INFINITY continuous flow water heaters

Operation guide

Rinnai

Important

This guide is applicable for continuous flow water heaters manufactured from 2019 onwards serial number 18.12-xxxx.

This appliance must be installed in accordance with:
- Manufacturer's installation instructions
- Current AS/NZS 3000, AS/NZS 3500, AS/NZS 5601.1 and G12/AS1

For use with Natural Gas or Universal LPG as indicated on the appliance.

- Not suitable as a spa or swimming pool heater.
- Not suitable for hydronic applications.
- The EF26 and A-Series external models are not suitable for solar installations.

Appliance must be installed, commissioned, serviced, and removed by an authorised person, being in New Zealand a licensed gasfitter.

Warning
Improper installation, adjustment, alteration, service and maintenance can cause property damage, personal injury or loss of life.

For more information about buying, using, and servicing of Rinnai appliances call: 0800 RINNAI (0800 746 624).

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Continuous flow water heaters require regular maintenance and servicing. For reliable operation Rinnai INFINITY continuous flow water heaters, in residential applications, should be serviced **every two years**.

Warning about hot water

Excessively hot water is dangerous. Rinnai INFINITY continuous flow water heaters, through the use of water controllers, allow you to control the temperature of hot water to safe levels.

Always

- Test the water temperature with your elbow before placing your child in the bath, and feel the water yourself before bathing or showering.
- Supervise children whenever they are in the bathroom.
- Make sure the hot water tap is turned off.

Consider

Installing child proof tap covers or child resistant taps, both will prevent a child being able to turn on a tap.

Never

Leave a toddler in the care of another child. They may not understand the need to have the water temperature set at a safe level.

Safety and important messages

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 should be supervised to ensure they do not play with the appliance.

If the supply cord is damaged, it must be replaced by a licensed tradesperson. This must be a genuine replacement part available from Rinnai.

DO NOT:

- Touch the unit cover or the flue outlet
- Insert objects into the flue outlet
- Spray water directly into the flue outlet
- Spray aerosols in the vicinity of this appliance while it is operating
- Use or store flammable materials near this appliance
- Place articles on or against the water heater
- Store pool chemicals near this appliance
- Modify this appliance

Keep trees, shrubs, and other obstructions well clear of the flue outlet.

About your water heater

Before using or operating your water heater, ensure your installer talks to you about the use and care of this appliance, and that you understand these instructions.

Your installer needs to complete their details at the back of this guide, and the commissioning checklist supplied with the unit—this verifies the water heater has been installed and commissioned correctly.

The installer needs to leave the commissioning checklist and this operation guide with you.

Damage prevention in freezing conditions

IMPORTANT

Rinnai INFINITY water heaters require power to prevent damage in freezing conditions. DO NOT disconnect the power if there is a likelihood of freezing without draining the water heater. Instructions for draining the water heater can be found on p.10.

How the water heater operates

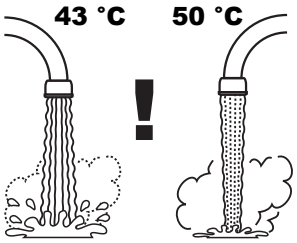
The burner lights automatically when the hot water tap is opened, and goes out when the tap is closed. Ignition is electronic, there is no pilot light. When the hot water tap is off there is no gas used.

In the event of a power failure

The water heater will not operate without electricity. If the power fails water heating will cease. When the power is restored the water flow may need to be stopped and restarted (and a controller, if fitted, switched on) in order for water heating to continue.

Water flow

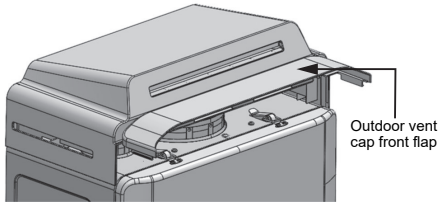
The flow will vary slightly depending on the incoming water temperature and temperature selected. For example, the water flow will be higher at 43 °C than at 50 °C.



There is also a minimum flow rate required for the continuous flow unit to start, so if a hot water tap is only opened a fraction, there may not be enough flow to start the unit.

Strong winds - outdoor unit (NB-Series external model only)

In strong winds, the outdoor unit front flap may blow open, which can negatively affect the unit's performance. Check the front flap in high winds and close if necessary.



General information

Frost protection
Frost protection is fitted as standard on all models. Frost protection operates automatically, as required, whenever the appliance is connected to power.

