater, Space Heater and Control Panel at the **same time** by using the master switch in the vehicle. When the Water Heater, Space Heater and Control Panel are switched on (it is important that they turn on at the same time), within a few seconds **"A Water Heater has been found"** and **"A Space Heater has been found"** message will appear on the screen. Press **OK** both times and the Water and Space Heater will be paired to the Control Panel.

Option 4 - Installing Vehicle Manufacturer Control Panel

If your vehicle is fitted with an alternative control panel, please refer to your vehicle manufacturer's handbook or instructions supplied by the control panel manufacturer.

Step 11 Electrical Connections 12V d.c.

Vehicle Manufacturer Installation

WARNING: Always disconnect the appliance from the power supply prior to working on electrical components. The Space Heater and both the Whale Space Heater Control Panel and the Whale Duo Control Panel come complete with electrical connectors fitted.

The Whale® Space Heater and Control Panels are designed to be integrated into the caravan's wiring loom. The Space Heater is provided with a JST VL series 12 way socket, and the Control Panel with JST VL 6 and 3 way sockets. 9 wires are required to connect the Space Heater to the Control Panel, and 12V d.c. and 0V d.c. power supply **must be** connected to the 12 way socket at the Space Heater.

Please note: Whale recommends that a 5 amp automotive fuse is fitted in the 12V d.c. supply. It may be possible to retrofit the Whale® Control Panel into existing frames.

Step 12 Electrical Connections 12V d.c.

Vehicle Manufacturer Installation - Part Number: SH2211 or SC2211



WARNING: Always disconnect the appliance from the power supply prior to working on electrical components. The Space Heater and Control Panel come complete with electrical connectors fitted. The Whale® Space Heater and Control Panel are designed to be integrated into the caravan's wiring loom. The Space Heater is provided with a JST VL series 12 way socket, and the Control Panel with JST VL 6 and 3 way sockets. 9 wires are required to connect the Space Heater to the Control Panel. The 12V d.c. power supply (red wire) and 0V d.c. power supply (white wire) are to be connected to the 12 way socket at the Space Heater (as shown in Table 1 and 2). **Please note:** Whale recommends that a 5 amp automotive fuse is fitted in the 12V d.c. supply.

Table 1: Connections at Space Heater

Terminal Number	Description	Wire Colour
1	Switch common	Brown
2	0V to Switch panel	Black
3	Fan Switch	Yellow
4	Electric 1 Switch	Green
5	Electric 2 Switch	Grey
6	Electric 3 Switch	Pink
7	Burner Switch	Blue
8	Burner LED	Orange
9	Lockout LED	Violet
10	12V supply	Red
11	0V supply	White

Table 2: Connections at Control Panel

Connector	Terminal Number	Description	Wire Colour
6 Way connector	1	Switch common	Brown
	2	Burner Switch	Blue
	3	Fan Switch	Yellow
	4	0V to Switch panel	Black
	5	Burner LED	Orange
	6	Lockout LED	Violet
3 Way connector	1	Electric 1 Switch	Green
	2	Electric 2 Switch	Grey
	3	Electric 3 Switch	Pink

Retail Installation - Part Number: SH2201 or SH2202

The Space Heater and Control Panel come with electrical connectors fitted.

Step 1

Connect the 12 way electrical connector with the unattached red and white leads to the 12 way connector on the Space Heater.

Step 2

Route the wire to the Control Panel and connect the 6 way electrical connector to the 6 way connector on the Space Heater.

Step 3

Route the 3 way electrical connector to the 3 way connector at the Control Panel.

Step 4

Secure the wire close to the Control Panel ensuring that there is no strain on the wires at the switches.

Step 5

Connect the free red lead coming from the 12 way connector to a 12V d.c. supply.
Connect the free white lead to the caravan 0V d.c. supply.

Please note: Whale recommends that a 5 amp automotive fuse is fitted in the 12V d.c. supply.

