Step 1 Find Suitable Location For Water Heater Installation

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.

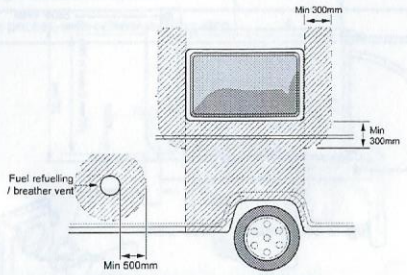
iv. Ensure that any surfaces in contact with the Water Heater are rated to at least 70 degrees C.

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. Ensure that the flue terminal can 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.



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

KEY

Prohibited area for Water Heater flue

Fig. 5 Installation Locating Diagram

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.

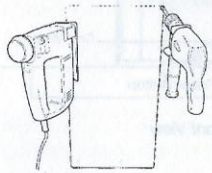


Fig. 6 Cut Out Hole For Flue

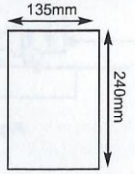


Fig. 7 Flue Dimensions

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

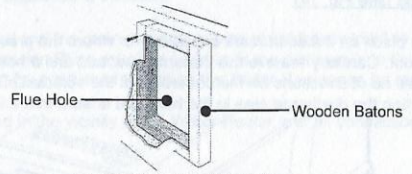


Fig. 8 Reinforce Flue Hole

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 ¾") provided and remove excess sealant.

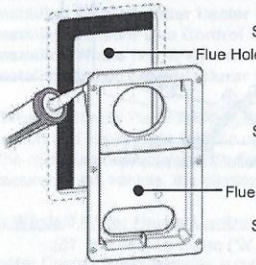


Fig. 9 Sealing the Flue to Caravan

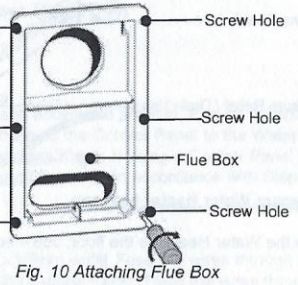


Fig. 10 Attaching Flue Box

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 ½") provided.

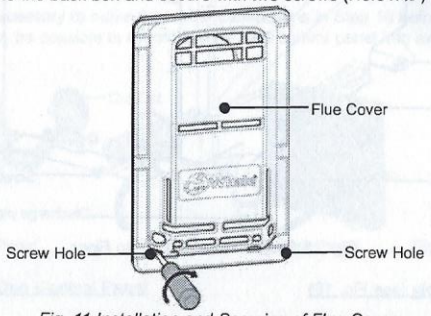


Fig. 11 Installation and Securing of Flue Cover

Step 5 Connect Water Heater to Flue

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

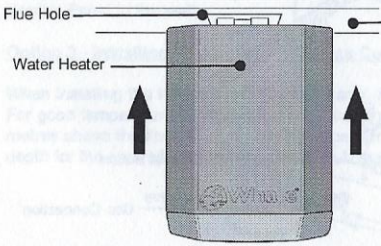


Fig. 12 Connect Water Heater to Flue (Plan View)

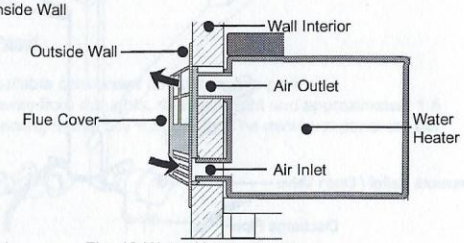


Fig. 13 Water Heater Position

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.

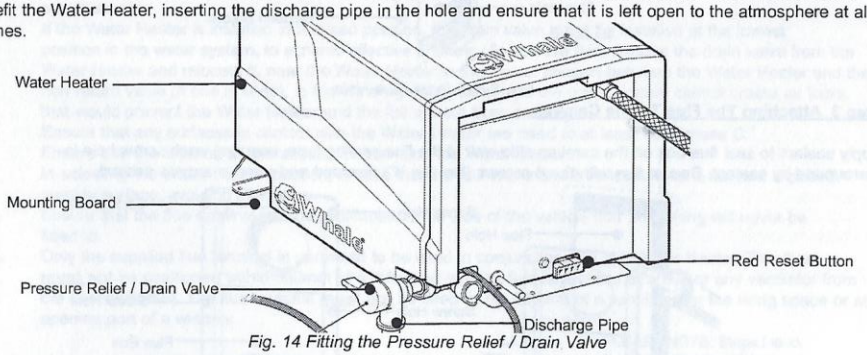


Fig. 14 Fitting the Pressure Relief / Drain Valve

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).

