

**INSTALLATION AND OPERATION MANUAL**

Thank you for purchasing this Whale® product.

For over 70 years Whale® has led the way in the design and manufacturer of water and waste systems including:- plumbing, faucets, showers, pumps and heating for mobile applications. Today's range features space and water heaters for caravans and motorhomes. The company and its products have built a reputation for quality, reliability and innovation backed up by excellent customer service.



For information on our full product range visit: [www.whalepumps.com](http://www.whalepumps.com)



**CONTENTS**

1.	Principles of Operation
2.	Specification
3.	Application
4.	Warnings
5.	Parts List
6.	Instructions for Installation
7.	Instructions for Use
8.	Maintenance
9.	Trouble Shooting
10.	Winterising
11.	Service Support Details
12.	EU Declaration of Conformity
13.	Patents and Trademarks
14.	Warranty
15.	Appendix - Identifying Flue Type

**LIST OF IMAGES**

Fig. 1	Components Drawing
Fig. 2	Installation
Fig. 3	Dimensions – Top View
Fig. 4	Dimensions – Side View
Fig. 5	Dimensions – Front View
Fig. 6	Flue Locating Diagram
Fig. 7	Floor Construction and Cut Out
Fig. 8	Positioning the Heater
Fig. 9	Securing the Heater
Fig. 10	Attaching Flues
Fig. 11	Secure Flue Brackets
Fig. 12	Connect to Gas Supply
Fig. 13	Fitting Hot Air Ducts
Fig. 14a	Correct Tee Fitting Orientation
Fig. 14b	Incorrect Tee Fitting Orientation
Fig. 15	Fitting Cold Air Ducts
Fig. 16	Mains Electrical Connection
Fig. 17	Reset Button Location
Fig. 18	Flue Type - Vehicle In Motion
Fig. 19	Flue Type - Standard Installation

		All Whale gas products must be installed by a <b>Qualified Gas Engineer</b> in accordance with the installation instructions and BS EN 1949-2011.
---	---	---

		All work must be carried out by a <b>competent person</b> as defined by BS7671 PART2.
---	---	---



**Please note if incorrectly installed a risk of electrocution exists.**

## 1. PRINCIPLES OF OPERATION

The Whale® 4kW Space Heater is an underfloor gas and electric blown air Space Heater. Nominal heat input is 2.9kW on gas and 2.0kW on mains electric. The 4kW Space Heater features a boost setting which varies the heat output depending on the temperature of the vehicle. It continually checks the temperature to establish the best settings to use. It is capable of using 2.9kW gas and up to 1.0kW electric simultaneously to provide the best available output. The compact design gives you more location options in the vehicle and it needs only minimal maintenance. The Space Heater is designed to be operated by the bespoke Advance Control Panel.

**Read the following carefully before installation**

## 2. SPECIFICATION

Model SL4312IR or SL4312IB

Maximum dimensions: Height: 185mm, Width: 313.5mm, Length: 820mm

Countries of Destination: AT, BE, BG, CY, CZ, DE, DK, EE, FI, FR, GB, GR, HU, HR, IS, IT, LT, LU, LV, MT, NL, NO, PL, RO, SE, SI, SK, TR

Weight: 10.9kg

Gas: Butane/Propane 28-30mbar - CAT I<sub>3B/P</sub> (30)

Gas Consumption (M) 220g/hr

**Please note:** For use in road vehicles (caravans and motorhomes) only.

Classification of Heater: Type: C<sub>53</sub> (Fanned) Normal Installation  
C<sub>13</sub> Vehicle In Motion Installation

Nominal Heat Input on Gas: 2.9kW

Nominal Heat Input on Electric: 2.0kW

Max Heat Input on Dual/ Boost: 3.9kW

Mains Electric:

Nominal voltage: 230V a.c. 50Hz

Power options: 500/1000/2000W

Maximum current a.c.: 9 Amps

Battery Supply

Nominal voltage: 12V d.c.

Operating range: 11.5V d.c. min. to 15V d.c. max. when using electric high

Maximum current d.c. gas operation: 2.8 Amps (0.01 Amps on standby)

Maximum current d.c. electric operation: 2.2 Amps (0.01 Amps on standby)

Maximum current d.c. dual operation: 3.6 Amps

Dry Storage Temperature: -20°C to 70°C

Hot Air Duct Diameter: 60mm ID

Flue Diameter: 22mm ID

Maximum Exhaust Flue Length: 2m

Minimum Exhaust Flue Length: 0.75m

Maximum Combustion Air Flue Length: 2m

Minimum Combustion Air Flue Length: 0.75m

The position of the Space Heater **must** allow access for servicing. You **must** ensure that there is a minimum of 25mm distance around the Space Heater to adjacent walls when mounted inside the vehicle.

For use in road vehicles only i.e. caravans and motorhomes. Not suitable for use in caravan holiday homes i.e. mobile homes or static caravans.

### 3. APPLICATION

The Whale<sup>®</sup> 4.0S (4.0kW) Space Heater has been designed for caravan and motorhome applications for typical recreational use. It is only suitable for use in road vehicles, i.e. caravans and motorhomes, but is not suitable for caravan holiday homes, i.e. mobile homes or static caravans. The Space Heater is designed to be installed with a ducted hot air system and **must not** be used in conjunction with any other system.



This symbol indicates that this appliance is suitable for use in Leisure Accommodation Vehicles.



This symbol indicates that this appliance is not suitable for use in boats.

### 4. WARNINGS



#### Observe all warnings.

In the unlikely event of leaks in the gas system, or if there is a smell of gas:

- Extinguish all naked flames
- Do not operate any electrical switches
- Turn off all gas appliances
- Open windows and doors for ventilation
- Do not smoke
- Shut off gas connection

Immediately ensure that the system is thoroughly checked by a registered gas engineer at a Whale<sup>®</sup> Approved Service Centre or a member of the official Whale Service Engineer Network.

