



**INSTALLATION  
INSTRUCTIONS  
OWNERS GUIDE  
&  
WARRANTY STATEMENT**

**RHEEM ELECTRIC DAIRY  
HOT WATER HEATER**

**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)

# 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

## IMPORTANT INFORMATION

- 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.

## 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 an authorised service person or registered plumber and the installation must comply with the New Zealand Building Code (G12), Rheem Installation Instructions, AS/NZS 3000 electrical installations, NZS 4605 The Installation of Dairy-Type Thermal Storage Electric Water Heaters, and all local codes and regulatory authority requirements.
- **WATER HEATER LOCATION**  
Dairy water heaters with a galvanised outer casing are only suitable for installations under cover away from draughts and weather. 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: Relief valve removal 135 mm, Element Cover and Element Removal 400 mm). It must also be possible to read the information on the main/rating Label.
- **MULTIPLE WATER HEATER SYSTEM LAYOUTS**  
When more than one heater is installed using a single filler funnel, ensure that the tops of the cylinders are at the same level. This also applies when cylinders are of different sizes.
- **COLD WATER INLET**  
The cold water inlet pipe should terminate not less than 25mm above the cylinder cold water inlet funnel located at the top of the cylinder. An air break of sufficient size must exist to ensure back-flow cannot occur.

### **WARNING:**

*DO NOT CONNECT THE COLD WATER INLET DIRECTLY TO THE CYLINDER*

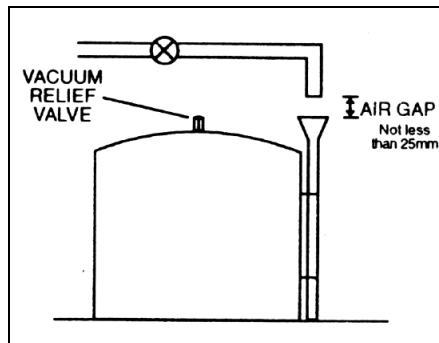
*DO NOT CONNECT THE COLD WATER INLET TO THE HEATER DRAIN VALVE OR OVERFLOW PIPE AS THIS COULD CAUSE PRESSURISING OR BACK-PRESSURE IN THE CYLINDER*

- **HOT WATER OUTLET**

A 40mm diameter socket connection is provided separately with the heater (*Note: this socket also has an extra connection for a thermometer and ancillary feed connection*). After applying a suitable thread seal to the 40mm nipple on the heater, screw the socket into position with the 1/4" BSP thermometer pocket hole facing upwards. Also apply thread seal to the thermometer and screw this into the thermometer pocket hole. Connect to the socket a quick-opening tap with a positive spring loaded closing action and a thermally insulated handle. The tap should be of such a design that it can be easily serviced (these can be purchased from Rheem NZ as an optional extra). In multi-heater bank installations, cylinders should be installed such that each cylinder may be drained separately.

- **VACUUM RELIEF VALVE**

The vacuum relief valve supplied with the water heater must be fitted to the socket in the centre of the dome to prevent tank collapse under abnormal conditions.



**WARNING:**

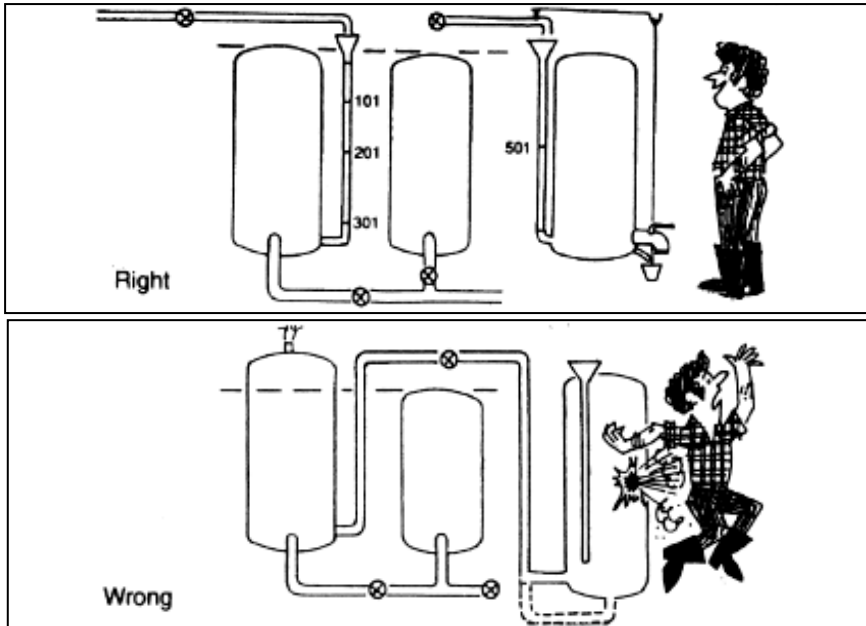
*DO NOT USE PLASTIC PIPING OR VALVES TO CARRY HOT WATER*

- **VENTING AND OVERFLOW**

The cylinder is supplied with an overflow vent pipe, a vacuum relief socket and vacuum relief valve. No other vents should be connected to the top of the cylinder.

