

INSTALLATION & USER INSTRUCTIONS

Thank you for purchasing this Whale[®] product.

For over 70 years Whale has led the way in the design and manufacture 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.

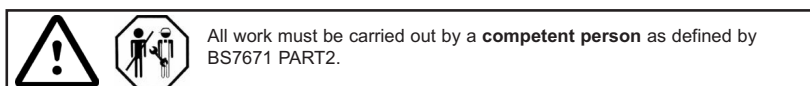
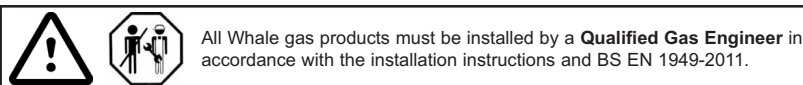
For information on our full product range visit: www.whalepumps.com

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Please note if incorrectly installed a risk of electrocution exists.

1. PRINCIPLES OF OPERATION

The Whale® Water Heater Mk II is a gas and electric storage Water Heater. The unique design has a 13L capacity hot water tank and incorporates versatile controls for low current draw or fast heat up settings. With robust insulation and no removable flue cover, the Whale® Water Heater needs minimal maintenance. Key enhancements to the Mk II design include a new, easy installation flue design, a highly durable burner design and a new pressure relief valve incorporating a drain function.

2. SPECIFICATION

Read the following carefully before installation

Model: **WH1302 or WH1302B or WC1302B**

Maximum dimensions inside RV: Height: 271mm, Width: 385mm, Length: 470mm

Dry Weight: 10.0kg

Nominal Water Capacity 13 Litre

Gas: butane 28-30mbar, propane 37mbar - CAT I₃₊ (29/37), butane/propane 30mbar - CAT I_{3B/P} (30)

Classification of Storage Water heater: Type: C11 (Natural draft)

Nominal Heat Input: Gas 1.25kW.

Standby Consumption Gas 98W

Nominal Heat Input Electric 1.2kW.

Electric: 230V a.c. 50 Hz 600/1200W

Maximum Current a.c.: 6 Amps

Nominal Voltage: 12V d.c. (10.0V d.c. min. to 15V d.c. max.)

Maximum Current d.c.: 0.36 Amps (0.01 Amps on standby)

Maximum Water Supply Pressure: 190kPa (1.9 Bar)

Rated Pressure 300kPa (3.0 Bar)

Pressure Relief Valve Setting: 300kPa (3.0 Bar)

Maximum Caravan Side Wall Thickness: 47mm

Ingress Protection Rating: IPX1

Note: If connecting to mains water supply, a suitable water pressure regulator **must be** connected to ensure that the maximum supply water pressure does not exceed 190kPa (1.9 Bar).

Dry Storage Temperature -20°C to 70°C

Maximum Water Temperature Approx. 75°C

Typical heating up times from 15°C to 70°C: Gas and both electric elements approx. 22 minutes.

Two electric elements only approx. 38 minutes, Gas only approx. 43 minutes.

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

The Water Heater position **must** allow access for servicing and to the reset button.

Whale's policy is one of continuous improvement and we reserve the right to change specifications without prior notice.

3. APPLICATION

The Whale® Water Heater has been designed for caravan, motorhome and mobile applications, and is suitable for use with a typical recreational vehicle shower. It is only suitable for use in recreational vehicles e.g. caravans and motorhomes, but is not suitable for use in caravan holiday homes e.g. mobile homes and static caravans. The 13L tank has the capacity to provide two 5 minute showers with minimal reheat time.



Do not operate the appliance while the vehicle is in motion.



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
- Switch off all appliances and 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 Approved Service Centre or by an approved member of the Whale Service Engineer Network.

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

- When refuelling the vehicle or refuelling the vehicle towing the caravan or any other appliance.
- When the vehicle in which the Water Heater is installed is in motion.
- When the vehicle in which the Water Heater is installed 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.

Before operating the Water Heater, the user **must ensure** that the caravan water system including Water Heater is full of water, and the vehicle is level.

This appliance **must be** drained if there is a risk of frost when not in use. Frost damage will not be covered by warranty.

The water temperature cannot be adjusted. It is automatically set to approximately 70°C to prevent bacteria growth. To avoid scalding, the temperature of the hot water supplied to the taps and showers **must be** controlled. **Do not** use the water as drinking water.

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

Please note: Incorrect installation or use of non-original Whale® 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.

5. PARTS LIST

The Whale® Water Heater Kit contains:

Quantity	Description
1	Water Heater
4	Water Heater Screws
1	Flue Assembly
8	Flue Assembly Screws
1	3.5m Control Panel Cable (WH1302 Only)
1	Control Panel
4	Control Panel Screws
1	Hot Water Flexible Connector
1	Pressure Relief / Drain Valve Assembly
1	Male Adaptor $\frac{3}{8}$ " Flexible Hose Plumbing Fitting
2	Male Adaptor $\frac{1}{2}$ " Flexible Hose Plumbing Fitting
1	Warranty Registration Card
1	Instruction Manual Including Installation Templates
1	Instruction Manual Storage Pocket, with Adhesive Fixing Strip