If the power has failed and there is a risk of damage from frost, turn off the gas supply to the unit and open a tap to allow flow through the unit, this may prevent damage from freezing.

If the INFINITY is not going to be used for a period and the power supply is disconnected, turn off the water and gas supplies, and arrange for a plumber to drain the water to prevent frost damage. If for practical reasons a plumber is unable to drain the INFINITY, there is an instruction on p.10.

Installation by a licensed tradesperson
Only a licensed tradesperson can install, adjust, maintain, and service this water heater. Any work carried out by a non-licensed tradesperson is illegal and will void any warranty.

Safety devices
The Rinnai INFINITY has the following safety devices fitted:
- flame failure
- boil-dry protection
- overheat protection (OHS)
- pressure relief valve
- combustion fan rpm check

Discolouration of flue outlets
The colour of the flue outlet may change over time due to condensate in the exhaust gases. This is normal. The discolouration will not damage the unit and will not affect the performance of the water heater.

Environmental
The Rinnai INFINITY is manufactured from a number of recyclable materials. At the end of its useful life please consider what parts could be recycled, for example scrap metal, PCB etc.

Servicing
Rinnai has a maintenance, service and spare parts network with personnel who are fully trained and equipped to give the best advice on your Rinnai appliance.

Servicing and repair should only be carried out by authorised personnel, please call Rinnai (0800 746 624).

For reliable operation Rinnai INFINITY water heaters in residential applications should be serviced every two years*.

Regular maintenance and servicing is not covered by the Rinnai warranty. Do not attempt to carry out any service work other than that mentioned in this guide. If you have any other faults or problems, please contact your installer or Rinnai.

* Including the flue system if you have an internal unit

* Installations located in or near coastal areas may require additional maintenance due to corrosive airborne ocean salt

INFINITY controllers
Temperature controllers are available to allow precise digital temperature control—a great safety feature if you have young children. Controllers can be fitted at any time during or after installation of the Rinnai INFINITY.

Solar installations
There is a recommended solar layout for continuous flow water heaters used in solar installations. It is important your installer configures your solar system correctly as water heaters in solar installations produce higher than normal temperatures.

INFINITY controllers cannot be used with Rinnai continuous flow water heaters in solar installations as the hot water does not always pass through the unit.

The EF26 and A-Series external models are not suitable for solar installations as they cannot be set to 75 °C.

INFINITY controllers

Water controllers are an optional extra. They allow precise temperature control—no need to mix hot and cold water.

General controller information
When used correctly the Rinnai INFINITY, when combined with digital controllers will deliver the selected temperature at the controller, even when the water flow varies, or when more than one tap is in use.

Each digital water controller can be individually programmed, though the INFINITY can only deliver one set temperature at a time. For example, someone is showering at a temperature of 43 °C, and another person uses the kitchen tap. The kitchen tap can only deliver 43 °C until the person in the shower is finished.

Available Rinnai controllers
- Compact, temperature selection only
- Kitchen Deluxe, temperature selection and voice prompting
- Bathroom Deluxe, temperature selection, shower saver, bath fill, and voice prompting

Controller configurations
A maximum of **four** (three for the VCM **indoor** models, and NB-Series) water controllers can be fitted, with the following conditions:

- Only ONE master controller can be installed. This can be a MC-145V1Z or a MC-601 (Universal controller). If a MC-145V1Z is fitted it will always function as a master controller.
- Only ONE Bathroom Deluxe BC-145V1Z controller can be installed.
- The third / fourth controller in any installation MUST BE a MC-601 Universal controller.

Controllers need to be turned on
The Rinnai INFINITY will not heat the water unless the controller(s) are turned on. If water is flowing before a controller is turned on, the Rinnai INFINITY will not heat the water. Turn off the tap for a few seconds then turn on again.

Ignition problems
If the Rinnai INFINITY fails to ignite the ‘In Use’ indicator will not illuminate. The Rinnai INFINITY will not attempt re-ignition until the water flow is stopped for a few seconds and then restarted.

When gas bottles have been changed or the gas supply is disrupted (controller may display error code 11 or 12) ignition may fail and the ‘In Use’ indicator won’t be on. The water flow may need to be stopped and restarted several times before the appliance will operate.

