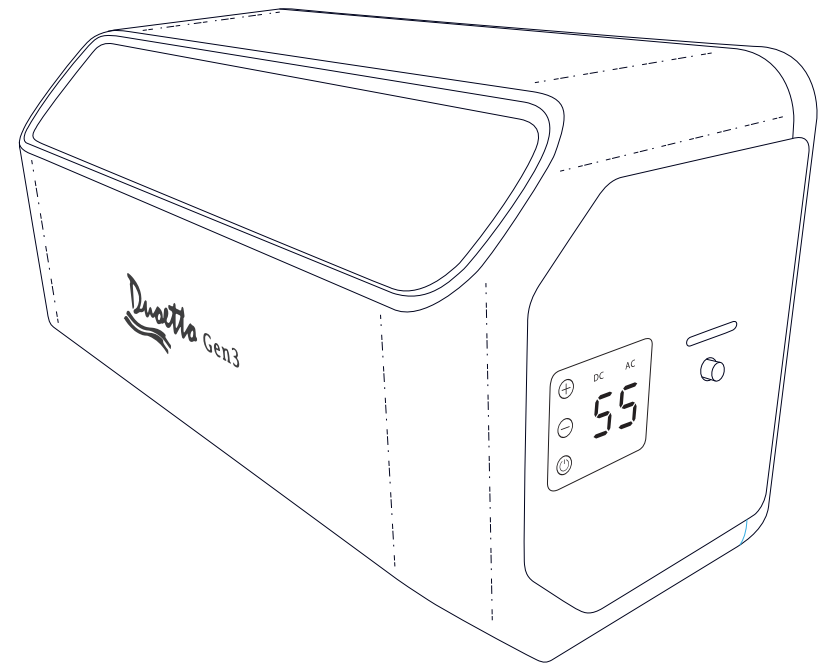


DUOETTO™ Gen 3



10 Product Warranty

To submit a warranty claim please contact the dealer where you purchased the water heater or submit the warranty claim directly with AusJ at service@ausj.com.au.

To process your claim, you will need to provide a copy of the Original Purchase Invoice and documentation that shows Place of Purchase, Model Number, Serial Number, Original Installation Date and the Installers Name.

Please note, in the event that the original purchase invoice is not being provided, warranty will commence from the date of manufacture.

Warranty Coverage

Warranty includes 12 months on all parts, **limited to parts only**.
For full details of warranty, refer to the website at www.ausj.com.au.

Please fill in all details correctly and retain this card along with the original purchase invoice for any future warranty claim.

Owner's Details

Surname: _____ Initial: _____

Address: _____

Purchase Date: _____ Purchased From: _____


Installer's Details

Installation Date: _____ Installer's Name: _____

Address: _____

Installer's Signature: _____

9 Product Disposal

 **THIS SYMBOL**, when displayed on the product itself or on its packaging, indicates that the product or component **MAY NOT** be treated as standard household waste.

- » Items marked with this symbol should be taken to an appropriate waste collection center for 'Recycling of Electrical Equipment'.
- » By ensuring that this product is disposed of correctly, you will help prevent negative impacts to both the environment and human health.
- » For more information about the recycling of this product, please contact your local council, your household waste disposal service or the shop where you purchased the product.

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1 Welcome

Congratulations on your purchase of an AusJ water heater!

You're joining a global network of thousands of proud owners of our quality RV water heating systems.

This device is approved to UL 174.

This appliance is a simple system with high quality parts designed to meet your needs. Please read this manual in its entirety for correct installation, operation and maintenance of your new AusJ water heater.

Should any fittings be required for your installation, we have a range which can be purchased on our website at www.ausj.com.au.

For sales inquiries please contact us at sales@ausj.com.au.

The latest version of this instruction manual can be found at www.ausj.com.au.

8.1 Thermostat Reset Button

On occasion the water temperature within the tank may exceed the normal operating range. As a safety feature, the thermostat has been fitted with an overheating sensor. In the event that the overheating sensor is triggered you will have to reset the switch.

To reset, disconnect the power and press the reset button (*Diagram 10*).

Turn on the power and resume normal operation.

If the overheating sensor is being triggered frequently, try setting a lower temperature for the water heater. If the problem persists, this could indicate that lime scale has formed on the heating element (*refer Maintenance Sections 7.8 & 7.9*).

