



# **INSTALLATION INSTRUCTIONS & OWNERS GUIDE**

## **RHEEM MAINS PRESSURE ELECTRIC HOT WATER HEATERS**

### **Congratulations for choosing a Rheem Water Heater**

It is important that you take a few minutes  
to read this booklet as it may save you  
time and trouble later.

If you require any further information or your  
water heater needs to be serviced, please contact the  
Rheem Service Department on 0800 657 335,  
or the nearest service centre  
(look in the Yellow Pages under "Plumbers")  
Or visit [www.rheem.co.nz](http://www.rheem.co.nz)

### **Important to the Installer**

Do not leave this booklet inside the element cover  
after installation  
Please leave the booklet with the water heater's owner

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# IMPORTANT INFORMATION

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## GENERAL

- The information contained in this manual, and all other information or advice given at any time by Rheem New Zealand Limited in connection with the purchase, installation or use of a Rheem water heater, is given in good faith. Subject to any rights the owner may have under the "Consumer Guarantees Act 1993", Rheem New Zealand Limited will not be liable to any person for any inaccuracy or omission in the information or advice arising through the fault or negligence of Rheem New Zealand Limited or any other person or through any other cause whatsoever.
- This water heater is not intended to be operated, adjusted or tampered with by young children or infirm persons. Young children should be supervised to ensure they do not play with the water heater.

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## ABOUT YOUR WATER HEATER

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### Q. DOES THE WATER QUALITY AFFECT THE WATER HEATER?

- A. Your water heater is suitable for most public water supplies, however, some water qualities may have a detrimental effect on it. **If you are in a known harsh water area please refer to page 6.**

### Q. HOW HOT SHOULD THE WATER BE?

- A. All models (temperature range 60 - 70°C) require an authorised person to make any temperature adjustments. For reasons of safety and economy, we advise the thermostat is adjusted to the lowest setting that meets your needs.

The New Zealand Building Code requires a stored temperature setting of not less than 60°C. A tempering valve set at a maximum of 55°C must be used on domestic wet areas.

### Q. HOW DO I KNOW IF THE WATER HEATER IS INSTALLED CORRECTLY?

- A. Refer to the installation requirements on page 4.

### Q. HOW LONG WILL THE WATER HEATER LAST?

- A. There are a number of factors that affect the life of the water heater. These include; the water quality, water pressure, water temperature and the usage pattern, however, your Rheem water heater is supported by a comprehensive warranty (refer to page 7).

The life of the water heater may be extended by arranging for an authorised person to inspect the anode and replace it, if required.

The suggested time after installation when the anode should be inspected is:

Vitreous Enamel 8 years

Optima 10 years

For softened water supplies or in areas of poor water quality, it is recommended the anode be inspected 3 years earlier than shown (refer to "Water Quality" on page 6).

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## HOW THE WATER HEATER WORKS

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### SINGLE AND TWIN ELEMENT MODELS

Water stored within the water heater is heated by the electric heating element. The thermostat controls the electricity supply to the heating element so that a constant water temperature is maintained. As the cold water is heated it expands approximately 1/50 of its volume and, as a result, a small amount of water is discharged from the cold water expansion valve.

### NON-SIMULTANEOUS ELEMENT MODELS


The two heating elements are wired for non-simultaneous operation, so that only one heating unit can operate at a time. The bottom heating unit is usually connected to an off-peak (overnight) supply and the top heating unit to a continuous supply. **The red link wire must be removed from the terminal block during installation if two separate power supplies are to be used.** Leaving the link in place ensures both elements operate correctly with a single power supply.

The basic operation is as follows: when the water temperature at the top of the water heater has reached the set temperature, the thermostat switches the top element off. This creates a circuit to the bottom heating element by switching the neutral.

### SAFETY

On all models, a Temperature and Pressure Relief valve is supplied with each water heater. It can be found inside the front cover and must be mounted on top of the water heater.

Also fitted to the water heater is a thermostat, which incorporates an over-temperature thermal cut-out device.

