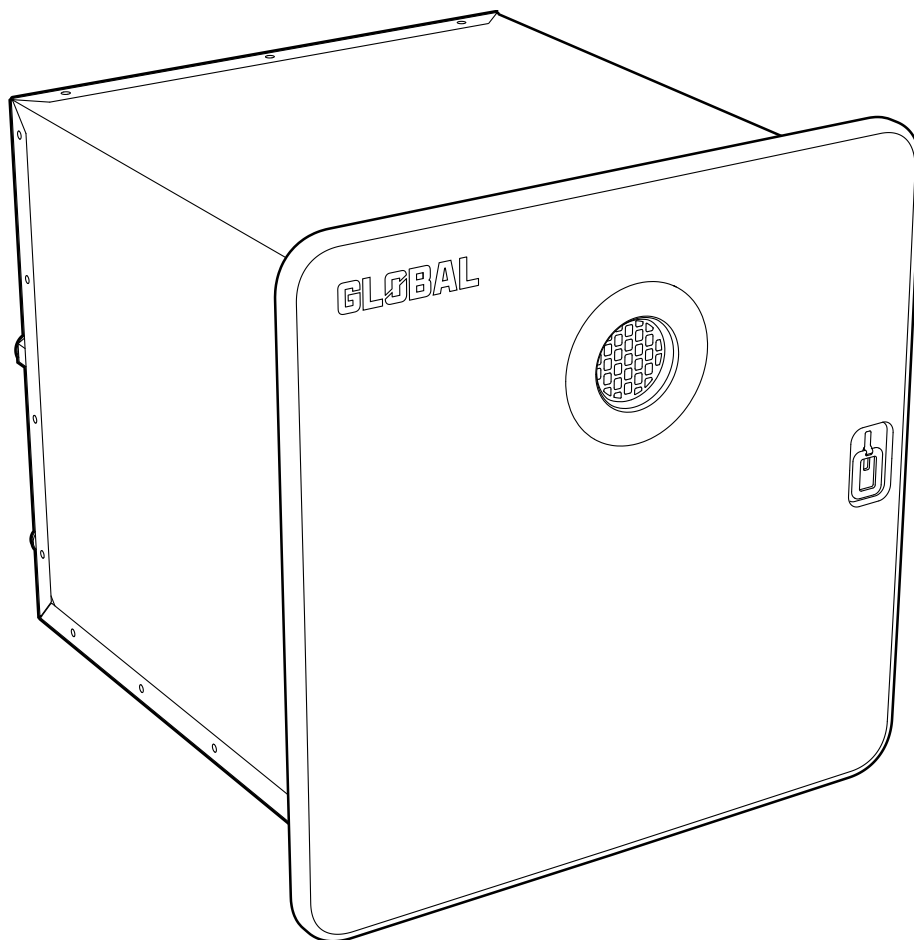




OPERATING & INSTALLATION INSTRUCTIONS



WCG 146 Instant Hot Water System

Version : OR

© Global Heritage 2025. All rights reserved

Contents:

1 Safety Precautions:	3
2 System Overview:	3
3 Operating Instructions:	3
3.1 Before starting the Hot Water System.....	3
3.2 Normal Operation	4
3.3 Temperature adjustment.....	4
3.4 Winter Use:	4
4 Maintenance:	4
4.1 Seals integrity:.....	4
4.2 Air Inlets:.....	4
4.3 Insects nests:.....	4
4.4 Debris:.....	4
4.5 Check hot Water System Bobby:	4
4.6 Water inlet filter screen (To be done by qualified person):	4
4.7 Wiring inspection:	4
4.8 Relief valve inspection:	5
4.9 Burner flame inspection:	5
5 Winterisation:	5
5.1 Compressed Air method:	5
5.2 Anti-freeze method:.....	5
6 Troubleshooting:	5
6.1 E0: Water Outlet Temperature Probe failure	5
6.2 E1: Ignition failure or accidental flame off during ignition.	5
6.3 E2: Flame sensing interrupted during normal operation.	5
6.4 E3: ECO open before ignition or during normal operation.....	5
6.5 E4: Water Inlet Temperature Probe failure...	5
6.6 E5: Blower motor failure.....	5
6.7 E6: Over Temperature.....	5
6.8 E7: Linear valve failure:	5
6.9 E8: Air pressure switch:	6
6.10 E9: Flame sensor:	6
6.11 EN: System Timer:.....	6
7 Technical specifications:	6
8 Installation Instructions:	6
8.1 Warnings:.....	6
8.2 Location	6
8.3 Preparation	6
8.4 Installation.....	7
8.5 Water connection	7
8.6 Gas connection	7
8.7 Wall controller installation.....	7
8.8 Testing	7
9 Commissioning:	8
9.1 How does the tankless hot water system work?.....	8
9.2 Water control valve flow optimisation	9
9.3 Functional diagram.....	9
9.4 Wiring diagram	10
10 Warranty:	10

Thank you for choosing our hot water system!

