Rheem

THERMAL SYSTEMS GROUP

Water to Water Heat Pump Installation, Maintenance and Service Manual

This booklet is to be carefully read and instructions followed for efficient and trouble free operation of the Rheem Thermal Hot water Heat Pump

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INTRODUCTION

Rheem Thermal Water to Water Hot Water Heat Pumps are available in sizes from 23kW to 352kW nominal output. The units are manufactured as water-to-water or ground-coupled design.

Each unit is a fully packaged unit, requiring only electrical and water connections to be made on installation. Circulation pumps are required for both hot and cold water sides of the system; these are not supplied and should be sized to ensure water flow specified is achieved.

Each unit is factory charged, with refrigerant R407c being ideally suited for commercial or industrial situations requiring hot water up to 61°C. Rheem Thermal also manufactures hot water heaters with R134a for 65°C.

The Rheem Thermal heat pump is installed to a wide diversity of commercial and industrial applications. The performance of the unit varies with ambient operating conditions, water flow, and water temperature and as such, selection should be done in conjunction with an experienced heat pump dealer or the manufacturer.

Rheem Thermal units are custom-manufactured to meet specific task / site requirements and a wide range of options is available in unit design.

This manual includes important information in regard to installation, operation, maintenance and servicing and should be retained for the life of the heater. Correct installation and familiarity with the operational guidelines is important.

Caution should be taken if soldering to avoid damage to thermostat sensor. Sensor should be removed prior to soldering and refitted once the pipe has cooled. The sensor is located in a well on the return water pipe.

SECTION 1 INSTALLATION

For validity of the Rheem Thermal warranty, installation must be carried out by registered trade person.

Delivery

- Reference should be made to the unit specifications to determine weight and lifting requirements.

- Packaging materials should be removed upon delivery so to avoid any sweating of the electrical compartment or potential staining to the case, particularly in tropical areas.

Site Location, Preparation & Unit Positioning

- Locating the Heat Pump close to other system equipment like filter, pump, tank, etc will minimise friction and heat losses in the water circuit.
- It is important that the Clearance Guidelines included in this Manual are read and understood. These guidelines set out the minimum clearance requirements in respect of servicing.
- Service access is required at both ends of the Heat Pump as per the Clearance Guidelines.
- Where multiple units are to be installed, minimum clearance requirements increase.
- The Heat Pump requires a firm base, say concrete slab. Rubber mounts should be installed between the unit and slab. Do **NOT** level the unit when mounting. Keep the 25mm fall towards drain.

Plumbing

- It is essential that the water recirculating pump and pipe sizes be engineered to suit the particular application, giving correct water flow through the heat pump as per the specification requirements of the unit. Inadequate or excessive water flow detracts from heating efficiency and can lead to damage to the unit. Selection of the recirculating pump must be made in accordance with the design flow rate and pressure as per the pump manufacturer's specification. See page 10 for recommended water flow rates.
- If unsure, contact Rheem Thermal for recommendations on the optimum flow rate. Assistance will be provided where possible in relation to plumbing design and pump selection.
- Water connections on the unit are clearly marked as water inlet and water outlet.
- The installation of breakable unions on both inlet and outlet pipes will facilitate maintenance and water drainage of the system. If the unit is situated below the tank level or an open holding tank, shut off valves should be fitted on the water side of both unions so that removal of the machine is possible without draining the system.
- Where multiple units are installed, the heaters must be installed in parallel to equalise pressure drops and balance flow through the heaters. Systems of two or more Heat Pumps require a manifold.
- All Plumbing should be carried out by qualified tradesman (plumber).

Water Quality

The heat pump must be installed in accordance with this advice to be covered by the Rheem Thermal warranty.

This heat pump 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 heat pump and its operation and / or life expectancy. If you are unsure of you water chemistry, you may be able to obtain information from your local water supply authority. This heat pump should only be connected to a water supply which complies with these guidelines for the Rheem Thermal warranty to apply.

Change of Water supply
The changing or alternating from one water supply to another, e.g. a rain water tank supply, bore water supply, desalinated water supply, public reticulated water supply or water bought in from another supply, then water chemistry should be tested to ensure the water supply meets the requirements given in these guidelines for the Rheem Thermal warranty to apply.