 **Warning:** The operation of the thermal cut-out indicates a possible dangerous situation. The thermostat and thermal cut-out is to only be adjusted or reset by an authorised service person.

These safety devices must not be tampered with, or removed, and under no circumstances operate the water heater unless both devices are fitted.

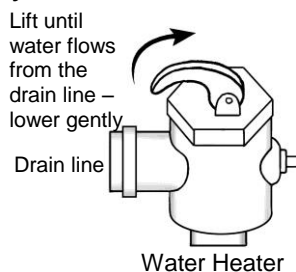
## REGULAR CARE

### MANUALLY OPERATING THE TEMPERATURE AND PRESSURE RELIEF (TPR) VALVE:

The easing lever (see diagram. 1) on the TPR valve should be operated regularly to remove lime deposits and verify that it is not blocked. **It is very important that you raise and lower the lever gently.**

**! Warning:** To ensure the relief valve is working correctly, operate the relief valve easing lever at least every six months. Failure to do this may result in the water heater over-pressurising.

#### DIAGRAM 1



If water does not flow freely from the drain line or the valve fails to completely close and water continues to be discharged, contact the Rheem Service Department, phone **0800 657 335**, or the nearest Rheem Service Centre (look in the Yellow Pages under "Plumbers").

### GOING ON HOLIDAYS:

If you plan to be away from home for one or two nights, we suggest that you leave the water heater switched on. However, if you plan to stay away more than a few nights, conserve energy by switching the water heater off at the isolating switch, or at the main switchboard. In locations where freezing could occur, you should leave the water heater turned on.

## SAVE A SERVICE CALL

**CHECK THE ITEMS BELOW BEFORE MAKING A SERVICE CALL. YOU MAY BE CHARGED FOR SERVICE IF THE FAULT IS NOT RELATED TO THE WATER HEATER MANUFACTURE OR PARTS SUPPLIED WITH THE WATER HEATER BY RHEEM.**

### WATER DISCHARGING FROM EXPANSION CONTROL VALVES

It is normal for the cold water expansion valve and the temperature and pressure relief valve to discharge a small quantity of water during the heating cycle. If either of these valves discharge more than a bucket full of water in 24 hours, one of the following may be the cause.

- **Continuous dribble**  
Try gently raising the easing lever on the relief valve for a few seconds. This may dislodge small particles of foreign matter and clear the fault.
- **Heavy flow of hot water until the water is cold – then stops while the water reheats**  
Immediately turn off the electricity supply to the water heater. Call the Rheem Service Department or look in the Yellow Pages under "Plumbers" for your nearest Rheem Service Centre or [www.rheem.co.nz](http://www.rheem.co.nz) to arrange an inspection.
- **A steady flow of water (often at night)**  
This may indicate that your cold water pressure sometimes rises above the design pressure of the water heater. A Pressure Limiting valve should be installed, or if one is installed, it may need replacing.

### NOT ENOUGH HOT WATER (or no hot water)

- **Is the electricity turned on?**  
Check the switch marked 'water heater' at the switchboard and the water heater isolating switch.  
Check the fuse or circuit breaker marked 'water heater'.

**WHERE THE WATER HEATER IS CONNECTED TO AN OFF PEAK (NIGHT RATE) ELECTRICAL TARIFF, THE SUPPLY MAY NOT BE AVAILABLE AT CERTAIN TIMES OF THE DAY.**

- **Do you have the correct size heater for your requirements?**  
Refer to the sizing guide in the Rheem sales literature or the Rheem website.
- **Is one outlet (especially the shower) using more hot water than you think?**  
Carefully review the family's hot water usage and if necessary, check the shower flow rate. For maximum efficiency we recommend the flow rate through the shower is between 8 to 10 litres per minute (mixed hot and cold). This can be achieved by installing a flow control valve if provision is not made to fit a flow restrictor in the shower rose.
- **Ensure the thermostat setting is appropriate. Note, some models require an authorised person to make electrical thermostat adjustments.**

### HIGH ELECTRICITY BILLS

- **Consider recent changes to your hot water usage pattern and check if there has been an increase in tariffs since your previous account.**
- **Is either of the expansion valves discharging too much water?**

- **Is one outlet (especially the shower) using more hot water than you think?**
- **Is there a leaking hot water pipe, dripping hot water tap, etc?**  
Even a small leak will waste a surprisingly large quantity of hot water and energy. Replace faulty tap washers, and have your plumber rectify any leaking pipe-work.