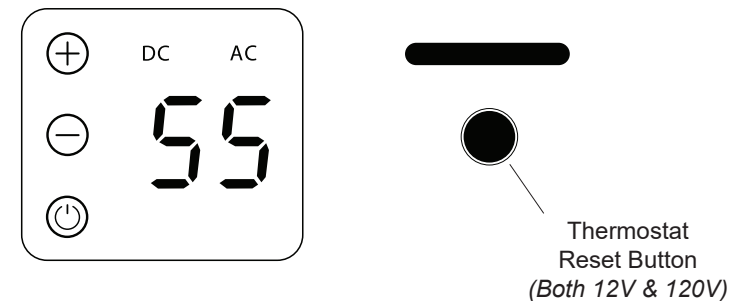


Diagram 11

8.2 12V Isolation Test

If the 12V connection isn't working you will need to carry out an isolation test to confirm that the heater is functioning properly.

For this procedure you will need to connect the water heater directly to a 12V battery. **DO NOT use any of your installation wiring at this stage.**

Connect the four wires from the water heater directly to a 12v battery. Test the normal operation of the heater. If the water heater operates correctly you have confirmed that the issue is not with the water heater itself.

Therefore, the problem must be within the installation wiring. Contact a qualified technician to troubleshoot the wiring and correct any issues.

8 Troubleshooting

Problem	Solution
Indicator light is NOT on	Ensure that the power source is properly connected and switched on.
	Overheating sensor may have been activated. Follow procedure at 8.1 to activate reset button.
	Indicator may be damaged; consult qualified technician
Water does not get hot	If the unit has just been turned on allow adequate time to heat the water in the tank (approx. 20 - 30 minutes)
	Ensure that the power source is properly connected and switched on.
	Overheating sensor may have been activated. Follow procedure at 8.1 to activate reset button.
	Heating element may be faulty; call a qualified technician to check and replace the heating element if necessary.
	Faulty temperature controller; contact customer service for replacement part.
	If indicator light works correctly but the temperature at tap is not hot. Check plumbing has been installed correctly with no crossover. To test, shut off cold water supply to heater and open hot water tap. There should be no water flowing, any flow indicates a crossover which ultimately affects water temperature. Rectify plumbing if crossover has been identified.
No water flows from tap	Mains water not turned on.
	One-way valve may be installed around the wrong way.
Electrical mains tripping	Heating element may have a short circuit, replace heating element.
Leaking	Check water fittings and temperature/pressure fitting on tank. Tighten any loose connections.
	Check heating element gasket, tighten or replace gasket if necessary.
E1 Displayed	Power source not connected or poorly connected. Get a qualified technician to check electrical wiring and indicators.
	Temperature sensor may be faulty. Get a qualified technician to test and replace if necessary.
E3 Displayed	Indicates that dry heating has occurred. Ensure that the tank is completely filled with water.
12V connection not working	Refer section 7.2 for the 12V isolation test procedure

2 Safety Information

⚠ WARNING! DO NOT power on the water heater without filling the tank completely with water. This will cause permanent damage to the water heater. When the tank is full water should flow from the hot water faucet.

⚠ WARNING! Hot water systems can produce hydrogen gas when not used for long periods of time (generally 2 weeks or more). Hydrogen gas is highly flammable. It is recommended after long periods without use that you run the hot water faucet for several minutes to purge the system before using any electrical outlets connected to the hot water system. If Hydrogen gas is present, it will make a sound like air escaping through the faucet. Ensure that there are no naked flames or smoking present when purging the system of Hydrogen gas.

⚠ WARNING! When using electrical appliances, safety precautions must be followed to reduce the risk of fire, electric shock or injury and includes the following:

- » READ ALL INSTRUCTIONS; ensure you have read and understood all the instructions before attempting to operate the water heater.
- » The electronics of this water heater must be GROUNDED. You must only connect this appliance to a properly grounded outlet. Refer 'Electrical Connection' on page 13.
- » Installation of this water heater must only be carried out in accordance with the installation instructions and local regulations.
- » This water heater must only be used for its intended purpose.
- » If there is no power outlet close to the water heater contact a qualified electrician to have one installed near the heater. DO NOT use extension cords with this heater.
- » DO NOT operate the water heater if it has a damaged cord or plug, is not working properly, or if the heater has been damaged or dropped.
- » The area in which the water heater is installed must have adequate drainage to ensure against damage to the surroundings in the event that there is a leak.
- » This appliance is suitable for use by children aged 8 years and above with adequate parental supervision.
- » Similarly, persons with reduced physical, sensory or mental capabilities can use this appliance with adult supervision.
- » Store these instructions for future reference. The manufacturer and/or distributor is not responsible for damages caused by improper installation, or failure to follow the instructions within this manual.