Saturation Index
The saturation index (SI) is used as a measure of the waters corrosive or scaling properties.
Where the saturation index is less than -1.0, the water is very corrosive and the Rheem Thermal warranty does not apply to the heat pump. In a corrosive water supply, the water can attack copper parts and cause them to fail.

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

Chloride and PH
Where the chloride level exceeds 250mg/l the Rheem Thermal warranty does not apply to the heat pump. In a high chloride water supply, the water can corrode stainless steel parts and cause them to fail.

Where the pH is less than 6.0 the Rheem Thermal warranty does not apply to the heat pump. pH is a measure of wether the water is alkaline or acid. In an acidic water supply, the water can attack stainless parts and cause them to fail.

Water with a pH less than 6.0 may be treated to raise the pH. The water supply from rainwater tank in a metropolitan area is likely to be corrosive due to the dissolution of atmospheric contaminants.

Summary of water advice affecting the Rheem Thermal warranty
The heat pump is not suitable for certain water chemistries. Those chemistries are listed below. If the heat pump is connected at any time to a water supply with the following chemistry, Rheem Thermal's warranty will not cover any resultant faults.

Water chemistry
Please maintain these water conditions or else Heat Exchanger failure may occur.
Saturation index (SI) > -1.0
Saturation index (SI) < +0.4
Chloride < 250 mg/L
pH >6.0

Electrical

- All electrical work must be carried out by licensed electricians and all the wiring should be carried out to AS/NZS3000 latest edition wiring standards.

- Refer to the internal electrical wiring diagram supplied with the units before proceeding with electrical work. As a minimum, cable and fuse sizing must be correct relative to the unit's specified requirements. Rheem Thermal's technical specification for each model nominates electrical demand information and minimum circuit size.

- For models up to 80 kW an isolating switch must be fitted adjacent to the Heat Pump, models above 100 kW have a factory installed isolation switch on the electrical panel.

- To install the unit, remove the electrical service panel. No conduit entry points are provided, the installer has to drill an appropriate hole in the desired location. Earth and Neutral wires need to be connected to the appropriate terminal. Line voltage to terminals L1 and L2 and L3 if unit is three phase. Every three phase unit comes with Phase sequencing relay therefore ensure connect correct phase connections during commissioning.

Control Design

All Rheem Thermal heat pumps intended for individual installation are manufactured with in-built thermostat control and refrigeration pressure safety controls.

- Typically, the thermostat is mounted on the outside panel and displays entering water temperature and/or leaving water temperature, with the sensor being located in a well to the inlet water and/or outlet water pipe inside the unit. 6 meter tank sensor may have provided out side of the unit.

For systems comprised of multiple Heat pump units, the thermostat sensor and well may be provided as follows depending on client requirement:

- Provided loose to allow installation of thermostat controller display in heat pump control panel (located separately to the heat pumps) with probe installed in the hot water storage tank.

The thermostat sensor is the controlling device in the heating system. This determines whether the heat pump unit should run and is activated in response to the parameters set for temperature control. That is, the heat pump will run when the entering water temperature (EWT) or tank temperature is less than the desired set point (normally with a 3°K split) and stop running when the EWT is a set point. The heat pump will likewise not run without water flow so there is a very direct link between the heat pump, hot water recirculating pump and thermostat controller.

The thermostat sensor can be located in the hot water tank with control wiring back to the water recirculating pump. The operation of the recirculating pump will be controlled by tank temperature, with water flow to the heat pump activating its operation. This approach reduces recirculating pump and heat pump run-hours and duty. Contact manufacturer at time of ordered to discuss wiring requirements.

There is also a safety feature fitted to the evaporator side of all AWW and RTWW units this is to prevent the water dropping below 5°C. This is to prevent possible freezing in the heat exchanger. If the water temperature drops below 5°C the Anti-freeze cut out will cut the whole system down. In the case of multiple stage units (2 or more compressors) there is Anti-freeze safety feature fitted to each evaporator. If any of these sense below 5°C the system will be shut down until the temperature rises again.

