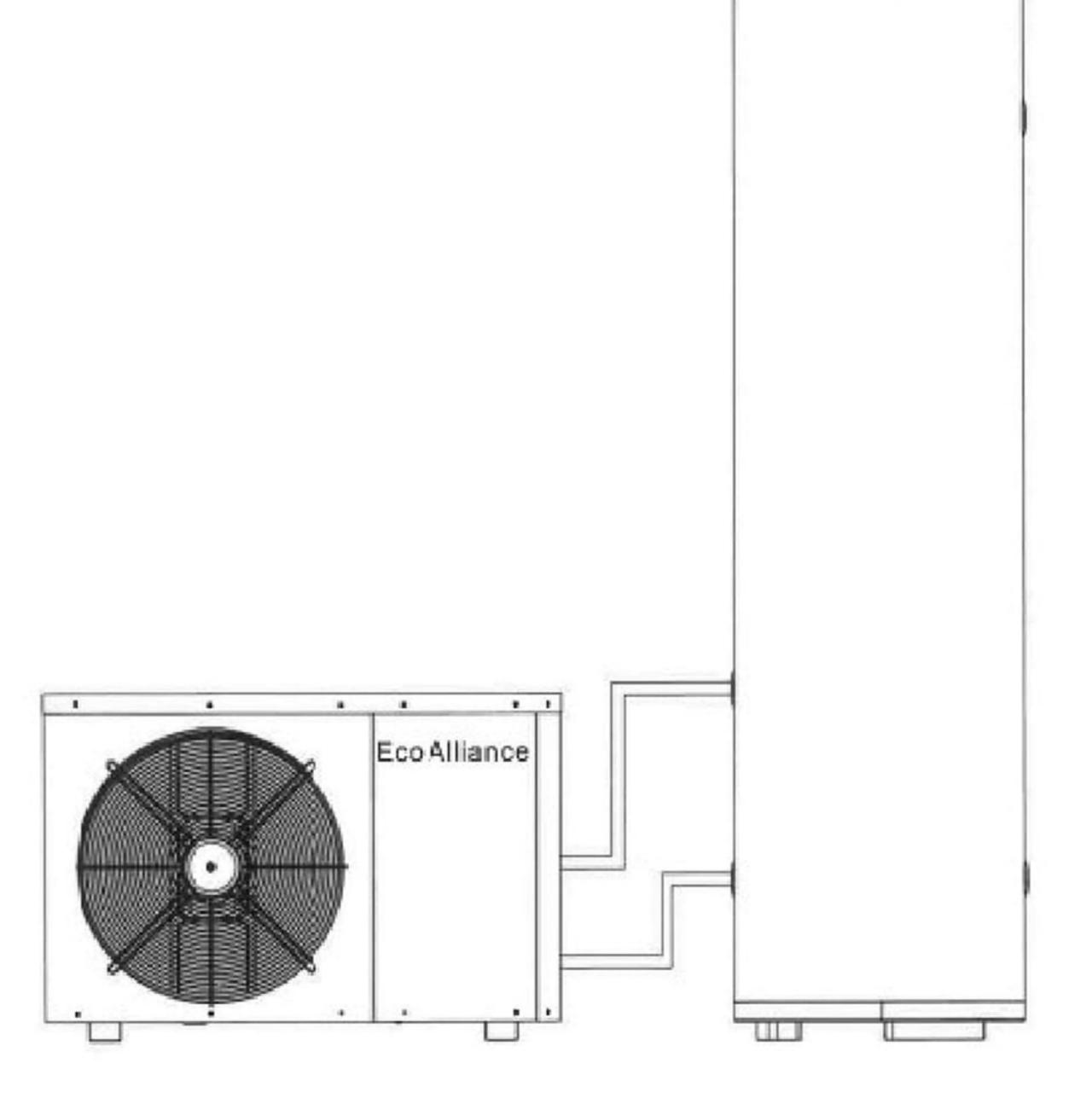




DYNAHEAT™ HEAT PUMP SERIES

Model Numbers:

ECO-155LU ECO-215LU



This appliance is not to be used by persons (including children) with reduced physical sensory or mental capabilities; or lack of experience and knowledge, unless they have been given supervision and/or instruction.

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Note: Every care has been taken to ensure accuracy in preparation of this publication. No liability can be accepted for any consequences that may arise as a result of its application. Eco Alliance Pty Ltd is in a process of continuous improvement, therefore specifications may be different to those referenced in this manual. Please contact Eco Alliance Pty Ltd or its distributors for the latest specifications at the time of install.

Introduction

The DynaHeat[™] heat pump water heater system has been designed using the latest refrigeration technology to remove the heat from the air to heat water. The refrigerant we use is R32 which does not contribute to global warming, so it allows us to help keep a clean, healthy earth for future generations.

By using R32 as the refrigerant we have produced one of the most energy efficient units currently available. It's even more efficient when connected to off-peak power.

How it works

The heat pump water heater system heats water by transferring the heat from the surrounding air to the water using a refrigerant. The refrigerant is heated by a heat exchanger that absorbs heat from the surrounding air (Figure 1).

Heat pump return

Heat pump return

Heat exchanger

heat exchanger

Heat pump supply

Water pump(condenser)

water supply

Figure 1:Heat Pump Water Heater System

Note:

Operating conditions may vary depending on the type of off peak tariff that is available in your area. The unit must have a minimum of 5 hours continuous power available at all times to allow the unit to operate without affecting reliability.

Safety Precautions

Please ensure you fully observe the precautions

The following instructions need to be fully followed to prevent any harm to users and others or damage to your property.

■ The extent of the possible harm or damage caused by misuse of the product falls into the following classifications:

Warning	The column with this classification indicates "the extent of harm that includes the possibility of death or serious injury".
Caution	The column with this classification indicates "the extent of harm/damage that includes the possibility of injury or damage to the property".

■ The type of content to be observed can be explained with the following pictorial classifications.

<u>C</u>	Indicates content requiring "attention".
	Indicates content that is prohibited.
	Indicates content with "instructions" that need to be followed.

Do not touch the faucet while hot water is being supplied.





Could result in being burnt by hot water.

Do not touch the relief valve, drainage pipe, drain outlet or drain elbow when inspecting the relief valve or while draining hot water.







Could result in being burnt by hot water.

Check the water temperature before supplying any hot water or taking a shower.



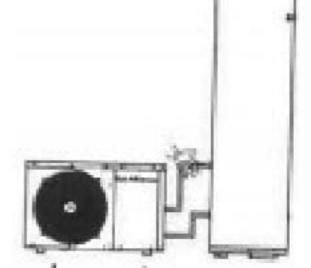


Do Not Touch

Could result in being burnt.

Do not touch the heat pump unit pipes or hotwater supply pipes.





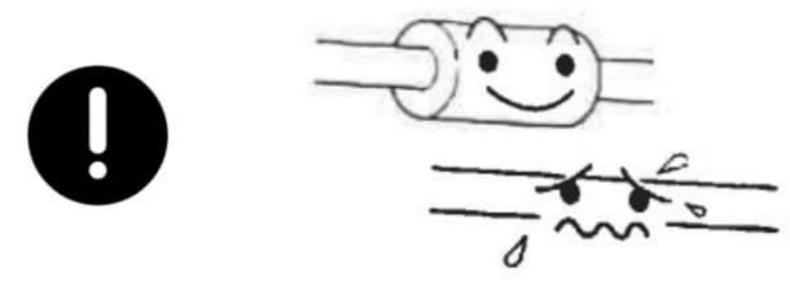
Could result in being burnt.

Marning

Do not use any damaged, altered or bundled power chords.

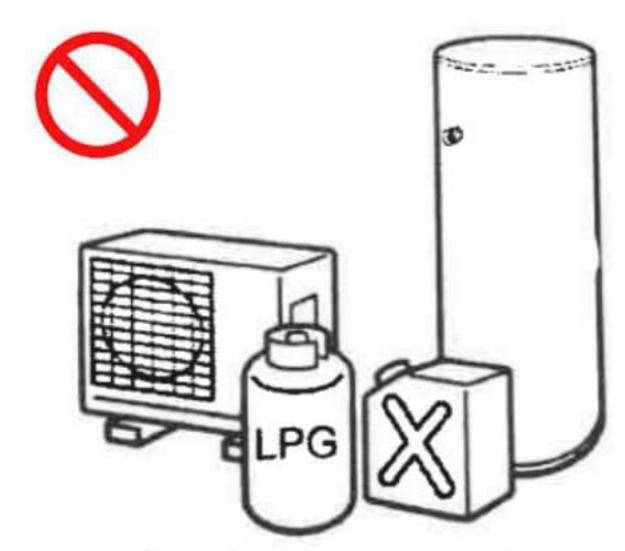


Verify that the piping has all been insulated.



