Owner's Guide and Installation Instructions

Air Sourced 565E315 Heat Pump Water Heater

This water heater must be installed and serviced by a qualified person.
Please leave this guide with the householder.

An electronic copy of these Owner's Guide and Installation Instructions can be downloaded from rheem.com.au and rheem.co.nz.

PATENTS

This water heater may be protected by one or more patents or registered designs in the name of Rheem Australia Pty Ltd.

TRADE MARKS

® Registered trademark of Rheem Australia Pty Ltd.
™ Trademark of Rheem Australia Pty Ltd.

Note: Every care has been taken to ensure accuracy in preparation of this publication.
No liability can be accepted for any consequences, which may arise as a result of its application.

CONTENTS

HOUSEHOLDER

This booklet contains important information about your new water heater, including terms of the Rheem warranty.

We recommend you read pages 8 to 33, and the terms of the Rheem warranty on pages 4 to 7.

The other pages are intended for the installer but may be of interest.

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RHEEM AUSTRALIA PTY LTD, A.B.N. 21 098 823 511
www.rheem.com.au, www.rheem.co.nz
For Service Telephone 131 031 AUSTRALIA or 0800 657 335 NEW ZEALAND

RHEEM HEAT PUMP WATER HEATER WARRANTY
- AUSTRALIA AND NEW ZEALAND ONLY -

HEAT PUMP WATER HEATER MODEL 565E315

1. THE RHEEM WARRANTY – GENERAL

1.1 This warranty is given in Australia by Rheem Australia Pty Limited ABN 21 098 823 511 of 1 Alan Street, Rydalmere New South Wales, and in New Zealand by Rheem New Zealand Limited of 475 Rosebank Road Avondale Auckland 1026.

1.2 Rheem offer a trained and qualified national service network who will repair or replace components at the address of the water heater subject to the terms of the Rheem warranty. Rheem Service, in addition can provide preventative maintenance and advice on the operation of your water heater. The Rheem Service contact number in Australia is 131031, with Contact Centre personnel available 24 hours, 7 days a week to take your call and if necessary to arrange a service call for during normal working hours Monday to Friday (hours subject to change) or in New Zealand on 0800 657 335.

1.3 For details about this warranty, you can contact us in Australia on 131031 or by email at warrantyenquiry@rheem.com.au (not for service bookings), or in New Zealand on 0800 657 335 or by email at rheem@rheem.co.nz (not for service bookings).

1.4 The terms of this warranty and what is covered by it are set out in sections 2 and 3 and apply to water heaters manufactured from the 1st July 2025.

1.5 If a subsequent version of this warranty is published, the terms of that warranty and what is covered by it will apply to water heaters manufactured after the date specified in the subsequent version.

2. TERMS OF THE RHEEM WARRANTY AND EXCLUSIONS TO IT

2.1 Rheem may reject a claim under this warranty in its sole discretion if:

a) You do not arrange for a major service to be conducted on your water heater in the fifth year after installation, in accordance with Rheem's recommendation in the Owner's Guide and Installation Instructions; and

b) The fault giving rise to the warranty claim would have been detected and rectified during that major service.

2.2 The decision of whether to repair or replace a faulty component is at Rheem's sole discretion.

2.3 If you require a call out and we find that the fault is not covered by the Rheem warranty, you are responsible for our standard call out charge. If you wish to have the relevant component repaired or replaced by Rheem, that service will be at your cost.

2.4 Where a failed component or cylinder is replaced under this warranty, the balance of the original warranty period will remain effective. The replacement does not carry a new Rheem warranty.

2.5 Where the water heater is installed outside the boundaries of a metropolitan area as defined by Rheem or further than 25 km from either a regional Rheem branch office or an Accredited Rheem Service Agent's / Centre's office, the cost of transport, insurance and travelling between the nearest branch office or Rheem Accredited Service Agent's / Centre's office and the installed site shall be the owner's responsibility.

2.6 Where the water heater is installed in a position that does not allow safe or ready access, the cost of that access, including the cost of additional materials handling and/or safety equipment, shall be the owner's responsibility. In other words, the cost of dismantling or removing cupboards, doors or walls and the cost of any special equipment to bring the water heater to floor or ground level or to a serviceable position is not covered by this warranty.

2.7 This warranty only applies to the original and genuine Rheem water heater in its original installed location and any genuine Rheem replacement parts.

HEAT PUMP WATER HEATER MODEL 565E315

2.8 The Rheem warranty does not cover faults that are a result of:

a) Accidental damage to the water heater or any component (for example: (i) Acts of God such as floods, storms, fires, lightning strikes and the like; and (ii) third party acts or omissions).

b) Misuse or abnormal use of the water heater.

c) Installation not in accordance with the Owner's Guide and Installation Instructions or with relevant statutory and local requirements in the State or Territory in which the water heater is installed.

d) Connection at any time to a water supply that does not comply with the water supply guidelines as outlined in the Owner's Guide and Installation Instructions.

e) Repairs, attempts to repair or modifications to the water heater by a person other than Rheem Service or a Rheem Accredited Service Agent / Centre.

f) Faulty plumbing or faulty power supply.

g) Failure to maintain the water heater in accordance with the Owner's Guide and Installation Instructions.

h) Transport damage.

i) Fair wear and tear from adverse conditions (for example, corrosion).

j) Cosmetic defects.

k) Ice formation in the waterways of a water heater system incorporating a freeze protection system where the electricity supply has been switched off or has failed.

l) corrosion caused by exposure to a corrosive environment such as coastal sea air, industrial or geothermal sulphur contamination environments, e.g., on the coast or in geothermal regions such as Rotorua, where high levels of atmospheric Sulphur Dioxide are present in the atmosphere.

2.9 Rheem may reject a claim under this warranty in its sole discretion if a third party solar diverter is connected to the water heater.

2.10 Subject to any statutory provisions to the contrary, this warranty excludes any and all claims for damage to furniture, carpet, walls, foundations or any other consequential loss either directly or indirectly due to leakage from the water heater, or due to leakage from fittings and/ or pipe work of metal, plastic or other materials caused by water temperature, workmanship or other modes of failure.

2.11 If the water heater is not sized to supply the hot water demand in accordance with the guidelines in the Rheem water heater literature, any resultant fault will not be covered by the Rheem warranty.

2.12 In New Zealand this warranty excludes to the extent permissible all implied warranties set out in the Sale of Goods Act 1908 (New Zealand) and all guarantees set out in the Consumers Guarantees Act 1993 (New Zealand) to the extent that the goods are acquired for the purpose of resupply in trade consumption in the course of a process of production or manufacture or repairing or treating in trade other goods or fixtures on land.

RHEEM HEAT PUMP WATER HEATER WARRANTY
- AUSTRALIA AND NEW ZEALAND ONLY -

HEAT PUMP WATER HEATER MODEL 565E315

3. WHAT IS COVERED BY THE RHEEM WARRANTY FOR THE WATER HEATERS DETAILED IN THIS DOCUMENT

3.1 Rheem will repair or replace a faulty component of your water heater if it fails to operate in accordance with its specifications as follows:

What components are covered	The period from the date of installation in which the fault must appear in order to be covered	What coverage you receive
565E315 model		
All components	Year 1	Repair and/or replacement of the faulty component, free of charge, including labour.
Sealed System* components (if the water heater is installed in a single-family domestic dwelling)	Years 2 & 3	Repair and/or replacement of the faulty component, free of charge, including labour.
The cylinder (if the water heater is installed in a single-family domestic dwelling)	Years 2 & 3	Repair and / or replacement of the cylinder, free of charge, including labour.
	Years 4 to 10	Replacement cylinder, free of charge. Installation and repair labour costs are the responsibility of the owner.
The cylinder (if the water heater is not installed in a single-family domestic dwelling)	Years 2 & 3	Replacement cylinder, free of charge. Installation and repair labour costs are the responsibility of the owner.

* The Sealed System includes components that carry refrigerant only, e.g. Compressor, Condenser, TX Valve, Receiver / Drier, Evaporator and associated pipe work.

3.2 Without limiting the periods shown in the table in Clause 3.1, a 5-year whole-of-product warranty applies (inclusive of labour incurred in respect of a valid claim under this warranty or the Australian Consumer Law in relation to a heat pump water heater) where:

a) A hot water rebate has been received under Solar Victoria's Solar Homes Program for a heat pump water heater installed from 1 July 2023, and / or

b) Victorian Energy Efficiency Certificates (VEECs) have been created for a heat pump water heater installed from 1 February 2025, or

c) Energy Savings Certificates (ESCs) have been created for a heat pump water heater installed from 1 December 2025.

For further details, call 131 031. Proof of receipt of the rebate and / or proof of VEECs or ESCs being created, i.e. installation quote showing number of VEECs or ESCs and dollar value, plus proof of purchase (as applicable) must be produced at the time of the service call.

RHEEM HEAT PUMP WATER HEATER WARRANTY
- AUSTRALIA AND NEW ZEALAND ONLY -

HEAT PUMP WATER HEATER MODEL 565E315

4. ENTITLEMENT TO MAKE A CLAIM UNDER THIS WARRANTY

4.1 To be entitled to make a claim under this warranty you need to:

a) Be the owner of the water heater or have consent of the owner to act on their behalf

b) Contact Rheem Service without undue delay after detection of the defect and, in any event, within the applicable warranty period.

4.2 You are not entitled to make a claim under this warranty if your water heater:

a) Does not have its original serial numbers or rating labels.

b) Is not installed in Australia or New Zealand.

5. HOW TO MAKE A CLAIM UNDER THIS WARRANTY

5.1 If you wish to make a claim under this warranty, you need to:

a) Contact Rheem on 131031 in Australia or 0800 657 335 in New Zealand and provide owner's details, address of the water heater, a contact number and date of installation of the water heater or if that's unavailable, the date of manufacture and serial number (from the rating label on the water heater).

b) Rheem will arrange for the water heater to be tested and assessed on-site.

c) If Rheem determines that you have a valid warranty claim, Rheem will repair or replace the water heater in accordance with this warranty.

5.2 Any expenses incurred in the making of a claim under this warranty will be borne by you.

6. THE AUSTRALIAN CONSUMER LAW

6.1 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 for 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.

6.2 The Rheem warranty (set out above) is in addition to any rights and remedies that you may have under the Australian Consumer Law.

7. THE CONSUMER GUARANTEES ACT 1993 (NEW ZEALAND)

7.1 Our goods come with guarantees that cannot be excluded under the Consumer Guarantees Act 1993 (New Zealand). If the goods fail to comply with the applicable guarantees set out under the Consumer Guarantees Act 1993 (New Zealand) being the guarantee as to acceptable quality, the guarantee as to correspondence with description or the guarantee as to repair and parts, or if the goods fail to comply with any express guarantee given by Rheem, then you are entitled to a replacement or refund and for compensation for any other reasonably foreseeable loss or damage.

7.2 The Rheem warranty (set out above) is in addition to any rights and remedies that you may have under the Consumer Guarantees Act 1993 (New Zealand).

SAFETY, WARNINGS, INSTALLATION NOTES

It is important you read the following Safety and Warnings, and Relief Valves information.

⚠ SAFETY AND WARNINGS

- The heat pump will operate until a water temperature of 60°C up to 65°C is reached inside of the storage tank depending upon the Hot Water Temperature Set Point of the heat pump.

  These temperatures are sufficiently hot to cause severe scalding. Water at this temperature may have been plumbed to fixtures where water hotter than 50°C is allowed, such as the kitchen and laundry.

  Refer to;

  - "How Hot Should the Water Be?" on page 12, and
  - "Hotter Water Increases the Risk of Scald Injury" on page 12, and
  - "Temperature Adjustment" on page 12.
- This water heater is only intended to be operated by persons who have the experience or the knowledge and the capabilities to do so.
- This water heater is not intended to be operated by persons with reduced physical, sensory or mental capabilities i.e. the infirm, or by children. Children should be supervised to ensure they do not interfere with or play with or at the water heater.
- Do not touch any exposed pipe work or fittings connecting the storage tank and the heat pump, as this may result in a burn injury. High temperature hot water flows through the pipe work between the storage tank and heat pump.

  Note: Any exposed pipe work or fittings in the heat pump circuit should be attended to and covered with insulation. Phone Rheem Service or their nearest Accredited Service Agent to arrange for an inspection.
- If the electrical supply cable to the heat pump is damaged, it must be replaced by a qualified person in order to avoid a hazard. Phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.
- This water heater uses 220 V - 240 V a.c. electrical power for operation of the control systems and the electrically operated components. The removal of the heat pump access covers will expose 220 V - 240 V a.c. wiring. They must only be removed by a qualified person. Do not operate the water heater with any of the covers removed.
- This water heater is supplied with a tank temperature sensor probe and lead, over-temperature energy cut-outs and a combination temperature pressure relief valve. These devices must not be tampered with or removed. The water heater must not be operated unless each of these devices is fitted and is in working order.

  The Rheem warranty may not cover faults if the relief valve or other safety devices are tampered with or if the installation is not in accordance with these instructions.
- For continued safety of this water heater, it must be installed, operated and maintained in accordance with this Owner's Guide and Installation Instructions supplied with the storage tank and the Installation Instructions supplied with the heat pump module.
- The lever on the temperature pressure relief valve and expansion control valve (if fitted) requires to be operated every six (6) months to clear any deposits and to ensure the valve and its drain line are not blocked.

  Refer to:

  - "Relief Valves" on page 9, and
  - "Minor Maintenance Every Six Months" on page 25.
- Servicing of the water heater must only be carried out by qualified personnel. Phone Rheem Service or their nearest Accredited Service Agent / Centre.

- Only a person qualified to install or service a water heater can drain the water heater, if this is required.
- Do not modify this water heater.
- In areas where there is a risk of freezing conditions, power must be available to the water heater at all times and the electrical supply to the water heater should not be switched off, otherwise damage could result.

  Refer to:

  - "Freeze Protection" on page 11, and
  - "To Turn Off the Water Heater" on page 13.
- Do not use **aerosols, stain removers and household chemicals** in the vicinity of this water heater while it is in operation. Gases from some aerosol sprays, stain removers and household chemicals are corrosive to the materials used in the heat pump system.
- Do not store swimming pool chemicals, household cleaners, etc., near the water heater.
- Ensure the air flow, air inlet and outlet grilles are not obstructed in any way at any time.

WARNINGS – REFRIGERANT

- Be aware that the refrigerant used in this heat pump is flammable and may not contain an odour if it were to leak.
- Do not use any means to accelerate the defrosting process of the evaporator coil or other components of the heat pump.
- Do not pierce or burn any components of the heat pump.

RELIEF VALVES

Temperature Pressure Relief Valve

This water heater incorporates a temperature pressure relief valve located near the top of the water heater. This valve is essential for the water heater's safe operation.

It is possible for the valve to discharge a quantity of water through the drain line during each heating period. This quantity should be equal to approximately 1/50 of the hot water used, as water expands by this volume when heated.

Expansion Control Valve

In many areas, including South Australia, Western Australia, New Zealand and scaling water areas, it is mandatory an expansion control valve is fitted to the cold water line to the water heater.

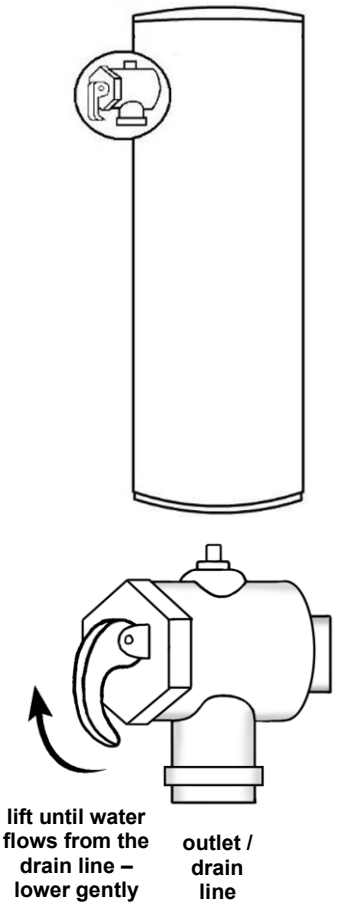
The expansion control valve will discharge the quantity of water from its drain line during the heating period instead of the temperature pressure relief valve as it has a lower pressure rating.

Valve Operation

Continuous leakage of water from either valve and its drain line may indicate a problem with the water heater. Refer to "Temperature Pressure Relief Valve or Expansion Control Valve Running" on page 32.

⚠ **Warning:** Never block the outlet of either valve or their drain lines for any reason. A relief valve drain must be left open to atmosphere and be installed in a continuously downward direction.

In locations where water pipes are prone to freezing, the relief valve drain line must be insulated and not exceed 300 mm in length before discharging into a tundish through an air gap.



Operate the easing lever on the temperature pressure relief valve and expansion control valve once every six (6) months to clear any deposits and ensure the valve and its drain line are not blocked. **It is very important the lever is raised and lowered gently.** Refer to "Minor Maintenance Every Six Months" on page 25.

⚠ **Warning:** Water discharged from the temperature pressure relief valve drain line will be hot. Exercise care to avoid any splashing of water by standing clear of the drain line's point of discharge when operating either valve's easing lever.

⚠ **DANGER:** Failure to operate the easing lever on the relief valve once every six (6) months may result in the water heater cylinder failing, or under certain circumstances, exploding.

If water does not flow freely from the drain line when the lever is lifted, then the water heater must be checked. Phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

The temperature pressure relief valve should be replaced at intervals not exceeding five (5) years and the expansion control valve should be checked for performance or replaced at intervals not exceeding five (5) years. The checking of the valves performance or replacement should occur more frequently in areas where there is a high incidence of water deposits. Refer to "Water Supplies" on page 27.

INSTALLATION NOTES

This water heater must be installed:

- by a qualified person,
- in accordance with the installation instructions,
- in compliance with the Plumbing Code of Australia (PCA) and the Plumbing Standard AS/NZS 3500.4,
  - The heat pump module is designed for outdoor installation only in a well-ventilated area. The water heater tank can be installed outdoors or indoors.
  - This water heater is intended to be permanently connected to the water mains and not connected by a hose-set. A braided flexible hose or semi-flexible connector may be used for connection to the water heater, where permitted by AS/NZS 3500.4.
  - Refer to the dimensions diagrams for the storage tank on page 41 and for the heat pump module on page 42 and the clearance requirements diagram on page 42 for clearance requirements to provide adequate ventilation for the heat pump module.
- in compliance with the Australian / New Zealand Wiring Rules AS/NZS 3000,
  - Isolation switches must be installed in the electrical circuit to the water heater in accordance with the Wiring Rules, so the water heater can be switched off.
  - The water heater must be directly connected to the mains power supply.
- in compliance with all local codes and regulatory authority requirements, and.
- in New Zealand also conforming to Clauses G12 and H1 of the New Zealand Building Code.

Installation and commissioning requirements and details for the installing plumber and licensed electrical worker are contained on pages 34 to 54.

Mains pressure water supply

The water heater is designed to operate at mains pressure by connecting directly to the mains water supply.

The water heater is supplied with a temperature pressure relief valve with a pressure rating of 1000 kPa. If an expansion control valve has been installed on the cold water line to the water heater, this should have a pressure rating of 850 kPa.

The maximum mains water supply pressure for the water heater is 800 kPa if an expansion control valve is not installed, or 680 kPa if an expansion control valve is installed. If the mains supply pressure in your area exceeds these values, a pressure limiting valve must be installed.

The supply pressure should be greater than 350 kPa for true mains pressure operation to be achieved.

ABOUT YOUR WATER HEATER

WATER HEATER APPLICATION

This water heater is designed for use in a single-family domestic dwelling for the purpose of heating potable water. Its use in an application other than this may shorten its life. This water heater complies with the Lead Free requirements of the National Construction Code Volume Three.