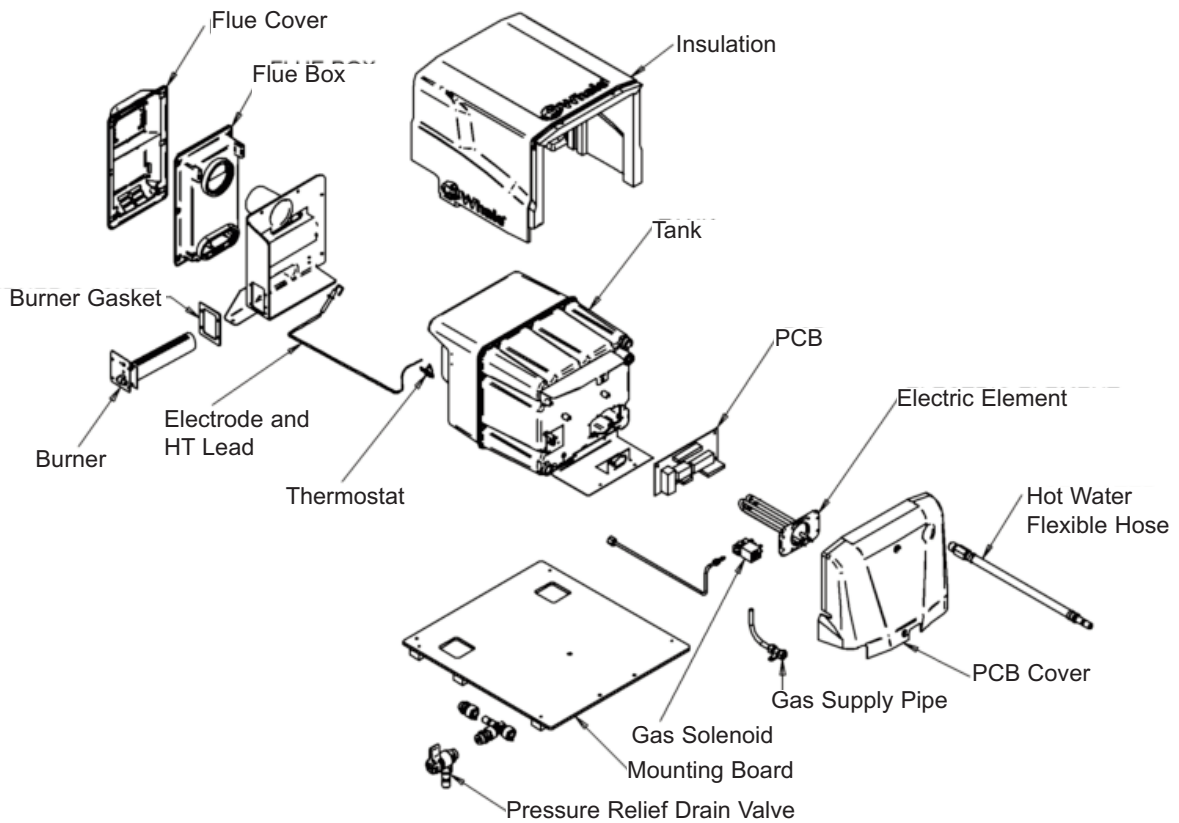


Fig.1 Components Drawing

6. INSTRUCTIONS FOR INSTALLATION

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**. Contact Whale Support, +44 (0)345 9090 911.

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. 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 BS EN 1949:2011 "Specification for the installation of LPG Systems For Habitation Purposes In Leisure Accommodation Vehicles And In Other Road Vehicles" applies.

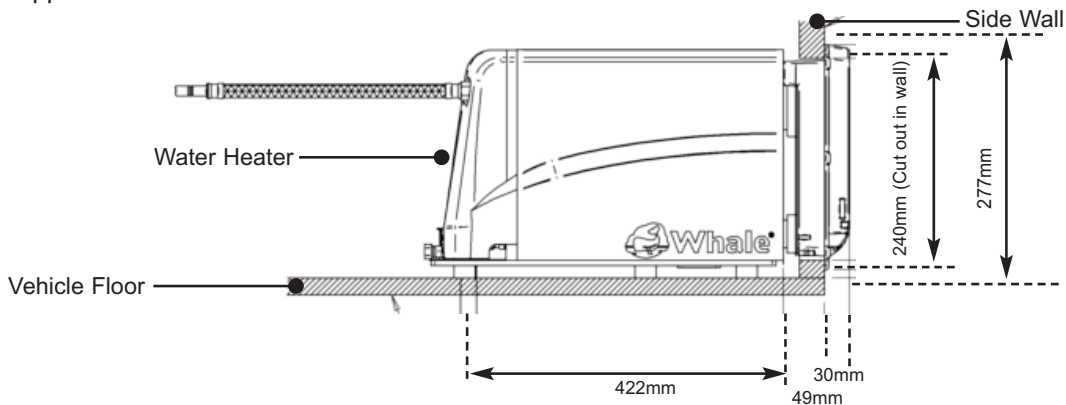


Fig. 2 Dimensions - Side View

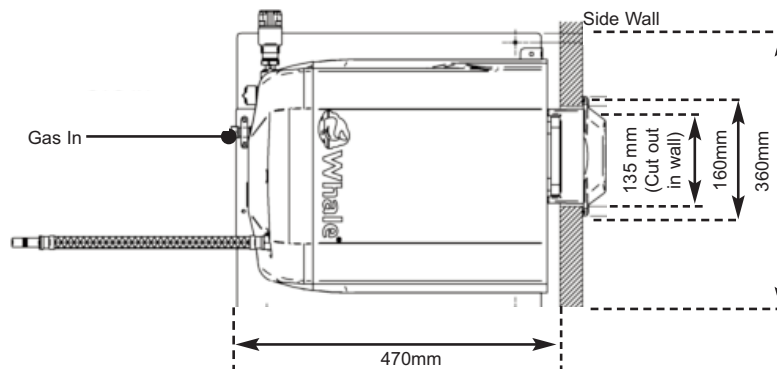


Fig. 3 Dimensions - Plan View

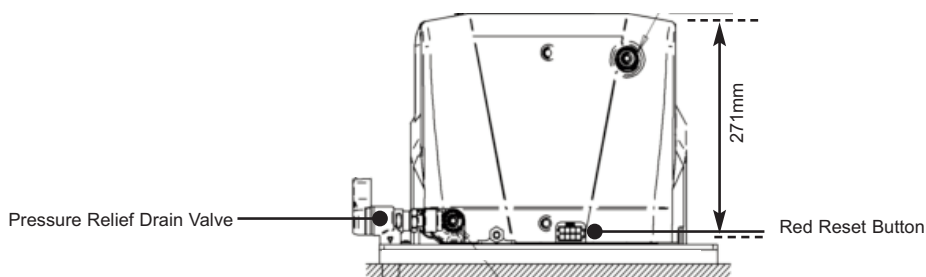


Fig. 4 Dimensions - Front View

Step 1 Find a Suitable Location to Install the Water Heater

Consider the following 10 points:

- i. For weight distribution in caravans, the Water Heater **must be** positioned as close to the axle as possible. The installer **must** avoid locating the Water Heater at the very rear and the very front of the vehicle.
- ii. Ensure the pressure relief valve / discharge pipe can be located through the floor without fouling chassis members etc.
- iii. If the Water Heater is installed in a raised position, the drain valve **must be** installed at the lowest position in the water system, to achieve effective draining. To achieve this, remove the drain valve from the Water Heater and relocate it, near the Water Heater in the lowest position between the Water Heater and the non-return valve (if one is fitted), in the water system. Make sure the water system cannot create air locks that would prevent the Water Heater and the full system from draining.
- iv. Ensure that any surfaces in contact with the Water Heater are rated to at least 70 degrees C.
- v. Ensure that the location allows access for servicing the Water Heater.
- vi. In selecting the Water Heater location, ensure that the flue terminal will be located on a flat and exposed outside surface, avoiding trim strips.
- vii. The flue terminal **must be** positioned at the side of the vehicle that an awning will never be fitted to.
- viii. Only the supplied flue terminal is permitted to be used in conjunction with this Water Heater. This 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 flue terminal **must not** be fitted within 300mm of a ventilator for the living space or an opening part of a window.