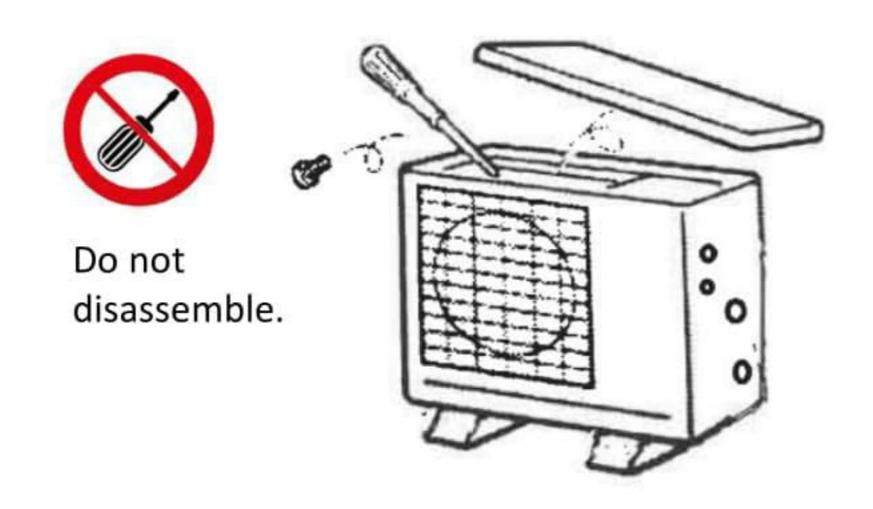
Any of the pipes freezing up and getting damaged could result in scalding or water leaking. Please contact the dealer on insulating the pipes.

Ensure the product is removed from any gas containers, sources of fire and flammable substances.



Sparks from the electrical parts of the product could result in fire.

Do not disassemble, repair or alter the product in any way.



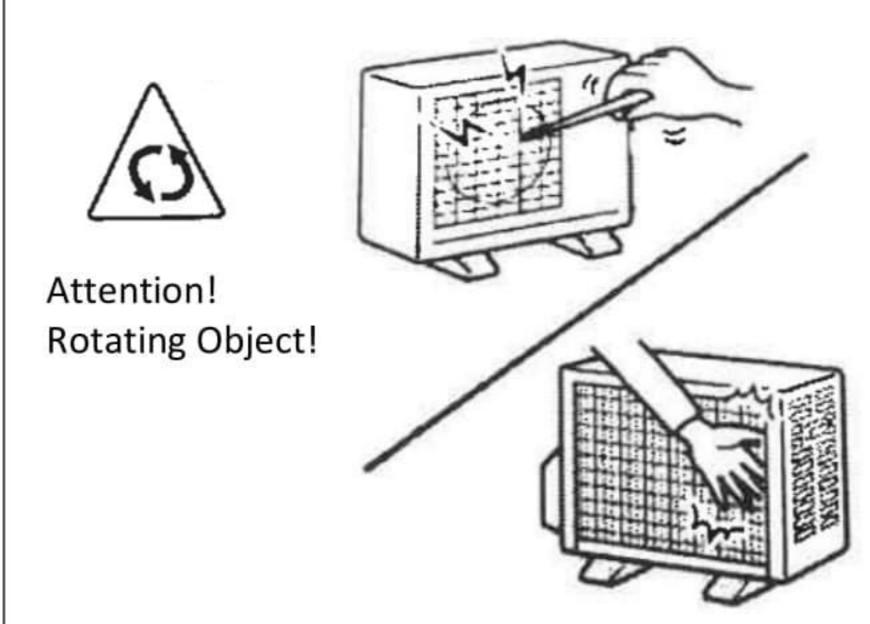
Could result in electric shock or fire. Contact the dealer for repair.

Do not open the front board of the hot water storage unit of the heat pump unit cover.



Could result in electric shock.

Do not poke your fingers or a stick into the air inlet (fins)/air outlet of the heat pump unit.

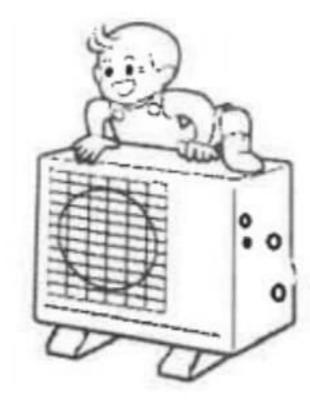


Could result in injury.

A Caution

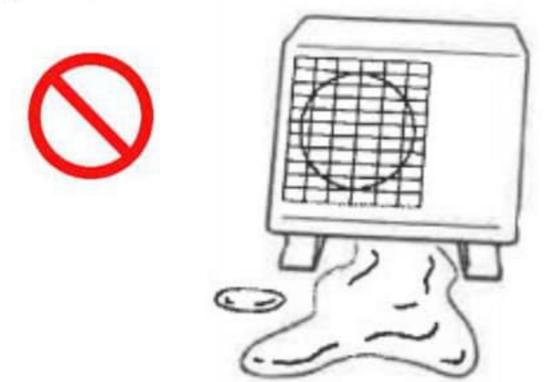
Do not climb or put anything on top of the unit. Do not apply any force to the piping.





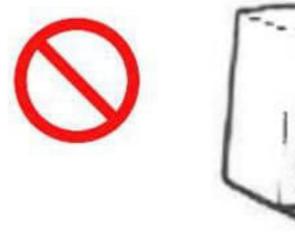
Could result in injuries from a fall or being scalded.

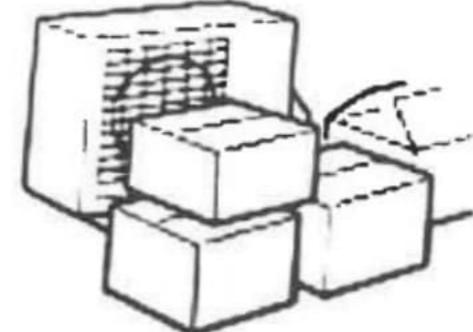
Do not put anything susceptible to humidity under the heat pump unit.



Water could drain out. In addition, condensation could drop from the pipe connections.

Do not block the air inlet and outlet.

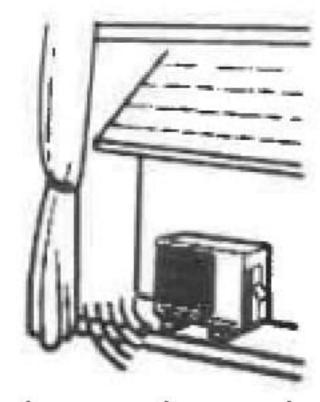




Could harmfully influence performance and lead to failure.

Select an installation place with consideration given to neighbours.

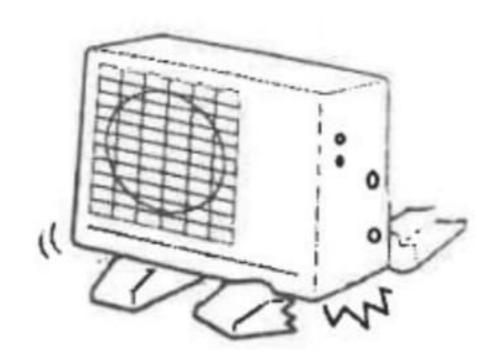




Please select a place where noise and vibration during operation will not bother your neighbours.

Do not use the heat pump unit if the installation blocks have been damaged.

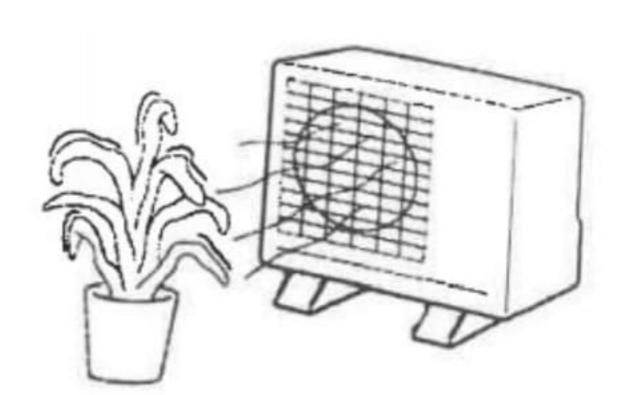




Damaged installation blocks could result in the heat pump unit falling over and causing injury.

Ensure no animal or plant life is placed directly in front of where air is blown from the unit.





Could result in harm to animal and plant life.

Remove any snow form the units after snowfalls.



Snow building up around the heat pump unit and hot water storage tank unit could result in malfunction and failure.

Check the installation conditions of the unit.

Installation of the unit in the following places could result in accidents or failure and the performance of the unit not being guaranteed:

- ☑ Anywhere the lowest temperature reached is under minus 20°c.
- ☑ Indoors (Applies only to the condenser unit).
- ☑ Anywhere not completely flat, unstable or where drainage is difficult.
- ☑ Ensure not to put anything around the heat pump unit.
 Could result in poor performance and unexpected problems.
 ☑ In winter in particular, please pay attention to any snow

☑ In winter in particular, please pay attention to any snow coverage.