Available temperatures on controllers (°C)

Kitchen (domestic)	35[1], 37, 38, 39, 40, 41, 42, 43, 44, 46, 48, 50, 55[2], 60[2], 65[2], 70[2], 75[2], 80[2], 85[2]
Bathroom (hot water)	35[1], 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50
Bathroom (bathfill)	37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48

[1] HD56kWe and NB-Series models only

[2] Some Rinnai water heaters will be programmed to deliver higher water temperatures, i.e. in commercial applications, and some residential applications. The temperatures shown in the table may not be applicable to all Rinnai models.

To obtain water temperatures lower than 37 °C, open the cold water tap and add cold water until the desired lower temperature is reached.

Troubleshooting without controllers

Fault	Possible solution
Unit doesn’t start	Check power is on at the unit. Check the gas isolation valve at the unit and gas meter are fully open.
Units starts and then immediately shuts down	Check power is on at the unit. Check the gas isolation valve at the unit and gas meter are fully open. Open your hot water tap fully.
Excessive temperature fluctuation while the water is flowing	Service call
Excessive noise or vibration from the water heater	Service call

Faults caused by insufficient gas supply, insufficient water supply, gas quality, water quality, installation errors or operation errors are not covered by warranty.

Troubleshooting with controllers

Rinnai INFINITY continuous flow water heaters are equipped with a self-diagnostic feature. In the event of a fault an error code will be displayed on the controller or the status monitor, depending on the model. This assists in diagnosing the fault—please state the code displayed when contacting Rinnai.

In all cases you may be able to clear the error code by turning the hot water tap off, then on again. If this does not clear the error code, trying pushing the On/Off button Off, then On again. If the error code remains, contact Rinnai for advice.

Error code	Fault	Possible solution
-	Noticeable reduction in water flow	Inlet water filter needs to be cleaned—service call.
03	Power interruption during bathfill, water will not flow when the power is back on	Turn off all hot water taps and press On/Off twice.
10	Air intake or flue blocked	Service call
11	No ignition, no gas supply	Check gas is turned on at the water and gas meter, or cylinder.
12	Flame failure, low gas flow	Check gas is turned on at the water heater and gas meter, or cylinder. Check there are no obstructions to the flue outlet.
14	Thermal fuse or overheat switch failure	Service call
15	Venturi control failure	Service call
16	Over temperature warning	Service call
17	Venturi blockage	Service call

Error code	Fault	Possible solution
18	Gas valve adjustment limit	Service call
19	Electrical earthing fault	Service call. Will require checking the harness and remote controller cable.
21	EF26 / A-Series / HD56 - dip switch setting fault NB-Series - data transfer error	Service call
22	Gas valve adjustment	Service call
25	Condensate trap error	Check condensate drain for blockage
32	Outgoing water temperature sensor faulty	Service call
33	Heat exchanger thermistor failure	Service call
34	Combustion air temperature sensor failure (for internal models only), excluding NB-Series models. NB-Series, lime detecting thermistor failure.	Service call. Will require; checking sensor wiring for damage, measuring resistance of sensor, checking combustion fan, checking internal flue leakage, checking flue system integrity, and possibly replacing sensor.
36	Tank lower thermistor failure	Service call
38	Exhaust thermistor failure	Service call
41	Freeze protection thermistor failure	Service call
51	Inlet thermistor failure	Service call
52	Gas modulating valve faulty	Service call
54	High exhaust gas temperature failure	Service call
55	Scheduled service reminder[1]	Service call
61	Combustion fan failure	Service call
63	Recirculation low flow rate	Service call
65	Water flow control failure—does not stop flow properly	Service call
66	Bypass flow control failure	Service call
70	PCB failure	Service call
71	Solenoid valve circuit failure	Service call
72	Flame rod failure	Service call
92	Neutraliser alert	Service call, condensate trap needs changing.
LC	Scale build-up in heat exchanger—when checking maintenance code history, 00 is substituted for LC	Service call
5E	Cascade diagnostic display. Displays 5E when an error code displays on any secondary unit with a cascade connection.	Service call

[1] **Service reminder**: Rinnai recommends commercial appliances are serviced annually. NB-series models display a scheduled service reminder code 55 (when programmed to do so) when the annual service period has elapsed as a reminder that the water heater is due to be serviced. The reminder code flashes intermittently on the status monitor and water controllers (if fitted)—normal operation of the appliance is not affected.

Draining the water heater

Frost protection is fitted as standard on all Rinnai INFINITY water heaters. Frost protection operates automatically, as required, as long as the appliance is connected to the power supply.