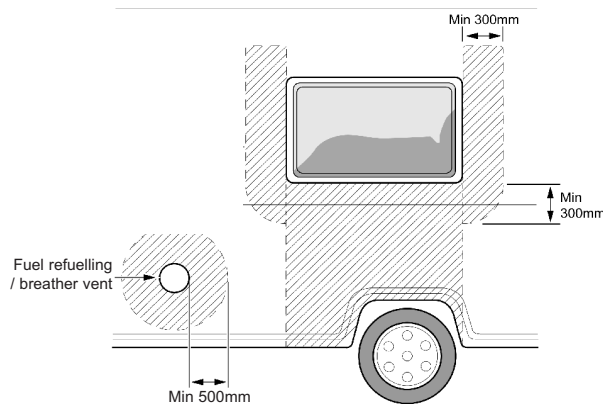



Fig. 5 Installation Locating Diagram

PLEASE NOTE: Steps i to x for information on Water Heater and Flue Locations.

KEY

 Prohibited area for Water Heater flue

- ix. The flue terminal **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. The flue terminal **must** still be a minimum of 300mm below the window.
- x. The user **must** have access to the reset button.

Step 2 Cut Out Hole for Flue

See the flue template supplied with the Water Heater.

i) Position template on the inside of the wall with side 'A' visible, then drill hole at centre position marked 'X' on the template.

ii) Position the template on the outside of the wall with side B visible, locate over the drilled position hole 'X', and ensure the template is level. Ensure that the flue outline is on a flat surface avoiding trim strips etc. If the flue needs mounted in a higher position, the Water Heater mounting board can be raised to suit, if there is sufficient height available.

iii) Drill four 6mm corner holes and cut aperture using flue template (provided) as a guide.

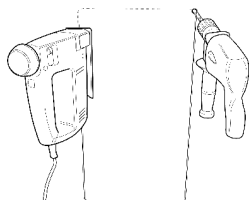


Fig. 6 Cut Out Hole for Flue 6

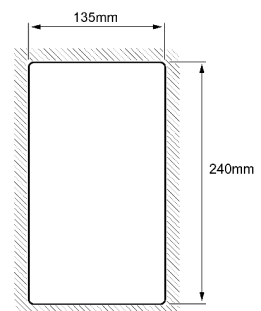


Fig. 7 Flue Dimensions

iv) Reinforce the cut out with wooden batons (minimum 20mm wide). This may require insulation in the wall to be removed.

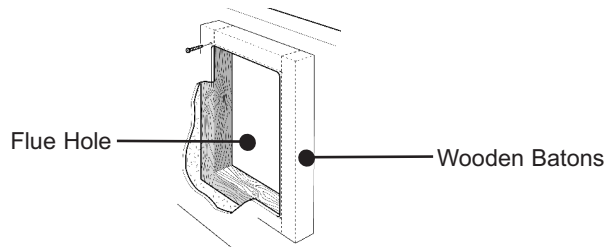


Fig. 8 Reinforce Flue Hole

Step 3 Attaching the Flue to the Caravan

Apply sealant to seal flue box on the caravan side wall of the flue sealing face, ensuring each screw hole is surrounded by sealant. Secure flue with the 6 screws (No. 8 x 3/4") provided and remove excess sealant.

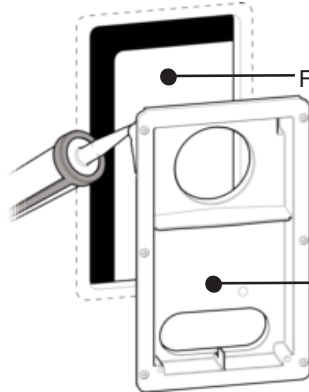


Fig. 9 Sealing the Flue to Caravan

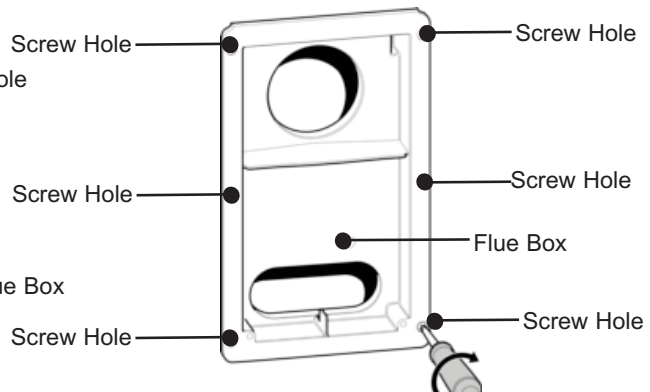


Fig. 10 Attaching Flue Box

Step 4 Attaching the Flue Cover

Clip the top of the flue cover onto the back box and secure with two screws (No.6 x 1/2") provided.

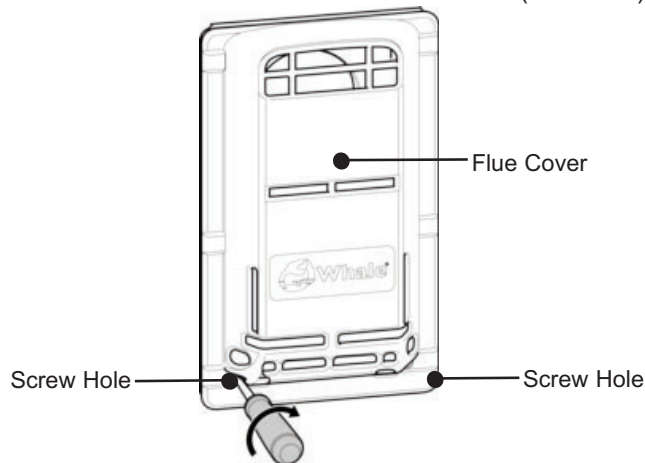


Fig. 11 Installation and Securing of Flue Cover

Step 5 Connect Water Heater to Flue

Set Water Heater on the floor and slide fully into flue as shown (see Fig. 12).

