



**Rinnai**

REFERENCE GUIDE

## Hot Water

Experience Our Innovation

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## Experience our Innovation

For over 35 years Australians have been enjoying the comfort, convenience and reliability of Rinnai gas 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 is committed to ongoing innovation - delivering efficient, well designed and engineered lifestyle solutions offering a host of benefits including versatility, safety, control, water conservation as well as guaranteed reliability. Backed with extensive warranties and after sales service teams, Rinnai is proud to be the No.1 choice for Continuous Flow Hot water in Australia. In addition, our innovative range of Solar Hot Water Systems boast market leading efficiencies that ultimately enjoy higher Government rebates.

Through innovation, we will endeavour to continue offering superior ranges of home appliances that provide a clear insight into what the future holds for Australian homes

## About this Brochure

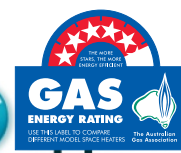
This 'Hot Water Reference Guide' is to be used in conjunction with the consumer brochure. The contents of this brochure are more of a technical nature and it has been produced in relevant technical sections rather than by specific product pages as in the consumer brochure.

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 the Rinnai HelpLine on 1300 555 545  
Monday to Friday 8.00am – 6.00pm EST

## Associations & Certificates



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THIS APPLIANCE TO BE  
ONLY BY AN AUTHORIZED  
INSTALLER

FOR OUTDOOR  
INSTALLATION  
ONLY  
THIS APPLIANCE  
IS NOT SUITABLE  
FOR USE AS A  
POOL HEATER  
ONLY FOR USE  
NATURAL GAS

Rinnai



## 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
- The only internal 26 Litre model available with flexible installation option using Rinnai twin-skin flueing
- Extensive accessory options – Recess Boxes, Pipe Covers, Flue Diverters, Smartstart® and Security Brackets

#### HANDY HINT

**By adding 2 or more Water Controllers, the Parts & Labour warranty is automatically increased from 3 to 5 years**



### Solar Systems

- Utilises the energy from the sun to pre-heat the water
- Benefits of low running costs and low greenhouse emissions
- Close Coupled roof or split ground mounted systems
- Choice of superior quality long-life Stainless Steel with extensive warranties or durable Vitreous enamelled steel cylinders
- Selection of Solar Collectors in both Standard & Frost Tolerant (FTC) configurations
- Full range of sizes to suit all domestic application & climates
- Choice of 2 gas booster sizes to suit small to large families
- Choice of electric element sizes enabling easy changeover from old electric systems
- Substantial Government rebates and incentives apply for most domestic installations

#### HANDY HINT

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



Solar Split System



Solar Close Coupled System

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## Mains Pressure Electric Storage

- Full range of capacities to suit all requirements
- Flexibility of various element sizes with dual handed connections making them ideal for replacing older systems
- Choice of high quality long-life Stainless Steel or durable Vitreous Enamel steel construction
- Stainless Steel cylinders are Solar compatible - added flexibility to upgrade at a later stage
- Flexibility - suitable for internal and external use
- Thermostatically controlled with safety temperature shut off for added safety and peace of mind

### 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!**

## Gravity Feed Electric Storage

- Low pressure gravity feed electric boosted systems
- Designed to be concealed in roof spaces
- Full copper cylinder with long life expectancy as unit not under mains pressure
- Suitable to be installed in conjunction with Solar Collectors to economically pre-heat the water
- Suitable for connection to a combustion stove pre-heat circulation system in addition to solar – best of both!
- Available in a model with a built-in heat exchanger coil for mains pressure capability.

### HANDY HINT

**Because the hot water is gravity fed, the piping to the outlets & showers is usually run in  $\frac{3}{4}$ " (20mm) to ensure adequate water flow!**



## 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








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## 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 market, we now have 5 dedicated ranges designed for specific applications.

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

	Rinnai Envirosmart	Rinnai INFINITY	Rinnai V-Series	Rinnai Heavy Duty (HD-Series)	Rinnai S-Series
Range					
External Models	1	5	2	2	2
Internal Model	-	1	-	1	-
Efficiency	6 Star	5+ Star	5+ Star	5+ Star	N/A
Primary Use	Domestic	Domestic	Builders & Projects	Commercial	Solar Boost Only
Water Controller	Compatible	Compatible	Compatible	Compatible	Not Compatible
Status Monitor	No	26Plus Only	No	Yes	No
Colour	Euro White	Euro White	Dune	Titanium	Dune

### Selection Guide & Sizing

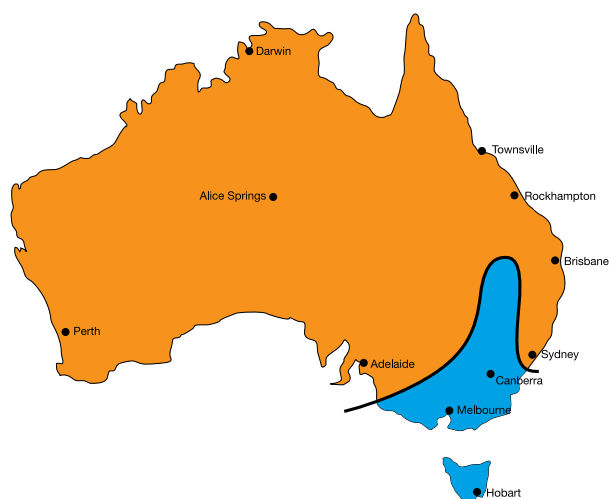
To ensure that the best Continuous Flow unit is installed in any application, we recommend breaking it down to 6 basic considerations:

#### 1. How many Showers are there?

A single bathroom home with a single shower outlet will operate using the smaller 16 or 20 litre model, whereas with multiple bathrooms or showers with 2 roses, then you may need to factor in the likelihood of simultaneous demand. In this case the larger 26 or 32 litre unit would be required.

#### 2. What is the Geographical location?

Ambient water temperatures vary immensely throughout Australia. Please refer to the below map and table as a guideline only:



Climate	Number of Bathrooms The number of shower outlets the unit can supply is dependant on water pressure, ambient water pressure and outlet water flow capacity. (Based on 3 Star, 9L/min)		
	1	2	3
Warm	16 to 20 Litre	16 to 26 Litres	26 to 32 Litre
Cool	16 to 20 Litre	20 to 26 Litres	26 to 32 Litre

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### 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 any 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'd 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 a Rinnai Smartstart pre-heat flow and return system

### 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 9 to 11.

## 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 2 ways to achieve this with Rinnai Continuous Flow appliances:

- 1. Preset 55°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 55°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.

### Rinnai Preset 50°C – Now adjustable to give 50°C at the outlet

Recent amendments to AS3498 allows for the introduction of adjustable 50°C Preset appliances. Similar to Tempering Valves, the installing plumber can now measure the temperature at the outlet with a thermometer and if necessary, adjust the Rinnai Continuous Flow unit. This can be done in increments of 1°C to a maximum of 4°C. At the time of printing the majority of Rinnai Preset 50 appliances already have this feature.

**If unsure whether a particular appliance is adjustable, please call the Rinnai HelpLine on 1300 555 545 quoting the serial number of the appliance.**

## Water Controllers

### 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 55°C in the Kitchen
- Conserve water usually wasted juggling the hot & cold taps
- Installing 2 Controllers extend the Parts & Labour warranty of the Rinnai INFINITY by 2 years to 5 years
- Activate the Rinnai Smartstart® pre-heat function (see page 16 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 Grey 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

#### 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



#### HANDY HINT

**Water Controllers are great for unit servicing as they are also a diagnostic tool. Should there be a problem with getting hot water, the Controllers will usually flash a predetermined number advising of the fault. i.e. low gas supply.**

### 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)



## Internal Flueing

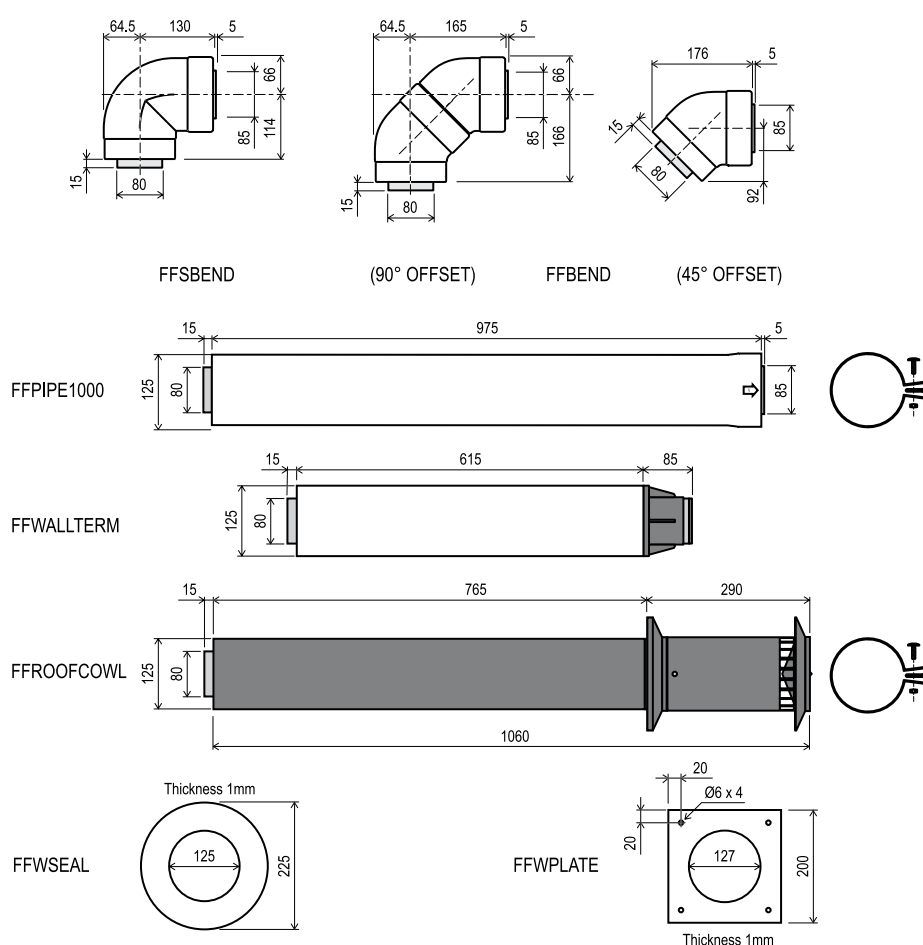
Rinnai offer the only 26 litre internal units available on the market. The Rinnai INFINITY 26i domestic unit and the HD200i commercial model. Ideal for replacement of existing internal hot water systems or simply used when limited space is available externally in applications such as apartments and townhouses. It is a 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 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