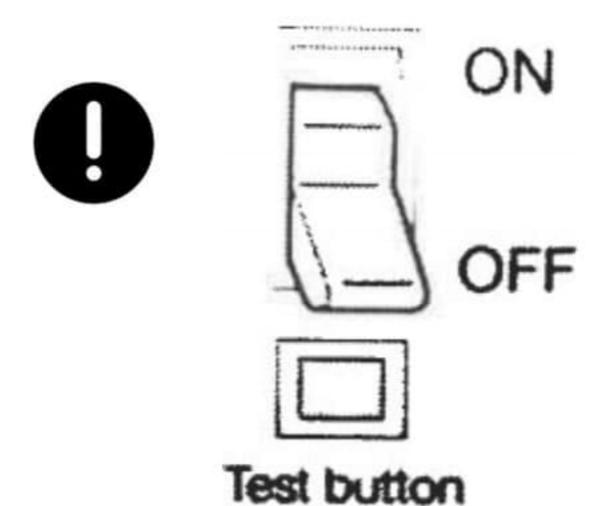
A Caution

Do not use the shower or any hot water for at least one minute after recovery from a power cut.



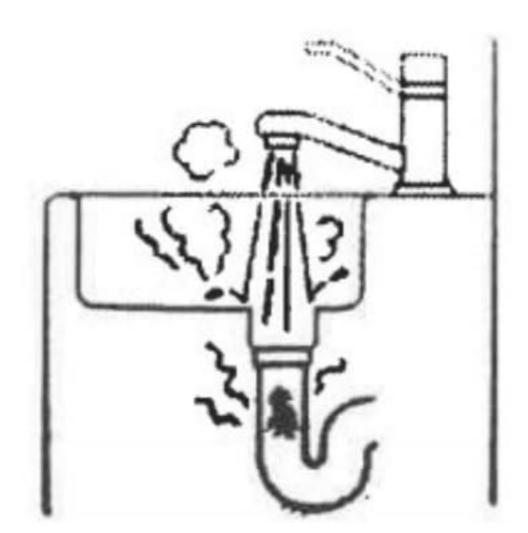
Hot water may unexpectedly exit from the shower.

In the event of any abnormality, turn the earth leakage breaker to "OFF"



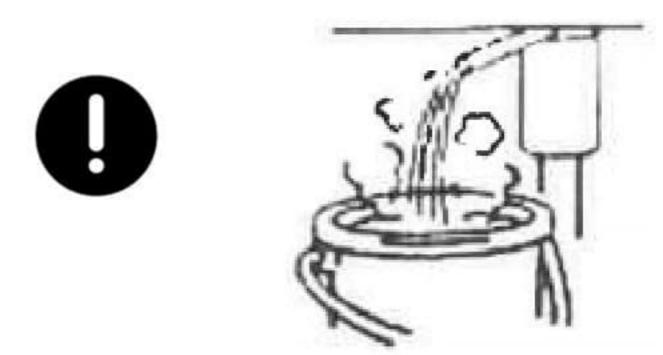
Use of the breaker in any abnormal situation could result in electric shock or fire. Please contact the dealer from whom your purchased the product.

Do not run the hot water directly into sink outlets etc...



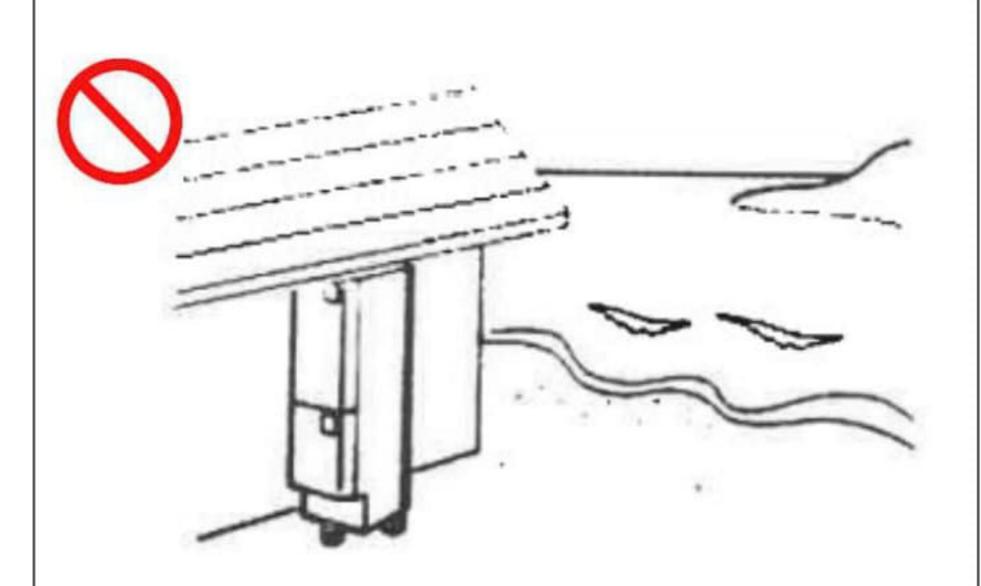
Could result in being burnt or the drainage pipe being damaged by the hot water. Ensure you mix with cold water when running the hot water.

When using the emergency water valve, first verify the temperature of the hot water and ensure you use a heat resistant collection vessel.



Hot water will be discharged. Ensure you avoid getting burnt. Glass collection vessels could be broken by the heat.

Do not install the unit anywhere it will be exposed to seawater.



Could result in the unit malfunctioning.

WARNING:

If the hot water system is not used for two weeks or more, a quantity of highly flammable hydrogen gas may accumulate in the water heater.

To dissipate the gas safely, it is recommended that a hot tap be turned on for several minutes or until discharge of gas ceases. Use a sink, basin or bath outlet, but not a dishwasher, clothes washer or other appliance.

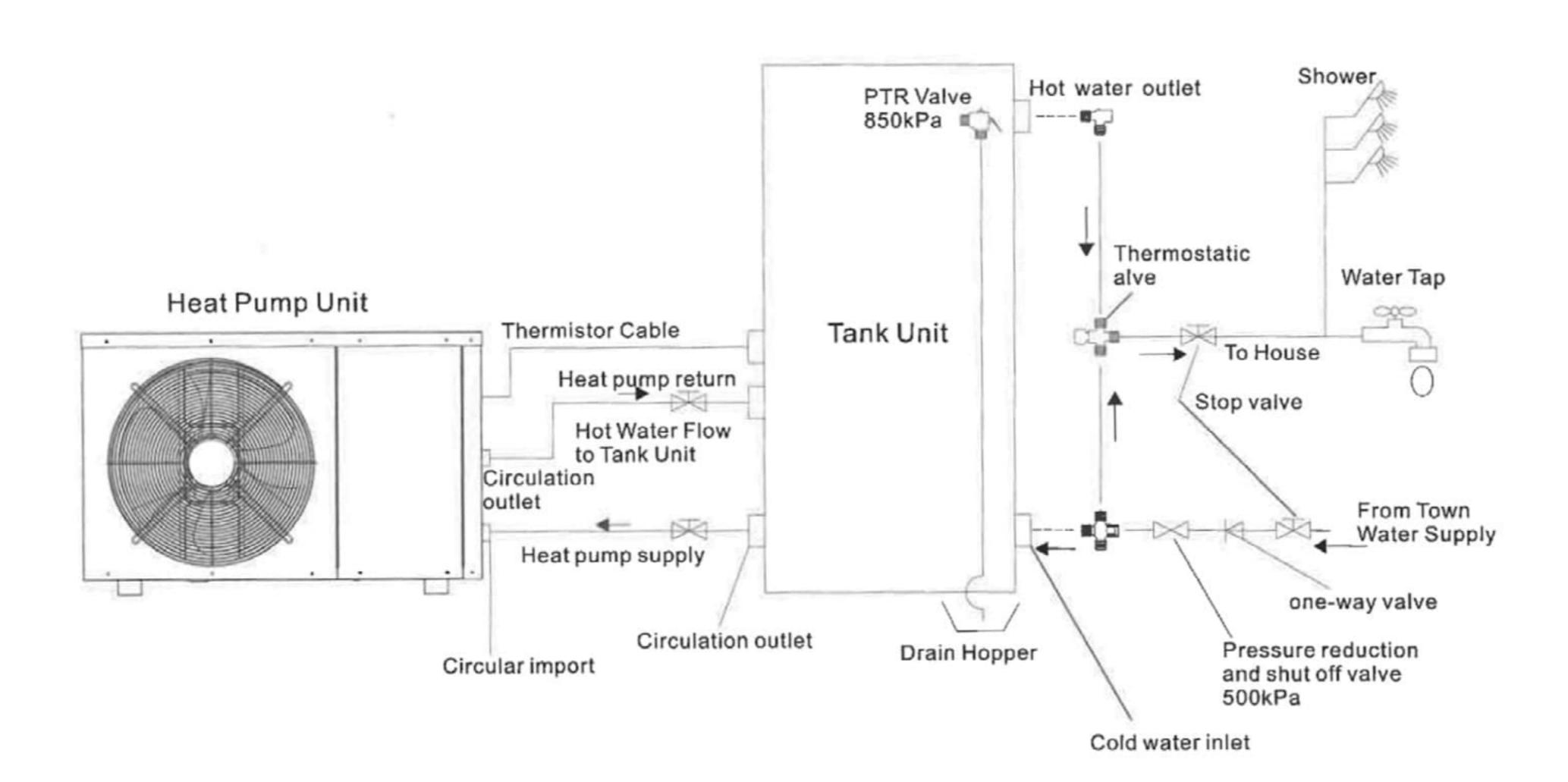
During the procedure, there must be no smoking, open flame or any electrical appliance operating nearby. If hydrogen is discharged through the tap, it will probably make an unusual sound similar to air escaping.