This manual is designed to provide you with all the information you need to operate and maintain your hot water system effectively. Please read this manual carefully before using the product.

1 Safety precautions:

- Read and understand the entire manual before operating the hot water system.
- Ensure proper ventilation when using gas-powered systems.
- Do not touch hot surfaces during or immediately after operation.
- Keep children and pets away from the hot water system.
- Turn off the system and gas supply before performing maintenance.
- Shut off gas appliances and pilot lights when refuelling.
- Follow a regular schedule of maintenance as outlined in this manual
- Use only authorized replacement parts and accessories.
- 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 should be supervised to ensure that they do not play with the appliance.
- This appliance can be used by children aged from 3 years and above and persons with reduced physical, sensory, or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- Children aged from 3 to 8 years are only allowed to operate the tap connected to the water heater.
- The gas heater function must only be supplied at safety extra low voltage corresponding to the marking on the appliance.
- If the electric cable is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons to avoid a hazard.
- Keep these instructions and warranty for future reference.

WARNING- FIRE OR EXPLOSION

These instructions must be followed exactly, or a fire or explosion may result damage, injury or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

• For your safety—WHAT TO DO IF YOUR SMELL GAS

- Do not attempt to light any appliance.
- Do not touch any electrical switch or use any phone or radio in the vehicle.
- Do not start the vehicle's engine or electric generator.
- Evacuate all people from vehicle.
- Shut off the gas supply at the gas cylinder if safe to do so.
- Contact the nearest qualified service technician for repairs.
- Do not turn on the gas supply until the gas leak has been repaired.
- Installation and Service must be performed by a qualified person.

2 System overview:

The hot water system comprises the following components:

- Water Heater Unit
 - Gas input connection
 - Electrical Power Source connection
 - Water inlet and outlet connections
- Control Panel

3 Operating instructions:

For proper operation this water heater requires a minimum water flow of 3.0L per minute for each Hot Water outlet it supplies.

3.1 Before starting the Hot Water System:

- Ensure water supply is ON.
 - Connected to water main pressure (campsite, home...)
 - Pump is on and water available in storage tank(s).
- Ensure 12VDC supply and gas supply are ON.

3.2 Normal Operation

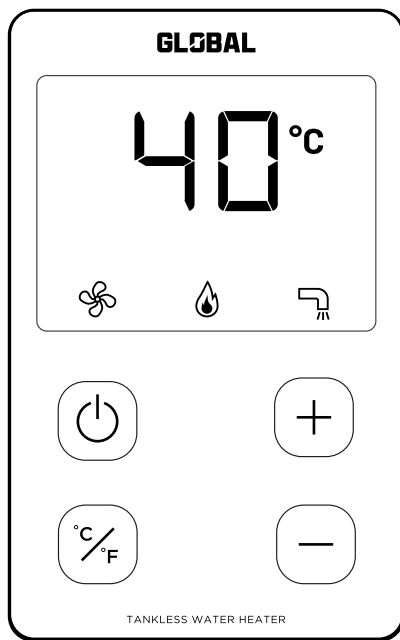


Fig. 1

- Press the power button to start the heater. The wall controller panel will display the water outlet temperature.
- Turn on the hot water tap/shower. Water will be heated to the wall controller set temperature.

3.3 Temperature adjustment:

- Adjust the set temperature to your preference using "+" or "-" button on the wall controller.
- Temperature can be adjusted from 35°C to 50°C.
- Recommended temperature is 46°C. (Factory setting)

3.4 Winter Use:

- If you wish to operate the water heater in potentially freezing conditions the hot Water System has a built-in thermostat that will start the burner whenever the temperature of the Heat Exchanger falls below 3°C and will automatically shut off when it senses a temperature in excess of 14°C.

4 Maintenance:

Maintaining a hot water system is essential to ensure it functions efficiently and safely while extending its lifespan.