3 Box Contents

No.	Item	Quantity
1	Duoetto™ Gen 3 Water Heater	1
2	Mounting Bracket	2
3	Bolt	4
4	Washer	4
5	Timber Screws	8
6	User Manual	1

4 Product Information

4.1 Product Features

- » The Duoetto™ Gen 3 Water Heater is the latest addition to the AusJ water heater range with upgraded features and a modern design to suit any application.
- » Automatic voltage detection. The water heater detects when a power source is added or removed and switches power source automatically, and will default to AC power when available to save on battery consumption.
- » The heater is also fitted with safety features such as over temperature and run dry protection.
- » The water tank utilizes high quality porcelain enamel to ensure a long working life free from rust and corrosion and provides greater efficiency in use.
- » Incorporating the latest technology heating element manufactured with Incoloy 840 which provides superior long lasting protection against corrosion and oxidization, even at high temperatures.
- » Superior insulation to provide minimum heat loss.
- » This appliance will maintain a water temperature between 86°-140° F. When the tank temperature drops 39° F below the set temperature the heating element will turn on until the set temperature is obtained.
- » Flexible mounting options; configurable for wall or floor mounting.

The element can be cleaned in two ways:

- » Chemically; through use of a mild acid. Soak the element in white vinegar or other proprietary descaling solution. Once cleaned, rinse thoroughly in fresh water with some baking soda added.
- » Manually; using a soft (non-metallic) brush. Once the heating element has dried, brush the dried deposits off the element with a soft brush.
- » Alternatively; If you have a drainage tap installed (refer Section 5.4), you can drain the water from the tank and fill the tank completely with white vinegar.
- » Let the vinegar sit in the tank for about 6 hours.
- » Drain the vinegar from the tank and thoroughly flush the tank with clean water.
- » Resume normal operation.

7.8 Assembly & Replacement Parts

- » Assembly of the components listed above is the reverse order in which they were removed.
- » When replacing hardware components with new replacement parts, simply swap out the components and assemble in the reverse order of the procedures described above.
- » Take care when reassembling the water heater and ensure that the bolts are not overtightened.

⚠ REFILL TANK! Don't forget to completely refill the tank with water before reconnecting the power to the water heater. The tank is full when water flows from the hot water faucet.

7.3 Removing Water Heater

- » To remove the water heater from its installed location you must first remove the screws from the base (shelf mount) or the wall (wall mount). For wall mount you must support the weight of the appliance as you remove the screws.

7.4 Draining Water Tank

- » After removing the heater from its installed location, rotate the water heater vertically so the water drains from the tank. Water should flow from the outlet pipe on the side of the water heater.

7.5 Removing Side Cover

- » Access to internal components of the water heater is achieved through the side panel on the right hand side of the appliance.
- » Remove the two Phillips head screws and carefully remove the cover.

7.6 Removing Heater Element

- » Before removing the heating element, ensure the power has been turned off and the water has been drained from the tank (refer previous sections).
- » Remove the side cover as described in previous step.
- » Disconnect the electrical terminals from the heater element and remove the 4x retaining nuts. Remove heating element and silicon gasket.

7.7 Descaling Heater Element

One of the leading causes of water heater malfunction is calcium build up around the heating element.

If you have brown colored water that you think looks like rust coming from your hot water outlet when you turn on the tap first thing in the morning, then you have a problem with hard water or calcium deposits.

Calcium deposits build up on the heating element which affects the efficiency of the element. Excessive scaling can even cause damage to the heating element.