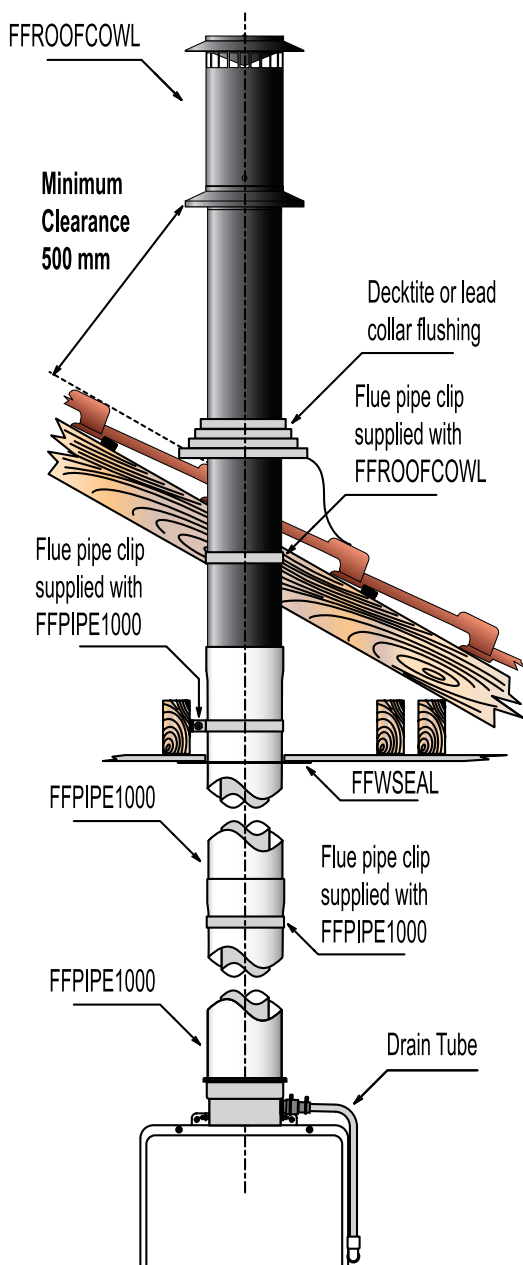
## Flue Components

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



## Dimensions in mm

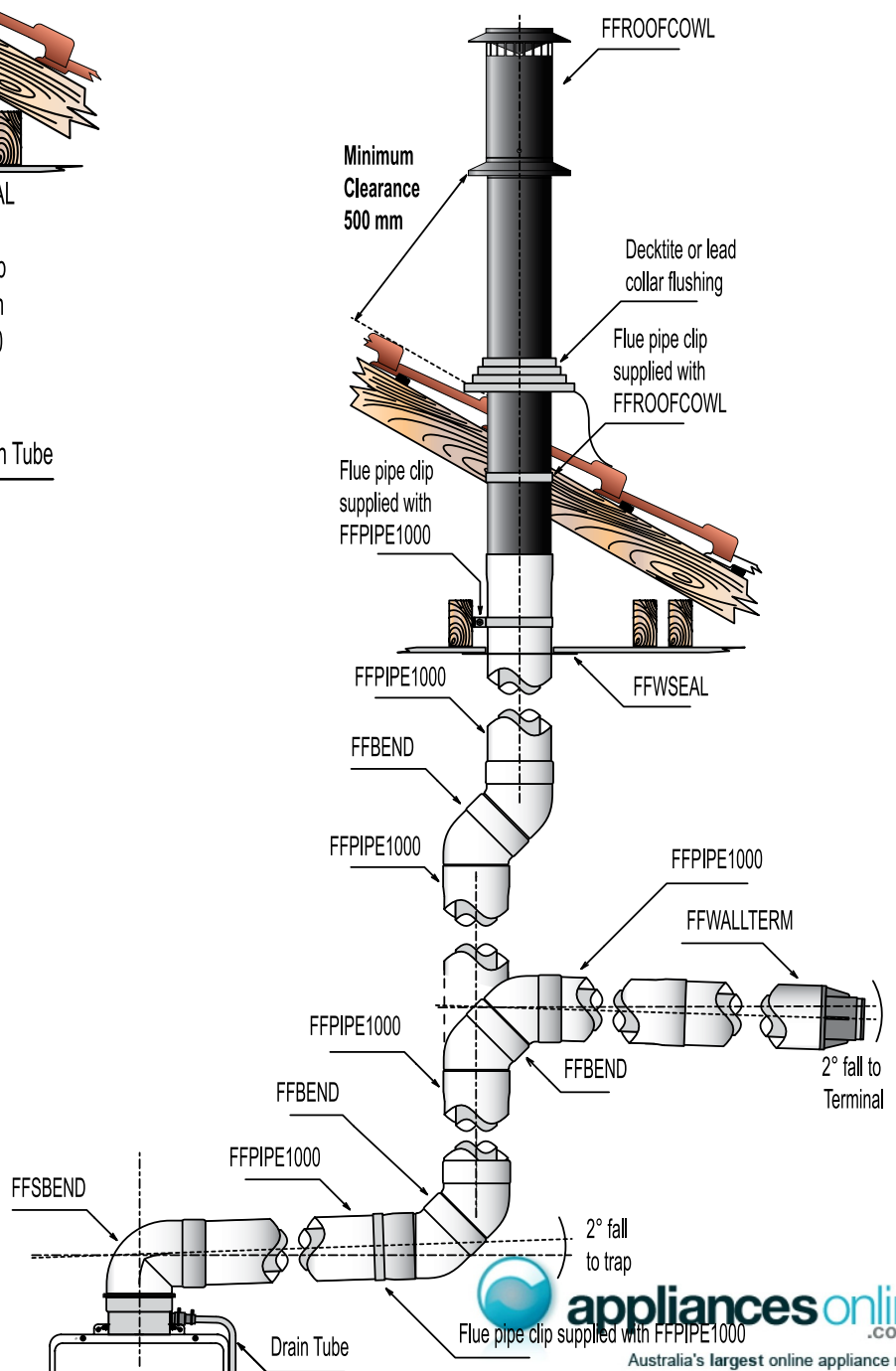
Description	Code Number
Starter Bend	FFSBEND
Universal 45/90 Degree Bend	FFBEND
Flue Pipe 1000mm length	FFPIPE1000
Horizontal Flue Terminal	FFWALLTERM
Vertical Flue Terminal	FFROOFCOWL
Ceiling Ring	FFWSEAL
Wall Plate	FFWPLATE



### 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.



### 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)

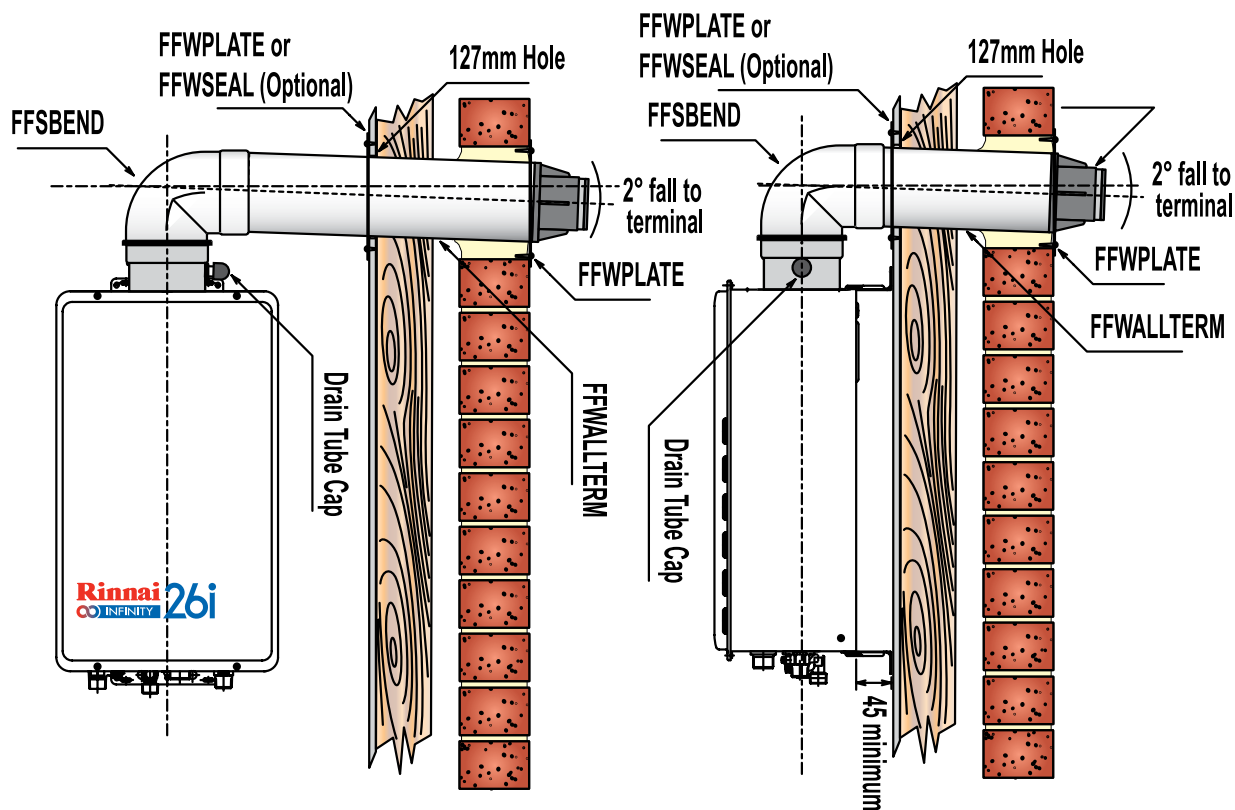
**Note:** For vertical installations over 1.5m a condensate drain trap is also required.