- Recommendation: The hot water system should be inspected monthly by the user and at least once a year by a qualified person.

- Before an inspection, make sure that the Electrical Power, LP Gas and Water systems are turned on. Purge air out of all hot and cold-water lines. Verify that there are no combustible materials, gasoline or other flammable vapours and liquids in proximity of the unit.

Here are the items to inspect:

4.1 Seals integrity

- Inspect the integrity of the sealing (caulking or tape) between the side wall and the door of the water heater and ensure that the unit is solidly mounted to the vehicle.

4.2 Air Inlets

- Verify that the air inlet openings (louvers) are completely open and clear of any debris including mud, leaves, twigs, insects etc. Remove all obstructions to allow full air flow.

4.3 Insect nests

- Insects, including mud wasps and spiders, can build nests in the Exhaust Tube Outlet which will affect the performance of the unit. Inspect the Flue Outlet Tube to make sure that it is unobstructed and that the screen is clean. If debris or insects are present, clean and vacuum to remove any remaining debris. The use of any type of aftermarket screen to cover the vent is not permitted and will void the warranty.

4.4 Debris

- Open the door and verify that no debris or extraneous combustible materials are present anywhere (especially for the burner and the gas controls); remove any item present and wipe it clean.

4.5 Check hot Water System Body

- Inspect the interior surface of the housing for any cracks or corroded areas that could allow penetration of gases into or out of the interior of the vehicle. Check especially around the Hot Water, Cold Water, Gas and electrical connections.

4.6 Water inlet filter screen

(To be done by qualified person):

- There is a filter screen on the Water Heater inlet water line connection, unscrew the water line connection from the water inlet and check the screen to ensure no debris.

4.7 Wiring inspection

(To be done by qualified person):

- Check that all wire connections are firmly in place and there are no signs of chafing or cracks on the insulation. Verify that the spark ignition cable between the Control Board and the igniter is securely in place and not shorted to any metal component.

4.8 Relief valve inspection

(To be done by qualified person):

- Check the relief valve to ensure it has not been leaking (no water residue).

4.9 Burner flame inspection

(To be done by qualified person):

- Turn ON the power to the water heater and open a hot water outlet/tap to inspect the flame of the burner. The flame should be of the normal bluish appearance that indicates proper combustion. This can be accomplished by opening the water heater door and observing the flames by looking at the burner under the edge of the heat exchanger.

5 Winterisation:

Freezing of the water heater and its plumbing components will result in severe damage not covered by warranty. For this reason, it is advisable to follow the recommendations below if the unit is to be stored in a freezing environment or for long periods of time. At the start of the winter season or before travelling to a location where freezing conditions are likely, the unit must be winterised. The very small amount of water present in the heat exchanger DOES NOT require the installation of a bypass kit. Winterisation can be accomplished using one of the two common methods of winterisation used for RV water systems:

5.1 Compressed Air method

- Drain all water from the system opening one tap at a time and using compressed air to purge all remaining water.

5.2 Anti-freeze method:

- Follow the recommendations of the Recreational Vehicle manufacturer and fill the system with a non-toxic anti-freeze. Make sure that the anti-freeze flows from each tap to complete the process.

6 Troubleshooting:

If a failure were to occur in the Hot water system, it will be detected by the Controller Module and the specific cause will be indicated by the Error Code on the User Control Panel display.

6.1 E0: Water Outlet Temperature Probe failure:

An open circuit or short circuit condition is detected: This could be due to an internal failure in the Temperature Probe or to a faulty connection (Wires)

6.2 E1: Ignition failure or accidental flame off during ignition

If the established flame signal is lost while the burner is operating, the control will respond within 0.8 seconds, the gas valve is de-energized and a new inter-purge and ignition routine will begin. If the burner does not light, the control will de-energize the gas valve and will make two more attempts to relight the burner. If the burner does not relight after the three trials the control will go into LOCKOUT and the unit will need to be turned off before it can operate again. This could occur for several reasons. The most common are:

- Lack of Gas in the tank Cylinder.
- Faulty Igniter.
- Faulty Igniter connections.
- Improper distance between the Igniter and the Burner.
- Accumulated dirt or obstruction between igniter and Burner.
- Low Gas Inlet pressure.

6.3 E2: Flame sensing interrupted during normal operation:

Buzzer will sound. Possible causes are the same as indicated by Error E1 if any of these conditions occur during normal operation. A locking out will occur also in these conditions.