The Space Heater **must not** be operated in the following situations:

- When refuelling the vehicle, the vehicle towing the caravan, or other appliances.
- When the vehicle in which the heater is installed is in motion; unless the vehicle in motion flue kit is installed (please see Appendix for information on identifying flue type).
- When the vehicle in which the heater is installed is in a confined space (such as a garage).

This appliance is **not intended** for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children **must be** supervised to ensure that they do not play with the appliance.

A minimum of one hot air outlet vent **must be** permanently open on each duct branch. This hot air vent **must be** the hot air vent that is located furthest distance from the Space Heater.

Any alteration to the appliance, including flue components, use of non-Whale<sup>®</sup> spare parts / accessories and non-observation of the installation and operation instructions shall lead to cancellation of the warranty and exclusion of liability claims. Any alteration to the appliance also results in it becoming illegal to use the appliance.

**Please note:** Incorrect installation, misuse or use of non-original Whale<sup>®</sup> parts may invalidate the warranty. It also becomes illegal to use the appliance if incorrectly installed, and in some countries this even makes it illegal to use the vehicle.

When operating the Space Heater using gas, the combustion air inlet flue and outlet flue 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 outlet and air intake).

Where the open end of the exhaust flue terminates, three sides of the under-floor space **must** be kept open and not obstructed and **must not** contain “through floor” ventilation openings.

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 product manufacturer’s recommendations. This inspection **must be** done 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<sup>®</sup> Space Heater kit contains:

	SL4312B or SL4312B
Space heater	1
Warranty registration card	1
Instruction manual including installation templates	1
Compression nut and olive for 8mm (5/16") pipe	1

Please note that the Whale<sup>®</sup> Space Heater requires a separate Flue Kit for installation.

Exhaust Flues are available in lengths of 0.75 metres, 1.25 metres and 2 metres.

Combustion Air Inlet Flues are available in lengths of 0.75 metres, 1.25 metres and 2 metres.

A separate vehicle in motion kit is also available specifically to allow the Space Heater to be used while the vehicle is in motion. For a full list of flue and accessory kits available please contact Whale<sup>®</sup> Support.

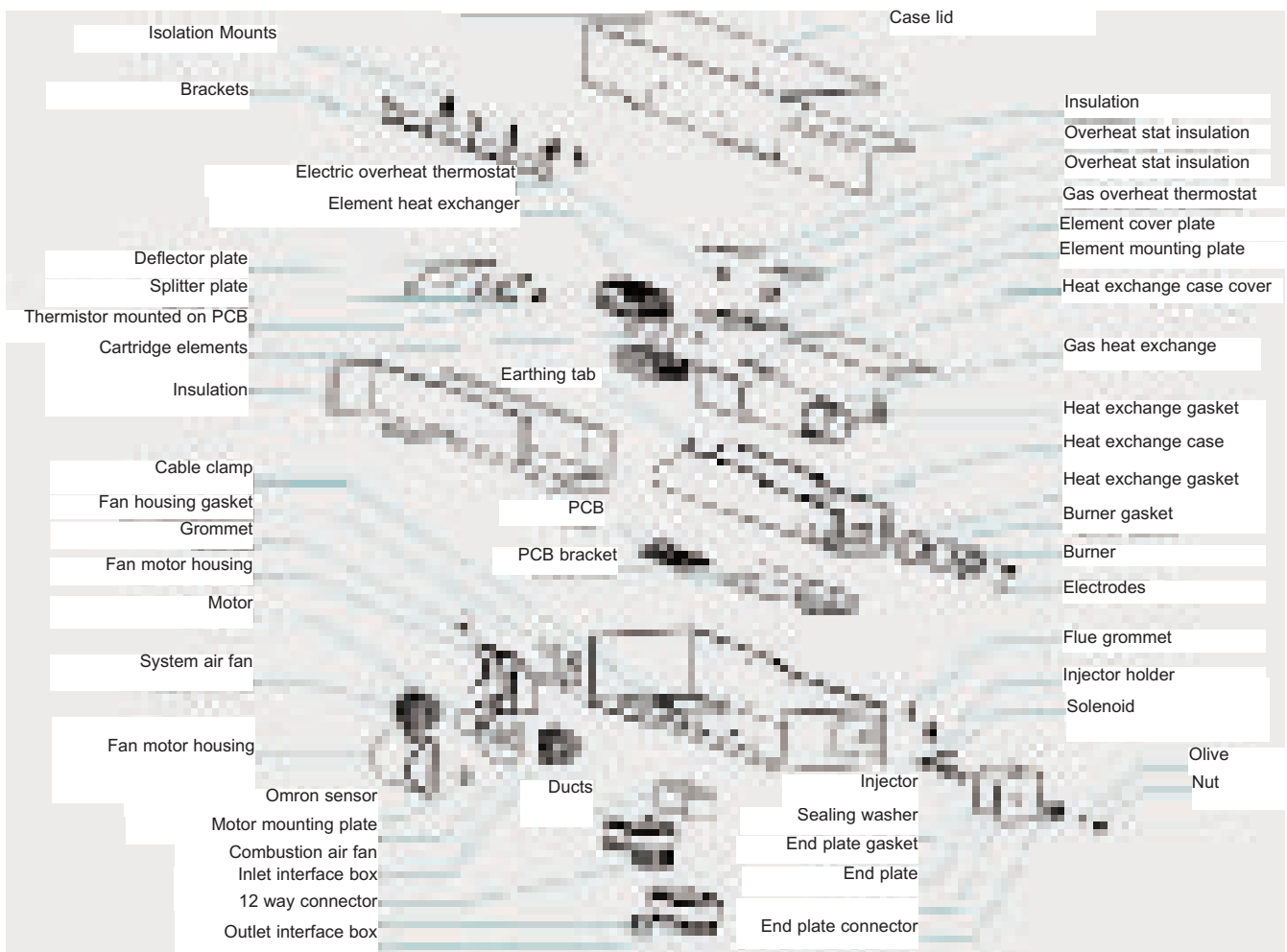
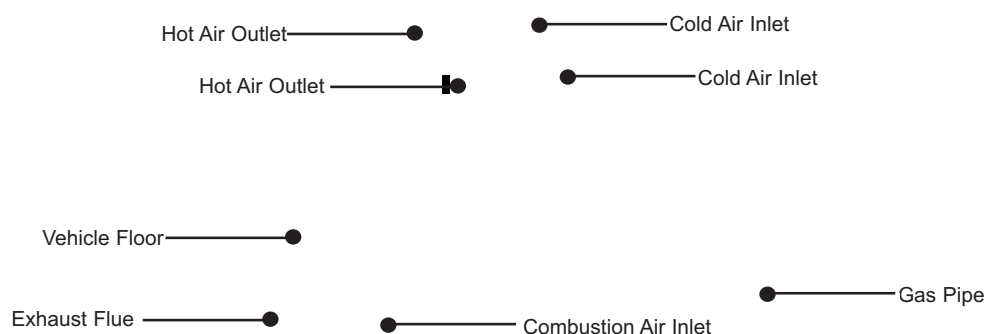


