

Rinnai



Owner's Manual

80L to 400L Electric Storage Water Heaters

Models: RIN80E24
RIN80E36
RIN125E24
RIN125E36
RIN160E24
RIN160E36
RIN250E36
RIN315E36
RIN400E36

Installation Details

Owner's Information

For advice, repairs and service, call:

1300 555 545



Carefully remove all packaging and transit protection from the heater before installation. Dispose of the packaging responsibly using re-cycling facilities where they exist.



Specifications and materials may change without notice.

Effective for all 80L to 400L electric storage water heaters manufactured and sold after 1st May 2011.

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Installation Details

Installation Requirements

This water heater must be installed by a licensed tradesperson, and in accordance with:

- AS/NZS3500.4.2 "National Plumbing and Drainage Code Hot Water Supply Systems – Acceptable Solutions".
- AS/NZS3000.
- Local authority regulations.
- Outside Australia and New Zealand, please refer to local plumbing and building codes and regulations.
- Notice to Victorian customers from the Victorian Plumbing Industry Commission – 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.

Water Supply Pressure

This water heater is designed for direct connection to water supply pressures of:

80 Litre model – 800kPa

125 Litre model – 800kPa

160 Litre model – 800kPa

250 Litre model – 680kPa

315 Litre model – 680kPa

400 Litre model – 680kPa

Where the mains pressure can exceed or fluctuate beyond the pressure shown above, a pressure limiting device (complying with AS1357) must be fitted in the cold water inlet supply. This device must be installed after the isolating valve and set below the pressure shown above. Note that during periods of lower demand, water pressure may increase.

Caution: This water heater delivers hot water at temperatures exceeding 50°C. Refer to AS/NZS3500 and local regulations regarding the need for additional hot water delivery temperature control.

Pool Heating

This water heater must **not** be used for pool heating.

Installation Details

Location

The water heater should be located as close as possible to the most frequently used hot water outlet. Adequate access must be made for service to the element, thermostat, relief valve and anode. Ensure that the data plate is clearly visible.

Note: All models are equipped with a sacrificial anode, accessible through the top cover. Allow 50% of the height of the water heater for clearance above to replace the anode.

We recommend a plinth be installed under the water heater where the water heater is subjected to wet conditions.

A properly drained overflow tray must be used where property damage could occur from water spillage. (See AS/NZS3500.4.2 for further details.)

When installing this water heater in a roof area as a mains pressure unit, refer to local regulations.

Note: The warranty does not cover damage due to leakage of the water heater.

Plumbing Connections

Pressure & Temperature Relief Valve

The Pressure & Temperature Relief Valve is supplied loose with the water heater.

Please refer to the specifications table on page 6 for the valve ratings.

The PTR valve must be installed directly into the top socket marked "RELIEF VALVE". The drain line from this valve must run in a continuously downward direction in a frost-free ambient position with the discharge end left open to atmosphere permanently.

The PTR Valve is not intended to enable connection of the water heater to supplementary energy sources such as solar panels or slow combustion stoves (refer AS/NZS 3500.4 for guidance on these types of installations).

Open the PTR Valve for approximately 10 seconds by lifting the lever on the valve to ensure water is relieved to waste through the relief drain pipe. Lower lever gently and check that it closes correctly.

The PTR Valve must not be tampered with or removed. The water heater must not be operated unless this valve is fitted and in working order.

The PTR Valve should be checked for adequate performance or replaced at intervals not exceeding 5 years, or less in areas where local regulations apply.

Important: The PTR Valve and its drain outlet pipe must not be sealed or

blocked. It is normal for the PTR valve to leak a small amount of water during heating cycles.

Danger

Failure to operate the relief valve easing lever at least once every six (6) months may result in a problem with the water heater and in some cases the tank may explode.

Warning: A separate drain line must be run for this relief valve. It is not permitted to couple drain lines from relief valves into a single common drain line.

Note: Brass plugs are supplied with the water heater to plug off the unused fittings. Ensure that a sealing material is applied to the plugs to prevent leaking.

Cold Water Connection

An approved isolating valve, non return valve, line strainer (optional but recommended), and union must be fitted between the supply main and either of the RP $\frac{3}{4}$ /20 sockets marked "Inlet" at the bottom of the water heater. All fittings must be approved by the relevant Authority. See the diagram on page 4 for details.

Note for S.A. and W.A.: It is a state requirement that a pressure relief valve be fitted on the cold water supply line between the non return valve and the water heater. See the diagram on page 4 for details.