If you live in an area prone to frost and will be away for an extended period with the power supply disconnected, Rinnai recommend draining your appliance to prevent frost damage, which is not covered by warranty.

We strongly recommend having your water heater drained by a plumber or gasfitter, but understand that remote locations and cost may prohibit this.

About these instructions

These instructions are intended as a guide only. Rinnai does not accept liability for issues arising from the use of this information. In particular Rinnai will not be responsible for damage caused by water freezing where this procedure was not followed and insufficient water was drained from the unit.

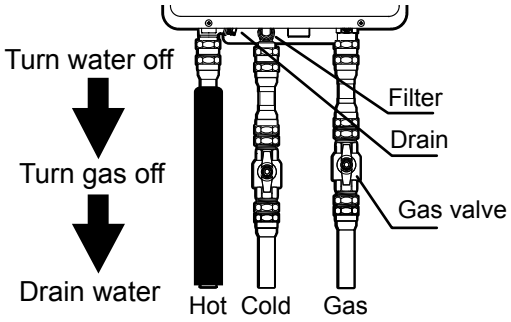
Procedure

You will need:

- A bucket if water cannot be drained into a garden or drain
- Approximately 15 minutes to complete the procedure

WARNING Wait until the water cools before draining as hot water will drain from the unit if there has been recent hot water use.

1. Turn off any water controllers in the building and then turn off the water, gas, and power to the unit.



2. To flush the water heater open all hot water taps in the building.
3. If required, place the bucket under the unit and unscrew the water filter and hot water drain plug.
4. Drain the water heater—the unit and surrounding pipes can hold up to one litre of water.

Refilling the Rinnai INFINITY

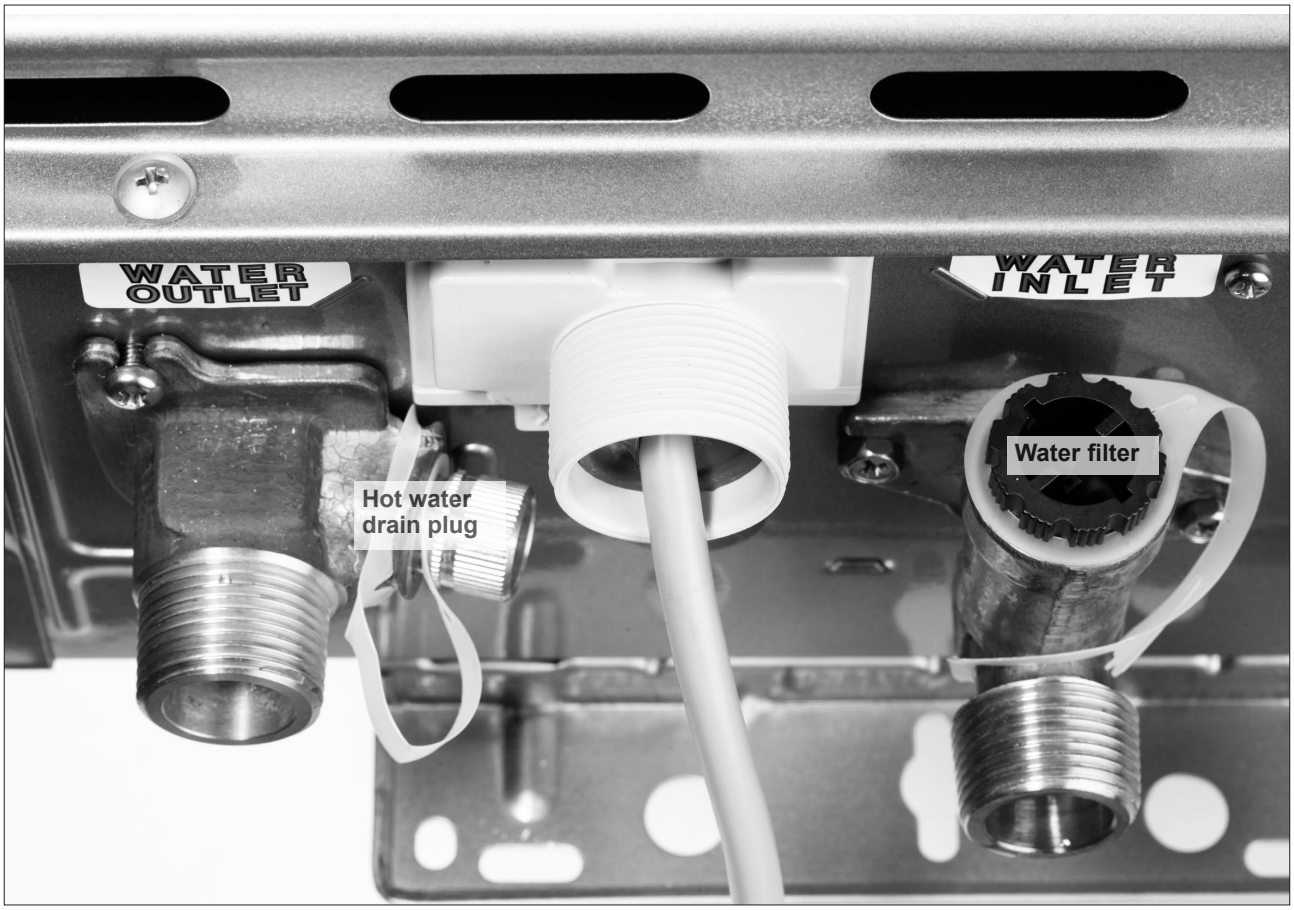
1. Check the gas and power are turned off. Turn off any open hot water taps.
2. Screw in the water heater drain plugs and the water filter in the cold water inlet.
3. Turn on the cold water at the water heater.
4. Turn on the hot tap to purge air from the pipe work and unit, then turn off the hot tap.
5. Turn on the gas and power at the Rinnai INFINITY and turn on any digital controllers (if fitted).