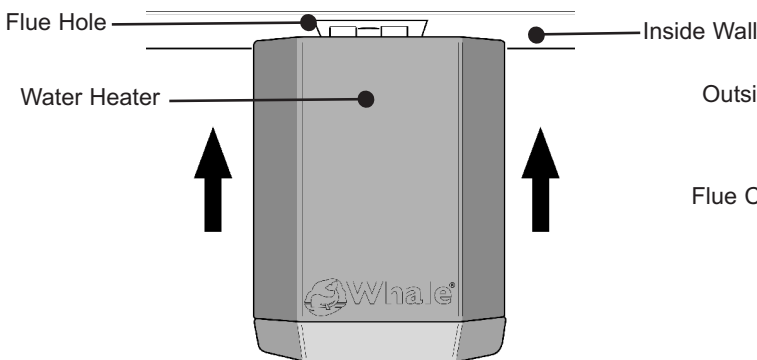


Fig. 12 Connect Water Heater to Flue (Plan View)

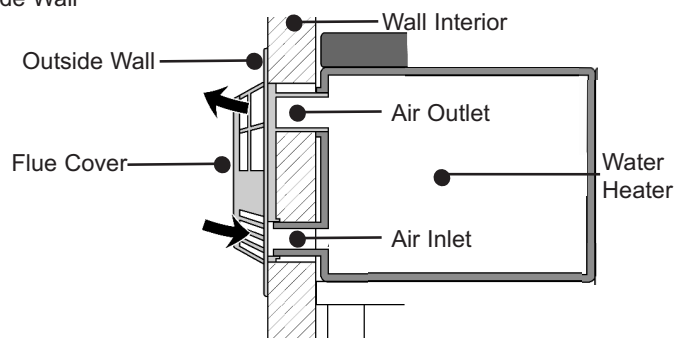


Fig. 13 Water Heater Position

Step 6 Fitting the Drain Pipe (see Fig. 14)

When the Water Heater is in place on the floor, mark a location for where the pressure relief / drain valve discharge pipe will come through the floor. Carefully remove the Water Heater and drill a hole in the floor, minimum diameter 20mm, ensuring that there are no obstructions on the underside of the vehicle i.e. gas pipes, chassis members etc. Refit the Water Heater, inserting the discharge pipe in the hole and ensure that it is left open to the atmosphere at all times.

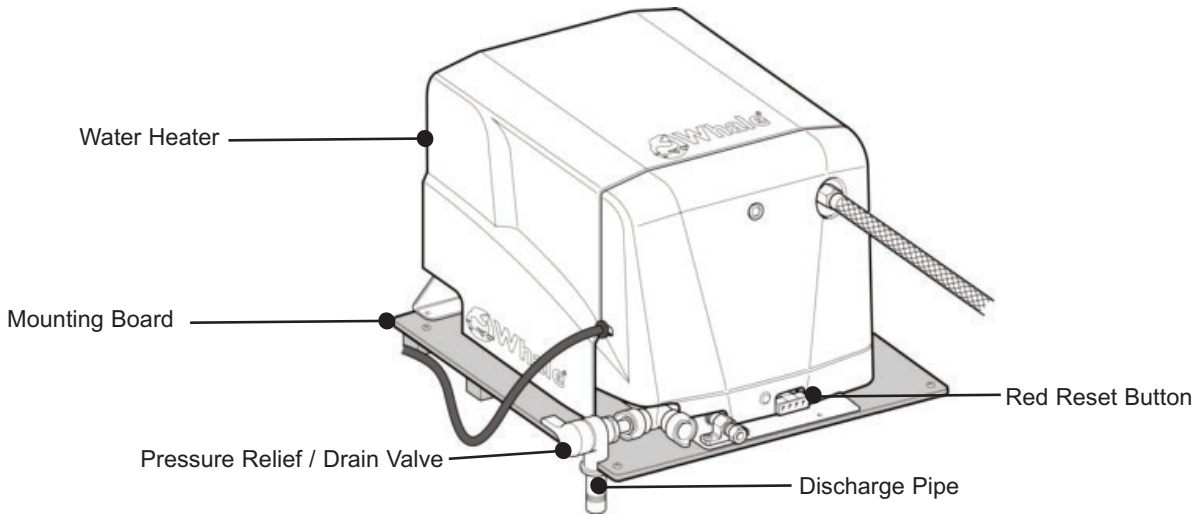


Fig. 14 Fitting the Pressure Relief / Drain Valve

Step 7 Secure Water Heater to Floor

To secure the Water Heater to the floor, use 4 screws (No. 8 x 1 ¼") provided (see Fig. 15).

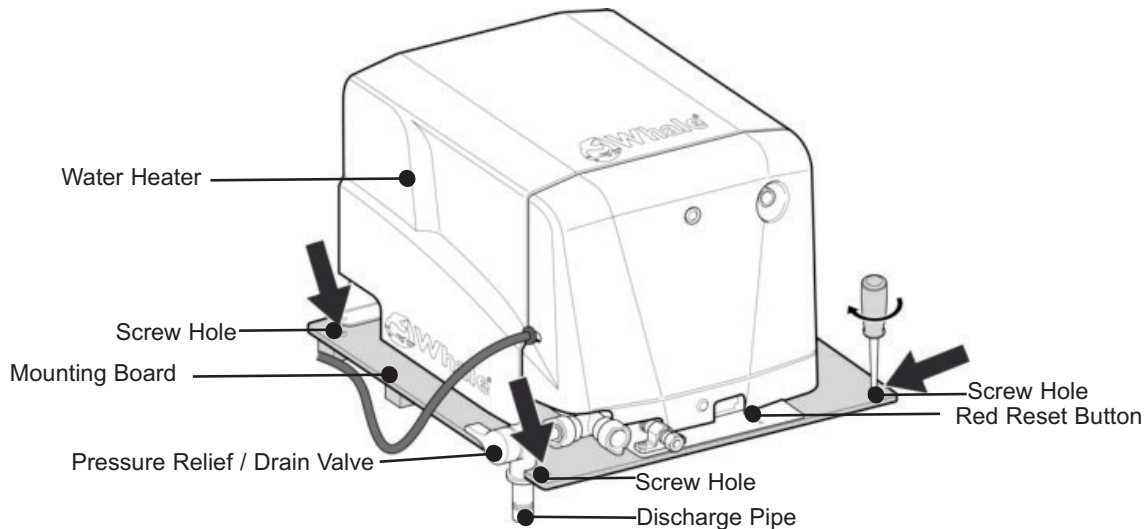


Fig. 15 Secure Water Heater to Floor

Step 8 Connect to Gas Supply (see Fig. 16)

Ventilation **must** comply with relevant local requirements e.g. EN 721. **Please note:** Valve and connection (shown in Fig. 16) are not included with this Water Heater.

