



Rinnai



Specification guide
Rinnai INFINITY®
gas continuous flow water heating

Important

Rinnai is constantly improving its products, and as such, information and specifications are subject to change without notice. For the most up-to-date information, go to www.rinnai.co.nz.

We'd love to hear from you

If you have any feedback about this guide we'd love to hear from you. Either email us at info@rinnai.co.nz, place 'Rinnai specification guide feedback' in the subject heading, or call customer services.

Help is here

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

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Online training at www.rinnai.co.nz/TradeSmart

We are proud of being New Zealand's largest provider of industry online learning, giving vital advice and support to technical institutes and other learning organisations, as well as all the people involved in selling, specifying, and installing Rinnai product.

There are a number of courses available for Rinnai INFINITY water heaters with new courses being uploaded regularly.

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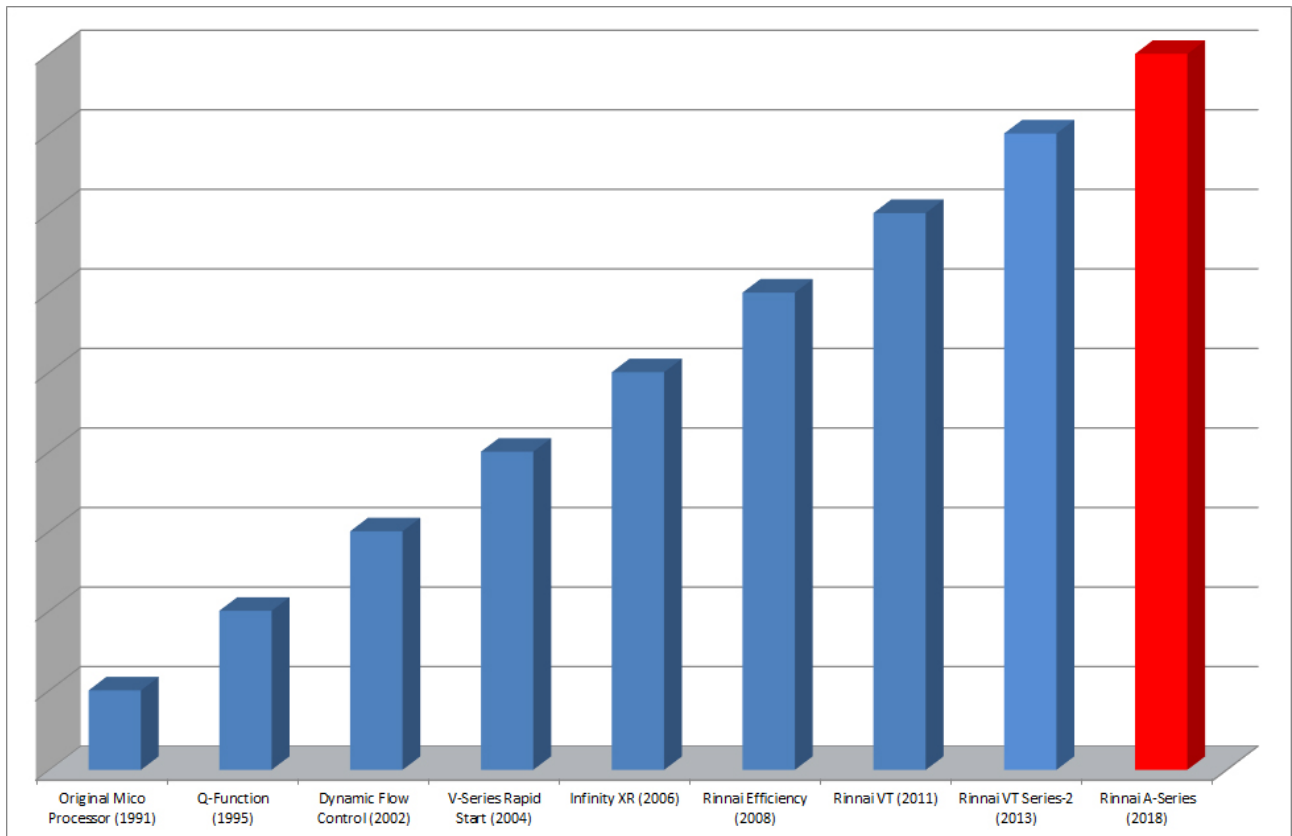
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Leaders in gas continuous flow

When you turn on a tap you want water at the right temperature fast, which is why over the years we've devoted considerable time and resource to leading edge research and development.




We were the first to introduce continuous flow technology and have been tirelessly working on improving this ever since. Our commitment to bring you the latest technology has resulted in the next generation of water heaters.

For seven years Rinnai INFINITY VT has been NZ's highest selling range of continuous flow water heaters. The next iteration, the Rinnai INFINITY A-Series, has the same great performance and reliability, with some clever new features to improve performance and servicing.



Rinnai INFINITY range

The Rinnai INFINITY range is made up of three categories to cater for a variety of hot water demands and installation requirements.

Category	Suitability	
Rinnai INFINITY A-Series Improved accessibility makes for easier and faster service	Residential applications only	
Rinnai INFINITY EF Condensing technology to deliver higher efficiencies	Residential and commercial applications	
Rinnai INFINITY HD Heavy duty on demand for demanding jobs	Residential and commercial applications	

Rinnai INFINITY model	Mounting position	Energy star rating	Input	Output	Thermal efficiency on high	Status monitor
A16	External	6.0	16.3-124 MJ/h	27.4 kW	80.5%	No
A20	External	6.0	19.9-156 MJ/h	33.9 kW	80.5%	No
A24	External	6.0	16.3-184 MJ/h	41.4 kW	81%	No
A26	External	6.0	16.3-199 MJ/h	44.2 kW	80%	No
HD200	External	5.9	16.0-199 MJ/h	47.0 kW	82%	Yes
HDi200	Internal	6.1	16.0-195 MJ/h	45.1 kW	83%	No
HD250	External	5.9	20.0-250 MJ/h	59.9 kW	81%	No
EF24	External	6.8	16.0-162 MJ/h	43.0 kW	95%	No
EF250	External	7.0	10.0-211 MJ/h	55.6 kW	95%	Yes
EFi250	Internal	7.0	10.0-211 MJ/h	55.6 kW	95%	Yes

Can I have your attention please

Service and maintenance

For reliable operation Rinnai INFINITY continuous flow water heaters in residential applications should be serviced every two years. For commercial applications Rinnai has a recommended maintenance and servicing schedule, please contact us for more information.

What is continuous flow?

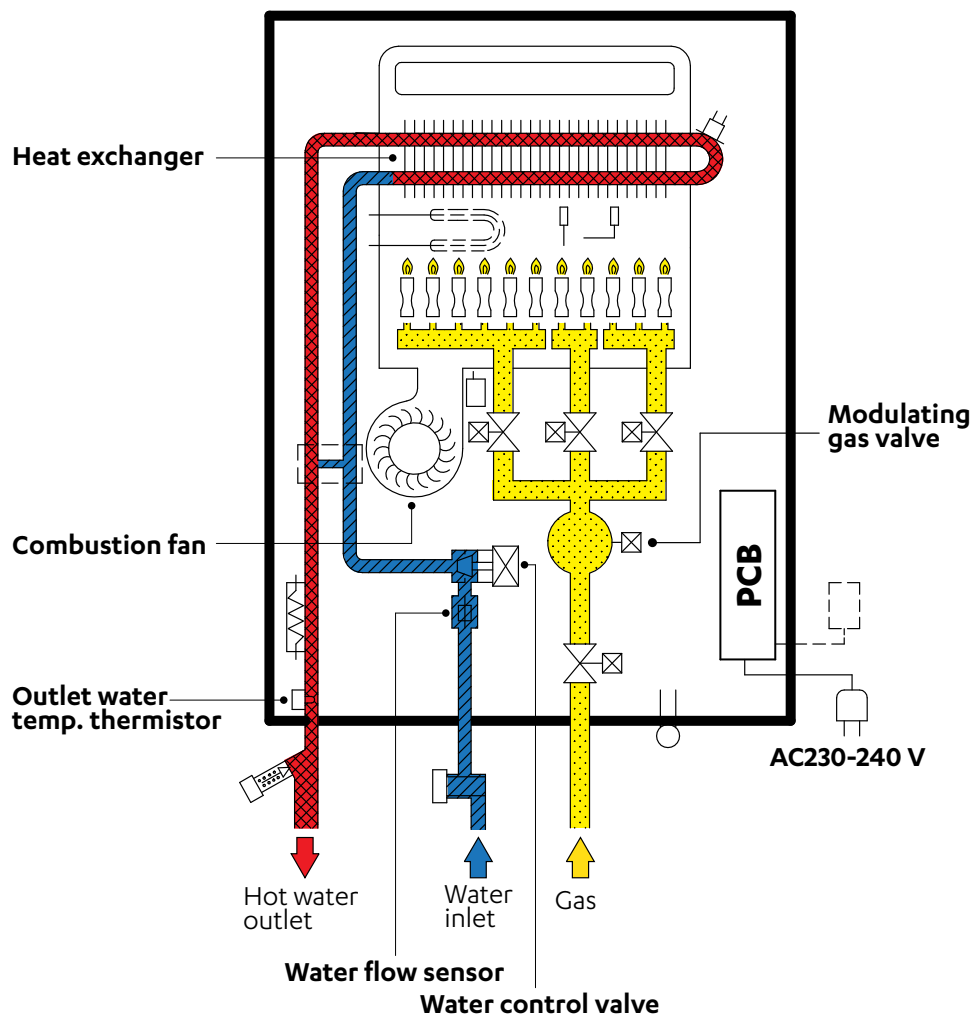
A continuous flow hot water system only heats water when it passes through the unit. It will deliver a continuous flow of heated water at a predetermined flow rate, depending on the model, as long as the unit is connected to the power supply.

General principle of operation

Each Rinnai INFINITY has a number of components that control the water temperature and water flow. These are:

- PCB (onboard computer)
- water flow control valve
- water flow sensor
- modulating gas valve
- outlet water temperature sensor

The unit senses the need to start when water begins to flow through the appliance, when a tap is turned on. The combustion fan starts, ignition begins (electronic requiring electricity), and the gas valve opens. Once the flame is established the appliance will heat the water, through the heat exchanger, as required, until the tap is turned off.



What is condensing continuous flow?

Rinnai's **EF** range utilises condensing technology to deliver higher efficient water heaters, requiring less gas to operate. These water heaters, via a secondary heat exchanger, unlock energy that would otherwise be wasted.

How condensing technology works

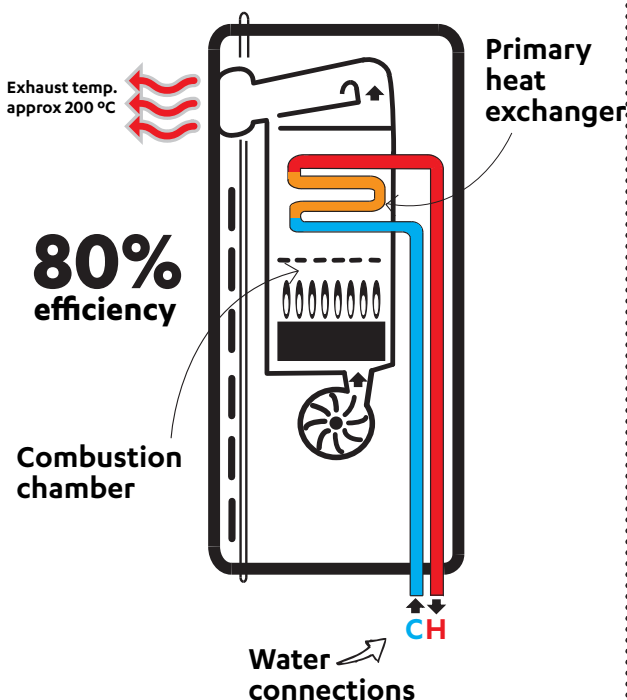
Condensing water heaters have two heat exchangers. Incoming cold water passes through the latent heat exchanger first, where the water is preheated from the exhaust gas, which in a standard unit would otherwise be wasted.

1. Cold water passes through the latent heat exchanger.
2. Exhaust (combustion) gases condense on the outside of the heat exchanger and heat is transferred to the cold water and the water temperature increases by approximately 5 °C.
3. Water flows to the primary heat exchanger and is heated, as the water is preheated it uses less gas to reach the required temperature.

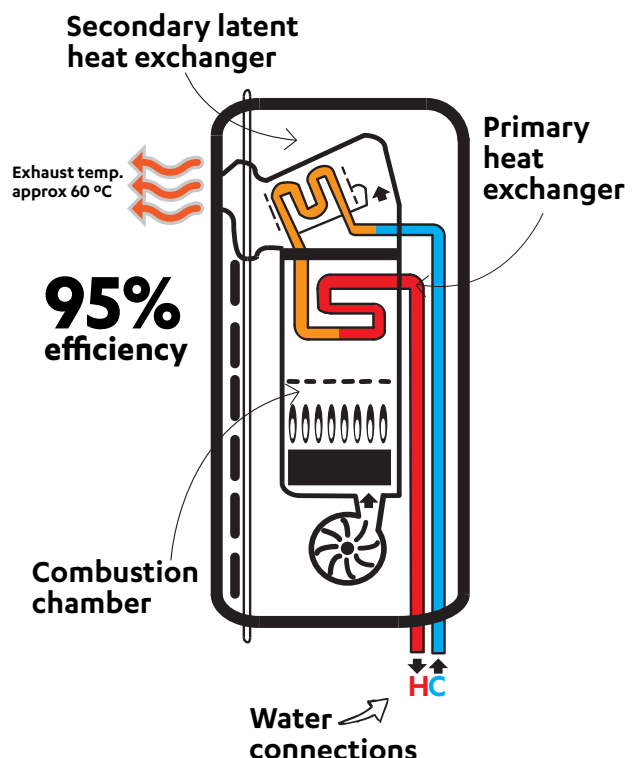
Example: If incoming water is 10 °C

	<u>Standard INFINITY</u>	<u>EF INFINITY</u>
• Water temperature in primary heat exchanger	10 °C	15 °C
• Exiting flue exhaust temperature	200 °C	60 °C

standard water heater



condensing water heater



Model selection for residential applications

When specifying residential hot water applications there are some questions you need to ask to determine what model(s) are required. Keep in mind future requirements of the building. Water heating solutions should be designed to the number of hot water outlets and not the number of people.

Which model?

Questions to ask to determine which model(s) may be suitable:

- how many bathrooms?
- where are the bathrooms and other hot water outlets positioned in the house?
- how often will the hot water outlets run simultaneously?
- what type of tapware is installed?
- what is the location of the property?

How many bathrooms?

An A16 or A20 unit may be suitable for a one bathroom home, whereas a two or three bathroom home will need a larger Rinnai INFINITY, or even multiple units.

Where are the bathrooms and other hot water outlets in the building?

Where are the bathrooms and other hot water outlets in relation to where the Rinnai INFINITY is to be installed? In most cases it is better to site the Rinnai INFINITY closer to the kitchen where there is an immediate demand for hot water. If bathrooms are situated at opposite ends of the house two Rinnai INFINITY units may be required.

How often will the hot water outlets run simultaneously?

How likely will hot water outlets, such as showers, be used at the same time?

Scenario one: Two bathroom home with a couple who rarely use the second shower—an A20 may be suitable.

Scenario two: Two bathroom home with a family of five who fight for two showers in the morning—a larger Rinnai INFINITY would be needed.

What type of tapware is installed?

There is a large range of tapware in the market, some with very high flow rates. The main consideration is the type of shower rose installed and how many litres it puts out—typical flow rates for showers is around 8-12 L/min. This needs to be factored when determining the Rinnai INFINITY model. To measure the flow rate of a shower, hold a bucket under the shower rose for one minute and measure the volume of water.

Location within New Zealand?

Ambient water temperatures will vary throughout the country, for example, the South Island in winter will be much colder than the North Island. This is important when determining the incoming water temperature and the temperature rise required at the hot water outlet as this will affect the output of the unit. For more information refer to Appendix 1 on page 48.

Use the New Zealand map on the next page to determine the location of the property in relation to the climate zone.

Model selector

Budget, size of house, number of hot water outlets, and hot water requirements all factor in determining which Rinnai INFINITY is right for you. Use the below product selector to work out what you need.

- Determine the hot water outlets that will run simultaneously in your house, and list the flow rates against them.

Hot water outlet	Typical flow rate*	Worked example
Bathroom	9 L per minute	9 L
Bathroom two	9 L per minute	9 L
Kitchen	6 L per minute	6 L
Laundry	6 L per minute**	
Other	Allow 6 L per minute	
TOTAL		24 L

* You can check your own actual water flow rates by holding a bucket under the hot water outlet for a minute and measuring the volume.

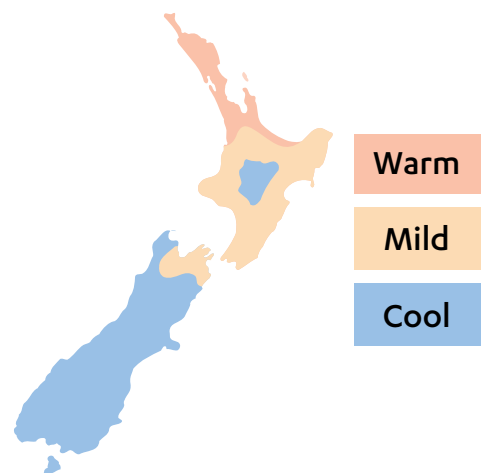
** A number of washing machines, particularly front loaders, have a cold-only connection as they have an internal heater. Hot water in this instance, as it isn't required, would not need to be factored into the calculation.

- Total the maximum simultaneous water flow, e.g. 24 litres.
- In the column for geographical region move down until a number bigger than your total appears.

Warm (L/min)	Mild (L/min)	Cool (L/min)	A-Series model	HD model	EF model
16	13	11	16	200	24
20	17	14	20	200	24
24	20	17	24	200	24
26	22	19	26	200	250
30	26	22	26	250	250
32	27	23		250	250

- Read across to the model, e.g. for 24 litres per minute in the mild zone an A26 is selected.

If you find the flow rate is greater than the figures listed in the table please contact Rinnai for advice. Multiple units may be required or an alternative hot water heating solution.



Location of Rinnai INFINITY units

To provide safe and effective water heating it is important to adhere to all the relevant gas installation standards. Check the guidelines detailed in this guide. If in doubt it pays to consult a licensed gasfitter to double check where the unit can be located.

General installation considerations

The Rinnai INFINITY should be placed as close as possible to the most frequently used hot water outlet(s) to minimise the delay for hot water. In most cases it's better to site the unit closer to the kitchen where there is an immediate demand for hot water.