## INSTALLATION

Please take careful notice of the advice given as Rheem New Zealand Limited will not be liable for any loss or damage suffered as a result of the incorrect installation of the water heater, or any failure to check the capability of the electrical supply wiring to the water heater.

The water heater must be installed by a certified person or registered plumber and the installation must comply with the New Zealand Building Code, Rheem Installation Instructions, AS/NZS 3000 electrical installations and all local codes and regulatory authority requirements. Note that no warranty costs will be payable where the water heater is located in a position that does not comply with the Rheem water heater installation instructions or relevant statutory requirements, where the unit is installed in a position that does not allow safe or ready access, the cost of that access shall not be payable (refer to "Rheem Warranty" on page 7).

- **WATER HEATER LOCATION**

Water heaters with a galvanised outer casing are only suitable for indoor installations, whereas water heaters with a painted casing are suitable for both indoor and outdoor installations.

Clearance must be allowed for servicing and removal of the water heater and it must be accessible without the use of a ladder or scaffold. (Typical clearances are: TPR valve removal 135 mm, Element Cover and Element Removal 400 mm). Also, you must be able to read the information on the rating plate and if possible, leave headroom of one water heater length so the anode can be inspected or replaced.

- **CONNECTION SIZES**

- Hot and Cold water connections: RP  $\frac{3}{4}$  / 20.
- Relief valve connection: RP  $\frac{1}{2}$  / 15.

- **INLET/OUTLET CONNECTIONS**

A union must always be provided at the cold water inlet and hot water outlet for disconnection reasons. All connection sockets on the water heater are parallel threaded and therefore tapered brass nipples must be used to ensure watertight connections. Both connections are fitted with plastic liners and it is important that they remain in situ for the water heater to function properly. These liners will be pushed into the correct position as the fitting is being screwed in.

- **NON RETURN VALVE**

A non return valve must be installed on the cold water line to the water heater.

- **PIPE SIZES**

The cold water line to the water heater should be the same size or bigger than the hot water line from the water heater. For best results, choose the most suitable pipe size for each individual application.


- **COLD WATER EXPANSION VALVE**

A cold water expansion valve must be fitted to the cold water line to the water heater.

- **TEMPERATURE AND PRESSURE RELIEF VALVE**

When fitting the temperature and pressure relief valve, ensure the probe has not been bent. Seal the thread with PTFE tape, or similar, as recommended by the valve manufacturer and screw the valve into the off-centre socket. Do not use a wrench on the valve body – use the spanner flats provided. Drain the TPR valve with a pipe the same size as the valve outlet. The drain must run downwards to a visible point outside the house, preferably over a gully trap.

In some setups or circumstances, such as if freezing could occur, an air break must be provided in the drain within 300 mm of the TPR valve, refer to the New Zealand Building Code - Clause G12 for requirements and acceptable solutions for the running of hot water drain line(s).

 **Warning: The drain line from the TPR valve must be in copper.** A Rheem mains pressure water heater must **not** be installed and operated without a suitable (valve that complies with AS 1357.1) temperature and pressure relief valve. Under no circumstances block the outlet of this valve or its drain pipe.