MODEL TYPE

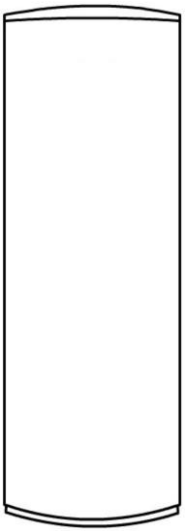
The water heater you have chosen is a Rheem® model 565E315 split heat pump water heater. The air sourced split heat pump module is designed for outdoor installation only. The storage tank is suitable for indoor or outdoor installation.

The water heater is recommended for connection to an uninterrupted 24 hour continuous tariff power supply. Depending upon the size of the household and its hot water requirements, in **non-freeze** areas and if the Electricity Retailer permits, an extended off-peak (overnight and day) or Extended time-controlled power supply connection of a minimum 16 hours per day may also be suitable. In areas where the ambient air temperature may fall below 5°C, power must be available to the water heater at all times to prevent freezing in the heat pump circuit.

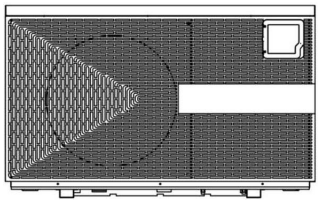
A Rheem heat pump water heater consumes less energy than an electric water heater. The impact on an electricity account will depend on the tariff arrangement of the water heater replaced and where you live. Contact your energy provider for more information on tariff arrangements and cost comparisons.

This model Rheem air sourced heat pump water heater has a vitreous enamel lined steel cylinder storage tank. The heat pump module's evaporator absorbs heat from the surrounding air and transfers this heat into the water which is circulated into the storage tank.

When hot water is drawn off and cold water enters the tank, a sensor activates the heat pump control system, a fan, a compressor and a circulator. The fan draws outside air in through the air inlet grille at the rear of the heat pump module. Heat is absorbed from the air by an evaporator and transferred to a heat exchanger. Water is circulated from the bottom of the storage tank and through the heat exchanger where it is heated and then circulated back into the storage tank. The resulting cold air is then discharged through the air outlet grille at the front of the heat pump module back to atmosphere. This process continues while ever heating is required until the water in the storage tank reaches a temperature of 60°C to 65°C, depending upon the Hot Water Temperature Set Point.



Even on cloudy or cold days, heat is drawn from the surrounding air. The heat pump will operate when the ambient air temperature is from -7°C to 43°C. The efficiency of the heat pump increases as the surrounding ambient air temperature increases.



Automatic safety controls are fitted to the water heater to provide safe and efficient operation.

FREEZE PROTECTION

The water heater has an anti-freeze protection system. The anti-freeze protection system will protect the heat pump and connecting pipe work from damage, by preventing ice forming in the waterways of the water heater, in the event of freezing conditions occurring.

The anti-freeze protection initiates when the water temperature at the heat pump inlet and the ambient air temperature are at or below 4°C and 5°C respectively if the heat pump is not already operating. Water is circulated from the storage tank through the heat pump circuit, to prevent freezing in the connecting pipe work and heat pump module. The heat pump and circulator will operate until either the water temperature increases to 8°C or the ambient temperature increases to greater than 5°C.

⚠ **Warning:** In areas where the ambient air temperature may fall below 5°C, power must be available to the water heater at all times to prevent freezing in the heat pump circuit. In these areas, connection to an uninterrupted 24 hour continuous tariff power supply is recommended.

Notes

- The system must be installed with the heat pump circuit hot and cold pipes fully insulated in accordance with the installation instructions and the insulation be fitted up to and cover the connections on both the storage tank and the heat pump.
- The anti-freeze function will still operate if the Display Panel is turned off or outside of a set Timer period and there is power to the water heater.
- The anti-freeze function will not operate if the isolating switch on the power supply to the water heater has been turned off or if the power supply has been interrupted or at a time outside of an off-peak type or time-controlled type power supply connection.
- The water heater has NO WARRANTY for freeze damage if the heat pump circuit hot and cold pipes are not suitably insulated or if power is unavailable at the water heater.

The water heater also has an active de-frost function so the heat pump operates automatically to remove ice which may form on its evaporator coil.

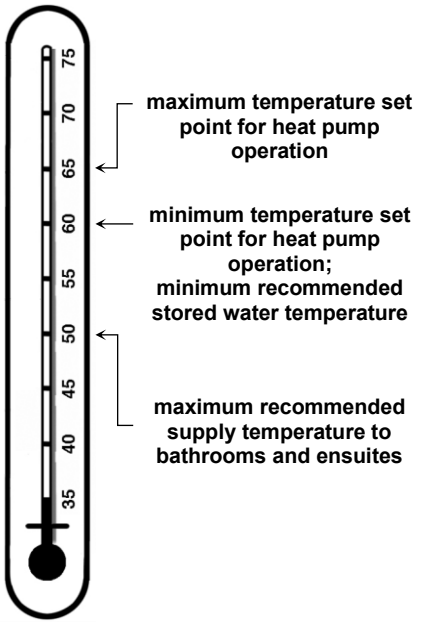
Warning: Do not use any means to accelerate the defrosting process of the evaporator coil or other components of the heat pump.

HOW HOT SHOULD THE WATER BE?

The heat pump is designed to operate until a water temperature of 60°C up to 65°C is reached inside of the storage tank depending upon the Hot Water Temperature Set Point of the heat pump.

Australian Standard AS/NZS 3500.4 'Plumbing and drainage – Heated water services' requires a water heater to store water at a temperature not less than 60°C for the water heater to satisfy the requirements of Australian Standard AS 3498, to inhibit the growth of legionella bacteria.

If a Timer period is set or the heat pump is connected to an Extended time-controlled power supply, this water heater meets these requirements provided the heat pump is energised for a sufficient period of time each day. Refer to "Timer Control" on page 13.



HOTTER WATER INCREASES THE RISK OF SCALD INJURY

Warning: This water heater can deliver hot water at temperatures of 60°C up to 65°C, sufficiently hot to cause severe scalding. Water at this temperature may have been plumbed to fixtures where water hotter than 50°C is allowed, such as the kitchen and laundry.

Check the water temperature before use, such as when entering a shower or filling a bath or basin, to ensure it is suitable for the application and will not cause scald injury.

We recommend and it may also be required by regulations that an approved temperature limiting device be fitted into the hot water pipe work to the bathroom and ensuite when this water heater is installed. This will keep the water temperature below 50°C at the bathroom and ensuite. The risk of scald injury will be reduced and still allow hotter water to the kitchen and laundry.

TEMPERATURE ADJUSTMENT

The Hot Water Temperature Set Point for the heat pump is adjustable from 60°C to 65°C. Refer to "Hot Water Temperature Set Point" on page 18.

DISPLAY PANEL

The water heater has a Display Panel to indicate the status of the water heater. The Display Panel also allows the user to select the Hot Water Temperature Set Point and use the Timer function. Refer to "Display Panel" on page 15.

TIMER CONTROL

A Timer function on the Display Panel allows the hours of operation of the water heater to be set during one timed period in a 24-hour period. Refer to “Clock and Timer” on page 19.

It may be desirable to operate the water heater during daytime hours when the air temperature is warmer and the heat pump is more efficient, or not to operate between certain hours, such as during peak energy demand periods of a Time of Use electricity supply when more expensive tariffs may apply.

If the water heater is set to run during a timed period, the heat pump will only operate outside of this timed period if the anti-freeze function is required. It is therefore necessary for the hours of operation set by the Timer to be sufficient in each 24-hour period to heat up the full volume of water in the tank from cold to the Hot Water Temperature Set Point of 60°C to 65°C. The hours of operation sufficient to achieve this will depend on various factors, including the climate and amount of hot water used during the period in which the Timer operates. As a guide, for this water heater this can be up to six (6) hours in a cold climate in winter (if no hot water is used during this period). If hot water is used, the hours of operation set by the Timer may need to be increased.

PRECAUTIONS

The water heater must be maintained in accordance with the Owner’s Guide and Installation Instructions. Refer to “Maintenance Requirements” on page 25 and to “Anode Inspection and Replacement” on page 28.

If this water heater is to be used where an uninterrupted hot water supply is necessary for your application or business you should ensure that you have back-up redundancy within the hot water system design. This should ensure the continuity of hot water supply in the event that this water heater were to become inoperable for any reason. We recommend you seek advice from your plumber or specifier about your needs and building back-up redundancy into your hot water supply system.

TO TURN OFF THE WATER HEATER

If it is necessary to turn off the water heater:

- Press the “On / Off” Key on the Display Panel to turn the water heater off.
- Switch off the electrical supply at the water heater isolating switch on the switchboard or at the isolating switch at the water heater.
- Close the cold water isolation valve at the inlet to the water heater.

Note: If there is a risk of freezing conditions, the electrical supply to the water heater should not be switched off at the isolating switch, otherwise damage could result. Refer to “Freeze Protection” on page 11.

TO TURN ON THE WATER HEATER

- Open the cold water isolation valve fully on the cold water line to the water heater.
- Switch on the electrical supply at the water heater isolating switch on the switchboard and at the isolating switch at the water heater.
- Check and if required turn the water heater on at the Display Panel.

Note: When the electrical supply is switched on, there may be a knocking sound coming from the heat pump for a short period of time. This is the electronic expansion valve operating. This is normal and not a fault with the heat pump.

HEAT PUMP OPERATION

The heat pump may take up to 5 minutes to commence operating when the power supply is switched on. The heat pump will only operate when:

- power is available at the water heater, and
- the water in the storage tank requires heating, and
- the water temperature in the lower half of the water heater is greater than 12°C below the Hot Water Temperature Set Point.

If the ambient air temperature is below -7°C or above 43°C and the system calls for heating, the heat pump will not operate.

When the heat pump is operating and it detects that the ambient air temperature falls below the minimum operating temperature of -7°C or rises above the maximum operating temperature of 43°C, it will stop operating. It will recommence operation if it detects the ambient air temperature has moved back to within the heat pump's operating temperature range and heating is required and the conditions for heating are met.

Note: The heat pump may not turn on after having just completed a heating cycle and more hot water is drawn from the water heater, or whilst the heat pump was operating and either power was switched off or it was turned "Off" at the Display Panel. The heat pump will wait a few minutes before operating and the conditions for start-up are favourable.

GOING ON HOLIDAYS

If you plan to be away from home for a few nights, we suggest you leave the water heater switched on.

If you plan to be away for a longer period, you can conserve energy by turning the water heater off at the Display Panel. The electrical supply remains available to the water heater. The heat pump is prevented from operating under normal operation but will activate if the anti-freeze function is required. Refer to "Turn the water heater "Off" at the Display Panel" on page 18 and "Freeze Protection Function" on page 24.

It is not advised to switch off the water heater at the isolating switch if there is the risk of freeze conditions. Refer to "To Turn Off The Water Heater" on page 13.

VICTORIAN CUSTOMERS

Notice to Victorian Customers from the Victorian Building Authority. This water heater must be installed by a licensed person as required by the Victorian Building Act 1993.

Only a licensed person will give you a Compliance Certificate, showing that the work complies with all the relevant Standards. Only a licensed person will have insurance protecting their workmanship for 6 years. Make sure you use a licensed person to install this water heater and ask for your Compliance Certificate.

DOES THE WATER CHEMISTRY AFFECT THE WATER HEATER?

The water heater is suitable for most public water supplies, however some water chemistries may have detrimental effects on the water heater, its components and fittings. Refer to "Water Supplies" on page 27.

If you are in a known harsh water area or you are not sure of your water chemistry, have your water checked against the conditions described on pages 27 to 30.

HOW LONG WILL THE WATER HEATER LAST?

The water heater is supported by a manufacturer's warranty (refer to page 4). There are a number of factors that will affect the length of service the water heater will provide. These include but are not limited to the water chemistry, the water pressure, the water temperature (inlet and outlet) and the water usage pattern. Refer to "Precautions" on page 13.

ENVIRONMENT

At the end of the service life of the heat pump water heater and prior to the water heater being disposed of, a person qualified to work with refrigerants must recover the refrigerant from within the sealed system. The refrigerant must not be vented to atmosphere. Phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

DISPLAY PANEL

DISPLAY PANEL AND ICONS

The water heater has a Display Panel located on the front face heat pump to allow the user to view the current operational status of the water heater and to enable user input functionality. The Display Panel has a hinged cover. The cover has a tab on its right hand side to gain purchase to open it.

LEDs on the Display Panel illuminate to display icons when there is power to the water heater. The display icons provide information on the water heater's current operational status and mode setting, water temperature at the mid-point of the water heater, the time, Timer function settings, and fault codes.

The Display Panel also has Selection Keys to enable the user to turn the water heater on or off at the Display Panel, change the Hot Water Temperature Set Point, set or change the time, and set the Timer and Vacation Modes.

- Refer to "Display Panel – Display Icons and Selection Keys" on page 16 to view the Display icons and Selection Keys which display on the Display Panel.
- Refer to "Display Selection Keys and Icons Explained" on page 17 for an explanation of each of the keys and icons.

Memory – The water heater has a memory function. When the electricity supply is switched on to the water heater after having been switched off, or if electricity is reinstated to the water heater after a time controlled electricity supply period, previous settings remain stored. The water heater and heat pump will return to the programmed state at the time the electricity supply being interrupted.

It is necessary to turn the water heater "On" at the Display Panel after the electricity supply is switched on to the water heater at the water heater isolating switch for the first time. The water heater must be "On" at the Display Panel for the water heater to operate and heat the water.

FUNCTIONS AND OPERATIONAL MODES OF THE WATER HEATER

Water Temperature Display

The water temperature at the mid-point of the storage tank (sensor probe location) is displayed in the Main Display Area of the Display Panel. Refer to "Display Panel – Display Icons and Selection Keys" on page 16 for the Main Display Area.

Clock and Timer Function

The water heater has a clock function to enable the time to be displayed. It is necessary to set the clock to use the Timer setting function and the date to use the Vacation Mode of the water heater.

The Timer function enables one timed period to be set in a 24 hour period. The Timer can be used to control the time of operation of the heat pump.

Refer to "Clock and Timer" on page 19.

ECO Mode

This is the standard heating mode. The ECO (Energy Conservation Only) Mode allows the Heat Pump to operate when heating is required, and the ambient temperature is within the heat pump's operating range of -7°C to 43°C. Refer to "ECO Mode" on page 18.

Vacation Mode

Vacation Mode enables energy to be conserved during a set period, such as when away on holidays. The heat pump is prevented from operating under standard heating conditions. Refer to "Vacation Mode" on page 22.

Key Locking the Display Panel

The Display Panel can be locked to prevent unauthorised or accidental adjustments being made. Refer to "Key Locking the Display Panel" on page 24.

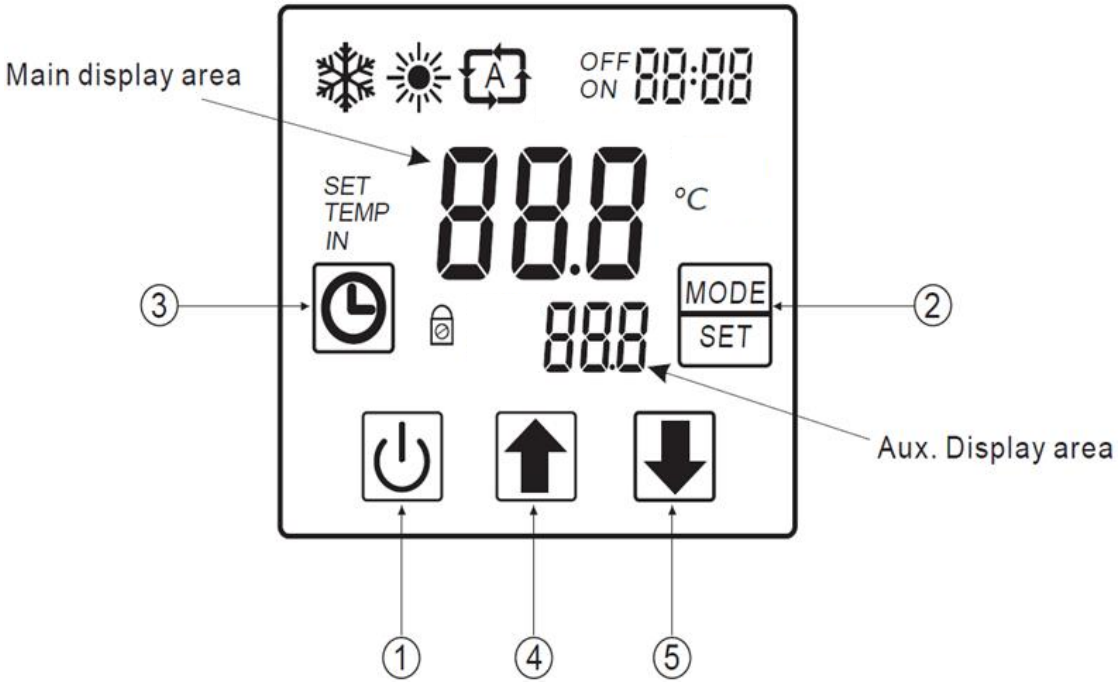
Fault Codes

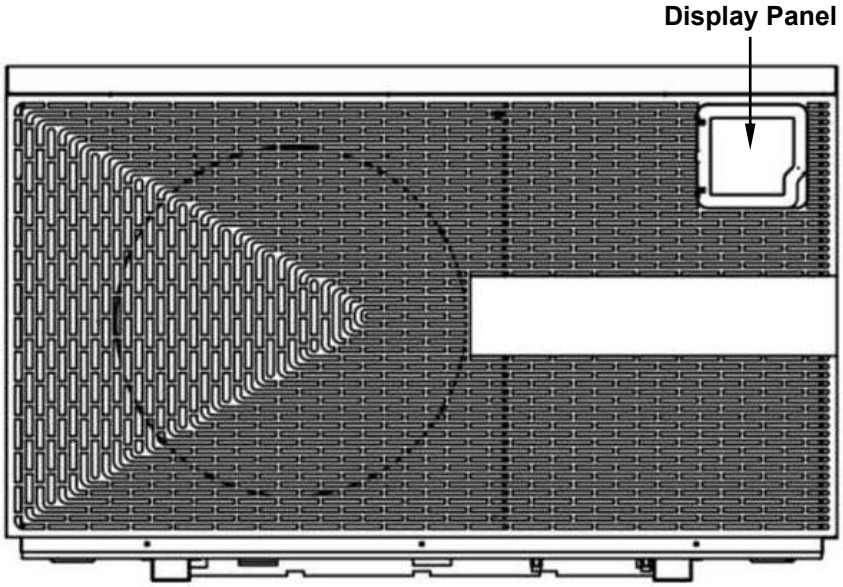
In the event the water heater develops a fault, a code will display in the Main Display Area. This function of the water heater indicates to the user a service call is required. Refer to “Fault Codes” on page 24.

Defrosting / De-Icing Function

The water heater has an automatic de-icing function for very cold conditions to defrost and de-ice the evaporator during periods of frost formation on the evaporator’s surface. Refer to “Defrosting / De-Icing Freeze Protection Function” on page 24.

DISPLAY PANEL – DISPLAY ICONS AND SELECTION KEYS





Heat Pump Module

Note: When the electricity supply to the water heater is turned on at the isolating switch or reinstated after having been off due to a time-controlled electricity supply, the Display Panel will illuminate and all Selection Keys and Icons will be displayed for up to five (5) seconds. There will be some icons displayed during this period that are not used by this model heat pump’s functionality and software and will not appear again during the normal operation of the water heater.

DISPLAY SELECTION KEYS AND ICONS EXPLAINED

Selection Keys		Description
①		**"On / Off" Key: **** Used to switch the water heater "On" or "Off" at the Display Panel and to reilluminate the Display Panel fully after it has gone out and become dark.
②		**Mode Selector Key:** Used to switch between ECO and Vacation Modes.
③		**"Clock / Timer" Key:** Used to set the clock and the timer ON / OFF settings.
④		**Up Arrow Key:** Used to increase a parameter value such as the Hot Water Temperature Set Point, or the time values during the Clock and Timer setting functions or navigates up a selection.
⑤		**Down Arrow Key:** Used to decrease a parameter value such as the Hot Water Temperature Set Point, or the time values during the Clock and Timer setting functions, or navigates down a selection.