Fig. 1 - Components Drawing

## 6. INSTRUCTIONS FOR INSTALLATION



*Fig. 2 - Installation*

The Whale<sup>®</sup> 4.0S (4.0kW) Space Heater is installed under the floor of the caravan as shown in Fig. 2

### **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 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 electricity (230V a.c.). 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 all relevant personnel read the points listed below. You **must** also ensure that these operating instructions are passed on to the end user.

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

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

## DIMENSIONS

### In Vehicle Installation

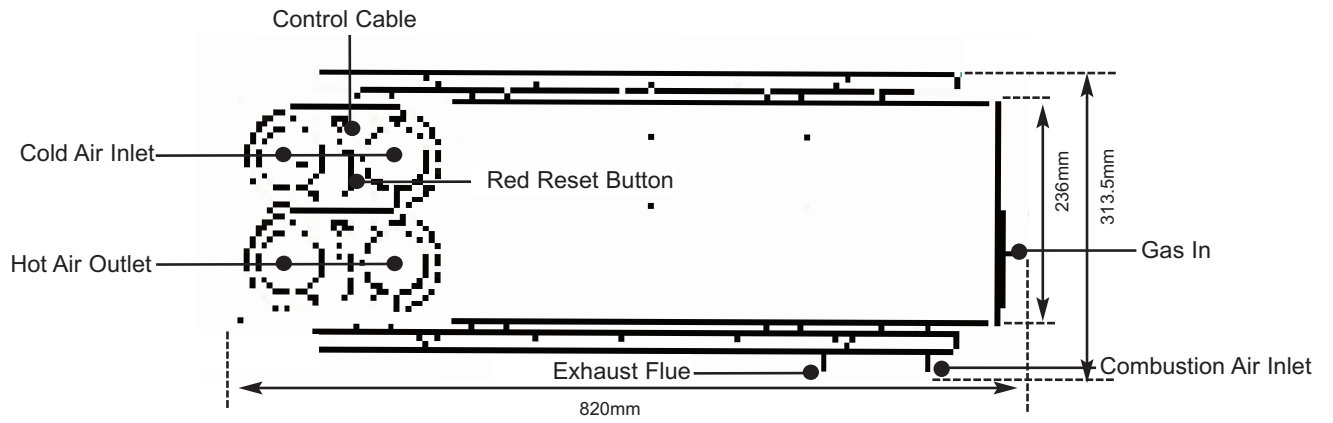


Fig. 3 - Dimensions Top View

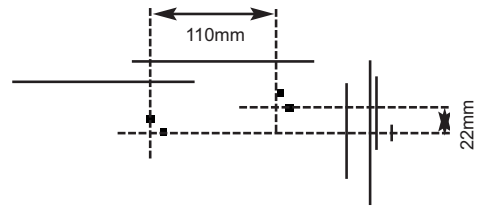


Fig. 4 - Dimensions Side View

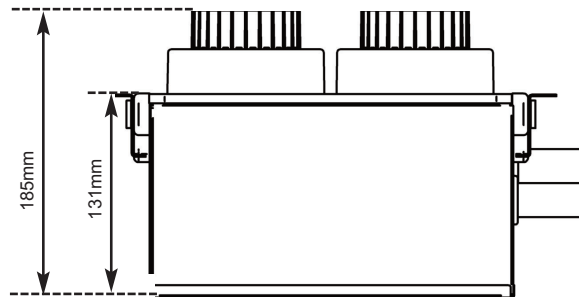


Fig. 5 - Dimensions Front View

## Step 1: Find Suitable Location for Space Heater Installation

### Consider the following points:

- i. Where possible for weight distribution in caravans, the Space Heater **must be** positioned as near to the axle as possible. You **must** avoid locating at the very rear and the very front of the vehicle.
- ii. 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 any items directly touching the Space Heater, ducts and flues.
- iv. The position of the Space Heater must allow access for servicing. There **must be** 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 and sharp bends in the ducting **must be** avoided.
- vi. The exhaust flue and combustion air inlet flues **must be** installed avoiding all chassis members and gas pipes etc. which are located underneath the floor.
- 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. The Space Heater **must be** 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 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 may 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.