- **WATER SUPPLY PRESSURE**

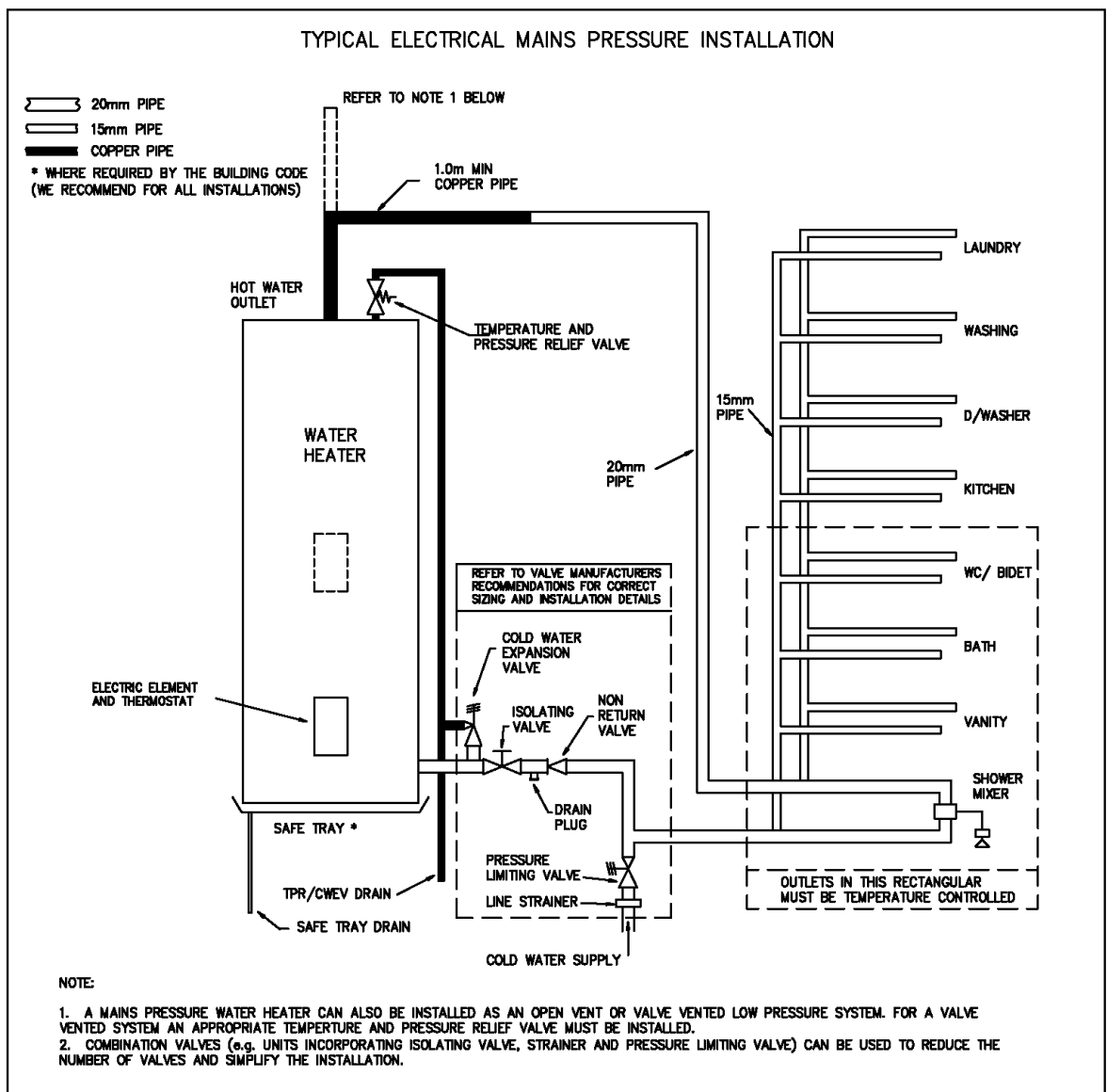
Maximum permitted mains water pressure - refer product label and Table 5.2 AS/NZS 3500.4. Note inlet pressure control valve is required where maximum permitted mains pressure is likely to be exceeded.  
Minimum inlet pressure: 60 kPa

- **PRESSURE LIMITING/REDUCING VALVE**

If the water supply pressure exceeds the requirements of Table 5.2 AS/NZS 3500.4, a pressure limiting valve with a maximum setting of 500 kPa is to be fitted in the installation.