Installation details

This Eco Alliance DynaHeat[™] hot water heat pump system must be installed by a licenced person in consideration of the following standards and regulations:

- AS/NZS3500 National plumbing and drainage code hot water supply systems acceptable solutions.
- HB 263-2004 Heated water systems plumbing industry commission.
- AS/NZS3000 Electrical installations (known as the Australian/New Zealand wiring rules).
- Notice to Victorian customers from the Victorian Plumbing Industry Commission, the Victorian Building Act 1993 requires that this DynaHeat[™] heat pump water heater system must be installed by a licenced person. Only a licenced person will provide a compliance certificate showing that the work complies with all the relevant standards. Only a licenced person will have insurance protecting their workmanship.
- The unit has been specifically designed for domestic hot water heating and may not be suitable for any other purpose.
- The unit is designed to operate when connected to the town water supply with an operating
 pressure rated at 500kPa. To ensure the mains pressure does not exceed this, a pressurelimiting device that complies with AS1357 can be connected to the town water supply line, but is
 not essential.
- This system delivers hot water exceeding 55°C. Reference should be made to AS/NZS3500 and/or local regulations relating to the need for temperature tempering devices.
- The unit must be stored and transported in an upright position. Failure to do so may render the
 unit faulty. Such failure is not covered under any warranty agreements. Failure to comply with the
 above conditions will void the warranty.

Figure 2: Typical Installation Layout



Trouble Shooting Guide

Should a problem arise while the heat pump is in use, please check the following things prior to calling for support:

STATUS	POSSIBLE CAUSES	ACTION TO TAKE
No hot water comes out of water tap	Small or no hot water is left in the storage tank.	 ♦ Stop using hot water and wait for about an hour. ♦ Consider a change of the electricity supply from off-peak mode (length of power supply hours may be too short for the water heating cycle to cover the hot water consumption).
	Air removing procedure from the heat pump system may be insufficient.	◆ Open the water drain plugs on the heat pump unit to remove air from the water circuit. (be careful of burning).
	Filter on cold inlet connector may be blocked.	
Temperature of hot water is too low	Water flow speed may be dropped due to the heat pump piping being bent, crushed or blocked.	
	Pipes may be frozen.	♦ If frozen area is found on the piping, melt the ice on the pipe and provide a heat insulation.
	Stop valve is closed.	
	Air absorption is not sufficient due to a blockage on the evaporator.	♠ Remove the object blocking the air flow through the evaporator (e.g. Fallen leaves, grass, snow, etc.).

For those problems not listed in the list above, an inspection provided by a skilled engineer is required. Please contact the distributor.

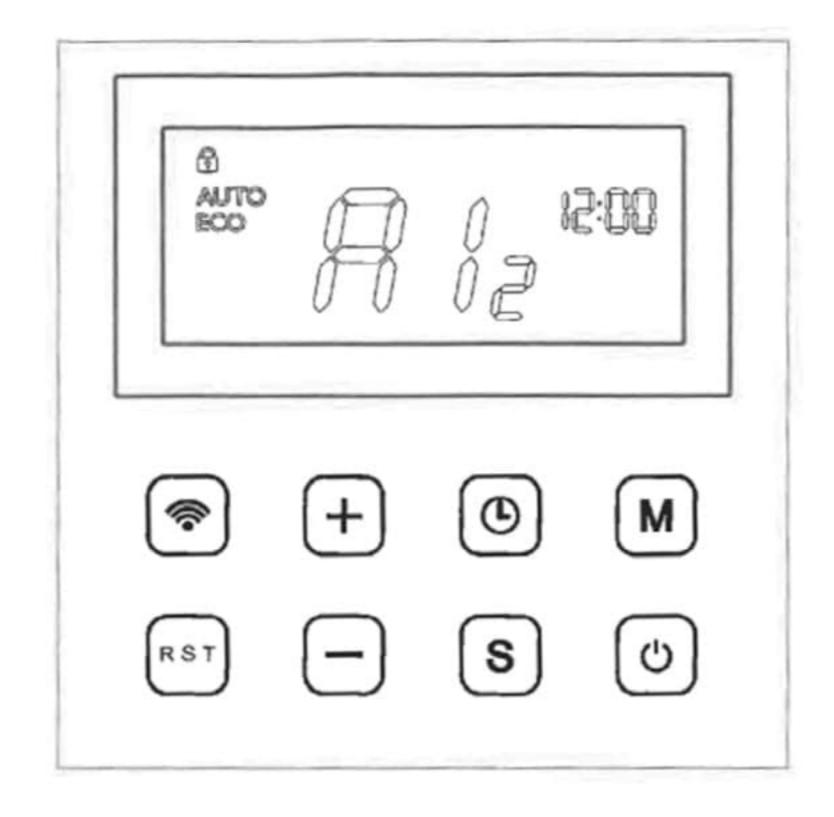
Caution:

Do not shut down the electricity supplied to the heat pump system even if you go away from home and hot water is not in use for a long time.

Error Codes

When an error has occurred, a LED on the operation panel turns on and an error code is displayed on the LED display. The panel does not turn the display to sleep mode while the error code is shown.

Figure 3 – Error Code example



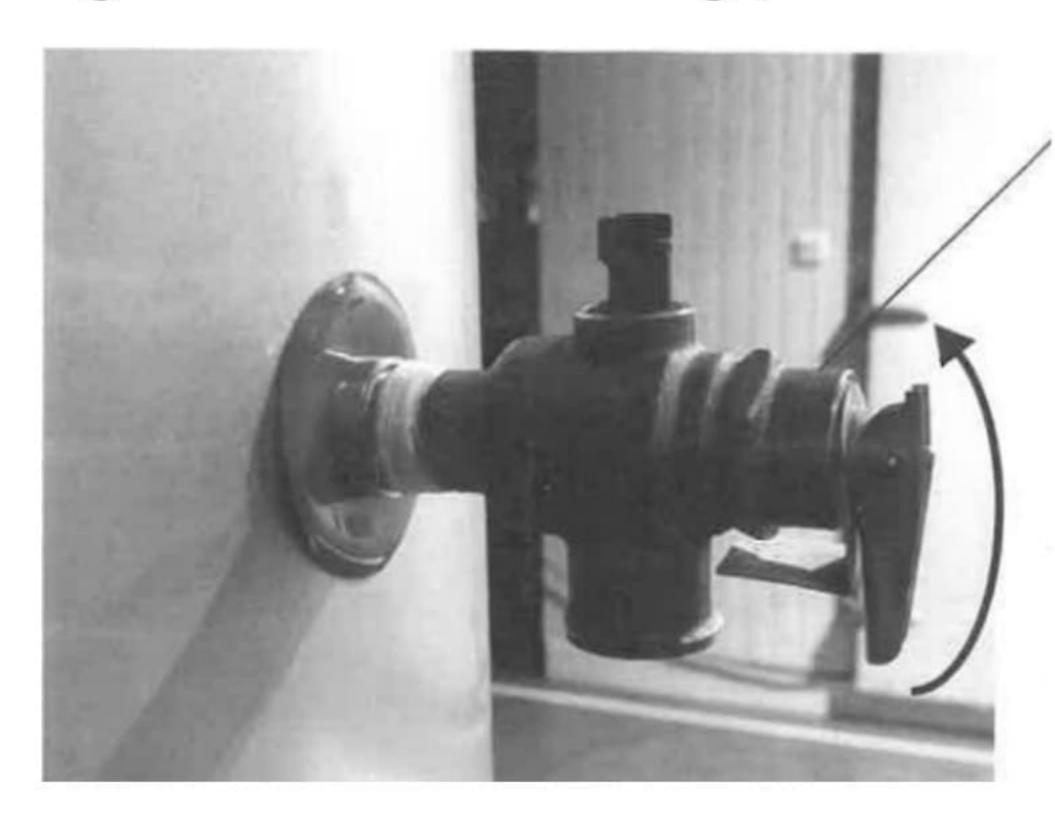
Below is the list of the error codes. If the corrective action does not solve the error problem, a malfunction of the PCB is likely.

Error Code	Error Contents	Solution
A12	Low pressure switch protection.	Switch off power and re-connect. If this fault occurs frequently, please contact the authorised contractor.
A13	Protection of high pressure switch.	Switch of power and reconnect. If this fault occurs frequently, please contact the authorised contractor.
A21	Water tank temperature sensor.	Automatic recovery. If this fault occurs frequently, please contact the authorised contractor.
A22	Fault of coil temperature sensor.	Automatic recovery. If this fault occurs frequently, please contact the authorised contractor.
A23	High pressure temperature sensor.	Automatic recovery. If this fault occurs frequently, please contact the authorised contractor.
A25	Air temperature sensor.	Automatic recovery. If this fault occurs frequently, please contact the authorised contractor.
A26	Low voltage temperature sensor.	Automatic recovery. If this fault occurs frequently, please contact the authorised contractor.

