

Hot Water Reference Guide

Rinnai

Relax with Rinnai.



HOT WATER

Global Leaders in Gas Appliance Manufacturing

For 40 years Australians have been enjoying the comfort, convenience and reliability of Rinnai appliances. Our innovative products are designed with the environment in mind, with low emission technology and high efficiencies, as well as a host of other great features.

Rinnai produces over 12 million appliances every year, which are distributed to all parts of the world, and are all ISO 9001 and ISO 14001 certified (International standard for quality and environmental management systems). Rinnai is proud to be the N°1 choice for Continuous Flow Hot Water globally. Rinnai hot water systems fulfil your requirements for new or existing projects, providing the optimum solution by using individual or multiple appliances manifolded together.

Rinnai employ innovative manufacturing and testing techniques to deliver unparalleled levels of quality, safety, comfort and efficiency in all appliances. The famous Rinnai Infinity Continuous Flow Hot Water System differs from static storage appliances because it only heats the required water on demand therefore not wasting energy and never runs out of hot water.

About this Brochure

This 'Hot Water Reference Guide' is to be used in conjunction with the consumer brochure. The contents of this brochure are more of a technical nature and it has been produced in relevant technical sections rather than by specific product pages as in the consumer brochure.

It is designed to be a quick reference guide to questions that may be asked to ensure selection of the best hot water solution for an application.

Need additional help?

Please contact Rinnai Customer Care on 1300 555 545
Monday to Friday 8.00am – 5.30pm EST

Certifications



HOT WATER



HEATING



COOLING

**TOTAL HOME
COMFORT**

rinnai.com.au

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Range Overview | Hot Water

Rinnai has an extensive range of hot water systems that cater for both domestic & commercial applications. Each range has specific and unique benefits which are explained both below and throughout this brochure.

Gas Continuous Flow

- Only heats the water when it is needed
- Highly efficient and compact allowing flexibility in installation options
- Additional Water Controllers add precise temperature control for convenience & safety as well as a host of other benefits
- Designed with low burner settings making them the most compatible with lower flow rated (WELS) showers & basin outlets
- Largest range of models suiting varied domestic, builders & commercial markets
- Available in 60°C preset or 50°C adjustable to True 50°C at the Tap
- Internal and Enviro (high efficiency condensing) models available
- Extensive accessory options – Recess Boxes, Pipe Covers, Flue Diverter, Smartstart® and Security Brackets



Infinity 26 touch

Solar Systems

- Utilises the energy from the sun to pre-heat the water
- Benefits of low running costs and low greenhouse emissions
- Roof mounted or ground mounted systems
- Choice of superior quality long-life Stainless Steel with extensive warranties or durable Vitreous Enamelled steel cylinders
- Selection of flat plate or evacuated tube solar collectors
- Full range of sizes to suit all domestic applications & climates
- Choice of 3 gas booster sizes to suit small to large homes
- Internal solar booster also available
- Choice of electric element sizes and positions enabling easy changeover from old electric systems
- Substantial Government rebates and incentives apply for most domestic installations



Ground mounted tank system

★ HANDY HINT

Gas Boosted Systems are awarded higher rebates than Electric Boosted Systems and this should always be considered when deciding on the system type and comparing costs.



Roof mounted system



HOTFLO Electric Storage Tanks

HOTFLO Mains Pressure Electric Storage

- Full range of capacities to suit all requirements 25 to 400 litres
- Flexibility of various element sizes with dual handed connections making them ideal for replacing older systems
- High quality durable Vitreous Enamel lined steel construction
- Flexibility - suitable for internal and external use
- Thermostatically controlled with safety temperature shut off for added safety and peace of mind
- Twin element variations available for 160L, 250L, 315L and 400L tank sizes

★ HANDY HINT

Always err on the high side when sizing electric systems. Under sizing can result in a lack of hot water and very unhappy customers!

HOTFLO Mains Pressure Gas Storage

- Fast recovery time
- Efficient 4 star energy rating
- Quick, easy no fuss installation
- Available in 2 standard sizes, perfect for emergency changeover getting you back up and running fast
- Rinnai quality with durability in mind



HOTFLO Gas Storage Tanks

Commercial Hot Water Systems

- Heavy Duty Continuous Flow units – smaller Commercial applications
- Manifold Packs – multiple units plumbed together with a maximum flow rate sized to suit a set number of outlets. (ie shower block with pre-set outlet temperature)
- Demand Duo – single or multiple units manifolded together in conjunction with storage cylinders. Stored hot water assists with 'peak demand' periods like mornings in a hotel
- Warm Water Systems designed for flow & return installations
- Commercial Solar pre-heat systems
- Common flues available for internal models
- HEX 250 systems using stainless steel coils to separate consumable water from the heat source. Perfect for poor water quality areas



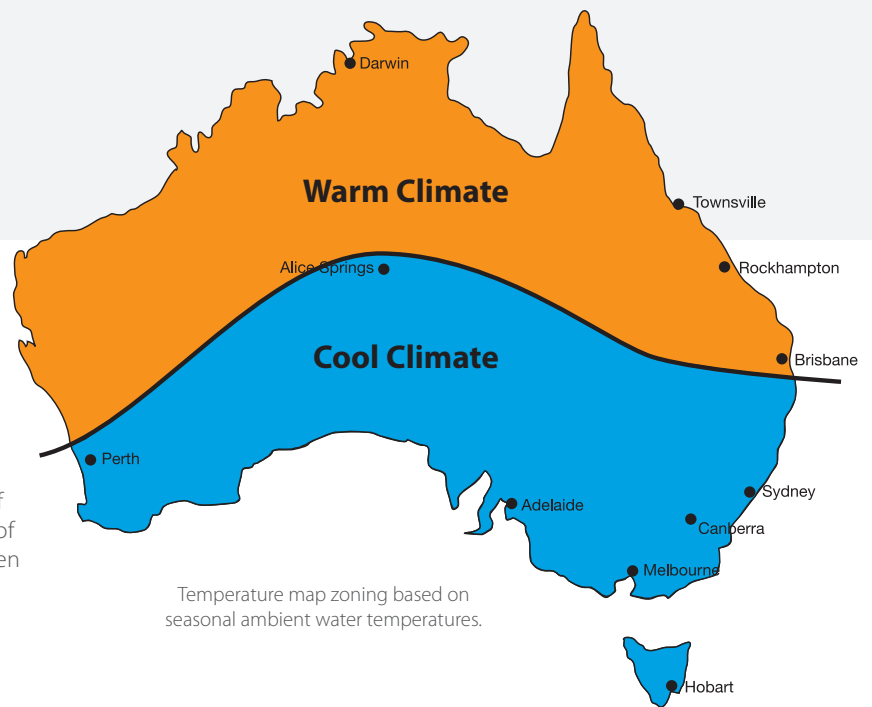
Continuous Flow Hot Water | Range at a glance

Rinnai has the largest range of Continuous Flow water heaters in Australia today. As the company that developed the Continuous Flow technology, we now have 6 dedicated ranges designed for specific applications.

The table below highlights the basic differences between the ranges as a general guide:

	Rinnai INFINITY	Rinnai Enviro High efficiency	Rinnai Builders Series	Rinnai Solar-Series	Rinnai Heavy Duty	Rinnai Heavy Duty High Efficiency
Range*						
External models	5	2	3	2	2	1
Internal model	1	-	-	1	1	1
Efficiency	5.9 to 6.2 Star	7.0 Star Equiv	6.1 to 6.2 star	N/A	5.9 to 6.1 star	7.0 star Equiv
Primary use	Domestic	Domestic	Builders & Projects	Solar Boost Only	Commercial	Commercial
Water controller	Compatible	Compatible	Compatible	Not Compatible	Compatible	Compatible
Status monitor	Yes	Yes	No	No	Yes	Yes
Colour	Euro White	Star Metallic	Dune	Dune	Titanium	Titanium
Pre-set temp	50°C & 60°C	60°C	50°C & 60°C	70°C	50°C & 75°C	50°C & 75°C

* All models are available in both Natural Gas or LPG.



Selection Guide & Sizing

To ensure that the best Continuous Flow unit is installed in any application, we recommend breaking it down to 6 basic considerations.

1. How many Showers are there?

Selecting a Continuous flow system is easy! The simplest way to identify your hot water needs is by the number of shower outlets in your home. Output based on number of showers ensures temperatures and pressure stability when you need it most. Rinnai has comfort and luxury in mind with Enhanced Combustion Technology (ECT) ensuring you get the most out of your low flow shower rose.

2. What is Geographical location?

Ambient water temperature greatly affects the amount of hot water demanded from the system. Please refer to the map and table below as a guide only.

Applicable Models		INFINITY 12	INFINITY 16	INFINITY 20	INFINITY 26	INFINITY 26i	Enviro 26	INFINITY 32	Enviro 32
No. of shower outlets*	Warm	1	1	1-2	1-3	1-3	1-3	1-4	1-4
No. of shower outlets*	Cool	1	1	1	1-2	1-2	1-2	1-3	1-3

*Sizing assumes AAA or "3 star" outlets. For non WELS rated or WELS rated fixtures with higher flow outlets (AA, A, 2 star or 1 star rated) a larger size appliance or additional appliance may be required to delivery adequate performance. Consult with your hot water specialist.

3. The type of shower roses installed?

Most States and Territories have legislation where new homes must have a minimum of 3 Star rated (9 litre/min) shower roses installed. Many older homes however, still have higher flow rated showers.

★ HANDY HINT

We recommend to replace shower roses with low flow rated (WELS approved) fixtures to assist with water conservation. Rinnai Continuous Flow models are more suited to lower flow rates than other units on the market.

4. Is there a large bath or spa?

If there is a large bath or spa that needs filling, then regardless of the number of bathrooms or showers, we would recommend the larger 26 or 32 litre.

5. Design of the house? (The distance to the furthest tap)

Where are the bathrooms and other 'wet areas' in relation to the hot water system? The further away the shower, the longer it takes to get the hot water. Typically if the distance to an outlet is 15m or greater you could be looking at a time delay for the hot water of approximately 10-15 seconds.