Icons	Description
	Defrost Icon: illuminates when the heat pump defrosting / de-icing mode is active.
	ECO (Energy Conservation Only) Mode Icon: illuminates when the heat pump is in ECO Mode, which is the standard heat pump heating mode.
	Vacation Mode Icon: illuminates when Vacation Mode is on.
	Key Lock Icon: illuminates when the Display Panel is locked.
OFF	**Timer Off Icon:** illuminates when the ON / OFF timer or Vacation Mode is set and flashes when off time / date is being adjusted.
ON	**Timer On Icon:** illuminates when the ON / OFF timer or Vaction Mode is set and flashes when on time / date is being adjusted.
	Clock / Timer Display Area: Displays the time. Also displays the date, Timer ON and Timer OFF settings when programming the time, date, timer settings or Vacation Mode.
	Main Display Area: illuminates the Water Temperature at the sensor probe mid-point of the storage tank in degrees Celsius, or the heat pump status (OFF), or the Hot Water Temperature Set Point during its setting or displays fault codes.
	Auxilary Display Area: Displays number of active faults present.
SET	**Parameter Setting Icon:** illuminates when the displayed parameter can be set.
TEMP IN	**Temperature Icon:** illuminates when main display area area shows a temperature value.
°C	**Celsius Icon:** illuminates when a temperature value is displayed in degrees Celsius.

**** Note – "On / Off" Key:** The "On / Off" Key only turns the Heat Pump "Off" at the Display Panel. It does not switch off or isolate the electricity supply to the water heater or Display Panel. If it is necessary to switch off the electricity supply to the water heater, then this must be done at the water heater isolating switch on the switchboard or at the isolating switch adjacent to the water heater.

TURNING THE WATER HEATER "ON" OR "OFF" AT THE DISPLAY PANEL

Turn the water heater "On" at the Display Panel

- When the water heater is "Off" at the Display Panel (OFF is visible in the Main Display area), press the "On / Off" Key for one second to turn the water heater "On" at the Display Panel.

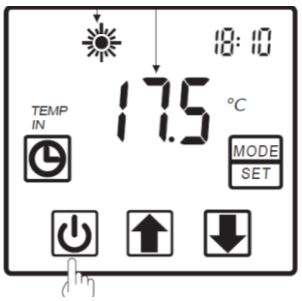
  The water temperature at the mid-point of the storage tank illuminates in the Main Display Area.

  The time (if set) illuminates in the Clock / Timer Display Area.

  The ECO or Vacation Mode icon and "TEMP", "IN" and "°C" icons illuminate.

  The OFF and ON icons beside the Clock / Timer Display Area only illuminate if the Timer is set.

  The Display Panel will remain fully illuminated for one (1) minute if a key is not pressed or after a key is pressed. It will then go out and become dark.



Note: When the water heater is turned on at the Display Panel after the electrical supply is switched on at the isolating switch, there may be a knocking sound coming from the heat pump for a short period of time. This is the electronic expansion valve operating. This is normal and not a fault with the heat pump. This knocking sound may also occur when the water heater is reconnected to power from a time controlled electrical supply after having been off.

Illuminating the Display Panel

- To illuminate the Display Panel fully after it has gone out, press the bottom left or bottom right corner of the screen of the Display Panel.

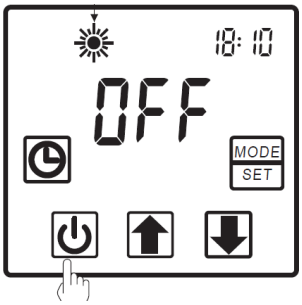
Turn the water heater "Off" at the Display Panel

- When the water heater is "On" at the Display Panel, press the "On / Off" Key for one second to turn the water heater "Off" at the Display Panel.

  The water temperature display in the Main Display Area goes out.

  The "TEMP", "IN" and "°C" icons go out.

  "OFF" appears in the Main Display Area.



HOT WATER TEMPERATURE SET POINT

The Hot Water Temperature Set Point is the temperature to which the Heat Pump will heat the water and then cut out.

- The factory default Hot Water Temperature Set Point is 60°C.
- The maximum Hot Water Temperature Set Point is 65°C.
- The minimum Hot Water Temperature Set Point is 60°C.

Up Arrow Key

To change the Hot Water Temperature Set Point:

- The water heater can be either "On" or "Off" at the Display Panel.

  The current water temperature at the mid-point of the storage tank or OFF is displayed in the Main Display area.

  The time and either the ECO or Vacation Mode icons are also displayed.

Down Arrow Key

- Press the "Up Arrow" or "Down Arrow" Key to display the current Temperature Set Point. The "SET" icon illuminates above the "TEMP" icon.
- Press the "Up Arrow" or the "Down Arrow" Key to increase or decrease the Temperature Set Point. Each press changes the Set Point in 0.5°C increments.

  The selected temperature will flash five times before turning solid. The temperature is now set. The "SET" icon goes out.

Main Display Area

- To discard the new temperature setting, press the "On / Off" Key before the selected temperature stops flashing.

ECO MODE

The ECO (Energy Conservation Only) Mode is the standard day to day operational and heating mode by the heat pump. This mode allows for the Heat Pump to operate during normal operation when heating is required. The ECO icon illuminates on the Display Panel.

The ECO Mode icon is displayed on the Display Panel.

ECO Mode icon

The heat pump will operate when there is:

- electricity supply to the water heater, and
- the water heater is turned “On” at the Display Panel, and
- the water temperature in the lower half of the water heater is more than 12°C below the Hot Water Temperature Set Point, and
- the ambient temperature is between the heat pump’s operating range of -7°C to 43°C.

CLOCK AND TIMER

Clock

The water heater has a clock function. The setting of the clock includes hours, minutes only, day, month and year. Once the clock is set, the time in hours and minutes is displayed in the Clock / Timer Display when the water heater is “On” at the Display Panel.

The clock must be set to the current time / date / year in order to use the Timer setting and Vacation Mode functions of the water heater. The clock will keep its time if there is an interruption to the power supply to the water heater.

The clock is a 24 hour clock, i.e. if the time is 4:30PM, it will show as 16:30 on the clock.

Timer

The water heater has a Timer function. One timed period can be set within a 24 hour period. The Timer operates over a 24 hour period, it does not allow for days or months to be programmed.

The Timer is used in conjunction with the ECO Mode to control the times of operation of the heat pump. The heat pump will not operate outside of this timed period under ECO Mode operation.

It may be desirable to operate the water heater during daytime hours when the air temperature is warmer and the heat pump is more efficient, or not to operate between certain hours, such as during peak energy demand periods of a Time of Use electricity supply when more expensive tariffs may apply.

The Timer displays use a 24 hour clock, i.e. if the time being set is 4:30PM, it will show as 16:30.

Notes

- If a Timer period is not set, the OFF and ON icons beside the Clock / Timer Display Area do not illuminate.
- It is necessary for the hours of operation set by the Timer to be sufficient to heat up the full volume of water in the tank from cold to the Hot Water Temperature Set Point of 60°C to 65°C, to ensure the hot water consumption requirements of the household are met. The hours of operation sufficient to achieve this will depend on various factors, including the climate and amount of hot water used during the period in which the Timer operates. The heat pump will take longer to heat water in the cooler winter months than in the warmer summer months. As a guide, for this water heater this can be up to six (6) hours in a cold climate in winter (if no hot water is used during this period). If hot water is used, the hours of operation set by the Timer may need to be increased.
- The Timer period may need to be reset at the start and finish of Daylight Saving where applicable.
- If the Timer OFF setting is earlier in the day than the Timer ON setting, then the Timer will turn OFF the following day.
- The Display Panel will not allow the scheduled ON and OFF settings to be the same.
- If there is no action for 5 seconds during the setting of the Clock or the Timer period, the Display Panel exits the clock or Timer programming. The last saved Clock time or Timer setting will be saved.
- The Timer operation is temporarily disabled when the water heater is within a Vacation Mode.

To set the Clock

The clock can be set whether or not the water heater is turned on or off at the Display Panel. Remember, it is a 24 hour clock, e.g., 4:30PM will show as 16:30 on the clock.

"Clock / Timer" Key

Clock / Timer Display Area

Up Arrow Key

Down Arrow Key

- Press the "Clock / Timer" Key.

  The Clock / Timer display will start flashing.

- Press the "Clock / Timer" Key.

  The hour section of the Clock / Timer display will start flashing.

- Press the "Up Arrow" or "Down Arrow" Key repeatedly (or press and hold) to select the current hour.
- Press the "Clock / Timer" Key to save the hour setting.

  The minute section of the Clock / Timer display will start flashing.

- Press the "Up Arrow" or "Down Arrow" Key repeatedly (or press and hold) to select the current minute.
- Press the "Clock / Timer" Key to save the hour setting.

  The Clock / Timer display will change to both the month and day flashing.

- Press the "Clock / Timer" Key.

  The month section of the Clock / Timer will start flashing.

- Press the "Up Arrow" or "Down Arrow" Key repeatedly (or press and hold) to select the current month.
- Press the "Clock / Timer" Key to save the month setting.

  The day section of the Clock / Timer display will start flashing.

- Press the "Up Arrow" or "Down Arrow" Key repeatedly (or press and hold) to select the current day.
- Press the "Clock / Timer" Key to save the day setting.

  The Clock / Timer display will change to the year, with the four digits of the year flashing, i.e., "20 - -".

- Press the "Clock / Timer" Key.

  The last two digits of the year will be flashing, i.e., "20 - -".

- Press the "Up Arrow" or "Down Arrow" Key repeatedly (or press and hold) to select the current year.
- Press the "Clock / Timer" Key to save the year setting.

To set the Timer

The Timer can be set whether or not the water heater is turned on or off at the Display Panel. Remember, it is a 24 hour clock, e.g., 4:30PM will show as 16:30 on the clock.

- Press and hold the “Clock / Timer” Key for 2 seconds.

  The Clock / Timer display will start flashing the Timer ON time and a small “ON” icon to the left Clock / Timer display will start flashing.

“Clock / Timer” Key

- Press the “Clock / Timer” Key.

  The Timer ON hour will start flashing.

- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the ON hour.

Clock / Timer Display Area & “ON”, “OFF” Icons

- Press the “Clock / Timer” Key to save the ON hour setting.

  The minute section of the Clock / Timer display will start flashing.

- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the ON minutes.

- Press the “Clock / Timer” Key to save the ON minutes setting.

  The “ON” icon illuminates solid.

  The Clock / Timer display will start flashing the Timer OFF time and a small “OFF” icon to the left Clock / Timer display will start flashing.

Up Arrow Key

- Press the “Clock / Timer” Key. The Timer OFF hour will start flashing.

- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the OFF hour.

Down Arrow Key

- Press the “Clock / Timer” Key to save the OFF hour setting.

  The minute section of the Clock / Timer display will start flashing.

- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the OFF minute.

- Press the “Clock / Timer” Key to save the OFF minute setting.

  Both the small ON and OFF icons to the left of the Clock / Timer display will illuminate solid and the current time will be displayed.

The heat pump will only operate between the Timer On and Timer Off times when heating is required. If it is necessary to adjust the Timer period, then repeat the above procedure.

“Clock / Timer” Key

To Cancel the Timer

To cancel the Timer On and Timer Off times:

- Press and hold the “Clock / Timer” Key for 2 seconds and a chime sounds.

  The “ON” icon to the left Clock / Timer display will start flashing.

“ON”, “OFF” Icons

- Press the “On / Off” Key.

  The “ON” and “OFF” icons to the left Clock / Timer display go out. The Timer has been cancelled.

On / Off Key

VACATION MODE

In a Vacation Mode, to conserve energy, the heat pump will not operate under standard heating conditions. This may be useful when the premises will be vacant for a period of time, such as when away on holidays. The heat pump will only operate under very cold conditions and anti-freeze protection is required.

The Vacation Mode has either a programmed On or Off date. Vacation Mode period is based on full days, i.e. the start time or finish time is at midnight on the morning of the start date or finish date of the Vacation period.

Note: If the Timer is set, its operation is temporarily disabled when the water heater is “Off” at the Display Panel during a Vacation Mode period.

Programming Vacation Mode for ON Operation

This procedure details how to program Vacation Mode to automatically turn the water heater back on to ECO Mode (standard heating mode) from OFF at the Display Panel, at a preset date.

Note: The water heater must be turned “Off” at the Display Panel to set the start date of Vacation Mode, i.e. OFF is displayed in the Main Display area.

- If “OFF” is not displayed in the Main Display area, press the “On / Off” Key to turn the water heater off at the Display Panel.

  “OFF” will illuminate in the Main Display area.
- Press the Mode Selector Key if the ECO Mode icon is currently illuminated to select Vacation Mode.

  The Vacation Mode icon will illuminate. The ECO Mode icon will go out.

  The Clock / Timer display will show the current month and day.
- Press and hold the “Clock / Timer” Key for 2 seconds and a chime sounds.

  “ON” will illuminate to the left of Clock / Timer display area and the month and day will start flashing in the Clock / Timer display area.
- Press the “Clock / Timer” Key.

  The month will start flashing.
- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the Vacation Mode ON month.
- Press the “Clock / Timer” Key to save the ON month setting.

  The day will start flashing.
- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the Vacation Mode ON day.
- Press the “Clock / Timer” Key to save the ON day setting.

  The Clock / Timer display will change to the year, with the four digits of the year flashing, i.e., “20 - -”.
- Press the “Clock / Timer” Key.

  The last two digits of the year will be flashing, i.e., “20 - -”.
- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the Vacation Mode ON year.
- Press the “Clock / Timer” Key to save the ON year setting.

  The Vacation Mode ON date is now set. “ON” and the ON month and day will illuminate solid.

  The water heater remains “OFF” at the Display Panel.

When the Vacation Mode ON date is reached, the ECO Mode icon will illuminate and the Main Display area will show the current water temperature at the mid-point of the storage tank.

OFF displayed

Mode Selector Key

Vacation Mode Icon

“Clock / Timer” Key

Clock / Timer Display Area & Date

Up Arrow Key

Down Arrow Key

When you leave for ‘Vacation’ and if the water heater had been tuned back “On” at the Display Panel after setting the ON date, it is necessary to turn the water heater “OFF” at the Display Panel.

Programming Vacation Mode for OFF Operation

This procedure details how to program Vacation Mode to automatically turn the heat pump OFF at the Display Panel from ECO Mode (standard heating mode), at a preset date.

Note: The water heater must be turned “On” at the Display Panel to set the end date of Vacation Mode, i.e. water temperature is displayed in the Main Display area.

- If the water temperature is not displayed in the Main Display area, press the “On / Off” Key to turn the water heater on at the Display Panel.

  The current water temperature at the mid-point of the storage tank will illuminate in the Main Display area.

Temperature displayed

- Press the Mode Selector Key if the ECO Mode icon is currently illuminated to select Vacation Mode.

  The Vacation Mode icon will illuminate. The ECO Mode icon will go out.

  The Clock / Timer display will show the current month and day.

Mode Selector Key

- Press and hold the “Clock / Timer” Key for 2 seconds and a chime sounds.

  “OFF” will illuminate to the left of Clock / Timer display area and the month and day will start flashing in the Clock / Timer display area.

- Press the “Clock / Timer” Key.

  The month will start flashing.

Vacation Mode Icon

- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the Vacation Mode OFF month.
- Press the “Clock / Timer” Key to save the OFF month setting.

  The day will start flashing.

“Clock / Timer” Key

- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the Vacation Mode OFF day.
- Press the “Clock / Timer” Key to save the OFF day setting.

  The Clock / Timer display will change to the year, with the four digits of the year flashing, i.e., “20 - -”.

Clock / Timer Display Area & Date

- Press the “Clock / Timer” Key.

  The last two digits of the year will be flashing, i.e., “20 - -”.

- Press the “Up Arrow” or “Down Arrow” Key repeatedly (or press and hold) to select the Vacation Mode OFF year.
- Press the “Clock / Timer” Key to save the OFF year setting.

  The Vacation Mode OFF date is now set.

  “OFF” and the OFF month and day will illuminate solid.

  The water temperature remains displayed in the Main Display area The heat pump remains “On” at the Display Panel.

Up Arrow Key

Down Arrow Key

The water heater will remain “On” until the Vacation Mode OFF date is reached. The water heater will then automatically switch off and the Main Display area will show “OFF”.

When you return from ‘Vacation’, turn the water heater “On” at the Display Panel.

To Cancel the Vacation Mode Setting

To cancel the Vacation Mode setting date:

- Press the Mode Selector Key if the ECO Mode icon is currently illuminated to select Vacation Mode.

  The Vacation Mode icon will illuminate. The ECO Mode icon will go out.

  The Clock / Timer display will show the current month and day.

  If the water heater is “Off” at the Display Panel, the “ON” icon will illuminate if set.

  If the water heater is “On” at the Display Panel, the “OFF” icon will illuminate if set.

- Press and hold the “Clock / Timer” Key for 2 seconds and a chime sounds.

  The month and day will start flashing in the Clock / Timer display area.

- Press the “On / Off” Key.

  The illuminated “ON” or “OFF” icon and the month and day will go out.

  The Vacation Mode setting date has been cancelled.

Vacation Mode Icon

Display Area & Date

“Clock / Timer” Key

On / Off Key

KEY LOCKING THE DISPLAY PANEL

The Display Panel can be locked to prevent unauthorised or accidental adjustments being made. The Key Lock icon will illuminate when the Display Panel is locked.

When the Display Panel is locked, pressing a Selection Key will not initiate a function.

- **To lock the Display Panel:**
  - Press and hold the "On / Off" Key until the “Key Lock” icon illuminates and a chime sounds. This will take 5 seconds.

    The Display Panel is locked.
- **To unlock the Display Panel:**
  - Press and hold the "On / Off" Key until the “Key Lock” icon goes out and a chime sounds. This will take 5 seconds.

    The Display Panel is unlocked.

On / Off Key

Key Lock Icon

Note: If a heat pump fault arises whilst the Display Panel is locked, the Display Panel Keylock is automatically released and will remain in the unlocked state.

FAULT CODES

A fault code will display in the Main Display Area in the event the water heater develops a fault. If there is more than one fault code, the number of faults will appear in the Auxiliary Display Area. When a fault code is present, the heat pump may not operate and there will be no heating of the water.

The fault codes which may appear are:

- **E01, E04, E07, E09, E10, E45, P01, P02, P04, P05, P07, P09, P81, P82.**

Take note of the fault code and phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

DEFROSTING / DE-ICING FUNCTION

The water heater has an active Defrosting / De-Icing function, so the heat pump operates automatically to remove ice from its evaporator coil in very cold conditions. This assists to increase the overall system efficiency.

The snowflake icon will illuminate on the Display Panel when this function is operating.

Defrost Icon

MAINTENANCE REQUIREMENTS

MINOR MAINTENANCE EVERY SIX MONTHS

It is recommended minor maintenance be performed every six (6) months. Minor maintenance can be performed by the dwelling occupant.

Switch off the electrical supply at the power outlet to the water heater prior to performing general maintenance. This will prevent the water heater from operating while you clean or spray around the water heater. Switch on the electrical supply at the power outlet to the water heater when finished performing the general maintenance.

The minor maintenance includes:

- Operate the easing lever on the temperature pressure relief valve. **It is very important the lever is raised and lowered gently.** Refer to "Relief Valves" on page 9.

  ⚠ **Warning:** Water discharged from the temperature pressure relief valve drain line will be hot. Exercise care to avoid any splashing of water by standing clear of the drain line's point of discharge when operating the valve's easing lever.

- Operate the easing lever on the expansion control valve. **It is very important the lever is raised and lowered gently.** Refer to "Relief Valves" on page 9.

  If water does not flow freely from the drain line of either the temperature relief valve or expansion control valve when the easing lever is operated, phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

- The jackets of the storage tank and heat pump can be cleaned with a soft cloth and warm mild soapy water if required. Under no circumstances should abrasive materials or powders be used.