Removing Air from the System

- ◆ The following steps must be taken to ensure all air is removed from the system. Incorrect removal of air may cause the water temperature to vary.
- Plumb pipes to the tank unit and the heat pump unit.
- Push the lever up on PTR valve to open and fill the tank unit with water.
- Confirm that the water comes out of the relief valve and then close the lever.
- Open the hot water taps in the home to remove air.
- Close the hot water taps in the home after no air is confirmed in the water.

Figure 4: Air removing process



PTR valve lever

Plumb pipes to storage tank unit and heat pump unit.

Push lever on the PTR valve to open and fill in the tank with water.

Confirm that water is coming out of the relief valve and then close the lever.

Relief valve leading gear should be operated at least once every six months. If water does not discharge freely when the lever is operated, the valve should be checked by an authorised agent.

Electrical Connections

- ♦ Electrical installation should be done by a licenced electrician who carries out the work according to the relevant regulations for electrical safety and wiring.
- Follow the wiring rules for the breaker rating and the thickness of the electrical wiring.
- ♦ Verify that the tank unit is full of water and the water stop valves are open before turning on the power.

System Operation Outline Continuous Power

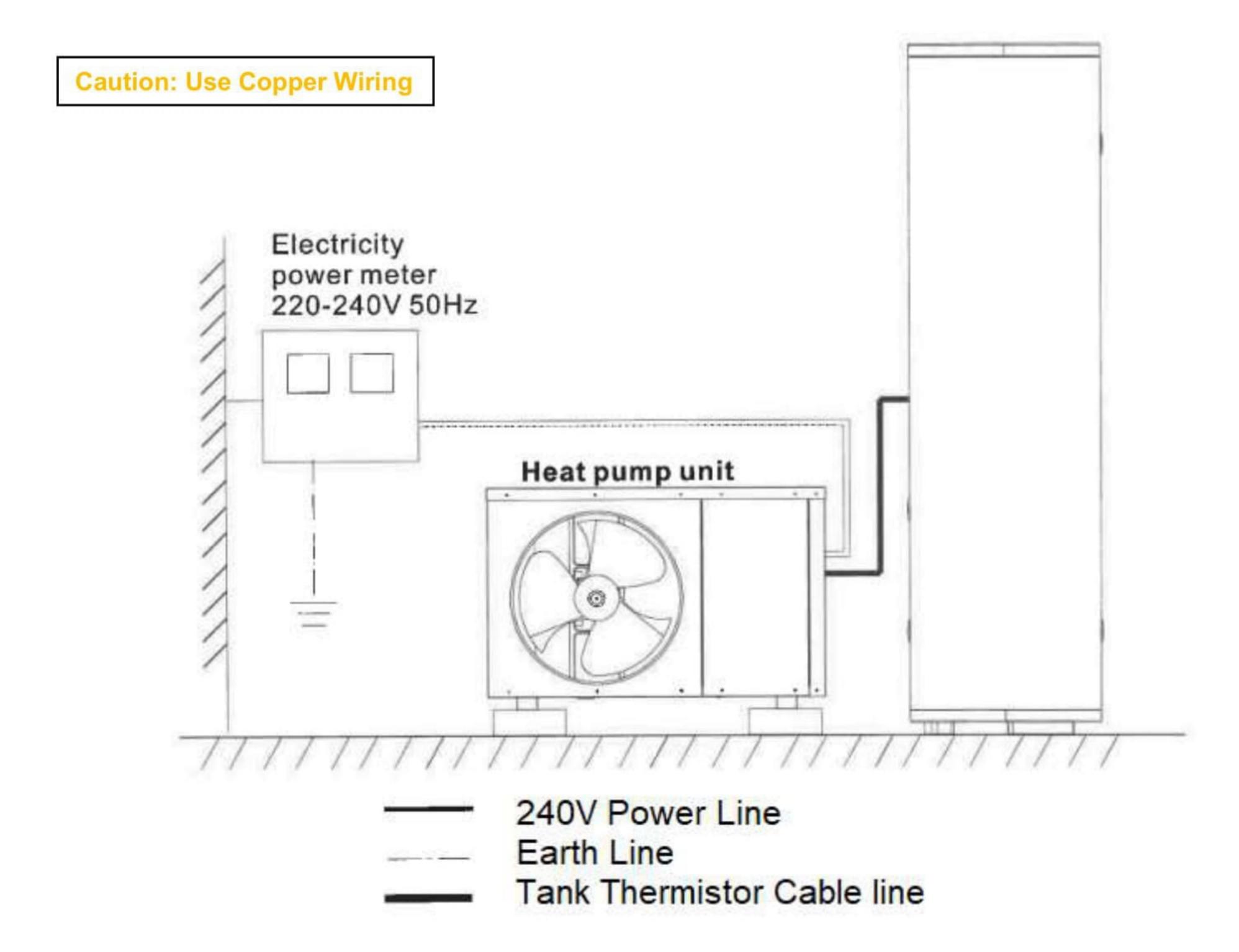
- ♦ The system runs its water heating cycle once a day to fill up the storage tank unit with heated water.
- ♦ If the block out time function selected (setting covered on page 17 of installation manual) the unit will not operate during block out times. This function is typically used on installations that have time of use electricity tariffs.
- ♦ The water heating cycle operation starts automatically when the residual hot water in the tank unit becomes less than 45°C.
- ♦ The system will not run if the electrical power supply is cut off (i.e. if it is connected to off-peak power). However, the system will automatically start operation once the electricity becomes available.

System Operation If Connected To Off Peak Electricity

- ♦ There are no special settings for the off-peak connection. The system will run once the power becomes available and the temperature in the tank drops below the set point of the tank thermistor. If connecting the unit to off-peak, ensure that the off peak tariff provides a minimum of 2 hours continuous power, as it can take at least 2 hours to fill the tank unit with hot water. If the ambient temperature is lower than 10°C, this can be longer.
- ♦ If the unit is connected to off peak and consumption has been higher than usual, hot water might not be available until the next power supply cycle.
- ◆ Daily frequency and amount of hot water consumption may also affect the duration of the heating cycle operation.

Select the electrical supply mode that best suits the customer's hot water consumption. The type of off peak connection may need to be changed if hot water supply is not maintained as required.

Figure 5: Outline of electrical system connections



How to connect power line

Please note:

Electrical installation should only be done by a licenced electrician.

Connect the power supply line to the terminal block.

Water Supply Quality

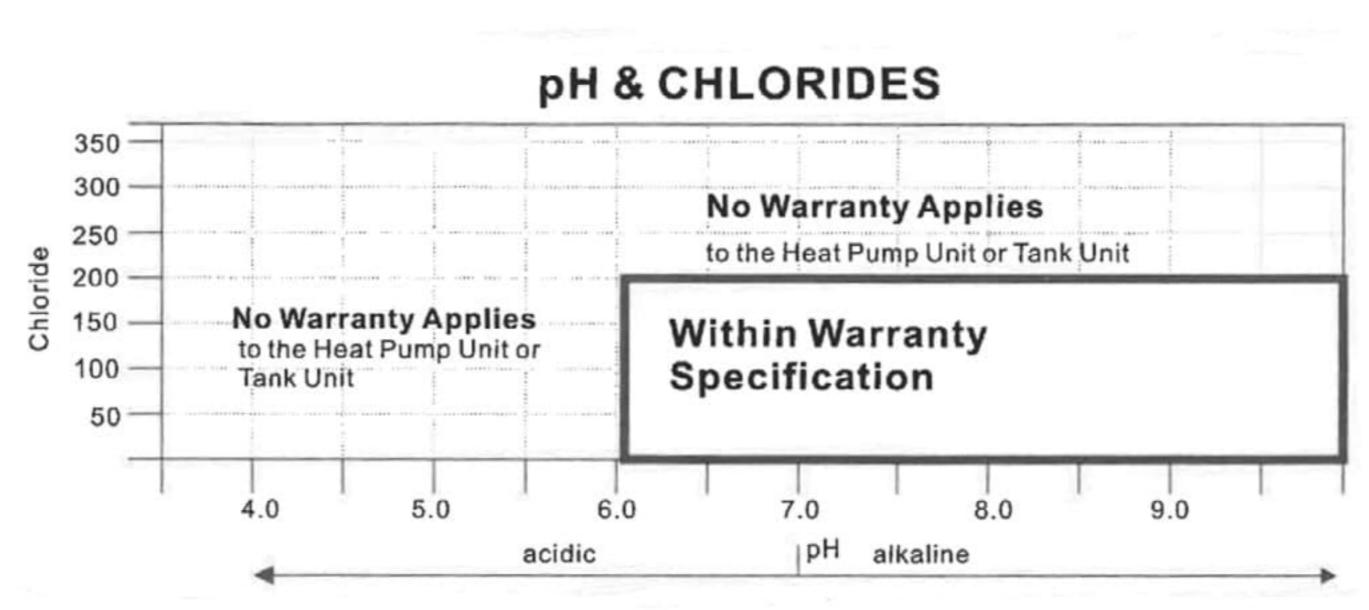
Chloride and pH

In high chloride water supply areas, the water can corrode some parts and cause them to fail. Where the chloride level exceeds 200mg/litre, warranty does not apply to the heat pump unit and tank unit. pH is a measure of whether the water is alkaline or acid. In an acidic water supply, the water can attack the parts and cause them to fail.