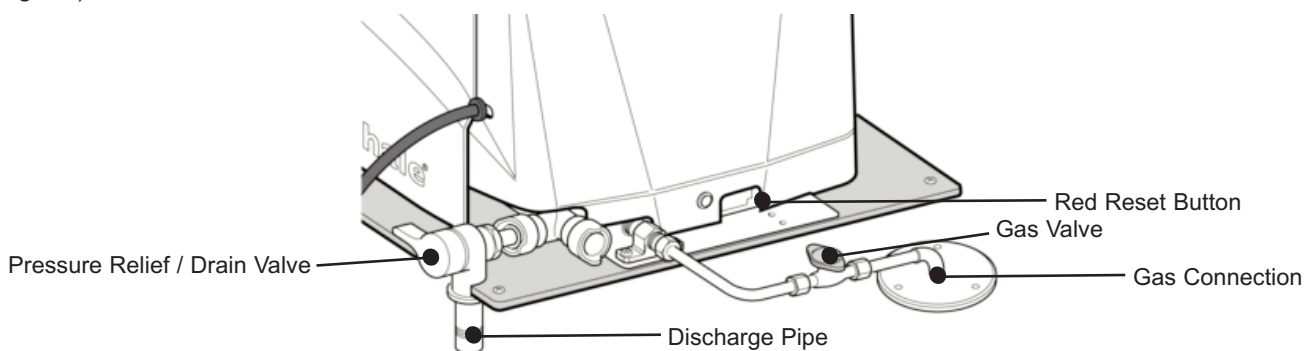


Fig. 16 Connect Gas Supply

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.

The gas pipe, the Water Heater and the mains supply gas pipe **must be** checked to ensure that they are free from dirt or other particles before connection to the 8mm gas inlet pipe on the Water Heater with a compression joint. The supply pipe **must be** routed so that the appliance can be removed for servicing.

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



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

Step 9 Installing Control Panel

Option 1 - Installing Whale Water Heater Control Panel (see Figs. 17-19)

Option 2 - Installing Whale Duo Control Panel

Option 3 - Installing Vehicle Manufacturer Control Panel

When mounting the Whale® Control Panel find a suitable convenient and accessible position. Ensure suitable access for wiring loom connection and cable. Note that the cable supplied to connect the Control Panel to the Water Heater is 3.5m long. The minimum depth behind the Panel for wiring **must be** 50mm. If using a Control Panel specific to the vehicle manufacturer or the vehicle, the electrical connections **must be** made in accordance with Step 10.

Option 1 - Installing Whale Water Heater Control Panel

The Whale Water Heater Control Panel requires a cut out 45mm high x 35mm wide. Feed the wires through the Control Panel mounting frame (see Fig.17) and line up the holes with the Control Panel. Feed the wires through the cut out in the wall and locate into desired position. Secure with 2 screws (No.4 x 3/4) 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. 17 Insert Control Panel



Fig. 18 Secure Control Panel



Fig. 19 Installed Control Panel

Option 2 - Installing Duo Whale 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 3/4) provided, then clip on the surround frame.

In some instances, it may be necessary to make the wiring connections in Step 11 before securing the Whale Duo Control Panel to the wall.

Option 3 - Installing 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.

Step 10 Electrical Connections 12V d.c.



WARNING: Always disconnect the appliance from the power supply prior to working on electrical components.

The Whale Water Heater and Control Panel come complete with electrical connectors fitted.

The Whale® Water Heater and Control Panel are designed to be integrated into the caravan’s wiring loom. The Water Heater is provided with a JST VL series 8 way socket, and the Control Panel with a JST VL 6 way socket. 6 wires are required to connect the Water Heater to the Control Panel. The 12V d.c. and 0V d.c. power supply are to be connected to the 8 way socket.

Please note: The Water Heater must be installed in-line with a 5 Amp fuse. Whale recommends that a 5 Amp automotive fuse is fitted in the 12V supply.

Table 1: Connections at Water Heater

Wire Number	Description	Wire Colour
1	Switch common	Brown
2	Burner switch	Blue
3	Immersion 1 switch	Green
4	Immersion 2 switch	Grey
5	Burner LED	Orange
6	Lockout LED	Violet
7	12v supply	Red
8	0v supply	White

Please Note: The water may drip from the discharge pipe of the pressure-relief valve during heating up. This pipe **must be** left open to the atmosphere, **must be** installed in a continuously downward direction and in a frost-free environment. The pressure relief valve **must be** operated regularly (at least twice a year) by turning the yellow lever in the clockwise direction, to remove lime deposits and to verify that it is not blocked.

Connect the 8 way electrical connector to the 8 way connector on the Water Heater, then route the wire to the Control Panel and connect the 6 way electrical connector to the 6 way connector at the Control Panel. Secure the 6 way wire close to the Control Panel so that there is no strain on the wires at the switches. Connect the red flying lead coming from the 8 way connector to a 12V d.c. supply; then connect the white flying lead to the caravan 0V d.c.

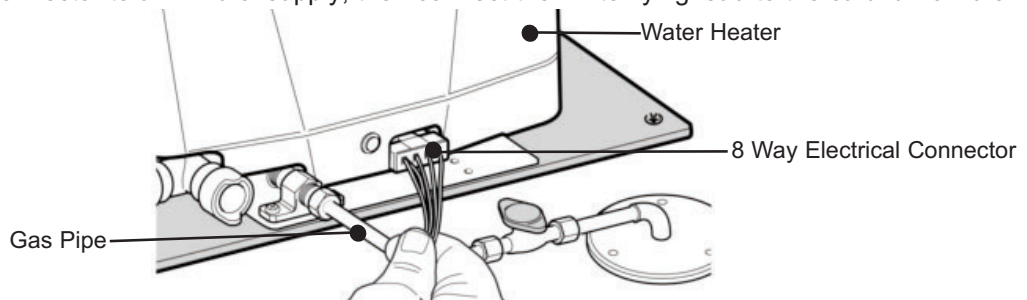


Fig. 20 Connect 12V d.c. Connector

Step 11 Electrical Connection 230V. Vehicle Manufacturer Installation: WH1302B or WC1302B

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 10 amp fused spur provided with an all-pole disconnection and the appliance **must be** earthed.