- Inspect around the air inlet and outlet grilles of the heat pump and the water heater in general for plant growth.

  - Trim back any shrubs, bushes or other plants which have encroached around the water heater.

    Plant growth across the air inlet and outlet grilles can interfere with the performance of the water heater.

- Inspect around the water heater for infestations of insects, such as ants. Insects encroaching into or nesting in the heat pump can interfere with the operation of the water heater and also damage components. The area around the water heater can be sprayed with insecticide to rid the area of insects.

  ⚠ **Warning:** Do not spray insecticide near the water heater while the heat pump is operating.

  - If necessary to rid the area of insects:

    - Ensure the electrical supply at the power outlet to the water heater has been switched off.
    - Spray the affected are, taking care not to spray into the air inlet or outlet grilles or onto the surface of the water heater.
    - Wait a few minutes to allow any aerosol gases to dissipate before switching on the electrical supply at the power outlet to the water heater.

- Inspect and check the insulation on the pipework between the storage tank and the heat pump.

  - If the insulation does not fully cover the entire length of pipework between the storage tank and the heat pump including up to and covering the connections on both the storage tank and the heat pump, or if it appears to have degraded, phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection and remedial action.

- Inspect and check the condition of the electrical cable to the heat pump and the sensor cable from the heat pump to the storage tank. If either is damaged, phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

MAJOR SERVICE EVERY FIVE YEARS

It is recommended a major service be conducted on the water heater every five (5) years.

⚠ **Warning**: Servicing of a water heater must only be carried out by qualified personnel. Phone Rheem Service or their nearest Accredited Service Agent / Centre.

Note: The major service and routine replacement of any components, such as the anode and relief valve(s), are not included in the Rheem warranty. A charge will be made for this work. Only genuine replacement parts should be used on this water heater. This service does not involve accessing the refrigerant circuit (sealed system).

The major service includes:

- Replace the temperature pressure relief valve.
- Inspect and flush the expansion control valve (if fitted). If required, replace the valve.
- Inspect and if required, replace the anode.

  If the anode is not replaced, it should be replaced within five (5) years of this service.

  Refer to “Anode Inspection and Replacement” on page 28.
- Flush the water heater tank (if required).
- Check and clean the heat pump of dust and residue.
- Check and inspect the heat pump for operation.
- Visually check the unit for any potential problems.
- Inspect all connections.
- Check the insulation on the pipework between the storage tank and the heat pump. If required, insulate exposed pipe work and repair or replace degraded insulation.
- Inspect around the air inlet and outlet grilles of the heat pump and the water heater in general for plant growth.
- Inspect around the water heater for infestations of insects, such as ants.
- Inspect and check the condensate discharge ports on the underside of the heat pump are clear and not blocked if readily accessible.
- Inspect and check the condition of the electrical cable to the heat pump.
- Inspect and check the condition of the sensor cable from the heat pump to the storage tank.
- Check the items covered in the minor maintenance

Note: The water heater may need to be drained during this service. After the completion of the service, the water heater will take some time to reheat the water. The Timer, if set, may need to be reprogrammed to enable the heat pump to operate and reheat the water in the tank prior to the next scheduled timed period.

HEAT PUMP SYSTEM

It is recommended the evaporator and refrigeration system is checked every five years. In particularly dusty environments, it may be necessary to have the heat pump system checked and cleaned of dust and residue on a more regular basis. Only the manufacturer’s authorised replacement parts are to be used with the servicing of the heat pump. This must only be conducted by qualified personnel.

HOUSEHOLD MAINTENANCE AROUND THE WATER HEATER

Care should be taken when conducting general household maintenance, such as lawn mowing and grass cutting, around the heat pump and storage tank. Careless use of devices such as a whipper snipper could damage or cut a sensor cable or the electrical cable. If the sensor cable or the electrical cable is damaged or cut, water heating may not be achieved and the freeze protection system may be rendered inoperative. In addition, if the electrical cable has been damaged or cut, wiring may be exposed leading to a dangerous situation.

WATER SUPPLIES

This water heater must be installed in accordance with this advice to be covered by the Rheem warranty.

This water heater is manufactured to suit the water conditions of most public reticulated water supplies. However, there are some known water chemistries which can have detrimental effects on the water heater and its operation and / or life expectancy. If you are unsure of your water chemistry, you may be able to obtain information from your local water supply authority. This water heater should only be connected to a water supply which complies with these guidelines for the Rheem warranty to apply.

CHANGE OF WATER SUPPLY

The changing or alternating from one water supply to another can have a detrimental effect on the operation and / or life expectation of a storage tank cylinder, the heat pump heat exchanger and a temperature pressure relief valve.

Where there is a changeover from one water supply to another, e.g. a rainwater tank supply, bore water 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 it should be tested to ensure the water supply meets the requirements given in these guidelines for the Rheem warranty to apply.

ANODE

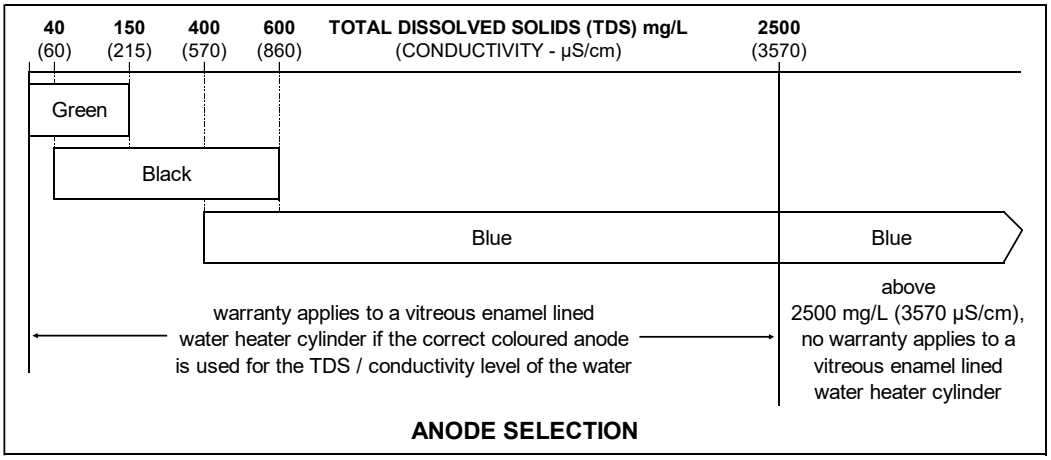
The vitreous enamel lined cylinder of the water heater is only covered by the Rheem warranty when the total dissolved solids (TDS) content in the water is less than 2500 mg/L and when the correct colour coded anode is used. If an incorrect colour coded anode is used in the water heater, any resultant faults will not be covered by the Rheem warranty. In addition, the use of an incorrect colour coded anode may shorten the life of the water heater cylinder.

The correct colour coded anode is as shown in the following table:

Total Dissolved Solids	Anode colour code
0 – 40 mg/L	Green
40 – 150 mg/L	Green or Black
150 – 400 mg/L	Black
400 – 600 mg/L	Black or Blue
600 – 2500 mg/L	Blue
2500 mg/L +	Blue (no cylinder warranty)

The changing of anodes must be carried out by a qualified person.

Note: Some water analysis reports may state the conductivity of the water rather than the level of total dissolved solids. Conductivity, measured in microsiemens per centimetre (μS / cm), is directly proportional to the TDS content of the water. TDS, in mg / L, is approximately 70% of the conductivity in μS / cm.



ANODE INSPECTION AND REPLACEMENT

The anode installed in your water heater will slowly dissipate whilst protecting the cylinder. The life of the cylinder may be extended by replacing the anode.

For water supplies which are either softened or desalinated, or where the water supply may alternate between a water tank and a reticulated public supply or another supply, or where there is a variable supply (e.g. from a bore or public reticulated supply from various water sources), the anode must be inspected (and replaced if there is any sign of depletion) within five (5) years of its installation, and within three (3) years thereafter.

For all water supplies, if the anode is not replaced during a major service (refer to "Major Service Every Five Years" on page 26) then in any event, the maximum time after its installation when the anode should be replaced for this water heater is ten (10) years.

CAUTION

If the water supply has a TDS greater than 150 mg/L and a green anode has not been changed to a black anode, or if the TDS is greater than 600 mg/L and the anode has not been changed to a blue anode, there is the possibility the anode may become overactive and hydrogen gas could accumulate in the top of the water heater during long periods of no use.

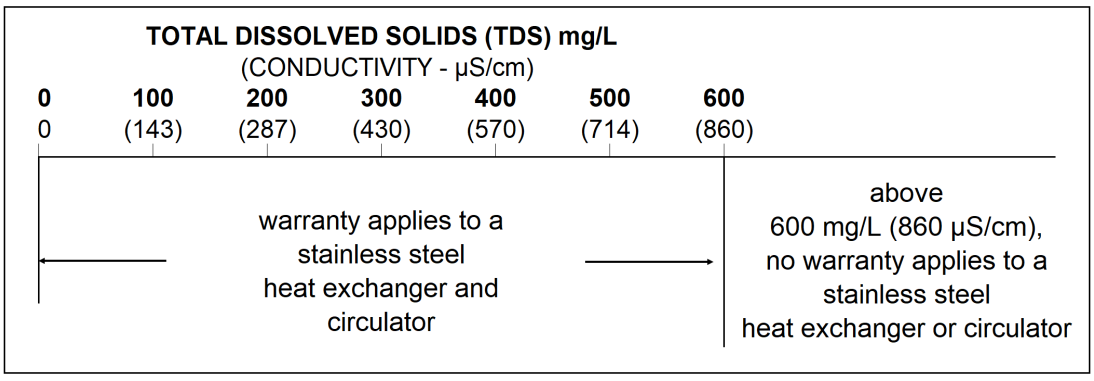
If, under these conditions, the water heater has not been used for two or more weeks the following procedure should be carried out before using any electrical appliances (automatic washing machines and dishwashers) which are connected to the hot water supply.

The hydrogen, which is highly flammable, should be vented safely by opening a hot tap and allowing the water to flow. There should be no smoking or naked flame near the tap whilst it is turned on. Any hydrogen gas will be dissipated. This is indicated by an unusual spurting of the water from the tap. Once the water runs freely, any hydrogen in the system will have been released.

TOTAL DISSOLVED SOLIDS

Where the total dissolved solids (TDS) content in the water exceeds 600 mg / L the Rheem warranty does not apply to the heat pump's stainless steel heat exchanger or circulator.

Note: Some water analysis reports may state the conductivity of the water rather than the level of total dissolved solids. Conductivity, measured in microsiemens per centimetre (*µ*S / cm), is directly proportional to the TDS content of the water. TDS, in mg / L, is approximately 70% of the conductivity in *µ*S / cm.



SATURATION INDEX

The saturation index (SI) is used as a measure of the water's corrosive or scaling properties. The saturation index figures stated are calculated using a water temperature of 80°C.

In a corrosive water supply, the water can attack stainless steel and copper parts and cause them to fail.

Where the saturation index is less than –1.0, the water is very corrosive, and the Rheem warranty does not apply to the heat pump's stainless steel heat exchanger or circulator or the water pipework within the heat pump.

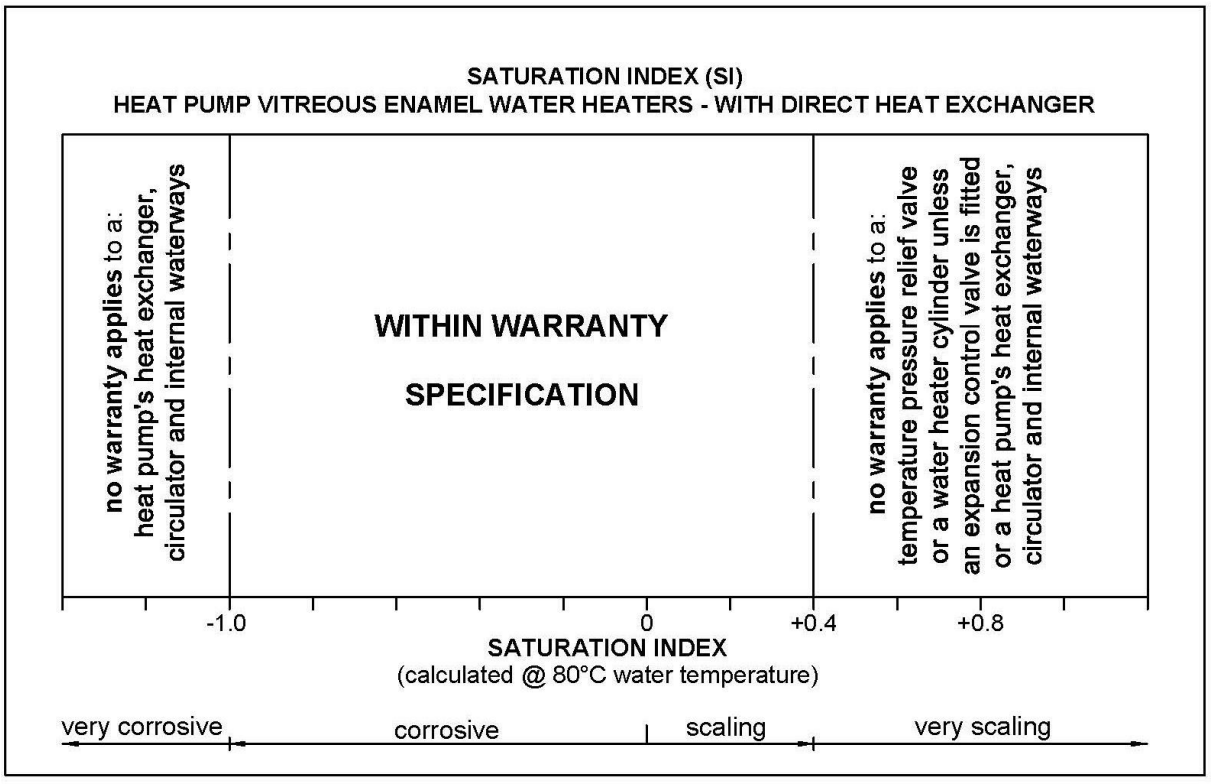
In a scaling water supply calcium carbonate is deposited out of the water onto any hot metallic surface.

Where the saturation index exceeds +0.40, the water is very scaling.

Where the saturation index exceeds +0.40, the Rheem warranty does not apply to the heat pump's stainless steel heat exchanger or circulator or the water pipework within the heat pump. An expansion control valve must be fitted on the cold water line after the non-return valve to protect and for the Rheem warranty to apply to the temperature pressure relief valve and water heater cylinder.

Water which is scaling may be treated with a water softening device to reduce the saturation index of the water.

Refer to the Saturation Index chart on page 29. Refer to the cold water connection diagram on page 48 for the position of the expansion control valve.



CHLORIDE AND PH

In a high chloride water supply, the water can corrode stainless steel parts and cause them to fail.

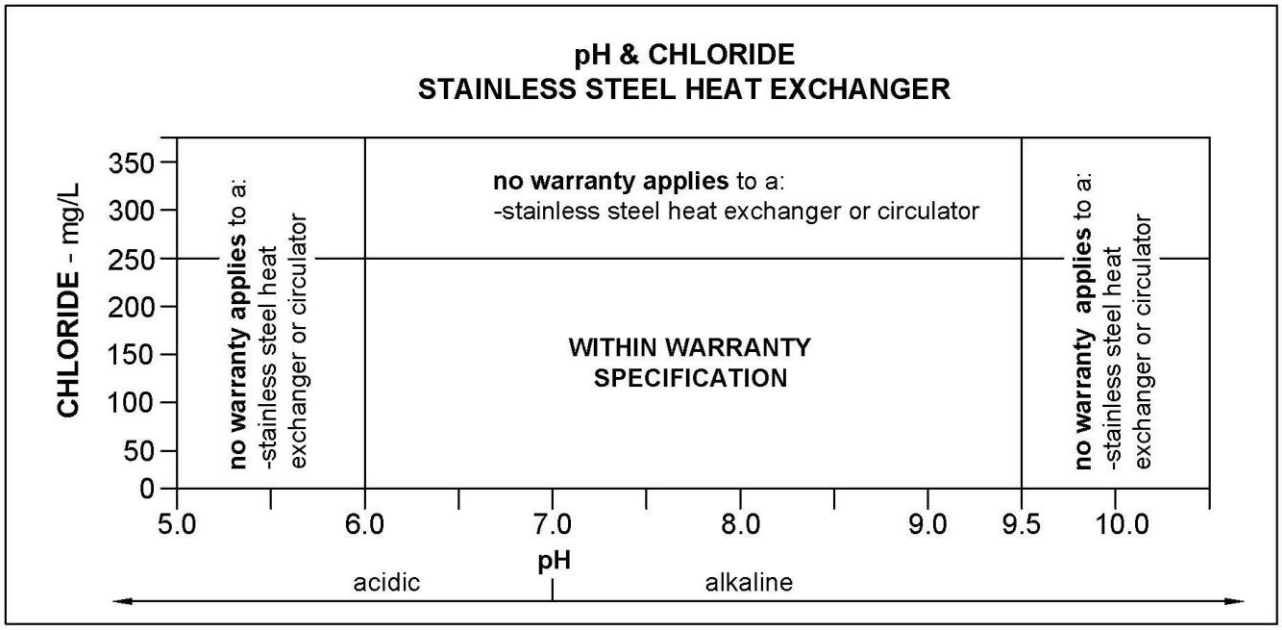
Where the chloride level exceeds 250 mg / L the Rheem warranty does not apply to the heat pump's stainless steel heat exchanger or circulator.

pH is a measure of whether the water is alkaline or acid. In an acidic or very alkaline water supply, the water can attack stainless steel parts and cause them to fail.

Where the pH is less than 6.0 or greater than 9.5, the Rheem warranty does not apply to the heat pump's stainless steel heat exchanger or circulator. Water with a pH less than 6.0 may be treated to raise the pH.

The water supply from a rainwater tank in a metropolitan area is likely to be corrosive due to the dissolution of atmospheric contaminants. This may result in pH of less than 6.0. It is recommended an analysis on the water from a rainwater tank be conducted prior to connecting this type of water supply to a heat pump water heater with a stainless steel heat exchanger.

Refer to the pH and Chloride chart on page 30.



SUMMARY OF WATER CHEMISTRY ADVICE AFFECTING WARRANTY

The water heater and its components are not suitable for certain water chemistries. Those chemistries are listed below. If the water heater is connected at any time to a water supply with the following water chemistry, the Rheem warranty **will not** cover any resultant faults on the components listed below:

Water Chemistry	Component
Total Dissolved Solids (TDS) > 600 mg/L	heat pump's heat exchanger and circulator
Total Dissolved Solids (TDS) > 2500 mg/L	water heater cylinder
Total Dissolved Solids (TDS) not suitable for anode type	water heater cylinder
Saturation Index (SI) < -1.0	heat pump's heat exchanger, circulator and internal waterways
Saturation Index (SI) > +0.4 (if expansion control valve is not fitted)	water heater cylinder temperature pressure relief valve
Saturation Index (SI) > +0.4	heat pump's heat exchanger, circulator and internal waterways
Chloride > 250 mg / L	heat pump's heat exchanger and circulator
pH < 6.0 or > 9.5	heat pump's heat exchanger and circulator

SAVE A SERVICE CALL

Check the items below before making a service call. You will be charged for attending to any condition or fault that is not related to manufacture or failure of a part.

NOT ENOUGH HOT WATER (OR NO HOT WATER)

- **Is the electricity switched on?**
  For a water heater wired into the isolating switch at the water heater, inspect the isolating switch at the water heater and the isolating switch marked “HOT WATER” or “WATER HEATER” at the switchboard and ensure they are turned on.

  Check the fuse or circuit breaker marked “HOT WATER” or “WATER HEATER” at the switchboard.

- **Has the Timer been set?**
  If the Timer has been set, ensure sufficient time has been allowed to reheat the storage tank.