Plumbing Connections

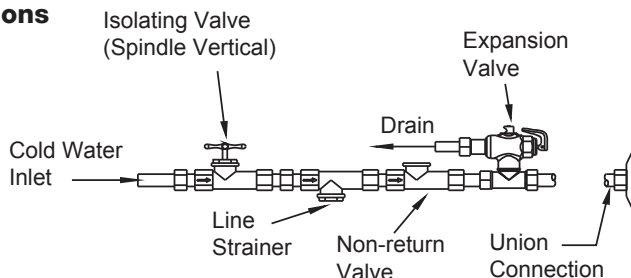
Hot Water Connection

The hot water pipe should be connected to either of the RP $\frac{3}{4}$ /20 sockets marked OUTLET at the top of the unit. For the most economical operation of the water heater, it is recommended that all hot water lines are insulated. Please check local regulations regarding the use of hot water supply pipework that are not made of copper.

Temperature Protection

Water heaters can produce very hot water. To reduce the risk of scald injury, it is mandatory under the requirements of Australian Standard AS/NZS3500.4.2 that a suitably approved temperature control device be fitted to the hot water supply to outlets used primarily for personal hygiene. This valve should be checked at regular intervals to ensure its operation and settings remain correct.

Inlet Connections



Note: a combined isolating valve/non-return valve/line strainer may be used. Expansion valve only required where local regulations demand.

Electrical Connection

This water heater is designed for single phase 240V A.C supply only. The electrical connection must comply with Local Supply Authority Regulations and AS/NZS3000.

For models pre-wired with a flexible lead, if the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified person in order to avoid hazard.

For models not pre-wired with a flexible lead, connections are made at the terminal block inside the water heater, and a means for disconnection must be incorporated in accordance with the wiring rules.

Entry to the connection area is through the hole beneath the element cover, designed to accept a 20mm conduit. The element cover may be removed by undoing the two screws on the cover and sliding the cover downwards to disengage the top edge. Ensure that the conduit entry is well sealed to achieve correct weatherproofing.

Note: This water heater is fitted with a thermostat and over-temperature energy cut-out. Under no circumstances should the water heater be operated without both these devices being in the circuit. Replacement must be carried out only by a qualified electrician or the manufacturer.

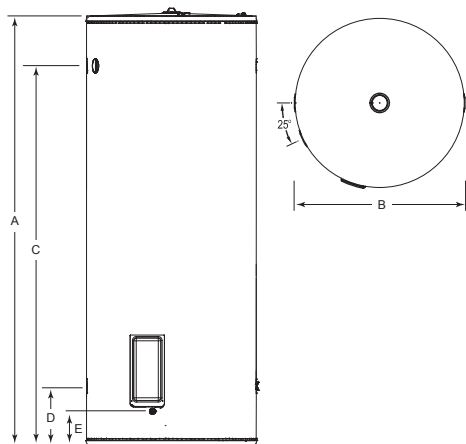
Danger: The operation of the thermal cut-out indicates a possibly dangerous situation. Do NOT reset the thermal cutout until the water heater has been serviced by a qualified person.

Caution: Water heater must be filled with water before turning on the electricity supply.

Electrician: Press the reset button on thermostat to ensure over-temperature cut-out is set.

When supply wiring has been connected, supply wires must be kept lower than the terminal block.

Specifications



Nominal Dimensions						
Tank Size	80L	125L	160L	250L	315L	400L
Total Height (A)	925	1062	1317	1444	1754	1703
Total Diameter (B)	490	532	532	617	617	705
Outlet Height (C)	750	857	1112	1231	1541	1466
Inlet Height (D)	175	206	206	215	215	240
Electrical Entry (E)	80	116	116	125	125	150

Specifications						
Tank Size	80L	125L	160L	250L	315L	400L
Storage Capacity (L)	90	128	164	259	324	416
Hot Water Delivery (L)	80	125	160	250	315	400
Twin Element Boost	—	—	—	—	—	—
Net Weight Empty (kg)	40	48	59	88	103	114
Element(s) Sizes (kW)	2.4, 3.6	2.4, 3.6	2.4, 3.6	3.6	3.6	3.6
Relief Valve:						
Pressure (kPa)	1000	1000	1000	850	850	850
Temperature (°C)	99					
Power Rating (kW)	10kW					

Operating Instructions

Safety

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children and animals should be supervised to ensure that they do not interfere with the appliance.

Filling The Water Heater

Open all hot water taps. Open isolating valve at the cold water inlet slowly and allow water heater to fill until water flows through the system. Close each hot water tap after the air is expelled from its line. As noted previously power is not to be turned on until the water heater is filled with water.