As a general rule, Rinnai recommend:

- Units are best installed closest to the Kitchen – but with consideration to bathroom locations
- New homes could consider two smaller units if hot water is required at opposite ends of home
- For long hot water runs, install the Rinnai Smartstart® Water Saver accessory to pre-heat the hot water pipes.
- Consider using a Rinnai 25 Litre under cabinet plug in tank for kitchen

6. Is it an Internal or External Installation?

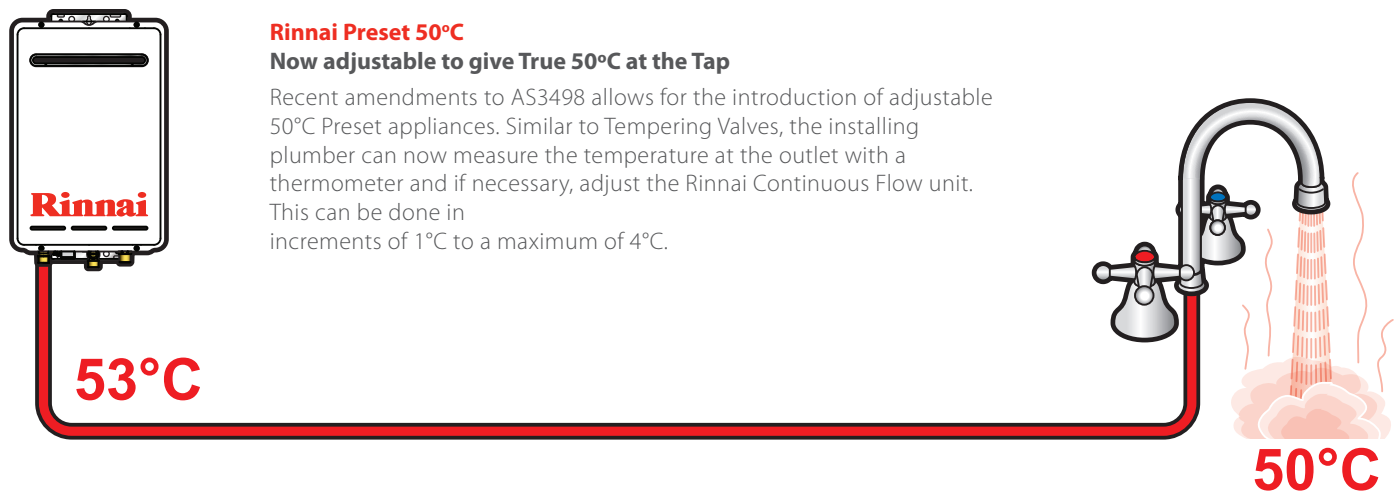
Most installations are external. This is by far the least expensive alternative with the unit readily accessible for servicing. Alternatively Rinnai have internal units which can be placed inside the house, in a cupboard or even in the ceiling cavity. All Rinnai internal units require a flue to be installed to atmosphere. For further details of the flueing requirements, please refer to pages 10 to 12.

Hot Water Delivery Temperature

AS/NZS3500 regulates that the temperature allowed in areas used primarily for personal hygiene (Bathrooms, Ensuites and Powder Rooms) must be limited to a maximum of 50°C in domestic installations. There are 3 ways to achieve this with Rinnai Continuous Flow appliances:

There are 2 ways to achieve this with Rinnai Continuous Flow appliances:

1. Preset 60°C Appliances – The installing plumber supply's and installs an approved Tempering Valve on the hot water branch line to the bathrooms etc set at a maximum of 50°C. This then allows for the hotter 60°C water to be supplied to the kitchen & laundry which is best for cutting greases and rinsing. Whilst this requires the additional expense of a Tempering Valve, it is Rinnai's preferred method of installation as it gives the end-user the best hot water solution.
2. Preset 50°C Appliances – This is where the unit is factory set to 50°C and the entire house is supplied at this temperature. This is adequate in most domestic situations, but any temperature losses in the pipe work due to poor or old insulation can result in lower temperatures being delivered at the outlet. This is usually noticeable in the kitchen when trying to wash dishes with (say) 46 or 47°C. Previously there was no way of overcoming this other than re-insulating supply lines until now.
3. Using smaller units, install a combination of 60°C and 50°C appliances, thus ensuring that areas like kitchens and laundries get 60°C water temperature, whilst bathrooms, ensuites and powder rooms are supplied with hot water limited to a maximum of 50°C.



★ HANDY HINT

Instructions on how to adjust the temperature are located on the back of the front panel inside the unit by licensed plumber.

Why install Water Controllers?

Rinnai strongly recommend installing Controllers to allow you to take full advantage of all the benefits available. Water controllers, depending on the model selected, enable the following additional benefits with any Continuous Flow model with the exception of Solar boost units:

All Controllers:

- Eliminate temperature fluctuations if someone else turns on another tap
- Allow the user to pre-set safe temperatures
- Enable precise temperature control up to 50°C in the bathrooms and up to 60°C in the kitchen
- Conserve water usually wasted juggling the hot & cold taps
- For any Rinnai Continuous Flow appliance, installing 2 Controllers extends the Parts & Labour Warranty from 3 years to 5 years for domestic applications only
- Activate the Rinnai Smartstart® Water Saver pre-heat function (see page 17 for details)
- Install up to 4 Controllers (some limitations apply, see below)

Universal (Wired) Controllers

- Ideal for new homes and renovations where easy access to running wires is appropriate
- Are a cost effective model with basic functionality including temperature control & room priority transfer
- Available in white only

Universal Wireless Controllers:

- Enable controllers to be easily fitted into new homes & extensions
- Ideal for retrofitting into existing homes
- Same functions as the 'wired' universal controllers
- Additional child lock function for added safety
- Requires a transceiver to be connected to the hot water unit
- Additional wireless controllers can operate on the same transceiver
- Available in silver only
- Available in white or silver

Deluxe Controllers:

- Enable controllers to be easily fitted into new homes & extensions
- Master controller usually installed in the kitchen
- Separate bathroom controllers
- All functions as per universal controller

Deluxe functions include:

- Automatic bath fill function (bathroom controller only)
- Shower saver feature - preset desired litres (bathroom controller only)
- Digital clock
- Speaker & volume controls
- Available in white or silver

Maximum number of Water Controllers

A maximum of 4 water controllers can be fitted to all Rinnai Continuous Flow water heaters. Any combination of universal wireless or wired or deluxe water controllers can be used with the following provisions:

1. Only ONE deluxe master water controller can be installed
2. Up to TWO deluxe bathroom water controllers
3. The FOURTH water controllers MUST BE a universal controller (Wired or wireless)



★ HANDY HINT

Regardless of whether Water Controllers are installed or not, to comply with AS3498- delivery of 50°C to ablution areas, a 50°C preset unit or 60°C unit with a tempering valve must be installed.

Internal Flueing

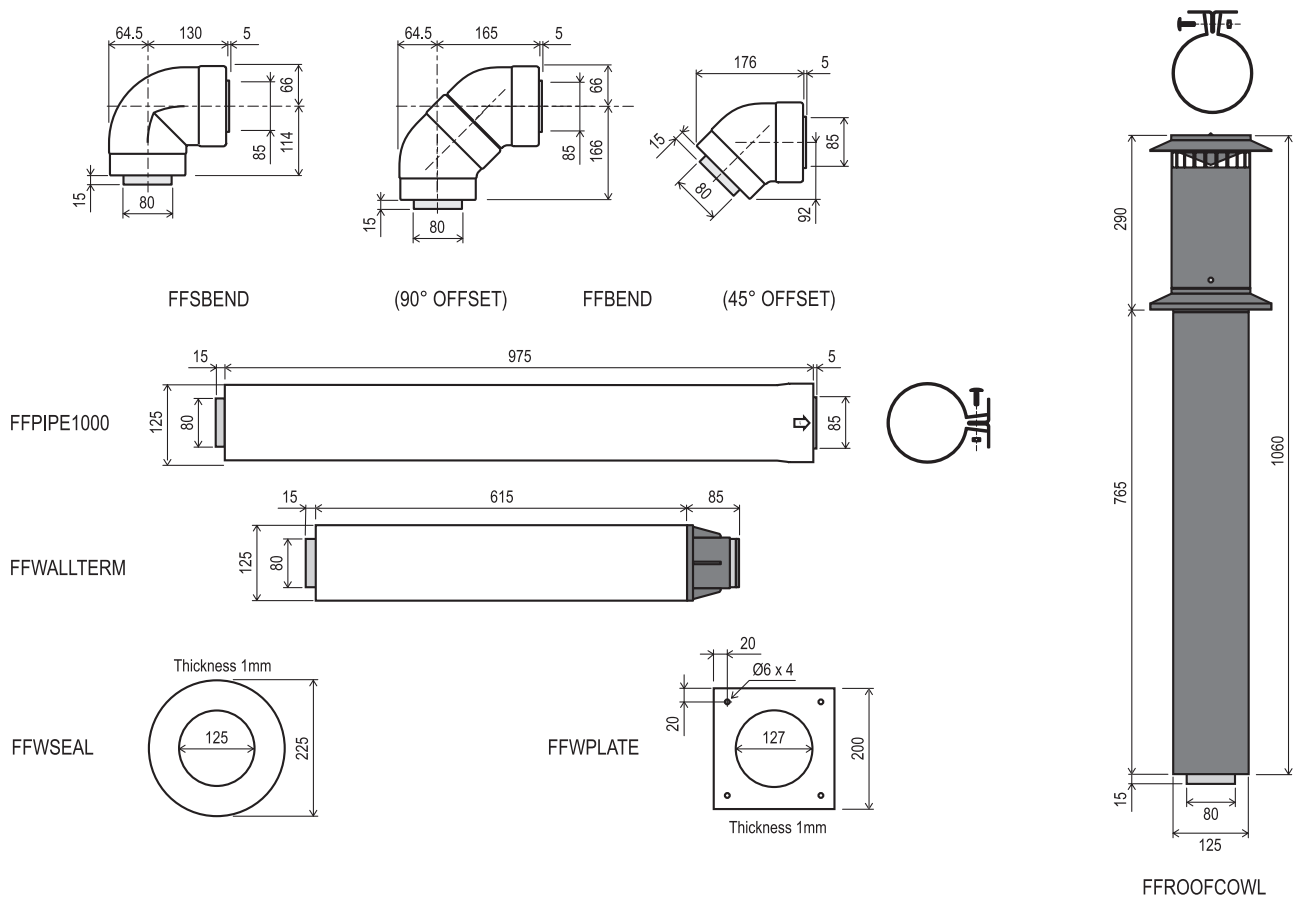
Rinnai offer three 26 litre internal models - the Rinnai INFINITY 26i domestic unit, the HD200i commercial model and the S26i solar booster. Ideal for replacement of existing internal hot water systems or simply used when limited space is available externally in applications such as apartments and townhouses. It is a balanced flue, room sealed appliance, drawing combustion air from the outside.