4.2 Product Diagrams

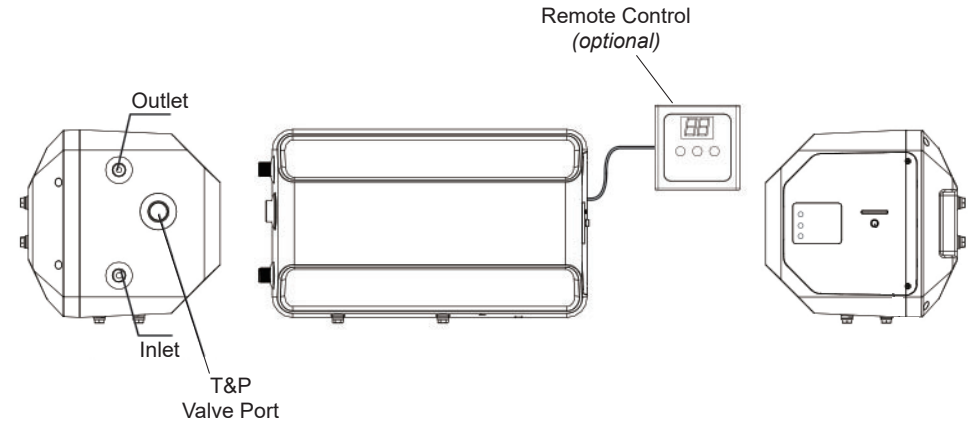


Diagram 1

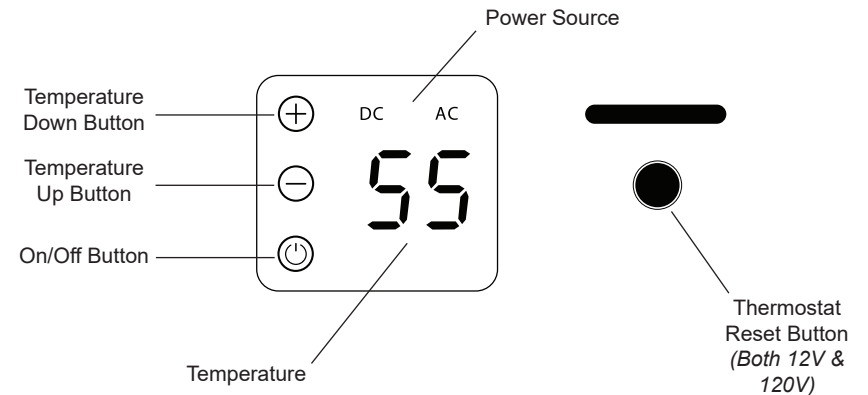


Diagram 2

4.3 Technical Specifications

Technical Specifications		
Voltage	AC 120V	DC 12V
Power	1440 W	300 W
Current	12 A	25 A
Frequency	60 Hz	-
Volume	2.5 gallons	
Water Pressure (max.)	150 psi	
Water Temperature	86° - 140° F	
Weight (empty / full)	21.6 pounds / 43.7 pounds	
Dimensions (w x d x h)	19.5" x 11.5" x 11"	
Box Dimensions (w x d x h)	21.9" x 13.2" x 29.5"	

4.4 Water Source Requirements

⚠ WARNING! Failure to use an appropriate water source can cause damage to the appliance and have negative health impacts for the end user. It is the end users responsibility to ensure that the water heater is always connected to an appropriate water source.

i INFORMATION! It is the responsibility of the installer to ensure that the water source for the water heater is potable and complies with the chemistry requirements shown at item 4.5 below.

Potable water is defined as drinkable water supplied from a utility or well in accordance with acceptable EPA containment levels (40 CFR Part 143.3).

If you suspect that your water may be contaminated in any way, immediately discontinue use. Water pre-treatment may be appropriate in this instance.

4.5 Water Chemistry Requirements

Water Chemistry	Value
Ph	6.5 - 8.5
Hardness (grains /US gallon)	4 - 20
Chloride concentration	≤ 100
Total dissolved solids (ppm)	≤ 500
Conductivity (µS/cm)	≤ 1200

6.3 AC & DC Power Source

- » This water heater can be simultaneously connected to both mains power AC (120V 60Hz) and 12V DC power.
- » When the water heater is connected to mains power the display panel will show AC.
- » When the water heater is connected to 12V power the display panel will show DC.
- » When operating the water heater with both AC and DC power sources connected to the water heater, the AC power source will take precedence.