Water Quality

Your Rinnai water heater has been manufactured to suit water conditions of most Australian metropolitan supplies. Please note that harsh water supplies can have a detrimental effect on the water heater and its life expectancy. If you are unsure about your water quality you can obtain information from your local water supply authority.

The water heater is 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 600mg/L it is possible that the magnesium alloy anode (supplied in the heater) may become over-reactive. To alleviate this, the magnesium alloy anode should be replaced with an aluminium alloy anode, available from your local Rinnai supplier.

Water can also be very corrosive, the measure of this is the saturation index. If the water saturation index is greater than 0.40, an expansion control valve should be fitted. If the index is greater than 0.80, the water heater installed should be a Hard Water Model. Please consult our Service Department for advice if required.

Caution

If the water heater is left in an operating condition and unused for two weeks or more, a quantity of hydrogen (which is highly flammable) may accumulate in the top of the water cylinder. To dissipate this gas safely it is recommended that a hot tap be turned on for several minutes at a sink, basin or bath, but not a dishwasher, clothes washer or other appliance. During this procedure there must be no smoking, open flame or any other electrical appliance operating nearby. If hydrogen is discharged through the tap it will probably make an unusual sound as with air escaping.

Where the water heater is not installed in accordance with the listed advice, the water heater will not be covered by the Terms of Warranty.

Safety Information

Warning

For safe performance, this water heater is fitted with:

1. Combination Thermostat and over-temperature energy cut-out.
2. Combination Pressure & Temperature 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 in working order. **The element(s) cover should be removed only by an electrician.**

The electrical power supply switch must be turned off and the fuse removed or the circuit breaker isolated at the main electrical supply switchboard before the water heater electrical cover is removed.

Open the PTR Valve for approximately 10 seconds by lifting the lever on the valve to ensure water is relieved to waste through the relief drain pipe. Lower lever gently and check that it closes correctly.

The PTR Valve must not be tampered with or removed. The water heater must not be operated unless this valve is fitted and in working order.

The PTR Valve should be checked for adequate performance or replaced at intervals not exceeding 5 years, or less in areas where local regulations apply.

Important

The PTR Valve and its drain outlet pipe must not be sealed or blocked. It is normal for the PTR valve to leak a small amount of water during heating cycles.

Danger

Failure to operate the relief valve easing lever at least once every six (6) months may result in a problem with the water heater and in some cases the tank may explode.

Service Information

Six Monthly Service (By Owner)

Operate the Pressure & Temperature Relief Valve for approximately 10 seconds by operating the easing lever on the valve to ensure water is relieved to waste through the relief drain pipe. Check to ensure the valve closes correctly.

Five Year Service (By Authorised Personnel Only)

The five yearly service should be carried out by a licensed tradesperson. It is recommended that this service be carried out by your local Rinnai agent.

The service should include the following:

- Replace the Pressure & Temperature Relief Valve.
- Replace the anode. (in areas of harsh or adverse water conditions it is recommended that you carry out a more frequent check of your anode's condition, refer Operating Instructions "Water Quality")
- Flush the water heater by doing the following:
 - i. Turn off the power.
 - ii. Turn off the cold water supply to the water heater at the isolating valve.
 - iii. Gently operate the easing lever on the Pressure & Temperature Relief Valve to release the pressure in the water heater.
 - iv. Disconnect the cold water inlet union to the heater and attach a drain hose.
 - v. Gently operate the Pressure & Temperature Relief Valve to let air into the heater and allow water to escape through the hose.
 - vi. To flush the heater, carry out steps (i) to (iv) above. Disconnect the hot water inlet union and attach a water supply hose to the heater. Turn on the water supply.
 - vii. Flush the heater until clear water appears. Reconnect all fittings, fill the heater and restore the electricity supply.

Troubleshooting

What Should I Check Before Making A Service Call?

If there is not enough hot water, it is recommended that the following points be considered before making a service call. If after checking the following points the problem has not been identified, please contact Rinnai on 1300 555 545.

No Hot Water

- Is the Pressure & Temperature Relief Valve discharging too much water?
- Do you have the correct size water heater for your requirements? Sizing details are available from your Rinnai supplier.
- Is one outlet (such as the shower) using more hot water than you think?
- Carefully review the family's hot water usage and if necessary check the shower flow rates with a bucket, measuring the amount of water used over that period of time. If it is not possible to adjust water usage patterns, an inexpensive flow control valve can easily be fitted to the shower outlet.
- Consider that during night time heating, the time taken to heat the tank can take longer so you may find that the tank has not fully recovered from a period of heavy usage the previous evening.
- Consider that often the hot water usage of showers, washing machines and dishwashers can be under estimated. Review these appliances to determine if your daily usage is greater than the storage volume of your water heater. For example, if you have a 315 litre storage tank and you are using 450 litres of water it is possible that there will be certain times of the day where there is insufficient hot water. It is also advisable to inspect tap washers etc. for leakage and replace if necessary.
- Is there a leaking hot water pipe or dripping hot water tap? A small leak can waste a large quantity of hot water.
- Replace faulty tap washers and have your plumber rectify any leaking pipe work.