There are 4 flueing options that enable the installation of an internal Continuous Flow model virtually anywhere:

- 1. Vertical Direct Flueing** - Straight up through the ceiling and penetrating the roofline
- 2. Horizontal Direct Flueing** - 90° bend off top of unit, backwards or sideways through the wall
- 3. Horizontal Extended Flueing** - Identical to horizontal flueing but with additional components to extend the length of the flue
- 4. Combination Flueing** - Mixture of both horizontal and vertical flues

Flue Components

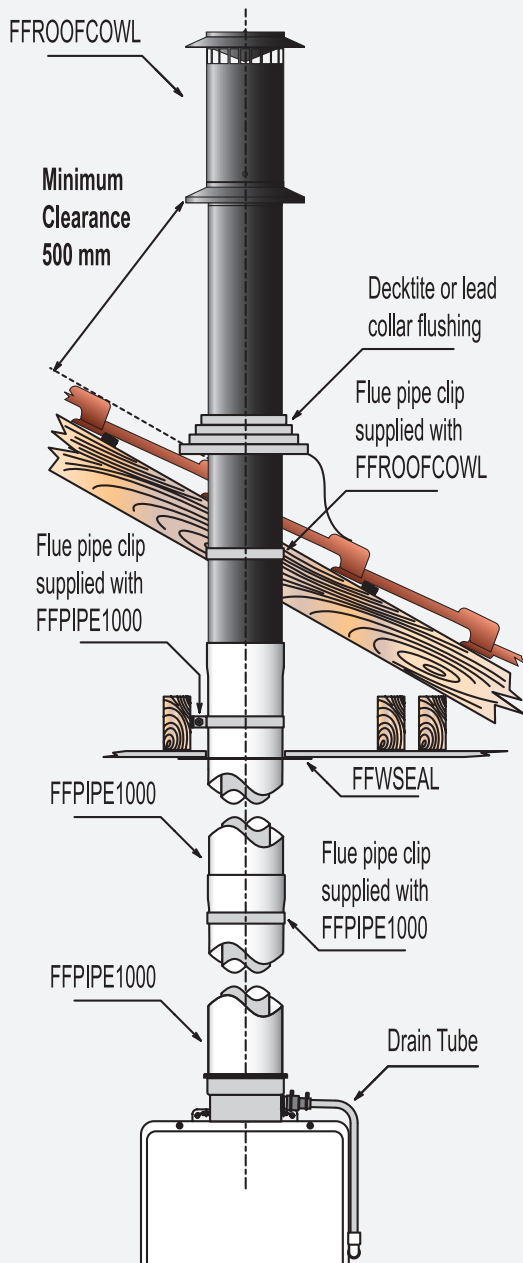
All Rinnai Internal Flue systems are made up from individual components. All components must be ordered separately.



Dimensions in mm

Description	Code number
Starter Bend	FFSBEND
Universal 45/90 Degree Bend	FFBEND
Flue Pipe 1000mm length	FFPIPE1000
Horizontal Flue Terminal	FFWALLTERM
Vertical Flue Terminal	FFROOFCOWL
Ceiling Ring	FFWSEAL
Wall Plate	FFWPLATE





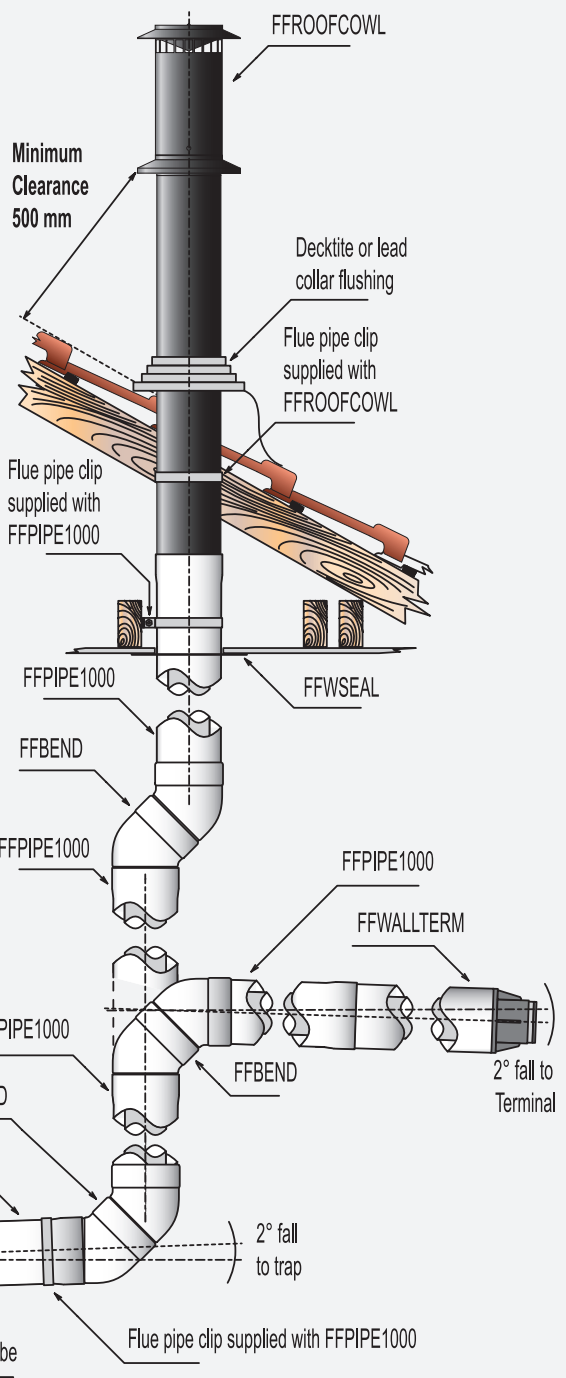
Vertical Direct Flueing

This is the most common system sold with flueing directly above the unit penetrating the roof line in a single storey home.

The following components will be required in these combination:

- Vertical Flue Terminal with roof cowl
- Additional Flue lengths (If required)
- Ceiling/wall ring (Cover plate)

Note: For vertical installations over 1.5m a condensate drain tube is also required.



Combination Flueing

(Vertical and Horizontal)

(Multiple bends with a vertical or horizontal flue termination)

The flexibility of the various Rinnai flueing components enables our Continuous Flow internal models to be installed virtually anywhere, using a roof or wall terminal, extension pieces (mounted vertically and horizontally), bends, adaptors and condensate traps as required.

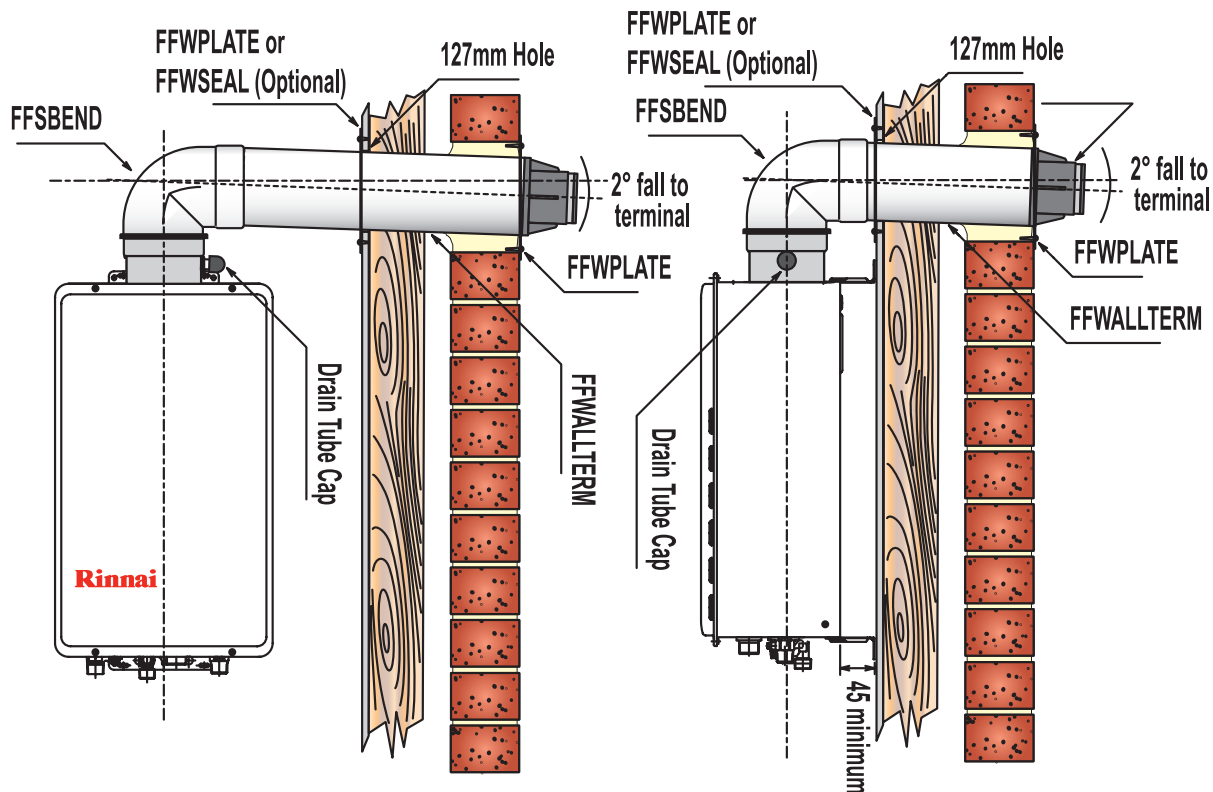
Internal Flueing (Cont.)