- **Are you using more hot water than you think?**
  Is one outlet (especially the shower) using more hot water than you think?

  Very often it is not realised the amount of hot water used, particularly when showering. Carefully review the family’s hot water usage. Have your plumber install a flow control valve to each shower outlet to reduce water usage.

  As you have installed an energy saving appliance, energy saving should also be practised in the home.

- **Heat pump fault**
  Is a fault code displayed on the Display Panel? The heat pump has developed a fault.

  A fault code may prevent the heat pump from operating and there will be no heating of the water. Take note of the fault code and phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

  Refer to “Fault Codes” on page 24.

  Also refer to “Heat Pump Is Not Operating” on page 32.

- **Relief valve running**
  Is the relief valve discharging too much water?

  Refer to “Temperature Pressure Relief Valve or Expansion Control Valve Running” on page 32.

WATER NOT HOT ENOUGH

You may find that due to heavy hot water usage the water temperature may be lower than normally expected, due to insufficient heating time being allowed. You will need to carefully plan your use of the hot water on such occasions.

WATER TOO HOT

The heat pump operation will heat the water to a temperature of 60°C up to 65°C, depending upon the Hot Water Temperature Set Point. This is normal operation.

- **Removed or Loose Sensor Probe**
  If the sensor probe has been removed or has become loosened from the sensor port on the left hand side of the tank, it will not be able to sense the tank water temperature for the heat pump to turn off. The water temperature may reach as high as 78°C before the heat pump deactivates on an E01, E45 or P82 fault code. Check the sensor probe to see if it has been removed or has become loose.

  If the probe has become loose, reinsert it into the sensor port and turn the water heater off at the isolating switch adjacent to the water heater for thirty (30) seconds before turning it back on again. If the fault code reoccurs, take note of the fault code and phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

HEAT PUMP IS NOT OPERATING

- **Power must be available at the water heater and the water heater switched on.**
  If there is power to the water heater, check the water heater has been turned “On” at the Display Panel. Refer to “Turning the Water Heater “On” or “Off” at the Display Panel” on page 18.

- **Time controlled power supply**
  If the water heater is connected to a time controlled power supply, then during periods of no power supply at the water heater, the heat pump will not operate.

  This is not a fault condition, but a result of no power being available to operate the water heater.

  Check the hours of supply from the electricity retailer.

  The Display Panel will illuminate again when power is available again at the water heater.

  Note: If power was cut to the heat pump whilst it was operating, it may wait for a few minutes before recommencing to operate when power is restored and if heating is required.

- **Heat pump operating range**
  The heat pump’s operating range is when the ambient air temperature is from -7°C to 43°C. It will not operate outside of this temperature range.

- **Possible fault condition**
  If the heat pump has developed a fault and a fault code is displayed on the Display Panel, the heat pump may not operate.

  A fault code may prevent the heat pump from operating and there will be no heating of the water. Check the Display Panel and take note of the fault code and phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

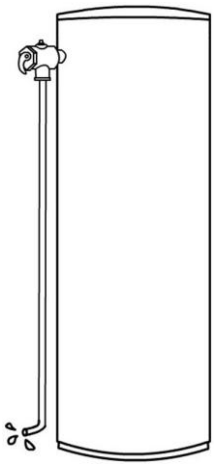
  Refer to “Fault Codes” on page 24.

TEMPERATURE PRESSURE RELIEF VALVE OR EXPANSION CONTROL VALVE RUNNING

- **Normal Operation**
  It is normal and desirable the temperature pressure relief valve or expansion control valve (if fitted) allows a quantity of water to escape during the heating cycle. This quantity should be equal to approximately 1/50 of the hot water used, as water expands by this volume when heated. However, if it discharges more than a bucket full of water in 24 hours, there may be another problem.

  The expansion control valve (if fitted) will discharge water instead of the temperature pressure relief valve as it has a lower pressure rating. A benefit is that energy is conserved as the discharged water is cooler. This valve is installed in the cold water line to the water heater.

  Refer to the cold water connection diagram on page 48.



- **Continuous dribble**
  Try gently raising the easing lever on the relief valve for a few seconds (refer to “Relief Valves” on page 9). This may dislodge a small particle of foreign matter and clear the fault. Release the lever gently.

- **Steady flows for long periods (often at night)**
  This may indicate the mains water pressure sometimes rises above the designed pressure of the water heater. Ask your installing plumber to fit a pressure limiting valve.

  ⚠ **Warning:** Never replace the relief valve with one of a higher pressure rating.

- **Heavy flows of hot water from the temperature pressure relief valve until the water heater is cold - then stops until water reheats**
  The water heater **must** be switched off at the isolating switch or switchboard. Phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.

HIGHER THAN EXPECTED ELECTRICITY BILLS

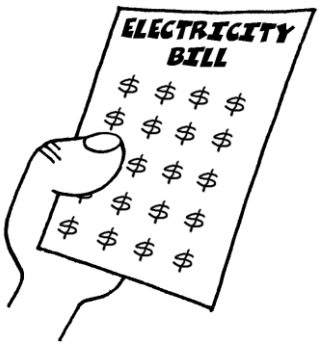
With the installation of your new air sourced heat pump water heater, electrical energy savings can be achieved. Should you at any time, feel your electricity bill is higher than expected, we suggest you check the following points:

- Is the relief valve running excessively?

  Refer to "Temperature Pressure Relief Valve or Expansion Control Valve Running" on page 32.

- Is one outlet (especially the shower) using more hot water than you think?

  Refer to "Not Enough Hot Water" on page 31.



- Is there a leaking hot water pipe, dripping hot water tap, etc?

  Even a small leak will waste a surprising quantity of hot water and energy. Replace faulty tap washers, and have your plumber rectify any leaking pipe work.

- Has there been an increase in hot water usage?

  An increase in hot water usage will result in an increase in heat pump operation.

- Has your water heating tariff rate been increased by your electricity retailer since your previous bill?

- Is the heat pump water heater on the same tariff as the water heater replaced?

  The impact on an electricity account will depend upon the tariff arrangement of the water heater replaced and where you live. Contact your energy provider for more information on tariff arrangements and cost comparisons.

IF YOU HAVE CHECKED ALL THE FOREGOING AND STILL BELIEVE YOU NEED ASSISTANCE, PHONE RHEEM SERVICE OR THEIR NEAREST ACCREDITED SERVICE AGENT / CENTRE.

INSTALLATION

THE HEAT PUMP MODULE IS FOR OUTDOOR INSTALLATION ONLY IN A WELL VENTILATED AREA.
THE STORAGE TANK CAN BE INSTALLED EITHER OUTDOORS OR INDOORS.
THIS WATER HEATER IS NOT SUITABLE FOR POOL HEATING.

INSTALLATION STANDARDS

The water heater must be installed:

- by a qualified person, and
- in accordance with the installation instructions, and
- in Australia in compliance with the Plumbing Code of Australia (PCA) and the Plumbing Standard AS/NZS 3500.4 and in New Zealand conforming to Clauses G12 and H1 of the New Zealand Building Code, and
- in compliance with the Australian / New Zealand Wiring Rules AS/NZS 3000, and
- in compliance with all local codes and regulatory authority requirements.

During the installation and commissioning process, it is not necessary to access the sealed refrigerant system, which contains a flammable refrigerant. Therefore, the water heater can be installed by a suitably qualified plumber and electrical worker.

⚠ **Warning:** This water heater may deliver water at high temperature. Refer to the Plumbing Code of Australia or the New Zealand Building Code, local requirements and these installation instructions to determine if additional delivery temperature control is required. Refer to “Hot Water Delivery” on page 38.

Victorian Installers

Notice to Victorian Installers from the Victorian Building Authority if this heat pump water heater is installed in a new Class 1 dwelling in the State of Victoria. The system model number is to be recorded on the Certificate of Compliance.

It is also a requirement to provide the householder with permanent documentation recording the system model number exactly as it is shown in the ‘VEET Product Register’ published by the Essential Services Commission in Victoria. See www.veu-registry.vic.gov.au/Public/ProductRegistrySearch.aspx. This documentation may be in the form of an indelible label adhered to the heat pump storage tank, or other suitable form placed in an accessible location, such as the meter box, for later inspection.

WATER HEATER APPLICATION

This water heater is designed for use in a single-family domestic dwelling for the purpose of heating potable water. Its use in an application other than this may shorten its life.

If this water heater is to be used where an uninterrupted hot water supply is necessary for the application or business, then there should be back-up redundancy within the hot water system design. This should ensure the continuity of hot water supply in the event that this water heater was to become inoperable for any reason. We recommend you provide advice to the system owner about their needs and building back-up redundancy into the hot water supply system.

The water heater is recommended for connection to an uninterrupted 24 hour continuous tariff power supply. Depending upon the size of the household and its hot water requirements, in **non-freeze** areas and if the Electricity Retailer permits, an extended off-peak (overnight and day) or Extended time-controlled power supply connection of a minimum 16 hours per day may also be suitable.

⚠ **Warning:** In areas where the ambient air temperature may fall below 5°C, power must be available to the water heater at all times to prevent freezing in the heat pump circuit.

A Rheem heat pump water heater consumes less energy than an electric water heater. The impact on an electricity account will depend on the tariff arrangement of the water heater replaced and the installation location. Contact the energy provider for more information on tariff arrangements and cost comparisons.

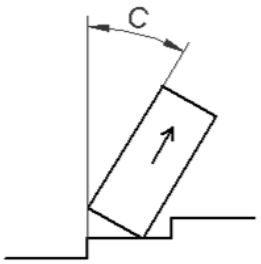
TRANSPORTING AND HANDLING THE STORAGE TANK AND HEAT PUMP MODULE

The heat pump water heater is made of two main components, the storage tank and the heat pump module. Both items are packaged and shipped separately. The water heater must not be operated until both components are installed, connected and purged of air.

The storage tank must be secured during transport to avoid tipping over. To prevent injury or damage, the storage tank and the heat pump module must also be placed on a level surface.

Caution: The heat pump module weighs approximately 78 kg when cartoned. A suitable lifting device is required to move it. The packaging base has room for forklift tines. Good lifting practice should be followed.

Do not lay the heat pump module down and do not tilt the heat pump module more than 30° from the vertical. This will unsettle the refrigerant gas and compressor lubricating oil. If the heat pump module has been tilted more than 30° from the vertical during handling, it will need one hour to drain back before the power to the water heater can be switched on, otherwise damage to the compressor may result.



(C ≤ 30°)

Care must be taken during transportation and handling. Take care when handling the heat pump module. The jacket of the heat pump module needs to be handled gently so as not to cause damage.

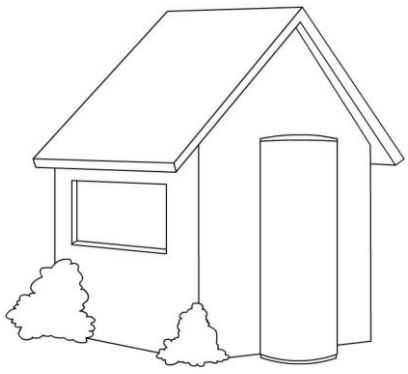
⚠ **Warning:** The heat pump module is designed to be installed with the purpose built water heater storage tank and may not be used for any other purpose.

All packaging materials must be removed from the heat pump module and storage tank prior to their installation. This includes the removal of the mini pallet base of the packaging from the underside of the module and the packaging base of the carton from the underside of the storage tank.

WATER HEATER LOCATION

The storage tank can be installed either outdoors or indoors and should be installed close to the most frequently used outlet and its position chosen with safety and service in mind.

The heat pump module is suitable for outdoor installation only. It is advisable to install the heat pump away from bedroom or living room windows as the system controls can generate a level of noise whilst they are operating. Consider the location in relation to neighbours' bedrooms and living room windows. Make sure people (particularly children) will not accidentally touch the heat pump's air inlet and outlet grilles and that they are clear of obstructions and shrubbery.



Clearance must be allowed for servicing of the water heater. The water heater must be accessible without the use of a ladder or scaffold. Make sure the temperature pressure relief valve lever on the storage tank is accessible and the heat pump covers, system controls and components can be removed for service.

You must be able to read the information on the rating plates. If possible, leave headroom of one storage tank height so the anode can be inspected or replaced. Remember you may have to remove the storage tank later for servicing.

To maintain the designed performance, air flow and air discharge from the heat pump, and to allow for service access, the minimum clearance distances to a wall or obstruction from the heat pump are:

- 150 mm at the rear, air inlet side of the heat pump, and
- 600 mm at the front, air outlet side of the heat pump, and
- 1,000 mm on the left hand side of the heat pump, and
- 500 mm on the right hand side of the heat pump.

Refer to the heat pump dimensions and clearance requirements diagrams on page 42.

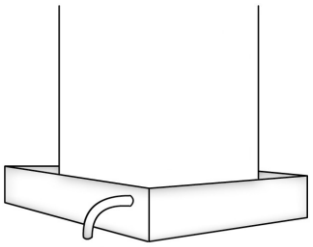
The heat pump module and storage tank are to be installed at ground or floor level and must stand vertically upright on a level, stable and impervious base designed to avoid ponding in accordance to AS/NZS 3500.4 and as acceptable to local authorities. An approximate size of 800 mm wide x 600 mm deep is recommended for the heat pump module. The base of the storage tank is made of corrosion resistant material, and it may be placed directly in contact with the supporting surface. It is not necessary to allow for free air circulation under the base of the water heater.

Note: The water heater should not be placed in direct contact with a concrete surface that is less than two months old and not fully cured as this may attack the metal coating of the water heater base. A moisture barrier should be used between the two surfaces in this instance. The barrier should extend at least 100 mm from the water heater and may be trimmed after two months.

The water heater must not be installed in an area with a corrosive atmosphere where chemicals are stored or where aerosol propellants are released, as exposure to the corrosive atmosphere may attack the materials used in the water heater and heat pump system.

SAFE TRAY

Where damage to property can occur in the event of the storage tank leaking, the storage tank must be installed in a safe tray. Construction, installation and draining of a safe tray must comply with AS/NZS 3500.4 and all local codes and regulatory authority requirements. In New Zealand the safe tray must also meet the requirements of Clause G12 of the New Zealand Building Code. AS/NZS 3500.4 and the NZBC also have particular requirements when a safe tray must be installed.



FREEZE PROTECTION

The water heater has an anti-freeze protection system. The anti-freeze protection system will protect the heat pump and connecting pipe work from damage, by preventing ice forming in the waterways of the water heater, in the event of freezing conditions occurring.

The anti-freeze protection initiates when the water temperature at the heat pump inlet and the ambient air temperature are at or below 4°C and 5°C respectively if the heat pump is not already operating. Water is circulated from the storage tank through the heat pump circuit, to prevent freezing in the connecting pipe work and heat pump module. The heat pump and circulator will operate until either the water temperature increases to 8°C or the ambient temperature increases to greater than 5°C.

⚠ **Warning:** In areas where the ambient air temperature may fall below 5°C, power must be available to the water heater at all times to prevent freezing in the heat pump circuit. In these areas, connection to an uninterrupted 24 hour continuous tariff power supply is recommended.

Notes

- The system must be installed with the heat pump circuit hot and cold pipes fully insulated. The insulation is to be fitted up to and cover the connections on both the storage tank and the heat pump with closed cell polymer insulation with a minimum thickness of 13 mm. Thicker insulation may be required to comply with the requirements of AS/NZS 3500.4.

  Refer to Step 3 on page 46 of “Heat Pump and Tank Assembly”.

- The anti-freeze function will not operate if the isolating switch on the power supply to the water heater has been turned off or if the power supply has been interrupted or at a time outside of an off-peak type or time-controlled type power supply connection.
- The water heater has NO WARRANTY for freeze damage if the heat pump circuit hot and cold pipes are not suitably insulated or if power is unavailable at the water heater.

The water heater also has an active de-frost function so the heat pump operates automatically to remove ice which may form on its evaporator coil.

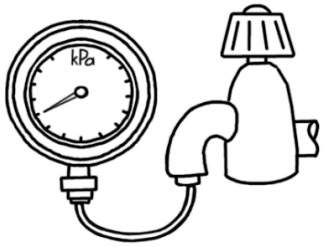
⚠ **Warning:** Do not use any means to accelerate the defrosting process of the evaporator coil or other components of the heat pump.

MAINS WATER SUPPLY

Where the mains water supply pressure exceeds that shown in the table below, an approved pressure limiting valve is required and should be fitted as shown in the cold water connection diagram on page 48.

Model	565E315
Temperature pressure relief valve setting	1000 kPa
Expansion control valve setting *	850 kPa
Maximum mains supply pressure	
With expansion control valve	680 kPa
Without expansion control valve	800 kPa
Minimum mains supply pressure	30 kPa

* Expansion control valve not supplied with the water heater.



A minimum water supply pressure of 30 kPa is required to enable the heat pump circulator and heat pump system to operate effectively.

TANK WATER SUPPLY

If the water heater is supplied with water from a tank supply and a minimum water supply pressure of 30 kPa at the water heater cannot be achieved, then a pressure pump system must be installed to allow the heat pump circulator to operate and avoid air locks in the circuit.

If a minimum water supply pressure of 30 kPa at the water heater can be achieved without a pressure pump system installed, then the bottom of the supply tank must be at least 1 m above the highest point of the hot water plumbing system, including the water heater. Care must be taken to avoid air locks.

The cold water line from the supply tank should be adequately sized and fitted with a full flow gate valve or ball valve.

ANODE TYPES

The vitreous enamel lined cylinder of the water heater is only covered by the Rheem warranty when the total dissolved solids (TDS) content in the water is less than 2500 mg/L and when the correct colour coded anode is used. If an incorrect colour coded anode is used in the water heater, any resultant faults will not be covered by the Rheem warranty. In addition, the use of an incorrect colour coded anode may shorten the life of the water heater cylinder.

The correct colour coded anode for the water supply being used must be selected and fitted to the water heater for the Rheem warranty to apply to the water heater cylinder. Refer to “Water Supplies” on page 27 and the Anode Selection table on page 27. The black anode is typically fitted as standard.

If an incorrect anode is used, there is also the possibility the anode may become overactive and hydrogen gas could accumulate in the top of the water heater during long periods of no use. In areas where this is likely to occur, the installer should instruct the householder on how to dissipate the gas safely. Refer to “Caution” on page 28.

REDUCING HEAT LOSSES

The cold water line to and the hot water line from the water heater must be insulated in accordance with the requirements of AS/NZS 3500.4 and Clause 12 of the New Zealand Building Code. The insulation must be weatherproof and UV resistant if exposed.

SADDLING - PIPE WORK

To prevent damage to the cylinder when attaching pipe clips or saddles to the water heater jacket, we recommend the use of self-drilling screws with a maximum length of 13 mm. Should pre-drilling be required, extreme caution must be observed when penetrating the jacket of the water heater.

Note: If the cylinder is damaged as a result of attaching pipe clips or saddles to the jacket, any resultant faults will not be covered by the Rheem warranty.

HOT WATER DELIVERY

⚠ **Warning:** This water heater can deliver hot water at temperatures up to 60°C to 65°C, sufficiently hot to cause severe scalding. Water at this temperature may be plumbed to fixtures where water hotter than 50°C is allowed, such as the kitchen and laundry.