Troubleshooting

Water Discharge from the PTR Valve

Pressure & Temperature Relief Valve (PTR)

It is normal for the PTR to allow a small quantity of water to escape during the heating cycle. The amount of discharge will depend on hot water usage.

Continuous trickle (PTR)

This is most likely due to a build up of foreign matter. In this case try gently raising the easing lever on the Pressure & Temperature Relief Valve for a few seconds then release gently. This may dislodge a small particle of foreign matter and rectify the fault.

Steady flow (PTR) – more than 20L per day

This may be caused by excessive water supply pressure, a faulty Pressure & Temperature Relief Valve or a faulty thermostat. Turn off the electricity supply and contact Rinnai.

High Electricity Bills

- Is the Pressure & Temperature Relief Valve discharging too much water?
- Is one outlet (such as the shower) using more hot water than you think? See “No Hot Water”.
- Is there a leaking hot water pipe or dripping hot water tap? A small leak can waste a large quantity of hot water.
- Replace faulty tap washers and have your plumber rectify any leaking pipework.

Warranty

Terms of Warranty and Replacement Guarantee

Applies only to models where the model number commences with RIN, for example RIN80E24.

The benefits to the consumer given by this warranty are in addition to all other rights and remedies of the consumer under a law in relation to the goods or services to which the warranty relates.

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 RINNAI HOTFLO HOT WATER UNIT THAT YOU HAVE PURCHASED COMES WITH A COMPREHENSIVE 1 YEAR PARTS AND LABOUR WARRANTY AND A GUARANTEE TO REPLACE YOUR HOT WATER UNIT IF THE INNER CYLINDER FAILS WITHIN 7 YEARS under domestic use. Domestic use is defined as follows:

1. Water heaters installed to supply heated water to domestic dwellings.
2. Water heaters installed to supply heated water to commercial installations such as motel units, hotel rooms, caravans, mobile

homes, nursing homes, retirement village complexes and other care institutions and like accommodation.

This water heater comes with a comprehensive one year parts and labour warranty under commercial use. Commercial use is defined as water heaters used in applications other than domestic use and include premises such as commercial and industrial buildings, cafes, caravan parks and sporting complexes, but not limited to these.

"Commercial Use" warranty applies to:

1. Water heater(s) supplying central shower blocks.
2. Water heater(s) supplying kitchens used for the bulk preparation of food.
3. Water heater(s) used in commercial or industrial heating processes.
4. Water heater(s) used in hydronic space heating installations.
5. Any application that uses Rinnai water heater(s) in conjunction with building flow and return systems.
6. Water heater(s) installed as component(s) of centralised bulk hot water system(s).

The terms of the Warranty and replacement guarantee are set out below.

This warranty applies to products which

Warranty

are manufactured on or after the date of publication of this warranty but before the next date of publication of this warranty.

No warranties except those implied and that by law cannot be excluded are given by Rinnai in respect of Goods supplied. Where it is lawful to do so, the liability of Rinnai for a breach of a condition or warranty is limited to the repair or replacement of the Goods, the supply of equivalent Goods, the payment of the cost of repairing or replacing the Goods or acquiring equivalent Goods as determined by Rinnai.

Rinnai is responsible for reasonable costs associated with legitimate warranty claims, including call-out of an authorised Rinnai service provider to inspect the faulty product. Rinnai is not responsible for:

- a. costs for tradespeople that are not authorised Rinnai service providers; or
- b. any costs, including call-out costs for an authorised Rinnai service provider, associated with a product which is determined upon inspection not to be covered by this warranty.

The consumer will be reimbursed by Rinnai for any reasonable costs associated with making a legitimate warranty claim against Rinnai which are not otherwise specified above.

Enquiries relating to Warranty claims for Rinnai products or services must be made by contacting Rinnai Australia. Contact details are on the back of this document.