No warranty applies to the heat pump unit and tank unit where the pH is less than 6.0. The water supply from a rainwater tank unit in a metropolitan area is likely to be corrosive due to the dissolution of atmospheric contaminants.

Water with a pH of less than 6.0 may be treated to raise the pH. It is recommended that an analysis of the water from a rainwater tank be conducted before connecting this type of water supply to the system.

Figure 6:



Change of Water Supply

Changing or altering from one water supply to another can have detrimental effects on the operation and/or the life expectancy of the water tank unit cylinder, PTR valve, water heating circulation and the heat exchanger in the system. Where there is a changeover from one supply to another, for example, a rainwater tank supply, desalinated water supply, public reticulated water supply or water brought in from another supply, then water chemistry information should be sought from the supplier, or the water should be tested to ensure it meets the warranty requirements in this installation manual.

Circulating Water Pump Flow

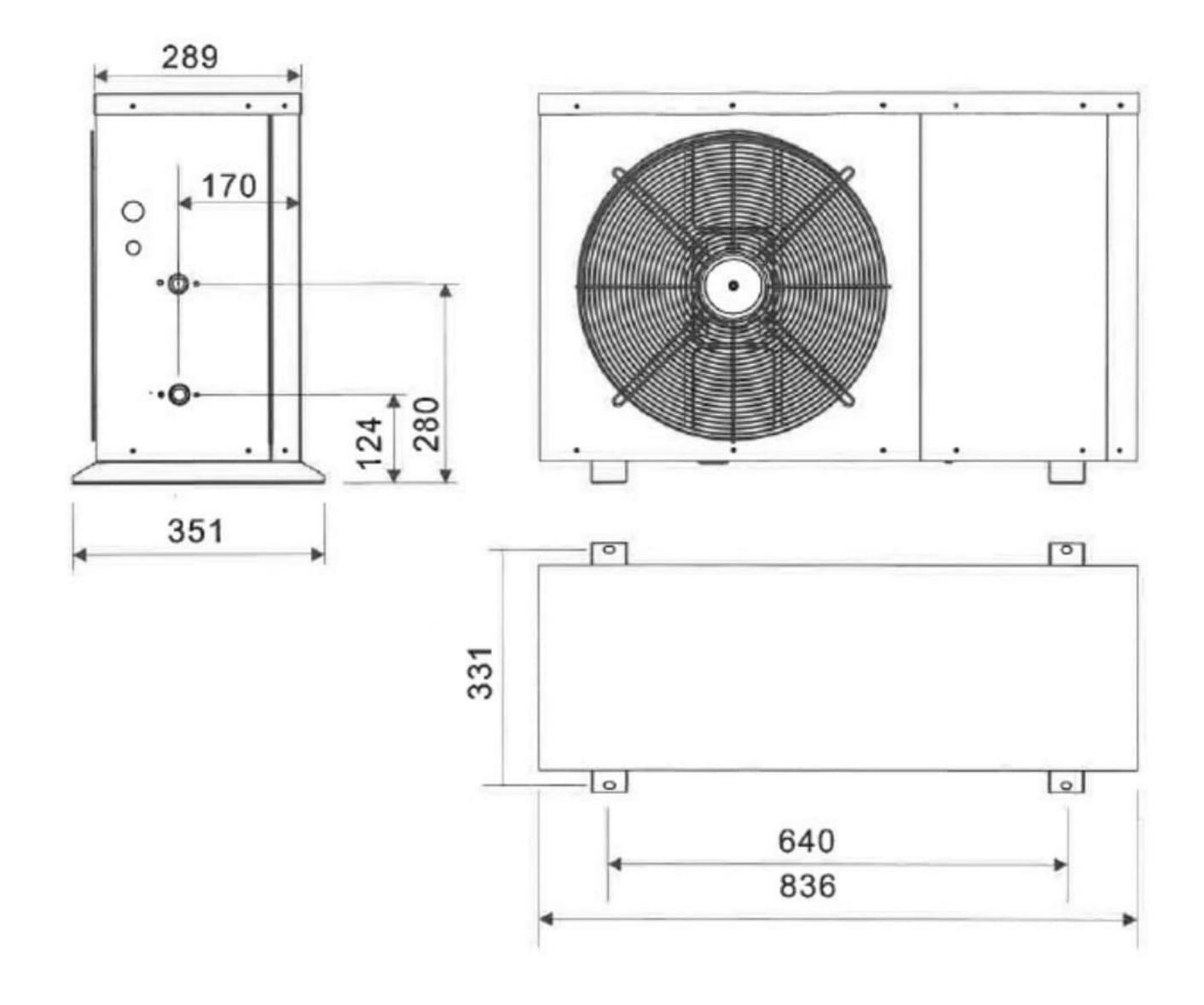
Changing or alternating from one supply to another can have a detrimental effect on flow rate in loop between heat pump and tank: 390L/h; actual measurement: 6.5L/min (6.5L x 60min = 390L/hour).

Periodic Inspection: Contact Eco Alliance Pty Ltd for Servicing Quotes

- ♦ It is recommended that a periodic inspection of the operating controls, heating elements and wiring should be made by service personnel qualified in electric appliance repair. Most electrical appliances, even when new, make some sound when in operation. If the hissing or singing sound level increases excessively, please contact your dealer.
- ♦ Additionally, it is also recommended that the evaporator and refrigeration circuit are checked every two years for dust and residues. In dusty environments it may be necessary to have the appliance checked and cleaned on a more regular basis.
- ♠ Relief valve leading gear should be operated AT LEAST ONCE EVERY SIX MONTHS. If water does not discharge freely when the lever is operated, the valve should be checked by an authorised agent.

Technical Data

Heat Pump Unit Dimension



Specifications:

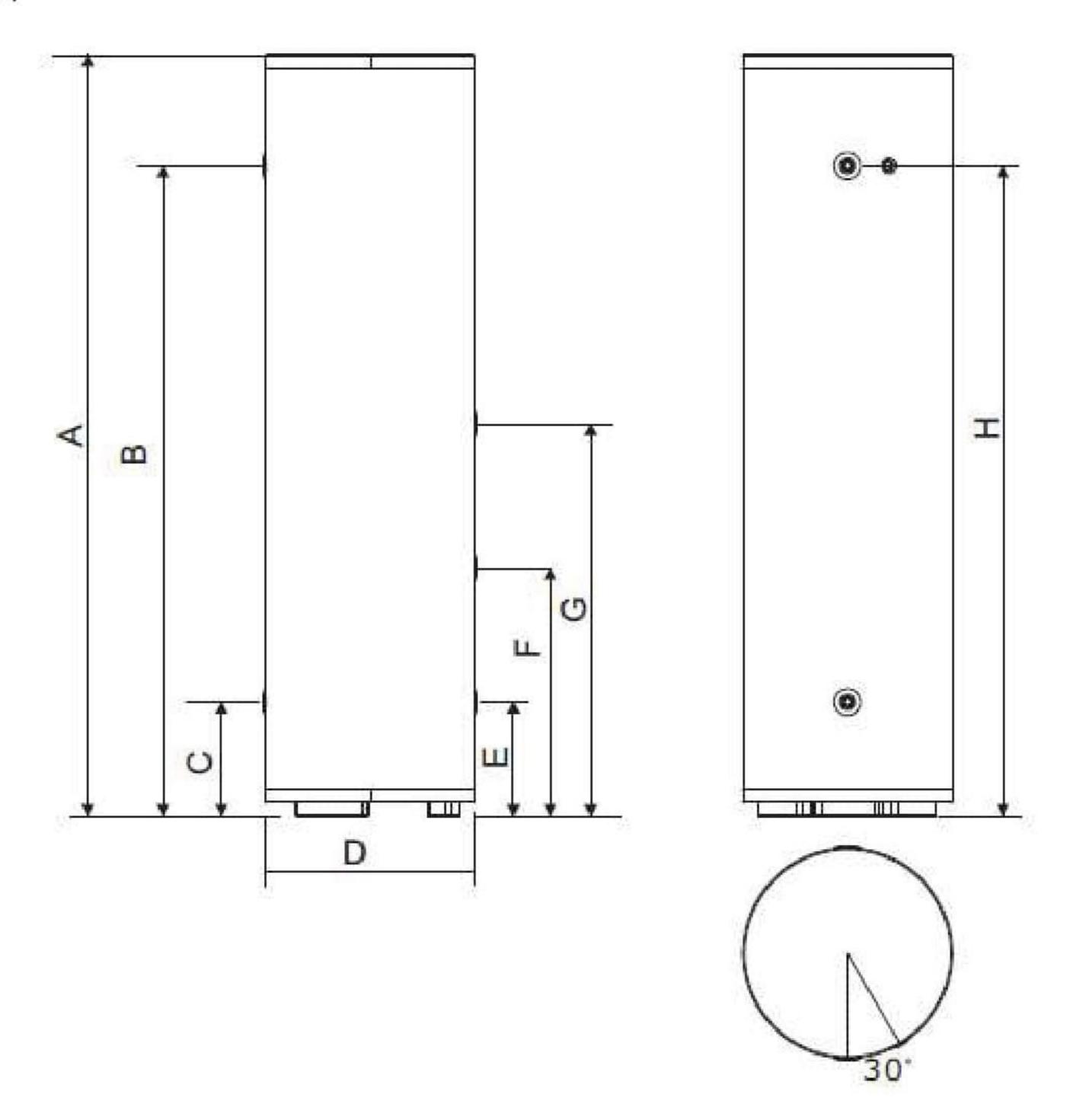
Refrigerant Type	R32
Mass Volume	900g
Running Ambient Air Temp	-7°C/+40°C
Setting Outlet Water Temp	35~60°C (1°C step) *1
Product Weight	30kg
Thermal Capacity	3.6kw *2
Average Input Power	0.85kw *2
COP	4.23 *2
Max Power Input	1.25kw
Circuit Breaker Size	5.43
Design Pressure (High/Low)	4.4/0.6 MPa
Protection Raining Class	IPX4
Rated Pressure	500kPa
PTR Valve:	850kPa

