Mercury RV Water Heaters

Duoetto MK2

Aqueous MK2

DUO-10/AQU-10

Warning

DO NOT power on the water heater without water.
Permanent damage will result.

www.ausj.com.au

sales@ausj.com.au

Last updated: 21/12/21

The most-up-to-date version of the manual is available at www.ausj.com.au

Warranty

Please fill in all details correctly.

Retain this card with original purchase invoice tor any future warranty claim.

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

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

Owner's Details

Surname_____ Initial_____

Address_____

_____

Date of Purchase_____Purchased From _____

Installer's Details

Date of Installation _____Installer's Name _____

Address _____

Installer's Signature_____

Troubleshooting

If your Duoetto is not working the way it is designed to, below are some helpful troubleshooting steps you can take to identify the cause of the problem, and take steps to fix it.

a) There is a wiring problem. Connect all four wires directly to the battery (do not use any other existing wiring). If the heater works, it means the original problem was with the wiring setup, and not with the heater itself.
b) The reset button may have been tripped. For instructions on how to reset this, see section 8, page 8, Over-Temperature Protection.
c) The unit may be mounted incorrectly. The heater MUST be mounted horizontally to function correctly. Refer to section 7, page 6 for further details.
d) The unit has been heated without water. As per the warning on the front page of this manual, NEVER turn on the Duoetto without water inside. Permanent damage will result
e) This is what will happen if you use spade thermals to connect the heating element to extend the wirers, you should use a Anderson plug to join wirers or similar.

If you have tried and ruled out all of the problems above, please contact,

Aus J Hot Water Solutions by email on jay@ausj.com.au with photos of how you have installed the unit for further help and advice.

Congratulations on your purchase of an Aus J water heater! You're joining a global network of thousands of proud owners of our quality Duoetto and Aqueous water heaters.

This device is approved to European Quality Standards, CE, AS/NZS 60335.2.21: 2002 A1-3 and has obtained Watermark certification. This unit is a simple system with high quality parts designed to meet your needs. Please read the instruction manual for maintenance and correct installation and operation of your heater.

Should any fittings be required for your installation, we have a range which can be viewed on our website.

1. Quick Installation

Aqueous MK2

1. Mount Heater (refer section 7 Installation, page 6)
2. Screw the combined pressure relief/non-return valve onto the cold-water inlet. It is recommended that you use a **liquid thread sealer**
3. Connect cold water hose to pressure relief valve and fit the provided clear hose to pressure relief valve safety outlet (refer Diagram 2, page 6) with cable tie or plumbing band hose clamp (not included)
4. Connect hot water hose to hot water outlet
5. Check all hose connections for leaks by pressuring the unit
6. Plug in to power (standard household power point}
7. Switch on

Duoetto MK2

1. Screw the combined pressure relief/non-return valve onto the cold-water inlet. It is recommended that you use a **liquid thread sealer** to ensure a non-leaking fitting.
2. Connect the cold-water hose to the pressure relief valve and fit the provided clear hose to pressure relief valve safety outlet (refer Diagram 2, page 6) with cable tie or plumbing band hose clamp (not included). Clear hose must be routed to drainage in a continuous downward direction for gravity draining.
3. Check all hose connections for leaks by pressuring the unit
4.
    a. Plug in to power (standard household power point}
    b. Connect large red wire to 12v POSITIVE (+) power source and large black wire to NEGATIVE (-).
    c. Connect small red wire to 12v POSITIVE (+) power source and small black wire to NEGATIVE (-).
5. Switch on

2. What's in the box

No.	Item	Quantity
1	Duoetto/Aqueous MK2 water header	1
2	Mounting brackets	2
3	Bracket bolts and washers	4
4	Self-tapping screws	8
5	Combined pressure relief valve	1
6	Owner's manual	1

3. Product Features

Intelligent

The Duoetto MK2 and Aqueous MK2 units have an advanced thermostat. This thermostat allows the water temperature to be set between 30°C and 75°C on 240V AC or between 30°C and 70°C on 12V DC via the digital display.

Durable and Elegant

The exterior shell is made of impact resistant ABS plastics. The tank inside is made of SPCC steel & enamel coating.