6.4 E3: ECO open before ignition or during normal operation:

This occurs if the ECO thermostat opens. Under normal circumstances this is due to the Temperature of the water at the Outlet exceeds 60°C. The cause must be identified and removed before restarting the unit.

6.5 E4: Water Inlet Temperature Probe failure:

An open circuit or short circuit condition is detected: This could be due to an internal failure in the Temperature Probe or to a faulty connection (Wires).

6.6 E5: Blower motor failure.

No motor signal was detected before ignition or during normal operation. This could be also caused by a wiring fault in the motor connections.

6.7 E6: Over Temperature:

Outlet Water Temperature has exceeded 60°C for 3 sec.

6.8 E7: Linear valve failure:

The Controller Module detects an open circuit in the Linear Valve control circuit before ignition or during normal operation indicating a faulty Valve.

6.9 E8: Air pressure switch:

Air pressure switch not detected for 7 sec. before ignition or is cut-off for 2 sec. during normal operation. This failure may be caused by a faulty motor or a blockage in the air supply or in the exhaust system.

6.10 E9: Flame sensor:

Flame is sensed before ignition. Buzzer will sound. This is displayed when a short is detected in the flame sensor.

6.11 EN: System Timer:

Water Heater ran longer than 20 min.

7 Technical specification:

- Energy Consumption: 45.5 MJ/h
- Fuel: Universal LPG
- Number of injectors: 6
- Injector size: 0.82 mm
- Inlet pressure: 2.75 kPa
- Power input: DC 12V, 36 W
- Water operating pressure: 0.8 MPa Max
- Min. water work pressure: 0.15 MPa
- Max. water temperature: 50°C
- Capacity: 5.8 l/min (Temp rise 25K)
- Heat output: 9.8kW

8 Installation Instructions:

8.1 Warnings

- This appliance shall be installed in accordance with:
 - a. The installation instructions provided in this manual.
 - b. AS/NZS 5601.2 – Gas Installations
 - c. All other national, state, or local statutory regulations
- For proper operation this water heater requires a minimum water flow of 3.0L per minute for each Hot Water outlet it supplies.

8.2 Location

- The water heater is designed to be installed on a floor or a fixed platform with access to water, LP gas and a 12VDC electrical connection from the back. It is recommended that the Tankless Hot Water System be located as near the centre of the vehicle as possible.
- DO NOT INSTALL IN AN AREA WHERE ONE OR BOTH THE INLET AIR VENT AND FLUE VENT CAN BE COVERED BY A DOOR OR ACCESS PANEL WHEN OPENED.
- INSTALL TO AS/NZS 5601.2. DO NOT INSTALL WHERE THE FLUE VENT IS CLOSER THAN 300mm IN ALL DIRECTIONS FROM ANY WINDOW OR OPENING INTO THE VEHICLE, AIR INTAKE OF ANOTHER APPLIANCE OF ANY FUEL SOURCE.
- DO NOT INSTALL THE WATER HEATER OR ANY OTHER APPLIANCE WHERE IT CAN VENT INTO AN AREA COVERED BY AN AWNING, CANOPY OR ANY OTHER ENCLOSURE.

(Note: The water heater can be installed under an RV roll-out/retractable type awning providing the awning does not have an enclosure such as a screen room and/or some type of “walled enclosure”.) AS/NZS 5601.2 restrictions apply.

8.3 Preparation

- The Instant Hot Water Service is to be installed on a non-combustible fire-proof base. If water leakage can result in damage to the adjacent area, install a drain pan under the water heater that can be drained to the outside of the vehicle.
- Verify that a clearance of 25mm will remain after installation between the top surface of the water heater and any combustible material. Zero mm clearance is acceptable for the sides.
- Make sure that the front edge of the opening is surrounded by a solid frame to firmly anchor the water heater. (Figure 1)