- ► 1: Factory default settings 55°C.
 - 2: Test condition: Outlet water setting 55°C, inlet water 14°C.

 Ambient Temperature Dry Bulb 19°C / Wet Bulb 15°C.
- ► A pressure reducing valve is fitted in the installation.

Hot Water Storage Tank Unit

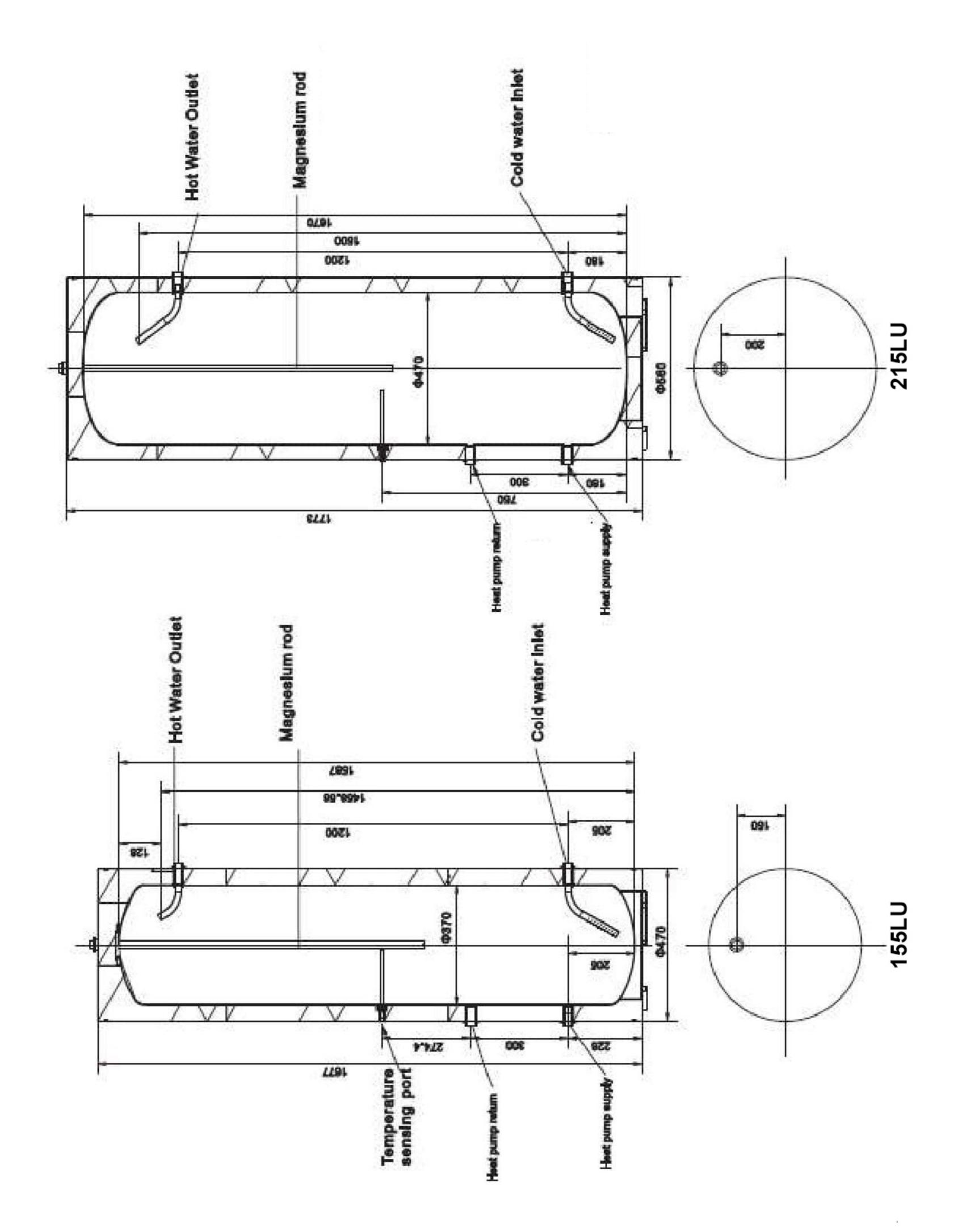
Refer drawing provided with tank:



Water Tank Size

Model No:	ECO-155 LU
A (Height)	1700
B (Hot Water)	1455
C (Cold Water Inlet)	255
D (Diameter)	Ø470
E (Heat Pump Flow)	255
F (Heat Pump Return)	555
G (Sensor Port)	800
H (PTR Valve)	1455

Model No:	ECO-215 LU
Tank volume capacity (L)	215
Voltage / Hz	220-240 / 50
Input power (W)	850
Heating capacity (W)	3500
СОР	2.23
Max rated currenct (A)	3.7
Relief valve pressure (kPa)	850
Noise level (dBA)	47
Net Weight -Tank (kg)	56
Net Weight - Compressor (kg)	48.5
Cylinder Type	Vitreous Enamel
Refrigerant	R32