For installations where the distance between the water heater and outlets is considerable, a flow and return system with a buffer tank can be used to minimise the waiting time for hot water delivery. Alternatively multiple units can be strategically placed to serve different outlets.



Operating noise

Some people are susceptible to low level noise. Rinnai INFINITY units operate at 50 dB(A). This needs to be considered if locating the appliance near a bedroom.

Easy access

All continuous flow water heaters must be installed to ensure access can be gained for servicing and repair without hazard or undue difficulty.

If mounting the unit at height the owner must arrange permanent and safe access, or provide another means of safe access such as scissor or boom lifts.

External models

External models are designed for outdoor installations only. They must be located above ground where products of combustion can be naturally dispersed. They should not be in enclosed areas as the unit can be choked by its own flue gases, this will cause the unit to malfunction. Refer to the general flue clearances diagram on the next page.

Internal models

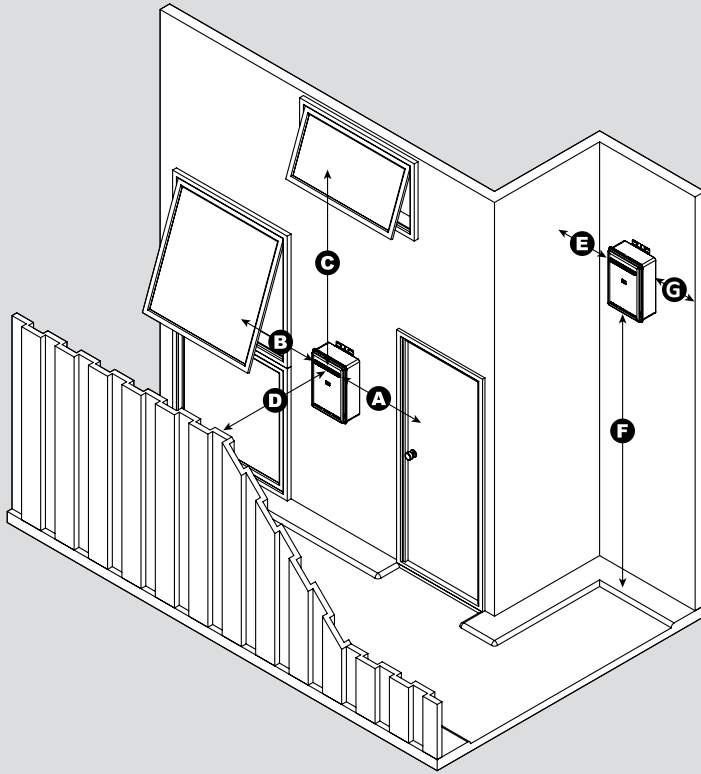
Internal models are designed for indoor installations only. They are a flued appliance—flue components purchased separately. They may be installed in an enclosure if the requirements of AS/NZS 5601.1 are met. An enclosure is defined as a compartment, enclosed area or partitioned off space primarily used for the installation of an appliance.

For internal units we recommend a 600 mm clearance in front of the unit for servicing access. This can be reduced to 50 mm if installed in a cupboard, refer clearances diagram on the next page.

General clearances

The following diagrams have been provided to assist in determining where, and if a continuous flow water heater can be installed. If in doubt, consult a licensed gasfitter who will have access to the Gas Installation standards.

External models: General flue clearances



Dim.	INFINITY A-Series, HD200, EF models	INFINITY HD250 model
A	Min. 300 mm	Min. 500 mm
B	Min. 300 mm	Min. 500 mm
C	Min. 1.5 m	Min. 1.5 m
D	Min. 500 mm	Min. 500 mm
E	Min. 300 mm	Min. 300 mm
F	Min. 300 mm*	Min. 300 mm*
G	Min. 300 mm	Min. 300 mm

Other clearances

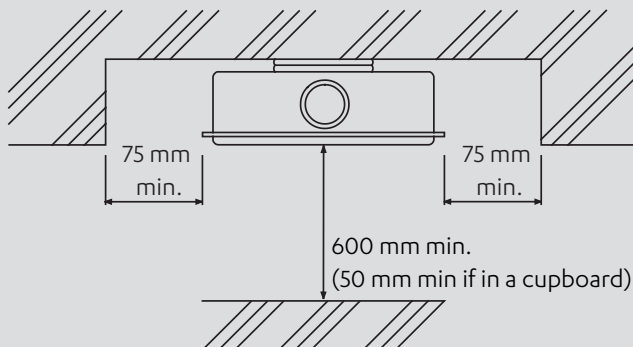
Below eaves, balconies, and other projections, minimum 300 mm.

From a gas meter, minimum 1000 mm.

From an electricity meter or fuse box, minimum 500 mm.

* Rinnai recommend 1.5 m to give enough clearance for the pipe work, and to safely expel flue gases.

Internal models: General flue clearances



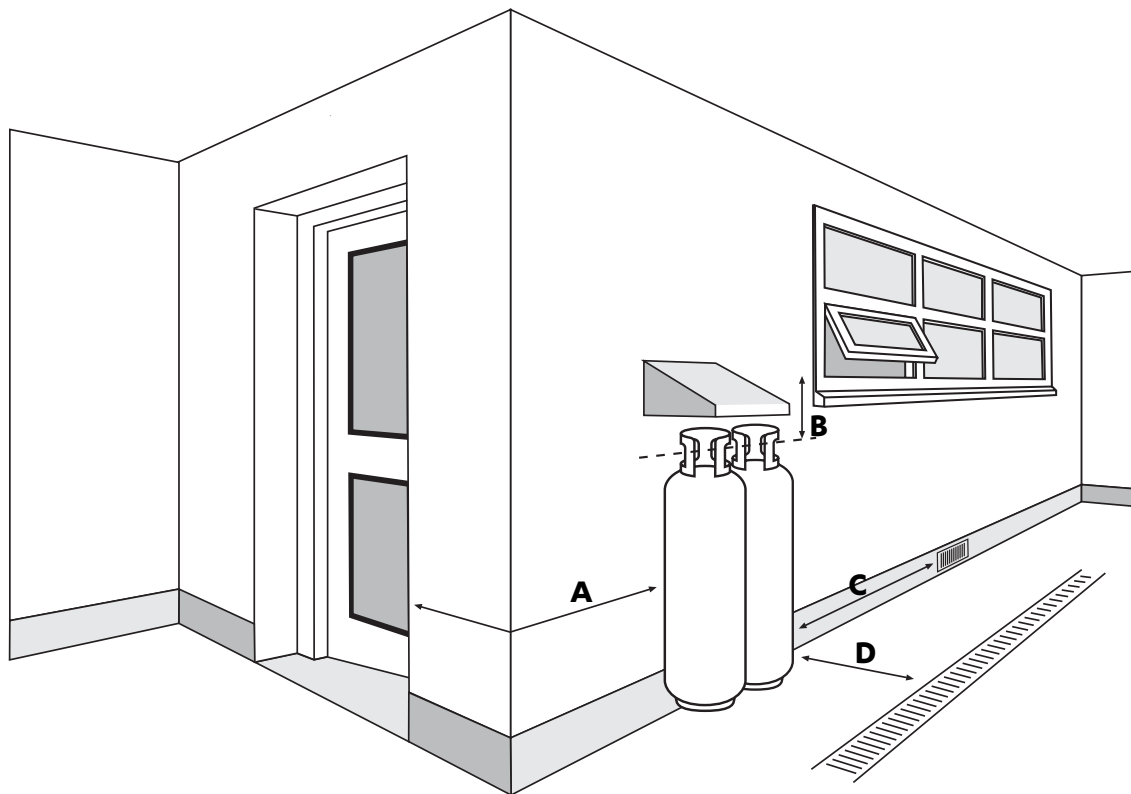
For internal units we recommend a 600 mm clearance for servicing access. This can be reduced to 50 mm if installed in a cupboard.



Example of an HDi200 internal installed in a cupboard - Rinnai Auckland showroom.

Overview of LPG cylinder clearances

The diagram below is a modified version of a drawing originally produced by ongas (www.ongas.co.nz). It is intended to provide an overview of the general clearances required for LPG cylinders.



A	Min. clearance to a door	1 m
B	Min. clearance to an openable window	150 mm
C	Min. clearance to an air vent or opening	1 m
D	Min. clearance to a drain	1 m

For detailed information relating to LPG cylinder placement it is advisable to consult a licensed gasfitter, your nearest LPG cylinder supplier, or consult AS/NZS 5601.1 Gas Installations.

Rinnai INFINITY®

product specification pages



Rinnai INFINITY A-Series specification

Product description

Designed and made in Japan, the Rinnai INFINITY A-Series are continuous flow gas hot water heaters with inbuilt frost protection. They have electronic ignition and require electricity to operate. They are factory preset to deliver water at 55 °C (maximum set temperature is 65 °C).

Scope of use

Suitable for **residential** applications only. They are designed to be externally mounted on an outside wall and located as close as practicable to the most frequently used hot water outlet(s), to reduce the delay for hot water delivery.

They are not suitable as a spa or swimming pool heater. They are also not suitable as a gas boost for solar installations, or connection with an iHeat, as the temperature cannot be set high enough.

Hard or acidic water will need to be treated to use this product.



A16

A20

A24

A26

	A16	A20	A24	A26
REU number	REU-A1620WG-ZK	REU-A2024WG-ZK	REU-A2426WG-ZK	REU-A2626WG-ZK
Order code NG	INFA16N	INFA20N	INFA24N	INFA26N
Order code LPG	INFA16L	INFA20L	INFA24L	INFA26L
Thermal efficiency	80.5%	80.5%	81%	80%
Hot water capacity*	2.1-20 L/min	2.5-24 L/min	2.1-26 L/min	2.1-26 L/min
Hot water capacity at a 25° rise	16 L/min 960 L/h	20 L/min 1200 L/h	24 L/min 1440 L/h	26 L/min 1560 L/h
Input	16.3-124 MJ/h	19.9-156 MJ/h	16.3-184 MJ/h	16.3-199 MJ/h
Output	27.4 kW	33.9 kW	41.4 kW	44.2 kW
Weight	13 kg	14 kg	15 kg	15 kg
Water - nominal operating pressure	120-1000 kPa	160-1000 kPa	200-1000 kPa	200-1000 kPa
Connection - hot	R½ (15 mm)	R¾ (20 mm)	R¾ (20 mm)	R¾ (20 mm)
Connection - cold	R½ (15 mm)	R¾ (20 mm)	R¾ (20 mm)	R¾ (20 mm)
Connection - gas	R¾ (20 mm)	R¾ (20 mm)	R¾ (20 mm)	R¾ (20 mm)
Ingress protection rating	IPX4	IPX4	IPX4	IPX4
Noise level (1 m away)	50 dB(A)	50 dB(A)	50 dB(A)	50 dB(A)
Compliance - ES declaration number	1825920179	1825820179	1825720179	1825620179
Power consumption: Normal,	47 W	58 W	56 W	66 W
standby, and automatic frost	2 W	2 W	2 W	2 W
protection	68 W	68 W	68 W	68 W

* The higher figures for the A16, A20, and A24 are only applicable in areas where the incoming water temperatures are high, for example 20 °C. Rather than all the water going through the heat exchanger, some of the water will go through the bypass valve, allowing a greater capacity of water to be delivered.

Rinnai INFINITY A-Series accessories



A16 **A20** **A24** **A26**

Compact controller Refer p. 37		MC601A	MC601A	MC601A	MC601A
Bathroom Deluxe Controller Refer p. 37		BC100V1Z	BC100V1Z	BC100V1Z	BC100V1Z
Kitchen Deluxe Controller Refer p. 37		MC100V1Z	MC100V1Z	MC100V1Z	MC100V1Z
Composite recess box Refer p. 39		R1406	R1406	R1406	R1406
Metal recess box* Refer p. 39		R1405	R1405	R1405	R1405
Piper cover Refer p. 41		R1385	R1385	R1385	R1385
Security bracket Refer p. 44		ACC1395	ACC1395	ACC1395	ACC1395
Sideways flue diverter Refer p. 43		FDS16	FDS20	FDS24	FDS24
Upwards flue diverter Refer p. 43		FDU16	FDU20	FDU24	FDU24

* Older recess boxes: R1405 and R1400

If the owner has an older recess box and is looking to replace an old Rinnai INFINITY with an A-Series unit, the following retrofit kits can be ordered:

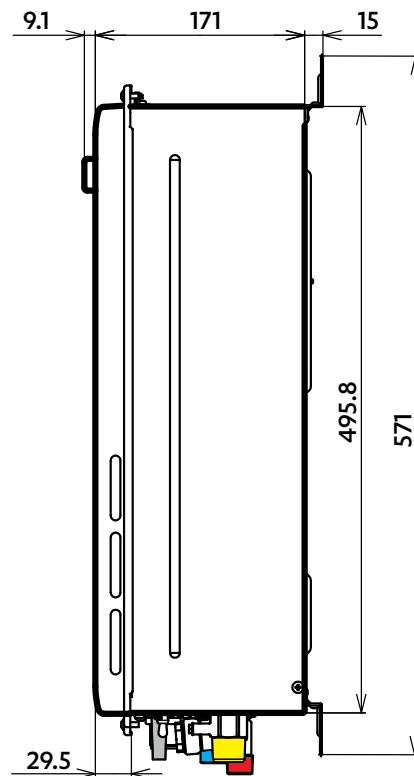
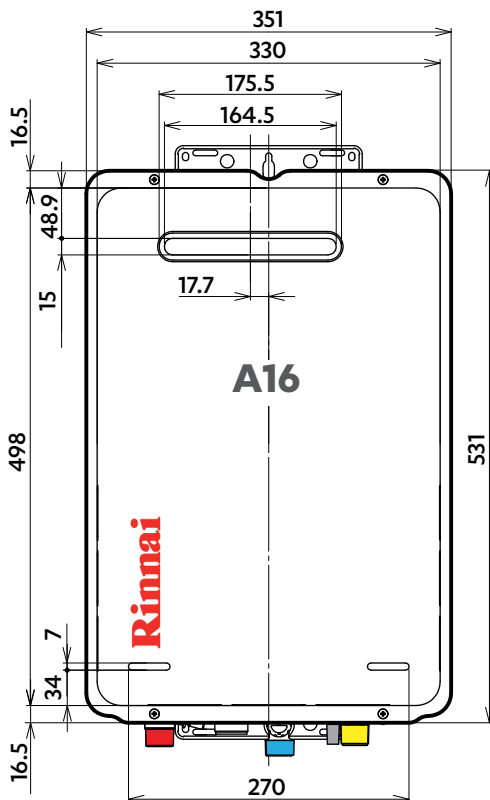
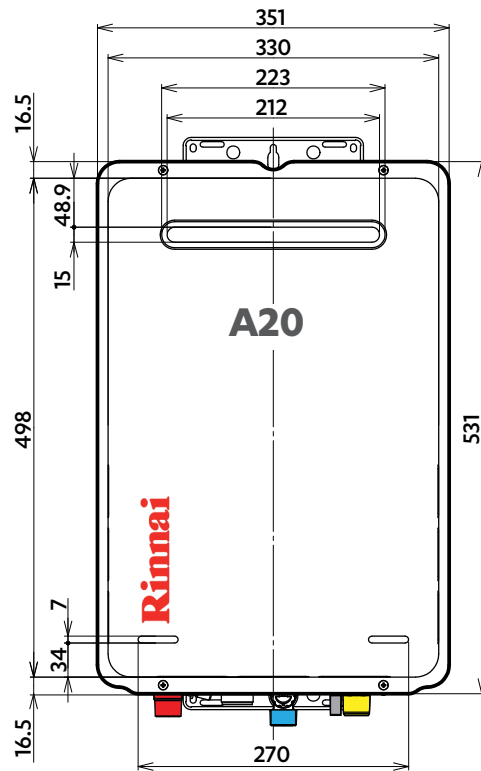
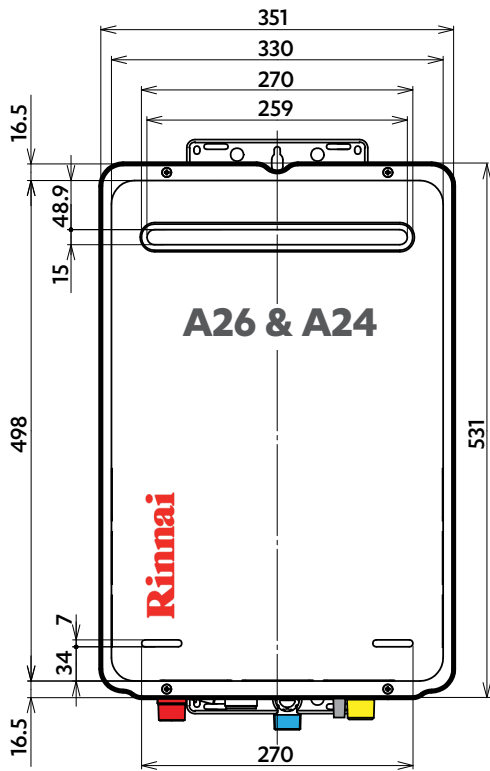
- R1405-2 A-Series retrofit kit for an R1405 metal recess box
- R1400-3 A-Series retrofit kit for an R1400 metal recess box

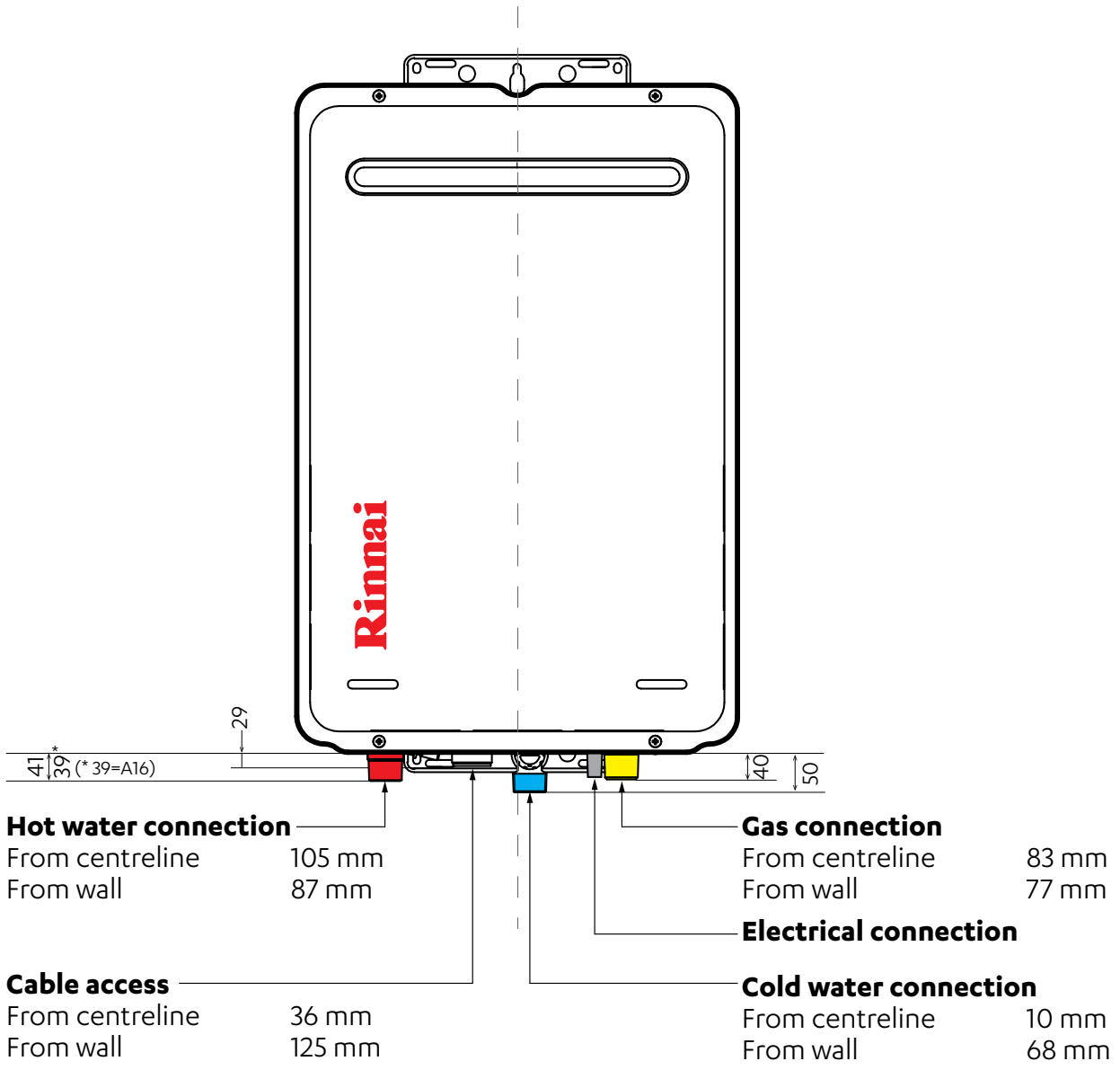
Manifolding note

At the time of print the A-Series models are unable to be manifolder using the Rinnai MECS system or the EZ connect cable.