**WARNING:**

*DO NOT BLOCK THE OVERFLOW VENT PIPE OR CONNECT ANY OTHER PIPE OR FITTING THAT COULD IMPEDE OR STOP THE FREE FLOW OF AIR TO THE WATER HEATER WHEN IT IS BEING EMPTIED.*



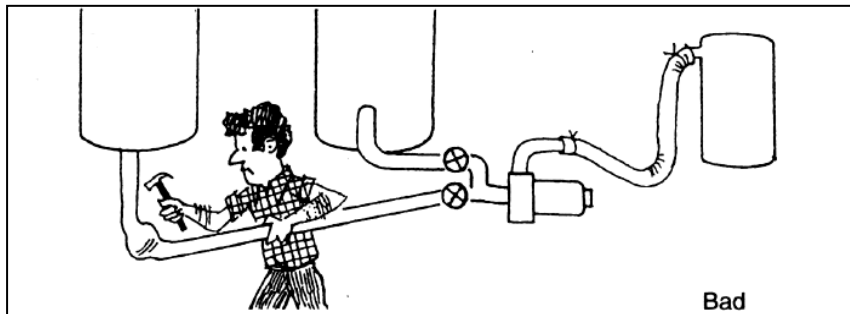
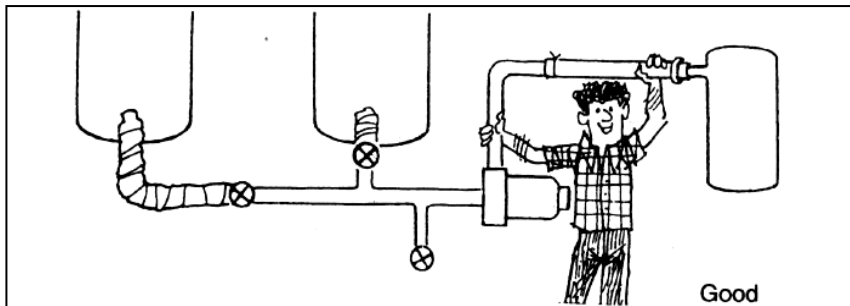
■ **CONNECTION TO POWER CLEANING SYSTEMS**

In power cleaning systems the hot water draw-off is done directly from the cylinder with a centrifugal pump. To ensure full and economic use of available hot water the following installation factors must be observed:

- a) The pump for emptying the cylinder and powering cleaning fluids must be mounted at least 450mm below the bottom of the water heater, but not directly underneath the water heater. This provides a positive head to the pump inlet to reduce cavitation at the impeller.
- b) The pump used should be mounted close to the water heater with the minimum number of bends, tees and valves possible.
- c) The pipes carrying hot water from the cylinder to the first valve must be thermally insulated with at least 25mm thickness of water-resistant insulation.
- d) Quick opening valves or gate valves of a non-corrosive metal are the only type of valve that should be used to prevent restrictions in the water flow lines.

**NOTE:**

*FOR BEST POSSIBLE PUMP PERFORMANCE, 450MM OF STRAIGHT PIPE SHOULD BE USED BETWEEN THE LAST JOIST AND THE PUMP INLET*



### POWER CLEANING INSTALLATION

All connections for hot water reticulation from the pump shall be to NZS 5121. The cylinder drain valve must not be used as a draw-off point.

#### **NOTE:**

*IN A 'CLEAN IN PLACE' POWERED CLEANING SYSTEM HOT WATER DOES NOT HAVE TO FLOW AT THE SAME RATE AS THE COLD WATER (14 TO 23 LITRES PER MILKING UNIT PER MINUTE). THE HOT WATER FLOW RATE MUST BE SUFFICIENT TO PUSH WATER OVER ALL SURFACES SIMULTANEOUSLY. THIS IMPROVES CONTACT TIME OF HOT SOLUTIONS FOR CLEANING AND SANITISING.*

#### ▪ **SAFE TRAY AND SEISMIC RESTRAINT**

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 New Zealand building code for acceptable solutions.)