Horizontal Direct Flueing

The second most common system where the Continuous Flow model is flued directly out through a back or side wall.

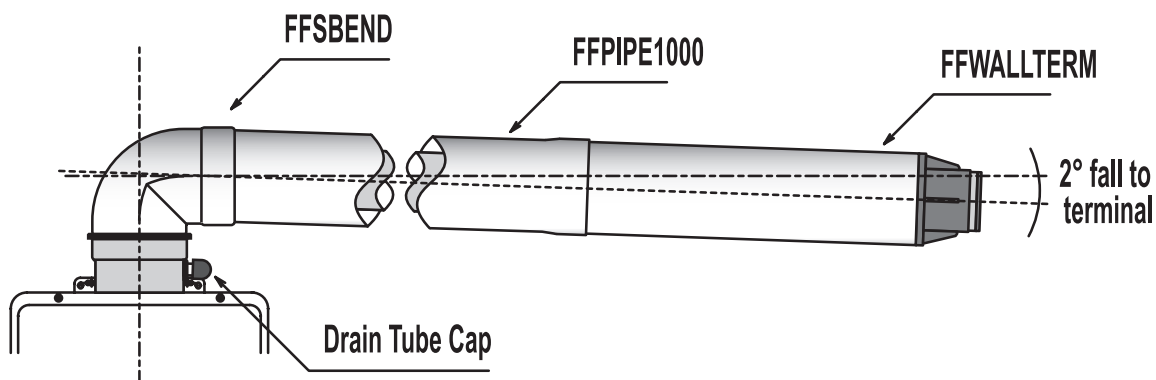
For this installation you will require the following components:

- 90° Bend and starter
- Horizontal Flue Terminal (In desired lengths)
- External wall plate
- Ceiling/wall ring (Cover plate)



Horizontal Extension Flueing

This option is used when the water heater is mounted against an internal wall and flueing needs to extend horizontally to exit an external wall. Rinnai flueing components must be used together with extension pieces and bends as required.



Important Flueing Rules

1. Installations can consist of both horizontal and vertical runs to a maximum length of 9 metres
2. Installations can have a maximum of three 90° bends
3. For any installation over 1.5 metres in height, a condensate tube must be installed

Continuous Flow | Technical Information

Flow Rate Characteristics

In response to market trends and as part of our continuous improvement processes, Rinnai have developed new technologies that allow our Continuous Flow models to operate over a wider range of conditions. Collectively known as “Enhanced Combustion Technology” (ECT), these new technologies result in lower minimum gas and water flow rates, a tangible benefit to our domestic Continuous Flow customers in the trend towards saving water and energy.

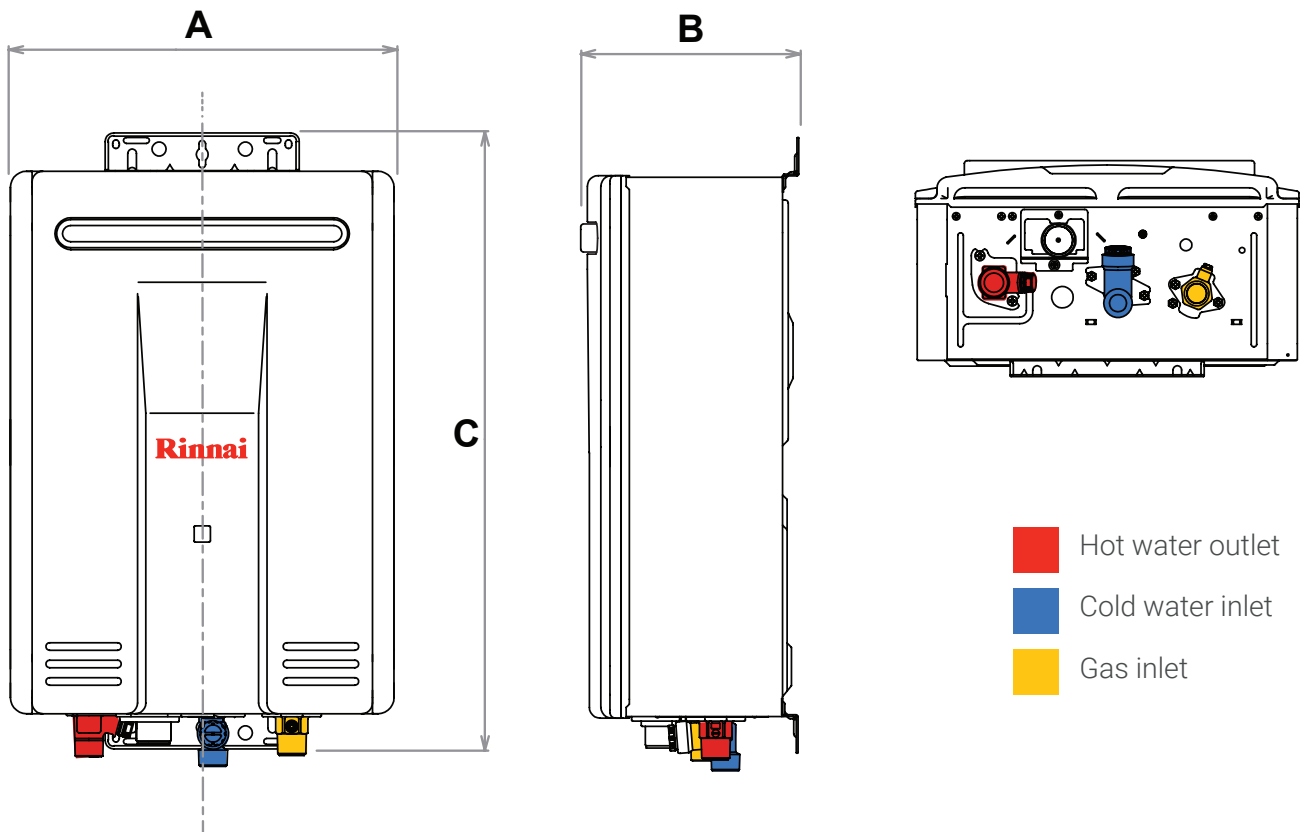
Our core Rinnai INFINITY Continuous Flow products have the lowest minimum gas rates on the market. This means that at the lowest possible burner settings the following two enhanced features are realised:

- a) They operate at lower flow rates which makes them more compatible with 3 star (7.5-9.0 l/min) low flow water saving fixtures
- b) They can operate at far higher ambient incoming water temperatures. This is particularly of benefit to the northern States of Australia and some inland areas where the water temperature from the ground can be as high as 30°C

Many Rinnai Continuous Flow models have variable flow rates that can exceed the commonly known flow rate. i.e. a Rinnai INFINITY 20 can actually give a maximum flow rate of 24 litres per minutes with a temperature rise of only 20°C. Ambient water temperatures vary immensely throughout Australia and often higher flow rates can be achieved with our models. This commonly applies when in use with Water Controllers set at showering temperatures between 37 and 42°C.

★ **HANDY HINT**

Cold Water (Ambient Temperature) + Temperature Rise = Outlet Temperature



Continuous Flow | Specifications

Model		INF12	INF16	B16	S20	INF20	B20	INF26	INF26 Touch	B26	S26	HD200e	INF26i S26i	HD200i	ENVIRO 26	ENVIRO 32	INF32 S32	HD250e	HDC211e	HDC211i
Factory pre-set temps	°C	50 60	50 60	50 60	70	50 60	50 60	50 60	50 60	50 60	70	50 75	50 60*	50 75	60	60	50 60*	50 75	50 75	50 75
Colour (W=White, D=Dune M=Metallic, T=Titanium, CP = Champagne Pearl)		W	W	D	D	W	D	W	CP	D	D	T	W	T	M	M	W	T	T	T
Min water pressure (kPa) Max 1000 (kPa)		120	120	120	120	160	160	200	200	200	160	190	140	140	250	250	190	190	220	220
Min operating water flow (L/ min)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5										
Gas rate	NG	Min	16	16	16	16	20	20	16	16	16	14	16	16	10	11	14	14	11	11
		Max	92	124	125	124	156	156	199	199	199	199	199	195	195	172	211	250	250	211
	LPG	Min	16	16	16	16	20	20	16	16	16	14	16	16	10.9	11	14	14	11	11
		Max	92	124	125	124	156	156	199	199	199	199	195	195	172	211	250	250	211	211
Flow rate (L/Min)	25°C Rise	12	16	16	16	20	20	26	26	26	26	26	26	26	26	32	32	32	32	32
	20°C Rise	15	20	20	20	24	24	26	26	26	26	32	32	32	35	37	37	37	37	37
Star rating		6.2	6.1	6.1	N/A	6.0	5.9	6.0	6.0	6.1	N/A	5.9	6.1	6.1	7.0	7.0	5.9	5.9	7.0	7.0
Width	A	356	356	350	350	356	350	356	356	351	350	350	350	350	470	470	470	470	470	470
Depth	B	202	202	194	194	202	194	202	202	195	194	251	234~274	283	283	244	244	283	257-307	
Height	C	503	503	530	530	503	530	503	503	531	530	600	600	600	670	670	600	600	670	654

* S26i and S32 preset to 70°C for Solar boosting.

Continuous Flow | Accessories

Rinnai offer a comprehensive range of accessories that assist with the installation and visual impact of our Continuous Flow models.