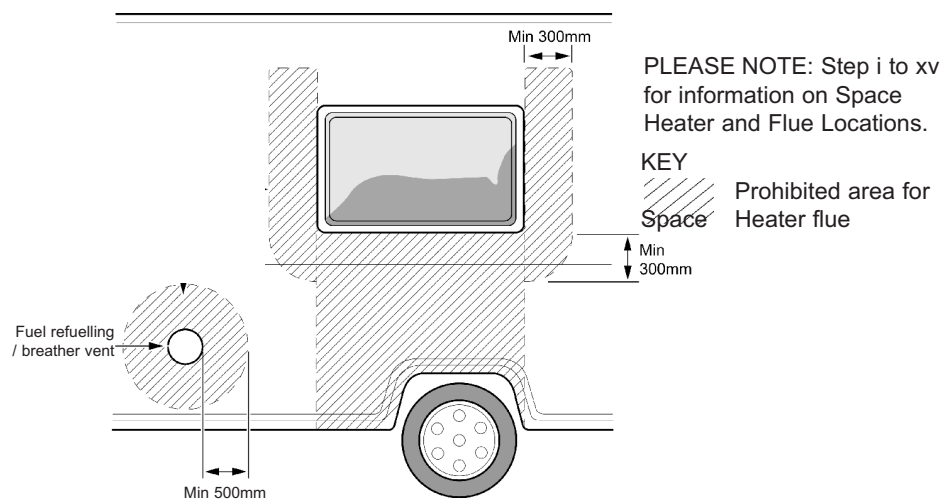


Fig. 6 - Flue Locating Diagram

- 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 0.75 metres, and maximum length 2 metres. The minimum length of the combustion air inlet flue inlet must be 0.75 metres, and maximum length 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 outlet flue and combustion flue intake).
- xii. Where the open end of the exhaust flue terminates, three sides of the underfloor space **must be** kept open and not obstructed, and 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 manufacturer's recommendations. Whale advises that this **must be** carried out at least once every year.

- xiv. The Space Heater **must not** be used when the vehicle is in motion unless the Vehicle in Motion Flues and Bracket are fitted. The Vehicle in Motion Kit is not included as standard and is available separately. Please refer to the Vehicle in Motion Kit instruction for further fitting considerations or contact Whale® Support for more information.
- xv. The user **must have** access to the reset button.

**Step 2: Space Heater Location**

For installation, the floor of the vehicle **must be** manufactured as per Fig. 7. Wooden batons **must be** incorporated in the floor's construction to allow the bolts to be fitted through the batons in the floor. Screws may be used for additional support.

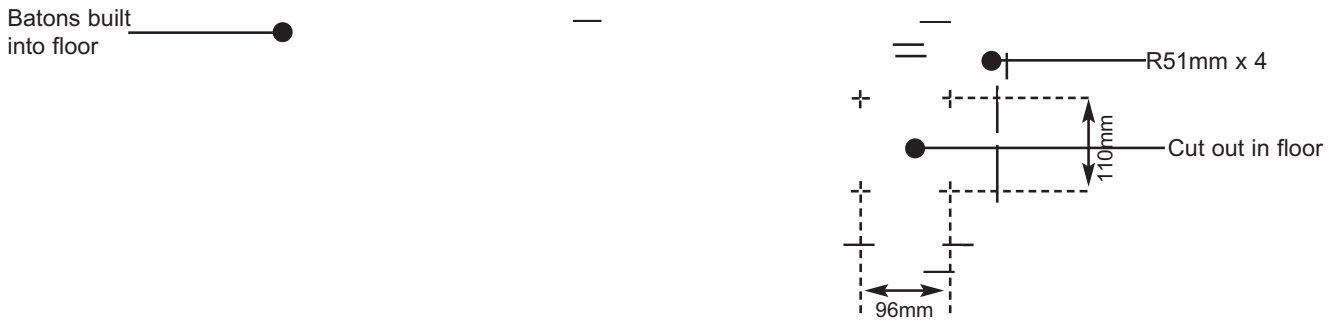


Fig. 7 - Floor Construction and Cut Out

Locate the Space Heater in the correct position, so that the brackets are aligned with the batons and attach with 4 x M8 bolts, plus additional screws (if required), please see Figs. 8 and 9. The mains cable **must be** fed through the rectangular cut out and **must not be** trapped between the outer cover box and the floor. It is recommended to use 4 additional screws at the ends of the mounting brackets.

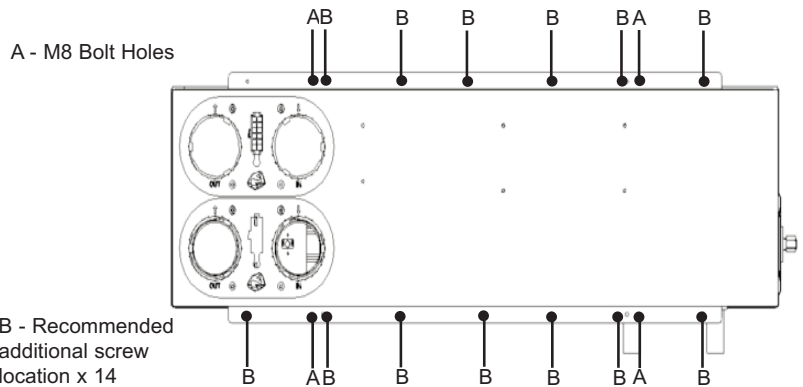


Fig. 8 - Positioning the Space Heater

Fig. 9 - Securing the Space Heater

**Step 3: Securing The Flues**

To secure the flues, push on the ends of the flues with the blue adaptor to the pipes on the underside of the Space Heater. Ensure that they are fully pushed on and secure with supplied hose clips (see Fig. 10).