## Horizontal Direct Flueing

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

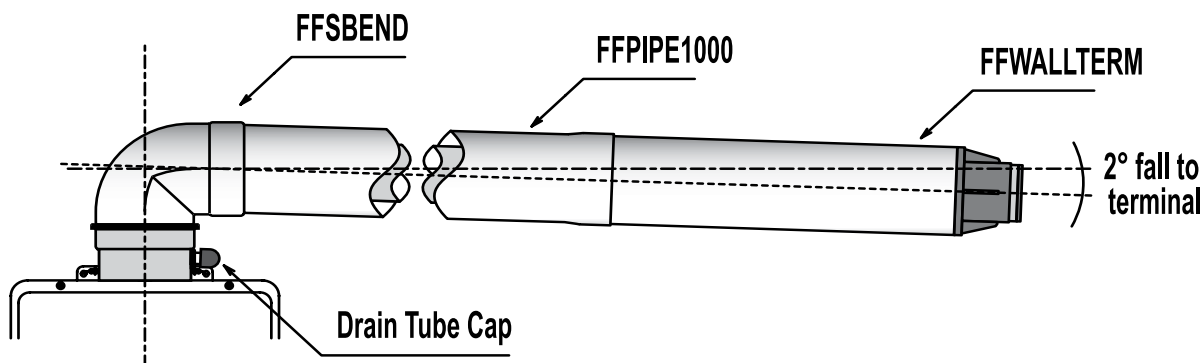
For this installation you will require the following components:

- 90° Bend & 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 drain must be installed

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## 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 and are introducing a number of modifications that allow our continuous flow models to operate over a wider range of conditions. Collectively known as "Enhanced Combustion Technology" (ECT) and in conjunction with new lower minimum gas rate and flow rates, these improvements deliver tangible benefits to our domestic continuous flow customers.

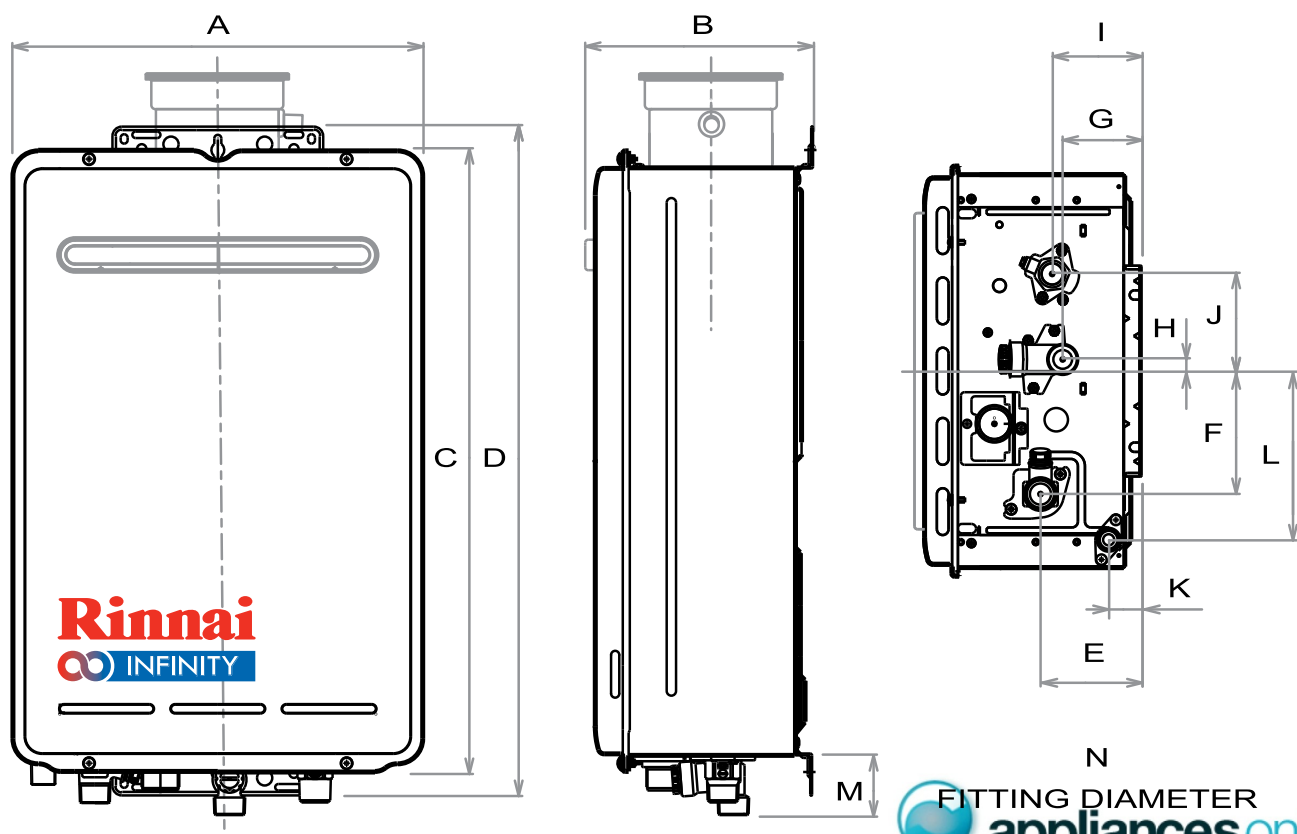
Our core Rinnai INFINITY Continuous Flow products now have the lowest minimum gas rates on the market. This means that at our new lowest possible burner settings the following two enhanced features are realised:

- They now operate at lower flow rates which makes them more compatible with 3 star (7.5-9.0 l/min) low flow water saving fixtures
- They can now 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 is most common when in use with Water Controllers set at showering temperatures between 39 and 42°C.

#### HANDY HINT

**Cold Water + Temperature Rise = Outlet Temperature**





# Continuous Flow Specifications

Model REUV-		1620WGAK	1620WBAK	1620WS(60)AK	2024WGAK	2426WBAK	2426WS(60)AK	2430WK	2626WG-AK	2630WDAK	2632WC(65)AK	2632FFUGA	2632FFUC(65) A	3237WGAK	3237WC(65)AK	
Model Name		INF16	V1200	S20	INF20	V1500	S26	Enviro-smart	INF26	INF26 Plus	HD200e	INF 26i	HD200i	INF32	HD250e	
Factory Default Temp	°C	50 or 55		60	50 or 55		60	50 or 55			65	50 or 55	65	50 or 55	65	
Colour		White	Dune		White	Dune		White		Metal-lic	Tita-nium	White	Tita-nium	White	Titanium	
Water Pressure (kPa)	Min	120			160	140	160	250	200	190		140		190		
	Max	1000														
Gas Rate Min/Max	NG	10.9/125			13.8/160	13.8/ 188		15.9/162	13.8/199		15.7/199	16/195		21/250		
	LPG	11.3/125			14.7/160	14.7/188			14.7/ 199							
Flow Rate 25_C/Max	l/min	16/20			20/24	24/26		24/30	26/26	26/30	26/32	26/32		32/37		
Star Rating		5.5		N/A	5.6	5.0	N/A	6.0	5.1	5.2	5.2	5.0		5.3		
Connection Sizes Gas/Hot/Cold	mm	20/15/15		20/20/20												
Status Monitor		No								Yes		No	Yes	No	Yes	
Dimensions (in MM)	Width	A	350							355	350			470		
	Depth	B	194					277	194	202	251	234 ~274		244		
	Height	C	530					600	530	503	600					
	Height Inc Brackets	D	571					644	571		636	641		644		
	Hot Water Outlet (From Wall)	E	87					164.5	87		96	91~ 131		115		
	Hot Water outlet (from centre)	F	105					100	105		110			61		
	Cold Water inlet (from wall)	G	68					83	68		75	70 ~ 110		99		
	Cold Water inlet (from centre)	H	10					53	10		27			52		
	Gas Connection (from wall)	I	77					70.5	77		104	99 ~ 139		61		
	Gas Connection (from centre)	J	83					25	83		89	89		110		
	Condensate outlet (from wall)	K	-					33	-							
	Condensate oulet (from centre)	L	-					132	-							
	Gas Connection length (from base)	M	40								41					
	Cold Connection length (from Base)		50								51					
	Hot Connection length (from base)		39				42									
	Condenstae Connection (from base)		-					51	-							
Condensate Fitting Diammeter		-					15	-								

## Continuous Flow Accessories

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

### Recess Boxes

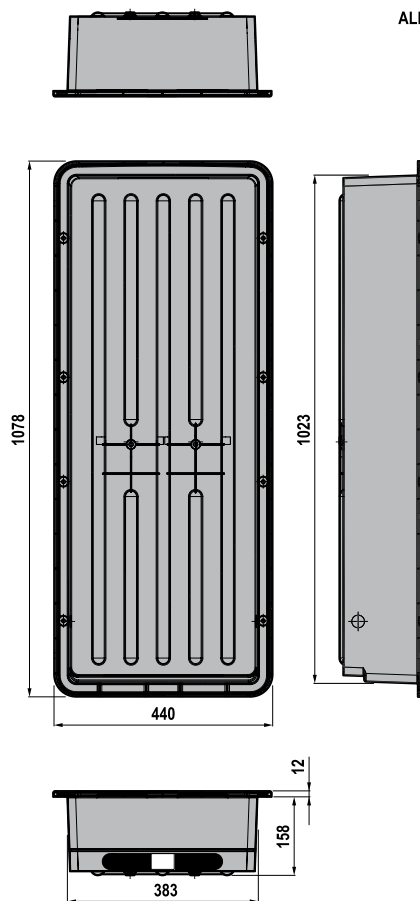
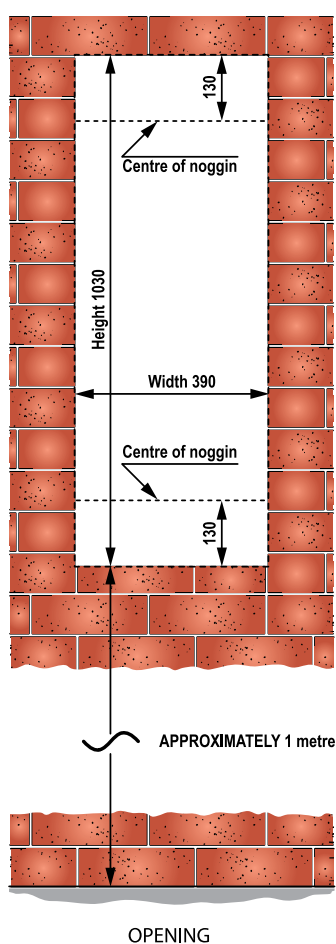
When installing a Rinnai Continuous Flow unit in a new home or renovation, you should consider using a recess box. These boxes allow you to virtually hide the hot water system into the cavity enabling a smooth and neat finish to the job. Both are available in full and semi-recessed options.