PRECAUTIONS

Where damage to property can occur in the event of the heat pump leaking, the unit must be installed in a drained drip tray in accordance with AS/NZS3500.4 and local codes and regulatory authority requirements.

The heat pump must be maintained in accordance with the Owners Guide and Installation Instructions.

If the heat pump is to be used in a commercial application, you should ensure that you have adequate redundancy within the heating system. This should ensure the continuity of heating in the event that the heat pump should become inoperable for any reason. We recommend that you seek advice from your Rheem Thermal representative or your specifier about your needs and building redundancy into your heating system.

In operating your heat pump, you should ensure that the hydraulic layout of the system is correct. Particular care should be given to ensure that excess pressure is not created to the heat pump's internal heat exchanger(s).

SECTION 2 COMMISSIONING

The Rheem Thermal heat pump is fully charged with refrigerant. The following checks should be carried out:

1. Installation and operation instructions should be read prior to commissioning.

2. The unit should stand on a firm level base but noting that it should have a small incline towards the condensate drainage inbuilt to the case (plumbing end).

3. Water connected correctly as indicated.

4. Any chemicals are introduced downstream of unit.

5. Condensate drain runs to waste.

6. Unit is wired correctly.

7. Unit is not to be started without flow of water.

8. The thermostat is set to the required parameters.

SECTION 3 OPERATION

1. The Heat Pump has an internal thermostat located in the return water pipe. Also it has storage tank water temperature sensor at the nominated set point. The normal operating range for storage tank water is between 55°C and 57°C.

2. As water usage occurs, mains water will enter the storage tank, lowering the overall stored water temperature, which in turn, activates the Heat Pump. The Heat Pump will run until the water temperature (at the sensing point) reaches set point.

Carel Tariff Thermostat Operation

The temperature shown in normal display mode is the entering water temperature, leaving water temperature and control temperature.

Operation occurs between the set point temperature and a lower set point, determined by the lag or DIFFERENTIAL programmed. Generally, the lag is negative 3°C, meaning that heating will occur at set point less 3°C. Heating will stop when set point is reached.

To check or adjust the current set-point temperature, reference should be made to the controller manufacturer's operating instructions provided with this documentation.

SECTION 4 PERIODIC MAINTENANCE

It is recommended minor maintenance be performed monthly by the dwelling or pool owner.

The minor maintenance includes:

1. Check condensate drain for blockages.
2. Ensure that water is not collecting in the base of the unit.

RECOMMENDED RHEEM THERMAL SERVICE PROCEDURE

1. In locations where ambient temperature can be very low, if unit is not used for a long period, it is essential to drain all water from unit to prevent ice build-up in water pipe-work.

2. Leak test refrigerant system once every 6 months.

3. Check correct function of pressure switches and solenoid valves if fitted.

4. Check thermostat operation.

5. Check condensate drain for blockages.

6. Check water inlet and outlet connections for any leaks.

7. Check current draw.

8. Check operating voltage at compressor terminal mains with load and at start-up.

9. For commercial installations, a program of servicing every four months is recommended and should be undertaken by a specialist refrigeration mechanic. For residential applications, an annual service program is recommended.

10. The unit casing is designed for outdoors installation and no specific maintenance should be necessary. If the case is cleaned, ensure that power to the unit is switched off.

Heat Exchanger Care

- Care should be taken of the heat exchanger by correct approach to the hydraulic layout of the installation and chemical treatment.

- It is fundamental that the nominated flow rate of the unit be maintained and pump selection should be made with knowledge of the target figure. Reference should be made the individual unit's specification with current requirements shown below. As specification data may vary with product development and/or where units are custom-manufactured, flow rates should be confirmed for validity with Rheem Thermal at the time of installation.

- If the hydraulic layout and recirculating pump capacity is seen to provide a flow well above the specified flow litres/sec or at excess pressure, then an external by-pass should be installed or alternatively, the pump flow should be moderated.