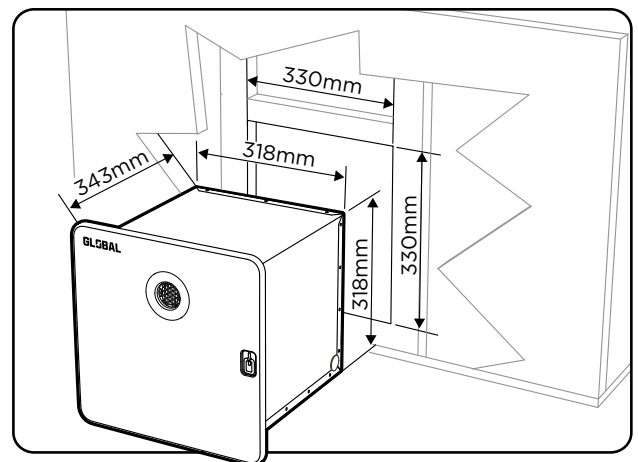


Fig. 2

- Connect the 1/4 BSP gas inlet connector to a rigid
- The rough opening for the Instant Hot Water heater should be 330mm X 330mm with right angle corners.
- The exterior wall opening must be in the same dimensions with no radius corners.
- Ensure that electrical water and gas connections from the vehicle are in place for installation.
- Allow sufficient length and flexibility in the electrical, water and gas lines to reach the connections while the unit is partially inserted into the opening.

8.4 Installation

- Remove the Hot Water System body from its packaging
- Remove the Door/Flange assembly from packaging. The door is hinged together with the flange.
- Fix the door unit to the Hot Water System body by x8 screws M4*5
- Position Hot Water System housing into the frame opening with the front edge aligned evenly to the exterior wall (See Figure 3).

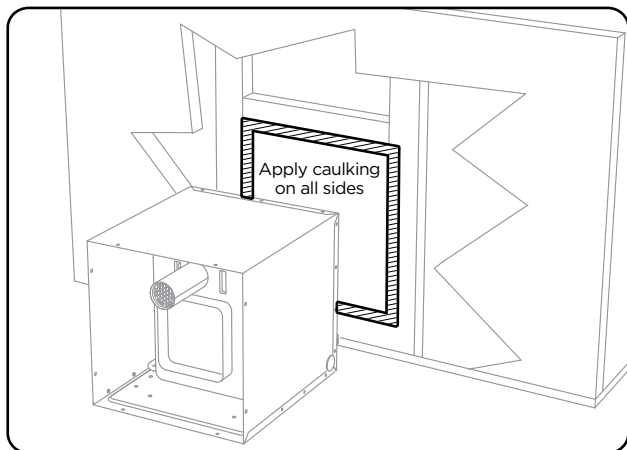


Fig. 3

- To prevent water and air leaks, apply sufficient caulking around the entire frame opening and the exterior edge of the water heater housing. Use a suitable caulking material that will result in a permanent seal between the water heater and the vehicle's frame.
- Push the Hot Water System housing and press the flange firmly against the sidewall.
- When ready to proceed, apply additional caulking or butyl tape to the back of the door flange that will contact the RV sidewall around perimeter of the opening.

- Secure the flange to the vehicle using 8 - 3/4" flat head screws through each hole along the perimeter. Verify that a tight seal exists between the side wall and the flange. If not, repeat the above steps.
- Remove any excess caulking and clean all surfaces.

8.5 Water connection

- Connect both Hot and Cold-water lines to the appropriate 1/2" BSP fittings. Connections can be made using PEX swivel nut adaptors threads and a cone seal. The PEX swivel nuts require only hand tightening.

RISK OF PRODUCT DAMAGE

Excessive torque will damage the Cold water and Hot water inlets. **DO NOT overtighten.**

8.6 Gas connection

- Connect the gas to 3/8" LP gas compression fitting on the back of Hot Water Heater.
- Use two wrenches to tighten the LP gas compression fitting to avoid damaging the unit
- Use additional caulking if needed to complete a permanent seal at the gas line connection.

WARNING: DO NOT use matches, candles or other sources of ignition when checking for gas leaks

8.7 Wall controller installation

- Set the water heater power switch to the "OFF" position and connect the power supply wires. Red wire to a 12VDC circuit from the DC panel protected with an interior power switch (not provided) and a 10amp fuse. Connect Black wire to a ground connection on the panel.

Note- The red wire is positive (+), and black wire is negative (-).

- Determine location for the controller inside the RV. Drill a 20mm hole and then run 2-18-gauge wires from the rear of water heater to the hole (Maximum wire length is 5M). Connect the 2 wires to the controller. Note—the wall controller wires can be connected to either colour/lead wire

CAUTION: DO NOT connect the Wall controller wires to the power wires.

WARNING: DO NOT use matches, candles or other sources of ignition when checking for gas leaks.