Environmentally Friendly and Efficient

The polyurethane insulation provides excellent heat preservation, saving electricity by maintaining the temperature.

Multi-Functional Protection

Over-temperature cut-out & run dry and over pressure protections all work in sync to make this a reliable and safe water heating option

10. 12V DC Cable Length and Current Capacity Guide

Current,length (twin) to area (sq mm)
12.6V DC, current carrying capacity (CCC) (top)
then follows 5% volt drop to 70 sqmm

Current in amps

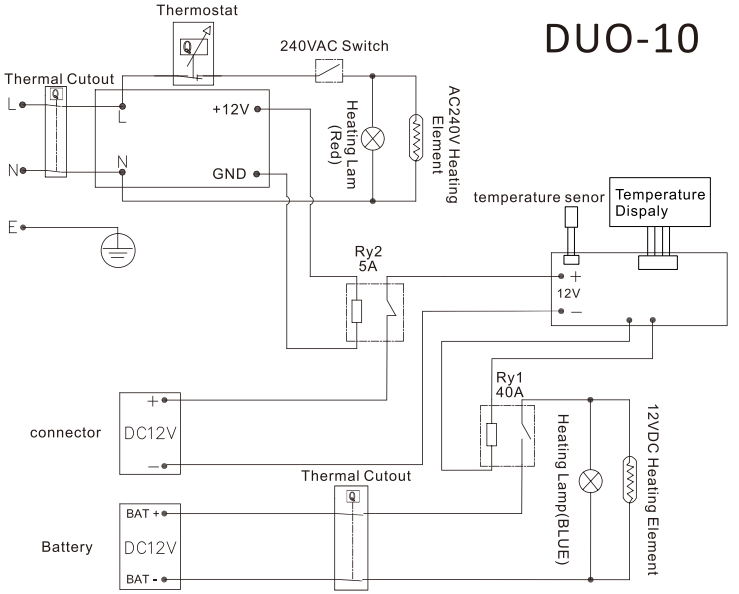
length,red & black metres	12	16	20	25	32	50	63	80	106	125	155
1	1	1.5	2.5	4	6	10	16	25	35	50	70
2	2.5	2.5	4	4	6	10	16	25	35	50	70
3	4	4	6	6	10	16	16	25	35	50	70
4	4	6	6	10	10	16	25	25	35	50	70
5	6	6	10	10	16	25	25	35	50	50	70
6	6	10	10	16	16	25	25	35	50	70	70
7	10	10	16	16	16	25	35	50	70	70	over
8	10	10	16	16	25	35	50	50	70	over	
9	10	16	16	25	25	35	50	70	over		
10	10	16	16	25	25	50	50	70			
11	10	16	16	25	25	50	70	70			
12	16	16	25	25	25	50	70	over			
13	16	16	25	25	35	50	70				
14	16	16	25	25	35	70	70				
15	16	25	25	25	35	70	over				
16	16	25	25	35	50	70					
17	16	25	25	35	50	70					
18	16	25	25	35	50	70					
19	25	25	25	35	50	over					
20	25	25	35	50	50						
30	35	35	50	70	over						
40	35	50	70	over							
50	70	70	over								
60	70	over									
70	over										

9. Circuit Diagrams

Only install your appliance in accordance with any state or territory regulations with a qualified installer