7 Maintenance

⚠ WARNING! Before carrying out any maintenance procedure ensure that the power to the water heater has been switched off and disconnected.

7.1 T&P Valve

- » The Temperature and Pressure Valve (T&P Valve) is a safety device that regulates the pressure within the tank by releasing water when the pressure is higher than the regulated limit. It is normal for water to drip from the discharge pipe during normal operation.
- » To maintain the water heater you should lift the lever on the T&P Valve for approximately 10 seconds to remove lime deposits and ensure that it is not blocked. Water will flow out the discharge pipe during this operation.
- » Releasing the pressure valve in this manner should be carried out every 6 months.

7.2 Disconnecting Water Heater

- » Disconnect the power and allow the water in the storage tank to cool. You can also drain the hot water from the tank by turning on the hot water faucet and running until cool water flows from the hot water faucet.
- » Disconnect the inlet pipe from the water heater, make sure you leave the one-way valve attached to the water heater.
- » Disconnect the outlet pipe from the water heater.

6 Operating Instructions

- ⚠ **WARNING!** Check all pipe connections for leaks before connecting power to the water heater.
- ⚠ **WARNING! DO NOT power on the water heater without filling the tank completely with water. This will cause permanent damage to the water heater.** When the tank is full water should flow from the hot water faucet.

6.1 Turning Water Heater ON/OFF

- » Connect the power cord to a power outlet and turn on. Press the power button on the display panel (*Diagram 9*) to turn the water heater on or off.
- » When the water heater is powered on, the temperature panel will light up and display the actual temperature of the water in the storage tank.

6.2 Adjusting Temperature

- » To view the 'Set Temperature' of the water tank press the + or - button once (*Diagram 9*). The temperature display will flash and show the set temperature.
- » Continue to press the + or - buttons to adjust the temperature to the desired setting.
- » After 5 seconds the display will stop flashing and show the actual tank temperature again.
- » The operating temperature range of the water heater is 86°-140° F.
- » If you have the remote control (*optional*) installed the temperature can be adjusted from the remote control panel in the same manner.
- » When the tank temperature drops 39° F below the set temperature the heating element will turn on until the set temperature is obtained.

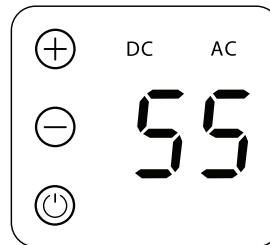


Diagram 10

5 Installation

- ⚠ **WARNING!** Use fixing screws and hardware appropriate to the wall or sub-straight material being fixed to. Ensure that the hardware and sub-straight can withstand at least 4 times the weight of the water heater when completely filled with water. Failure to do so may result in damage to the water heater or the surrounding cabinetry.

5.1 Wall Mount

- » Fasten the brackets to the rear of the water heater with the bolts provided.
- » Position the water heater in the desired location allowing adequate clearances as detailed at information section above.
- » Mark the fixing locations with a pencil.
- » Fasten the water heater in place with the supplied screws.

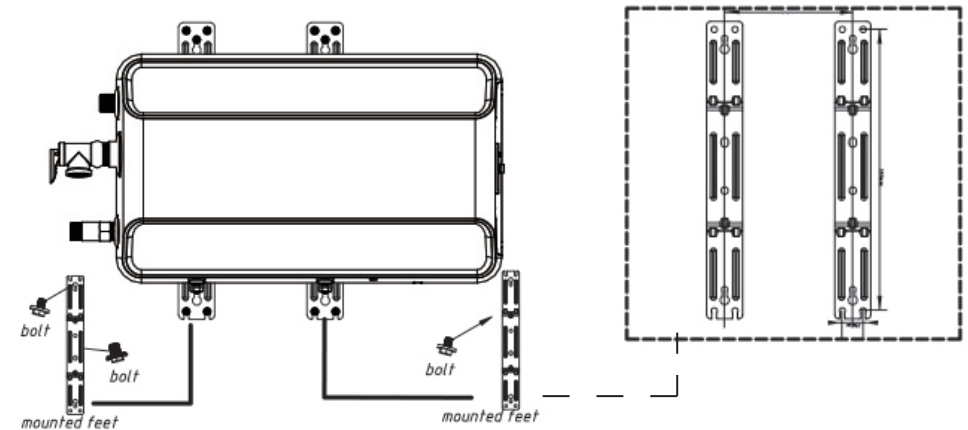


Diagram 3

5.2 Base Mount

- » Fasten the brackets (feet) to the under side of the water heater with the bolts provided.
- » Position the water heater in the desired location allowing adequate clearances as detailed at information section on Page 9.
- » Fasten the brackets to the floor using the screws provided (*refer Diagram 5*).