8.8 Testing

1. Verify the power switch on the water heater is in the "OFF" position (located inside water heater compartment) or the interior Water Heater Power Switch (installed).
2. Turn on the water supply to the unit.
3. Open and then close the HOT & Cold-water outlet in the vehicle to fill the pipes with water. If needed, purge air out of all water lines including washers, toilet and outside Water outlets. Close the water outlets when the water is flowing smoothly and verify that there are no leaks at the connections and within the water heater.
4. Confirm that there is a "steady" water flow (not pulsating). If pulsating has the water pump settings adjusted.
5. Turn on the gas supply and check all gas connections for leaks including exterior gas connection and gas connection to the gas-valve inside the Water Heater compartment.
6. Turn the power switch to the "ON" position and verify the UCP is illuminated (push RED power button on the UCP to illuminate). It will show the Hot Water temperature setting.
7. The recommended factory setting is 46 degrees (C).
8. Open a Hot water outlet / tap and verify that the unit ignites and supplies hot water at the outlet.
9. The UCP display will show the following icons: fan, flame and water temperature. See page Figure 5 for icon identifications.
10. WHILE UNIT IS RUNNING, verify that there are no leaks at the external gas connection and in proximity of the Gas Control within the unit.

9 Commissioning:

9.1 How does the tankless hot water system work?

The Tankless Water Heater is connected to:

1. The RV's cold-water system deriving its water input from a pressurized (310 kPa or greater) source such as main water connection or an RV water pump connected to the RV's fresh water storage tank.

NOTE - A steady water flow (no pulsating) will ensure consistent temperature and performance.

2. The RV's hot water system (i.e. outlets, taps and shower).
3. The RV's LP Gas system capable of supplying its rated MJ/h requirement.

The Tankless system introduces a new generation of smart tankless water heater designed specifically for Recreation Vehicles (RV). Its configuration and size are consistent with the tank-based RV water heater currently in use and is designed for OEM's and after-market use by the RV industry.

4. The RV's 12VDC electrical power.

The Water Heater microprocessor-based controller (Control Module) receives from electronic sensors the data it needs to decide each step of the Tankless operation.

1. Display on the User Control Panel (UCP) each phase of the Water Heater operation and receive from the user the operation parameters desired: ON/OFF to activate desired outlet temperature.
2. Verify that all components are in working order and that it is safe to start the unit upon sensing the minimum amount of water required (3.0 litres min)
3. Verify that the blower is operating and supplies the air flow needed to maintain a clean combustion.
4. Open the gas control and light the burner according to the procedure required by the safety standards.
5. Adjust the gas flow to reach and maintain the desired temperature set by the user.
6. Continue operation as long as:
 - The water flow is above the minimum required
 - The presence of flame is verified
 - No unsafe conditions develop
7. Provide the user with a visual indication of the operating conditions turning on the appropriate icon and displaying the current outlet temperature:
 - Fan icon on: Blower operating
 - Flame icon on: Burner is lit and flamed is detected
 - Shower Head on: Water is flowing
8. The button marked "C/F" determines if the temperature is displayed in °F or °C degrees.
9. Whenever the "UP" or "Down" buttons are pressed the display shows the set temperature.
10. If an unsafe condition is encountered and the unit shuts off, the display will show an Error Code corresponding to the actual condition that caused the unsafe condition.

See Troubleshooting section for a list of all error codes.

9.2 Water control valve flow optimisation

The Water Control Valve of the Tankless water system provides good control of the outlet temperature within a wide range of inlet water temperatures as are normally encountered in Recreational Vehicles. The unit is shipped with the Water Control Valve set at fully open/maximum flow. If desired, the operating flow can be manually adjusted. It is located on the rear of the water heater. In case of operation with extreme cold inlet water temperatures (approximately less than 7°C the performance of the Water Control Valve can be optimized by adjusting the flow as shown in Figure 4 opposite.

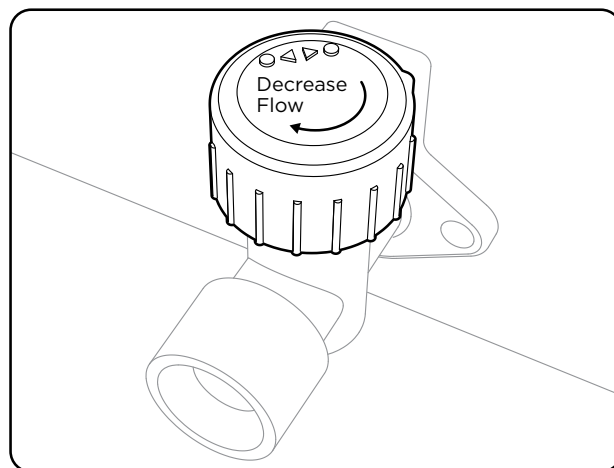


Fig. 4

NOTE - This also can be accomplished by adjusting the hot water flow at the outlet.