Rinnai INFINITY A-Series dimensions

The basic dimensions, (height, width, and depth) are the same. The difference between the models are the dimensions and position of the flue outlet.





Rinnai INFINITY HD specification

Product description

Designed and made in Japan, the Rinnai INFINITY HD series are continuous flow gas hot water heaters with inbuilt frost protection. They have electronic ignition and require electricity to operate. The internal unit is a room sealed appliance. The INFINITY HDi200 and HD250 are factory preset to 55 °C, the HD200 is factory preset to 75 °C.

Scope of use

Suitable for residential and commercial applications. The external HD200 and HD250 units are designed to be externally mounted on an outside wall. The internal HDi200 is designed for internal installations only, and can be installed in an enclosure if the requirements of AS/NZS 5601.1 are satisfied. The INFINITY HD units are to be located as close as practicable to the most frequently used hot water outlet(s), to reduce the delay for water delivery.

They are not suitable as a spa or swimming pool heater.

Hard or acidic water will need to be treated to use this product.












	HD200 external	HDi200 internal	HD250 external
REU number	REU-VRM2632WC	REU-VR2632FFUG	REU-VR3237WG
Order code NG	INFHD200HNCN	INFHD200FFNCFN	INFHD250HNCN
Order code LPG	INFHD200HNCL	INFHD200FFNCFN	INFHD250HNCL
Thermal efficiency	82%	83%	81%
Hot water capacity*	2.4-30 L/min	2.4-32 L/min	2.4-37 L/min
Hot water capacity at a 25° rise	26 L/min 1560 L/h	26 L/min 1560 L/h	32 L/min 1920 L/h
Input	16-199 MJ/h	16-195 MJ/h	20-250 MJ/h
Output	47.0 kW	45.1 kW	59.9 kW
Weight	21 kg	21 kg	29 kg
Water - nominal operating pressure	130-1000 kPa	140-1000 kPa	200-1000 kPa
Connection - hot	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)
Connection - cold	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)
Connection - gas	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)
Ingress protection rating	IPX4	IPX4	IPX4
Noise level (1 m away)	50 dB(A)	50 dB(A)	50 dB(A)
Compliance - ES declaration number	12410201012	10978200911	10996200911
Power consumption: Normal, standby, and automatic frost protection	60 W 2 W 100 W	67 W 2 W 100 W	72 W 2 W 116 W

* The higher figures are only applicable in areas where the incoming water temperatures are high, for example 20 °C. Rather than all the water going through the heat exchanger, some of the water will go through the bypass valve, allowing a greater capacity of water to be delivered.

Rinnai INFINITY HD accessories



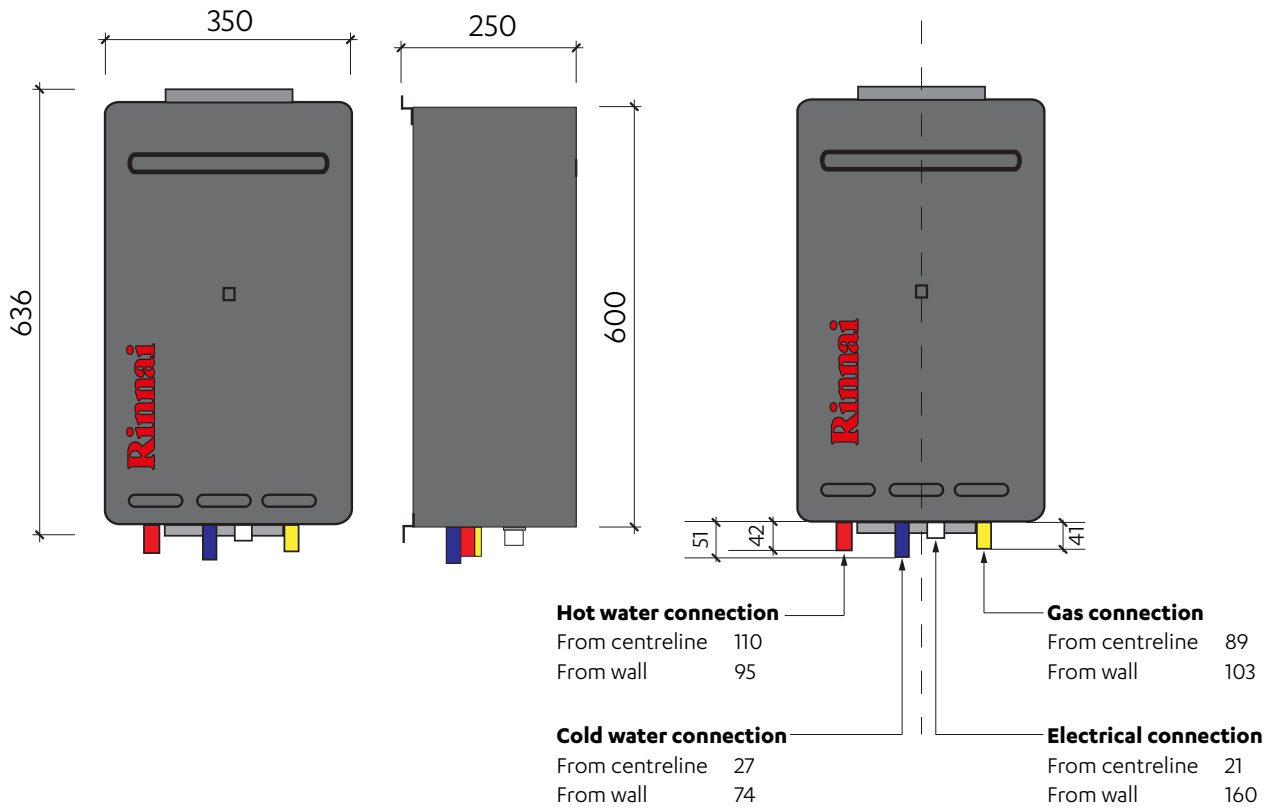
		HD200 external	HDi200 internal	HD250 external
Compact controller Refer p. 37		MC601A	MC601A	MC601A
Bathroom Deluxe Controller Refer p. 37		BC100V1Z	BC100V1Z	BC100V1Z
Kitchen Deluxe Controller Refer p. 37		MC100V1Z	MC100V1Z	MC100V1Z
Metal recess box Refer p. 39		R1407	Not applicable	R1407
Piper cover Refer p. 41		R1408SC	R1408SC	R1402SC
Security bracket Refer p. 44		ACC1395	ACC1395	ACC1395
Upwards flue diverter Refer p. 43		Not available	Not available	FDU32
HD error indication switch Refer p. 45		R1070	R1070	R1070
EZ connect cable Refer p. 45		REUEZC	REUEZC	REUEZC

Manifolding

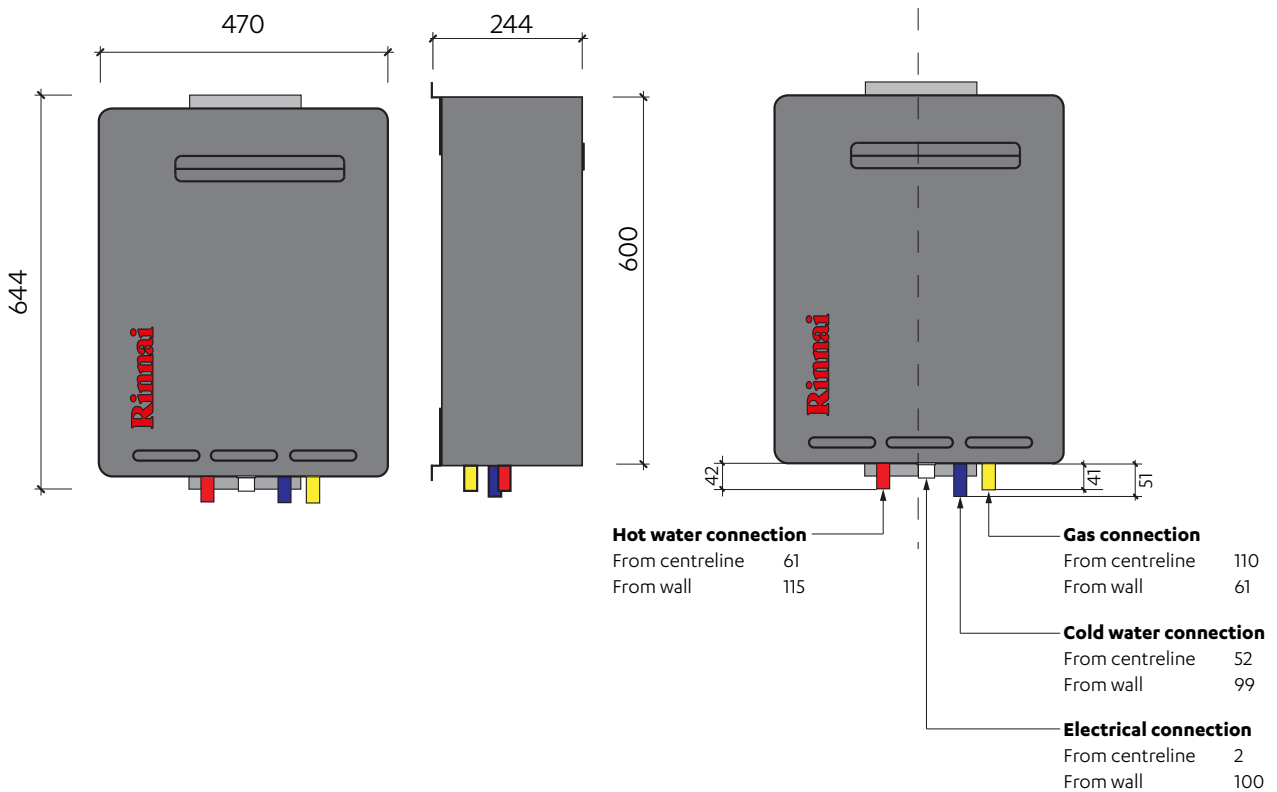
Commercial Rinnai INFINITY units can be manifolded together in banks of five (up to 25 units), by connecting them together to enable a greater hot water flow rate that is possible with a single unit, refer p. 46 for further information.

Rinnai INFINITY HD dimensions

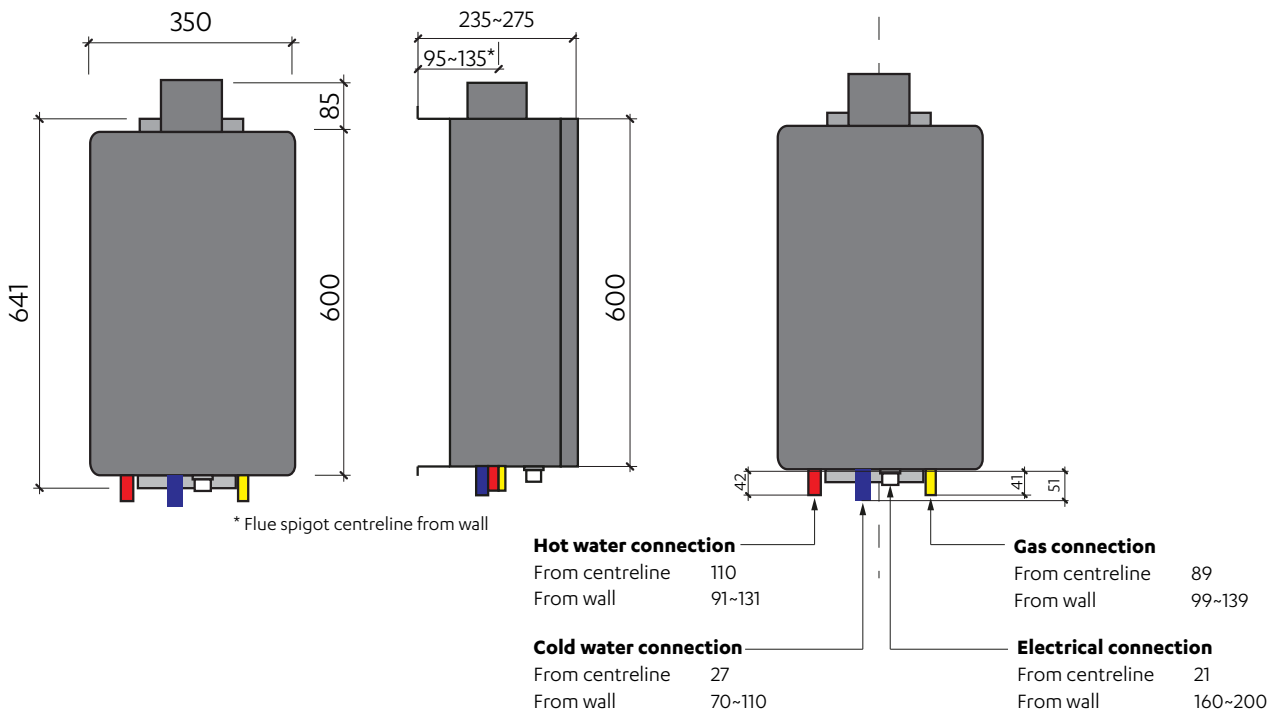
HD200 external



HD250 external



HDi200 internal



Rinnai INFINITY EF specification

Product description

Designed and made in Japan, the Rinnai INFINITY EF series are condensing continuous flow gas hot water heaters with inbuilt frost protection. They have electronic ignition and require electricity to operate. The internal unit is a room sealed appliance.

The INFINITY EF units are factory preset to 55 °C.

Scope of use

Suitable for residential and commercial applications. The external EF24 and EF250 units are designed to be externally mounted on an outside wall. The internal EFi250 is designed for internal installations only, and can be installed in an enclosure if the requirements of AS/NZS 5601.1 are satisfied. The INFINITY EF units are to be located as close as practicable to the most frequently used hot water outlet(s), to reduce the delay for water delivery.

They are not suitable as a spa or swimming pool heater.

Hard or acidic water will need to be treated to use this product.



EF24 external

EFi250 internal

EF250 external

	EF24 external	EFi250 internal	EF250 external
REU number	REU-K2430WG	REU-KM3237FFUD	REU-KM3237WD
Order code NG	EFF24NCN	INFEF250FFN	INFEF250N
Order code LPG	EFF24NCL	INFEF250FFL	INFEF250L
Thermal efficiency	95%	95%	95%
Hot water capacity*	2.3-30 L/min	1.5-37 L/min	1.5-37 L/min
Hot water capacity at a 25° rise	24 L/min 1440 L/h	32 L/min 1920 L/h	32 L/min 1920 L/h
Input	16-162MJ/h	10-211 MJ/h	10-211 MJ/h
Output	43.0 kW	55.6 kW	55.6 kW
Weight	27 kg	32 kg	32 kg
Water - nominal operating pressure	240-1000 kPa	240-1000 kPa	240-1000 kPa
Connection - hot	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)
Connection - cold	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)
Connection - gas	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)	R $\frac{3}{4}$ (20 mm)
Connection - condensate	R $\frac{1}{2}$ (15 mm)	R $\frac{1}{2}$ (15 mm)	R $\frac{1}{2}$ (15 mm)
Ingress protection rating	IPX4	IPX4	IPX4
Noise level (1 m away)	50 dB(A)	50 dB(A)	50 dB(A)
Compliance - ES declaration number	1431020135	1008720096	1008720096
Power consumption: Normal, standby, and automatic frost protection	50 W < 3 W 118 W	51 W (NG), 62 W (LPG) 2.4 W 170 W	51 W (NG), 62 W (LPG) 2.4 W 170 W

* The higher figures are only applicable in areas where the incoming water temperatures are high, for example 20 °C. Rather than all the water going through the heat exchanger, some of the water will pass through the bypass valve, allowing a greater capacity of water to be delivered.