Recess Boxes

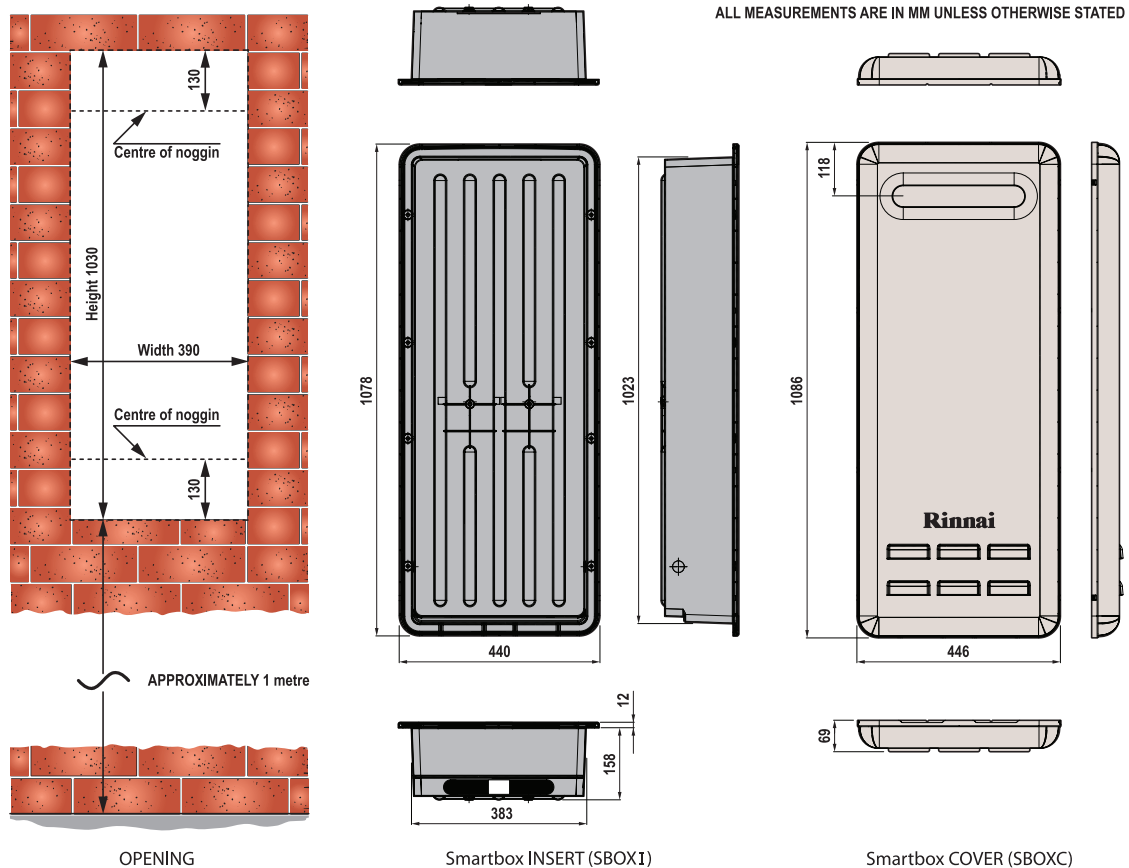
When installing a Rinnai Continuous Flow unit in a new home or renovation, you should consider using a recess box. These boxes allow you to virtually hide the hot water system into the cavity enabling a smooth and neat finish to the job. All are available in full and semi-recessed options.

There are 5 types of recess boxes:

1. RBOX04L – Suits B16, B20 and B26.
2. Smartbox® – suits all external Continuous Flow units except the larger INF32, EnviroSmart & Commercial models
3. RBOX02 – suits INF32, HD200e & HD250e
4. RBOX05 – suits Enviro 26,32 and HDC211e
5. RBOX06L – suits Inf12, Inf16, Inf 20, Inf26 & Inf26 Touch

Smartbox®

- Ideal for new homes or coastal environments
- Save precious space by utilising the existing wall cavity
- Made from durable ABS plastic
- Suits any application:
- Brick: compatible for use with brick ties
- Rendered: complete with off-set spacers
- Weatherboard: used with semi-recess frame
- Full or semi recess options available
- Supplied standard in neutral DUNE colour – UV stabilised
- Fully paintable to blend with any colour scheme
- Not suitable for the INFINITY 32, Commercial units or Enviro models



Continuous Flow | Accessories (Cont.)

RBOX06L (White Colourbond)^o

Colour matched and suited to the Infinity 12, 16, 26, 26 and 26 Touch models. The RBOX06L provides a premium wall recess offering that compliments its existing surroundings

RBOX02, RBOX04L & RBOX05 (Galvanised Recess Boxes)

The RBOX02 recess Box is for use with the larger INFINITY 32, HD200e and HD250e Continuous Flow water heaters and is suitable for brick constructions only. RBOX04L is suitable for the Builders range (B16, B20, B26), RBOX05 is suitable for the INFINITY 26 Enviro, INFINITY 32 Enviro and HDC211e

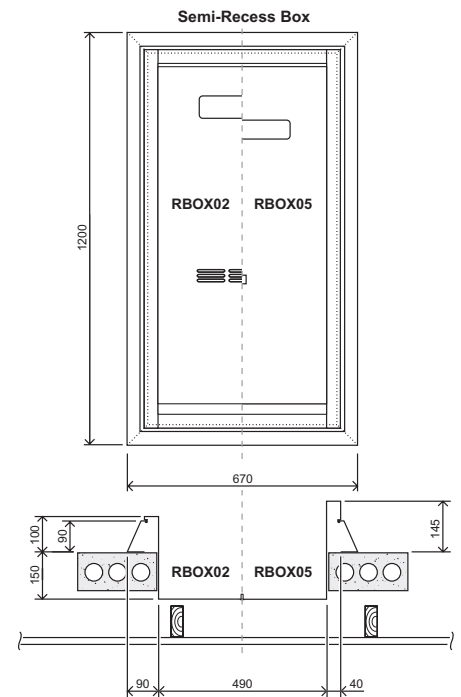
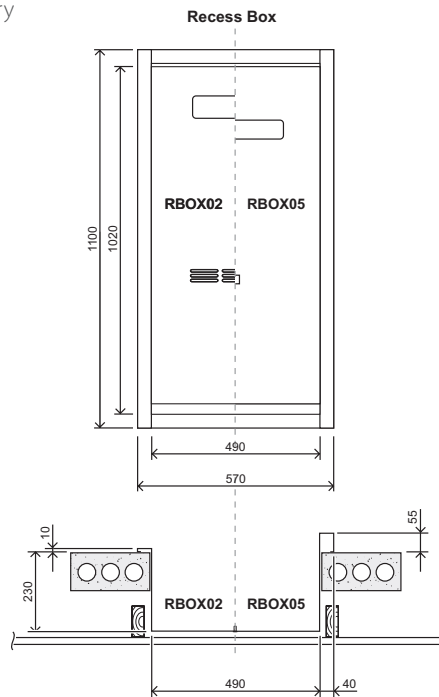
Recess Boxes are usually installed as follows;

New Homes or Extensions

- As the brickwork is being laid
- Usually installed before the plumbing rough-in
- Secured by fold-out brick ties incorporated in the box

Existing installations

- By cutting an opening in the brickwork
- Strengthening with a lintel as necessary
- Secured by drilling holes in the sides and fix in position with suitable flush headed masonry anchors



Model	Suits	Material	Opening dimensions (mm)			Wall protrusion (mm)	Recess	Code
			Width	Height	Depth			
Smartbox	INFINITY 12, 16, 20 & 26, Touch 26 B16, B20 & B26 Solar S20 & S26	ABS Plastic	385-395	1025-1050	160	69	Full	SBOX
					95	125	Semi	SBOXF*
RBOX02	INFINITY 32 Commercial HD200e Commercial HD250e S32	Galv. Steel	495-530	1020-1050	230	10	Full	RBOX02
					140	100	Semi	RBOX02F*
RBOX04L	B16, B20, B26	Galv. Steel	365-395	1030-1050	150	15	Full	RBOX04L
RBOX05	INFINITY Enviro 26 & 32 Commercial HDC211e	Galv. Steel	495-530	1020-1050	230	55	Full	RBOX05
					140	145	Semi	RBOX05F*
RBOX06LW	Infinity 12, 16, 20, 26, 26T	Color Bond (white)	382-412	1030-1050	146	15	Full	RBOX06LW

* Ordered in addition to the full Recess Box.

Rinnai INFINITY Smartstart®

Introducing Australia's first 'water saving' hot water system. Utilising Rinnai patented technology, the Smartstart Water Saver module was developed specifically to reduce water wastage whenever a hot tap is turned on.

- Allows user to pre-heat the water in the pipes before the tap is turned on
- Simply activated by the 'preheat' button on any Rinnai Water Controller
- Takes a minute or two to warm up depending on the size of the installation
- Saves literally tens of thousands of litres of water over the life of the hot water system

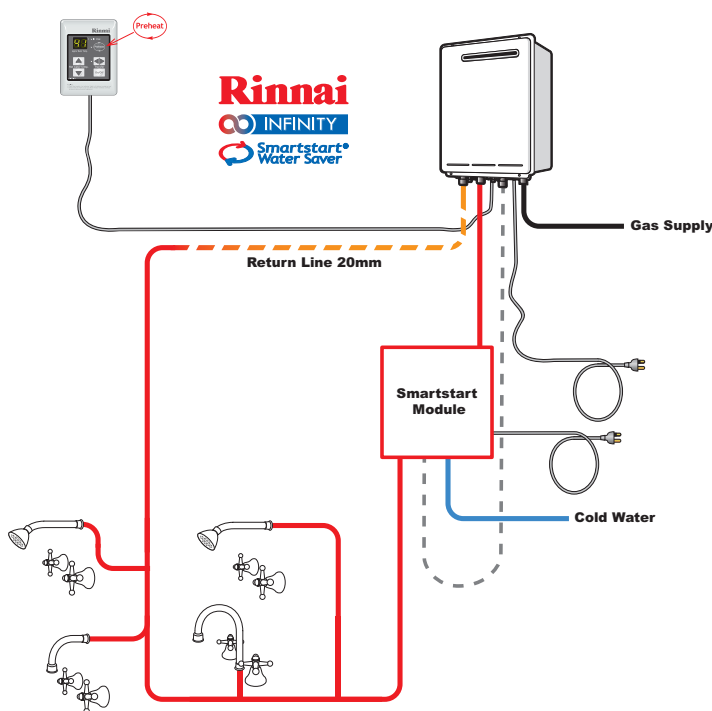
Plumbing is designed as a 'ring-main' or flow and return loop around the house. In existing homes, a return line can be plumbed in from the furthest point back to the Rinnai Continuous Flow unit.

Operation overview

The Smartstart® system pre-heats the water in the pipework between the water heater and the hot water outlets. This allows the cold water to be flushed from the pipe work before any outlets are opened, using the 'flow and return' principle. This results in water savings and reduced waiting time for heated water delivery from the outlet when opened.