- **SAFE TRAY AND SEISMIC RESTRAINTS**

The water heater must be installed with a properly drained safe tray where there is the possibility of water damage to furniture, carpets or building. All water heaters must be restrained to protect against seismic forces. (Refer to the Zealand Building Code for acceptable solutions.)



**DIAGRAM 2:**

## CONNECTIONS - ELECTRICAL

The electrical installation must be completed in accordance with AS/NZS 3000. All water heaters are designed for 230 VAC, 50 Hz mains operation and a means of disconnection from the power supply must be incorporated in the fixed wiring during installation.

A flexible 20 mm conduit is required for the electrical cable to the water heater. The conduit is to be connected to the unit with a 20 mm plain to screw adaptor. Connect the power supply wires directly to the terminal block and earth tab connection, ensuring there are no excess wire loops inside the front cover. For details, refer to the wiring diagram on the inside of the element cover. **A separate heating element earth wire is not required because the element earths by the thread of the element boss or the flange being in contact with the element socket.**

## COMMISSIONING

### TO FILL AND TURN ON THE WATER HEATER

**Warning:** The power supply to the water heater must not be switched on until the water heater is filled with water and an "earth continuity test", as outlined in Annex A of AS/NZS 60335.1 has been carried out. Failure to do so will damage the element and shorten its life and may create a dangerous situation.

- 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 to force the air out of the taps. As water flows freely from each tap, close it. Check the pipe-work for leaks.
- Switch on the electrical supply at the isolating switch to the water heater.

### TO TURN OFF THE WATER HEATER

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 is vacant, then;

- Switch off the electrical supply at the isolating switch to the water heater.
- Close the cold water isolation valve at the inlet to the water heater.

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## DRAINING THE WATER HEATER

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- Switch off the electrical supply at the isolation switch to the water heater.
  - Close the cold water isolation valve.
  - Operate the relief valve easing lever to release the pressure in the water heater.
  - Drain the water heater through the drain valve or plug.
  - Undo the top outlet union or operate the relief valve easing lever again to let air into the water heater and allow the water to drain
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## WHAT YOU SHOULD KNOW ABOUT WATER QUALITY

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### WATER SUPPLY CHEMISTRY

Water quality can have a detrimental effect on water heater operation, components and life expectancy and may affect the warranty.

 **Warning:** *This water heater must be installed in accordance with advice given to be covered by the Rheem warranty.*

Your Rheem water heater is manufactured to suit the water condition of most local authority water supplies. However, some water supplies can have a detrimental effect on the water heater and its operation and/or life expectancy. This water heater must only be connected to a water supply which complies with these specifications for the Rheem warranty to apply. If you are unsure of your water chemistry you may be able to obtain information from your local water supply authority or you can contact Rheem and we will provide you with contact details of a suitable agency capable of testing your water for compliance with Rheem standards. Water quality tests must be carried out at the owner's cost.

### HARSH WATER AREAS

Rheem water heaters are designed for use in areas where the Total Dissolved Solids (TDS) content of the water supply is less than 2500 mg/L.

In areas where the TDS exceeds 600 mg/L it is possible the standard magnesium anode fitted to the water heater, may be excessively active. To alleviate this, the magnesium anode should be replaced with an aluminium anode. Where the TDS of the water is less than 40 mg/L, such as when the water has been deionised or is from an alpine supply, a high potential anode should be used. The changing of anodes must be carried out by a plumber or qualified service person.

### CAUTION

If your water supply has a TDS greater than 600 mg/L and the anode has not been changed, there is a possibility of hydrogen gas accumulating 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 (e.g. 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 flames near the tap whilst it is turned on. Any hydrogen gas will be dissipated as indicated by an unusual spurting of the water from the tap. Once the water runs freely again any hydrogen in the system will have been released.

### SATURATION INDEX

The saturation index is used as a measure of the water's corrosive or scaling properties. In a scaling water supply calcium carbonate is deposited out of the water onto any hot metallic surface. When scaling water has a saturation index greater than +0.40 an expansion control valve must be fitted on the cold water line after the non-return valve.