- For seasonal shut-downs, always allow water to pass through the heater, even if the heater is not being used. If the heater is isolated with chlorinated water or in its water piping, chlorine gases may corrode the heat exchanger. Rheem Thermal's warranty will be voided where chemical corrosion is clearly diagnosed as the cause of failure.

- For shutdowns in locations experiencing freezing conditions, the piping system and heater must be drained. The heater should be flushed with clean fresh water for several minutes to wash away all traces of chemicals, then drained. It is recommended that the entire system is purged using pressurised air to force remaining water from the system.

- If water enters the refrigeration system due to heat exchanger failure, contact supplier for advice.

Caution! Motorised diverter valves must never be installed so that they can move through a closed inlet position while the pump is operating and allow the system to pressurise. This situation will void the Rheem Thermal warranty and may significantly damage the hot water system and other system equipment.

Flowrate requirements Litres per second for Refrigerant R407c models			
Model	Model	Cond Water Flow lit/sec	Evap Water Flow lit/sec
AWW023SK#-JQ-1	RTWW023SK#-JQ-1	0.93	0.89
AWW023SK#-DQ-1	RTWW023SK#-DQ-1	0.94	0.91
AWW027SK#-DQ-1	RTWW027SK#-DQ-1	1.09	1.04
AWW037SK#-DQ-1	RTWW037SK#-DQ-1	1.47	1.43
AWW049SK#-DQ-1	RTWW049SK#-DQ-1	1.97	1.93
AWW064SK#-DQ-1	RTWW064SK#-DQ-1	2.55	2.46
AWW085SK#-DQ-1	RTWW085SK#-DQ-1	3.37	3.27
AWW098SK#-DQ-1	RTWW098SK#-DQ-1	3.95	3.85
AWW128SK#-DQ-1	RTWW128SK#-DQ-1	5.09	4.91
AWW170SK#-DQ-1	RTWW170SK#-DQ-1	6.8	6.58
AWW192SK#-DQ-1	RTWW192SK#-DQ-1	7.64	7.36
AWW212SK#-DQ-1	RTWW212SK#-DQ-1	8.48	8.23
AWW256SK#-DW-1	RTWW256SK#-DW-1	10.21	9.82
AWW340SK#-DQ-1	RTWW340SK#-DQ-1	13.53	13.01
AWW424SK#-DQ-1	RTWW424SK#-DQ-1	16.85	16.23
AWW520SK#-DQ-1	RTWW520SK#-DQ-1	20.7	20.02
Flowrate requirements Litres per second for Refrigerant R134a models			
AWW033SD#-DQ-1	RTWW033SD#-DQ-1	1.32	1.28
AWW045SD#-DQ-1	RTWW045SD#-DQ-1	1.78	1.71
AWW058SD#-DQ-1	RTWW058SD#-DQ-1	2.28	2.19
AWW071SD#-DQ-1	RTWW071SD#-DQ-1	2.84	2.73
AWW088SD#-DQ-1	RTWW088SD#-DQ-1	3.49	3.37
AWW116SD#-DQ-1	RTWW116SD#-DQ-1	4.57	4.38
AWW142SD#-DQ-1	RTWW142SD#-DQ-1	5.67	5.45
AWW176SD#-DQ-1	RTWW176SD#-DQ-1	7	6.74
AWW213SD#-DQ-1	RTWW213SD#-DQ-1	8.51	8.18
AWW264SD#-DQ-1	RTWW264SD#-DQ-1	10.5	10.11
AWW352SD#-DQ-1	RTWW352SD#-DQ-1	14	13.49

SERVICE ASSISTANCE

- ***Service must only be undertaken by properly authorised personnel***

You may contact Rheem Thermal directly on ☎02 9684 3684 or your local Rheem Thermal distributor to arrange for your service or recommend a qualified service organisation.

It will be necessary for you state the model number and serial number of your heater. This information will be found on the heater data plate.

SECTION 5 TROUBLESHOOTING

Machine Will Not Start

As a safety feature, the Heat Pump has a programmed time delay between provision of power and unit start, usually a few minutes. Wait for this time delay before making the following checks:

- Check electrical supply to the unit is ON.
- Check water flow
- Check electrical for loose connections and wiring.
- Check supply fuse.
- Check thermostat is correctly set.