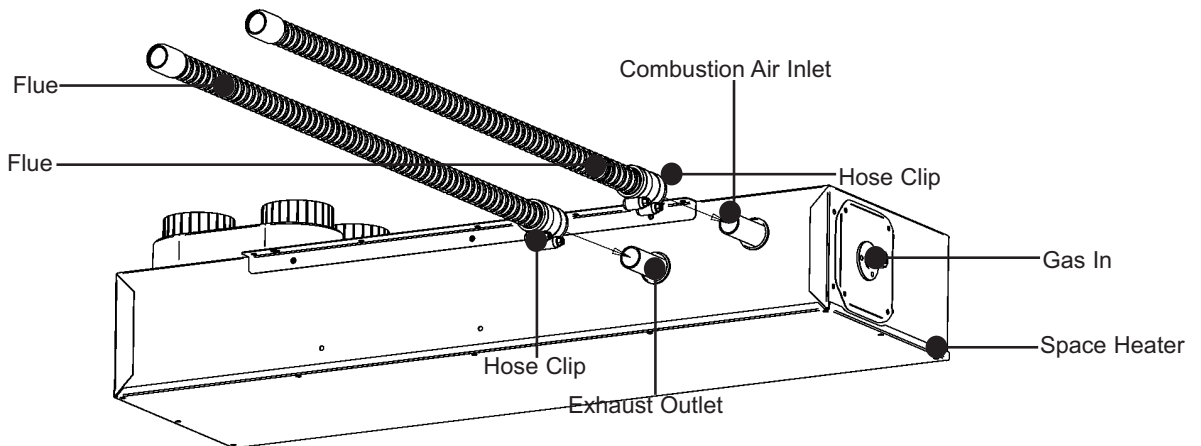


Fig. 10 - Attaching Flues



#### Step 4: Mounting The Flues

When mounting the combustion air inlet flue 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.

The exhaust flue **must be** positioned to avoid contact with combustible materials such as the caravan or skirt. Brackets can be used to ensure that the hot flue has a safe gap around it.

**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 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 attached the exhaust flue. Clip the bracket around the flue and use two screws (No.8 x 3/4") to attach each bracket to the floor as per Fig.11.

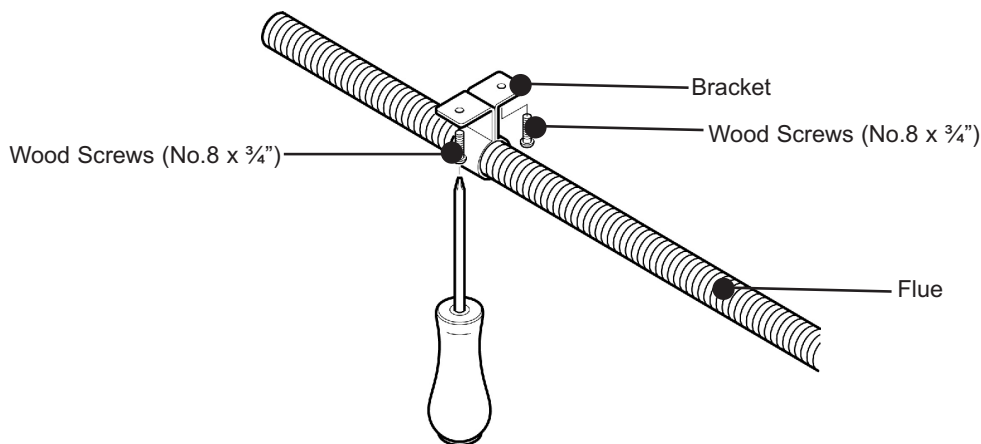


Fig. 11 - Secure Flue Brackets

#### Step 5: 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 (5/16") pipe. The supply pipe **must be** checked and be free from dirt or other particles before connection 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 air to measure the pressure drop, leak detection fluid can then be used. **NB: 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 in caravans and motorhomes **must be** 30mBar.

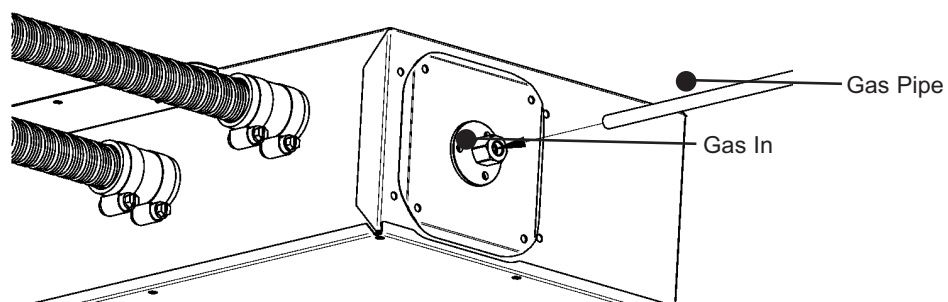


Fig. 12 - Connect to Gas Supply

## Step 6: Fitting Hot Air Ducts

To fit the ducting, push it onto the hot air outlet ports where it will be gripped by the nozzle (see Fig. 13).

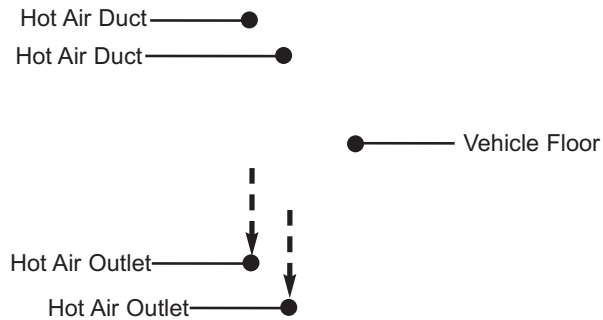


Fig. 13 - Fitting Hot Air Ducts

When fitting the air ducts, the outlet ducts **must be** fitted to the hot air out (black) fitting and the inlet ducts are connected to the cold air in (blue) fitting.