Where the saturation index exceeds +0.80, low watts density elements should be used. Where the saturation index is less than -1.0, a corrosive resistant heating unit should be used (contact your local Rheem Service Department or an authorised service person).

Scaling water is water that containing levels of calcium carbonate (total hardness in excess of 200 mg/litre at any time when the water heater is operating) Scaling water can block and prevent the pressure & temperature relief valve from operating, resulting in damage to the water heater storage cylinder and water components. A cold water expansion control valve must be fitted where in all areas with scaling water to assist in preventing blockage of the pressure and temperature relief valve.

 **Warning:** *Failure to install an expansion control valve where scaling water conditions occur may result in the water storage cylinder failing or under certain circumstances over pressurising.*

To avoid damage to the storage cylinder and components Rheem strongly recommends scaling water be treated before entering the water heater by fitting appropriate water filters, conditioners, etc – refer to your local water authority for information on water in your area. A build up of white sediment on the hot taps or shower rose can be indicative of scaling water. Contact Rheem if this condition is observed.

 **Warning:** *Damage caused by scaling water can affect the Rheem warranty.*

The Rheem warranty of this water heater will not cover resultant faults on components, including storage tank, due to the effects of sludge and/or sediment as a result of connection to a water supply from silted or untreated sources, i.e. springs, dams, bores, rivers or town supplied from a bore.

**WATER HEATERS NOT INSTALLED IN ACCORDANCE WITH THE ABOVE ADVICE WILL NOT BE COVERED BY THE RHEEM WARRANTY.**

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## RHEEM WARRANTY

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### **Mains Pressure Electric Water Heater Product Warranty New Zealand Only**

In addition to your legal right, in New Zealand Rheem New Zealand Limited makes the following promise to the owner. We will repair or, if necessary, replace a defective unit or part of it, which has failed due to faulty manufacture on the following terms and conditions:

#### **1. THE RHEEM WARRANTY – GENERAL**

- 1.1 This warranty is given in respect of sales in New Zealand by Rheem New Zealand Limited of 475 Rosebank Road.
- 1.2 Rheem offer a trained and qualified national service network who will repair or replace components at the address of the unit subject to the terms of the Rheem warranty in New Zealand – contact your Rheem Service Centre on 0800 657 335.
- 1.3 For details about this warranty, you can contact your Rheem Service Centre in New Zealand on 0800 657 335.
- 1.4 The terms of this warranty are set out in section 2 and apply to units manufactured after 1<sup>st</sup> July 2016.
- 1.5 If a subsequent version of this warranty is published, the terms of that warranty will apply to units manufactured after the date specified in the subsequent version.

#### **2. TERMS OF THE RHEEM WARRANTY AND EXCLUSIONS TO IT**

- 2.1 The decision of whether to repair or replace a faulty component is at Rheem New Zealand Limited's sole discretion.
- 2.2 Where a failed component or unit is replaced under this warranty, the balance of the original warranty period will remain effective. The replacement does not carry a new Rheem warranty.
- 2.3 Where the unit is installed outside the boundaries of a metropolitan area, defined by Rheem as further than 25 km from a Rheem service centre, the cost of transport, insurance and travelling between the Rheem service centre and the installed site shall be the owner's responsibility.
- 2.4 Where the unit 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, walls, roofs or trap doors and the cost of any special equipment to bring the unit to floor or ground level or to a serviceable position is not covered by this warranty.
- 2.5 This warranty only applies to the original and genuine Rheem unit in its original installed location and any genuine Rheem replacement parts. It does not cover any plumbing, gas fitting or electrical parts supplied by the installer, that are not an integral part of the unit, e.g. pipe-work, pressure limiting valve, stop valves, non-return valves, electrical switches, pumps and fuses.
- 2.6 The Rheem warranty does not cover faults that are a result of:
  - a) Accidental damage to the unit or any component, for example Acts of God such as floods, storms, fires, lightning strikes and the like and Third party acts or omissions.
  - b) Misuse or abnormal use of the unit.
  - c) Installation or use not in accordance with the Owner's Guide and Installation Instructions, New Zealand Building Code requirements or with relevant statutory and local requirements including failure to install a properly drained safe tray where required by the owners guide and installations.
  - 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, or poor water quality outside the limits specified in the owners guide and installation instructions.
  - e) Repairs, attempts to repair or modifications to the unit by a person other than Rheem Service or a Rheem Accredited Service Technician.
  - f) Faulty plumbing or faulty power supply.
  - g) Failure to maintain the unit 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.
- 2.7 If you require a call out and we find that the fault is not covered by the Rheem warranty, you are responsible for Rheem Service Centre call out costs. If you wish to have the relevant component repaired or replaced by Rheem that service will be at your cost.
- 2.8 Subject to any statutory provisions to the contrary, this warranty excludes any and all claims however arising including under contract or tort for damage to furniture, carpet, walls, foundations or any other consequential loss or incidental expenses either directly or indirectly due to leakage from Rheem unit, 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.
- 2.9 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 1933 (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.