There are 2 types of recess boxes:

1. Smartbox® – suits all external units except larger INF32, Envirosmart & Commercial models
2. RBOX02 – suits INF32, HD200e & HD250e

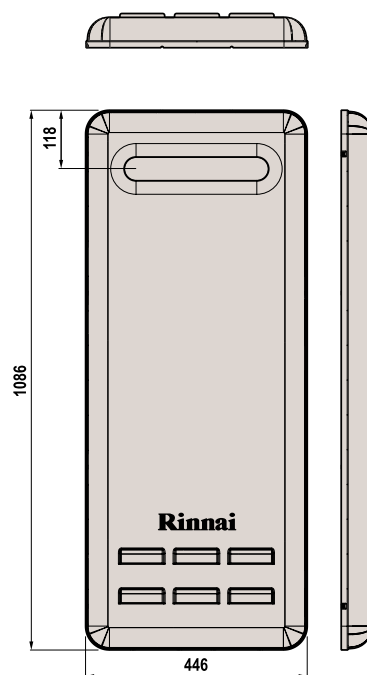
### Smartbox®

- Ideal for new homes or major renovations
- 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 Envirosmart models



Smartbox INSERT (SBOXI)

ALL MEASUREMENTS ARE IN MM UNLESS OTHERWISE STATED



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 Smartbox COVER (SBOXC)

## RBOX02 (Galvanised Recess Box)

The RBOX02 recess Box is for use with the larger INFINITY 32, HD200e & HD250e Continuous Flow water heaters and is suitable for brick constructions only.

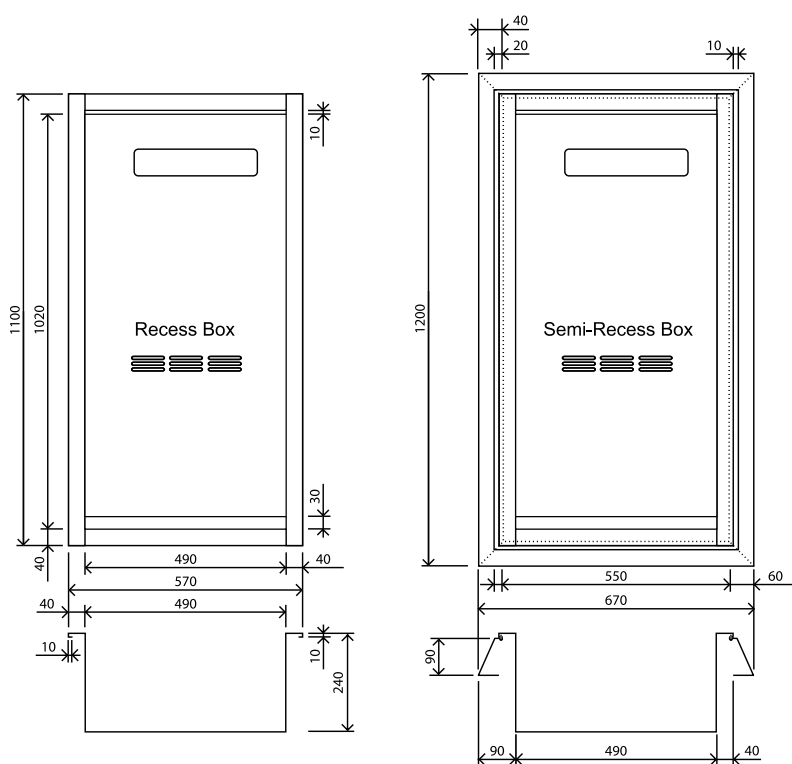
The RBOX02 requires an available cavity depth of 230mm and is usually installed as follows:

### 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



Suits	Material	Opening Dimensions (mm)			Wall Protrusion (mm)	Recess	Code
		Width	Height	Depth			
INFINITY 16, 20 & 26, 26Plus V1200 & V1500 Solar S20 & S26	ABS Plastic	385-395	1025-1050	160	55	Full	SBOX
				95	125	Semi	SBOXF*
INFINITY 32 Commercial HD200e Commercial HD250e	Galv. Steel	496-530	1020-1050	230	15	Full	RBOX02
				140	100	Semi	RBOX02F*

\* Ordered in addition to the full Recess Box

**Note:** The Rinnai Envirosmart model is not suitable for use with a Recess box.

## Smartstart® Water Saver

The Rinnai Smartstart® water saver has been developed to specifically 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

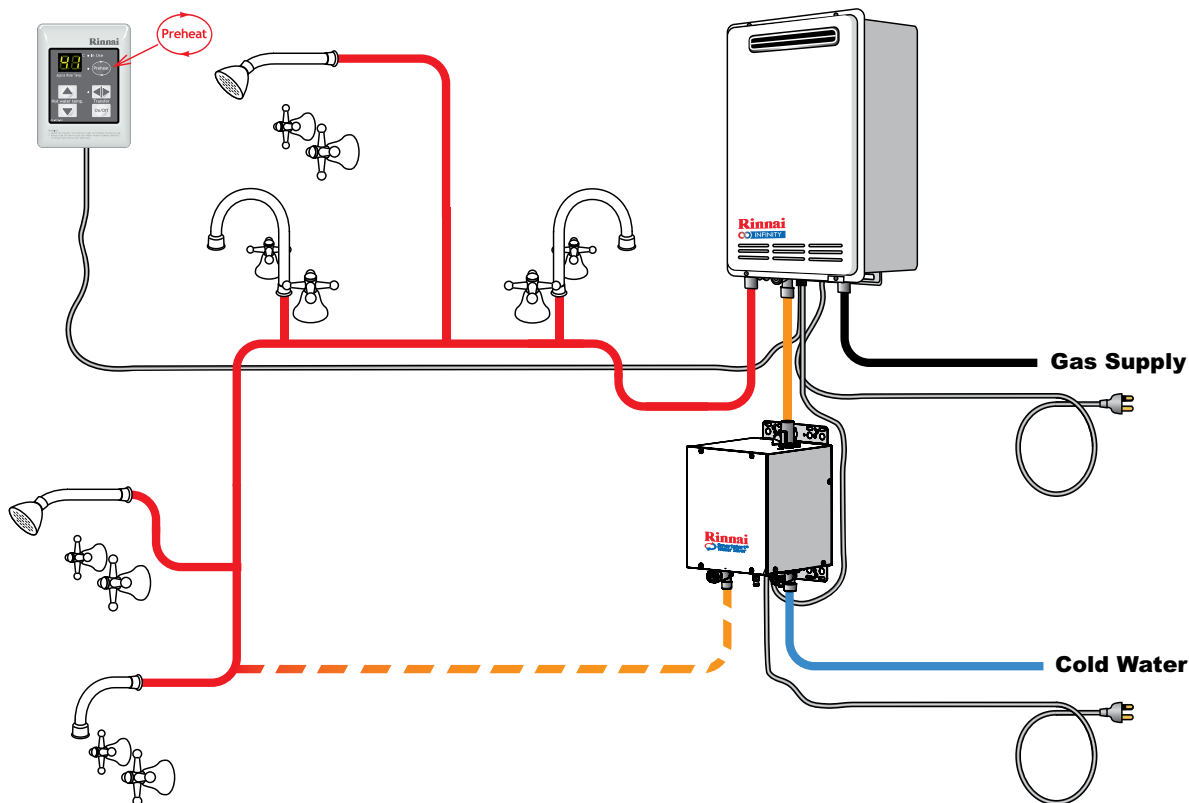
Plumbing is designed as a 'ring-main' or flow and return loop around the house. In existing homes, a return line can be plumbed in from the furthest point back to the Rinnai Continuous Flow unit.

### Operation overview

The Smartstart® system heats the water in the pipework water connected between the water heater and the hot water outlets before any outlets are opened using the 'flow and return' pipework 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, only heats the water before the outlet is opened. This results in significant energy savings because water is not heated unnecessarily whilst retaining the benefits of traditional flow and return systems.

The Smartstart® module is usually located below the Rinnai Continuous Flow water heater, however, it can be mounted anywhere within the return loop.



#### 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.



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## 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
- Provides 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

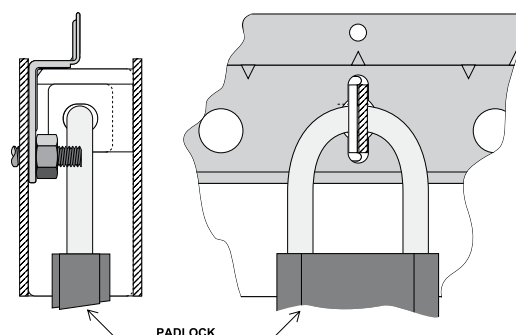
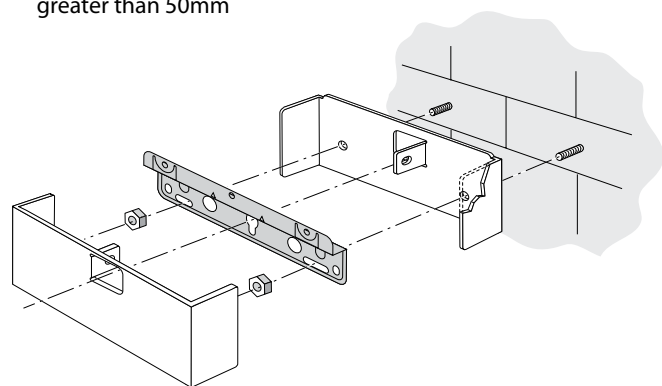
Suits	Width	Height	Depth	Colour	Code
INFINITY 26Plus	350mm	450mm	180mm	Star Metallic	PCD01
INFINITY 16,20 & 26	350mm	400mm	160mm	Euro White	PC11
INFINITY 32	470mm	400mm	210mm	Euro White	PCV02
V1200 & V1500	350mm	450mm	210mm	Dune	PC11D



## 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



## 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.

**Note:** Suits V1500, S26, INFINITY26, INFINITY26Plus and HD200 models only.

### 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**



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## Rinnai Solar Hot Water Systems

### Range at a glance

#### Close Coupled Systems

Where the Storage Cylinder and the Solar Collectors (panels) are coupled together and the installation is on the roof. A choice of an electric boost element in the cylinder 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
- No recirculating pumps and pipe runs – reducing heat losses and improving running efficiencies
- No electricity required to operate pumps to recirculate the water through the panels
- 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 NEW Titanium colour
- Wide range of Colorbond® colours available. Ask your Rinnai Solar consultant for selection



#### Split Systems

Where the Storage Cylinder and the Solar Collectors are literally split and installed separately. A choice of an electric boost element in the cylinder or an in-line gas booster which can be installed on the side of the cylinder, 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 cylinder 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 stays for a weekend!