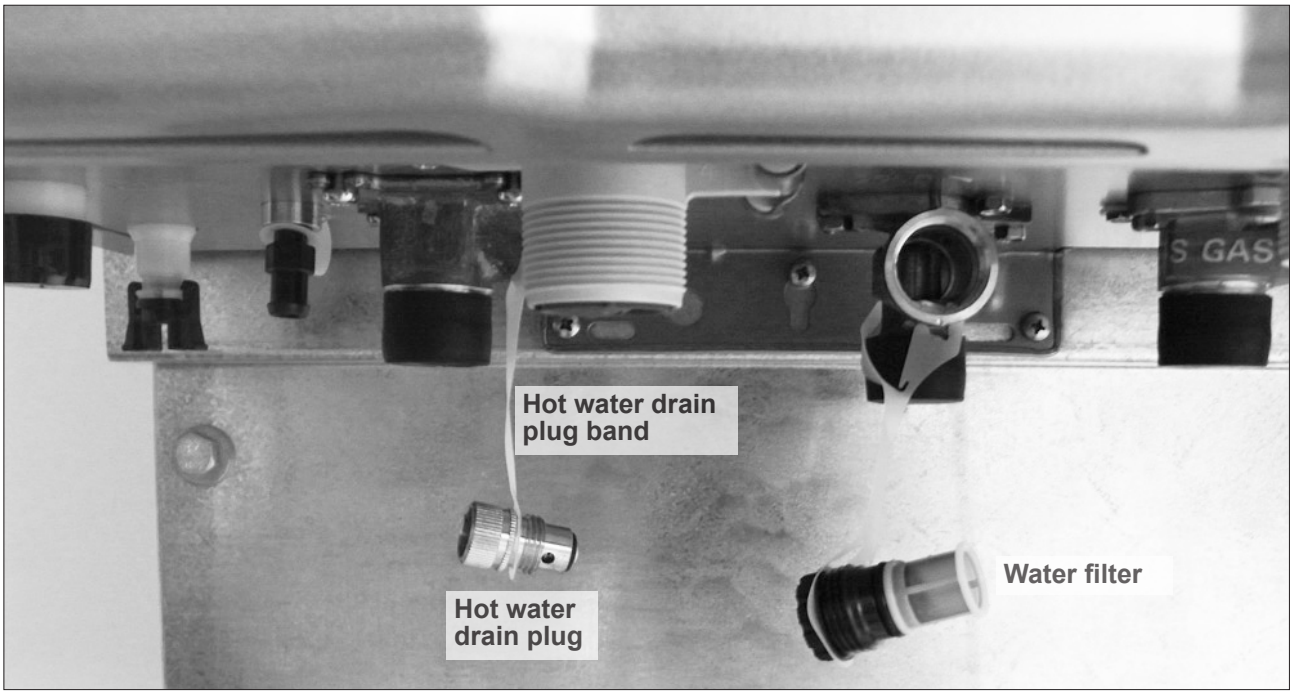
When the water heater or external pipes have frozen

DO NOT operate the Rinnai INFINITY if the water heater or the external pipes have frozen. Close the gas and water valves, and turn off the power. Wait until the water thaws, check this by opening the water supply valve.