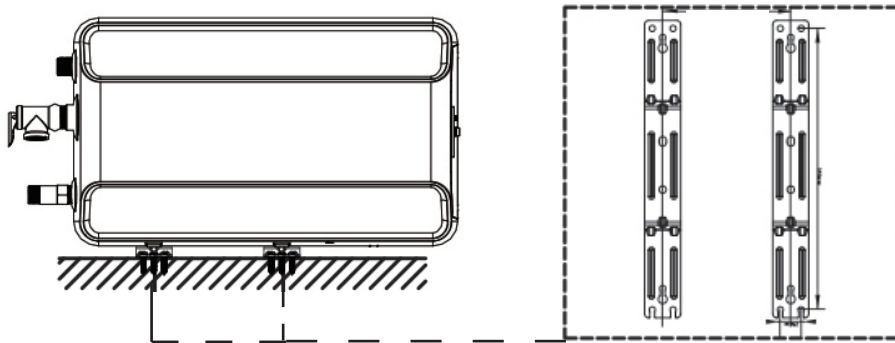


Diagram 5

5.3 Pipe Connection

- ⚠ WARNING!** Installation of any plumbing or pipe works are to be carried out by a qualified person.
- ⚠ WARNING!** Do not over tighten the safety valve or pipe connections as it may cause damage to the joints and/or the appliance.
- i INFORMATION!** All pipes must be flushed prior to fitting taps and/or appliances to ensure the system is free from dirt and debris.
- » All pipe connections are 1/2" NPT threads and must be connected with appropriate plumbing tape or liquid thread seal.
- » Connect a one-way valve to the inlet port (marked blue) on the water heater (*refer Diagram 6*).
- » Then, connect the mains cold water pipe to the one-way valve.
- » Connect the hot water outlet on the water heater (marked red) to the hot water pipe that feeds to the faucets and/or appliances.

5.11 Choosing the Right Wire Gauge

Choosing the right cable size for the DC electrical circuit is important. Wires that are too small can overheat and possibly start a fire. The chart below is intended to assist you in choosing the correct wire for your particular installation.

This chart also assumes the use of 'Stranded Wire' that is tin-plated copper. In addition, the chart assumes a cable insulation rating of 105°C. A lower insulation rating will decrease the current-carrying capacity of the wire. This table has been rated for 'Critical DC Circuits' with allowance for a 3% voltage drop.

- » Calculate the total Amps of all the appliances in your circuit. Locate the Amps across the top of the table.
- » Calculate the circuit length; this is the round-trip distance in feet from the power source (DC Battery) to the product and back. Locate the length along the left side of the chart.
- » On the table, intersect the current (Amps) and Length (Feet) to determine the cable size for your application.
- » A 40-50 Amp fuse is recommended on the main circuit (large 5/32" wires) and on the smaller switching wires a 5 Amp fuse is recommended.

		Current Flow (Amps)																
		5A	10A	15A	20A	25A	30A	40A	50A	60A	70A	80A	90A	100A	120A	150A	200A	
Circuit Length (feet)	0-6		16 AWG	14 AWG	14 AWG	12 AWG												
	10	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	1 AWG			2 0 AWG
	15		12 AWG	10 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG		2 AWG	2 AWG	1 AWG	0 AWG			
	20	14 AWG		8 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG
	25		10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0 AWG	2 0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG
	30			6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0 AWG	2 0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG
	40		8 AWG		4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0 AWG	2 0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG
	50	10 AWG		6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG
	60		6 AWG		2 AWG	2 AWG	1 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG
	70			4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG
	80	8 AWG		2 AWG	2 AWG	1 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG
	90			2 AWG	1 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG
	100		4 AWG		1 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG
110			2 AWG	1 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	
120	6 AWG		1 AWG	0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	
130		2 AWG		0 AWG	2 0 AWG	3 0 AWG	3 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	4 0 AWG	