Warranty (Domestic and Commercial use)

1. Your hot water unit and its components are covered by a 1 year warranty against defective factory parts or workmanship from the date your hot water unit is installed. If the date of installation is unknown, the warranty commences 2 months after the date of manufacture (which can be found on the data plate on the hot water unit).
2. This warranty is for normal use of the hot water unit and covers the repair and/or replacement of any failed component in the hot water unit or where necessary, the hot water unit itself. Under this warranty Rinnai will repair or replace the component or hot water unit free of charge.
3. The warranty only applies to defects in the hot water unit which have arisen solely due to faulty materials or workmanship.

Replacement Guarantee (Domestic use only)

4. If an inner cylinder fails on a Rinnai hot water unit within a further 6

Warranty

years after the end of the 1 year warranty period Rinnai will provide a free replacement hot water unit at the nearest approved Rinnai agent or Rinnai office to the owner's home.

Under this replacement guarantee, the transport, installation and labour costs of delivering the replacement hot water unit and removing the existing hot water unit will be charged to the owner of the existing hot water unit.

Scope of Warranty and Guarantee

5. The warranty and replacement guarantee do not apply to any defects or damage not due to faulty factory parts or workmanship, including but not limited to defects or damage caused by or resulting from:
 - a. accidental damage, abuse, misuse, maltreatment, abnormal stress or strain, harsh or adverse water conditions, contamination or corrosion from particles in the water supply, excessive water pressure or temperature or neglect of any kind to the hot water unit or its components.
 - b. alteration or repair of the hot water unit other than by an approved Rinnai agent or a Technician of a gas or electricity utility approved by Rinnai.
 - c. attachment of any parts or accessories other than those manufactured or approved by Rinnai; and
 - d. faulty or improper installation of the hot water unit, including installation other than in accordance with the instructions contained in the owner's manual supplied with the unit.
6. The warranty only applies to the hot water unit and/or components in the hot water unit and does not cover any plumbing or associated parts, including but not limited to, pressure limiting valves, stop cocks, non return valves, electrical switches, pumps or fuses, supplied by any person installing the hot water unit.
7. Where a hot water unit or a component in a hot water unit is replaced by Rinnai, the balance of any original warranty or replacement guarantee period will remain effective. The replacement part or hot water unit does not carry any additional warranty or replacement guarantee.
8. Where the warranty applies but the hot water unit is installed or located in a position that does not comply with the Rinnai installation instructions or any relevant statutory requirements, the owner of the hot water unit will be responsible for the costs of:
 - a. the dismantling or removal of cupboards, doors, walls of special equipment and

Warranty

- b. any labour required to gain access to and to bring the unit to a position that complies with the installation instructions or relevant statutory requirements.
9. Any claim under the warranty or replacement guarantee must include full details of the defect and/or damage to the hot water unit and/or component in the hot water unit. All claims must be made within one month of the detection of the defect.
10. This warranty applies to water heaters connected to a water supply where the water chemistry and impurity levels do not exceed the limits specified in Table 1 below. The water supply from water utilities is deemed to comply with these requirements.

This warranty does not apply to water heaters connected to water supplies if the water chemistry and impurity levels exceed the limits specified in Table 1 below. Examples of water supplies where chemistry and impurity levels may exceed the limits specified in Table 1 include but are not limited to private bores, private dams and water from water utilities where the chemistry is deliberately altered by parties other than the water utility before supplying the water heater.

11. This warranty does not apply to damage caused by sludge and/or sediment in the water supply.

Table 1 – Water Characteristics

Total Dissolved Solids (TDS) mg/Litre or ppm	Hard-ness (as CaCO ₃) mg/Litre or ppm	Saturation Index (Langelier)	pH	Dissolved CO ₂ mg/Litre or ppm	Chlorides mg/Litre or ppm
2500*	200	+0.4 to – 1.0 @ 65°C	5.5 to 9.5	Not Applicable	Not Applicable

* For TDS levels up to and including 600mg/litre the Rinnai magnesium based anode is to be used. This is the anode fitted during manufacture of the cylinder. For TDS levels greater than 600mg/litre and not exceeding 2500mg/litre the Rinnai aluminium based anode is to be used. This anode can be fitted by Rinnai or an authorised person. This warranty does not apply if the TDS exceeds 2500mg/litre.

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HOTFLO *ELECTRIC*

Owner's Manual 80L to 400L Electric Storage Water Heaters



Serial Number

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Rinnai has a Service and Spare Parts network with personnel who are fully trained and equipped to give the best service on your Rinnai appliance. If your appliance requires service, please call our Hot Water Service Line.

Internet: www.rinnai.com.au E-mail: enquiry@rinnai.com.au

National Help Line

Customer Care Centre
Tel: 1300 555 545* Fax: 1300 555 655*

**Cost of a local call higher from mobile or public phones.*
Hot Water Service Line
Tel: 1800 000 340