Check the Rinnai INFINITY and pipes for leaks.

Please note: The hot water drain plug and water filter positions will vary depending on the model. The images below are to highlight what they look like.





Please note: The NB-Series models do not have a hot water drain plug band.

Limited Warranty
Rinnai INFINITY Continuous Flow Water Heaters

Rinnai warranty summary table
This warranty is applicable for all Rinnai INFINITY continuous flow water heaters manufactured from 2019 onwards. All terms of the warranty, subject to the conditions below, are effective from the date of first installation. The attending service person reserves the right to verify this by requesting a copy of the gas certificate of compliance prior to commencement of any warranty work. Proof of purchase and installation date will be required at the time of any warranty claim. This warranty is only valid within the country of purchase.

		HEAT EXCHANGER		ALL OTHER PARTS	
Rinnai INFINITY	**Application**	**Parts**	**Labour**	**Parts**	**Labour**
EF26 and A-Series models	Residential WITHOUT controllers	10 years pro rata[1]	3 years	3 years	3 years
	Residential WITH controllers	12 years pro rata[1]	3 years	5 years	3 years
	Commercial	1500 hours or 1 year[2]	1500 hours or 1 year[2]	1500 hours or 1 year[2]	1500 hours or 1 year[2]
HD and NB-Series models	Residential	12 years pro rata[1]	3 years	5 years	3 years
	Commercial	5000 hours or 3 years pro rata[2]	1500 hours or 1 year[2]	1500 hours or 1 year[2]	1500 hours or 1 year[2]

[1] Under a pro rata warranty, if the heat exchanger fails before the end of the warranty, Rinnai will replace the heat exchanger at a cost that depends on the age of the heat exchanger at the time of the fault. For further details refer to the pro rata table on p.14.

[2] Whichever comes first

Residential application
A residential application is defined as an installation where a continuous flow unit is set to 55 °C[3] or lower, delivering hot water to a single residential dwelling (not used for commercial purposes[4]).

All other installations are defined as commercial applications.

For constant use applications, such as circulating ring mains, the water heater, must be sized and installed according to written guidelines from Rinnai.

General warranty terms
Rinnai reserves the right to make modifications and change specifications and its parts without notice.

For the purposes of the Consumer Guarantees Act 1993, Rinnai only guarantees the availability of repair facilities and spare parts for the express warranty period recorded in the table above.

This warranty does not limit any consumer rights or guarantees that may apply under the Consumer Guarantees Act 1993. If the product is being acquired for the purposes of a business, the provisions of the Consumer Guarantees Act 1993 do not apply and no other warranties (either express or implied by law) apart from those stated in the warranty will apply.

[3] A solar installation using a Rinnai INFINITY continuous flow unit (excluding EF26 and A-Series models) in a single residential dwelling is considered a residential application.

[4] Examples of a commercial application in a residential dwelling; hair salon, catering kitchen, communal care facility etc. An accommodation business such as a motel, where a continuous flow unit serves the equivalent of a single family dwelling, is deemed to be a residential application.

Warranty terms and conditions

1. All terms of the warranty are effective from the date of first installation. The attending service person reserves the right to verify this by requesting a copy of the gas certificate of compliance prior to commencement of any warranty work. The installer must issue a certificate of compliance by law in New Zealand. Warranty claims may be invalid if not accompanied by details of the installing or supervising gasfitter's registration number and the gas certification number.

2. All Rinnai appliances must be installed, commissioned, serviced, repaired and removed in accordance with the manufacturer's installation instructions, local regulations, and building codes by persons authorised by local regulations to do so.

3. All appliances must be operated and maintained in accordance with the manufacturer's operating instructions.

4. The warranty applies only to the components supplied by Rinnai. It does not apply to components supplied by others, such as electrical switches, electrical cables, fuses, isolating valves, pipework, and where applicable flue systems, but it is not limited to these.