If the majority of your hot water is used in the evening (i.e. for running baths & spas etc) then re-heating will occur as follows depending on the type of booster:

**Electric Boost** – the thermostat will turn on the element overnight to bring the water back to temperature. This means that if no hot water is used in the morning the sun's energy is wasted the next day as the water is already hot.

**Gas Boost** – the booster will not activate until the hot water is required. If that is early morning then the gas booster will be required, but if later in the day, some solar reheating will have occurred.

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**



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**The Rinnai Solar Hot water Systems are separated into 2 ranges:**

### **Rinnai Prestige**

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

#### **Storage Cylinders**

- Long lasting commercial grade Stainless Steel construction
- Specifically designed for solar ensuring maximum heat retention thus reducing the need for boosting
- 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
- 10 Riser tubes per panel for effective transfer of the solar energy to heat the water
- Full aluminium casing for corrosion resistance
- Fully replaceable glass
- Available in both standard and frost tolerant versions (see below)



### **Rinnai Sunmaster**

- High quality Vitreous Enamel lined steel cylinders
- Supplied with high efficiency Enduro and Equinox (frost tolerant) Solar Collectors
- Available as Split Systems only
- Available in both Gas or Electric Boost

#### **Modular System**

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

#### **Storage Cylinders**

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

#### **Enduro & Equinox Solar Collectors**

- Highly efficient aluminium fin solar absorber to maximise efficiency
- 8 Riser tubes per panel for effective transfer of solar energy to the water
- Full aluminium casing for corrosion resistance
- Equinox Collector has added feature of Frost Protection (see below)



### **Frost Protection**

If you live in a frost prone area, it is important that you specify when ordering Frost Tolerant Collectors (FTCs). In Victoria for example, it is mandatory to install FTCs 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](http://www.rinnai.com.au)

**Rinnai have two Collectors that are frost tolerant to -6°C – the Excelsior FTC and the Equinox. Standard Collectors are not covered by warranty for any damage due to freezing or frost.**

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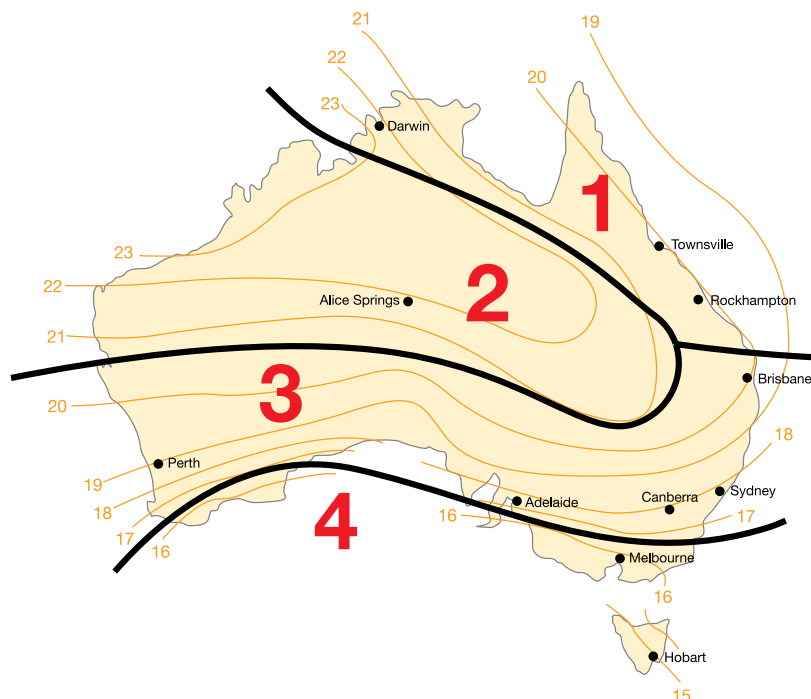
## Solar Rebates

### Government Rebates

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

### Solar Zones

The number of RECs 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 RECs than if it were installed in Hobart. For the purposes of REC assessment, Australia is divided into 4 solar zones as shown in the map.



#### HANDY HINT

To assist with understanding all the rebates available, Rinnai has introduced an on-line Solar Rebate Estimator which has the latest up to date rebates and values. See [www.rinnai.com.au](http://www.rinnai.com.au) for details

#### HANDY HINT

It is if you are unsure where the boundaries lie between zones, Please refer to the Australian Government website [www.orer.gov.au](http://www.orer.gov.au) and follow the Solar Water Heater link to find a post code listing.

### How to claim the RECs rebate?

Ultimately the RECs 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 REC rebate declaration form that is supplied with each system which transfers the RECs to Rinnai. In return we will pay you the market rate which is current at that time less a small admin fee. Alternatively, you can speculate on the market value and sell them at a later stage either to us or another authorised trader.

### Additional Rebates/Incentives

From time to time both the Federal and State Governments as well as some local councils offer rebates (additional to RECs) 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:

- Conversions from Electric Systems to Solar Systems
- Gas Boosted systems only
- Regional/Rural areas only
- Means testing on household income
- Concession Card holders
- Minimum RECs contribution (i.e. minimum 20 RECs)
- Residency restrictions
- Domestic applications only



## RECs and Rinnai Solar Systems

The following tables show the awarded RECs for a selection of the most popular systems that Rinnai sell. If your particular system is not shown, please ask your Rinnai Solar specialist who can further advise.

Standard Rinnai Systems are calculated with the following Collectors:

- Rinnai Prestige Excelsior & Excelsior (FTC) Collectors
- Rinnai Sunmaster Enduro & Equinox (FTC) Collectors

Rinnai Prestige					RECs Zones (Excelsior)			
Description	Size	Booster	Collectors		1	2	3	4
Split System Gas	System A	160L	S20	1	27	27	27	23
	System B	250L	S20	2	42	44	42	35
	System C	250L	S26	2	42	44	42	35
	System D	315L	S26	2	42	44	42	36
	System E	315L	S26	3	48	48	48	42
Split System Electric	System F	250L	3.6kW	2	32	31	32	26
	System G	315L	3.6kW	2	32	31	32	26
	System H	315L	3.6kW	3	35	33	35	30
Close Coupled Electric	System I	180L	3.6kW	1	21	21	21	17
	System J	330L	2.4kW	2	35	33	35	30
	System K	330L	3.6kW	2	35	33	35	30
Close Coupled Gas	System L	180L	S20	1	29	29	29	24
	System M	330L	S26	2	43	45	43	37

Rinnai Sunmaster					RECs Zones (Enduro & Equinox)			
Description	Size	Booster	Collectors		1	2	3	4
Split System Gas	System 1	175L	S20	1	28	28	28	23
	System 2	175L	S26	1	28	28	28	23
	System 3	215L	S20	2	42	44	42	36
	System 4	215L	S26	2	42	44	42	36
	System 5	270L	S26	2	43	44	43	36
Split System Electric	System 6	200L	3.6kW	2	20	20	20	16
	System 7	315L	3.6kW	2	30	30	30	25
	System 8	315L	3.6kW	3	33	33	33	28

### How much can I get?

As can be seen from the above table, Rinnai Solar Systems are typically awarded between 20 to 42 RECs. Each REC has a \$ value that fluctuates according to market demand, which needs to be checked at the time of purchase. If a REC was valued at (say) \$40, your rebate for Rinnai systems would be anywhere between \$800 and \$1680.



At the time of printing this brochure, the Federal Government is also offering an additional \$1600 to switch from an electric system to Solar. In some States there are additional rebates on top of this again!

## Correct Sizing

Correct Sizing is vital for optimum performance

### Number of Occupants

The number of users 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
- The storage cylinder capacity determines the 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 Cylinder size 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 re-heated water:
  - Normal (peak) tariff continually re-heats
  - Off-peak will generally not re-heat until overnight



## 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 would be the most appropriate.

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

Frost protection should always be used if temperatures fall below zero. This can be achieved by using Frost Tolerant Collectors (FTCs) which must be requested at the time of ordering. FTC panels are warranted to -6°C under certain conditions. Please ask your Rinnai Solar Specialist for further details or see on-line at [www.rinnai.com.au](http://www.rinnai.com.au)

## Rinnai Solar System Sizing Tables

### Vitreous Enamel Split Systems - Gas

Solar Zone(s)	Number of Bedrooms	System Performance	Tank Storage Capacity (Litres)	No of Solar Collectors	Booster Size	Rinnai Sunmaster System
1, 2 & 3	1 to 3	Good	175	1	S20	1
		Best			S26	2
	2 to 3	Good	175	1	S26	2
		Best	215	2	S20	3
	3 to 4	Good	215	2	S20	3
		Best			S26	4
	3+	Good	215	2	S26	4
		Best	270			5
4	1 to 3	Good	175	1	S26	2
		Best	215	2	S20	3
	2 to 3	Good	215	2	S20	3
		Best			S26	4
	3 to 4	Good	215	2	S26	4
		Best	270			5
	3+	Best	270	2	S26	5
						5

### Vitreous Enamel Split Systems - Electric

Solar Zone(s)	Number of Bedrooms	Tank Storage Capacity (Litres)	No of Solar Collectors	Booster Size	Rinnai Sunmaster System
1, 2 & 3	1 to 3	200	2	3.6	6
	3 to 4	315	2	3.6	7
	3+	315	3	3.6	8
4	1 to 2	200	2	3.6	6
	2 to 3	315	2	3.6	7
	3+	315	3	3.6	8

### Stainless Steel Split Systems - Gas

Solar Zone(s)	Number of Bedrooms	System Performance	Tank Storage Capacity (Litres)	No of Solar Collectors	Booster Size	Rinnai Prestige System
1, 2 & 3	1 to 3	Good	160	1	S20	A
		Best	250	2		B
	2 to 3	Good	250	2	S20	B
		Best			S26	C
	3 to 4	Good	250	2	S26	C
		Best	315			D
	3+	Good	315	2	S26	D
		Best		3		E
4	1 to 3	Good	250	2	S20	B
		Best			S26	C
	2 to 3	Good	250	2	S26	C
		Best	315			D
	3+	Good	315	2	S26	D
		Best		3		E