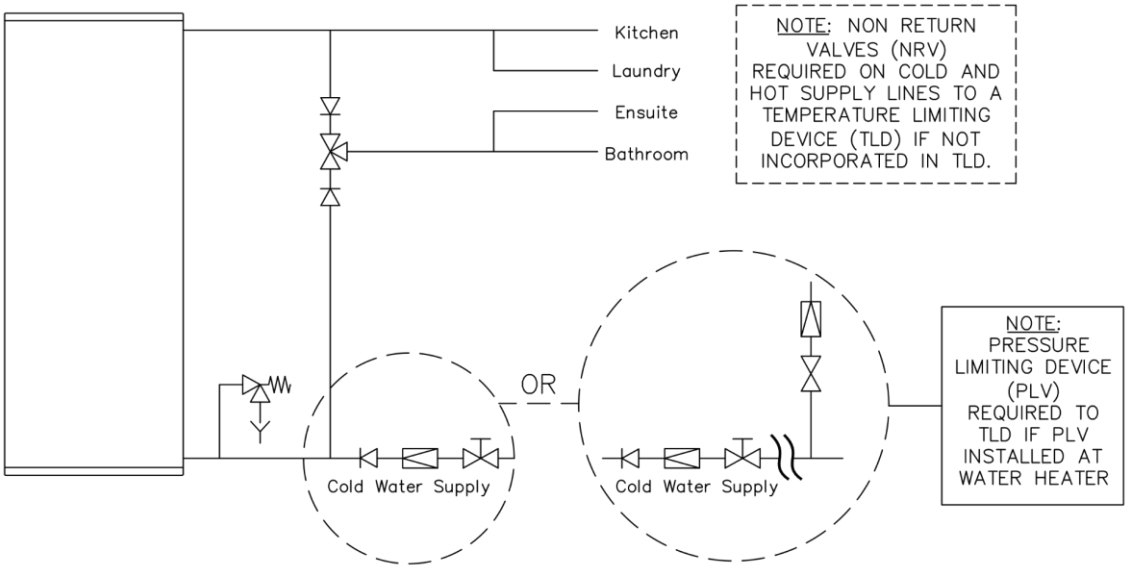
The installing plumber may have a legal obligation to ensure the installation of this water heater meets the water temperature delivery requirements of the Plumbing Code of Australia and New Zealand Building Code Clause G12 so that heated water delivered to fixtures and appliances used primarily for personal hygiene is at a temperature which is unlikely to scald.

It is necessary and we recommend that a temperature limiting device be fitted between the water heater and the fixtures and appliances used primarily for personal hygiene such as in a bathroom, ensuite, public amenities or other ablution areas, to reduce the risk of scalding.

The temperature limiting device used with a heat pump water heater should have a specified 'minimum temperature differential' between the hot water inlet and the tempered water outlet of no greater than 10°C. Refer to the manufacturer's specifications of the temperature limiting device.

If a pressure limiting valve is installed on the cold water line to the water heater and the cold water line to a temperature limiting device branches off before this valve or from another cold water line in the premises, then a pressure limiting valve of an equal pressure setting may be required prior to the temperature limiting device.

Where a temperature limiting device is installed adjacent to the water heater, the cold water line to the temperature limiting device can be branched off the cold water line either before or after the isolation valve, pressure limiting valve and non-return valve to the water heater. If an expansion control valve is required, it must always be installed after the non-return valve and be the last valve prior to the water heater.



Two Temperature Zones Using a Temperature Limiting Device

CIRCULATED HOT WATER FLOW AND RETURN SYSTEM

A 565E315 model heat pump water heater should not be installed as part of a circulated hot water flow and return system in a building.

If a circulated flow and return system is required, it is necessary to install a secondary water heater supplied from the heat pump water heater. The flow and return lines connect to the secondary water heater, not the heat pump storage tank. The secondary water heater makes up for the pipe heat loss in the flow and return system and must be able to provide a hot water outlet temperature of at least 60°C.

Note: The thermostat or preset outlet temperature of the secondary water heater must always be set to maintain a temperature of at least 60°C in the hot water flow and return line, including making up pipe heat losses in the system.

Refer to the diagram Circulated Hot Water Flow and Return System – Heat Pump Water Heater on page 39.

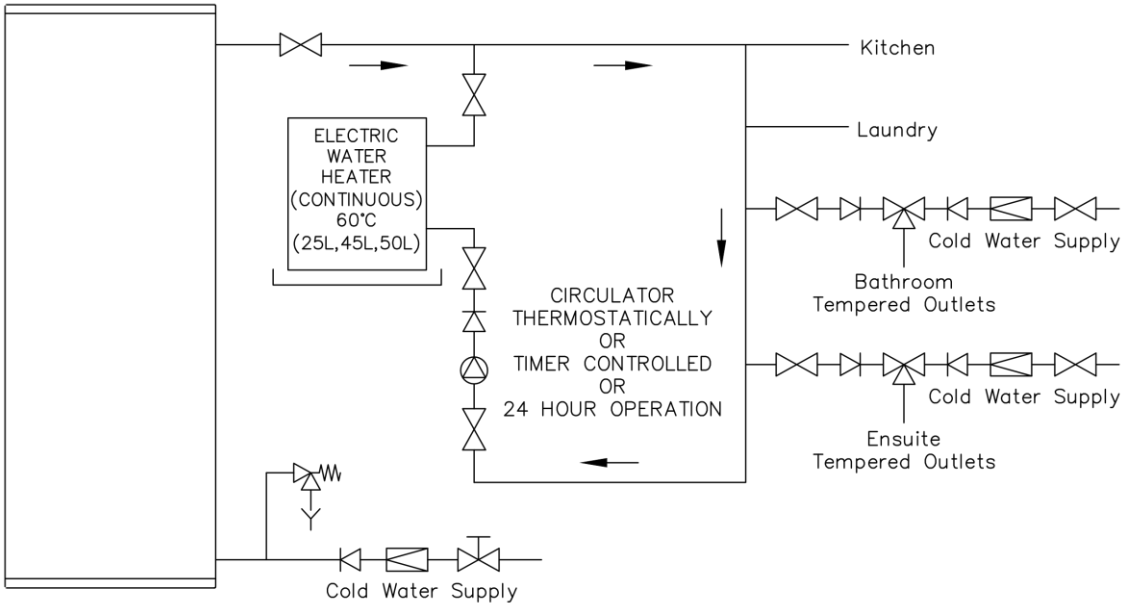
Temperature Limiting Device

A temperature limiting device cannot be installed in circulated hot water flow and return pipe work. The tempered water from a temperature limiting device cannot be circulated. Where a circulated hot water flow and return system is required in a building, a temperature limiting device can only be installed on a dead leg, branching off the circulated hot water flow and return pipe.

If circulated tempered water were to be returned back to the water heater, depending on the location of the return line connection on the water supply line to the water heater, then either:

- water will be supplied to the cold water inlet of the temperature limiting device at a temperature exceeding the maximum recommended water supply temperature, or
- when the hot taps are closed no water will be supplied to the cold water inlet of the temperature limiting device whilst hot water will continue to be supplied to the hot water inlet of the temperature limiting device.

These conditions may result in either water at a temperature exceeding the requirements of AS/NZS 3500.4 being delivered to the hot water outlets in the ablution areas, or the device closing completely and not delivering water at all, or the device failing. Under either condition, the operation and performance of the device cannot be guaranteed.



NOTE: A PLV IS REQUIRED TO BE INSTALLED ON THE COLD SUPPLY LINE TO THE TEMPERING VALVE IF A PLV IS INSTALLED ON THE COLD SUPPLY LINE TO THE WATER HEATER.

Circulated Hot Water Flow and Return System – Heat Pump Water Heater

SEISMIC RESTRAINT

New Zealand Building Code Clause B1 requires building elements (including storage water heaters) to be adequately supported including support against earthquake forces. This water heater must be restrained to protect against seismic forces. Clause G12 (Edition 3 Amendment 13) Paragraph 6.11.4 and Figure 14 outline an acceptable solution to this requirement.

As the water heater has a minimum clearance of 25 mm to a wall behind the water heater, suitably sized vertical blocking will be required running the full height of the storage section only of the water heater, to comply with this requirement. Ensure the vertical blocking does not encroach over the air inlet and outlet grilles of the heat pump. The blocking shall be installed in a manner as to allow the condensate drain of the heat pump to run to a visible discharge point and to be accessed for servicing.

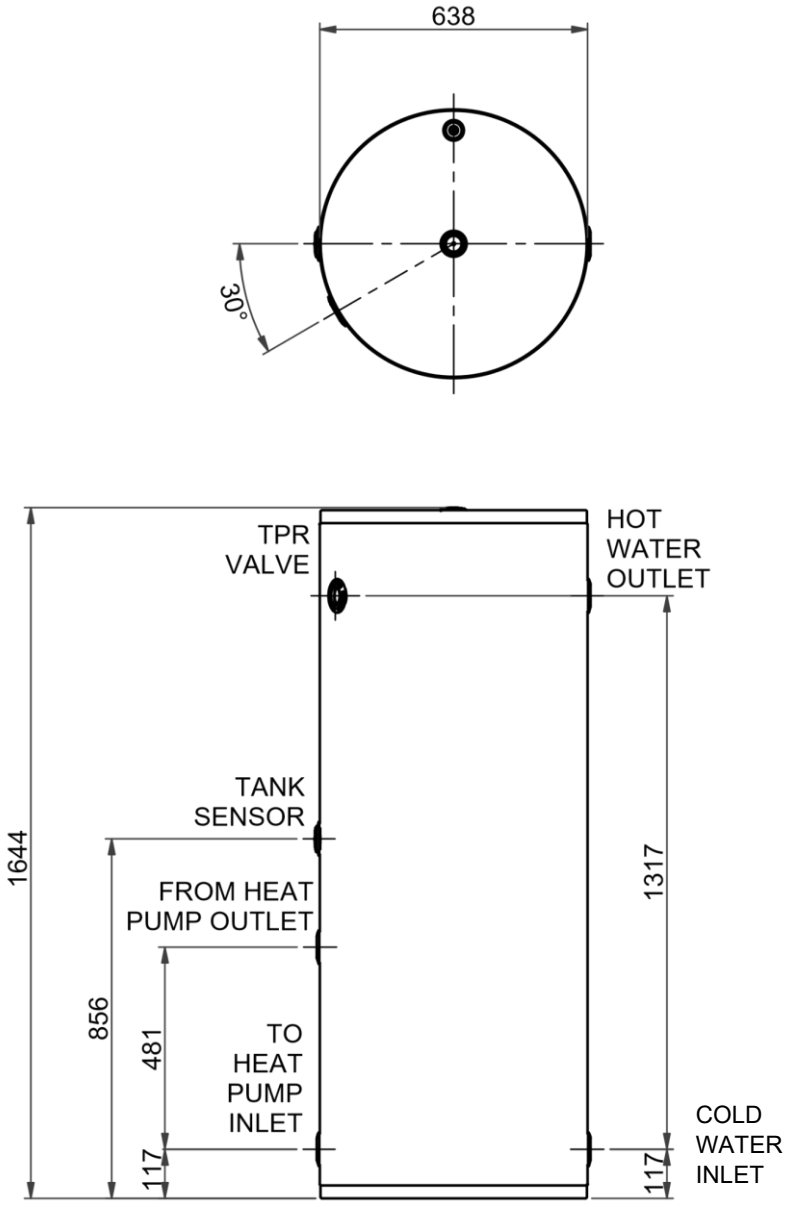
Three (3) Seismic restraints are to be installed around the 565E315 model water heater and suitably fixed to the wall behind the water heater. Provide sufficient tension on the straps to secure the water heater, taking care not to cause damage to the water heater outer casing.

The location of the Seismic Straps shall be:

- Top strap: the top Seismic Strap is to be located below and a maximum of 100 mm from the connection of the heat pump unit to the storage tank of the water heater and in a position so as not to cover the rating label of the water heater.
- Bottom strap: the bottom Seismic Strap is to be located below the cold water inlet of the water heater. If there is insufficient space below to inlet to fit the width of the Strap, then it can be installed above the inlet. The Strap is not to foul on the pipe seal.
- Middle strap: the middle Seismic Strap is to be located approximately at the midpoint between the upper and lower Seismic Straps.

DIMENSIONS AND TECHNICAL DATA

Dimensions – Storage Tank



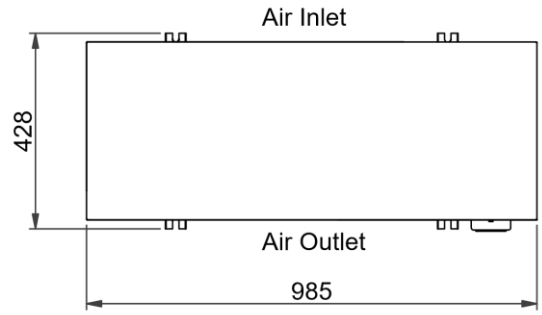
Tank Product No. T565E315R0

Technical Data – Storage Tank

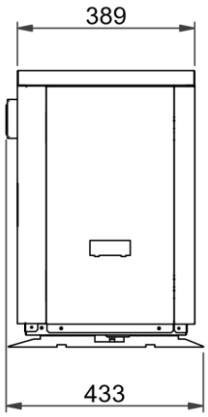
Heat Pump & Tank System Number		**565E315**
Tank product number		T565E315R0
Cylinder type		Vitreous Enamel coated steel
Storage tank capacity	litres	325
Weight tank cartoned	kg	96
Weight tank full	kg	414
Heat Pump Inlet & Outlet Water Connections		Rp 3/4
Cold Inlet & Hot Outlet Water Connections		Rp 3/4

* Tank T565E315R0 has a magnesium (black) anode.
Technical data is subject to change.

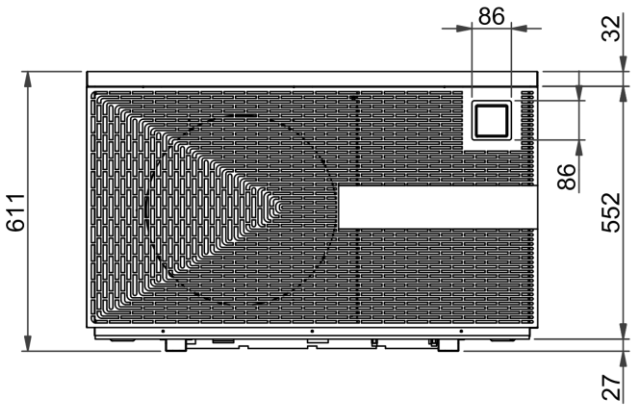
Dimensions – Heat Pump Module



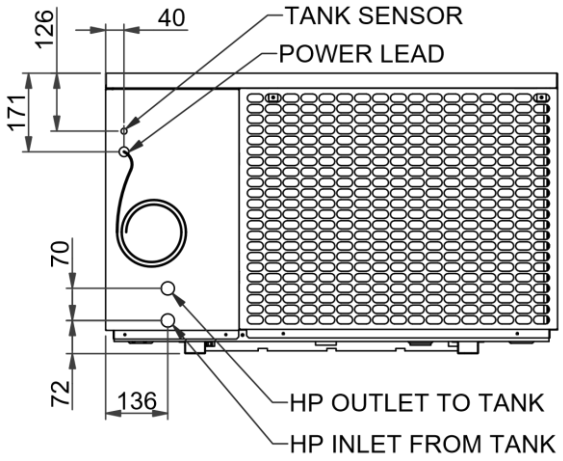
Top View



Side View (Right)

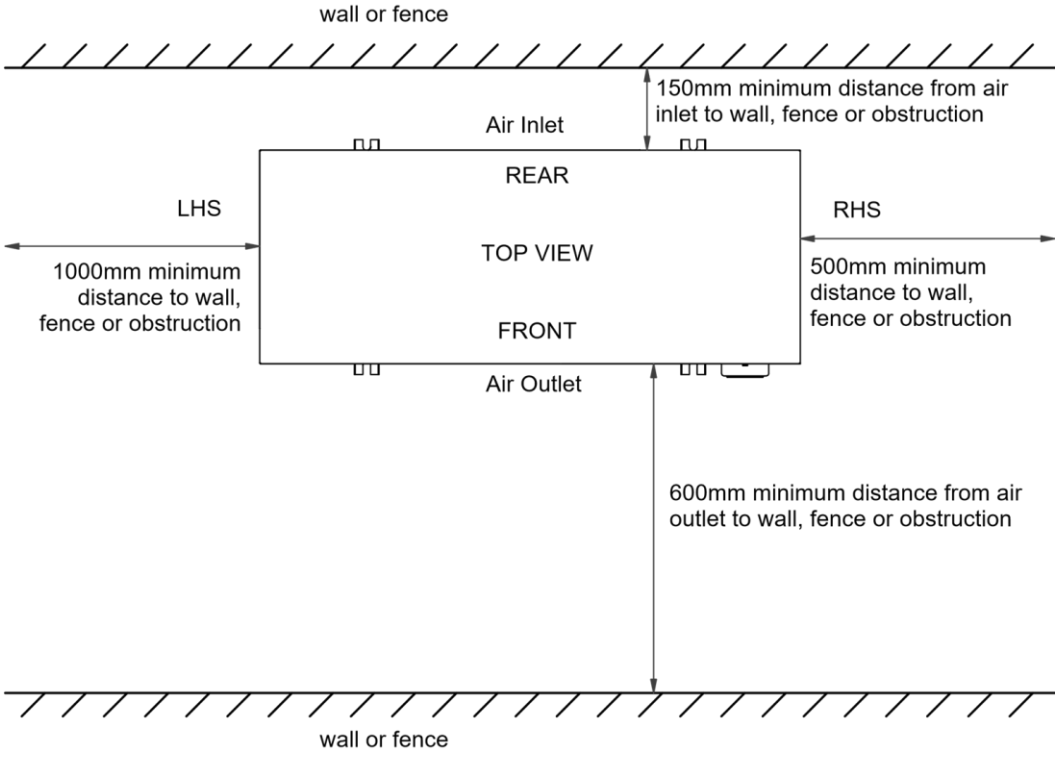


Front View



Rear View

Clearance Requirements – Heat Pump Module



Technical Data – Heat Pump Module

HP module product number		**180555**
Maximum rated power input	watts	1750
Rated heat pump power input	watts	1140
Electrical Circuit	Amps	10
Weight heat pump - cartoned	kg	78
Weight heat pump - uncartoned	kg	66
Noise level @ 1 metre	dB(A)	47
Refrigerant circuit pressure	kPa	3200
Refrigerant charge	grams	300

IP Rating	IP24
Average COP @ 19°C Ambient air temp & 10°C to 60°C water temp	4.5
Avg HP Heating Capacity @ 19°C Ambient air temp & 10°C to 60°C water temp	4.6 kW
Inlet / Outlet water connects	Rp 3/4
Refrigerant type	R290

Technical data is subject to change.

Heat Pump Module 180555 Performance Specifications

Ambient Air Temperature	Relative Humidity	Average Heat Pump Heating Capacity (kW)	Recovery Rate @ 45°C rise (L / hr)	Average Coefficient of Performance (COP)
9.5°C	87%	3.7	70	3.8
19.0°C	65%	4.6	87	4.5
32.0°C	37%	5.4	102	4.6
33.0°C	58%	5.9	112	5.1

Noise Level - A noise level of 47 dB(A) was measured at 1 metre from the water heater during a Noise Test conducted to Standard JB/T 4330-1999. The noise level when installed may be higher due to sound reflections from adjacent walls and structures.

COP – The Coefficient of Performance (COP) for a heat pump is the ratio of how much useful heat it produces for water heating to the power input into the water heater. The higher the COP number, the more efficient the heat pump is. The actual COP of the product at any given time will be impacted by a number of factors, including the ambient air and cold-water inlet temperatures at the place of installation and time of day / season of operation.