9.3 Functional diagram

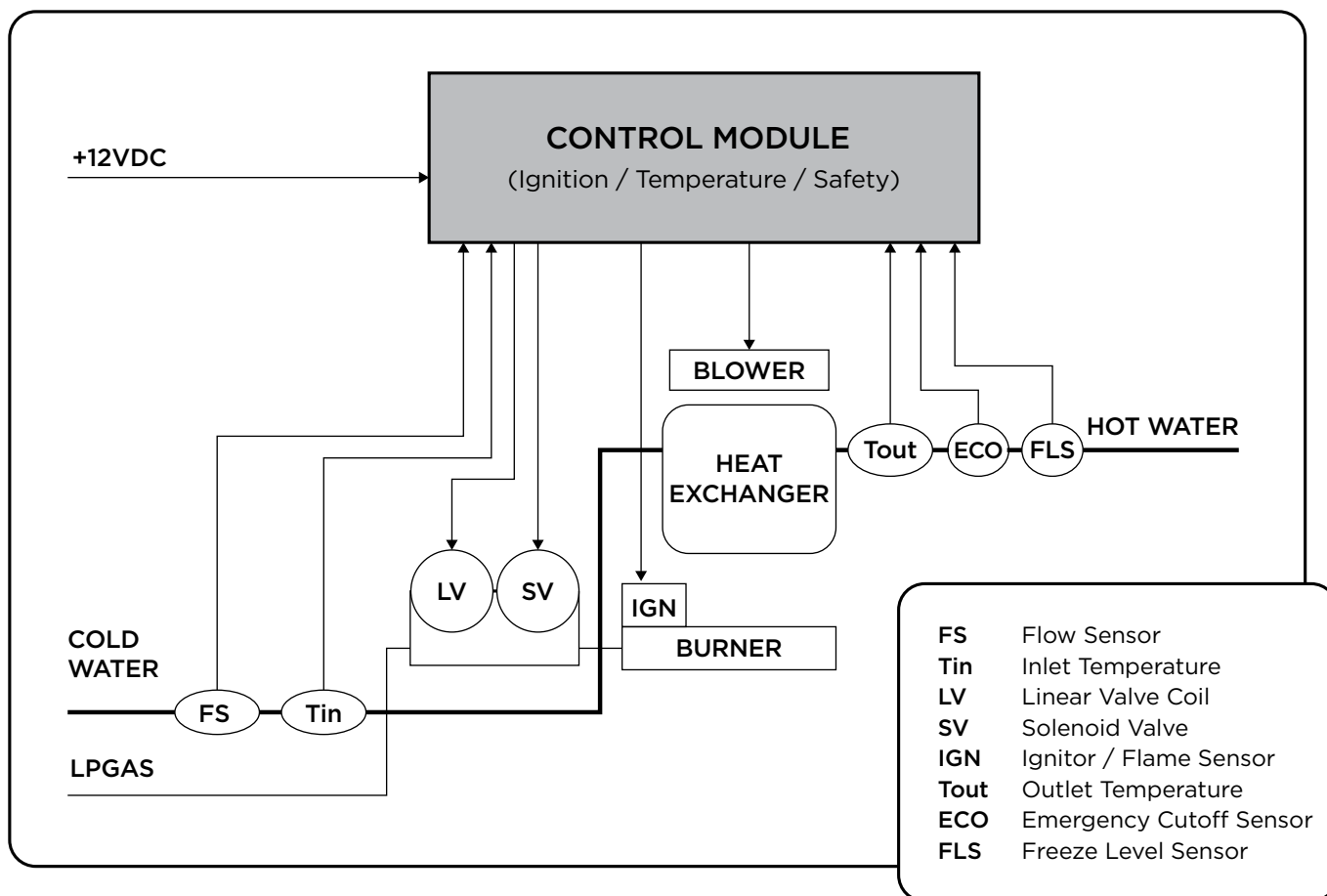


Fig. 5

9.4 Wiring diagram

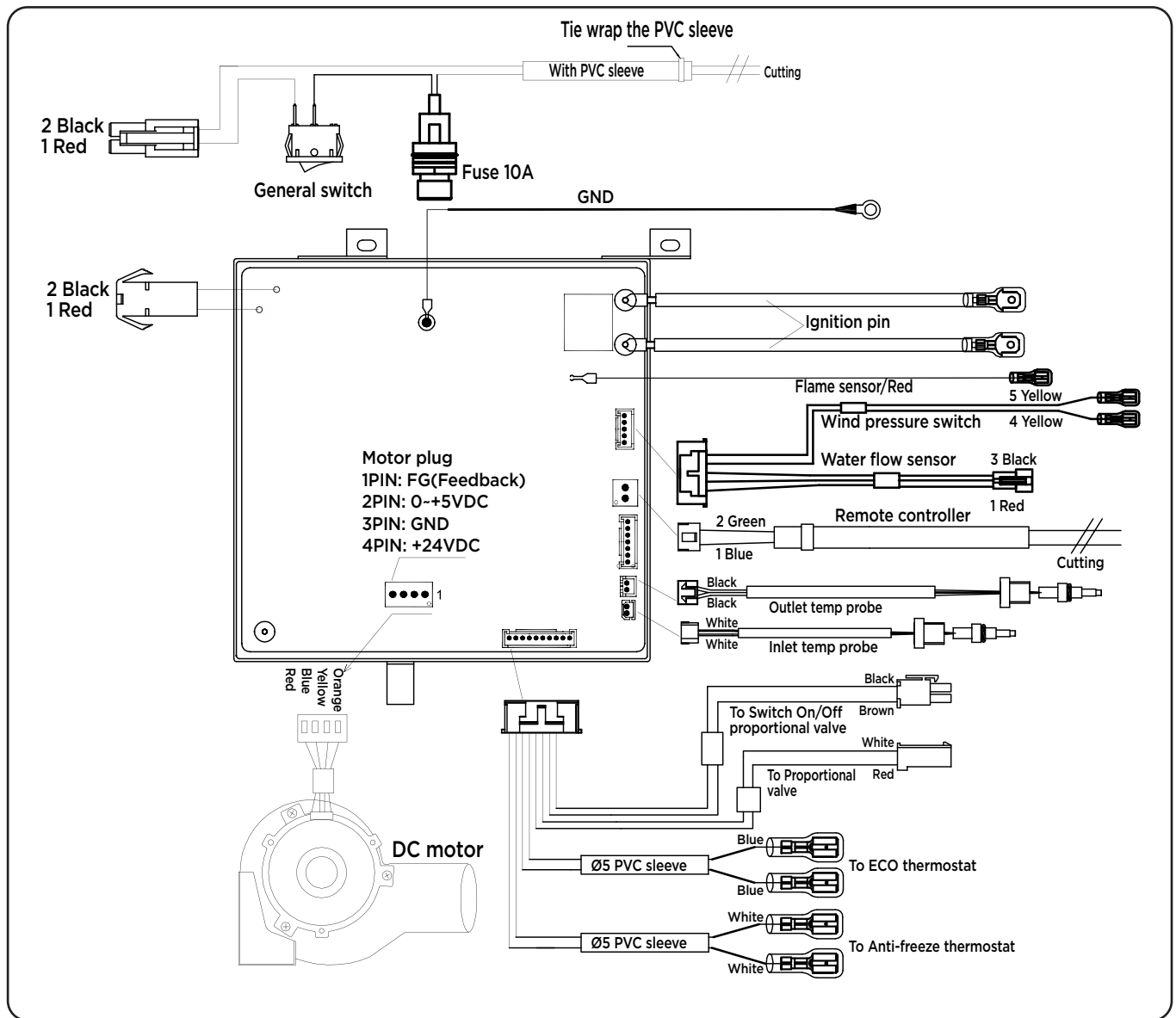


Fig. 6

10 Warranty:

This warranty only applies to a new water heater, purchased, and used in Australia. The warranty period is 12 months in Australia following the date of original purchase.

During the Warranty Period, Global Heritage will, at no extra charge, repair or replace any parts which it considers to be defective.

To enquire about claiming under this warranty, please follow these steps:

- 1-Check the user manual and the terms of this warranty.
- 2-Have the model and serial number.
- 3-Have the proof of purchase (e.g., an invoice) available.

4-Please contact the retailer or Global Heritage service department.

Phone: 1300 667 888

Email: warranty@globalheritage.com.au

Website: www.globalheritage.com.au

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage.

You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.