Stainless Steel Split Systems - Electric					
Solar Zone(s)	Number of Bedrooms	Tank Storage Capacity (Litres)	No of Solar Collectors	Booster Size	Rinnai Prestige System
1, 2 & 3	1 to 3	250	2	3.6kW	F
	3 to 4	315	2	3.6kW	G
	3+	315	3	3.6kW	H
4	1 to 2	250	2	3.6kW	F
	2 to 3	315	2	3.6kW	G
	3+	315	3	3.6kW	H

Stainless Steel Close Coupled - Gas					
Solar Zone(s)	Number of Bedrooms	Tank Storage Capacity (Litres)	No of Solar Collectors	Booster Size	Rinnai Prestige System
1, 2 & 3	1 to 3	180	1	S20	L
	3+	330	2	S26	M
4	1 to 2	180	1	S20	L
	2 to 4	330	2	S26	M

Stainless Steel Close Coupled - Electric					
Solar Zone(s)	Number of Bedrooms	Tank Storage Capacity (Litres)	No of Solar Collectors	Booster Size	Rinnai Prestige System
1, 2 & 3	1 to 3	180	1	3.6kW	I
	3 to 4	330	2	2.4kW	J
	3+	330	2	3.6kW	K
4	1 to 2	180	1	3.6kW	I
	2 to 3	330	2	2.4kW	J
	3+	330	2	3.6kW	K

## Ordering Sunmaster Solar

Rinnai Sunmaster Solar systems are ordered as separate components as shown in the below table. This is particularly suitable for installation in new homes and major renovations as it allows for supply of the various components at different stages of completion. Alternatively, all components can be ordered for a single delivery for existing homes & replacements.

Gas	System 1		System 2		System 3		System 4		System 5	
	Gas 175L, S20 1 Collector		Gas 175L, S26 1 Collectors		Gas 215L, S20 2 Collectors		Gas 215L, S26 2 Collectors		Gas 270L, S26 2 Collectors	
Components	Order Code	Qty	Order Code	Qty	Order Code	Qty	Order Code	Qty	Order Code	Qty
Storage Cylinder	SG175	1	SG175	1	SG215	1	SG215	1	SG270	1
Solar Collectors (Std)	R18801740*	1	R18801740*	1	R18801740*	2	R18801740*	2	R18801740*	2
Collector Installation Kit	R33202739	1	R33202739	1	R33202740	1	R33202740	1	R33202740	1
Pump Kit	SGPKIT	1	SGPKIT	1	SGPKIT	1	SGPKIT	1	SGPKIT270	1
Gas Booster	S20#	1	S26#	1	S20#	1	S26#	1	S26#	1

Electric	System 6		System 7		System 8	
	Electric 200L, 2 Collectors, 3.6kW		Electric 315L, 2 Collector, 3.6kW		Electric 315L, 3 Collector, 3.6kW	
Components	Order Code	Qty	Order Code	Qty	Order Code	Qty
Storage Cylinder	SE200S36	1	SE315S36	1	SE315S36	1
Solar Collectors (Std)	R18801740*	2	R18801740*	2	R18801740*	3
Collector Installation Kit	R33202740	1	R33202740	1	R33202741	1
Pump Kit	SEPKIT	1	SEPKIT	1	SEPKIT	1

\* Collector shown is standard Enduro (Non Frost Tolerant). For the Frost Tolerant Equinox Collector, please substitute with code R18801741

# Nominate N (Natural Gas) or L (LPG) after the code to specify gas type

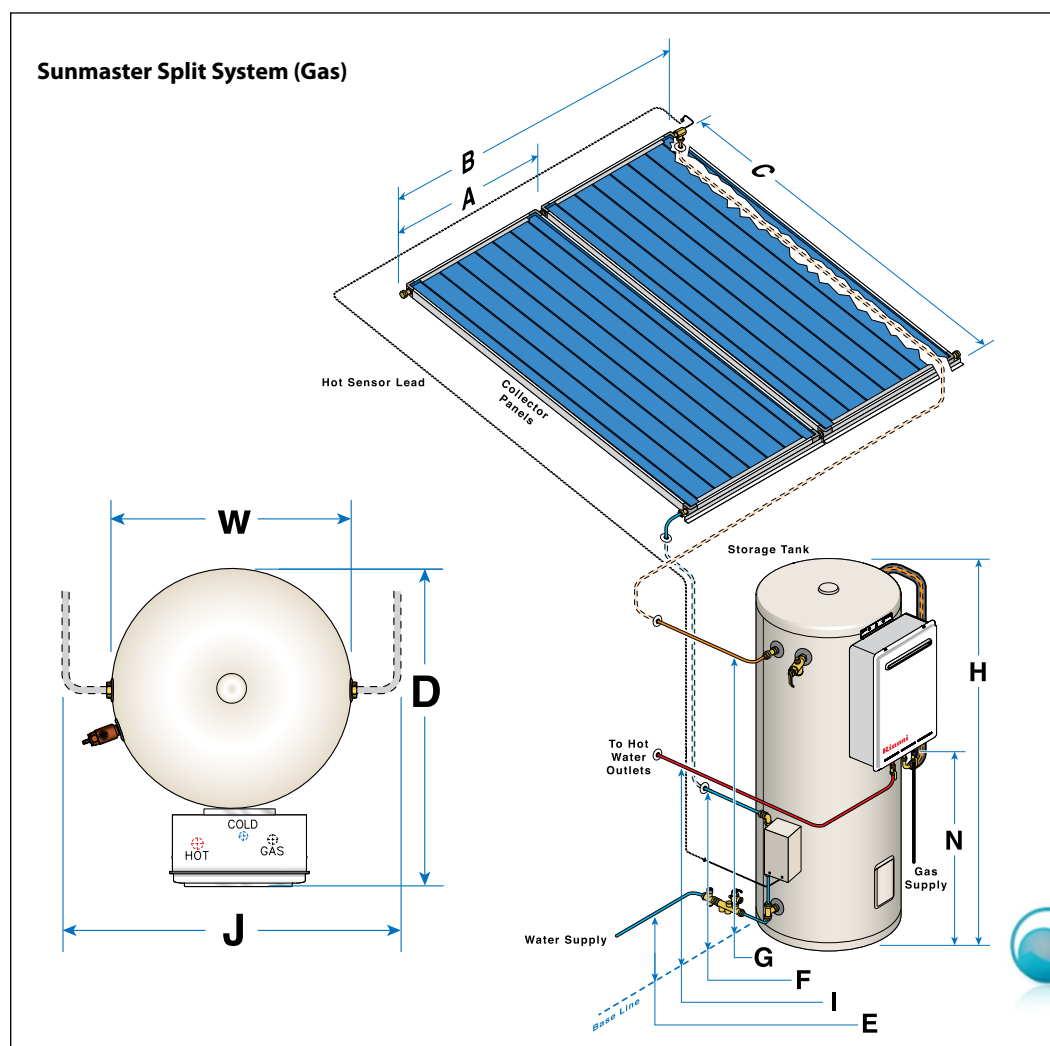


# Solar Rough in Diagram

## Sunmaster Split Systems

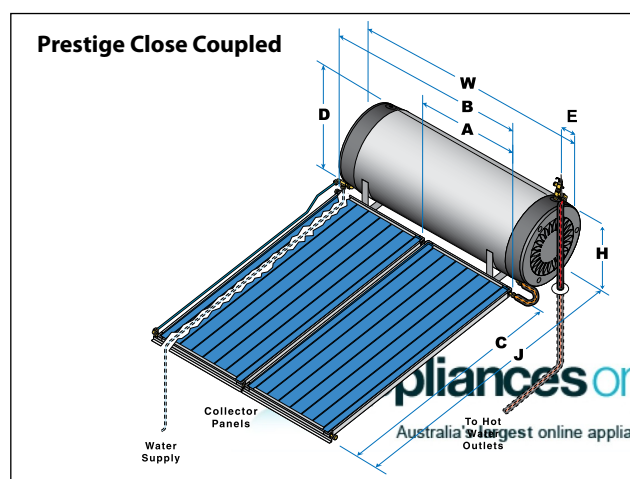
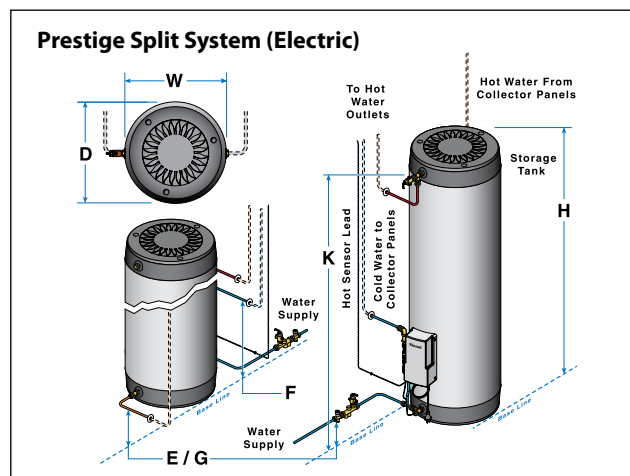
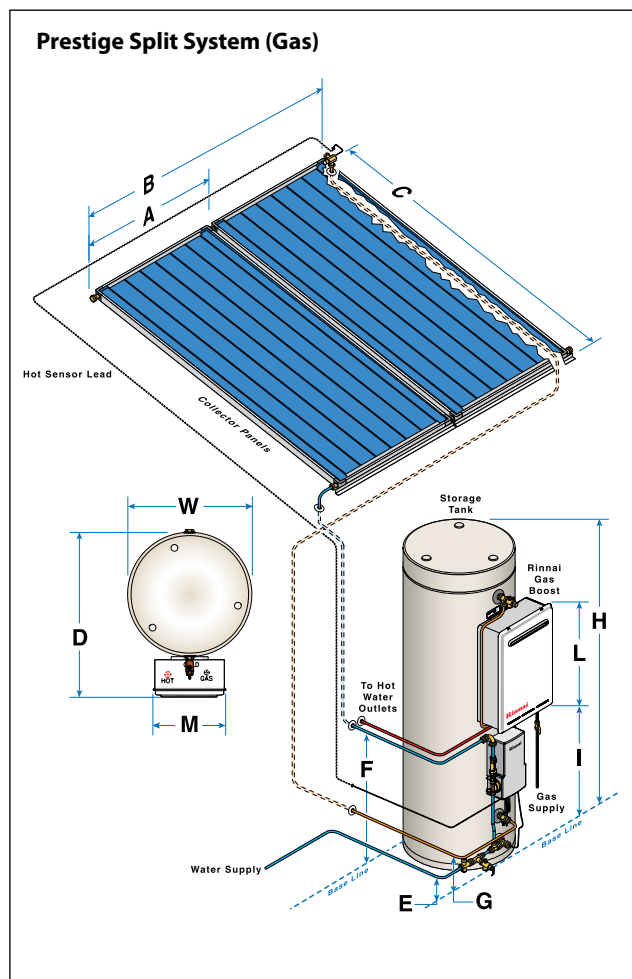
Sunmaster Split Systems- Enamel Tanks		175 Lt Gas Boost 160 Lt Electric Boost	215 Lt Gas Boost 200 Lt Electric Boost	270Lt Gas Boost	315Lt Electric Boost
A	Collector Width	1015	1015	1015	1015
B	Width of two collectors	2100	2100	2100	2100
C	Length of Solar collectors	1930	1930	1930	1930
H	Height of tank	1530	1825	1265	1510
D	Depth of Tank with Booster	709*	709*	879	N/A
W	Tank Diameter	515	515	685	685
E	Left Hand Side Cold Water Inlet	150	150	210	260
F	Cold Water Flow to collector	800	800	840	910
G	Hot Water Return from collector	1310	1605	985	1200
I	Hot Out (Gas Boost)	850*	1150*	590	1200
K	Hot out (Electric Boost)	1310	1605	985	1200
L	Height of Gas Boost	530*	530*	530	N/A
M	Width of Gas Boost	350*	350*	350	N/A
N	Right Hand Side Gas Supply	850*	1150*	590	N/A