Traditional 'flow and return' systems usually keep the water in the pipework heated continuously. The Smartstart® system however, automatically shuts off after one pass of the ring main. This results in significant energy savings because water is not heated unnecessarily whilst retaining the benefits of traditional flow and return systems.

The Smartstart® Water Saver module is separate and compatible with all Rinnai Continuous Flow models including Solar Boosters* it is a fully integrated unit with the pump and sensors built into the box.



Maximum length of loop is 60 metres. Return line must be 20mm.

Please note: The diagram above shows a Typical Smartstart® Installation. All Smartstart® installations require at least one Rinnai Water Controller to be installed to activate the system. All Rinnai Water Controllers are compatible. For further information on Water Controllers please refer to page 9 of this brochure.



★ HANDY HINT

It is always advisable to plumb the loop towards the kitchen tap first if at all possible. This reduces waiting time at this high use outlet.

* A separate activation switch is required as Solar units are not compatible with Water Controllers.

Continuous Flow | Accessories (Cont.)

Pipe Covers

Pipe Covers can be easily attached to most Rinnai Continuous Flow Hot Water units to:

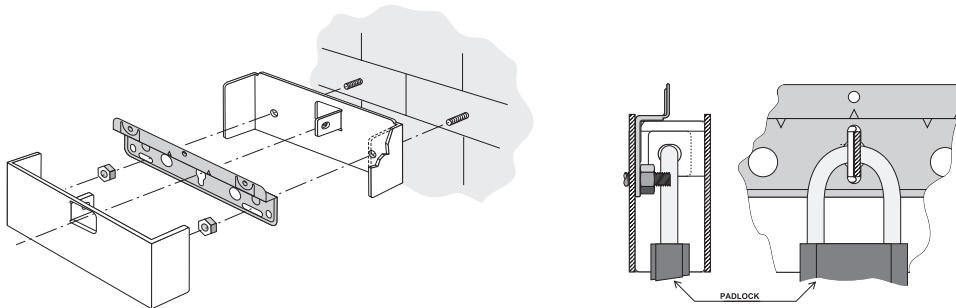
- Cover the pipes, valves and even the external power point
- Provide a clean and smooth finish to the installation
- Two pipe covers can be joined together to hide longer pipe work under the unit as required

Suits	Width	Height	Depth	Colour	Code
INFINITY 12,16,20,26,26T	356mm	450mm	202mm	Euro White	PCD01W
INFINITY 32	470mm	400mm	210mm	Euro White	PCV02
B16, B20 & B26	350mm	450mm	210mm	Dune	PC11D
INFINITY Enviro 26 & 32	466mm	450mm	274mm	Star Metallic	PCD07

Security Bracket

Secure your investment with Rinnai's quick and easy to install security bracket.

- Assists in the protection of any Rinnai Continuous Flow model from theft if it is located in an exposed area
- Particularly applicable to new homes during the building process
- The bracket fits over the unit wall mounting bracket covering the holes where the unit is secured to the wall
- A standard padlock and key is required (purchased separately)
- Padlock shank diameter not to exceed 6mm with an overall length greater than 50mm



★ HANDY HINT

For extra security fully enclosed security cage also available

Sideways Flue Diverter

Where confined or narrow spaces might normally exclude a Rinnai Continuous Flow water heater from being installed, our sideways flue diverter is available. Manufactured from durable stainless steel, the sideways flue diverter forces the flue gases sideways. This can help overcome many of the restrictions when the hot water system is installed on balconies with only one opening.

Conditions & Clearances

Full installation instructions are contained when purchasing the product however, there are a number of important conditions and clearances for the location of the Rinnai Continuous Flow unit installed with a Flue Diverter.

Please contact the Rinnai HelpLine on 1300 555 545 for further information

SFD01 suits: B26, Inf12, 16, 20, 26 and 26 Touch

SFD02 suits: B16 (pre 2018 Inf 16)

SFD03 suits: B20 (pre 2018 Inf 20)



HOTFLO Hot Water Storage Systems | Range at a glance

Mains Pressure Systems

They are simply a storage cylinder that holds hot water at a pre-set temperature with the use of a thermostatic control. As hot water is used, it is replaced with cold water which is then heated. Hot Water delivery is at mains pressure or the maximum allowable pressure should the home have a pressure limiting device installed.

Rinnai HOTFLO Range

Our quality HOTFLO range of electric and gas tanks are available in various storage capacities ranging from a compact 25 litre right up to the large 400 litre model. We also have a complete range of element sizes minimising changeover costs.

- Economical Vitreous Enamel lined steel tank with a 7 year warranty on 25L and 50L and 10 year warranty on 80L,125L,160L,250L,315L and 400L
- Inbuilt anode protection - extends the life of the tank
- Dual handed - allows increased flexibility of installation
- Flexibility - suitable for internal (electric only) and external use
- Tank Insulation that exceeds MEPS* (Minimum Energy Performance Standard), reducing heat loss and running costs
- Thermostatically controlled with safety temperature shut off for added safety and peace of mind
- 8 year cylinder warranty on Hotflo Gas Storage tank



System Selection

Selecting the correct storage hot water system

Step 1 - Tariff

- Determine which tariff that is going to be used
- If using both Peak & Off-peak use the sizing guide for Off-peak

Step 2 - Climate

- Refer to the Climate Map on page 7 to reference whether the installation is in a warm or cool climate

Step 3 - Number of persons

- Determine the number of persons living in the home
- Also consider additional demand if it is a larger home with spare bedrooms

Tank size	No. of persons - Peak Electric (Continuous tariff)		No. of persons - off peak Electric	
	Warm climate	Cool climate	Warm climate	Cool climate
50 Litres	1	1	Not recommended	Not recommended
80 Litres	2 to 3	1 to 2	1 to 2	Not recommended
125 Litres	3 to 4	2 to 3	2 to 3	1 to 2
160 Litres	4 to 5	3 to 4	3 to 4	2 to 3
200 Litres	6 to 7	4 to 5	4 to 5	3 to 4
250 Litres	7 to 8	5 to 6	5 to 6	4 to 5
315 Litres	8 to 9	6 to 7	6 to 7	5 to 6
400 Litres	10+	8+	8+	6+

Electric Storage Recovery Times

The recovery times for all storage tanks is based on 3 factors:

1. The volume of water
2. The size of the electric element
3. The set temperature

Element size

1.2kW Element heats
2.4kW Element heats
3.6kW Element heats
4.8kW Element heats

Litres per hour heated by 50°C

20.6 Litres
41.2 Litres
61.9 Litres
82.5 Litres

Selecting the correct Gas Storage system

Step 1 - Unit of measure

- Unlike electric hot water systems which are sized on the basis of total volume, Gas storage is calculated via First Hour Capacity (FHC)
- FHC is based on tank volume and heat-up rate to calculate the 'usable' hot water in litres

Step 2 - Climate

- Refer to the Climate Map on page 7 to reference whether the installation is in a warm or cool climate

Step 3 - No. of persons

- Determine the number of persons living in the home
- Also consider additional demand if it is a larger home with spare bedrooms
- Remember, that the system only needs one hour to recover

Tank size	FHC	Warm climate	Cool climate
135 Litres	270	1 - 4	1 - 5
170 Litres	305	1 - 5	1 - 6

Specifications

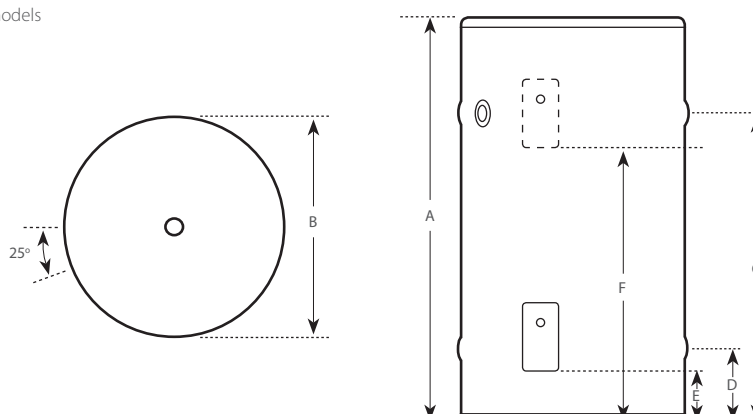
HOTFLO Electric Storage

Note: Rinnai HOTFLO Electric Storage Water Heaters also come in twin element configurations.

Product Specifications												
Models		25L	25L with plug	50L	50L with plug	80L	125L	160L	160L Compact	250L	315L	400L
Total Height (mm)	A	452	452	694	694	900	1245	1530	1313	1484	1770	1820
Width incl. PTR Valve (mm)		490	490	490	490	590	590	590	606	674	674	760
Diameter (mm)	B	415	415	415	415	515	515	515	537	605	605	685
Outlet Height (mm)	C	297	297	524	524	685	1020	1310	1107	1248	1541	1545
Inlet Height (mm)	D	153	153	158	158	225	225	225	186	210	210	260
Electrical Entry - Lower (mm)	E	80	80	80	80	155	155	155	110	135	135	155
Electrical Entry - Upper (mm)	F	N/A	N/A	N/A	N/A	N/A	N/A	946	N/A	985	1225	1224
Dry Weight (kg)		20	20	27	27	43	56	66	51	72	83.5	102

Technical Specifications												
Models		25L	25L with plug	50L	50L with plug	80L	125L	160L	160L Compact	250L	315L	400L
Storage Capacity (L)		33	33	55	55	84	140	179	172	279	334	424
Hot Water Delivery (L)		25	25	50	50	80	125	160	160	250	315	400
Element Size (kW) [†]		3.6	1.8, 2.4	3.6	1.8, 2.4	1.8, 2.4, 3.6	1.8, 2.4, 3.6	1.8, 2.4, 3.6	2.4, 3.6	2.4, 3.6, 4.8	2.4	3.6, 4.8
Boost Capacity (Twin element only) (L)		N/A	N/A	N/A	N/A	N/A	N/A	42	N/A	49	60	84
Incl. PTR Valve (kPa)		1000						1000			850	
ECV (kPa)		850						850			700	
Max. Inlet Pressure with ECV (kPa)		680						680			550	
PLV with ECV (kPa)		500										
Max. Inlet Pressure without ECV (kPa)		800						800			680	
PLV without ECV (kPa)		500										
Max. Thermostat Setting (°C)		75						70			75	
Ingress Protection Rating		IPX4										
Electrical Supply		240V - @50Hz										
Tank Body Colour		White	White	White	White	Dune	Dune	Dune		Dune	Dune	Dune
Port Size (mm)		20										

[†]Hard water anodes available on most models



Specifications (Cont.)