5.10 Wiring Diagram

- » Wiring must comply with category III wiring requirements (*Diagram 7*).
- » If the appliance is hard wired, there must be a facility integrated within the circuit that allows for both positive and negative poles to be disconnected from the mains power supply (*Diagram 8 shows one example of this type of connection*).
- » Electrical terminals must be protected from damp or humid environments. DO NOT use spade terminals as they do not provide adequate protection. We recommend using Anderson Plugs to extend or connect wires (*Diagram 8*).
- » Cable ties may be used to tidy up the wiring and to prevent cable droop (*Diagram 8*).

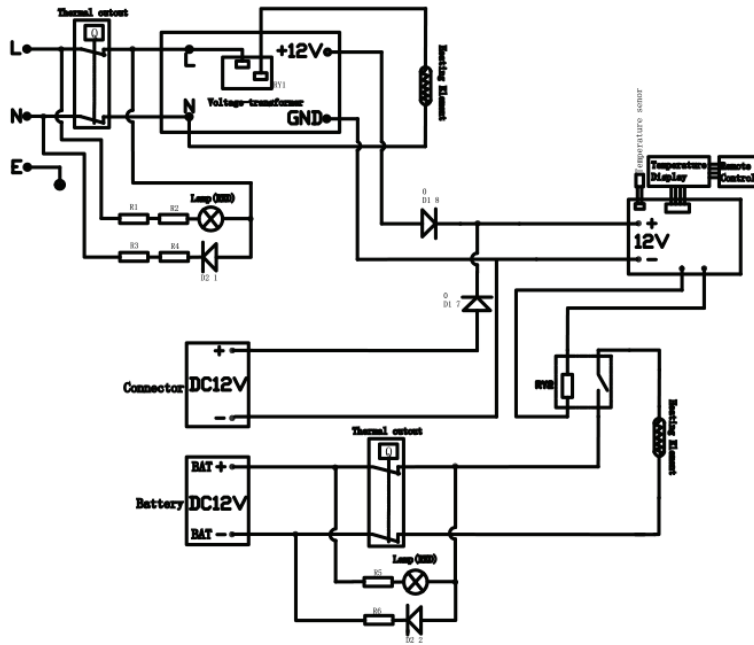


Diagram 8

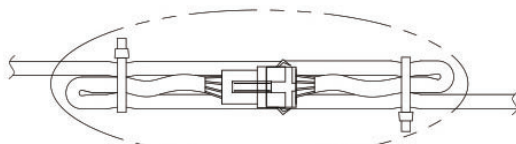


Diagram 9

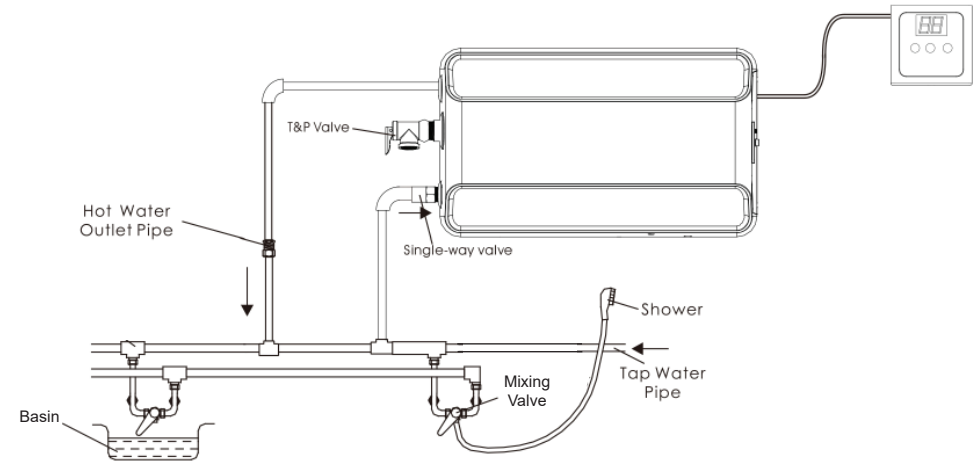


Diagram 6

5.4 Adding Drainage Tap

If the water heater hasn't been used for a long period of time or is not going to be used over winter it is recommended that the storage tank be drained of water.