\* Not applicable for Electric Boost



## Prestige Systems

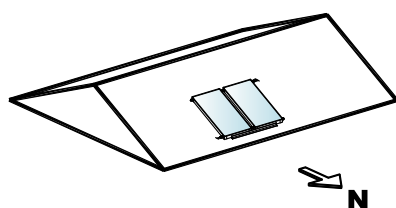
Split Systems Stainless Steel		Electric Boost			Gas Boost			Close Coupled Stainless Steel		Gas & Electric	
		160 Lt	250 Lt	315 Lt	160 Lt	250 Lt	315 Lt			180 Lt	330 Lt
A	Collector Width	1015			1015			A	Collector Width	1015	
B	Width of two collectors	2100			2100			B	Width of two collectors	2100	
C	Length of Solar collector	1930			1930			C	Length of Solar collector	1930	
								J	Overall Length of System	2580	
Weight (Empty)		48	66	80	44	56	68	Weight (Empty)		44	68
H	Height of tank	1200	1700	2080	1170	1690	2080	H	Height of tank (installed)	640	
D	Depth of Tank with Booster	N/A				795		D	Diameter	600	
W	Tank Diameter	600			600			W	Tank Length / Width	1200	2080
E	Cold Water inlet	85			265			E	Left Hand Side Cold Water inlet	60	
F	Cold Water Flow to collector	400			600			F	Cold Water Flow to Collector	N/A	
G	Hot Water Return from Collector	85			352			G	Hot Water Return from Collector	N/A	
I	Hot Water Flow To House (From Gas Boost)	N/A				780	1170	I	Hot Water Flow to House (From Gas Boost)	N/A	
K	Hot out	1110	1610	1990	N/A			K	Hot out (to Cold in Gas Boost)	N/A	
L	Height of Gas Boost	N/A			530			Height of Gas Boost		530	
M	Width of Gas Boost				350			Width of Gas Boost		350	
N	Right Hand Side Gas Supply				N/A	780	1170	N	Right Hand Side Gas Supply	N/A	



## Solar Collector Dimensions

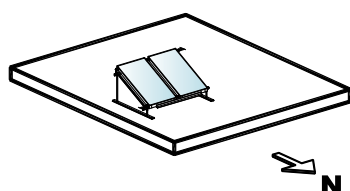
Characteristics		Enduro	Equinox Frost Tolerant	Excelsior	Excelsior Frost Tolerant	Enduro SP152
Code		SP200A	SP200A FTC	EXT	EXT FTC	SP152
Type		Flat Plate				
Construction	Waterways	Copper				
	Absorber	Aluminium	Aluminium	Copper	Copper	Aluminium
	Selective Surfaces	High Performance				
Maximum Operating Pressure		850 kPa				
Casing Material		Aluminium				
Weight empty		33kg	36kg	35kg	38kg	24kg
Weight full		34.3kg	37.3kg	36.5kg	39.5kg	25kg
Volume of Water		1.3 litres	1.3 litres	1.5 litres	1.5 litres	1 litres
Potential Solar Output at PTR relief conditions		1.25kW	1.25kW	1.25kW	1.25kW	0.75kW
Approx Roof Space Required L X W (mm)	1 Collector	1940 x 1025	1940 x 1025	1964 x 1047	1964 x 1047	1310 x 1025
	2 Collector	1940 x 2100	1940 x 2100	1964 x 2144	1964 x 2144	1310 x 2100
	3 Collector	1940 x 3175	1940 x 3175	1664 x 3241	1664 x 3241	1310 x 3175

## Solar Collector Installation



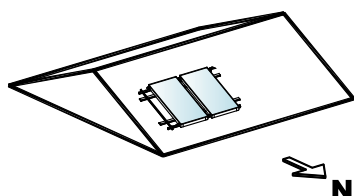
### Standard "Pitch Roof" installation – Split System Collectors

The below sketches show the standard frames supplied for a normal angled roof installation. These components are supplied with the installation kits.



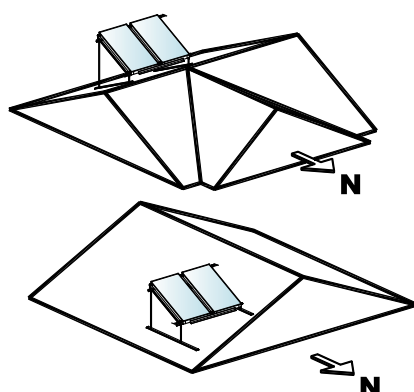
### Flat Roof Installations

The below 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.



### 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.



### 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.

## Electric Hot Water Systems

### Range at a glance

#### Mains Pressure Systems

Rinnai has two mains pressure ranges of Electric Hot Water – Centurion & HOTFLO. They are simply a storage cylinder that holds water at a pre-set temperature with the use of thermostatic control. As hot water is used, it is replaced with cold water and reheats again. Hot Water delivery is at mains pressure or the maximum allowable pressure should the home have a pressure limiting device installed.

##### Rinnai Centurion

Rinnai centurion electric tanks are made from high quality stainless steel, they have positive domes on both ends of the cylinder, for optimum capacity in a slim line water heater. All centurion water heaters come standard with a hot water return connection point, which is ideal for flow and return plumbing or solar conversions at a later date.

- Superior quality long life Stainless Steel tank with a 10 year warranty
  - No requirement for a sacrificial anode – reduced maintenance
  - Taller slimline tank. With positive domes at both ends for optimum capacity and neater appearance
  - Solar compatible - added flexibility at a later stage
  - Connection for pumped return line
  - Colorbond® outer case - durable and weather resistant
  - Flexibility - suitable for internal and external use
  - Thermostatically controlled with safety temperature shut off for added safety and peace of mind
  - Left handed connections - suits most common installations
- Colorbond® is a registered trademark of BlueScope Steel Limited.



##### Rinnai HOTFLO

Our quality HOTFLO range of electric tanks are available in various storage capacities ranging from a compact 40 Litre right up to the large 315 Litre model. We also have a complete range of element sizes minimising changeover costs.

- Economical Vitreous Enamel lined steel tank with a 5 year warranty
- Inbuilt anode protection - extends the life of the tank
- Dual handed - allows increased flexibility of installation
- Flexibility - suitable for internal and external use
- Foam Insulation exceeds MEPS\* (Minimum Energy Performance Standard) by an average of 20%, reducing heat loss and running costs
- Thermostatically controlled with safety temperature shut off for added safety and peace of mind

\* Excludes 40 litre



#### Gravity Feed Systems

Similar to normal storage cylinders the gravity feed systems again hold water at a pre-set temperature but this time not under mains pressure. Sometimes also referred to as 'constant pressure' systems, the Roofmaster is usually located in the roof space. Whereas mains pressure systems usually operate between 300 – 500kPa, a gravity feed system operates at the 'head of pressure' dependant on how high the tank is above the tap/shower. In single storey installations this is generally about 20 to 24kPa.

##### Rinnai Roofmaster

The Rinnai gravity feed Roofmaster water heaters are concealed in your roof space. The storage cylinder is made from heavy duty copper which makes it extremely reliable and corrosion resistant. The lower pressure at which they operate puts much less stress on the cylinder and fittings, so everything lasts that much longer.

- Copper cylinder construction - reliable and corrosion resistant with a 7 year warranty
- Specifically designed for in-roof Installations
- Gravity feed, less stress on components means longer life
- Thermostatically controlled with silent operation
- Flexibility to integrate with solar and/or combustion stove (wetback) installations
- Operates at the 'head of pressure' 20 to 24 kPa



## Range Overview

The table below outlines the sizes and element option for all Rinnai Electric Hot Water Systems

Range	Size	Construction	Heating Element Size				Twin Element Option
			1.8kW	2.4kW	3.6kW	4.8kW	
Centurion	160 Litres	Stainless Steel	✓	✓	✓	✓	
	250 Litres	Stainless Steel	✓	✓	✓	✓	✓
	315 Litres	Stainless Steel	✓	✓	✓	✓	✓
HOTFLO	40 Litres	Vitreous Enamel		✓	✓		
	80 Litres	Vitreous Enamel		✓	✓		
	125 Litres	Vitreous Enamel		✓	✓		
	160 Litres	Vitreous Enamel		✓	✓		
	200 Litres	Vitreous Enamel			✓	✓	
	250 Litres	Vitreous Enamel			✓	✓	
	315 Litres	Vitreous Enamel			✓	✓	
	400 Litres	Vitreous Enamel			✓	✓	
Roofmaster Plus	160 Litres	Copper	3.0kW Immersion Element				
	250 Litres	Copper					
	315 Litres	Copper					
Roofmaster Prestige	250 Litres	Copper	3.0kW Immersion Element				
	315 Litres	Copper					
Roofmaster Coil	315 Litres	Copper	3.0kW Immersion Element				