Storage Tank Will Not Heat

- Check that thermostat is correctly set
- Check that both water pumps are running
- Check that inlet valves are not closed
- Check the safety low temperature thermostat has not stopped the unit

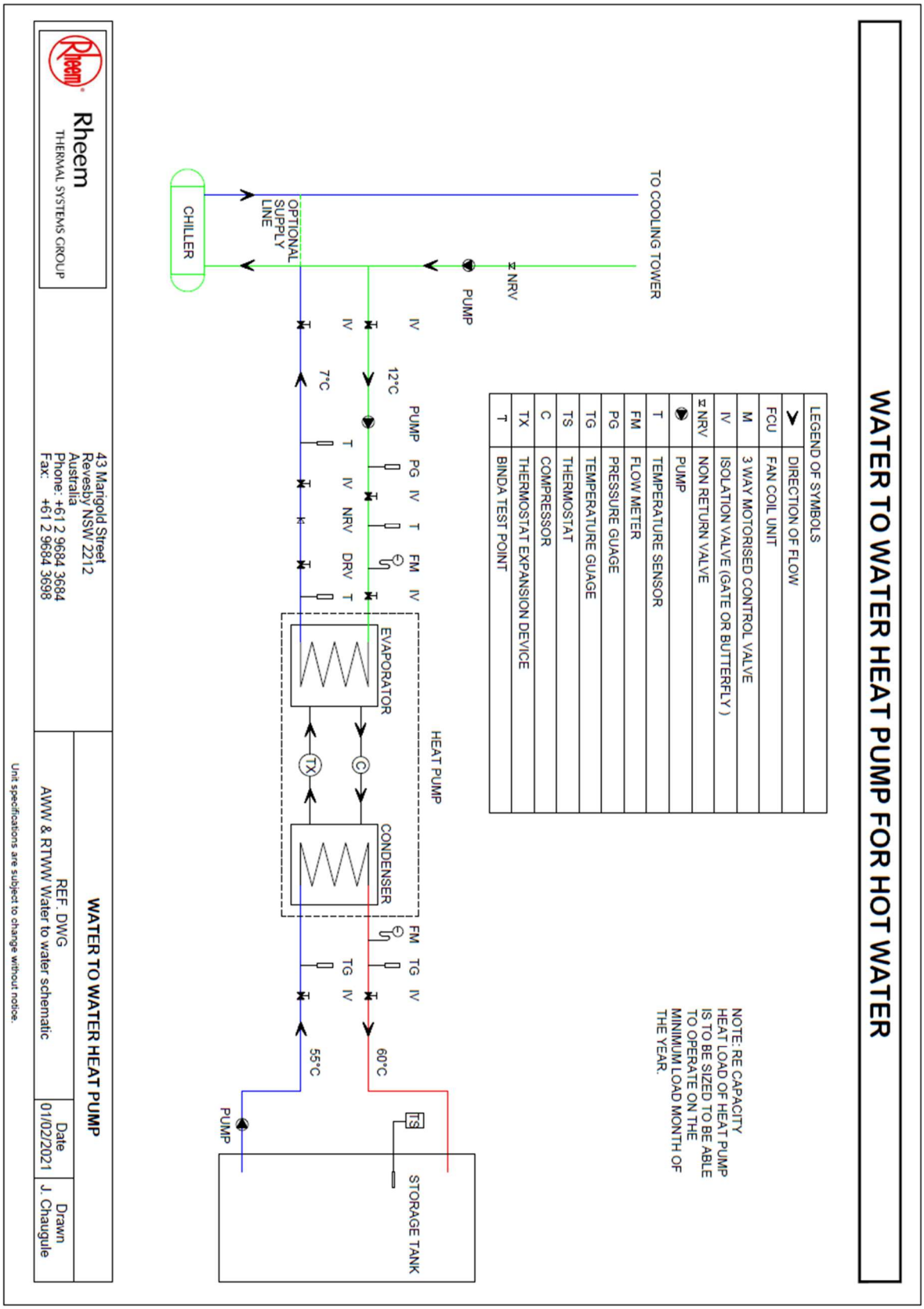
The temperature rise for a heat pump heating may seem slow, but the unit is probably working. Typically, heat pumps have a much lower KW per hour heat output capacity than gas and will need to operate for more time to deliver the same heat transfer.