5. Where the appliance has not been sited in accordance with the installation instructions or installed such that normal access is difficult, a service charge will apply. If at the discretion of the attending service person the installation is deemed illegal or access is dangerous, service will be refused. Any work required to gain reasonable access to the appliance will be chargeable by the attending service person (for example, removal of cupboards, doors, walls, or the use of special equipment to move components, but not limited to these).

6. Where the failed component is replaced under warranty, the balance of the original warranty will remain effective.

7. Rinnai reserves the right to transfer functional components from defective appliances if they are suitable.

8. Rinnai reserves the right to have installed product returned to the factory for inspection.

9. Where the water heater is installed outside the metropolitan area or further than 40 km from an Rinnai authorised repairer, travel costs shall be the owner's responsibility.

Warranty exclusions

The following exclusions may cause the warranty to become void and will result in a service charge and costs of parts (if required).

1. Accidental damage, defects or failure caused by acts of nature (fire, wind, lightning, flood, storm, hail storm fallout), vandalism, earthquake, war, civil unrest, misuse, abuse, negligence, pests, animals, pets, insects, or entry of foreign objects or matter into the product such as dirt, debris or moisture.

2. Failure due to abuse or misuse, improper maintenance or improper storage.

3. Failure due to incorrect or unauthorised installations.

4. Failure or damage caused by alterations, service or repair work carried out by unauthorised personnel.

5. Where the water heater has failed directly or indirectly as a result of poor water quality outside the limits specified.

6. Where it is found that there is no fault with the appliance and the issue is related to the installation or is due to failure of electric or gas supplied.

7. Subjective issues such as noise or smell that Rinnai have investigated (or a Rinnai authorised repairer has investigated) and are established to be within normal operating parameters.

8. Subject to any statutory provisions to the contrary, Rinnai does not accept
   a. liability for consequential damage or incidental expenses resulting from any breach of the warranty.

   b. claims for damage to building or any other consequential loss either directly or indirectly due to leaks from the appliance or any other faults.

Pro rata heat exchanger warranty table

Under a pro rata warranty, if the **heat exchanger** fails before the end of the warranty, Rinnai will replace the heat exchanger at a cost that depends on the installation application and the age of the heat exchanger at the time of the fault.

	EF26 and A-SERIES		HD and NB-SERIES	
Year	Residential WITHOUT controllers	Residential WITH controllers	Residential	Commercial
1	100%	100%	100%	33.3%
2	100%	100%	100%	33.3%
3	100%	100%	100%	33.3%
4	70%	90%	90%	-
5	60%	80%	80%	-
6	50%	70%	70%	-
7	40%	60%	60%	-
8	30%	50%	50%	-
9	20%	40%	40%	-
10	10%	30%	30%	-
11	-	20%	20%	-
12	-	10%	10%	-

The percentages above relate to the heat exchanger component only. It does not include labour.

Water quality

Water chemistry has a direct impact on hot water heaters, affecting corrosion protection measures, or causing scale buildup.

Water quality MUST:

1. Meet the latest Water Services (Drinking Water Standards for New Zealand) Regulations and the Aesthetic Values for Drinking Water Notice, or the water standards as statutorily defined at the time; AND
2. Be within the limits shown in the table below.

Water quality outside these limits will void this warranty.

Water quality and impurity limits

TDS (Total Dissolved Solids)	<600 mg/L	**Chlorides**	<300 mg/L
Total Hardness $CaCO_3$	<200 mg/L	**Magnesium**	<10 mg/L
Alkalinity	<200 mg/L	**Sodium**	<150 mg/L
Dissolved (free) CO_2	<25 mg/L	**Iron**	<1 mg/L
pH	6.5-8.5	**LSI**[1]	Between -1.0-0.8
[1] Langelier Saturation index—scaling potential of water.			

If sludge or foreign matter is present in the water supply, a suitable filter should be incorporated in the water supply.

Bore and tank water supplies should be considered to be corrosive and should be tested prior to using the system. Bore and tank water must meet the water quality parameters stated above.

Purchase details

Record your purchase details below

ATTACH YOUR PROOF OF PURCHASE HERE:

Retailer:

Retailer address:

Date of purchase:

Product details:

Please keep these details in a safe place for future reference.

Register your system online: **www.rinnai.co.nz/register/** for service reminders, product updates, and special offers. You can unsubscribe at any time.

Installer details

Company name:

Installer name:

Address:

Phone:

Mobile:

Certificate of compliance number for installation:

Signed:

Date:

Rinnai.co.nz

Tel: 0800 746 624
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