## CONNECTIONS - ELECTRICAL

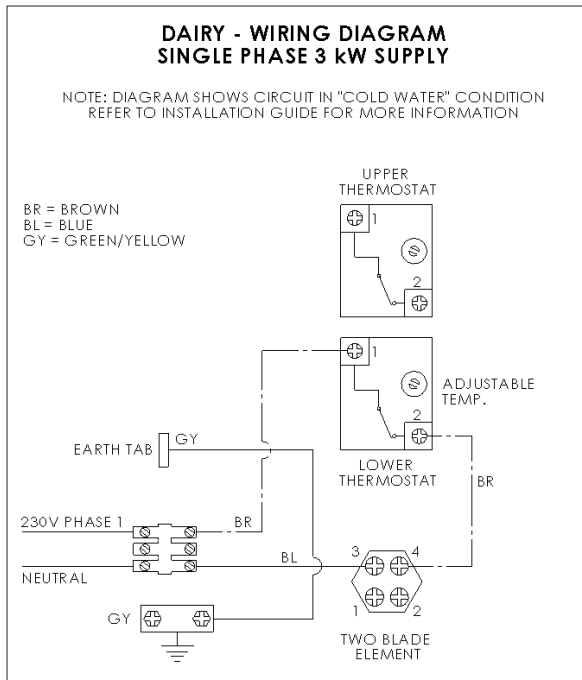
#### ▪ **GENERAL REQUIREMENTS**

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. Supply wiring may reach excessive temperatures and must be suitable for temperatures  $\geq 100^{\circ}\text{C}$ . **A separate heating element earth wire is not required because the element earths by the thread of the element boss or flange being in contact with the element socket.**

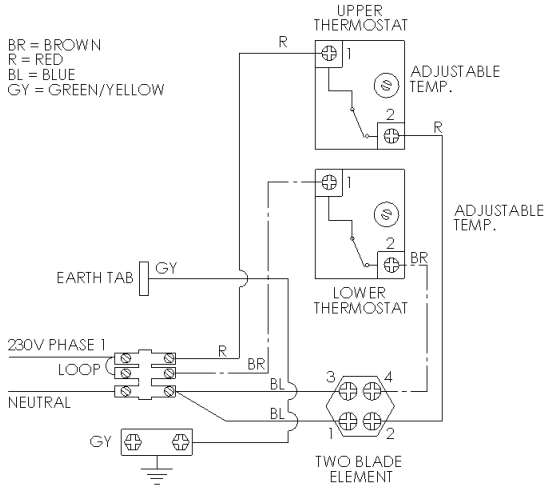
■ **PRODUCT SPECIFICATIONS**

This Rheem Electric Dairy Water Heater is supplied with a double-blade 3/6 kW element, and two independent adjustable single-pole thermostats (60-90°C). This water heater has the option of either 3kW or 6kW rated supply. The following wiring diagrams show how to achieve single or double-blade connection, with the option of single or two-phase supply.



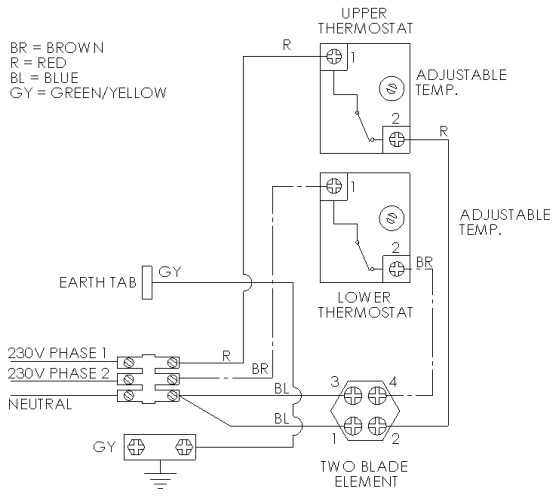
### DAIRY - WIRING DIAGRAM SINGLE PHASE 6 kW SUPPLY

NOTE: DIAGRAM SHOWS CIRCUIT IN "COLD WATER" CONDITION  
REFER TO INSTALLATION GUIDE FOR MORE INFORMATION



### DAIRY - WIRING DIAGRAM TWO PHASE 6 kW SUPPLY

NOTE: DIAGRAM SHOWS CIRCUIT IN "COLD WATER" CONDITION  
REFER TO INSTALLATION GUIDE FOR MORE INFORMATION



# COMMISSIONING

**WARNING:**

*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*

**NOTE:**

*BEFORE INITIAL FILLING, FLUSH ALL INLET PIPEWORK TO PREVENT CONTAMINANTS BEING PUSHED INTO THE WATER HEATER*

**NOTE:**

*THE TEMPERATURE SET POINT OF THE UPPER THERMOSTAT MAY REQUIRE INITIAL ADJUSTMENT TO PREVENT CONTINUOUS BOILING*

▪ **TO FILL AND TURN ON THE WATER HEATER**

Filling the water heater can be done by either manual or automatic operation as described in NZS 4605.