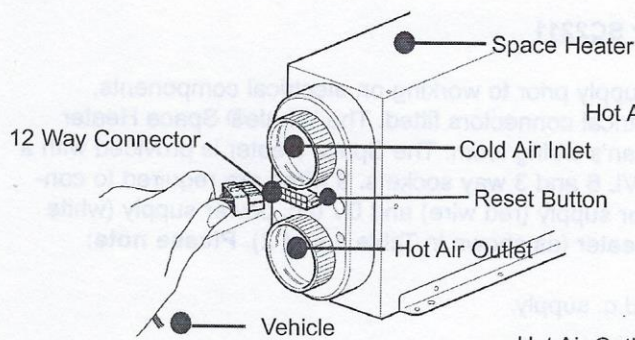


Fig. 31 Internal Installation - Connect 12V d.c.

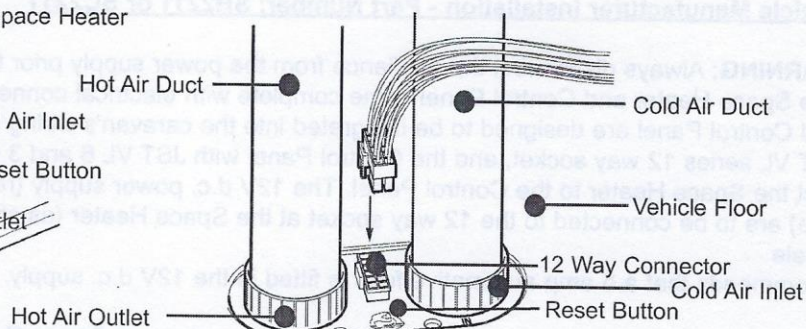


Fig. 32 Underfloor Installation - Connect 12V d.c.

Step 13 Electrical Connection 230V

The appliance **must be** installed in accordance with the installation instructions and comply with any relevant regulations in the country where the appliance is installed. Electrical installation **must be** carried out by a suitably qualified electrician. The electrical supply **must be** connected to a 13 amp fused spur provided with an all-pole disconnection and the appliance **must be** earthed.

Vehicle Manufacturer Installation

The mains supply cable is supplied with a JST LP series socket (terminal pins are JST slm-61T-2.0) and **must be** mounted in a housing with strain relief to prevent accidental disconnection and prevent access to the connector.

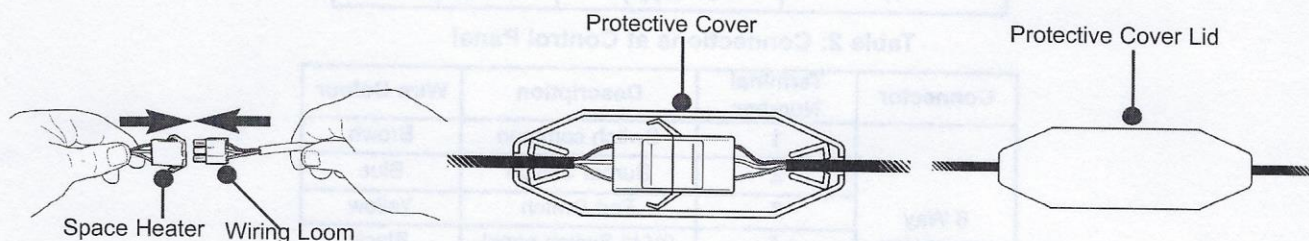


Fig. 33 Mains Electrical Connection

Retail Installation



The Whale® Space Heater comes fitted with a 3 pin plug. The socket **must be** mounted vertically and away from potential exposure to water. If installation of an electrical socket is required, this **must be** carried out by a competent person. The plug is fitted with a 10 amp fuse.

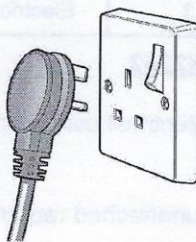


Fig. 34 Mains Connection

Please note: If the supply cable is damaged, it **must be** replaced by the caravan/motorhome/cable manufacturer or a Whale® Approved Service Centre or Technician.

Warning: The appliance **must not** be supplied through an external switching device, such as a timer or a circuit that is regularly switched. This is to avoid an inadvertent resetting of the thermal cut out.

N.B. Ensure that the Space Heater is not located immediately below the electrical supply socket.