Compressor Will Not Run

Possible Cause	***Possible Solution***
Overload switch cut-out (if fitted)	Find cause of overload and reset overload switch.
System stopped on safety lockout	A disturbance in water flow may have triggered the safety lockout. Reset unit by switching OFF, then back to ON. If unit does not respond, fit gauges and check refrigerant charge and HP/LP operation. Possible condenser water flow failure. Check condenser pump water entering temperature and flow rate.
Motor windings faulty	Contact manufacturer for replacement.

Compressor Motor Hums but Will Not Start

Possible Cause	***Possible Solution***
Low voltage	Provide adequate voltage.
Wrong motor connections	Check with name plate or wiring diagram.
Tight or seized compressor	Replace.
No power on one phase	Check circuit breakers, main switch and wiring for fault.


WATER TO WATER HEAT PUMP FOR HOT WATER
LEGEND OF SYMBOLS
DIRECTION OF FLOW
FCU FAN COIL UNIT
M 3 WAY MOTORISED CONTROL VALVE
IV ISOLATION VALVE (GATE OR BUTTERFLY)
NRV NON RETURN VALVE
PUMP
T TEMPERATURE SENSOR
FM FLOW METER
PG PRESSURE GUAGE
TG TEMPERATURE GUAGE
TS THERMOSTAT
C COMPRESSOR
TX THERMOSTAT EXPANSION DEVICE
T BINDA TEST POINT
NOTE: RE CAPACITY HEAT LOAD OF HEAT PUMP IS TO BE SIZED TO BE ABLE TO OPERATE ON THE MINIMUM LOAD MONTH OF THE YEAR.
TO COOLING TOWER
NRV
PUMP
CHILLER
OPTIONAL SUPPLY LINE
IV
12°C
7°C
PUMP PG IV T FM IV
T IV NRV DRV T
EVAPORATOR
CONDENSER
HEAT PUMP
TX
C
FM TG IV
TG IV
60°C
55°C
PUMP
TS
STORAGE TANK
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WATER TO WATER HEAT PUMP
REF. DWG
AWW & RTWW Water to water schematic
Date
01/02/2021
Drawn
J. Chaugule
Unit specifications are subject to change without notice.

SECTION 7 RHEEM THERMAL WARRANTY - AWW & RTWW SERIES

1. THE RHEEM THERMAL WARRANTY – GENERAL

1.1 This warranty is given by Rheem Thermal Air Pty Limited ABN 28 062 383 224 of 43 Marigold Street, Revesby, New South Wales 2212.

1.2 For the purposes of this document, the Rheem Thermal heat pump water heater is referred to as the "unit".

1.3 Rheem Thermal offer a trained and qualified national service network who will repair or replace components at the address of the heat pump subject to the terms of the Rheem Thermal warranty. Rheem Thermal Service, in addition can provide preventative maintenance and advice on the operation of the unit. The Rheem Thermal Service contact number is **02 9684 3684** with service personnel available to take your call from 8.30am to 5.00pm Monday to Friday, (hours subject to change).

1.4 For details about this warranty, you can contact us on **02 9684 3684**

1.5 The terms of this warranty are set out in Section 2 and apply to units manufactured after 1st January 2012.

1.6 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.

1.7 The application of the Warranty is dependent on payment for the unit being made in accordance with the Company's Standard Terms and Conditions.

2. TERMS OF THE RHEEM THERMAL AIR WARRANTY AND EXCLUSIONS TO IT

2.1 The warranty period will commence from the end user's date of purchase.

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

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

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

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

2.6 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 or walls and the cost of any special equipment to bring the pool 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 Thermal unit in its original installed location and any genuine Rheem Thermal replacement parts.