Rinnai INFINITY EF accessories



EF24 external

EFi250 internal

EF250 external

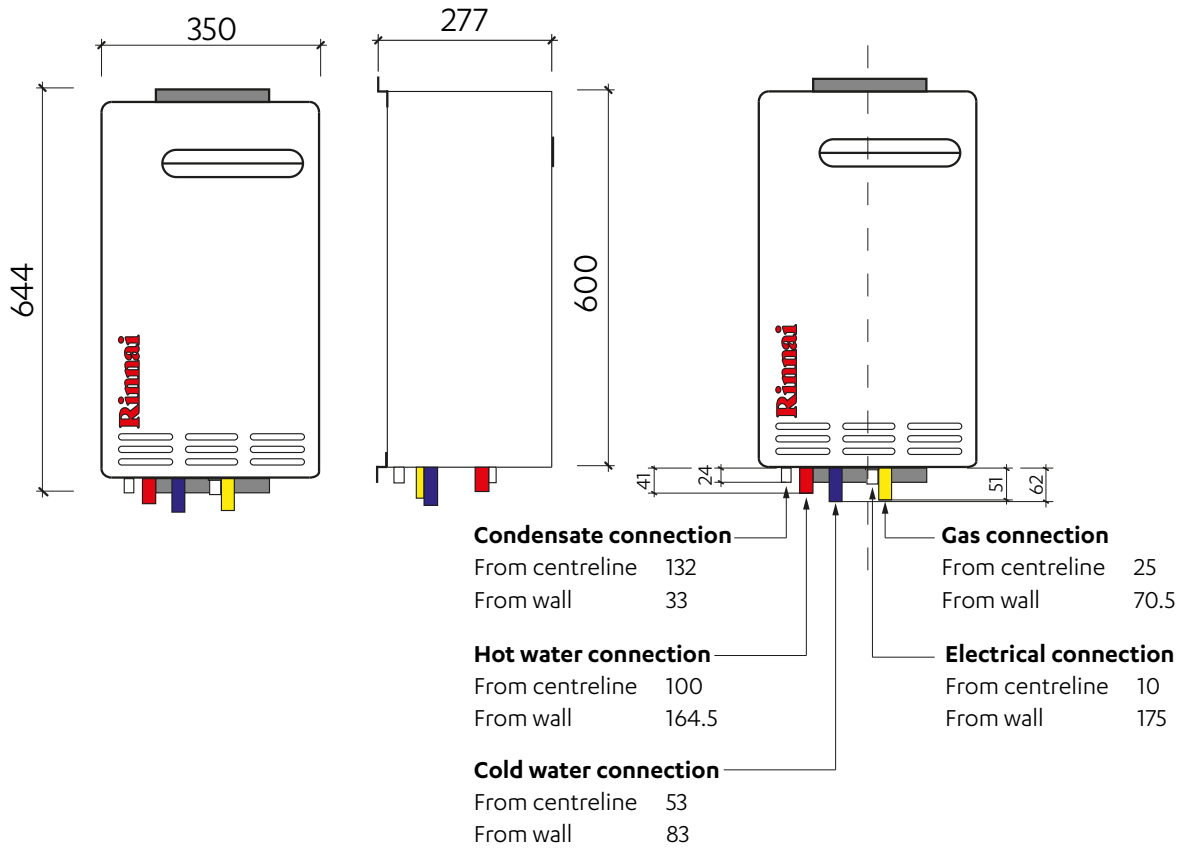
<p>Compact controller Refer p. 37</p>		MC601A	MC601A	MC601A
<p>Bathroom Deluxe Controller Refer p. 37</p>		BC100V1Z	BC100V1Z	BC100V1Z
<p>Kitchen Deluxe Controller Refer p. 37</p>		MC100V1Z	MC100V1Z	MC100V1Z
<p>Metal recess box Refer p. 41</p>		R1407	Not available	Not available
<p>Piper cover Refer p. 41</p>		R1408	R1409	R1409
<p>Security bracket Refer p. 44</p>		ACC1395	ACC1395	ACC1395
<p>HD error indication switch Refer p. 45</p>		R1070	R1070	R1070
<p>EZ connect cable Refer p. 45</p>		Not available	REUEZC	REUEZC

Manifolding

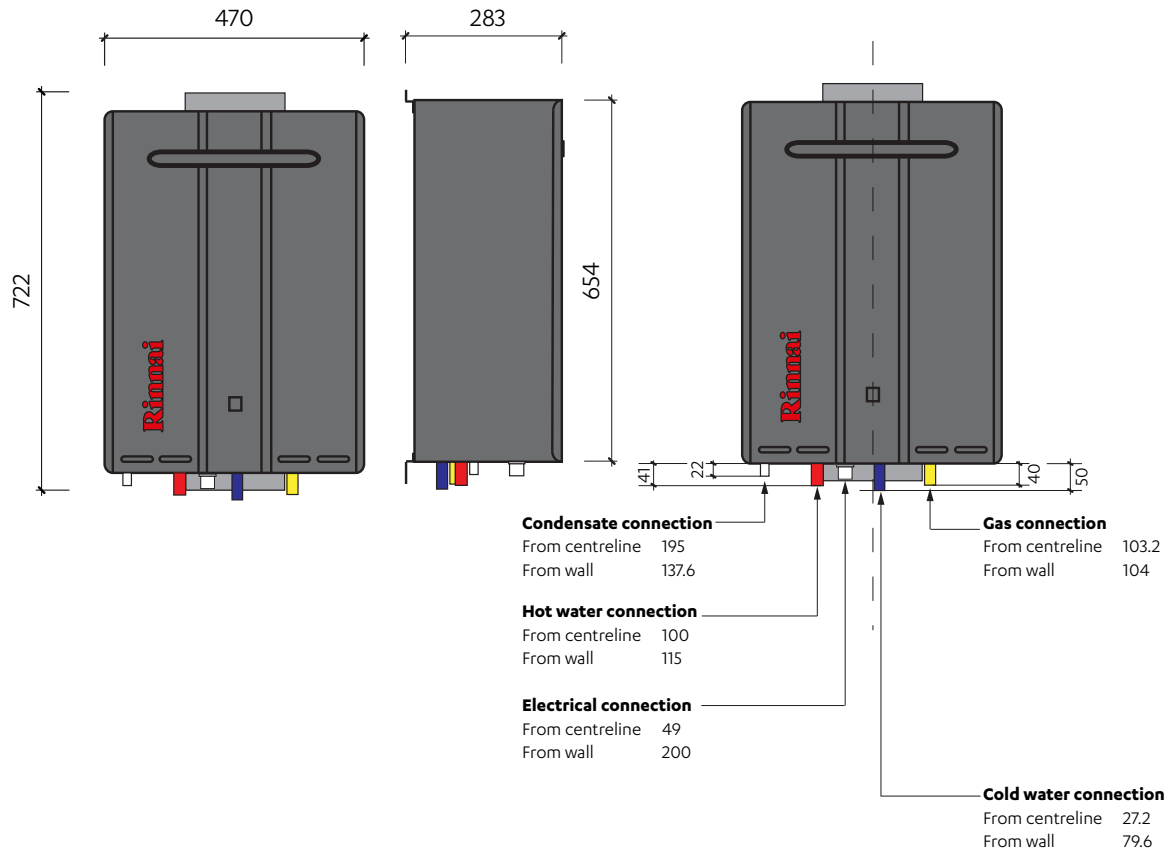
Commercial Rinnai INFINITY units can be manifolded together in banks of five (up to 25 units), by connecting them together to enable a greater hot water flow rate that is possible with a single unit, refer p. 46 for further information.

Rinnai INFINITY EF dimensions

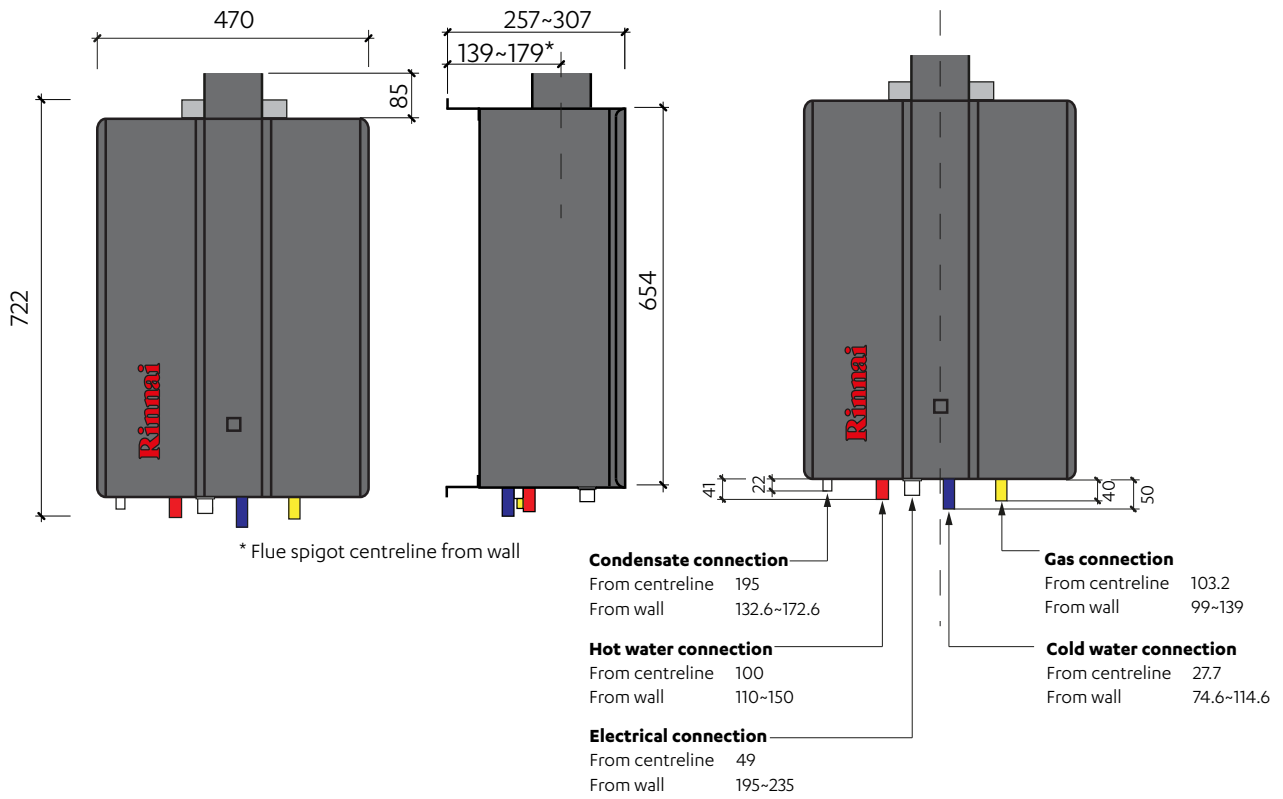
EF24 external



EF250 external

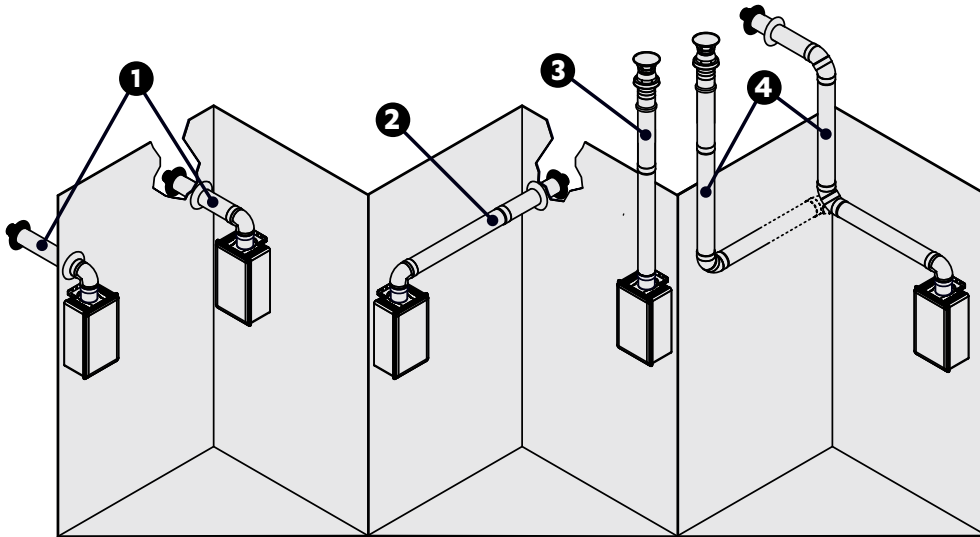


EFi250 internal



Rinnai INFINITY internal flueing options

The flueing for internal water heaters is a coaxial design. It has a stainless steel inner pipe to discharge products of combustion and a thermoplastic outer pipe for air supply to the appliance. Each Rinnai INFINITY water heater is flued individually, refer to the flueing options below.



1 Direct flueing

For direct flue installations through an external wall using the direct flue kit FFSSKIT—maximum wall thickness 430 mm (EFi250) and 485 mm (HDi200).

2 Horizontal extension flueing

For flue installations through an external wall using the direct flue kit FFSSKIT and additional lengths of pipe.

3 Vertical straight flueing

Installations where the internal unit is flued vertically through the roof.

4 Combination flueing

Installations using a combination of horizontal and vertical flueing.

Can I have your
attention please

Condensate

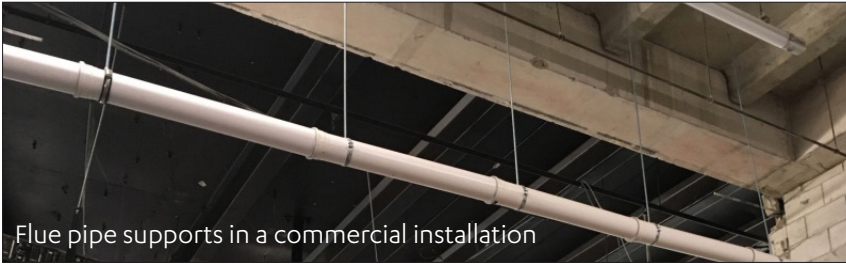
The HDi200 and EFi250 internal units have different ways in which condensate is handled. For installations using the HDi200, where the flue length exceeds 1.5 m, an additional flue component called the condensate trap kit is required, refer p. 29. For installations using the EFi250 internal, regardless of flue length, a condensate drain is required to drain the condensate to a suitable discharge point, refer p. 29 for more information. Provision of this drain is part of the installation and not a separate flue component.

Rinnai INFINITY internal flueing guidelines

Flue gases can reach temperatures of up to 200 °C. The flue terminal is to terminate in a location so as not to cause a nuisance, in accordance with AS/NZS 5601.1.

Flue support

The flue must be supported independently of the appliance by suitable clips or brackets, in accordance with AS/NZS 5601.1. Appropriate standoff brackets are supplied with each roof cowl (FFSSROOFCOWL) and flue pipe (FFSSPIPE1000).



Flue pipe supports in a commercial installation

Flue length

The chart below highlights the maximum flue length and the number of bends.

		Number of 90 ° bends				
		0	1	2	3	4
Flue length (m)	1	short flue				
	2					
	3					
	4					
	5					
	6	long flue				
	7					
	9					
	11					
	13					
	15					

The short and long flue areas in the table determine when the DIP switch settings on the INFINITY need changing. This is part of the installation process.

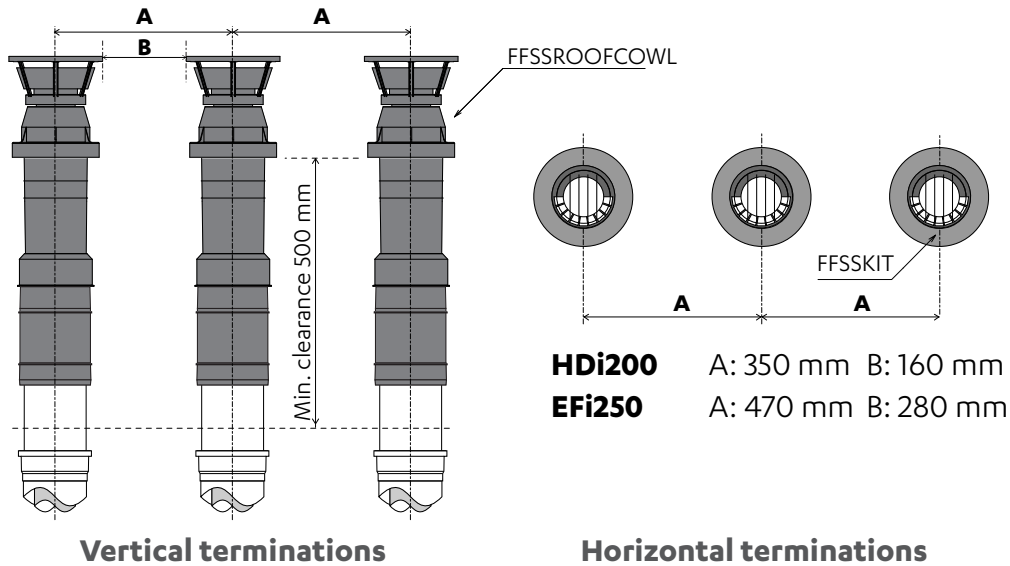
Vertical terminations

Rinnai INFINITY internal water heaters require a flue system that will draw effectively and clear flue products safely under all potential wind and climatic conditions. It is the responsibility of the installer to ensure the appliance is provided with an effective flue.

To ensure products of combustion are cleared, adequate clearance from the building is required. The flue cowl should have a 500 mm clearance from any part of the building. This also applies to steeped and pitched roofs where the flue cowl should be 500 mm clear of the ridge line. An adequate flow of fresh air must exist around the flue cowl following installation. Minimum clearances are shown in AS/NZS 5601.1.

Multiple flues

Ensure minimum distances, as shown below are maintained. The terminal clearances stated in AS/NZS 5601 do not apply to the HDi200 and EFi250 internal water heaters when they are installed side by side. AGA certification allows for the minimum 'B' horizontal separation as shown.



Each terminal is to be terminated at the same vertical height, refer images below—please note, these images show our older style terminals, which have since been updated.



HDi200 internal flue spigot

The HDi200 has a female flue spigot attached to the top of the unit. This differs to the older internal units, which had a male flue spigot attached. This is relevant if trying to fit the HDi200 into old flueing—a male flue spigot will need to be ordered. Contact Rinnai for further information.