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.

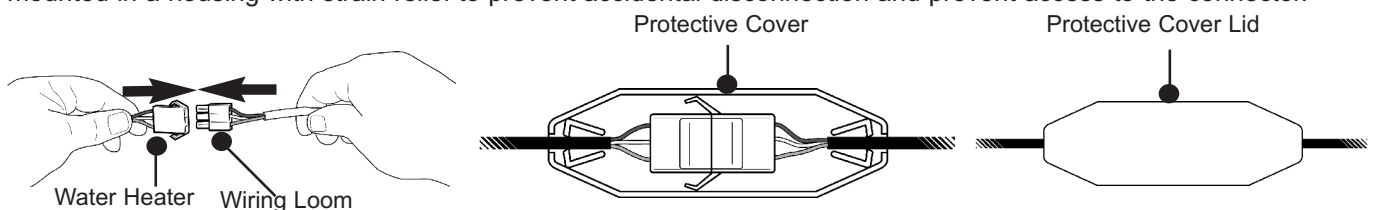


Fig. 21 Mains Electrical Connection

If the supply cord is damaged, it **must be** replaced by Whale, a Whale Approved Service Engineer or a Whale Approved Service Centre.

Retail Installation - WH1302 (see Fig. 22)

The Whale® Water Heater comes fitted with a 3 pin plug. Whale recommends that 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 an approved electrician. The plug is fitted with a 13 amp fuse.

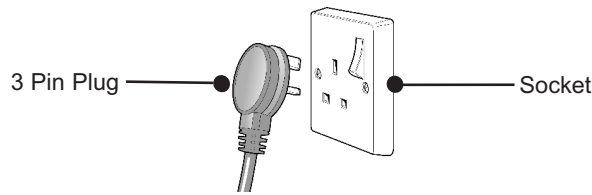


Fig. 22 Mains Connection

Step 12 Connection to Cold Water Supply (see Figs. 23 & 24)

The Whale® Water Heater is fitted with a Whale® 12mm Quick Connect fitting on the cold water inlet to fit to Whale® semi rigid tubing. Various plumbing adaptors are included to assist with these connections as follows:-

Flexible Tubing	Adaptor	Whale Part Number	Additional Information
10mm (3/8")	3/8" Stem Adaptor	WU1280	Secure with a hose clip
13mm (1/2")	1/2" Stem Adaptor	WU1282	Secure with a hose clip

For any other plumbing systems, contact Whale® Support for further information.

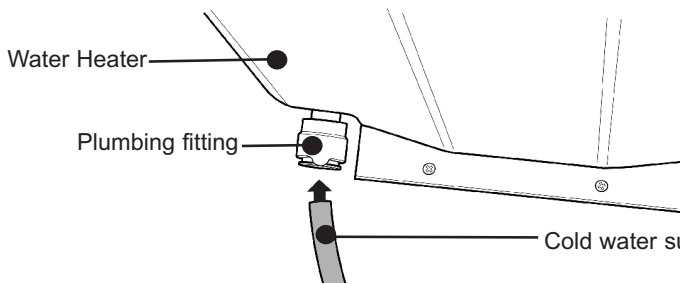


Fig. 23 Connect Cold Water Supply

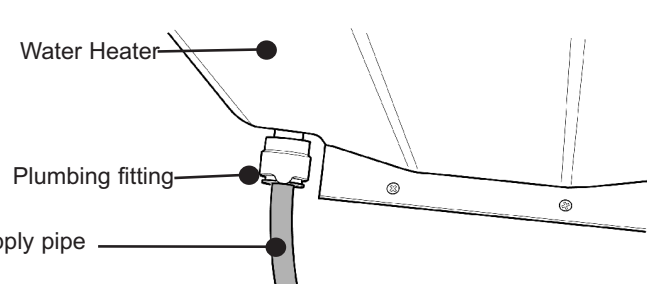


Fig. 24 Installed Cold Water Supply

Important: Do not operate the appliance without the installed pressure relief device attached to the Water Heater.

Please note: A Non-Return Valve (not supplied) can be fitted before the Pressure Relief Valve to prevent back flow of hot water to cold water taps.

Step 13 Connect Hot Water Supply (see Figs. 25 & 26)

Screw in the braided hose supplied into the hot water outlet and tighten with a 19mm spanner. The outlet of the braided hose has a 12mm stem which can be connected to a number of different pipe systems with the included fittings as follows:-

Pipework	Adaptor	Whale Part Number	Additional Information
12mm	12mm Equal Straight	WU1204	Push in twice to ensure the fitting is fully home and watertight. (See Fig. 23)
10mm (3/8")	None	N/A	Push the hose over the 12mm nipple on the end of the braided hose and secure with a hose clip.
13mm (1/2")	12mm Equal Straight 1/2" Stem Adaptor	WU1204 WU1282	Secure with a hose clip

If you have any other plumbing system, contact Whale® Support for further information.

Please note: The hot water flexible braided hose (included) **must always** be used to ensure safe operation.

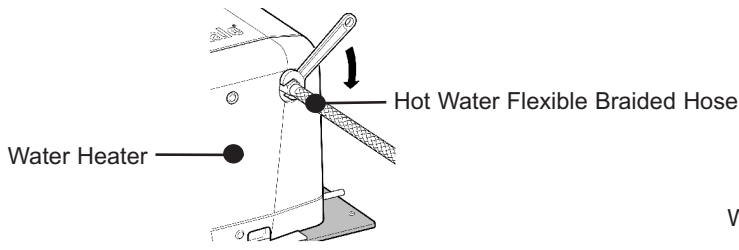


Fig. 25 Connect Braided Hose

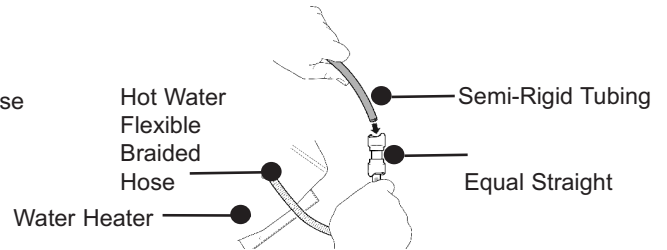


Fig. 26 Connect Hot Water Supply

Step 14 Completed installation (see Figs. 27 & 28)