- a) Fill the water heater by opening the cold water supply to the inlet funnel. Allow the heater to fill with cold water until water discharges from the overflow pipe. A small amount of water will continue to flow from the overflow after the supply tap is turned off. Check the pipe-work for leaks
- b) 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;

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

# DRAINING THE WATER HEATER

▪ **TO COMPLETELY DRAIN THE WATER HEATER**

If it is necessary to completely drain the water heater to remove sludge and sediment build-up;

- a) Switch off the electrical supply at the isolation switch to the water heater
- b) Ensure the cold water isolation valve is closed
- c) Open the water heater drain valve or remove the drain plug.

# WHAT YOU SHOULD KNOW ABOUT WATER QUALITY

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. If you are unsure of your water quality, you can obtain information from your local water supply authority.



## Water pH

pH is used as a measure of the water's alkalinity or acidity. pH should be between 6.5 and 7.5 for the proper life of the water heater. For low pH a corrosive resistant element can improve the life of the element. For high pH Low watts density elements and a lower temperature setting may be used to reduce scale build up on the element and in the tank

## SATURATION INDEX (SI)

The saturation index is based on pH and is used as a measure of the water's scaling properties. With positive SI calcium carbonate is deposited out of the water onto any hot metallic surface. Where SI is greater than +0.4 the water is very scaling. Low watts density elements and a lower temperature setting may be used to reduce scale build up on the element and in the tank. Where the saturation index exceeds +0.8 warranty will not apply to the copper tank or heating element. Water with an SI greater than +0.8 may be treated with a water softening device to reduce the SI of the water. For extreme water conditions a coated element may be available.

## PLASTIC TANKS

Rain water held in plastic tanks should be regularly checked for correct pH levels and adjusted to between 6.8 and 7.5. pH above or below these levels can cause corrosion and eventual failure of the water heater.

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

# WARRANTY

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

Component	Installation	Model	Warranty Period (since installation)	Warranty
All	All Installations	All Models	1 Year	New component or water heater (at Rheem's sole discretion) free of charge, including labour
Inner cylinder	Standard open vented installations		5 years	New water heater free of charge, excluding labour

## DURABILITY

Your Rheem water heater meets the durability requirements of New Zealand Building Code provided the water heater is:

1. Installed in accordance with the New Zealand Building Code and the Rheem Installation Instructions.
2. Maintained in accordance with these instructions.
3. Not damaged in any way.
4. Stored correctly prior to use, and
5. Your water quality remains within the requirements stated in the Installation Instructions.

## WARRANTY CONDITIONS

1. The water heater must be installed and maintained in accordance with the Rheem Installation Guides supplied with the water heater, and comply fully with all the requirements of the New Zealand Building Code.
2. The warranty applies to the faulty manufacture of the water heater only and does not cover any plumbing, gas fitting or electrical parts supplied by the installer, that are not an integral part of the water heater, e.g. pipe work, valves, electrical switches, pumps and fuses.

## WARRANTY INFORMATION

### WARRANTY EXCLUSIONS:

The Rheem Warranty does not cover repair or replacement work to the water heater or its components caused directly or indirectly by:

1. Accidental damage
  2. Acts of God
  3. Failure due to misuse
  4. Incorrect installation
  5. Attempts to repair the water heater, other than by a Rheem Authorised Service Centre, or the Rheem Service Department
  6. Excessive water pressure, negative pressure or excessive heat input
  7. Noncompliance with a) the Rheem Installation Instructions, b) relevant statutory regulations, c) New Zealand Building Code requirements.
- This warranty does not include any additional costs, for removing a heater where dismantling or removal of other materials is required, that is, walls, doors or roofs. Rheem New Zealand Limited will not pay claims for damage to furniture, carpets, walls, foundations or any other consequential loss either directly or indirectly due to leakage or other causes from a water heater.

Repairs to the water heater due to chemical/scale formation in waterways when the heater has been connected to a harmful water supply as outlined on page 7 of the owner's manual.

Service under this warranty can be provided by a **RHEEM AUTHORISED SERVICE CENTRE**.

Such services will be provided during their normal business hours.

Additional mileage and cartage charges shall be made for any water heater installed in a location exceeding 25km from the nearest Rheem Service Centre.

**Note:** You may have other rights in addition to this warranty under the "Consumer Guarantees Act 1993".

**RHEEM SERVICE DEPARTMENT, 475 Rosebank Road Avondale, Auckland Phone: 0800 657 335, Fax: 09 829 0222**

Or consult the Yellow Pages under "Plumbers" for your nearest Rheem Authorised Service Centre