**Important:** At least one hot air outlet **must be** permanently open on each branch of ducting. The hot air duct **must not** be fed into the centre branch of a T piece fitting (see Fig. 14b).

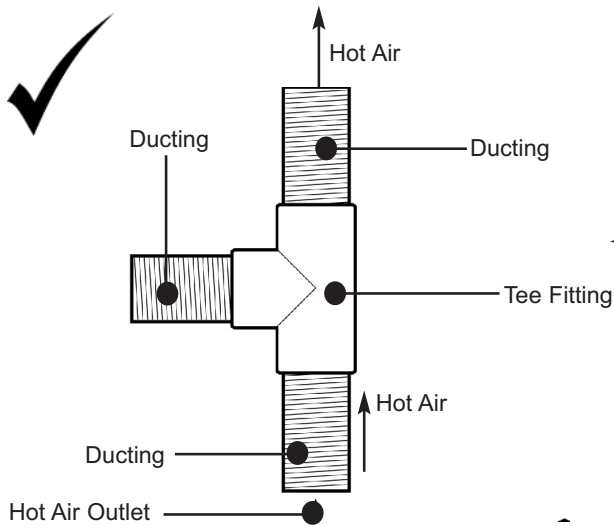


Fig. 14a - Correct T Fitting Orientation

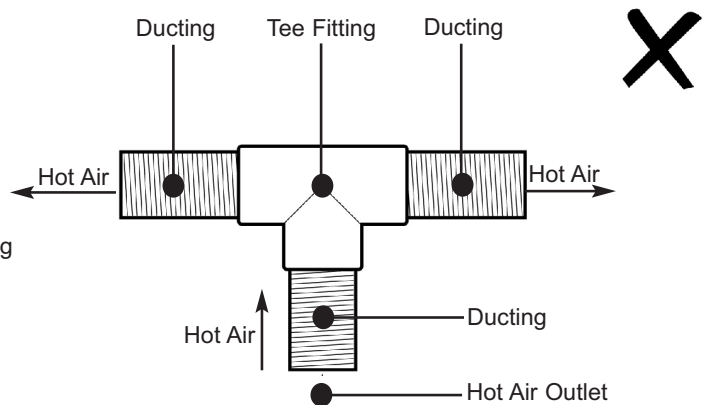


Fig. 14b - Incorrect T Fitting Orientation

## Step 7: 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, either 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, where it will be gripped by the nozzle (see Fig. 15).

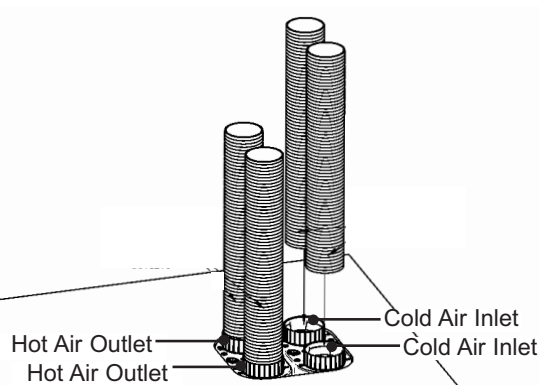


Fig. 15 - Fitting Cold Air Ducts

### Step 8: Installing Control Panel

Your vehicle is fitted with a bespoke control panel, please refer to the control panel manufacturer's instructions or your vehicle handbook.

### Step 9: Electrical Connections 12V d.c. Vehicle Manufacturer Installation Only.

**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:** This Space Heater **must be** installed with a 5 Amp automotive fuse 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
<b>6 Way connector</b>	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
<b>3 Way connector</b>	1	Electric 1 Switch	Green
	2	Electric 2 Switch	Grey
	3	Electric 3 Switch	Pink

## Step 10: 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.

### Manufacturer Installation Example

The mains supply cable is supplied with a JST LP series socket as shown in Fig 16 (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.

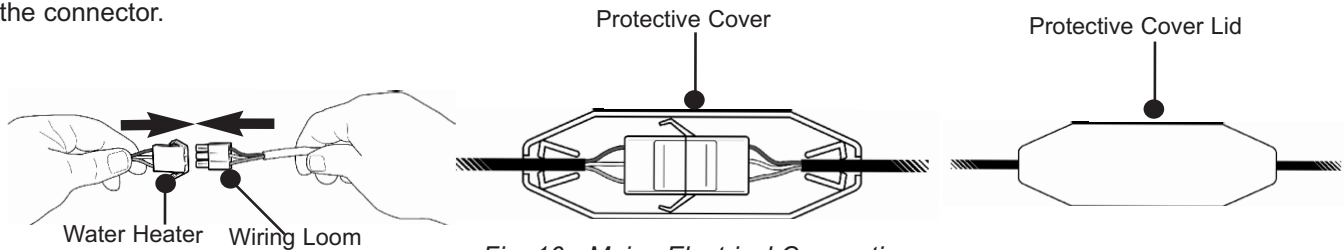


Fig. 16 - Mains Electrical Connection

**Please note:** If the supply cable is damaged, it **must be** replaced by the caravan/motorhome/cable manufacturer or a Whale<sup>®</sup> Approved Service Centre / 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 accidental resetting of the thermal cut out.