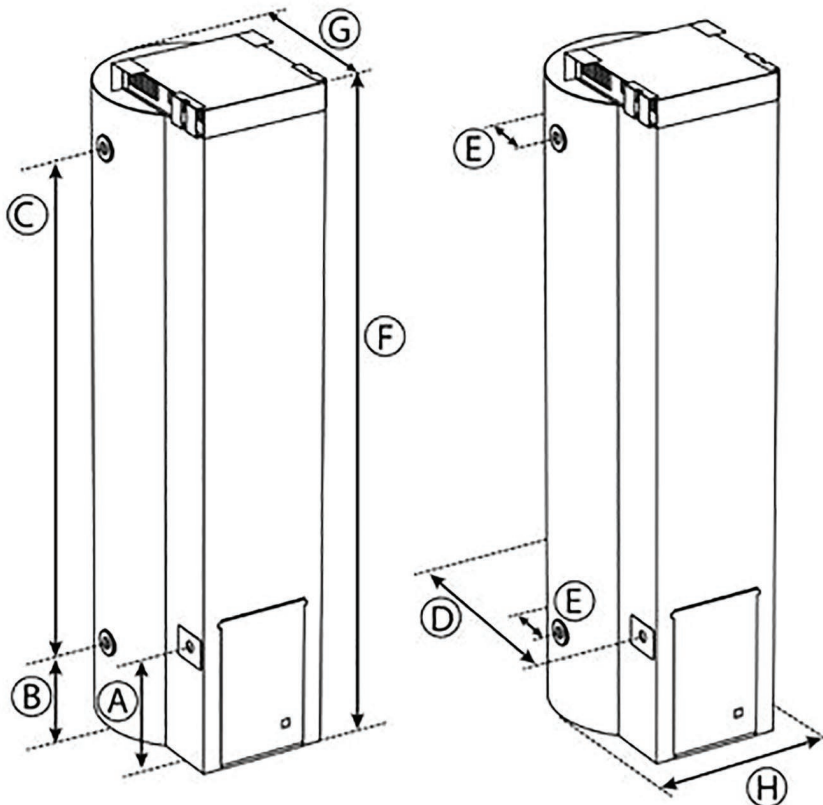
HOTFLO Gas Storage

Model	GHF4135	GHF4170
Tank capacity (L)	135	170
Weight empty (Kg)	68	83
Relief valve pressure (kPa)	1000	1000
Water capacity in first hour* (L)	209	257
ECV pressure (kPa)	1200	1200
Max supply pressure without ECV	800	800
Max supply pressure with ECV	680	680

*Temperature rise at 45°C and inlet temperature of 15°C using Natural Gas.

Dimensions

Dimensions		GHF4135	GHF4170
Height (mm)	F	1579	1915
Width (mm)	H		420
Depth (mm)	G		508
Hot height (from cold inlet) (mm)	C	988	1213
Cold height (from ground) (mm)	B	328	403
Hot height (from ground) (mm)	C + B	1316	1616
Gas height (mm)	A		276
Gas depth (mm)	D		459
Water depth (mm)	E		210



Solar Hot Water Systems | Range at a glance

Close Coupled Systems

Where the Storage tank and the Solar Collectors (panels) are coupled together and the installation is on the roof. A choice of an electric boost element in the tank or a gas booster installed usually on the side of the house completes the system.

Benefits:

- Technically very efficient, economical to install and low maintenance
- Shorter pipe length between tank & collectors, minimising heat loss
- No electricity required to operate pumps to recirculate the water through the collectors
- Space saving in that it eliminates the need for a storage tank at ground level – ideal for courtyard homes or small blocks
- Supplied standard in Titanium colour
- Wide range of Colorbond® colours available. Ask your Rinnai Solar consultant for selection
- Low profile pump version available for flat roofs



Split Systems

Where the Storage tank and the Solar Collectors are literally split and installed separately. A choice of an electric boost element in the tank or an in-line gas booster which can be installed on the side of the tank, or remote mounted on a wall.

Benefits:

- Easy installation on roofs
- Streamlined appearance - minimal impact on the aesthetics of your roof line with only the Collectors visible
- Split Systems do not require reinforcement of the roof structure, as the weight associated with water storage is at ground level
- Split System tank can be installed internally or externally
- Collectors and the tank do not need to be installed at the same time – ideal during construction of new homes and major renovations



What is the Booster?

The booster is simply a backstop to make sure you always have hot water available, such as during cloudy or rainy weather or during the winter months. It also operates should you exhaust the stored water on those occasions when an extra family member stays for a weekend!

Electric Boost

- Low element tank connected to off peak receive the most solar energy when hot water is used in the morning. Solar energy reheats the water and is topped up overnight by the electric booster if required
- Continuous tariff suits low element tanks where water is used all day and both solar and electric energy reheat the water
- Mid element tanks are offered in 250 and 315 split systems and operate so that there is always some of the tank available for solar heating

Gas Boost

- The in-line gas booster detects the temperature of the solar pre-heated water from the tank. Gas boosting automatically operates, only when necessary to maintain full delivery temperature
- Regardless of whether your hot water is used in the mornings or evenings, gas boosting is the most efficient, convenient and cost effective boost option

Gas boosters operate only on demand and have the additional benefit of never running out of hot water



★ **HANDY HINT**

26i Internal Model also available



Solar Hot Water Systems | Range at a glance (Cont.)

The Rinnai Solar Hot Water Systems are separated into 2 ranges:

Rinnai Prestige

- Highest quality Stainless Steel tanks
- Supplied with high efficiency Excelsior Solar Collectors
- Available in both Close Coupled and Split Systems
- Available in both Gas or Electric Boost

Storage Tanks

- Long lasting commercial grade Stainless Steel construction
- Specifically designed for solar ensuring maximum heat retention
- Do not require a sacrificial anode saving on maintenance costs

Excelsior Solar Collectors

- Highly efficient all copper Collector with a selective surface maximising energy from the sun
- Full aluminium casing for corrosion resistance
- Evacuated tube systems available with protection against low ambient temperatures in winter

Rinnai Sunmaster

- High quality Vitreous Enamel lined steel tanks
- Supplied with high efficiency Enduro Collectors
- Available in both close coupled and split systems
- Available in both gas or electric boost

Modular System

- Components supplied separately allowing you to select your own system
- Collectors and cylinder can be installed at separate times which is ideal for working around construction timetable

Storage Tanks

- Cost effective glass lined (Vitreous Enamel) tanks
- Tall slimline design with a smaller footprint for minimal aesthetic impact

Enduro Solar Collectors

- Highly efficient aluminium fin solar absorber to maximise efficiency
- Copper Riser tubes for effective transfer of solar energy to the water
- Full aluminium casing for corrosion resistance
- Evacuated tube systems available with protection against low ambient temperatures in winter



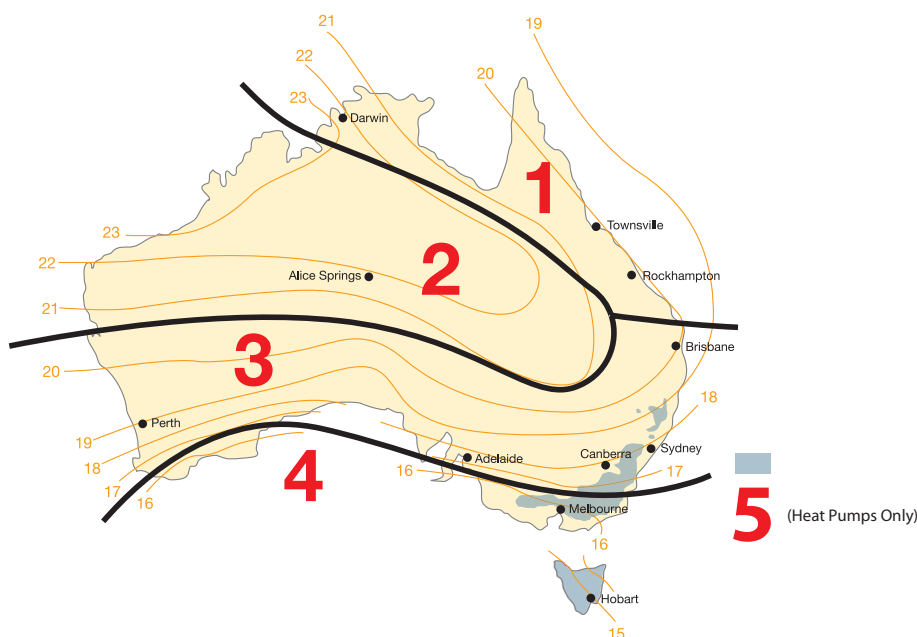
Solar Incentives

Government Incentives

The Australian Greenhouse Office awards (Small - Scale Technology Certificates) STCs according to how much energy each Rinnai Solar system saves compared with a conventional electric water heater. The Federal Government legislation states that STCs are applicable when a solar system is installed in a new home or replaces an existing hot water system.

Solar Zones

The number of STCs awarded to a particular Rinnai Solar System varies according to the amount of energy saved relative to an electric water heater installed in the same location. This is influenced by the amount of local solar gain and the local operating conditions. Darwin, for example, has more solar gain than Hobart, hence a particular system installed in Darwin will be assigned a higher number of STCs than if it were installed in Hobart. For the purposes of STC assessment, Australia is divided into 5 solar zones as shown in the map.



★ HANDY HINT

To assist with calculating the rebates available, Rinnai has an on-line Rebate estimator with the latest rebates and values.

See www.rinnai.com.au

SOLAR REBATE ESTIMATOR

★ HANDY HINT

If you are unsure where the boundaries lie between zones, Please refer to the Australian Government website <http://ret.cleanenergyregulator.gov.au> and follow the publications link to find a post code listing.

How to claim the STCs incentives?