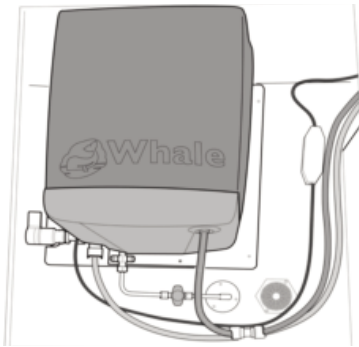


Fig. 27 Typical Vehicle Manufacturer's Installation
WH1302B or WC1302B

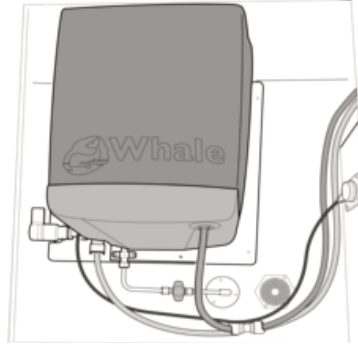


Fig. 28 Typical Retail Installation
WH1302

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

7. INSTRUCTIONS FOR USE

To the User: Read the following instructions carefully.



Observe all Warnings.

Never operate the Water Heater without water in it. This appliance **must not** be connected directly to the mains water supply without a pressure regulator fitted, or any water supply greater than 190 kPa (1.9 bar). Ensure the caravan water system including Water Heater is full of water, and the vehicle is level before operating.

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

OPERATING INSTRUCTIONS

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

Upon initial operation, or to refill after the system has been drained, check the drain valve is closed, then fill the system with clean fresh water. To fill, open one hot tap and switch on the Water Pump. Leave the tap open to allow air to escape while the Water Heater is filling. Once water flows smoothly out of the hot tap, the Water Heater is filled. To allow the remainder of air to escape from the system, open each hot water tap in turn until water flows smoothly.

Please note: In cold temperatures, the water in the supply pipework may freeze and prevent filling.

Check that all the gas and/or electricity supplies are turned on.

Option 1 - Whale Water Heater Control Panel

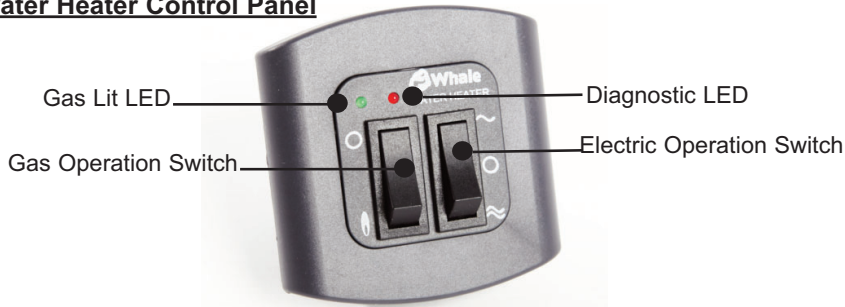




Fig. 29 Whale Water Heater Control Panel

For Gas Operation: Operate the left-hand switch to the 'on' (flame) position. There will be a pre-purge pause of approximately 5 seconds to allow any un-burnt gas to leave the flue and will extinguish when the water is up to temperature. A green LED will light upon successful flame ignition. If there is air in the gas supply line, it may take a few attempts for the gas to ignite. See Section 9 for gas lockout re-setting. If the ignition is not satisfactory, the red diagnostic LED will flash - refer to the Trouble Shooting Guide (see Section 9).

For Electric Operation: The Water Heater is equipped with twin 600W / 1200 W immersion heater elements offering operation at 600W or 1200W. Operate the right-hand rocker switch to the top position  to turn on one electric element. To turn on both electric elements, operate the right-hand rocker switch to the bottom position. 

Note: The electric elements will still operate if the appliance is in gas ignition lock-out.

Gas and Electric Operation: For faster heating, the appliance can be operated with both gas and electric.

Switching Appliance Off: Operate the left-hand gas switch to the top 'Off' position (O) and the right-hand electric rocker switch to the centre position (O). If the Water Heater is not going to be used for some time, isolate the gas supply and drain water if there is a risk of freezing.

Option 2 - Whale Duo Control Panel

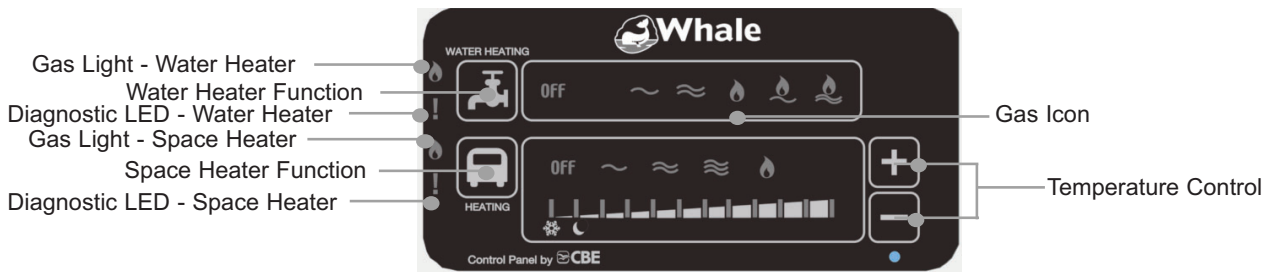




Fig. 30 Whale Duo Control Panel

For Gas Operation - Water Heater: Press the Water Heater Function key until the 'gas' icon is illuminated. There will be a pre-purge pause of approximately 5 seconds to allow any un-burnt gas to leave the flue and will extinguish when the water is up to temperature. A green LED (Gas Lit - Water Heater) will light upon successful flame ignition. If there is air in the gas supply line, it may take a few attempts for the gas to ignite. See Section 9 for gas lockout resetting. If the ignition is not satisfactory, the red diagnostic LED will illuminate - refer to the Trouble Shooting Guide (see Section 9).

For Electric Operation - Water Heater: The Water Heater is equipped with twin 600W / 1200 W immersion heater elements offering operation at 600W or 1200W. For 600W, press the Water Heater Function key until the 'low power setting' icon is illuminated. 

For 1200W, press the Water Heater Function key until the 'high power setting' icon is illuminated. 

Note: The electric elements will still operate if the appliance is in gas ignition lock-out.

Gas and Electric Operation: For faster heating, the appliance can be operated with both gas and electric.