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

**Please note:** After completing the installation, carry out a full function check including gas soundness to ensure the appliance has been installed and operates correctly. The gas soundness check **must be** carried out by an accredited LPG gas engineer and a test certificate issued.

## 7. INSTRUCTIONS FOR USE

### To the User:

Read the following instructions carefully.



### Observe all Warnings.

In the unlikely event of leaks in the gas system, or if there is a smell of gas:

- Extinguish all naked flames
- Do not operate any electrical switches
- Turn off all gas appliances
- Open windows and doors for ventilation
- Do not smoke
- Shut off gas connection

Immediately ensure that the system is thoroughly checked by a Whale<sup>®</sup> Approved Service Centre / Technician.

The Space Heater **must not be** operated in the following situations:

- When refuelling the vehicle, the vehicle towing the caravan, or other appliances.
- When the vehicle in which the Space Heater is installed is in motion, unless a Vehicle In Motion Kit is fitted. Please refer to Section 3 and Appendix for more details.
- When the vehicle in which the Space Heater is installed is in a confined space (such as a garage).

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children must be supervised to ensure that they do not play with the appliance.

A minimum of one of the hot air outlet vents **must be** permanently open on each branch.

When using gas, the combustion air 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 shall be removed from the combustion outlet and air intake).

Where the open end of the exhaust flue terminates, three sides of the under-floor space **must be** kept open and not obstructed, and not contain through-floor ventilation openings.

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

The Whale<sup>®</sup> Space Heater **must be** checked periodically by a Whale<sup>®</sup> Approved Service Centre / Technician, or competent person, at least annually. This **must be** completed according to the practice in the country where it is used and according to the Whale instructions. Whale recommends annual testing of gas soundness and combustion by an accredited LPG gas engineer. The appliance contains ESD sensitive components and therefore **must only be** opened by a Whale<sup>®</sup> Approved Service Centre / Technician (contact Whale<sup>®</sup> Support).

When using operating switches provided by the installer or vehicle manufacturer, the installer or vehicle manufacturer are responsible for providing user instructions and identification of symbols on the Control Panel.

The inlet vents of the Space Heater **must never** be blocked and at least one hot air outlet vent **must be** permanently open on each branch.

## OPERATING INSTRUCTIONS

For operation of the Space Heater, a 12V d.c. supply **must** be connected at all times. To operate the Space Heater's electric elements, it **must also** be connected to a suitable 230V a.c. supply.

### Vehicle Manufacturer Control Panel

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

## 8. MAINTENANCE

If the Space Heater has not been used for some time, dust may have settled inside the heater and the ducting. Run the Space Heater on the "Fan only" setting until it clears. The outside of the appliance should not normally require cleaning. If it does, isolate the electrical supplies and wipe down with a soft, damp cloth only. Allow to fully dry before re-connecting the electrical supplies. **Do not** use abrasive cleaning agents.

The Whale<sup>®</sup> Space Heater **must be** checked periodically by a Whale<sup>®</sup> Approved Service Centre / Technician, or competent person, at least annually. This **must be** completed according to the practice in the country where it is used and according to the Whale<sup>®</sup> instructions. Whale recommends annual testing of gas soundness and combustion by an accredited LPG engineer. The appliance contains ESD sensitive components and therefore **must only** be opened by a Whale<sup>®</sup> Approved Service Centre / Technician. Contact Whale<sup>®</sup> Support for information.

## 9. TROUBLESHOOTING

The Space Heater is equipped with an electronic diagnostic system which will detect fault conditions ranging from poor gas or d.c. supply to internal Space Heater malfunctions. In the unlikely event of a failure, please refer to the control panel manufacturer's instructions or your vehicle handbook. Ensure the fan has stopped before cycling power to prevent an overheat lockout.

Lockout Condition	Fault	Remedy
1	No Flame Detected	Check gas supply making sure there is gas in the bottle and no blockage in the gas line. Ensure that if the temperature is below 5°C, only propane gas is used. Clear lockout as described below.
2	Overheat	Check the air ducts and vents are not blocked or restricted. Whale recommends that you wait at least 5 to 10 minutes to allow the Space Heater to cool before clearing lockout as described below.
3	Low/High Supply Voltage	Note that if high electric setting is used the minimum operating voltage is 11.5V, maximum is 15V, when measured at the Space Heater. Check battery voltage. If between 11.5V and 15V, check connections between Space Heater and battery. Check alternator or external battery charging. Clear lockout as described below.
4	Combustion Air Fault	Check combustion air inlet flue and exhaust flue for blockages. Clear lockout as described below.
5	Other / Internal Fault	Attempt to clear lockout as described below. If this fails, contact <b>Whale Support on +44 (0)345 9090 911.</b>
Solid	General Fault	Two faults have occurred at the same time OR five or more lockout clearing attempts have been unsuccessful. Clear lockout by pressing the red Reset Button on the Space Heater, as described below.

### Lockout Clearing Procedure

If the Space Heater is in lockout condition **1, 3, 4 or 5**, the lockout **must be** cleared by turning the d.c. power 'off' and then 'on' again. Please follow the instructions on the control panel perform this action. If the lockout still will not clear, please press the red Reset Button on the Space Heater (see Fig. 17).

If the Space Heater is in lockout condition **2 or 15** and / or five (or more) unsuccessful attempts to clear a lockout have been made, the lockout must be cleared by pressing the red Reset Button on the Space Heater once (see Fig. 17).