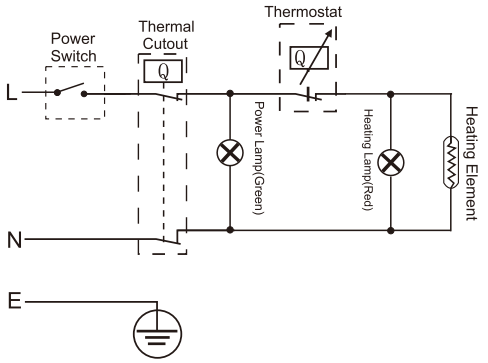
ELECTRICITY DIAGRAM

DUO-10

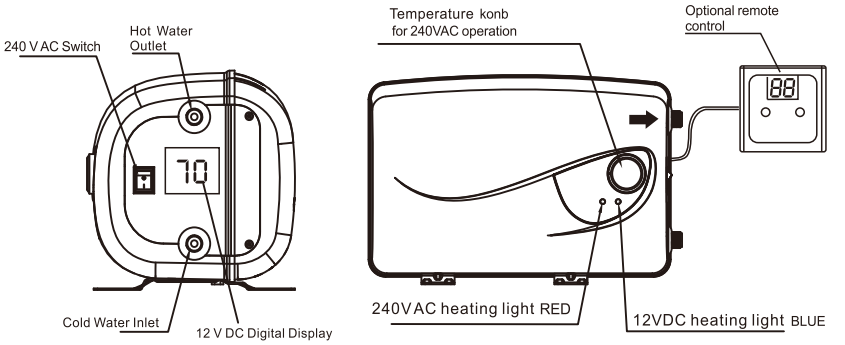


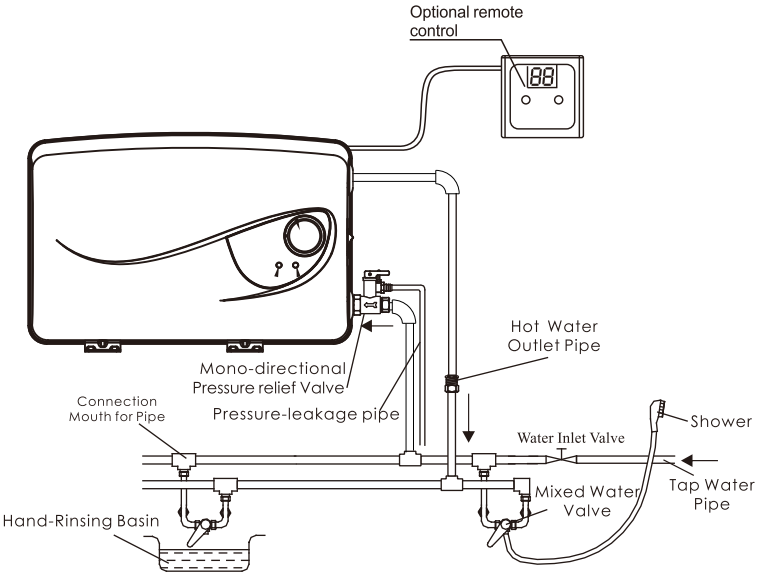
No notice to any change of the diagram

AQU-10



4. Product Diagrams





5. List of Technical Parameters

	DUO-10		AQU-10
	240V AC	12V DC	240V AC
Rated Volume (L)	10L		10L
Rated Temperature (C)	30°C to 75°C	30°C to 70°C	30°C to 75°C
Rated Voltage (V)	240V AC	12V DC	240V AC
Rated Power(W)	1000W	300W	1000W
Rated Current(A)	4.2A	25A	4.2A
Rated Frequency (Hz)	50Hz		
Rated Tank Pressure(MPa)	0.85MPa / 117 psi	0.85MPa	
Weight(kg)	7.4kg	7.4kg	
Dimensions(mm)	409x267x269mm	409x267x269mm	
Mounting Mode	Horizontal	Horizontal	

6. Safety Cautions

Electrical safety requires that this unit be earthed according to the working rules of installations of electrical goods.

The location this water heater is installed in should be able to support four times the weight of the water system when it is full of water (Approx. 40kg).

The water heater must be filed with water before being given power during the first use. The water heater is not allowed to heat without water (run dry).

The power socket must be earthed.

Do not handle the 240V AC plug with wet hands.

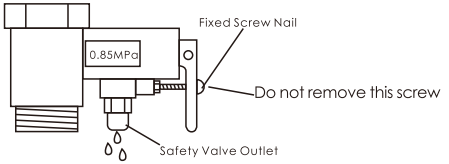
Do not operate this device if the cord, feed or plug is damaged in any fashion.

Don't replace the safety valve with any unimproved product.

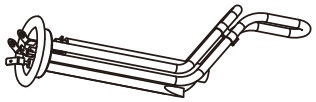
Duoetto Remote (sold separately): If you have purchased a “Remote Control for Duoetto Water Heaters” from Aus J, this will display the temperature (from 30-70^{o}C),and allow you to adjust it up or down by 1^{o}C without having to adjust this on the Duoetto heater itself. This creates additional accessibility for users if the unit is located in a compact space, or far away from the point of use. The Duoetto Remote comes with a 5m cable.