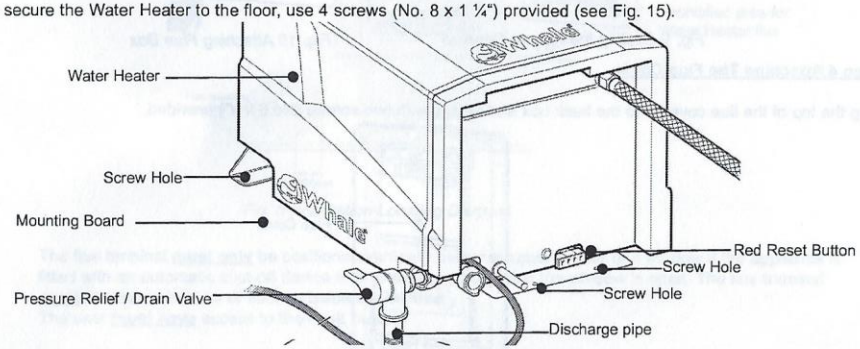


Fig. 15 Secure Water Heater to Floor

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.

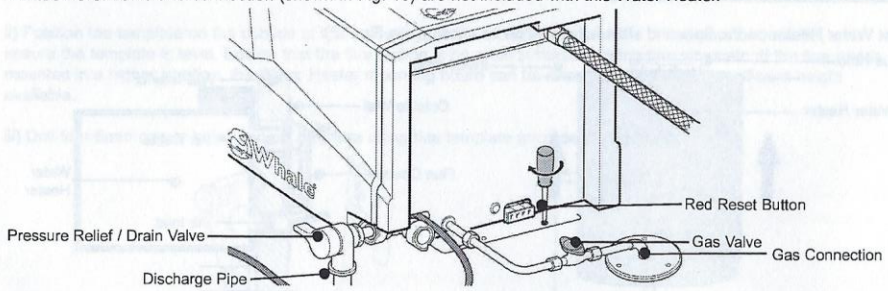


Fig. 16 Connect to Gas Supply

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

Both the gas pipe of the Water Heater and the main gas supply pipe **must be** checked to ensure that they are clear from dirt or other particles. A compression fitting **must be** used to fit the gas supply to the copper gas pipe of the Water Heater. The supply pipe **must be** positioned to ensure the Water Heater can be removed for servicing.

A 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 Panels

Option 1 - Installing Whale® Water Heater Control Panel (see Figs. 17-19)
Option 2 - Installing Whale® Duo Control Panel
Option 3 - Installing Whale iVan® Wireless Control Panel
Option 4 - 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 3.5 metres 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 ¾) provided, then clip on the surround frame.

In some instances, it may be necessary to make the wiring connections in Step 10 before securing the Control Panel to the wall. **Please note:** It may be possible to retrofit the Whale® control panel into existing frames.

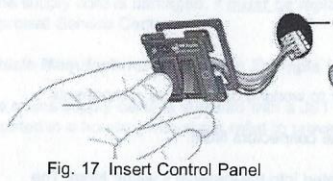


Fig. 17 Insert Control Panel

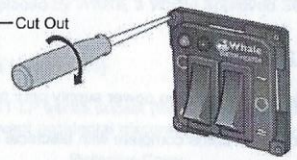


Fig. 18 Secure Control Panel

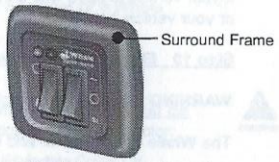


Fig. 19 Installed Control Panel

Option 2 - Installing 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 ¾) 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 Whale iVan® Wireless 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 × ⅝" pan head screws).

iii. Connect the positive and negative wires from the back of the controller into the vehicle's electrical system and iVan Control Panel **must be** protected 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.

iv. Reconnect / turn on the power supply. The iVan® Control Panel will 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 - 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 Panels 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 Panels 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 **must be** connected to the 8 way socket.

Please note: Whale recommends that a 5 amp 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: 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.