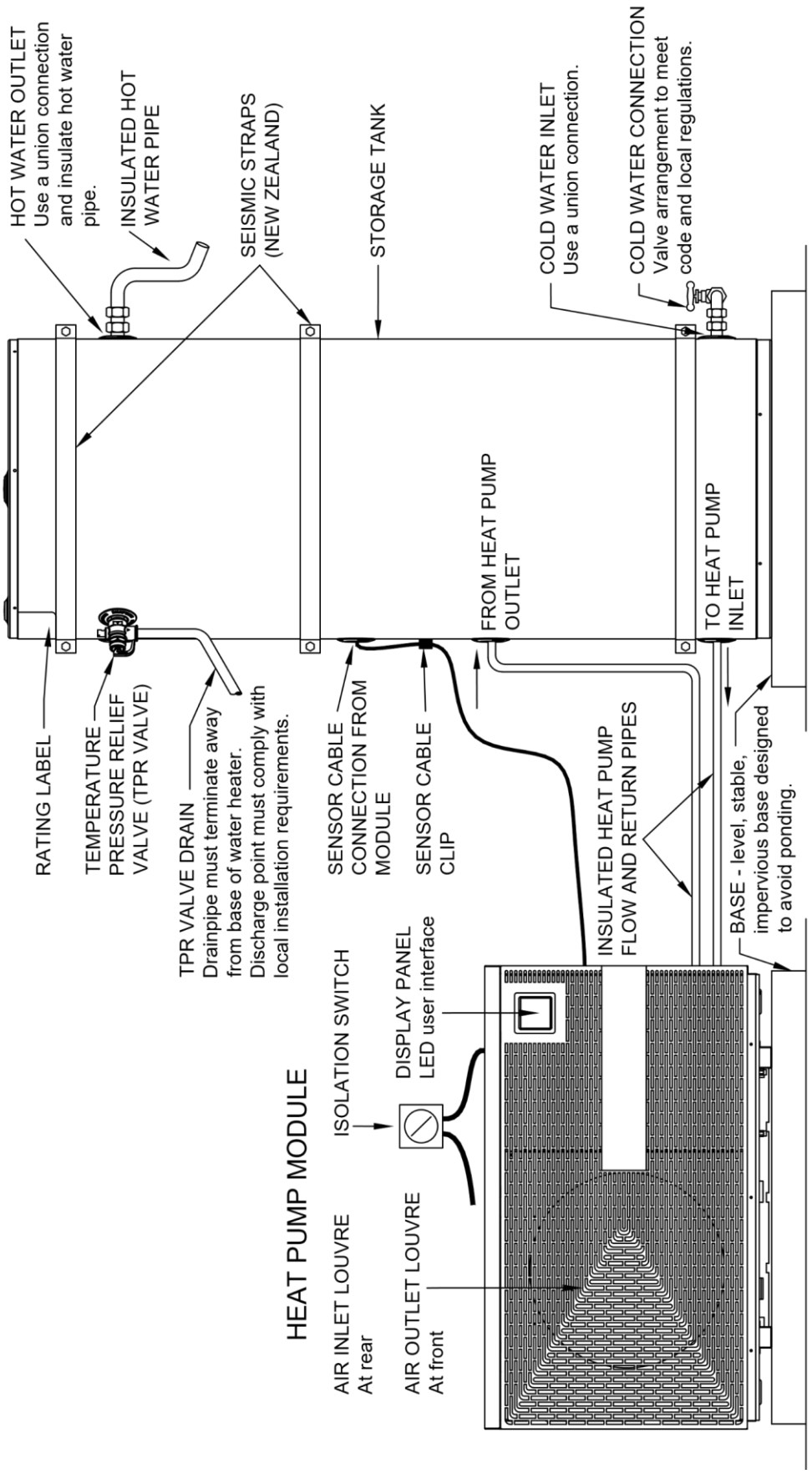
An average Coefficient of Performance (COP) value of 4.5 was measured under test conditions with an ambient air temperature of 19˚C/15˚C (Dry Bulb/Wet Bulb) over the entire heat-up process, heating of the water from 10˚C to 60˚C during water heater operation and a power supply of 240 V~ 50 Hz. The Heat Pump average heating capacity in Watts (and converted to kilowatts – kW) and its water heating capacity in Litres / hour were calculated from the results of this test. The heat pump water heater performance tests were conducted to AS/NZS 5125.1:2014.

Ambient Air Temperature & Humidity – The performance of a Heat Pump changes with ambient air temperature, humidity and incoming water temperature. The warmer the air temperature and the higher the Relative Humidity and the cooler the water temperature, then the higher is the heating rate of the heat pump. Performance specifications stated in relation to the heat pump are measured at predefined conditions during its testing.

Average Heating Capacity kW – This is how much heating power is put into the water during the heating cycle. It is expressed as an average due to the changes in heating power from the refrigeration cycle as the water is being heated and its temperature increases during the heating cycle.

Recovery Rate @ 45°C rise L/hr – Is the number of litres of water that can be heated through a 45°C temperature rise in one hour, e.g. when the air temperature is 19°C, the heat pump can heat 87 litres of water from 15°C to 60°C in one hour.

TYPICAL INSTALLATION – OUTDOOR LOCATION



Note: In New Zealand, the tank of the 565E315 model requires three (3) Seismic Straps to be installed around the storage tank. Refer to "Seismic Restraint" on page 40 for additional information and Seismic Strap positioning.

HEAT PUMP AND TANK ASSEMBLY

STORAGE TANK AND HEAT PUMP MODULE

The heat pump module is installed separately of the storage tank. The module and tank are to be plumbed together with DN20 copper or stainless steel pipe work. There are two Rp 3/4 connection points located on the rear side of the heat pump module and two Rp 3/4 connection points located on the left-hand side of the storage tank to which the flow and return pipe work from the heat pump module is connected during the assembly procedure.

The maximum total flow and return circuit length is:

- In Australia – 10 metres
  (approximately 5 metres each way)
- In New Zealand – 28 metres
  (approximately 14 metres each way)

A power cable (3 metres long) and tank sensor cable (6.5 metres long) are supplied connected to the heat pump module. The power cable is to be connected to the mains power electricity supply. The sensor probe on the sensor cable is to be inserted into the sensor port on the left-hand side of the storage tank during the assembly procedure.

heat pump module

storage tank

ASSEMBLY PROCEDURE

⚠ **Warning:** The heat pump must be assembled, plumbed and filled with water prior to power being connected and switched on.

The following procedure is to be followed to install the heat pump module in position and connect to the storage tank:

1. **Heat Pump Storage Tank:** Remove all packaging including the carton base from the heat pump storage tank and position in its intended location, supported by a stable base. It is recommended to position the storage tank to the right of the heat pump module to more simply line up the heat pump water circuit connections, but it can be installed to the left or in another suitable location.

   The cold-water supply and hot water outlet connections of the vitreous enamel lined tank are on the right-hand side of the tank and the tank should be positioned with these connections parallel to the wall.

   The storage tank must also be positioned such that when the heat pump module is in position, there is a clearance of at least 500 mm from the right-hand end of the heat pump module to the left-hand side of the storage tank, or at least 1,000 mm from the left-hand end of the heat pump module to the right-hand side of the storage tank.

2. **Heat Pump Module Location:** Select the location for the heat pump module.

   The heat pump module is designed for outdoor installation only in a well-ventilated area.

   Ensure the temperature sensor cable (6.5 m long AUS / NZ or up to 15 m long NZ) reaches the storage tank with sufficient length to enable it to be satisfactorily secured.

   There are minimum clearance distances from each face of the heat pump to a wall, fence or obstruction, including the storage tank. The air inlet and air outlet grilles of the heat pump module must be clear of shrubbery.

   Refer to the Clearance Requirements – Heat Pump Module diagram on page 42 for the clearance distances.

   Secure the feet of the heat pump module onto the slab or solid base with suitable concrete anchors. The feet raise the heat pump module off the ground and allow a free flow of air under the heat pump.

3. **Heat Pump Flow and Return Pipe Connections:** Install the heat pump flow and return lines from the heat pump module to the storage tank. Keep elbows and bends to a minimum.

   The pipe work is to be of DN20 copper or stainless steel tube. A disconnection union must always be provided at the water inlets and outlets on the heat pump module and the storage tank to allow for disconnection. The flow and return water connections on the heat pump module and storage tank are Rp 3/4.

   It is recommended to use brass or copper olives olive on compression fittings.

   The system must be installed with the heat pump circuit hot and cold pipes fully insulated. The insulation must:

   - be of a closed cell type or equivalent with closed cell polymer insulation and be at least 13 mm thick. Thicker insulation may be required to comply with the requirements of AS/NZS 3500.4 or the NZBC.
   - be weatherproof and UV resistant if exposed,
   - extend through any wall penetrations,
   - be fitted up to and cover the connections on both the heat pump module and the storage tank.

   The insulated copper pipe work should be fixed at suitable locations to prevent or reduce the possibility of noise from water hammer and vibration from occurring.

4. **Tank Water Supply Connections:** Install and connect the cold water supply and hot water pipe work to the storage tank.

   Refer to “Connections – Plumbing” on page 48.

5. **Water Supply:** Turn on the cold water supply and fill the water heater, but do not turn the power on.

   Refer to “To Fill and Turn On the Water Heater” on page 53.

6. **Temperature Sensor Cable:** A 6.5 m sensor cable is supplied with the heat pump module. Route the sensor cable from the heat pump module to the heat pump storage tank.

   - The sensor cable is supplied with the heat pump and is connected to the circuit board.

     A 15 metre sensor cable (PN 830000000426) is available as a Spare Part in New Zealand for an installation that has a total flow and return circuit length greater than 10 metres and up to 28 metres. The 6.5 metre cable supplied will need to be disconnected from its connection in the heat pump module and the 15 metre cable connected in its place.

   - Route the sensor cable either along a building wall and suitably fix in place or along the outside of the insulated flow or return pipe and secure with cable ties or similar.

     Any excess cable is to be rolled and tied up and kept up off the ground and out of the way of potential hazards such as a lawn mower or whipper snipper.

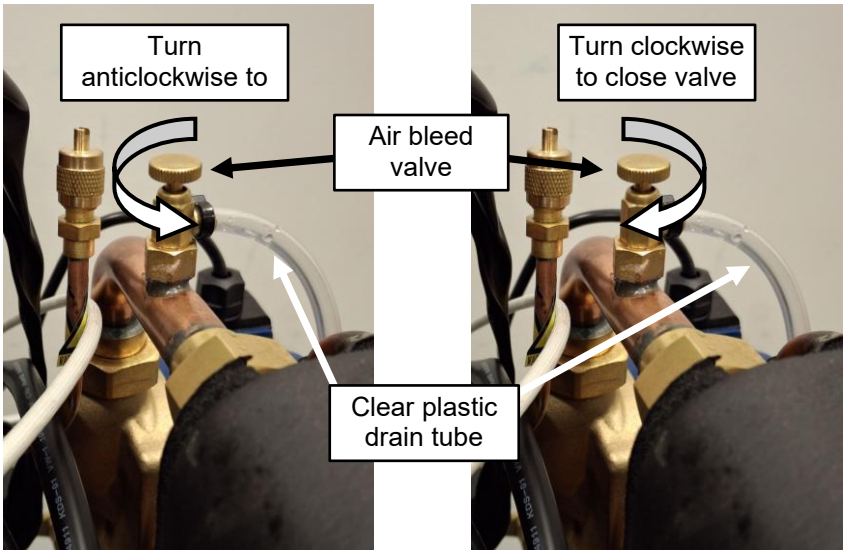
   - Remove the tank sensor pocket cap from the storage tank. Pierce a hole through the cap, pass the sensor and cable through the hole in the cap and insert the sensor probe fully into the tank sensor port. Securely fit the cap again.

   - A P-clip (PN AQ0109535) and a screw (PN 080031) are supplied with the tank (in with the Temperature Pressure Relief Valve in a padded bag). Secure the Sensor cable to the side of the storage tank adjacent to where it is connected to the sensor port using the P-clip and screw.

7. **Purge Air from the Heat Pump Water Circuit:** It is important the heat pump circuit is purged of air, otherwise the system will not work effectively.

   - Undo the screws securing the right side cover of the heat pump module and remove the side cover.
   - Open the air bleed valve by turning the air bleed valve screw anticlockwise. This will bleed any air from the circuit.

     The air bleed valve has a clear plastic tube attached to its drain point. Any air will be discharged down the clear plastic tube from the valve.
   - When no more air is being expelled from the valve, close the air bleed valve screw by turning it clockwise.



8. **Condensate Drain:** Short drain lines may be fitted to the heat pump module's condensate drain elbows to carry the discharge clear of the module. The drain line can be of rigid poly hose or conduit.

   - If fitted, the drain line from the condensate elbow should be as short as possible, be horizontal and level or fall all the way from the module with no restrictions and terminate in such a position that flow out of the pipe can be easily seen - but arranged so water discharge will not cause damage or nuisance.

9. **Mains Power Connection:** A mains power supply cable is supplied with the heat pump module and is connected to the terminal block and earth connection on the heat pump module.

   Strip the loose Active, Neutral and Earth wires at the other end of the cable and connect to the isolating switch adjacent to the heat pump module.

   Refer also to "Connections – Electrical" on page 51.

   Note: The power supply to the water heater must not be switched on until the installation is complete, the water heater is filled with water, air has been purged from the heat pump circuit and a satisfactory megger reading is obtained.

10. **Commissioning:** Refer to "Commissioning" on page 53.

CONNECTIONS – PLUMBING

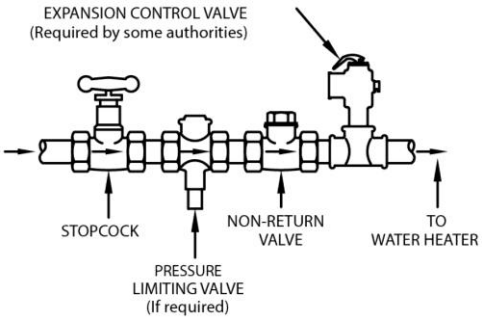
All plumbing work must be carried out by a qualified person and in accordance with the Standard AS/NZS 3500.4 and all local codes and regulatory authority requirements. In New Zealand, the installation must also conform to Clauses G12 and H1 of the New Zealand Building Code.

CONNECTION SIZES

- Hot water and cold water connections: Rp 3/4
- Heat pump water circuit connections on storage tank: Rp 3/4
- Heat pump water circuit connections on heat pump module: Rp 3/4
- Relief valve connection: Rp 1/2

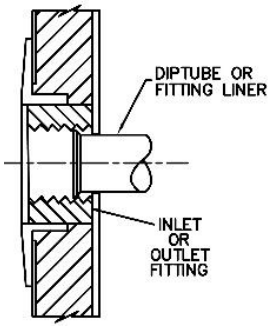
WATER INLET AND OUTLET

The pipe work must be cleared of foreign matter before connection and purged before attempting to operate the water heater. All olive compression fittings must use brass or copper olives. Use an approved thread sealant such as Teflon tape on all threaded joints.



An isolation valve and non-return valve must be installed on the cold water line to the water heater. An acceptable arrangement is shown in the diagram. Refer also to "Hot Water Delivery" on page 38 and to "Mains Water Supply" on page 37.

A disconnection union must always be provided at the cold water inlet and hot water outlet on the water heater to allow for disconnection of the water heater.



This water heater has either a plastic dip tube or fitting liner in the inlet and outlet fittings (see diagram). These must be in place for the water heater to function properly. Do not remove or damage them by using heat nearby. They will be pushed into the correct position as the fitting is screwed in.

This water heater is intended to be permanently connected to the water mains and not connected by a hose-set. A braided flexible hose or semi-flexible connector may be used for connection to the water heater, where permitted by AS/NZS 3500.4.

HEAT PUMP WATER CIRCUIT

Water flow and return lines are to be installed between the heat pump module and the storage tank. The pipe work is to be DN20 size and be of copper or stainless steel. A disconnection union must always be provided at each of the four water connections of the water circuit at the heat pump module and storage tank to allow for disconnection. Keep elbows and bends to a minimum.

The pipe work shall be fully insulated with a closed cell type insulation or equivalent in accordance with the requirements of AS/NZS 3500.4. The insulation must be weatherproof and UV resistant if exposed. The insulation must be fitted up to the connections on both the heat pump module and storage tank.

The maximum total flow and return circuit length is:

- In Australia – 10 metres (approximately 5 metres each way)
- In New Zealand – 28 metres (approximately 14 metres each way)

A 6.5 metre sensor cable is supplied connected to the heat pump module. The sensor probe is to be inserted into the sensor port on left hand side of the storage tank. The cable must be secured to the storage tank adjacent to the sensor port using the P-clip (PN AQ0109535) and screw (PN 080031) provided (in with the TPR valve in a padded bag). The cable can be secured along either the flow or return line on the outside of the insulation and secured with cable ties or similar, or along a wall behind the installation and suitable fixed in place. Any excess cable is to be rolled and tied up and kept up off the ground and out of the way of potential hazards such as a lawn mower or whipper snipper.

A 15 metre sensor cable (PN 830000000426) is available as a Spare Part in New Zealand for an installation that has a total flow and return circuit length greater than 10 metres and up to 28 metres. The 6.5 metre cable supplied will need to be disconnected from its connection in the heat pump module and the 15 metre cable connected in its place.

HEAT PUMP CONDENSATE OUTLET PORTS

There are three condensate outlet ports on the underside of the heat pump. One each is located at the mid-point along the left and right hand sides and one at the mid-point of the rear of the heat pump. A plastic elbow is connected at each port.

It is not necessary to add a drain line to the ports. The water condensate will discharge onto the surface below the heat pump and drain or evaporate away.

PIPE SIZES

To achieve true mains pressure operation, the cold water line to the water heater should be the same size or bigger than the hot water line from the water heater.

The pipe sizing for hot water supply systems should be carried out by persons competent to do so, choosing the most suitable pipe size for each individual application. Reference to the technical specifications of the water heater and local regulatory authority requirements must be made.

TEMPERATURE PRESSURE RELIEF VALVE

The temperature pressure relief valve is shipped with the water heater. The temperature pressure relief valve must be fitted before the water heater is operated. Before fitting the relief valve, make sure the probe has not been bent.

To fit the relief valve:

- Seal the thread with an approved thread sealant such as Teflon tape - never hemp. Make sure tape does not hang over the end of the thread.
- Hand tighten the valve into the opening marked “Relief Valve”.

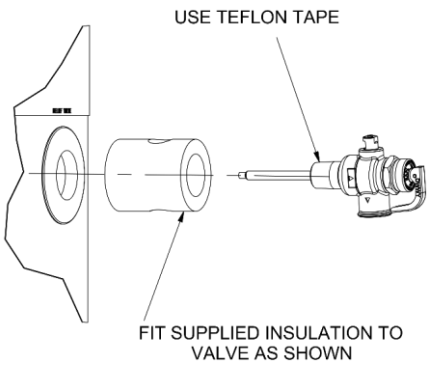
  Refer to the dimensions diagram on page 41.
- Using a spanner engaged on the valve’s spanner flats and applying medium pressure to tighten, turn the relief valve an additional ½ to 1 ½ turns to secure and make the joint watertight, leaving the valve drain pointing downwards.

  ⚠ **Warning:** Do not use a pipe wrench or poor fitting tool on the valve body nor over tighten the valve, as this could damage the valve and prevent safe operation.
- Operate the easing lever on the valve to check the smooth operation of the valve plunger. It is very important the lever is raised and lowered gently. The lever should move smoothly and without undue force.
- If the lever cannot be moved or is jerky in its movement, then the valve has been damaged and must be replaced.
- A copper drain line must be fitted to the temperature pressure relief valve.

  Refer to "Relief Valve Drain" on page 50.
- The valve must be insulated with closed cell polymer insulation or similar (minimum thickness 9 mm) and the insulation installed so as not to impede the operation of the valve.

  The insulation must be weatherproof and UV resistant if exposed.

  The flexible insulation collar supplied with the temperature pressure relief valve meets these requirements and must be placed over the body of the valve (refer to the diagram on page 49).



flexible insulation collar

EXPANSION CONTROL VALVE

In South Australia and Western Australia, it is mandatory to install an expansion control valve (ECV) in the cold water line to the water heater. In other areas, an ECV is required if the saturation index is greater than +0.4. Refer to “Water Supplies” on page 27.

The expansion control valve must always be installed after the non-return valve and be the last valve installed prior to the water heater. Refer to the diagram on page 48. A copper drain line must be fitted to the expansion control valve. Refer to "Relief Valve Drain" on page 50.

The valve, if installed within 500 mm of the water heater, must be insulated with closed cell polymer insulation or similar (minimum thickness 9 mm) and the insulation installed so as not to impede the operation of the valve. The insulation must be weatherproof and UV resistant if exposed.