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

a) Accidental damage to the unit 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 unit.
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 unit is installed.
d) Connection at any time of the unit in anyway which does not comply with the guidelines as outlined in the Owner's Guide and Installation Instructions.
e) Repairs, attempts to repair or modifications to the unit by a person other than Rheem Thermal Service or an Rheem Thermal Accredited Service Agent.
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 where freight is arranged by others.
i) Fair wear and tear from adverse conditions (for example, corrosion).
j) Cosmetic defects.

2.9 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 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.

2.10 This warranty is not applicable if the installation of the unit is carried out by an installer not approved by Rheem Thermal or persons who are not qualified to do so in the opinion of Rheem Thermal.

2.11 Unless a titanium heat exchanger is fitted, this warranty does not cover repair or replacement of the Heat Exchanger due to corrosion caused by use of poor quality water not complying with the following

a) pH to be maintained between 7.0 and 8.0
b) alkalinity not exceeding 200ppm

2.12 Where a titanium heat exchanger is fitted, the extended warranty protects against failure due to water imbalance. The warranty is not applicable if failure is caused due to hydraulic damage, such as excess pressure. The extended parts warranty covers the cost of a replacement heat exchanger but excludes labour or associated costs or the cost of any subsequent damage, of any type.

2.13 This warranty does not cover the replacement or replenish of refrigerant within the unit.

2.14 It is a condition of warranty that the customer has stipulated correctly and precisely the capacity and performance required of the System and the conditions under which the System shall operate. Any performance figures given by us in the Quotation or mentioned or referred to in or prior to the contract are such as we expect to obtain on test but are not guaranteed. All such performance figures whether analytical or financial are estimates only and the customer must independently satisfy itself as to their accuracy and completeness.

Failure to perform as duly specified shall be notified to us in writing and we shall be given every reasonable facility to investigate the cause of the failure and to recommend remedial action.

If it is clearly established that the fault is due to an error in calculation by us or failure by our employees to carry out instructions, the fault shall be rectified by us in as reasonable a period of time as possible and at no cost to the Customer. Should the remedial action fail to achieve the designed performance the limit of our liability either the negligence or for breach of statutory duty or otherwise shall be for us to remove the equipment at our expense or to refund to the buyer the purchase price in full.

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

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

Series	What components are covered	The period in which the fault must appear in order to be covered	What coverage you receive
HW, HWP, HWW & HWWP	Major Parts*	Years 1 to 2	Repair and/or replacement of the faulty parts, free of charge, when installed for the purpose of heating a pool or spa. Labour is not covered in the 2nd year.
	Minor Parts*	Year 1	Repair and/or replacement of the faulty parts, free of charge, when installed for the purpose of heating a pool or spa
	Protection of the heat exchanger due to chemical corrosion	Years 1 to 10	Repair and/or replacement of the faulty parts, free of charge, when installed for the purpose of heating a pool or spa, Labour is not covered in the 2nd year onwards.
All above models	Labour	Year 1	Repair and/or replacement of the faulty parts, free of charge

- For the purposes of this warranty, Major Parts are defined as compressors, heat exchangers and evaporators. Minor Parts are defined as the remainder of the unit including refrigeration piping, valves, fans, electrical components and refrigerant.

- **ENTITLEMENT TO MAKE A CLAIM UNDER THIS WARRANTY**

- 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 Thermal Service without undue delay after detection of the defect and, in any event, within the applicable warranty period.
- 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 Australia.

- **HOW TO MAKE A CLAIM UNDER THIS WARRANTY**

- If you wish to make a claim under this warranty, you need to:
- Contact Rheem Thermal on 02 9684 3684 and provide owner's details, address of the unit, a contact number and date of installation of the heater or if that's unavailable, the date of manufacture, model and serial number (from the rating label on the heater)
- Rheem Thermal will arrange for the heater to be tested and assessed on-site.
- If Rheem Thermal determines that you have a valid warranty claim, Rheem Thermal will repair or replace the heater in accordance with this warranty
- Any expenses incurred in the making of a claim under this warranty will be borne by you.

- **THE AUSTRALIAN CONSUMER LAW**

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

- **INTERNATIONAL WARRANTY PROVISIONS**

- Contact Rheem Thermal for international warranty terms and conditions**.**