Note: The Duoetto Remote does not turn the unit on or off. This must be done using the two control wires on the Duoetto.

Over Pressure Protection: When the internal pressure is higher than the rated tank pressure the safety valve will automatically release pressure. It is normal that water is draining from the pressure relief outlet.



Water Maintenance: 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, Look at the example below in the photo, one of the leading causes of water heater malfunction is Calcium build-up around the heating element it begins disrupting the heating process by stifling the heating elements With their heat conveyors caked in calcium, the water heaters must work extra hard to produce hot water. As a result, the water in your heater also takes longer to heat up. The hotter the water is, the more calcium and magnesium comes out of your hot water and forms solid deposits on the elements in your hot water heater.



Flushing:

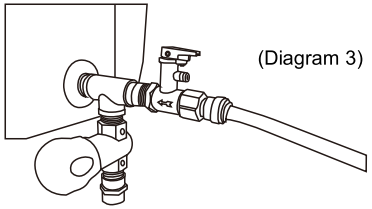
To treat this, you will need to drain your system of water and fill the heater with vinegar and let it sit for about six hours. This will clean any existing mineral build up from your system. To prevent this from reoccurring we recommend a water softening system. If left untreated, this can cause heating element failure.

Vinegar is a weak acid that is generally quite safe to use.

How to drain and winterisation:

To winterise or if the unit has been unused for a long period of time, the water can be drained from the water heater as followed:

1. Add a T fitting to cold water inlet (refer to Diagram 3). This will provide a location where you can have an outlet tap to let the water drain when you open it for winterisation or maintenance.
2. Turn on all cold & hot water inlet and outlet taps to create open pressure to drain the water.
3. Water will drain from the T fitting.

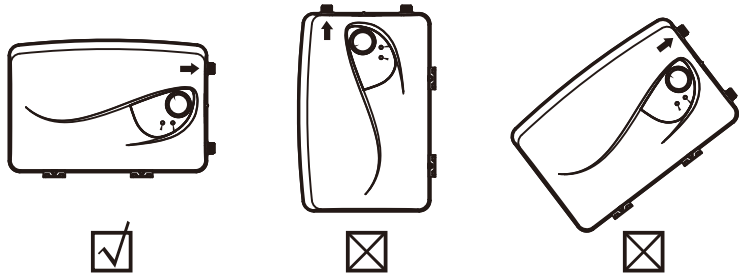


(Diagram 3)

7. Installation

Installation is the responsibility of the buyer and the manufacturer does not bear the responsibility for any damages caused by incorrect installation, damage due to poor quality plumbing and parts, non-standard water or not following these instructions.

Mounting the Heater (must be horizontal)



- Fit the brackets to the unit using the bolts and washers supplied
- Using the supplied screws, fix the brackets to the floor/wall (you may have to predrill holes)

It's recommended that the water heater be as close as possible to the place of use to reduce loss of heat in the piping.

Warning: The wall or floor must be strong enough to support four times the weight of the heater filled with water (Approx. 40kg). The unit should be mounted to a load bearing fixture.

Pipe Connection

1. Screw the combined pressure relief / non return valve onto the cold-water inlet. It is recommended that you use a **liquid thread sealer** to ensure a non-leaking fitting
2. Connect the cold-water hose to the pressure relief valve and fit the provided clear hose to pressure relief valve safety outlet (Diagram 2) with cable tie or plumbing band hose clamp (not included). Clear hose must be routed to drainage in a continuous downward direction for gravity draining

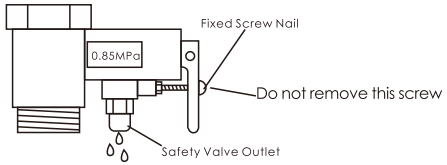


Diagram 2

3. Connect the hot water hose to the water heater outlet (1/2W BSP).

Notices:

- No responsibility is taken by the manufacturer for damage caused to the unit when not using the supplied pressure relief valve.
- **If the water pressure exceeds 0.85MPa or water flows constantly from the pressure relief valve hose, a pressure reducing valve must be used on the cold-water inlet.**
- We recommend adding a thermostatic valve or mixer valve to avoid the chance of the outlet water temperature being too high.