RELIEF VALVE DRAIN

DN15 copper drain lines must be fitted to the temperature pressure relief valve and expansion control valve (if one is installed) to carry the discharge clear of the water heater. Connect the drain lines to the valves using disconnection unions. The drain line from the valve to the point of discharge should be as short as possible, have a continuous fall all the way from the water heater to the discharge outlet and have no tap, valves or other restrictions in the pipe work.

A drain line from a relief valve must comply with the requirements of AS/NZS 3500.4.

A drain line must have the number of changes in direction plus the length of the relief drain (in metres) not exceeding 12. The maximum length of 12 metres for a drain line is reduced by 1 metre for each bend or change of direction required. Where the distance to the point of final discharge exceeds this length, the drain line can discharge into a tundish. For example, a relief drain of 9 metres must have no more than three bends before discharging at an outlet or air-break.

The drain lines from the temperature pressure relief valve and expansion control valve from an individual water heater may be interconnected where freezing is unlikely. The combined drain line must have a minimum size of DN20 and discharge via a minimum air-break of 25 mm.

The outlet of a drain line must be in such a position that flow out of the pipe can be easily seen, but arranged so discharge will not cause injury, damage or nuisance. The termination point of a drain line must comply with the requirements of AS/NZS 3500.4. Drain lines must not discharge into a safe tray.

In locations where water pipes are prone to freezing, drain lines from the temperature and pressure relief valve and expansion control valve shall not be interconnected, must be insulated with a minimum thickness of 13 mm insulation, must not exceed 100 mm in length and are to discharge into a tundish through an air gap of 25 mm before the drain line enters a zone where freezing is likely.

If a drain line discharges into a tundish, the drain line from the tundish must be not less than DN20. The drain line from a tundish must meet the same requirements as for a drain line from a relief valve.

⚠ **Warning:** As the function of the temperature pressure relief valve on this water heater is to discharge high temperature water under certain conditions, it is strongly recommended the pipe work downstream of the relief valve be capable of carrying water exceeding 93°C. Failure to observe this precaution may result in damage to pipe work and property.

CONNECTIONS – ELECTRICAL

The power supply to the water heater must not be switched on until the water heater is filled with water and a satisfactory megger reading is obtained.

Ensure the water heater has been in the installed position for a minimum of 30 minutes before switching on the electricity supply to the water heater. Refer to "To Fill and Turn On The Water Heater" on page 53.

MEGGER READING

When a megger test is conducted on this water heater, then the following should be noted.

⚠ **Warning:** This water heater contains electronic equipment and 500 V insulation tests must only be conducted between active and earth and between neutral and earth. An active to neutral test WILL damage the electronics.

An insulation test result of greater than 1 MΩ for this water heater is normal.

ELECTRICAL CONNECTION

All electrical work and permanent wiring must be carried out by a qualified person and in accordance with the edition of the Wiring Rules AS/NZS 3000 in force in the state or territory at the time of installation, and all local codes and regulatory authority requirements.

The heat pump module must be directly connected to a 220 V – 240 V a.c. 50 Hz mains power supply. The heat pump must be on its own circuit with an isolating switch installed at the switchboard.

The Wiring Rules requires a second and lockable isolating switch be installed adjacent to and within reach of but not on or attached to the heat pump. In Australia, a residual current device (RCD) must be installed in the electrical circuit to the heat pump. The RCD may not be required to be installed in New Zealand.

The electrical power supply cable from the switch board to the isolating switch adjacent to the heat pump must be correctly sized to safely carry the maximum current draw of the heat pump. The power supply must be able to supply a minimum of 7.3 Amps.

This heat pump is fitted with a 3.0 m supply cord and bootlace wire terminals and must be directly connected to the mains electricity supply with an Earth, Live and Neutral wire connection. This supply cord can be connected to the isolating switch adjacent to the water heater. Excess cable is to be rolled and tied up and kept up off the ground and out of the way of potential hazards such as a lawn mower or whipper snipper.

The electrical cable is to be installed so it is not subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects over the life of the water heater.

The 565E315 model water heater is recommended for connection to an uninterrupted 24 hour continuous tariff power supply. Depending upon the size of the household and its hot water requirements, in **non-freeze** areas and if the Electricity Retailer permits, an extended off-peak (overnight and day) or Extended time-controlled power supply connection of a minimum 16 hours per day may also be suitable.

Caution: Power must be available to the heat pump module for the anti-freeze protection system of the heat pump to operate and prevent freezing in the heat pump circuit. In areas where the ambient air temperature may fall below 5°C, there is a risk of freezing conditions and the electrical supply to the water heater should not be switched off, otherwise damage could result. Refer to "Freeze Protection" on page 11.

Note: It is not recommended to connect this water heater via a power switching device which allows alternative supply of grid power and photovoltaic (PV) power.

The water heater will only operate on a sine wave at 50 Hz. Devices generating a square wave cannot be used to supply power to the water heater.

Sensor Cable – the sensor cable is supplied connected to the heat pump module. The sensor probe is to be fitted into the sensor port at the storage tank. This procedure is outlined in "Heat Pump and Tank Assembly" Step 6 on page 46.

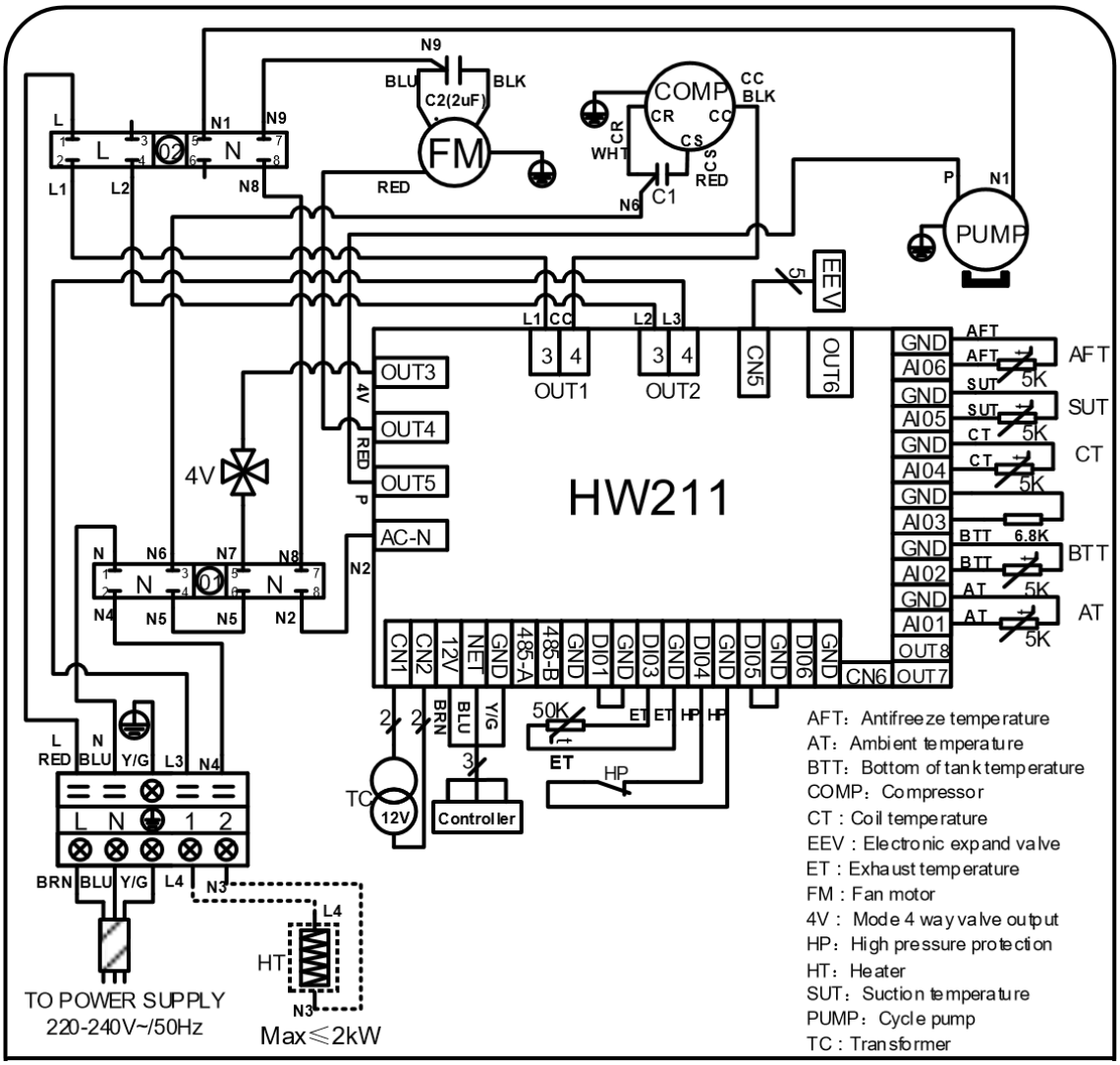
Hot Water Temperature Set Point – The Hot Water Temperature Set Point of the heat pump can be adjusted from 60°C to 65°C. Refer to “Hot Water Temperature Set Point” on page 18.

TIMER

A Timer function on the Display Panel allows the hours of operation of the water heater to be set during one timed period in a 24-hour period. Refer to “Clock and Timer” on page 19.

If the water heater is set to run during a timed period, the heat pump will not operate outside of this timed period. The exception is if the anti-freeze mode is activated, which can occur outside of a timed window.

WIRING DIAGRAM



COMMISSIONING

TO FILL AND TURN ON THE WATER HEATER

The power supply to the water heater must not be switched on until the water heater is filled with water air has been purged from the system and a satisfactory megger reading is obtained.

- Open all of the hot water taps in the house (don't forget the shower).
- Open the cold water isolation valve fully to the water heater.

  Air will be forced out of the taps.
- Close each tap as water flows freely from it.
- Check the pipe work and the connection points for leaks.
- Inspect for leaks at the temperature pressure relief valve connection to the water heater.

  If a leak is detected, close the cold water isolation valve fully and relieve pressure from the water heater by either operating the easing lever on the temperature pressure relief valve or opening a hot tap. Remove the valve and all of its thread sealant from the threads of the valve. Reapply new thread sealant and refit the valve.

  Refer to the procedure in "Temperature Pressure Relief Valve" on page 49.
- Operate the easing lever on the temperature pressure relief valve to check the smooth operation of the valve plunger and that water discharges freely from the drain line. It is very important the lever is raised and lowered gently. The lever should move smoothly and without undue force.

  If the lever cannot be moved or is jerky in its movement, then the valve has been damaged and must be replaced.
- Ensure the water heater has been in the installed position for a minimum of 30 minutes before switching on the electricity supply to the water heater.
- Switch on the electrical supply at the water heater isolating switch on the switchboard and at the isolating switch at the water heater.

  Note: When the electrical supply is switched on, there may be a knocking sound from the heat pump for a short period of time. This is the electronic expansion valve operating. This is normal and not a fault with the heat pump.
- Turn the water heater "On" at the Display Panel.

  Refer to "Turn the Water Heater "On" at the Display Panel" on page 18.
- Set the Clock on the Water Heater, and if required, set the Timer period.

  Refer to "Clock and Timer" on page 19.

The heat pump may take up to 5 minutes to commence operating when the power supply is switched on. The heat pump will only operate when the water in the storage tank requires heating and power is available at the water heater.

If the ambient air temperature is outside the operating range of the heat pump, i.e., below -7°C or above 43°C and the system calls for heating, the heat pump will not operate.

Note: The heat pump may not turn on after having just completed a heating cycle and more hot water is drawn from the water heater, or whilst the heat pump was operating and either power was switched off or it was turned "Off" at the Display Panel. The heat pump may wait a few minutes before operating and the conditions for start-up are favourable.

It is important to wait for five minutes after the heat pump has activated to ensure it continues to operate and is functioning correctly.

Explain to the householder or a responsible officer the functions and operation of the heat pump water heater. Upon completion of the installation and commissioning of the water heating system, leave this guide with the householder or a responsible officer.

TO TURN OFF THE WATER HEATER

We recommend you leave the water heater switched on in the event of freezing conditions occurring (refer to “Freeze Protection” on page 36).

If it is necessary to turn off the water heater on completion of the installation, such as on a building site or where the premises are vacant, then:

- Turn the water heater off at the Display Panel.
- Switch off the electrical supply at the water heater isolating switch on the switchboard and at the isolating switch at the water heater.
- Close the cold water isolation valve at the inlet to the water heater.

Notes

- The freeze protection system will be rendered inoperable if electrical power is not available at the water heater.
- Damage caused by freezing due to the unavailability of power at the water heater is not covered by the Rheem warranty.

  Refer to “Terms of the Rheem Warranty” on page 4.
- If the power has been switched off to the water heater and there is a risk of freezing, then it is necessary to drain the water heater.

  Refer to “Draining The Water Heater” on page 54.

DRAINING THE WATER HEATER

⚠ **Warning:** Exercise care, as water discharged from the water heater may be of a very high temperature.

To drain the water heater:

- Turn off the water heater.

  Refer to “To Turn Off The Water Heater” on page 54.
- Close all hot water taps.
- Operate the relief valve lever - do not let the lever snap back or you will damage the valve seat. **It is very important the lever is raised and lowered gently**.

  Operating the lever will release the pressure in the water heater.
- Undo the union at the cold water inlet to the storage tank and attach a hose to the storage tank side of the union.

  Let the other end of the hose go to a drain.
- Open the relief valve by holding the lever in the raised position.

  This will let air into the storage tank and allow the water to drain through the hose.
- It may also be necessary to undo the union at the cold water inlet to the heat pump to completely drain the heat pump if this is required.

MAINTENANCE, REPAIR, DECOMMISSIONING, DISPOSAL

WARNINGS

- **Be aware that the refrigerant used in this heat pump is flammable.**
- **The refrigerant is R290 (Propane).**
- **It may not contain an odour if it were to leak.**
- **Only a person qualified and competent in working with flammable refrigerants can access the refrigerant circuit (sealed system) to: maintain, repair or service the heat pump, or; to decommission the heat pump and dispose of the refrigerant.**

The information in this section does not replace the Service Instructions for the Rheem 565E315 heat pump water heater. The Service Instructions should be referred to for the full and complete procedures for maintenance, repair, decommissioning and disposal of the heat pump. This section is for information only.

WARNINGS – MAINTENANCE AND REPAIR WORK

If maintenance or repair of the sealed system containing the flammable refrigerant is required, then this service work shall be undertaken by a person qualified and competent in handling flammable refrigerants.

The following should be noted if this type of servicing is required:

- The servicing shall occur in an open well-ventilated area and remain well-ventilated for the duration of the service work.

  Ensure the area is well-ventilated before opening the sealed system or conducting any hot work. Any accidentally released refrigerant should be able to disperse safely.
- Be aware when a refrigerant leak is possible that malfunction of the heat pump may be caused by refrigerant loss.
- During repair work, when brazing is required, the following procedures shall be carried out:
  - Evacuate the refrigerant circuit (sealed system) and remove the refrigerant.
  - Purge the refrigerant circuit (sealed system) with nitrogen for five (5) minutes.
  - Evacuate the refrigerant circuit (sealed system) again.
  - Remove parts to be replaced by cutting, not by flame.
  - Purge the braze point with nitrogen during the brazing procedure,
  - Carry out a leak test before charging with refrigerant.
- Reassemble sealed enclosures accurately. If seals are worn replace them.
- Check safety equipment before recommissioning the heat pump into service.

GENERAL PRINCIPLES

Detection of Refrigerant

If a leak is suspected, all naked flames shall be removed / extinguished.

When searching for or detecting a refrigerant leak, potential sources of ignition shall not be used under any circumstances. A halide torch (or any other detector using a naked flame) shall not be used.

An electronic leak detector may be used to detect refrigerant leaks if it has the sensitivity to do so and is suitable for the detection of R290 refrigerant. The detector must not be a potential source of ignition. Leak detection equipment shall be set at a percentage of the LFL of and be calibrated for R290 refrigerant.

Leak detection fluids are also suitable but the use of detergents containing chlorine shall be avoided as the chlorine may react with the R290 and also corrode copper pipework.

If a leakage of refrigerant is found which requires brazing, all refrigerant shall be recovered from the heat pump prior to repair work being conducted.

Evacuation and Removal of the Refrigerant

Conventional procedures shall be used if the refrigerant circuit (sealed system) is to be opened. Refrigerant R290 is flammable, therefore the following procedure shall be followed:

- Safely evacuate the refrigerant circuit (sealed system) and remove the refrigerant following local and national regulations.
- Purge the refrigerant circuit (sealed system) with nitrogen for five (5) minutes.
- Evacuate the refrigerant circuit (sealed system) again.
- Remove parts to be replaced by cutting, not by flame.

The refrigerant shall be recovered into the correct recovery cylinders. The sealed system shall be purged with nitrogen to render the heat pump safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for purging the refrigerant lines.

Purging shall be achieved by breaking the vacuum in the system with nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable service work to take place. This process is vital if brazing operations on the pipe work are to take place.

The outlet of the vacuum pump must not be close to any potential ignition sources, and the point of discharge is well-ventilated.

Good practise is to be followed when removing refrigerant from the sealed system during servicing or decommissioning to ensure all refrigerant is removed safely.

- Only appropriate refrigerant recovery cylinders shall be used and labelled for R290 refrigerant.
- A recovery cylinder shall be complete with pressure relief valve and associated shut-off valves in good working order, evacuated and if possible, cooled before recovery occurs.
- The recovery equipment shall be in good working order and suitable for the recovery of R290 refrigerant.
- Hoses shall be complete with leak-free disconnect couplings and in good condition.
- The recovery machine is to be checked to ensure it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release.
- Calibrated weighing scales shall be available and in good working order.

Recovered refrigerant shall be disposed of correctly and a waste transfer note arranged. Do not mix refrigerants in recovery cylinders.

Charging Procedure

Prior to recharging the sealed system, pressure test the system with nitrogen.

In addition to conventional charging procedures, the following should be noted:

- Ensure the contamination of different refrigerants does not occur when using charging equipment. Hoses and lines should be as short as possible to minimise the amount of refrigerant in them.
- Charging cylinders shall be kept in an appropriate position according to their instructions.
- Ensure the refrigerating system is earthed prior to charging the system with refrigerant.
- If not already labelled, label the system when charging is complete.
- Exercise extreme care so as not to overfill the refrigerating system.

Leak test the sealed system upon completion of the charging but prior to commissioning, and again after commissioning prior to leaving the site.

Recovery of Compressor Oil

Good practise is to be followed when removing compressor oil during servicing or decommissioning to ensure all oil is removed safely.

If the compressor or compressor oil are to be removed, ensure they have been evacuated of refrigerant to an acceptable level to make certain no refrigerant remains within the lubricant. Only electric heating to the compressor body shall be employed to accelerate the evacuation process. When oil is drained from a sealed system, it shall be carried out safely. The evacuation procedure shall be carried out before disposing of the compressor.

⚠ WARNINGS – DECOMMISSIONING AND DISPOSAL

At the end of the water heater's life, the decommissioning and disposal of the heat pump shall be undertaken by a person qualified in handling flammable refrigerants.

The following should be noted:

- If the safety is affected when the heat pump is put out of service, the refrigerant charge shall be removed before decommissioning.
- The decommissioning shall occur in an open well-ventilated area and remain well-ventilated for the duration of the decommissioning work.

  Ensure the area is well-ventilated before opening the sealed system or conducting any hot work. Any accidentally released refrigerant should be able to disperse safely.
- Be aware when a refrigerant leak is possible that malfunction of the heat pump may be caused by refrigerant loss.
- During decommissioning, the refrigerant is to be recovered and disposed of in accordance with governing regulations.
  - Evacuate the refrigerant circuit (sealed system) and remove the refrigerant.
  - Purge the refrigerant circuit (sealed system) with nitrogen for five (5) minutes.
  - Evacuate the refrigerant circuit (sealed system) again.
  - Fill with nitrogen up to atmospheric pressure.
  - Place a label on the heat pump that the refrigerant is removed.
- Cut out the compressor and drain the oil.
- Do not pierce or burn any components of the heat pump.

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