Ultimately the STCs awarded to any system are traded/sold on the open market at a price which fluctuates according to supply and demand. The simplest way is to fill out the STC rebate declaration form that is supplied with each system which transfers the STCs to Rinnai. In return we will pay you the market rate which is current at that time. Alternatively, you can speculate on the market value and sell them at a later stage either to us or another authorised trader.

Additional Incentives

From time to time both the Federal and State Governments as well as some local councils offer rebates (additional to STCs) as an incentive to install Solar Hot Water systems. These are often conditional and must always be checked before purchase.

Conditions for additional rebates sometimes include:

- Gas Boosted systems only
- Regional/Rural areas only
- Concession Card holders
- Minimum STCs contribution (eg minimum 20 STCs)
- Residency restrictions
- Domestic applications only

How much can I get?

Rinnai Solar Systems are typically awarded between 12 to 44 STCs. Each STC has a \$ value that fluctuates according to market demand, which needs to be checked at the time of purchase. If a STC was valued at (say) \$37, your rebate for Rinnai systems would be anywhere between \$444 and \$1628.

Correct Sizing

Correct sizing is vital for optimum performance.

Number of Occupants

The number of potential users (ie bedrooms) in any installation is extremely important as it directly affects the size of unit that is required. Nobody likes a cold shower so it is vital that any system is correctly sized for an application. Please talk to your Rinnai Hot Water Specialist about the best model to suit your needs.

Below we have outlined some of the considerations for various Rinnai Solar Systems:

Gas Boosted Solar

- Sizing parameter – Number of bedrooms in the home and the number of hot water outlets that will operate at the same time
- The storage tank capacity and the number of solar collectors determines the volume of available solar heated hot water
- The Gas Booster is always available as a backup, therefore hot water will never run out
- Undersized system could mean the system is relying on the gas booster more often – increasing running costs
- Insufficient Solar Collectors would also reduce the solar gain causing reliance on the gas booster

Electric Boosted Solar

- Sizing Parameter – Number of Bedrooms in the home
- The Storage tank capacity determines the amount of hot water available regardless of whether solar generated or electric boosted
- Hot water can run out if not correctly sized
- Choice of electricity tariff affects availability of hot water:
 - Normal (peak) tariff continually heats
 - Off-peak will generally not heat until overnight
- Split systems offer high element cylinders to balance the solar and electric boost used



Tips on selecting the best Rinnai System

To correctly select a Rinnai Solar System for a home, a number of lifestyle factors need to be considered.

1. What Solar Zone is applicable for the installation?

This determines the amount of solar energy that will be available and can influence the number of collectors that should be installed.

2. Is Gas available?

Natural Gas boosting is the cheapest to run and the most environmentally friendly form of boosting for a Solar System. Rinnai recommends that gas boosting should always be the first choice if available. Alternatively, both LPG & Electric boosting are also economical to run with correctly sized systems.

3. Is there limited space available?

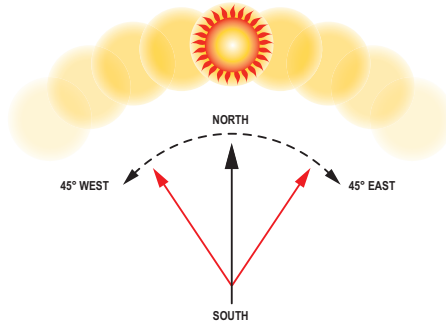
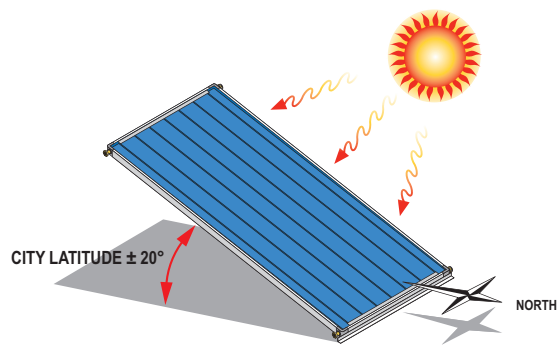
This can determine whether space is available at ground level for a Split System storage cylinder. If limited, then a Close Coupled roof mounted system may be the most appropriate.

4. Is the area prone to frost or sub-zero temperatures?

If you live in a frost prone area, it is important that you specify suitable solar collectors. In VIC, NSW and ACT for example, it is mandatory to install Evacuated Tubes in certain areas as determined by listed post codes. For further information, please talk to your solar specialist or refer to the full warranty conditions on-line at www.rinnai.com.au

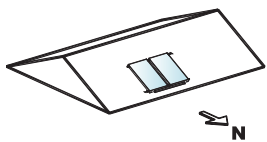
Solar collector Installation Direction

The solar collectors should face as close as possible to North.



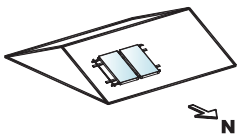
Latitudes of Australian Cities	
City	Latitude
Adelaide	35°S
Alice Springs	24°S
Darwin	12°S
Brisbane	27°S
Canberra	35°S
Hobart	42°S
Melbourne	38°S
Perth	32°S
Sydney	34°S

Solar Collector Installation



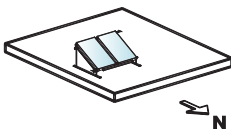
Standard "Pitch Roof" installation – Split System Collectors

This sketch shows the standard frames supplied for a normal angled roof installation. These components are supplied with the installation kits. For both flat plate and Evacuated Tube collectors.



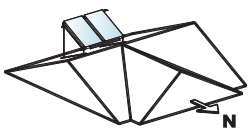
Cyclone Frame Installations

For Cyclone prone areas it is often mandatory but in any event, it is highly recommended to use a cyclone frame. These have a different configuration to the standard frames and are made in much stronger materials. They need to be ordered in addition to the installation kits. Applicable to Flat Plate collectors only.



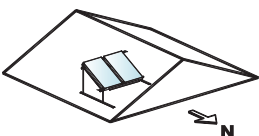
Flat Roof Installations

This sketch shows the frame required for all flat roof installations. It is ordered in addition to the appropriate installation kit and vary depending on the type of system installed. For both Flat Plate and Evacuated Tube collectors.



Reverse & Side Pitch Installations

In addition to the above frames, you can also order Reverse & Side Pitch adaptor kits that suit both Close Coupled & Split Systems. These are ordered in addition to the applicable Flat Roof Frame. Applicable to Flat Plate collectors only.



Commercial Hot Water Systems

The Rinnai Heavy Duty (HD) water heaters are suitable for single installation, Manifold Pack or Demand Duo installations. Each Commercial application require different quantities of hot water, therefore if you are unsure about sizing, please contact our National Commercial Project Division on 1300 555 545 for assistance.

Heavy Duty Units

Rinnai Heavy Duty (HD) water heaters are high efficiency gas Continuous Flow units, available in five models: HD200e, HD200i, HD250e, HDC211e and HDC211i. Refer to page 14 of this brochure for specifications or the Rinnai Commercial Hot Water Reference Guide available to download online at rinnai.com.au

Applications include:

- Cafés
- Child Care Centres
- Hair Dressing Salons
- Small Amenities Blocks
- Butchers

Rinnai Manifold Packs

A Rinnai Manifold Pack consists of 2 to 25 Heavy Duty continuous flow water heaters plumbed together to allow higher flow rates than a single unit can provide.

Applications include:

- Shower blocks
- Sporting clubs
- Mining facilities
- Factories
- Hospitality
- Process / wash down

Rinnai Demand Duo Systems

Rinnai Demand Duo is the combination of between 1 to 6 gas Continuous Flow water heaters with single or multiple storage cylinders. The storage cylinder allows a short period of high hot water flow rate, greater than the continuous flow rate of the HD water heater(s). i.e 'peak demand' applications such as:

- Hotels and Motels
- Apartment blocks and Student Accommodation
- Commercial Kitchens
- Commercial Laundries
- Hospitals
- Aged Care



Heavy Duty



Demand Duo

Commercial Hot Water Systems (Cont.)

Rinnai Commercial Solar Systems

Rinnai Commercial Solar hot water systems provide solar pre-heated water to the Rinnai Commercial gas hot water systems such as the Manifold Pack or Demand Duo system. The system is selected according to the daily hot water demand for the application, the required solar contribution, and what solar zone the system is located in.

Rinnai Common Flue System

Rinnai internal commercial hot water systems can be flued into a single common natural draft flue. This allows both internal Demand Duo and internal Manifold Packs systems to be installed in existing buildings as well as new applications.

Note: Combustion air is drawn from the plant room.

Rinnai Commercial HEX 250

The HEX250 is designed to manage water quality over an extensive range of commercial applications. It manages water quality issues by separating consumable hot water from the heat source. This ensures the heat source remains free of contaminants, resulting in greater overall efficiency and life.

The HEX250 system features a heavily insulated stainless steel tank and a set of stainless steel heat exchange coils. Heated water is stored within the tank. This energy is transferred through the heat exchange coils, heating the consumable hot water to deliver the desired outlet temperature. The innovative control system delivers a stable output temperature of 42°C, 50°C or 60°C depending on your requirements.

Rinnai Warm Water Valve

The Rinnai Demand Duo Warm Water Valve is a system that is designed to accept 60°C or more incoming hot water from a storage system and deliver a reduced constant outlet temperature across a full range of flow rates.

Applications include:

- Apartment buildings and hotels
- Hospitals
- Aged care facilities
- Child care centres

Approved to AS4032.1 as a Thermostatic Mixing Valve and AS4032.2 as a Tempering Valve. Also approved as a warm water system by NSW Health.

For further information or on site assistance please contact our National Commercial Project Division on 1300 555 545



HEX250



Warm Water Valve



Common Flue



Solar

Rinnai Service

Need help with an installation?

In most situations Rinnai retailers can assist with the installation of our appliances. Should this not be the case, Rinnai has an installation service available direct to the end-user. Any installation of a Rinnai appliance is a specialist process and requires trained professional installers to ensure safe and efficient operation of the appliance. This is particularly relevant for connection to gas, electrical changeovers and the installation of Solar Collectors. Our Rinnai installers are not only very familiar with our products, but are fully insured and OH&S compliant. Be confident in your installation by employing Rinnai Service.

For further information, please call 1300 555 545

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For further information visit www.rinnai.com.au or call 1300 555 545

Rinnai
Relax with Rinnai.