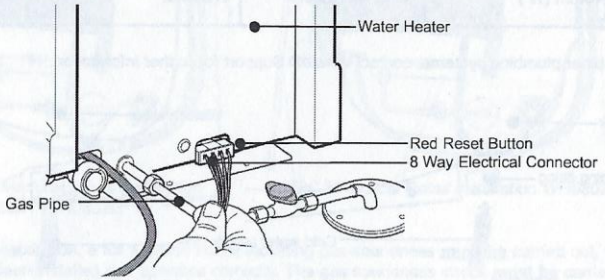


Fig. 20 Connect 12V d.c. Connector

Step 11 Electrical Connection 230V

Vehicle Manufacturer Installation (Whale Part Number: WH0802B or WI0802B) (see Fig. 21)

The appliance **must be** installed in accordance with the installation instructions and **must 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.

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

Vehicle Manufacturer Installation Example (see Fig. 21)

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.

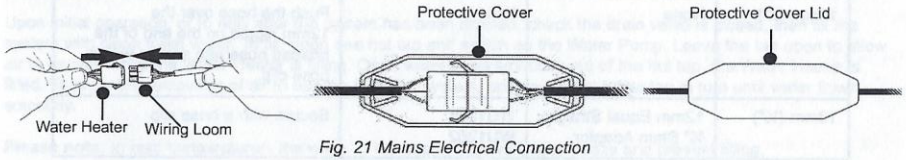


Fig. 21 Mains Electrical Connection

Retail Installation (Whale Part Number: WH0802) (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.

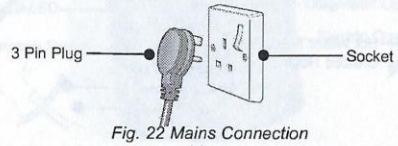


Fig. 22 Mains Connection

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 (⅜")	⅜" Stem Adaptor	WU1280	Secure with a hose clip
13mm (½")	½" Stem Adaptor	WU1282	Secure with a hose clip

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

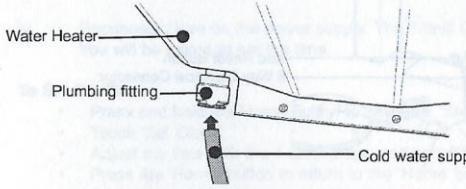


Fig. 23 Connect Cold Water Supply

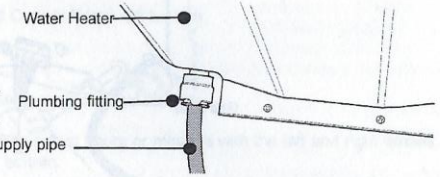


Fig. 24 Installed Cold Water Supply

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 (⅜")	None	N/A	Push the hose over the 12mm nipple on the end of the braided hose and secure with a hose clip.
13mm (½")	12mm Equal Straight ½" Stem Adaptor	WU1204 WU1282	Secure with a hose clip

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

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

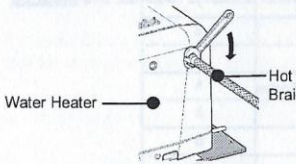


Fig. 25 Connect Braided Hose

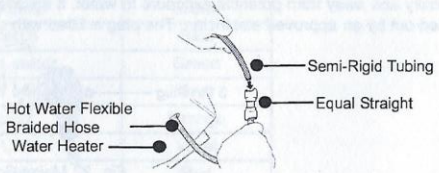


Fig. 26 Connect Hot Water Supply

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

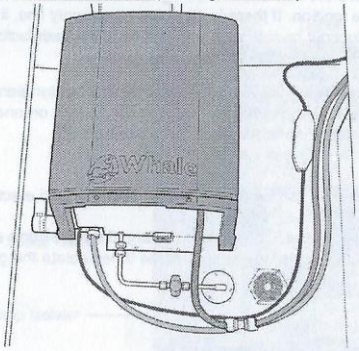


Fig. 27 Typical Vehicle Manufacturer's Installation WH0802B or WI0802B

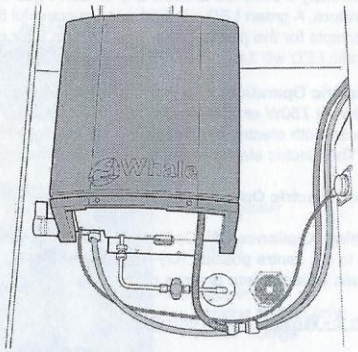


Fig. 28 Typical Retail Installation WH0802

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.

WARNING **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