N.B: This **does not** apply to the EFi250 model



Female flue spigot - part 4913



Male flue spigot - part 4914

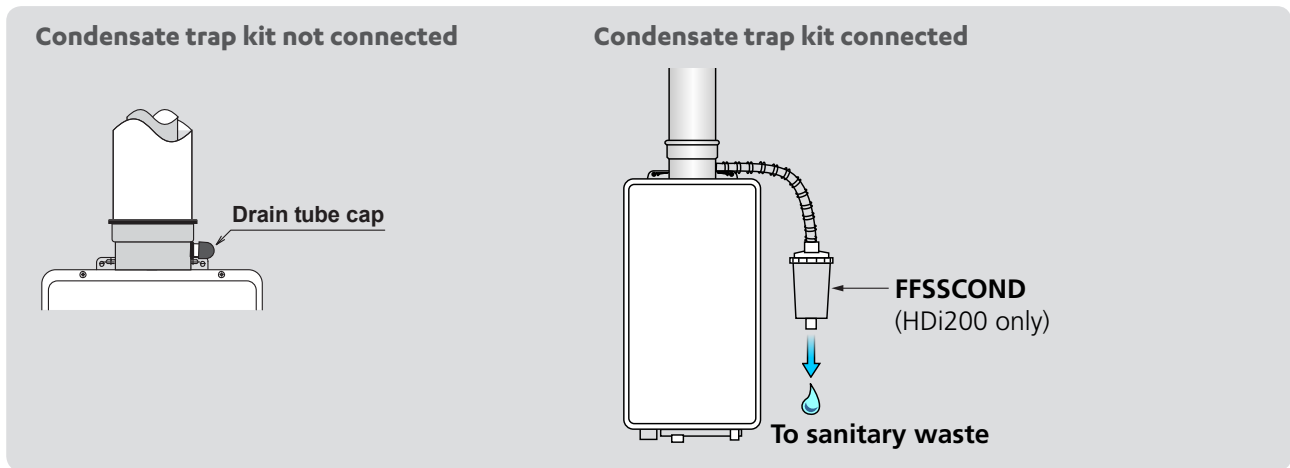
Condensate

The condensate trap (HDi200) or condensate drain (EFi250) collects any condensate from the unit and prevents it entering the water heater and causing damage.

Condensate is a by-product of gas combustion and is mildly acidic. For this reason copper tube and fittings must not be used as it will corrode. Instead plastic pipe and fittings such as UPVC or PE should be used.

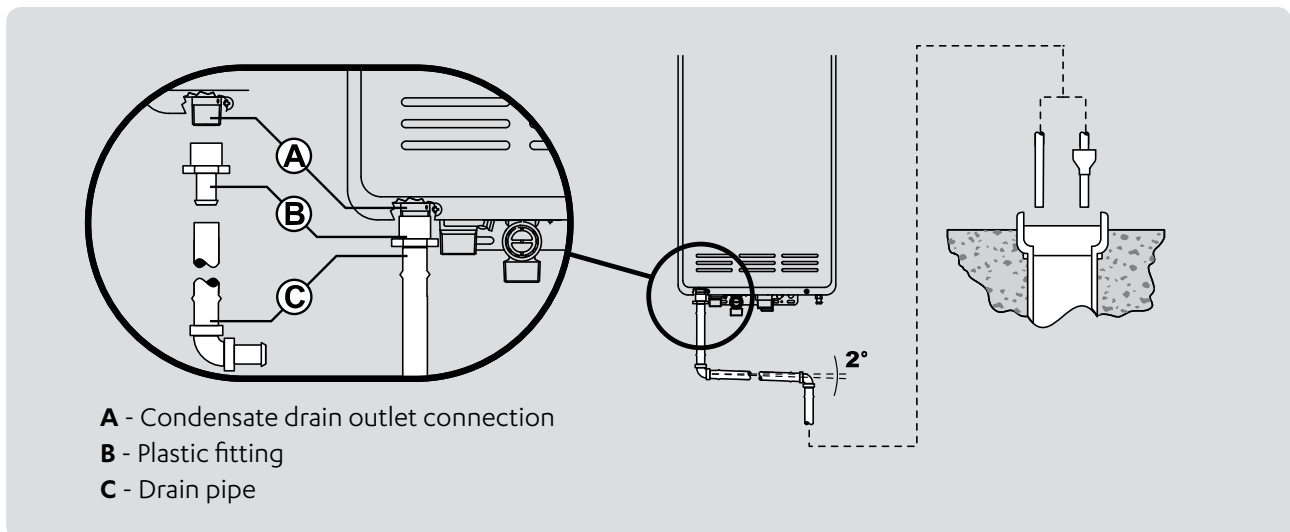
Handling condensate for the HDi200

A condensate trap kit (FFSSCOND) is required for lengths over 1.5 m. If flueing is less than 1.5 m, the flue spigot on the top of the unit is capped using the drain cap tube supplied with the unit. The drain cap is only removed if the condensate trap kit is connected.



Handling condensate for the EFi250

A condensate trap kit is not needed for the EFi250 as there is a different method for draining condensate. The Rinnai INFINITY EF water heaters generate condensate continuously at the a rate of up to five litres per hour as a by-product of a highly efficient gas burner. As there is a continuous flow of condensate being produced the unit must be drained via a pipe to a suitable discharge point, refer image below.



Rinnai INFINITY flueing configurations

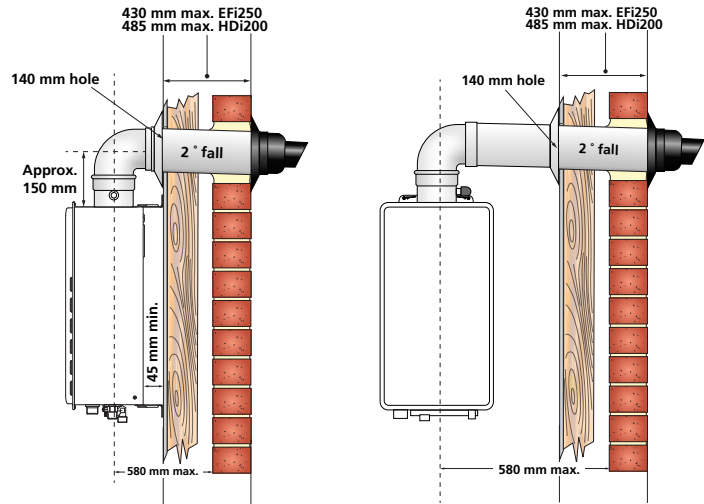
Direct flueing using the Rinnai direct flue kit (FFSSKIT)

For installations where the Rinnai INFINITY is mounted directly on the inside of an external wall with a maximum thickness of 430 mm (EFi250) and 485 mm (HDi200).

Kit contents:

- 90° bend
- horizontal flue terminal and pipe
- internal rubber white wall trim
- external rubber back wall trim

Horizontal flues **MUST** slope 20 mm per metre to the termination point to ensure any condensate drains appropriately—drain so as not to be a nuisance, for example concrete will be corrode if condensate is allowed to drip on it.



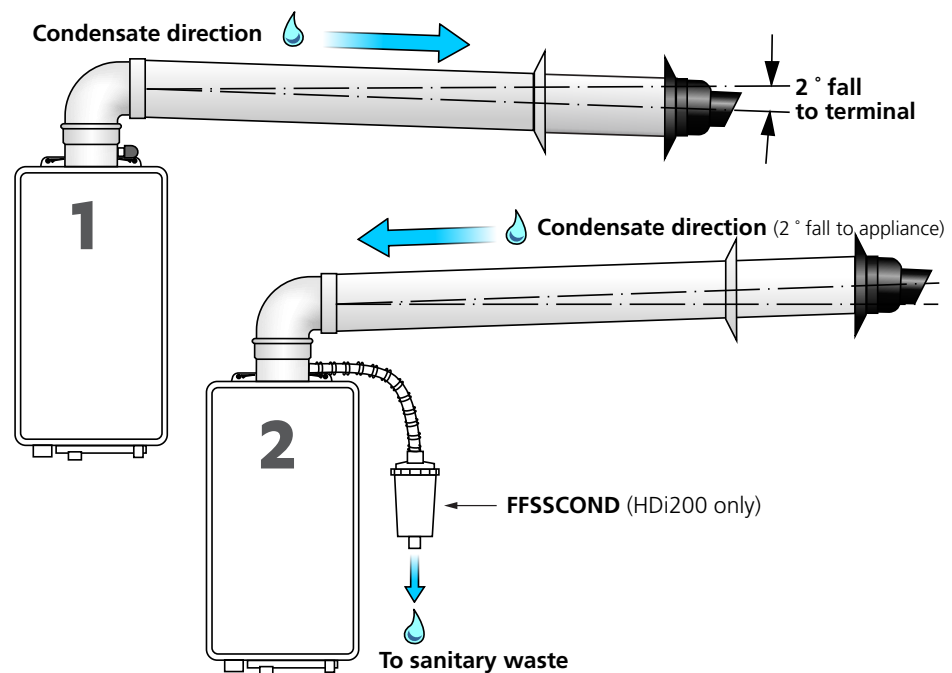
Horizontal extension flueing

For installations where the Rinnai INFINITY is mounted against an internal wall and the flueing needs to be extended for a longer distance to exit an external wall.

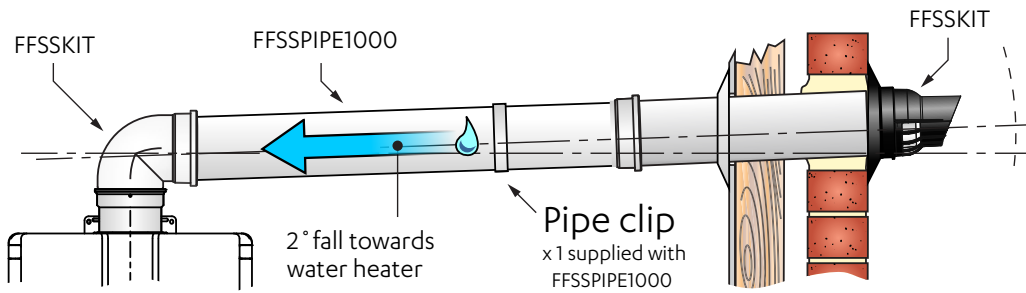
Use the direct flue kit (FFSSKIT) as a starting point and customise with additional flue pipe (FFSSPIPE1000), which can be cut to size. Total flue length can be up to 13 m.

Condensate for the HDi200 can be handled in two ways:

1. Two degree fall to the termination point (20 mm per metre), ensure condensate drains appropriately, refer direct flueing note above.
2. Condensate drains back to the unit—a condensate trap kit (FFSSCOND) is required.



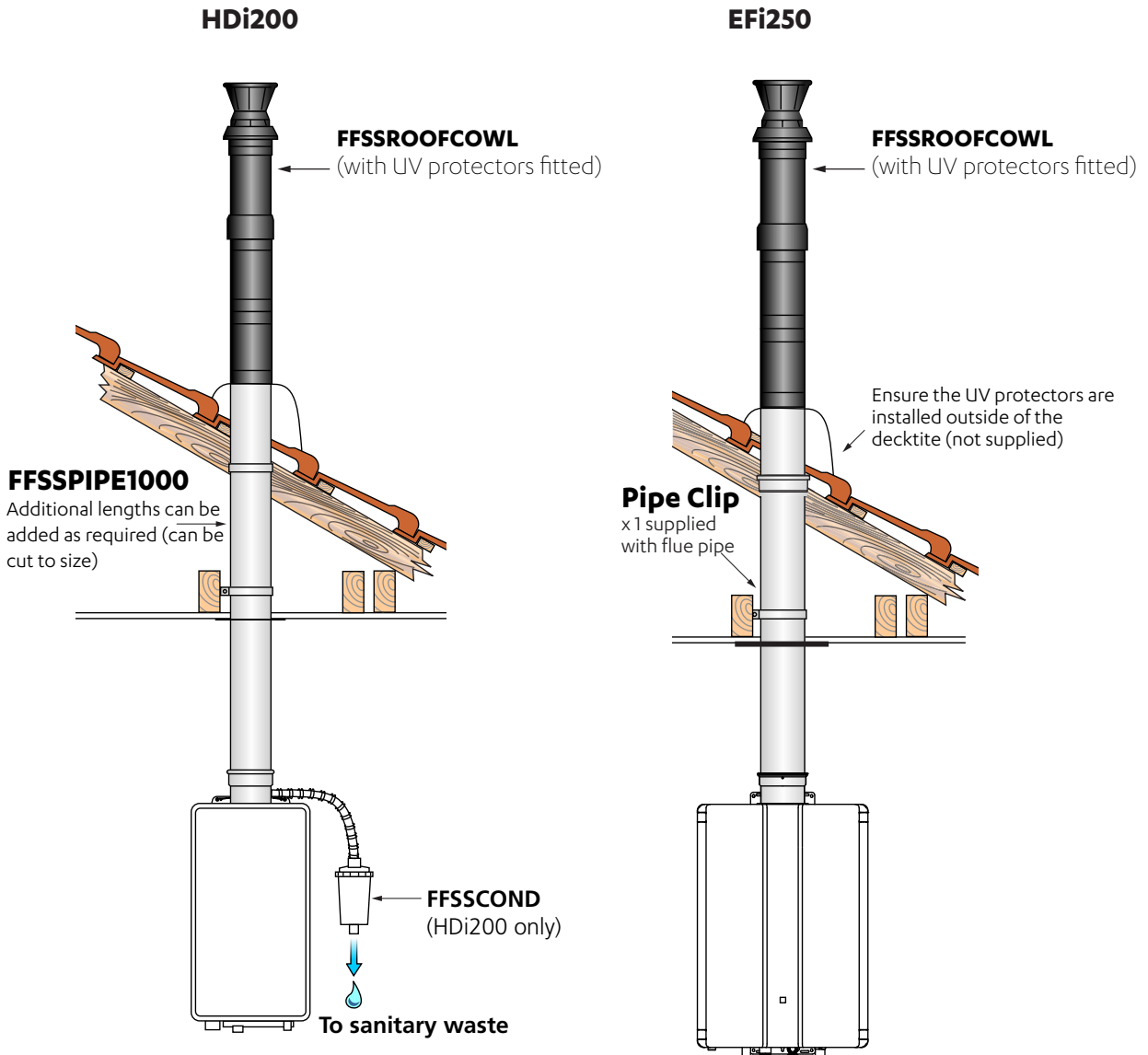
For extension horizontal flueing for the EFi250, condensate MUST BE directed back to the unit, refer image below, and further details on p. 29.



Vertical straight flueing

For installations where the Rinnai INFINITY needs to be flued vertically through the roof.

For HDi200 units a condensate trap kit (FFSSCOND) is required for flue lengths over 1.5 m. Total flue length can be 15 m. For the EFi250, condensate is handled in a different way, refer p. 29.



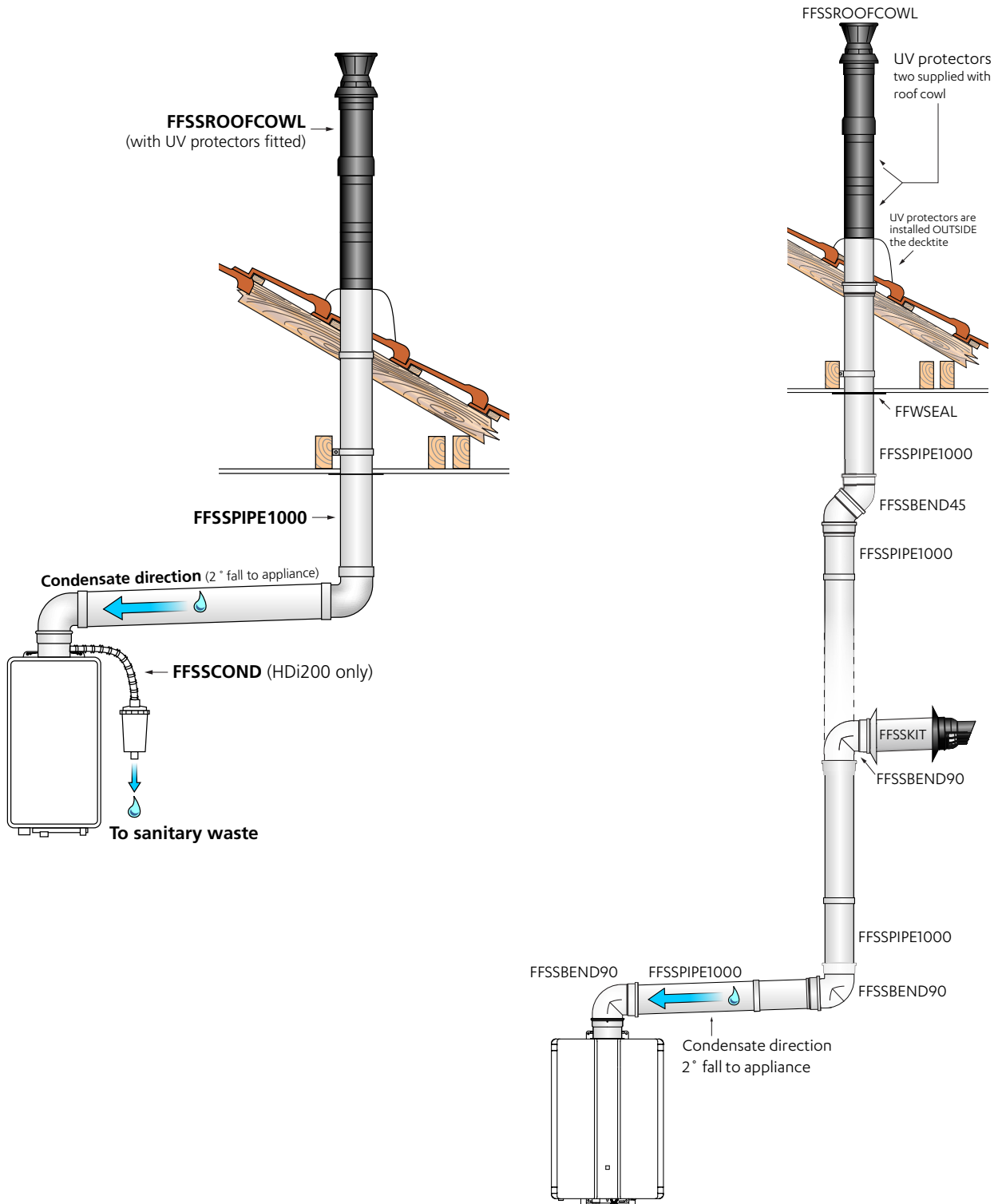
Combination flueing

Combination of vertical and horizontal flueing.

For HDi200 units a condensate trap kit (FFSSCOND) is required.

If starting horizontally and finishing horizontally, use FFSSKIT as a starting point and customise with additional flue pipe (FFSSPIPE1000), which can be cut to size.

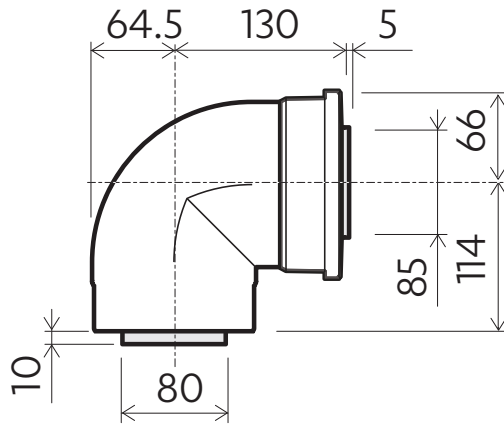
If starting horizontally and ending vertically or vice versa, individual flue components will need to be ordered. Flueing **MUST** start with 90 ° bend (FFSSBEND90) or flue pipe (FFSSPIPE1000).