Press the Water Heater Function key until the desired function is illuminated:-

For 750W and Gas, press the Water Heater Function key until the desired setting is illuminated.



For 1500W and Gas, press the Water Heater Function key until the desired setting is illuminated.



Switching Appliance Off: Press the Water Heater Function key until 'Off' is illuminated.

Option 3 - Installing 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.

General Safety Notes: The operating pressure of the gas supply to the Water Heater **must be** 28-30mBar Butane or 30mbar -37mbar Propane.

8. MAINTENANCE

To clean and sterilise inside the Water Heater, use diluted sterilising fluid and fully rinse through with clean water afterwards. 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. **Do not** use abrasive cleaners. Allow to fully dry before reconnecting the electrical supplies. If descaling of this appliance is required, this can be done using 'Kettle Klear' or an equivalent product and fully rinse through with clean water afterwards.

The Whale® Water Heater **must be** checked periodically by a Whale® Authorised Service Engineer, 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 engineer.

Please Note: The water may drip from the discharge pipe of the pressure-relief valve during heating up. This pipe **must be** left open to the atmosphere, **must be** installed in a continuously downward direction and in a frost-free environment. The pressure relief valve **must be** operated regularly (at least twice a year) by turning the yellow lever in the clockwise direction, to remove lime deposits and to check that it is not blocked.

9. TROUBLE SHOOTING

The Water Heater is equipped with an electronic diagnostic system which will detect fault conditions ranging from poor gas or d.c. supply to internal Water Heater malfunctions. In the unlikely event of a failure, the red LED on the Control Panel will light. To diagnose the problem please refer to the table on page 15.

Option 1 - Whale Water Heater Control Panel

In the unlikely event of a failure, the red LED on the Control Panel will flash a number of times, pause, and repeat until switched off. Count the number of flashes and refer to the table on page 15.

Option 2 - Whale Duo Control Panel

In the unlikely event of a failure, the red '!' LED on the Control Panel will light. To identify the lockout press and hold, the Water Heater Function Button. The temperature control bars will light to indicate the fault code e.g if 1 bar lights, the fault code is 1, if 2 bars lights, the fault code is 2 etc. Identify the fault code and refer to the table on page 15.

Number of Flashes/Bars Lit	Fault	Remedy
1	No Flame Detected	Check gas supply making sure there is gas in the bottle and no blockage in the gas line. At temperatures below 5°C, use Propane gas rather than Butane. Clear lockout as described below.
2	Overheat	Check that there is water in the appliance. Whale recommends that you wait at least 5 to 10 minutes to allow the Water Heater to cool before clearing the lockout as described below.
3	Low/High Supply Voltage	Minimum operating voltage is 10V d.c., maximum is 15V d.c., when measured at the Water Heater. Check battery voltage. If between 10V d.c. and 15V d.c., check connections between Water Heater and battery. Check alternator or external battery charging. Clear lockout as described below.
5	Other / Internal Fault	Attempt to clear lockout as described below. If this fails, contact Whale Support on +44 (0)345 9090 911.
Solid (i.e. all bars lit)	General Fault	Two faults have occurred at the same time OR at least five lockout clearing attempts have been unsuccessful. Clear lockout by pressing the red Reset Button on the Water Heater as described below.

Option 3 - 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.

Lockout Clearing Procedure

If the Water Heater lockout condition has been identified by **3 or 5 flashes/bars**, the lockout **must be** cleared by turning the d.c. power 'off' and then 'on' again at the master switch in the vehicle. Note that in some vans the d.c. power going to the Heater can only be turned on or off by pressing the power button on the power supply unit (PSU). See your vehicle handbook for more information. If the first attempt is unsuccessful, you can retry an additional 4 times. If the lockout still will not clear (identified by a solid LED (Whale Control Panel), or by all 12 temperature bars being lit (Duo Control Panel)) please press the red Reset Button on the Water Heater once (see Fig. 31).

If the Water Heater lockout condition has been identified by **1 or 2 flashes/bars**, the lockout **must be** cleared by pressing the red Reset Button on the Water Heater once (see Fig. 31).

If the Water Heater lockout condition has been identified by a **solid red LED** (on the Whale Control Panel) or by all 12 temperature bars being lit (on Duo Control Panel) 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 Water Heater once (see Fig. 31).

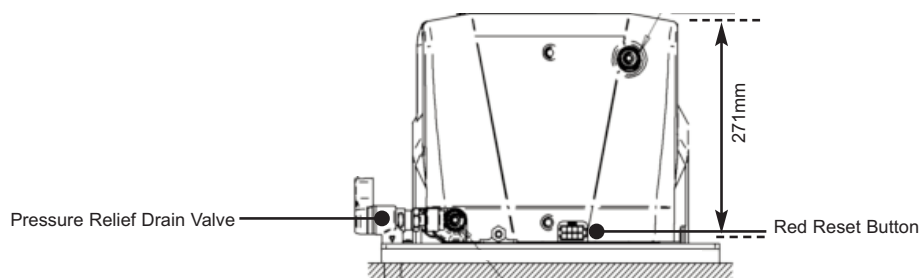


Fig. 31. Front View - Reset Button Location

10. WINTERISING / DRAINING

When using the Water Heater in winter, ensure the flue is not blocked by snow or fallen leaves etc. When not in use, the Water Heater **must be** fully drained. This is particularly important during the winter months as a precaution against freezing. To drain, switch off the water pump at either the pump switch or main switch, and then operate the Drain Valve which is fitted in the system.

For effective draining, air **must be** allowed into the system, this can usually be achieved by opening the taps. The Drain Valve **must be** left in the "open" position to ensure that all the water drains out. Open all the hot water taps in the vehicle and operate the drain valve fitted in the system. The drain valve **must be** left in the "open" position to ensure all the water drains out.

11. SERVICE SUPPORT DETAILS

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

Tel: +44 (0)345 9090 911 Email: info@whalepumps.com

12. EU DECLARATION OF CONFORMITY

Description of Equipment: **Gas and Electric Storage Water 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 electromagnetic compatibility.

CE mark first affixed: June 2009

Basis on which conformity is declared

The above equipment meets 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® Water Heater is protected by the following patent and design registration:

Patent Number: EP2438364

WHALE® is a registered trademark of Munster Simms Engineering Ltd trading as Whale.

14. WARRANTY

The Whale® Water Heater is covered by a 3 year warranty.

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.

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