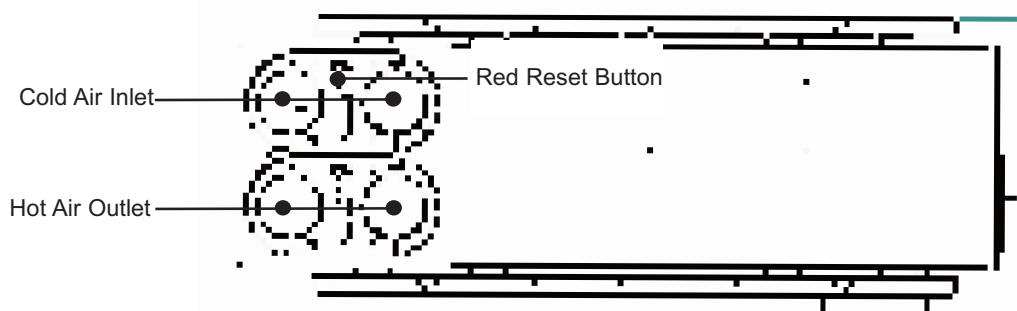


Fig. 17 Reset Button Location

If the problem persists contact **Whale Support on +44 (0)345 9090 911.**

## 10. WINTERISING

When using the Space Heater in winter ensure that the flues are not blocked by snow or fallen leaves etc. When the Space Heater is not going to be used for a long period of time, Whale® recommends that the open end of the combustion air and exhaust flue are covered to prevent ingress of leaves etc.

## 11. SERVICE SUPPORT DETAILS

For installation or serviceable parts advice please contact **Whale® Support:**

**Tel: +44 (0)345 9090 911**

**Email: [info@whalepumps.com](mailto:info@whalepumps.com)**

## 12. EU DECLARATION OF CONFORMITY

Description of Equipment: **Gas and Electric Space Heater**

### Manufacturer's Declaration

We hereby declare, under our sole responsibility, that the above equipment complies with the provisions of the following EC Directives.

Gas Appliance Regulation (EU) 2016/426 (GAR) on the approximation of the laws of the Member States relating to appliances burning gaseous fuels.

Low Voltage Directive 2014/35/EU on the harmonization of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits.

Electromagnetic Compatibility Directive 2014/30/EU, on the approximation of the laws of the Member States relating to automotive electromagnetic compatibility.

ECE Regulation No.122, Uniform technical prescriptions concerning the approval of vehicles of categories M; N and O with regard to their heating systems.

CE mark first affixed: July 2014

Basis on which conformity is declared

The above equipment complies with the protection requirements of the EMC Directive and the principal elements of the safety objectives of the Low Voltage Directive

Please contact Whale® if further details are required.

Richard Bovill  
Engineering Director

## 13. PATENTS AND TRADEMARKS

The Whale® Space Heater is patent pending protected by the following patent and design registration applications:

European Patent granted No. 2438364. European Patent application No.s 13154895.0 and 10752342.5. UK Patent Application No. 1302417.9

Whale® is a registered trademarks of Munster Simms Engineering Ltd.

## 14. WARRANTY

The Whale® Space Heater is covered by a standard 3 year warranty, unless otherwise stated in your vehicle's manual.

Please complete the enclosed warranty card and return to Whale.

For warranty details, please see the enclosed Warranty Statement.

© Copyright Whale 2019 - All rights reserved. Reproduction in whole or in part without permission is prohibited.

WHALE®, is a registered trademark of Munster Simms Engineering Limited, Bangor, Northern Ireland trading as Whale. Whale's policy is one of continuous improvement and we reserve the right to change specifications without prior notice. Illustrations are for guidance purposes only.

Neither the accuracy nor completeness of the information contained in this or any product literature is guaranteed by the Company and may be subject to change at its sole discretion.

Munster Simms Engineering Ltd, 2 Enterprise Road, Bangor, N. Ireland BT19 7TA  
Tel: +44 (0)28 9127 0531  
Web: [www.whalepumps.com](http://www.whalepumps.com)  
E-mail: [info@whalepumps.com](mailto:info@whalepumps.com)



See below for identification of the flue type and installation.

**C13 Flue Type – for Vehicle in Motion**

The C13 type utilises the Vehicle in Motion Double Flue Bracket, whereby both flues exit the vehicle wall via the same bracket, with one flue located above the other (see below). For reference, the Exhaust Flue should always be located above the Inlet Flue.

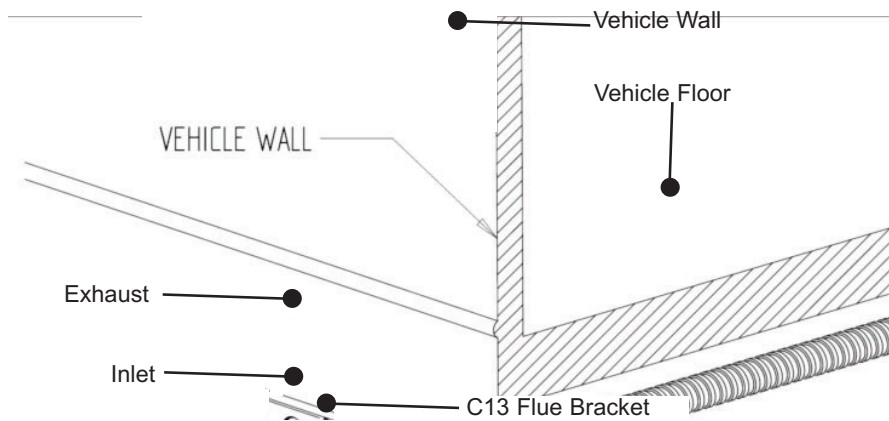


Fig. 18 Flue Type for Vehicle in Motion

**C53 Flue Type – Standard installation**

If the installation and flues are type C53, the flues remain separate and exit the vehicle wall at least 500mm apart. Please note: Some installations may use a single bracket to secure each flue individually, in this case they must also be located at least 500mm apart.



Fig. 19 Flue Type for Standard Installation