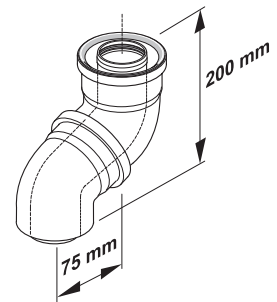
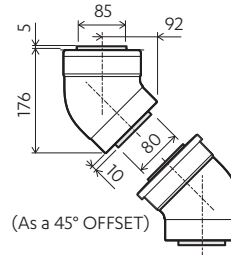
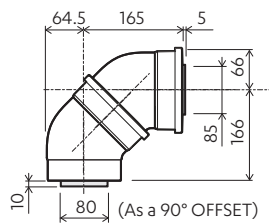
Rinnai INFINITY flue components

All the major flue components are constructed of a PVC outer and a stainless steel inner. These have zero clearance from combustibles.

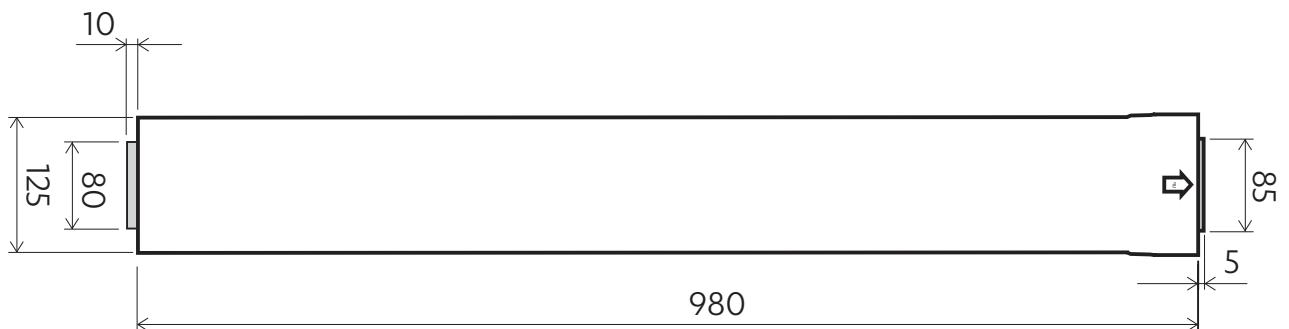
90° bend (FFSSBEND90)



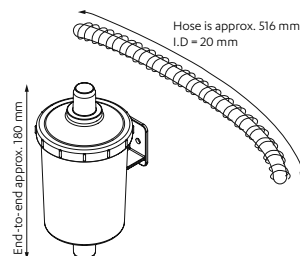
45° bend (FFSSBEND45) - sold as a pair



Flue pipe (FFSSPIPE1000) - can be cut to size, includes Munzing ring to support flue



Condensate trap kit (FFSSCOND) for the HDi200*



The FFSSCOND is not needed for the EFi250 as there is a different method to drain condensate, refer p. 29

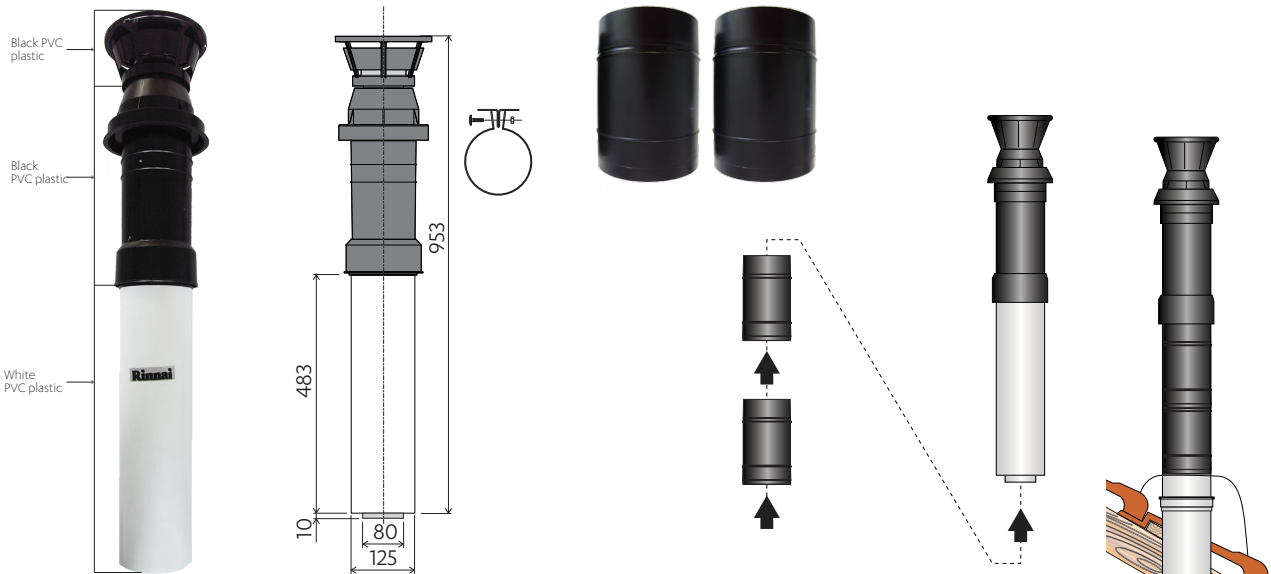
Roof cowl for vertical installations (FFSSROOFCOWL) - can be cut to size

Includes two black injection UV protectors, as shown, for covering and protecting the white flue pipe from UV damage. Also includes a flue clamp to support the flue.

Roof protector dimensions

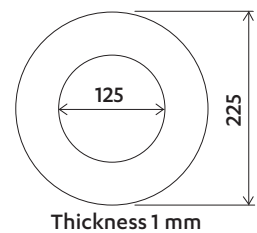
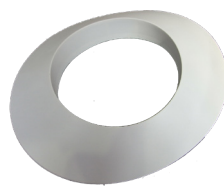
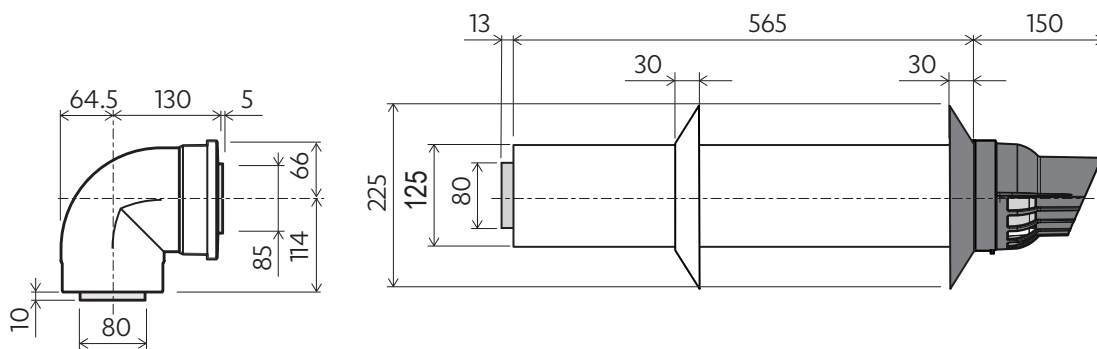
Length: approx. 197 mm
Joined length: approx. 37 mm
Diameter: 140 mm

If two protectors are not enough to cover the flue pipe additional protectors can be ordered—12693 (single protector)



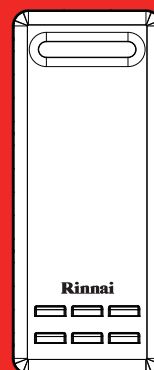
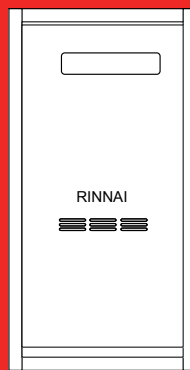
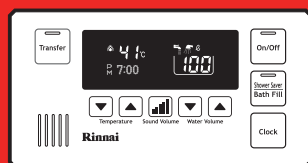
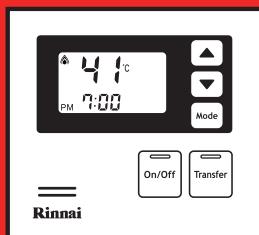
Direct flue kit for horizontal installations (FFSSKIT) - can be cut to size

Black and white wall trims come with the kit



Rinnai INFINITY®

accessory product pages





Rinnai INFINITY® digital controllers

With a Rinnai INFINITY digital controller you choose your own personalised settings. Just select the water temperature you want (37-55 °C) in up to four different locations. This means you can set water at a safe temperature in the bathroom, a great safety feature, then set it higher, when you need to in the kitchen and laundry.

Why have controllers?

- Control the temperature coming out of the hot water tap, a great safety feature for young children
- Reduce temperature fluctuations when other taps are used in the house
- Receive an extra two year warranty on your Rinnai INFINITY unit when controllers are installed
- Troubleshoot any problems by using the controller as a diagnostic tool, for example error code 11 when there is no gas

Location

Water controllers are water resistant, however, durability is improved when positioned outside the shower recess. In other areas they must be installed at least 400 mm above the highest part of the sink, basin, or bath.

Maximum number of controllers

For residential applications a maximum of four controllers can be fitted, refer combinations below.

- Only ONE master controller can be installed, this can be a Kitchen Deluxe or Compact Controller.
- Up to TWO Bathroom Deluxe controllers can be installed.
- The fourth controller must be a Compact Controller.

Each controller can be individually programmed, however the water heater can only deliver one set temperature at any time. For example, John is in the shower and has set the controller to 42 °C, Megan uses the kitchen tap at the same time. The water coming out of the kitchen tap will also be 42 °C, or lower if using a mixer and adding cold water. Megan can only change the programmed temperature at the kitchen once John is out of the shower.

Compact Controller (MC601A)

- Smallest, most economical model
- Off white
- For use anywhere in the house
- Comes with 10 m of cable



Bathroom Deluxe Controller (BC100V1Z)

Bathfill function lets you set the desired water level and temperature and walk away. Also ideal as a water saver as the temperature and volume of the water to be used in the shower can be set—great if you have teenagers.



A voice message will let you know when your bath is ready. If you have other deluxe controllers around the house, the message will play on all of them.

- Bathfill set-and-forget function*
- Silver
- For use in bathrooms only
- Comes with 10 m of cable

* **Please note:** Bathfill function unable to be used if manifolding Rinnai INFINITY units together

Kitchen Deluxe Controller (MC100V1Z)

- Works in conjunction with the Bathroom Deluxe Controller
- Silver
- For use in kitchens and laundries
- Comes with 10 m of cable



Additional cable

Additional cable can be ordered:

- R1069 Additional cable 10-15 m* for the Compact and Bathroom Deluxe controllers
- R1369 Additional cable 10-15 m* for the Kitchen Deluxe Controller

At the time of print existing stock is 15 m, possibly changing some time in the future to 10 m

Important

Rinnai controllers cannot be used with Rinnai INFINITY units connected to a solar system, or when a Rinnai iHeat is installed as the preset dip switch setting on the Rinnai INFINITY needs to be adjusted from 55 to 75 °C.

Rinnai INFINITY® recess boxes

Recess boxes enable a Rinnai external continuous flow water heater to be partially recessed (composite recess box) or fully recessed (metal recess box) into an external wall, covered, and out of sight. They can also be painted to match the exterior cladding.

Positioning

A Rinnai INFINITY unit inside a recess box operates at a slightly louder level than a Rinnai INFINITY installed on an outside wall. Please keep this in mind when positioning near a bedroom as the operating noise could affect some people.

Building code compliance

Local councils may have their own additional requirements regarding a recess box installation as it is similar in detail to installing a meter box. If in doubt over compliance with the building code, it is advisable they are consulted prior to installation.

Suitability

- Outdoor installations only
- New construction or major renovation—installation needs to commence during the framing stage before internal linings, cladding, or building wrap is applied

Types of recess boxes

- Composite recess box
Affordable alternative to the metal recess box.
- Metal recess box
Premium recess box that can either be fully or partially recessed.



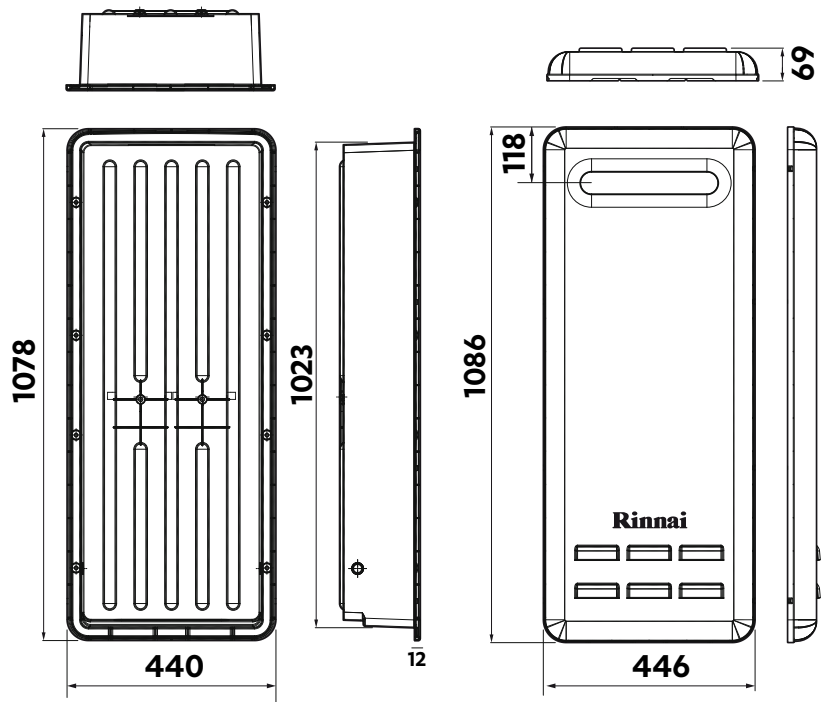
Rinnai INFINITY composite recess box (R1406)

Colour - beige.

Suitable for the current A-Series units (A16-A26), and our established range (VT16-VT26).

Minimum framing depth is 88 mm.

The composite recess box is not suitable for fire rated walls.



Approximate depth with cover on - 240 mm

Rinnai INFINITY metal recess box (R1405/R1407)

Construction is folded galvanised steel, powder coated white.

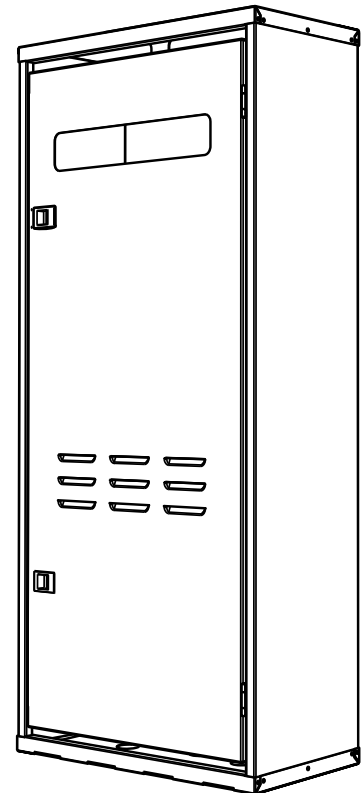
R1405

Suitable for the current A-Series units (A16-A26), and our established range (VT16-VT26).

R1407

Suitable for the:

- HD200 external
- HD250 external
- EF24 external



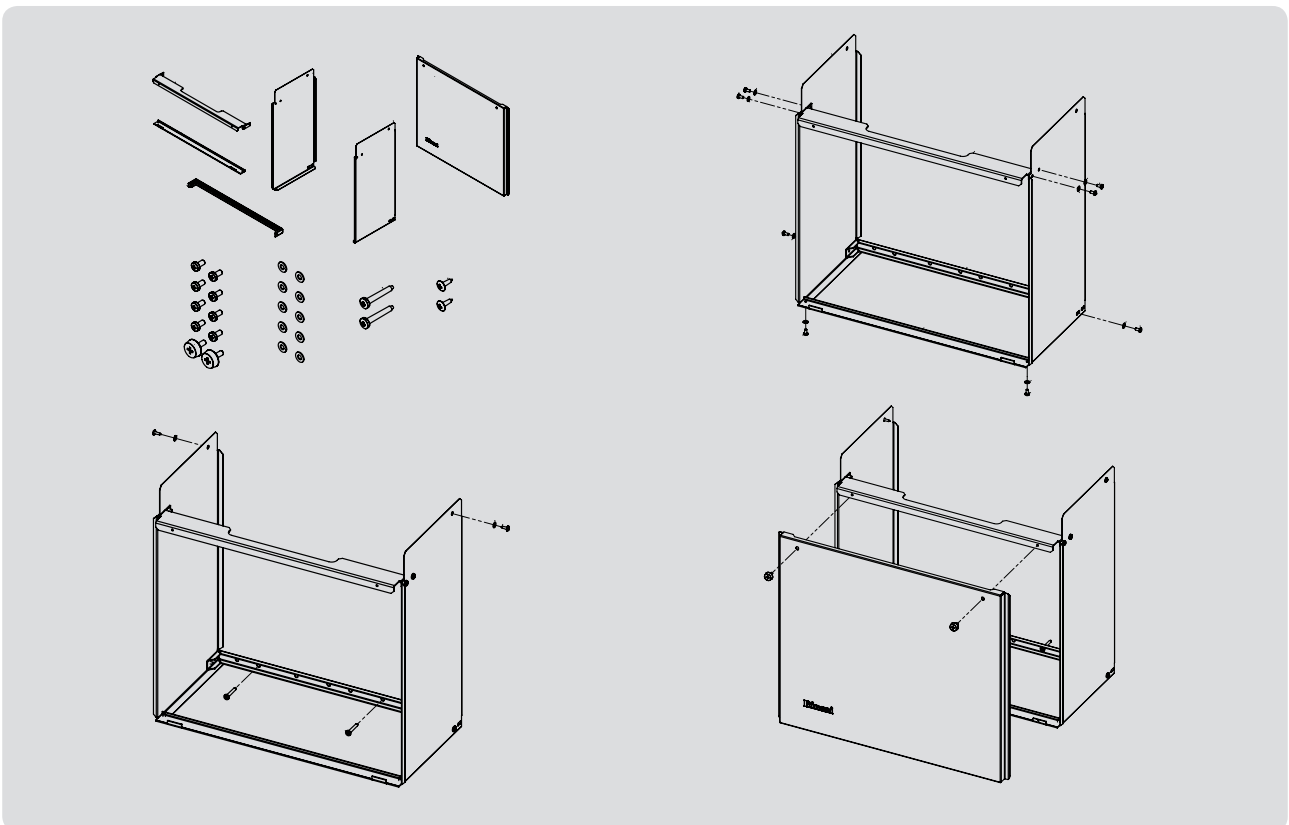
	R1405	R1407
Height	944 mm	944 mm
Width	417 mm	514 mm
Depth	205 mm	270 mm



Rinnai INFINITY® pipe covers

If you want a clean smooth finish to the installation, the Rinnai INFINITY pipe cover can be used to cover pipes, valves, and even the external power point*. There are five pipe cover kits that vary in size and colour according to the model of Rinnai INFINITY.