Use of the Duoetto/Aqueous

- Open the outlet and inlet pipelines until water flows out normally, demonstrating that the inlet and outlet works normally and the heater is full of water.
- Close the outlet valve.
- Check all joints to see if there is any leakage.
- When first using the water heater, ensure that the water heater is filled with water and that water flows from the outlet and only then introduce any power to the system.

Power Connection

Before introducing any power to the water heater make sure the water heater is filled with water.

240V AC Installation

1. Power supplies must be on a network with an alternating current of 50Hz 240V AC.
2. The water heater is equipped with a standard 10-amp cord and power plug.
3. The socket should be grounded and protected from moisture.

12V DC Installation (Duoetto MK2 only)

All appliance installations should be only carried out by a qualified individual.

1. Connect the red 4mm^2 large wire directly to house battery or another suitable power source, depending on the length of your wiring you may need to step up the cabling, we recommend
   a 50-amp fuse. Refer to page 12 for appropriate cable sizing.
2. Connect the black 4mm^2 negative wire to a common ground or a negative battery terminal, depending on the length of your wiring you may need to step up the cabling, refer to page 12 for appropriate sizing.
3. Connect the small black ground wire to a common negative and the small red wire to *a* switched power source; this is crucial for 12V DC operation of the heater.

Important: To avoid draining the engine crank battery, the red small positive wire must be connected to a switch or an ignition source. (Applicable for DUO-10/12V DC type only).

Transition between 12V DC and 240V AC: When connected to a 240V AC source, the Duoetto MK2 will automatically use 240V AC as its power source. There is no need to press anything to switch from 12V DC to 240V AC.At this point if you switch back to 12V DC and the 12V DC is not working, unplug the 240V AC from the power point.

8. Methods of Usage

- Plug in the water heater after making sure it is filled with water.
- Turn the thermostat to the desired temperature (240V AC only) and switch the heater on. A red indicator lights indicate the heater is functioning.
- Water temperature is adjustable from 30°C to 75°C on 240V AC, and 30°C to 70°C on 12V DC via the digital display.
- The Duoetto MK2 and Aqueous MK2 water heaters are auto thermostatic. They automatically cycle by 5 degrees when they reach the set temperature.

On/Off Switch: Controls 240V AC heating. **When it switches on, the 12V DC heating will not work.** The water heater will be heating on 240V AC power Only.

DC LED: A blue light indicates 12V DC heating. It will turn off when the heater is being powered by 240V AC.

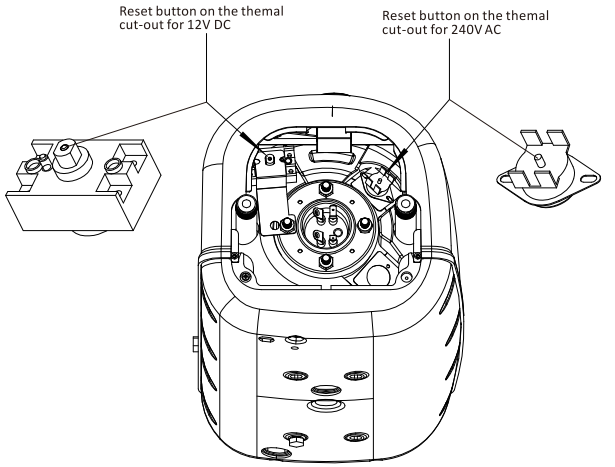
Button Function: +/- button will set the 12V DC heating temperature in 1 **°C increments.**

Display: "88"

Digital display shows the setting temperature and actual temperature.

Normally the digital display will be displaying the actual water temperature. When setting the temperature via the +/- buttons the setting temperature will be displayed for 5 seconds before returning to displaying the actual temperature.

Error tips: Temperature sensor open/short Circuit, display shows "E1".

Thermostat: The thermostat at the front of the heater controls 240V AC heating.

Over Temperature Protection: This protects the water heater from overheating; it disconnects a heating element from the network at temperatures in excess of 85 °C (12V DC) or 90°C (240V AC). Safety systems cannot automatically reset, it will require opening the side inspection plate and manually pressing the reset button (see below graphic).