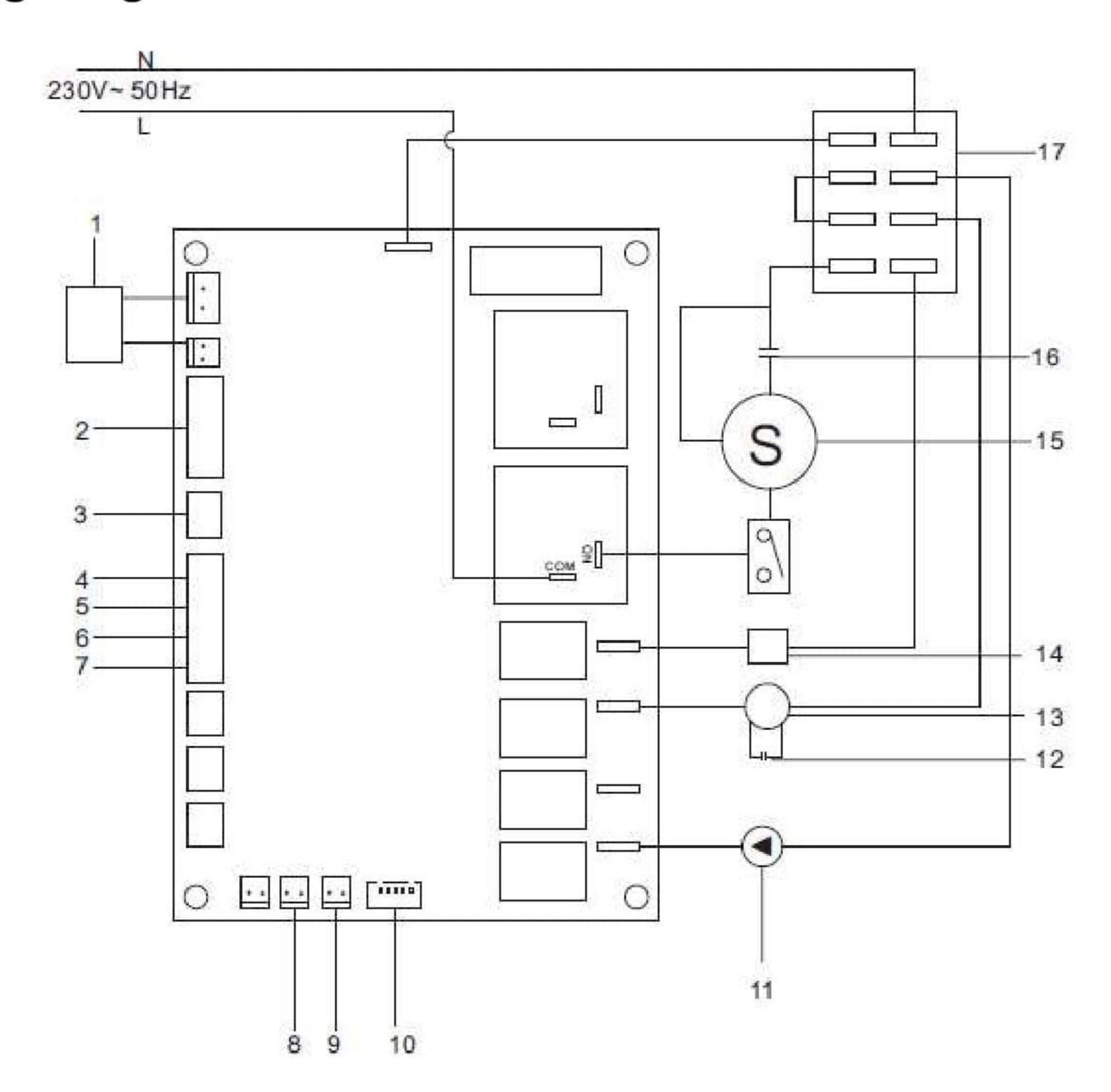


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Push Button Operation Instructions

- 1) Switching Operation Switch on and off by pressing the " button.
- 2) "W" When powered on, press [M] to switch to running modes (Automatic mode, Energy saving mode).
- 3) Temperature Setting: Press the "+" or "-" button under the main interface to view the set temperature. At this time, display the 'set temperature' and flicker. Continue to press the "+" or "-" to adjust the set temperature. Press the "\$" to save the settings and exit after setting. If there is no operation in 5 seconds, the system will automatically remember the user setting and return to the main interface. Press button and hold for 10 seconds to enter the forced defrosting mode.
- 4) Setup Time
 - ♦ Press the "⊕" button to set the entry time. Time is adjusted as follows: Hour→Minute→Out.
 - Adjust the corresponding time values by "▲" and "▼".
 - Automatically quit 30 seconds without pressing any keys.
 - Press the "
 " to exit during the setting process.
- Timer Adjustment Operation
 - Press "\(\bigcup \)" for 3 seconds to enter timing setting
 - Timing 1: At this time "Timer On 1" flashes. Press "▲" and "▼" to adjust the hour. After adjustment, press "♣", "Timer 1" flashes. Press "▲" and "▼" to adjust the minute again. Press "♣" to enter the setting of "Timer Off 1", the setting mode is the same as "Timer On 1"
 - Timing 2: Press the "[⊕]" key again to enter the setting of state of "Timer On 2". The setting method in 1 when the timing is 1".
 - ◆ Timing 3: Press the "[⊕]" key again to enter the setting state of "Timer On 3" the setting method is 1 when the timing is 1".
 - Automatically quit 30 seconds without pressing any keys.
 - Press the "To exit during the setting process.
- Factory Parameter Setting
 - Press the "RST" three times in succession and enter the factory parameter setting. The parameter adjustment mode is the same as the advanced setting. This parameter adjustment mode will solidify the factory parameter.
- 7) Parameter Restore Factory Default Parameter (RST)
 - ♦ In the non-set state, press the "reset (RST)" button for more than 4 seconds to display the "DEF", then press the "S" button to restore the current parameters to the factory parameters. (Note: Detailed settings of factory parameters can be found in "factory parameter settings").
- 8) Legionella Control Method Provide Details of Control Strategy
 - Compressor opens automatically at 2:00am every Monday (constant temperature shutdown and standby status can be opened).
 - Disinfect once a week.
 - The default is 60°C for 35 minutes.

Wiring Diagram



- 1) Transformer
- 2) Display
- 3) Water tank temperature sensor
- 4) Exhaust temperature sensor
- 5) Ambient temperature sensor
- 6) Gas recovery temperature sensor
- 7) Coiler temperature sensor
- 8) High-pressure switch
- 9) Low-pressure switch

- 10) Electronic expansion valve
- 11) Water pump
- 12) Motor capacitance
- 13) Electric machinery
- 14) Four-way reversing valve
- 15) Compressor
- 16) Compressor start-up capacitor
- 17) Compressor terminal station

Warranty Policy

Warranty Conditions

- 1. The Eco Alliance Pty Ltd DynaHeat[™] heat pump water heater system must be installed in accordance with the installation instructions supplied with the DynaHeat[™] heat pump water heater system and in accordance with all relevant statutory/local requirements of the state/province/municipality in which the water heater is installed.
- 2. Where a failed component or DynaHeat[™] heat pump water heater system is replaced under warranty, the balance of the original warranty period will remain effective. The replaced part or DynaHeat[™] heat pump water heater system does not carry a new warranty.
- Where the DynaHeat[™] heat pump water heater system is installed in a position that does not allow safe, ready access, the
 cost of accessing the site safely, including the cost of additional materials handling and/or safety equipment, shall be the
 owner's responsibility.
- 4. The warranty only applies to the DynaHeat[™] heat pump water heater system and original or genuine (company) component replacement parts and therefore does not cover any plumbing or electrical parts supplied by the installer and not an integral part of the DynaHeat[™] heat pump water heater system. Such parts would include pressure regulating valve, isolation valves, check valves, electrical switches, pumps or fuses.
- 5. The Heat pump Water Heater System must be sized to supply the hot water demand in accordance with the guidelines in the Eco Alliance Pty Ltd DynaHeat™ heat pump water heater system literature.
- 6. This warranty is for parts only. Any and all labour costs associated with diagnosis, removal of the faulty part and installation of replacement parts will be solely the owner's responsibility.

Warranty Exclusions

- 1. Repair and replacement work will be carried out as set out in the Eco Alliance Pty Ltd DynaHeat™ heat pump water heater system warranty. However the following exclusions may void the warranty and may incur additional service charges and/or cost of parts:
- 2. Accidental damage to DynaHeat[™] heat pump water heater system or any component, including: Acts of God, failure due to misuse, incorrect installation, attempts to repair the water heater other than by a Eco Alliance Pty Ltd accredited service agent or the Eco Alliance Pty Ltd service department.
- 3. Where it is found there is nothing wrong with the DynaHeat[™] heat pump water heater system; where the complaint is related to excessive discharge from the temperature and/or the pressure relief valve due to high water pressure; where there is no flow of hot water due to faulty plumbing; where water leaked are related to plumbing and not the DynaHeat[™] heat pump water heater system or its components; where there is a failure of electricity or water supplies; where the supply of electricity or water does not comply with relevant codes or acts.
- 4. Where the DynaHeat™ heat pump water heater system or its component has failed directly or indirectly as a result of excessive water pressure.
- 5. Overflow vent drain has not been installed or blocked or corroded.
- 6. Where the DynaHeat™ heat pump water heater system has rusted as a result of a corrosive atmosphere.
- 7. Where the unit fails to operate or fails as a result of ice formation in the piping to or from the DynaHeat™ heat pump water heater system.
- 8. Where the DynaHeat[™] heat pump water heater system is located in a position that does not comply with the DynaHeat[™] heat pump water heater system installation instructions or relevant statutory requirements, causing the need for major dismantling or removal of cupboards, doors or walls or use of special equipment to bring the DynaHeat[™] heat pump water heater system to floor or ground level or to a serviceable position.
- 9. Repair and/or replacement of the DynaHeat[™] heat pump water heater system due to scale formation above 200ppm (water hardness) in the waterways or the effects of either corrosive water or water with a high chloride or low pH level when the water heater has been connected to a scaling or corrosive water supply or a water supply with a high chloride or low pH level as outlined in the Owner's Guide and Installation Manual.
- 10. Warranty service is provided to the original owner of the equipment only. Subject to any statutory provisions to the contrary, this warranty excludes any and all claims for damage to furniture, carpets, walls, foundations or any other consequential loss either directly or indirectly due to leakage from the DynaHeat™ heat pump water heater system, or due to leakage from fittings and/or pipe work of metal, plastic or other materials caused by water temperature, poor workmanship or other modes of failure.

Warranty Period

Subject to the Warranty Conditions and Exclusions stated above, your Eco Alliance Pty Ltd DynaHeat heat pump water heater system is warranted in a residential application as follows:

Compressor - Eco Alliance warrants all parts labour on the Eco Alliance water heater system for a period of 2 years from date of installation. Extended warranty can be purchased. To purchase, please contact your sales rep. or contact Eco Alliance Pty Ltd directly.

Tank unit - Eco Alliance Pty Ltd warrants that the tank will be free from defects for 5 years with 100% replacement guarantee. Extended warranty can be purchased. To purchase, please contact your sales rep, or contact Eco Alliance Pty Ltd directly.

Labour costs are paid directly to the servicing contractor per the payment cost schedule published by Eco Alliance Pty Ltd and revised from time to time as per Eco Alliance Pty Ltd requirements.

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