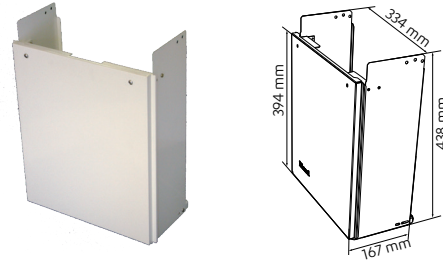
The pipe cover kits are sold as a flat pack and require assembly. With our current range of water heaters, as this does not require taking off the cover of the unit, assembly can be done by the homeowner.



* If the power point is located inside the cover it must comply with AS/NZS Wiring rules

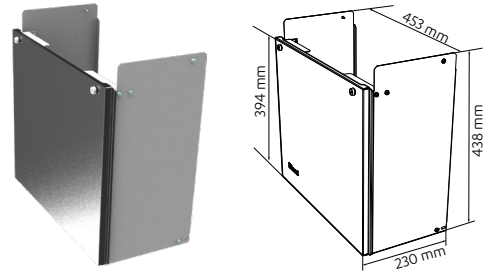
Pipe cover A-Series models (R1385)

- Suitable for the A16, A20, A24, and A26
- Colour - white



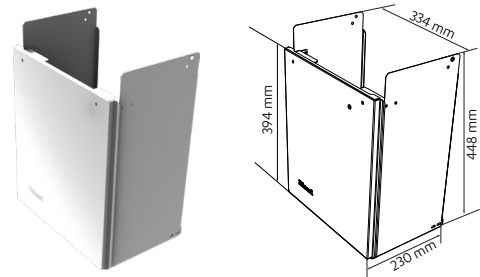
Pipe cover HD250 (R1402SC)

- Suitable for the HD250
- Colour - silver



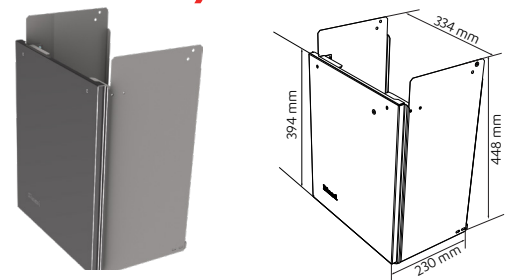
Pipe cover EF24 (R1408)

- Suitable for the EF24
- Colour - white



Pipe cover HD200/HDi200 (R1408SC)

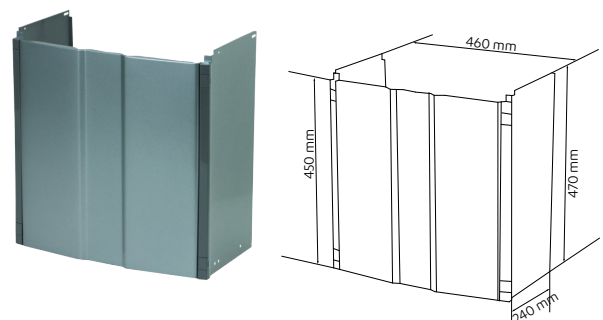
- Suitable for the HD200 models
- Colour - silver



Pipe cover EF250/EFi250 (R1409)

- Suitable for the EF250 models
- Colour - gunmetal grey

Flangeless design to match the flangeless case of the EF250's.





Rinnai stainless steel flue diverters are an accessory that can be fitted to an external Rinnai INFINITY water heater to expel combustion gases in either a sideways or upwards direction. The flue diverter is fitted with screws to the flue terminal of the water heater*.

Suitability

- Externally mounted Rinnai INFINITY continuous flow water heaters NOT installed in a recess box.
- Balconies, patios or other enclosed areas where products of combustion can be rapidly dispersed into the open-air.
- Sideways flue diverter only—external single water heater applications, can be installed for left or right handed installations.

Specific applications

Noise reduction, where the unit is positioned close to a neighbouring property.

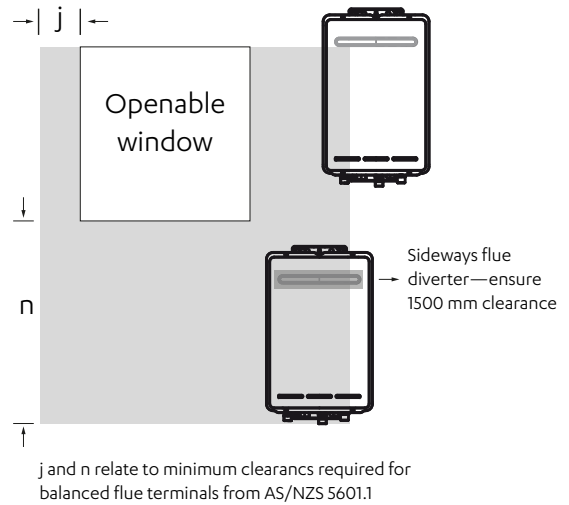
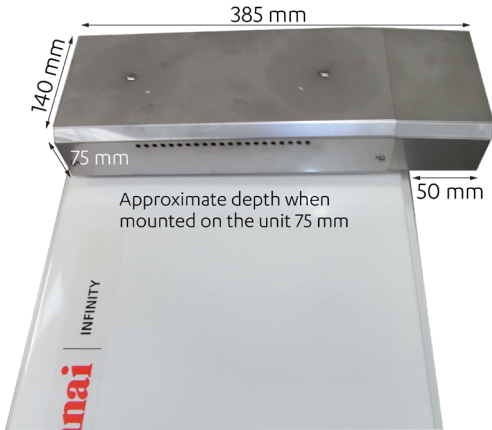
Where there may be an obstruction such as a tree, fence, wall, or other structure, that even though the Rinnai INFINITY is installed with the required clearances, will perform more efficiently if the flue gases are expelled away from the obstruction.

Important

* The flue diverter **MUST** remain as a permanent fixture as removal could mean the water heater position no longer complies with AS/NZS 5601.1.

Rinnai INFINITY sideways flue diverters

Where clearance to an openable window or other building structure is tight, the clearance shifts to the point of discharge, close to the edge of the water heater case.



Codes

FDS16	A16
FDS20	A20
FDS24	A24 and A26

Rinnai INFINITY upwards flue diverters

Codes

FDU16	A16
FDU20	A20
FDU24	A24 and A26
FDU32	HD250

Specific commercial application

Where there are multiple units installed that are positioned facing each other there is the potential for the units to suffocate from the flue gases directly opposite. With an upwards flue diverter the flue gases can be expelled upwards away from the units.



Rinnai INFINITY security bracket (ACC1395)

Description

A sturdy security bracket can be installed to act as a deterrent to thieves. Consisting of two U-shaped 2 mm powder coated galvanised steel plates, which interlock through the lower bracket of the Rinnai INFINITY. The bracket is secured with a padlock (not included).

Colour: Off-white, can be painted.

Ideal for builders who need to protect the Rinnai INFINITY before the home is sold or handed over to the new owners.

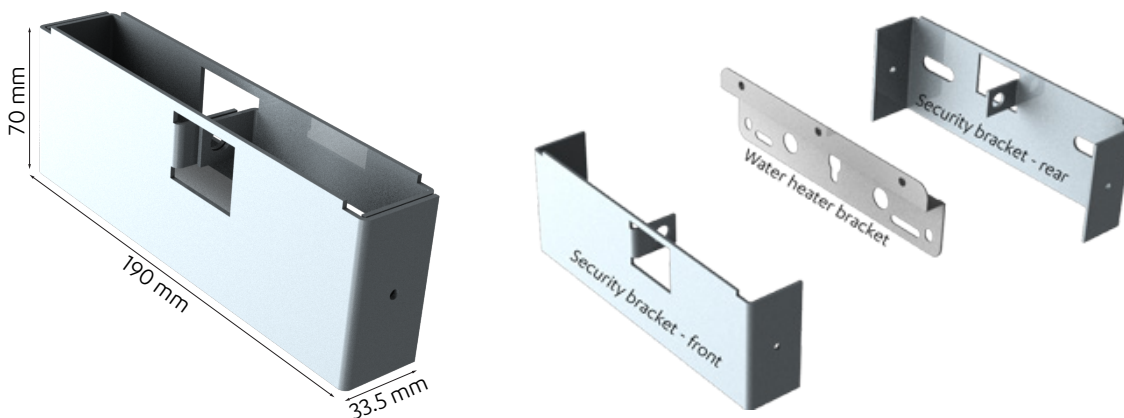
How it works

The bracket prevents access to the bolts fixing the unit to the wall, this locks the lower section of the Rinnai INFINITY in place, and prevents the unit from being quickly removed from the wall.

Suitability

For all Rinnai INFINITY continuous flow gas water heaters—can be retrofitted to existing installations.

Can be installed on all cladding systems, like weatherboard, brick, and plaster. Can also be installed inside a recess box.



Rinnai INFINITY HD error switch (R1070)

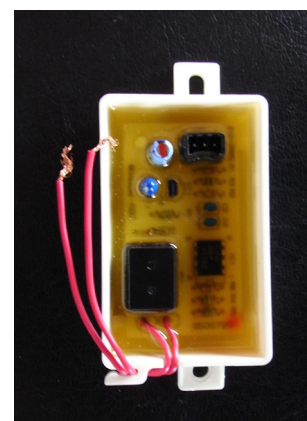
Description

The Rinnai INFINITY HD water heater error indication switch is a volt-free, normally open switch. The switch will shift to a closed position when there is an active error in the water heater.

The switch is intended to be connected to a monitoring system such as a building management system, or audible error indication system.

Suitability

Suitable for commercial applications with the; HD200 external, HDi200 internal, EFi250 internal, and EF250 external.



System design

System designers should note that some errors will reset to an inactive (open) state under particular conditions. It is important that this is clearly understood when developing monitoring and response systems.

Switch rating

The HD error indication switch will switch the following maximum loads

- Voltage (AC or DC) 24 Volts
- Current 1 Amp

Systems requiring loads greater than this should be configured via an external relay.

Rinnai INFINITY EZ connect cable (REUEZC)

Description

The EZ connect cable allows two Rinnai INFINITY commercial water heaters to be connected so they function as one large unit.

The water heaters can be installed 5-460 mm apart. The maximum distance of 460 mm is so the cable will reach between the units, and to prevent temperature fluctuations when the water is turned on and off.

Cable length plug to plug - 1850 mm.



Installation

Installation by a certified tradesperson is required.

Suitability

Can be used with the following water heaters:

- HD200 external and HDi200 internal
- HD250 external
- EFi250 internal and EF250 external

Please note: The bathfill function on the Bathroom Deluxe Controller will not work if an EZ connect cable is fitted.

Rinnai INFINITY manifolding

Description

Commercial Rinnai INFINITY units can be manifolded together, in banks of five (up to 25 units), by connecting them together in parallel to enable a greater hot water flow rate than is possible with a single unit.

A manifold electronic control system (MECS) links each Rinnai INFINITY unit in the system, and will turn on each unit as required. The system is designed to ensure gas is not wasted and that an endless supply of hot water is always available.

How it works

A master, located internally or externally, and sub-communication PCB is installed in the first unit, other units have a sub-communication slave cable installed. The master communication PCB receives information about flow rates from each unit and balances the load on each unit.

Random selection of the units required to supply the demand means all units share the workload evenly.

All information is transmitted via communication cables to the slave units. The master control also has an inbuilt fault detection system and will allocate a replacement should one unit fail.

Suitability

All HD and EF models only*

* At the time of print, A-Series unit manifolding is not available.

Codes

REUMSBM internal master manifold kit for a connection made inside the unit
 REUMSBMB external master manifold kit for a connection made outside the unit
 REUMSBC1 manifold slave cable
 REUMSBC2 joiner for greater than five manifolded Rinnai INFINITY units

MECS Position	Master		Slave REUMSBC1	Joiner REUMSBC2
	Internal*	OR External**		
Code	REUMSBM	REUMSBMB		
Number of water heaters				
2	1	1	-	-
3	1	1	1	-
4	1	1	2	-
5	1	1	3	-
6	2	2	2	1
7	2	2	3	1
8	2	2	4	1
9	2	2	5	1
10	2	2	6	1
11	3	3	5	2
12	3	3	6	2
13	3	3	7	2
14	3	3	8	2
15	3	3	9	2
16	4	4	8	3
17	4	4	9	3
18	4	4	10	3
19	4	4	11	3
20	4	4	12	3
21	5	5	11	4
22	5	5	12	4
23	5	5	13	4
24	5	5	14	4
25	5	5	15	4

* Internal: Master PCB located inside the Rinnai INFINITY
 ** External: Master PCB located outside the Rinnai INFINITY

Appendices



Appendix 1

water flow and gas usage

When calculating the model of Rinnai INFINITY required it's important to determine what the incoming water temperature will be—this is usually calculated on the worst case scenario (winter). This temperature is needed to work out the degree rise to produce the hot water needed,

Approximate incoming water temperatures in winter

- Northland and Auckland use 15 °C
- BOP, Gisborne, and Hawkes Bay use 10 °C
- Waikato, and South Island (excl. Nelson & Marlborough) use 5 °C

Degree rise

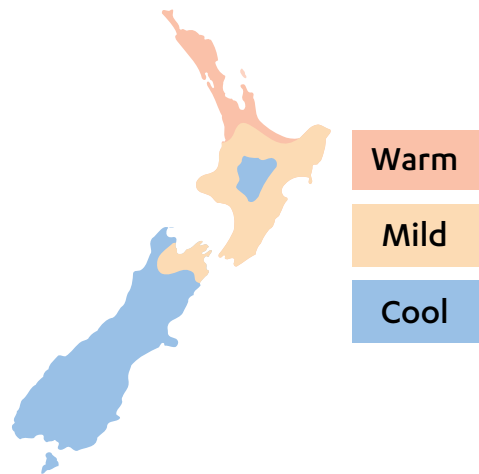
In the specification pages for the Rinnai INFINITY models we express a parameter called 'nominal water capacity'. This means at a 25 ° rise, the unit will produce a certain number of litres per minute of hot water. For example:

- The A26 external will produce 26 litres per minute at a 25 ° rise
- The A24 external will produce 24 litres per minute at a 25 ° rise

Using the example above, for incoming water at 10 °C and a required temperature 55 °C, the A26 external will produce 14.4 litres per minute at a 45 ° rise (55-10), and the A24 external will produce 13.3 litres per minute at a 45 ° rise.

Water flow and gas usage tables

Use these tables to calculate model performance based on the incoming water temperature, and the required outlet temperature.



Rinnai INFINITY A-Series

temperature preset to 55 °C or less

A-Series model	Approx. min. to max. gas input (MJ/h)	5 ° temperature rise				10 ° temperature rise			
		L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)	L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)
A16	16.3-124	20	1200	100	31.0	20	1200	100	62.0
A20	19.9-156	24	1440	140	37.2	24	1440	140	74.4
A24	16.3-184	26	1560	180	40.3	26	1560	180	80.6
A26	16.3-199	26	1560	180	40.3	26	1560	180	80.6
		15 ° temperature rise				20 ° temperature rise			
A16	16.3-124	20	1200	100	93.0	20	1200	100	124.0
A20	19.9-156	24	1440	140	111.6	24	1440	140	148.8
A24	16.3-184	26	1560	180	120.9	26	1560	180	161.2
A26	16.3-199	26	1560	180	120.9	26	1560	180	161.2
		25 ° temperature rise				30 ° temperature rise			
A16	16.3-124	16	960	60	124.0	13.3	800	45	124.0
A20	19.9-156	20	1200	100	156.0	16.7	1000	70	156.0
A24	16.3-184	24	1440	145	184.0	20	1200	100	184.0
A26	16.3-199	26	1560	180	199.0	21.7	1300	110	199.0
		35 ° temperature rise				40 ° temperature rise			
A16	16.3-124	11.4	686	30	124.0	10.0	600	25	124.0
A20	19.9-156	14.3	857	45	156.0	12.5	750	42	156.0
A24	16.3-184	17.1	1029	70	184.0	15.0	900	45	184.0
A26	16.3-199	18.6	1114	90	199.0	16.3	975	70	199.0
		45 ° temperature rise				50 ° temperature rise			
A16	16.3-124	8.9	533	20	124.0	8	480	18	124.0
A20	19.9-156	11.1	667	35	156.0	10	600	30	156.0
A24	16.3-184	13.3	800	45	184.0	12	720	40	184.0
A26	16.3-199	14.4	867	50	199.0	13	780	45	199.0

Rinnai INFINITY HD

temperature preset to 55 °C or less

HD model	Approx. min. to max. gas input (MJ/h)	5 ° temperature rise				10 ° temperature rise			
		L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)	L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)
HD200	16-199	32	1920	200	47.8	32	1920	200	95.7
HDi200	16-195	32	1920	200	47.8	32	1920	200	95.7
HD250	20-250	37	2220	200	55.3	37	2220	200	110.6
		15 ° temperature rise				20 ° temperature rise			
HD200	16-199	32	1920	200	143.5	32	1920	200	199.0
HDi200	16-195	32	1920	200	143.5	32	1920	200	195.0
HD250	20-250	37	2220	200	165.9	37	2220	200	250.0
		25 ° temperature rise				30 ° temperature rise			
HD200	16-199	26	1560	200	199.0	21.7	1302	112.5	199.0
HDi200	16-195	26	1560	200	195.0	21.7	1302	112.5	195.0
HD250	20-250	32	1920	140	250.0	26.7	1602	100	250.0
		35 ° temperature rise				40 ° temperature rise			
HD200	16-199	18.6	1116	75	199.0	16.3	978	60	199.0
HDi200	16-195	18.6	1116	75	195.0	16.3	978	60	195.0
HD250	20-250	22.9	1374	60	250.0	20	1200	50	250.0
		45 ° temperature rise				50 ° temperature rise			
HD200	16-199	14.4	864	45	199.0	13	780	40	199.0
HDi200	16-195	14.4	864	45	195.0	13	780	40	195.0
HD250	20-250	17.8	1068	40	250.0	16	960	40	250.0