### 3. WHAT IS COVERED BY THE RHEEM WARRANTY FOR THE UNITS DETAILED IN THIS DOCUMENT

3.1 The following Warranty terms apply for all Rheem Water Heaters manufactured after 1st June 2018. Rheem will repair or replace a faulty component of your unit if it fails to operate in accordance with its specifications as follows:

<b>Warranty Cover</b>	<b>The period from date of installation, in which the fault must appear, in order to be covered</b>		*Domestic use is defined as; when the appliance is installed in a single family domestic dwelling.
<b>What components are covered</b>	<b>Domestic use*</b>	<b>Non-domestic use*</b>	<b>What coverage you receive</b>

#### Low & Mains Pressure

#### Years

\*\* (Excludes Optima)

All components	1	1	Repair or replacement of failed component, or if necessary, replacement of the complete water heater, free of charge, including labour.
Cylinder only (Thermostat setting must be below 70°C)	5	1	Repair or replacement of the complete water heater, free of charge, including labour.
Cylinder only - Vitreous Enamel (Thermostat setting must be below 70°C)	10	3	Repair or replacement of the complete water heater, free of charge. Installation and labour cost are the responsibility of the owner.

#### Optima

#### Years

All components	3	1	Repair or replacement of failed component, or if necessary, replacement of the complete water heater, free of charge, including labour.
Cylinder only (Thermostat setting must be below 70°C)	5	1	Repair or replacement of the complete water heater, free of charge, including labour.
Cylinder only (Thermostat setting must be below 70°C)	12	5	Repair or replacement of the complete water heater, free of charge. Installation and labour cost are the responsibility of the owner.

### 4. ENTITLEMENT TO MAKE A CLAIM UNDER THIS WARRANTY

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

- Be the owner of the unit or have consent of the owner to act on their behalf.
- Contact Rheem New Zealand Limited Service Department without undue delay after detection of the defect and, in any event, within the applicable warranty period.
- Return the faulty component or unit as directed by the Rheem New Zealand Limited Service Department.

4.2 You are **not** entitled to make a claim under this warranty if your unit:

- Does not have its original serial numbers or rating labels.
- Is not installed in 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:

- Contact Rheem New Zealand on 0800 657 335 and provide owner's details, address of the unit, a contact number and date of installation of the unit or if that's unavailable, the date of manufacture and serial number (from the rating label on the unit).
- A Rheem service centre will arrange for the unit to be tested and assessed on-site.
- If Rheem determines that you have a valid warranty claim, Rheem will repair or replace the unit in accordance with this warranty.

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

**RHEEM SERVICE DEPARTMENT**  
475 Rosebank Road, Avondale, Auckland

www.rheem.co.nz

FOR SERVICE TELEPHONE  
Phone: 0800 657 335

Fax: 09 829 0222

or refer to your local Yellow Pages under "Plumbers"  
for your nearest Rheem Service Centre