Adding a T Fitting and Drainage Tap to the water heater will enable easy drainage of the water tank without having to remove the water heater.

- » Add a T fitting to the inlet port on the water heater. The T Fitting must sit between the one-way valve and the water heater inlet port.
- » Connect the tap to the bottom of the T Fitting
- » Ensure that the tap outlet feeds into a drain and water can easily exit the vehicle.
- » To drain the tank; turn on all hot and cold water taps to create open pressure to drain the tank.
- » Open the drain tap at the inlet port of the water heater to drain the water from the tank. Close all taps when draining is complete.

5.5 T&P Valve Connection

⚠ WARNING! To reduce the risk of excessive pressures and temperatures within this water heater an appropriate temperature and pressure regulator is recommended.

The pressure valve must be marked with a maximum set pressure not to exceed the marked maximum pressure of the water heater, which is 150 psi.

- » Appropriate tubing must be installed on the pressure valve outlet port so that any discharge from the valve exits at either 6" above the floor or at any distance below the structural floor via a drain.
- » Shut-off valves ARE NOT to be installed either before or after the T&P Valve.
- » Discharge from the pressure valve must freely exit the vehicle via a drain and must not contact any live electrical wires or electrical components.
- » The outlet drain pipe must be made of suitable material for hot water and be installed in a continuously downward direction.
- » The outlet drain pipe must be installed in a frost-free environment and never be plugged or blocked.

5.6 Electrical Connection

⚠ WARNING! All electrical work must to be carried out by a qualified electrician and be in accordance with the installation instructions and local regulations.

⚠ WARNING! Check all pipe connections for leaks before connecting power to the water heater.

⚠ WARNING! DO NOT power on the water heater without filling the tank completely with water. This will cause permanent damage to the water heater. When the tank is full water should flow from the hot water faucet.

5.7 120V Connection

- » When connecting the water heater to mains power it must be connected to a 120V, 60 Hz power socket. That socket must be within 20" of the water heater.
- » If a power socket is not available close to the water heater have a licensed electrician install one. The power socket must be grounded (earthed).

- » The power socket should be protected from moisture, dampness and be insulated and resistant to high temperatures.
- » Do not use extension leads with this appliance.

5.8 12V Connection

- » Connect the large red wire (5/32") directly to the positive terminal on the 12V battery or another suitable positive power source.
- » Connect the large black wire (5/32") directly to the negative terminal on the 12V battery or another suitable negative power source.
- » Connect the small red wire to the positive terminal on the 12V battery with an in-line switch (this is critical for the operation of the water heater).
- » Connect the small black wire to the negative terminal on the 12V battery.

5.9 Remote Control (Sold Separately)

The remote control allows convenient adjustment of the water heaters temperature (in 1 degree increments up/down) without having to adjust this on the heater itself. The remote control comes standard with a 16 foot cable, so if the water heater is installed in a hard to reach place or is far away from the point of use the remote control can be installed in a convenient location. The remote control also has the functionality to turn the appliance on or off.

- » Attach the black cable (4 pin connector) from the remote control to the black remote control cable at the rear of the water heater (Diagram 7).
- » Mount the remote control in a convenient location closer to where the device is going to be operated.

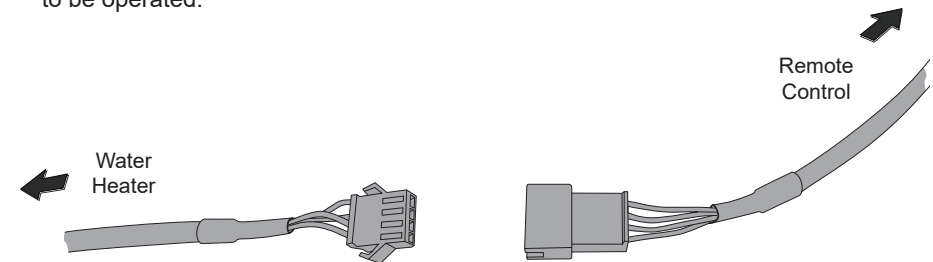


Diagram 7