Rinnai INFINITY HD

temperature preset to 75 °C

HD model	Approx. min. to max. gas input (MJ/h)	5 ° temperature rise				10 ° temperature rise			
		L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)	L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)
HD200	16-199	24	1440	200	34.8	24	1440	200	72.9
HDi200	16-195	24	1440	200	34.8	24	1440	200	72.9
HD250	20-250	24	1440	200	36.4	24	1440	200	72.9
		15 ° temperature rise				20 ° temperature rise			
HD200	16-199	24	1440	200	104.3	24	1440	200	139.0
HDi200	16-195	24	1440	200	104.3	24	1440	200	139.0
HD250	20-250	24	1440	200	109.3	24	1440	200	145.7
		25 ° temperature rise				30 ° temperature rise			
HD200	16-199	24	1440	200	173.8	21.7	1302	112.5	199.0
HDi200	16-195	24	1440	200	173.8	21.7	1302	112.5	195.0
HD250	20-250	24	1440	200	182.2	24	1440	140	250.0
		35 ° temperature rise				40 ° temperature rise			
HD200	16-199	18.6	1114	75	199.0	16.3	975	60	199.0
HDi200	16-195	18.6	1114	75	195.0	16.3	975	60	195.0
HD250	20-250	22.9	1371	130	250.0	20.0	1200	100	250.0
		45 ° temperature rise				50 ° temperature rise			
HD200	16-199	14.4	867	45	199.0	13.0	780	40	199.0
HDi200	16-195	14.4	867	45	195.0	13.0	780	40	195.0
HD250	20-250	17.8	1067	80	250.0	16.0	960	70	250.0
		55 ° temperature rise				60 ° temperature rise			
HD200	16-199	11.8	709	36	199.0	10.8	650	33	199.0
HDi200	16-195	11.8	709	36	195.0	10.8	650	33	195.0
HD250	20-250	14.5	873	50	250.0	13.3	800	45	250.0
		65 ° temperature rise				70 ° temperature rise			
HD200	16-199	10	600	31	199.0	9.3	557	29	199.0
HDi200	16-195	10	600	31	195.0	9.3	557	29	195.0
HD250	20-250	12.3	738	40	250.0	11.4	686	35	250.0
		75 ° temperature rise				80 ° temperature rise			
HD200	16-199	8.7	520	29	199.0	8.1	488	29	199.0
HDi200	16-195	8.7	520	29	195.0	8.1	488	29	195.0
HD250	20-250	10.7	640	30	250.0	10.0	600	25	250.0

Rinnai INFINITY EF

temperature preset to 55 °C or less

EF model	Approx. min. to max. gas input (MJ/h)	5 ° temperature rise				10 ° temperature rise			
		L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)	L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)
EF24	16-162	30.0	1800	240	41.9	30.0	1800	240	79.3
EF250	10-211	37.0	2220	340	51.6	37.0	2220	340	97.8
EFi250	10-211	37.0	2220	340	51.6	37.0	2220	340	97.8
		15 ° temperature rise				20 ° temperature rise			
EF24	16-162	30.0	1800	240	118.9	30.0	1800	240	162.0
EF250	10-211	37.0	2220	340	146.7	37.0	2220	340	195.6
EFi250	10-211	37.0	2220	340	146.7	37.0	2220	340	195.6
		25 ° temperature rise				30 ° temperature rise			
EF24	16-162	24.0	1440	140	162.0	20.0	1200	80	162.0
EF250	10-211	32.0	1920	240	211.0	26.7	1600	171	211.0
EFi250	10-211	32.0	1920	240	211.0	26.7	1600	171	211.0
		35 ° temperature rise				40 ° temperature rise			
EF24	16-162	17.1	1028.6	60	162.0	15.0	900	50.0	162.0
EF250	10-211	22.9	1371.4	130	211.0	20.0	1200	96.0	211.0
EFi250	10-211	22.9	1371.4	130	211.0	20.0	1200	96.0	211.0
		45 ° temperature rise				50 ° temperature rise			
EF24	16-162	13.3	800	45	162.0	12.0	720	31.0	162.0
EF250	10-211	17.8	1066.7	82	211.0	16.0	960	61.9	211.0
EFi250	10-211	17.8	1066.7	82	211.0	16.0	960	61.9	211.0

Rinnai INFINITY EF

temperature preset to 75 °C

EF model	Approx. min. to max. gas input (MJ/h)	5 ° temperature rise			10 ° temperature rise				
		L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)	L/min	L/h	Pressure loss through unit (kPa)	Approx. gas consumption (MJ/h)
EF24	16-162	24	1140	140	33.5	24	1140	140	63.4
EF250	10-211	24	1140	137	33.5	24	1140	137	63.4
EFi250	10-211	24	1140	137	33.5	24	1140	137	63.4
		15 ° temperature rise			20 ° temperature rise				
EF24	16-162	24	1140	140	95.2	24	1140	140	126.9
EF250	10-211	24	1140	137	95.2	24	1140	137	126.9
EFi250	10-211	24	1140	137	95.2	24	1140	137	126.9
		25 ° temperature rise			30 ° temperature rise				
EF24	16-162	24	1140	140	162	20	1200	80	162.0
EF250	10-211	24	1140	137	158.6	24	1140	137	190.3
EFi250	10-211	24	1140	137	158.6	24	1140	137	190.3
		35 ° temperature rise			40 ° temperature rise				
EF24	16-162	17.1	1029	60	162	15	900	50	162
EF250	10-211	22.9	1371	130	211	20	1200	96	211
EFi250	10-211	22.9	1371	130	211	20	1200	96	211
		45 ° temperature rise			50 ° temperature rise				
EF24	16-162	13.3	800	45	162	12	720	31	162
EF250	10-211	17.8	1067	82	211	16	960	61.9	211
EFi250	10-211	17.8	1067	82	211	16	960	61.9	211
		55 ° temperature rise			60 ° temperature rise				
EF24	16-162	10.9	655	29	162	10	600	27	162
EF250	10-211	14.5	873	48.1	211	13.3	800	41.2	211
EFi250	10-211	14.5	873	48.1	211	13.3	800	41.2	211
		65 ° temperature rise			70 ° temperature rise				
EF24	16-162	9.2	554	26	162	8.6	514	25	162
EF250	10-211	12.3	738	34.3	211	11.4	686	27.5	211
EFi250	10-211	12.3	738	34.3	211	11.4	686	27.5	211
		75 ° temperature rise			80 ° temperature rise				
EF24	16-162	8.0	480	25	162	7.5	450	25	162
EF250	10-211	10.7	640	24.7	211	10	600	20.6	211
EFi250	10-211	10.7	640	24.7	211	10	600	20.6	211

Appendix 2

Rinnai INFINITY inbuilt frost protection

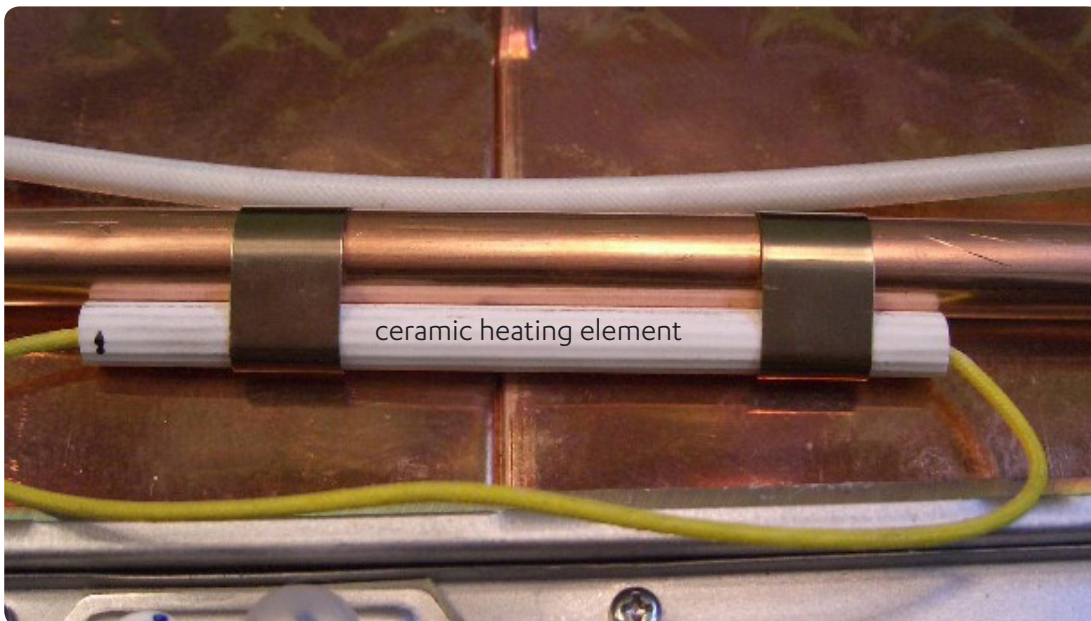
Frost protection is fitted as standard on all Rinnai INFINITY models. Frost protection operates automatically, as required, whenever the appliance is connected to the electric power supply.

How frost protection works

When the temperature inside the unit drops below 3.5 °C the frost protection turns on, providing approximately 15 W of heat via electricity. Once the temperature inside the unit reaches 7 °C the frost protection switches itself off.

The heat, provided by strategically placed ceramic heating elements, stops the water from freezing within the pipework of the unit.

As frost protection requires electricity to run it is important that the unit is connected to the power supply at all times. If left off in an area prone to frost Rinnai recommend draining the appliance to prevent frost damage (not covered by warranty).



Long ceramic heating element inside a Rinnai INFINITY unit

Appendix 3

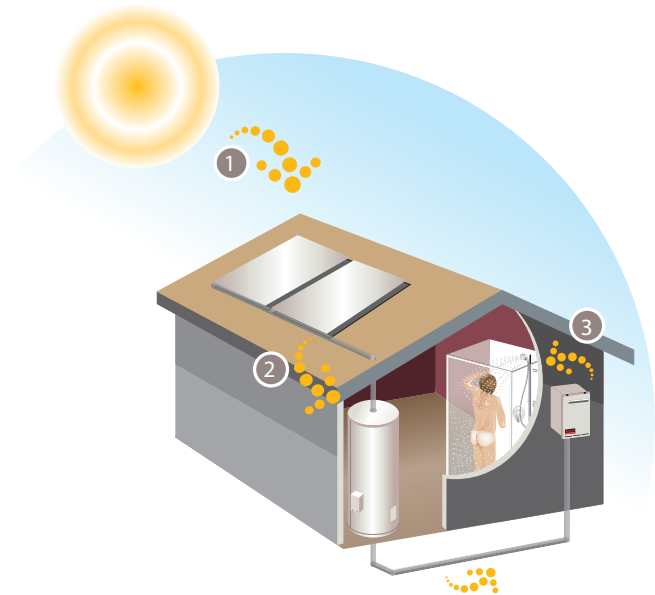
Gas boosted solar

Rinnai INFINITY HD and EF models can be easily plumbed to provide additional heat to a solar hot water system to heat water when solar hot water is not available.

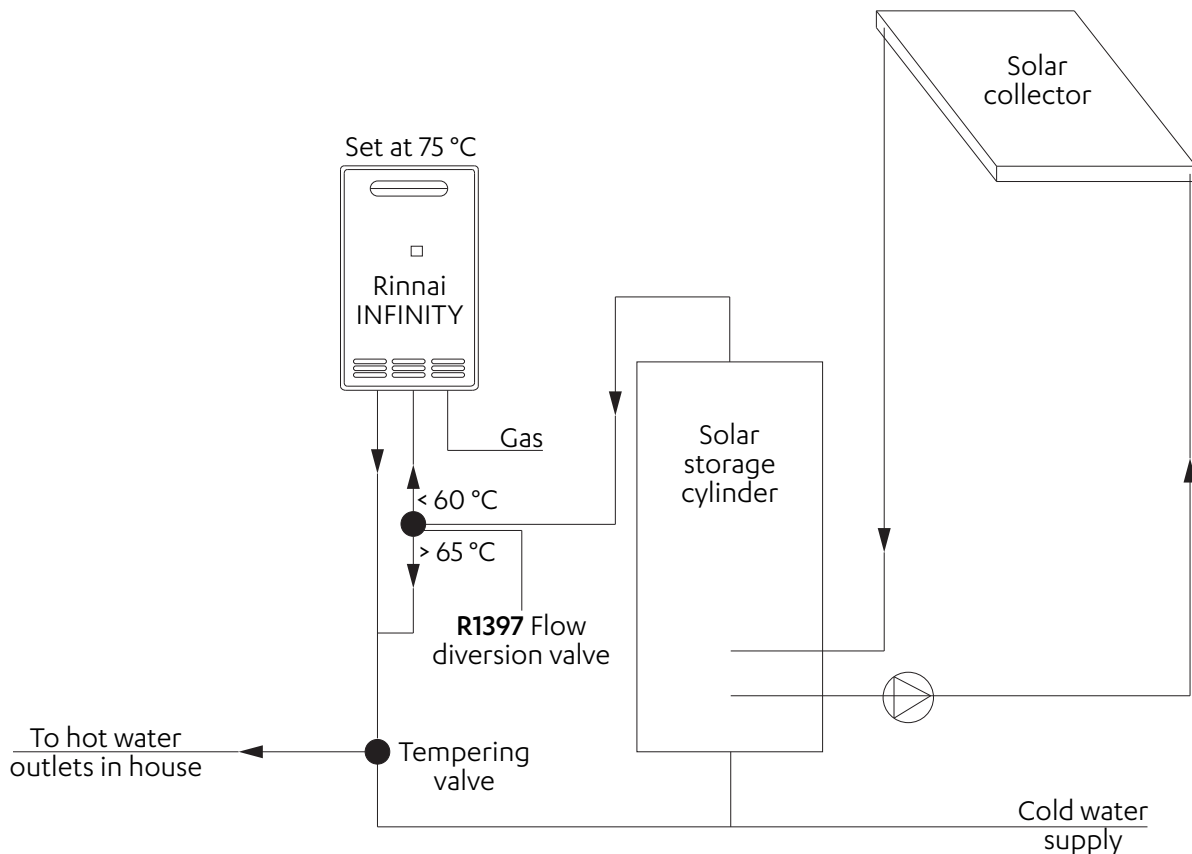
How a gas boosted system works

1. The sun's rays heat water in the solar panels.
2. Hot water from the panels is stored in the cylinder.
3. If the water is too cold, the Rinnai INFINITY gas boost heats the water on demand as it travels from the cylinder to the tap.

The size of the Rinnai INFINITY depends on the number of bathrooms, select the Rinnai INFINITY model as if solar hot water was not available.



Recommended system layout using a Rinnai INFINITY and flow diversion valve



Appendix 4

Rinnai INFINITY Limited Warranty

Rinnai warranty summary table

This warranty is applicable to all Rinnai INFINITY continuous flow water heaters manufactured from 2010 onwards. All terms of the warranty, subject to the conditions below, are effective from the date of installation. Proof of installation date will be required.

Rinnai continuous flow water heater	Application	HEAT EXCHANGER		ALL OTHER PARTS	
		Parts	Labour	Parts	Labour
White residential models	Residential WITHOUT a Rinnai controller	10 years pro rata*	3 years	3 years	3 years
	Residential WITH a Rinnai controller	12 years pro rata*	3 years	5 years	3 years
	Commercial	1500 hours or 1 year**	1500 hours or 1 year**	1500 hours or 1 year**	1500 hours or 1 year**
Silver commercial models	Residential	12 years pro rata*	3 years	5 years	3 years
	Commercial	5000 hours or 3 years pro rata**	1500 hours or 1 year**	1500 hours or 1 year**	1500 hours or 1 year**

* Under a pro rata warranty, if the heat exchanger fails before the end of the warranty cycle, 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. 58.

** Whichever comes first

Residential application

A residential application is defined as an installation where a continuous flow unit is set to 55 °C¹ or lower, delivering hot water to a single residential dwelling (not used for commercial purposes²).

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 periods recorded in the 'Warranty Summary'.

If the Rinnai Continuous Flow Water Heater is being acquired for personal, domestic or household use, 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 apply.

¹ A solar installation using a Rinnai continuous flow unit (excluding A-Series models) in a single residential dwelling is considered a residential application.

² 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 this warranty are effective from the date of installation. The attending service person reserves the right to verify this by requesting a copy of the certificate of compliance prior to commencement of any warranty work. Certificate of compliance must be issued by the installer by law in New Zealand.
2. All Rinnai appliances must be installed, commissioned, serviced, repaired and removed in accordance with the manufacturer's installation instructions, local regulations, and municipal 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, isolating valves, electrical switches, pipe work, electrical cables, fuses, and where applicable flue systems supplied by others, but not limited to these.
5. Where the appliance has not been sited in accordance with the installation instructions or installed such that normal service 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 a failed component is replaced under warranty, the balance of the original appliance warranty will remain effective.
7. Rinnai reserve the right to transfer functional components from defective appliances if they are suitable.
8. Rinnai reserve the right to have the 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 a Rinnai authorised service centre, 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 and acts of God.
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 persons other than Rinnai service persons or service centres.
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 the failure of electric or gas supplies.
7. Subject to any statutory provisions to the contrary, Rinnai does not accept:
 - a. liability for consequential damage or any 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 cycle, 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.

Year	White residential models		Silver commercial models	
	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 part only. It does not include labour.

Water quality

Water quality outside the limits (as set down below) will void this warranty. Water quality tests must be carried out at the customer's own cost but Rinnai will reimburse any reasonable test costs where water quality is within the limits tabled.



Water quality and impurity limits

TDS (Total Dissolved Solids)	Total hardness CaCO ₃	Alkalinity (as CaCO ₃)	Dissolved (free) CO ₂	pH	Chlorides	Magnesium	Sodium	Iron	Langelier Index
Up to 600 mg/L or ppm	Up to 200 mg/L or ppm	Up to 200 mg/L or ppm	Up to 25 mg/L or ppm	6.5-8.5	Up to 300 mg/L or ppm	Up to 10 mg/L or ppm	Up to 150 mg/L or ppm	Up to 1 mg/L or ppm	Between -1.0-0.8

Most metropolitan water supplies fall within these limits. If you are unsure about water quality, please contact Rinnai and we will provide you with details of an authorised agency able to test your water with compliance to Rinnai standards. If sludge or foreign matter is present in the water supply, a suitable filter should be incorporated in the water supply.

Some examples of water quality issues where water may need to be treated:

- Hard water (areas including Whanganui)
- Aggressive water (areas including Christchurch)
- Both hard and aggressive water (some bore water)

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