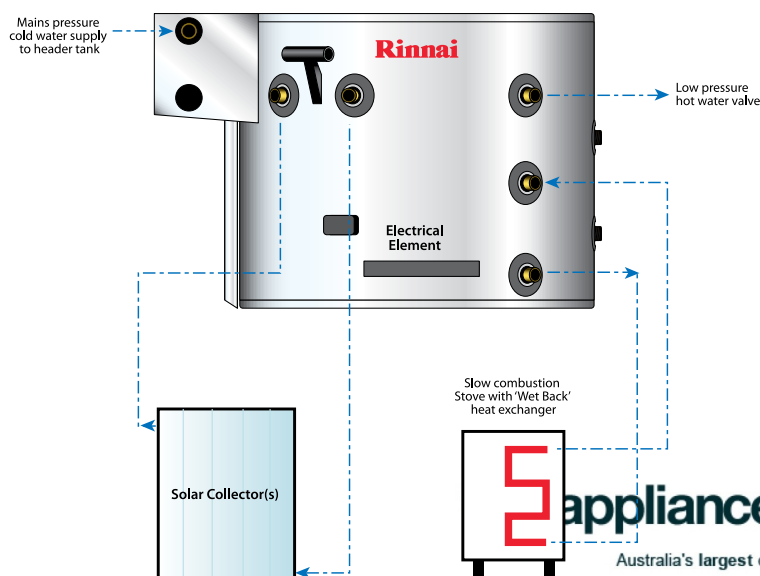
## Solar Boosted Roofmaster

### Roofmaster Prestige (Solar &/or Combustion Heater)

In this installation the primary heating source utilises energy from the sun via Solar Collectors and/or energy generated from a slow combustion stove with a 'wet back' heat exchanger.

The optional Electric element (Submerged 'Bobbin type') is then used only to boost water temperature in low pressure tank and is usually set up on an Off Peak tariff.

For Roofmaster specifications including dimensions, please refer to page 31.





## Selecting the correct Electric 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	Peak Electric (Continuous Tariff)		Off-peak Electric	
	Warm Climate	Cool Climate	Warm Climate	Cool Climate
40 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+

#### 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!**

### 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

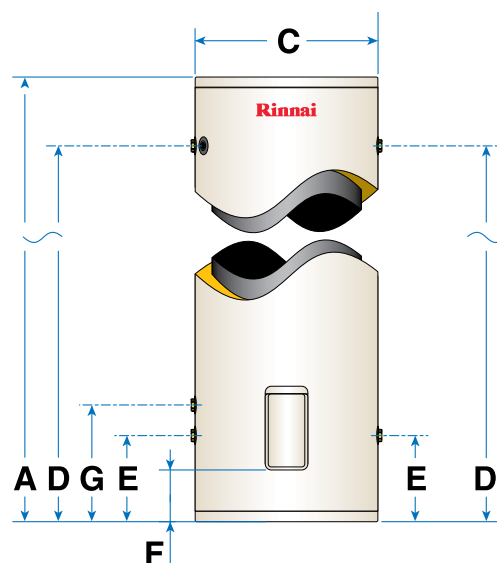
The table below shows all available Rinnai sizes and assumes that the unit is wired for immediate reheat i.e. peak tariff. For Off-peak wired units, the table can only be used as a guide for how long it will take from the point that re-heating occurs.

Element size	Litres per hour heated by 50°C
1.2kW element heats	20.6 litres
2.4kW element heats	41.2 litres
3.6kW element heats	61.9 litres
4.8kW element heats	82.5 litres

## Specifications

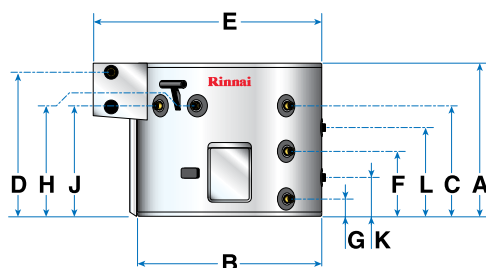
### HOTFLO and Centurion

**Note:** All Rinnai HOTFLO water heaters are single element. Centurion are available with twin element in 250 and 315L water tanks



Specifications			Hotflo								Centurion		
	Rated Capacity (Litres)		40	80	125	160	200	250	315	400	160	250	315
	Weight Empty (kg)		24	48	62	75	98	107	117		39	49	59
	Heating Elements Available (kW)		-	-	-	-	-	-	-		1.8	1.8	1.8
			2.4	2.4	2.4	2.4	-	-	-		2.4	2.4	2.4
			3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
			-	-	-	-	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Dimensions (mm)	Overall Height	A	665	900	1245	1530	1825	1265	1510	1820	1170	1690	2070
	Overall Width inc' PTR	B	470	590	590	590	590	760	760	760	740	740	740
	Tank Diameter	C	395	515	515	515	515	685	685	685	600	600	600
	Outlet Height	D	470	683	1020	1310	1605	985	1200	1512	960	1460	1860
	Inlet Height	E	75	225	225	225	225	260	260	260	270	270	270
	Electrical Connection Height	F	125	155	155	155	155	155	155	155	225	225	225
	Hot Return (Centurion Only)	G	-					n/a	n/a	n/a	355	355	355
Max Supply Pressure	Relief Valve Setting (kPa)		1000					850					
	Expansion Control Valve Setting		850					700					
	With Expansion Control Valve		680					550					
	Without Expansion Control Valve		800					680					
	When these pressures are exceeded, install a Pressure Limiting Valve (PLV)							-					
	Water Connections		RP ¾ 20mm										
	Ingress Protection Rating (AS1939)		IPX4										
	Power Supply		AC 240 V 50 Hz										

### Roofmaster



Specifications			Plus			Prestige		Coil
Dimensions (mm)	Rated Capacity (Litres)		160	250	315	250	315	315
	Rated Capacity Connected to Solar (L)		-	-	-	280	370	370
	Weight Empty (kg)		26	32	37	34	42	59
	Overall Height	A	525	725	900	725	900	900
	Tank Diameter	B	865	865	865	865	865	865
	Height - Hot Water Outlet	C	335	530	710	530	710	710
	Height - Cold Water Inlet	D	485	700	875	700	875	875
	Overall Top Width (inc Head Tank)	E	1020	1020	1020	1020	1020	1020
	Combustion Heater (Hot Flow)	F				325	415	415
	Combustion Heater (Cold Return)	G				85	85	85
	Solar Collector Flow Height	H				535	715	715
	Solar Collector Return Height	I				535	715	715
	Coil - Cold Inlet Connection	J				N/A		
	Coil - Hot Outlet Connection	K						
	Safe Tray (Optional)	L						670



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## 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 on the sizing guidelines, please contact our National Commercial Project Division on 1300 555 545 for assistance.

### Heavy Duty Units:

Rinnai Heavy Duty (HD) water heaters are a high efficiency gas continuous flow water heater available in three models: HD200e, HD250e and HD200i – refer to page 13 for specifications.

Applications include:

- Cafés
- Child Care Centres
- Hair Dressing Salons
- Small Amenities Blocks
- Butchers
- Factories
- Laundromats with domestic style top loader machines

### Rinnai Manifold Packs

A Rinnai Manifold Pack consists of 2 to 6 Heavy Duty continuous flow water heaters plumbed together to allow higher flow rates than a single unit can provide.







### 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 & Motels
- Apartment Blocks
- Student Accommodation
- Shower Blocks
- Commercial Kitchens
- Commercial Laundries

### 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.

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



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## 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**

## Warranty

### Continuous Flow Systems

Continuous Flow Water Heaters <sup>(4)</sup>		All INFINITY and ENVIROSMART Models		V1200 and V1500 models		Heavy Duty (HD) Models		Smart-Start® Water Saver	Water Controllers	Accessories <sup>(5)</sup>
		Heat Exchanger	All other components	Heat Exchanger	All other components	Heat Exchanger	All other components			
Domestic Use	Parts	10 Years <sup>(1)</sup>	3 Years <sup>(3)</sup>	8 Years	3 Years <sup>(3)</sup>	10 Years	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	1 Year
	Labour	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	3 Years <sup>(3)</sup>	1 Year
Commercial Use	Parts	1 Year	1 Year	1 Year	1 Year	5 Years <sup>(2)</sup>	1 Year	1 Year	1 Year	1 Year
	Labour	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year

(1) 12 Years on heat exchanger for INFINITY 26Plus and ENVIROSMART models. (2) One (1) year warranty on Heat Exchanger when pre-set to 85 or 95°C. (3) 5 Years if two or more controllers are installed in domestic applications. (4) The models in this table are unsuitable for solar hot water applications. Any failure or service issue when installed in a solar hot water application is not covered by warranty. (5) Accessories include pipe covers, recess boxes, security brackets and flue diverters.

### Solar and Electric Systems

Solar Hot Water Systems  Hotflo Electric Hot Water Systems		Solar						Electric	
		Solar Compatible Continuous Flow Water Heaters - models S20 and S26 and other models converted by Rinnai for Solar applications <sup>(1) (3)</sup>		Storage Cylinders		Solar Collectors		Components <sup>(2)</sup>	Cylinder
		Heat Exchanger	All other components	Vitreous Enamel (Glass) Lined Sunmaster Range	S/Steel Prestige & Centurion Ranges	Enduro (SP200A) (SP152) Equinox (SP200A FTC) Excelsior			Components <sup>(2)</sup>
Domestic Use	Parts	10 Years	3 Years <sup>(4)</sup>	5 Years	10 Years	7 Years	1 Year <sup>(4)</sup>	5 Years	1 Year
	Labour	3 Years	3 Years	3 Years	3 Years	1 Year	1 Year	3 Years	1 Year
Commercial Use	Parts	5 Years	1 Year	1 Year	5 Years	5 years	1 Year	1 Year	1 Year
	Labour	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year

(1) The continuous flow models in this column are suitable only for solar hot water applications. Any failure or service issue when installed in a non solar hot water application is not covered by warranty. (2) Components include pumps, system controllers, sensors, thermostats, valves, electric heating elements and anodes where applicable. (3) Rinnai Infinity 26 Internal, HD200i, HD200e and HD250e models can be converted for solar applications by Rinnai by order request. (4) For Victorian installations only - 5 year warranty on the solar circulating pump, solar controller and components within the continuous flow water heater in order to comply with State legislation.



## Commercial and Other Hot Water Systems

Commercial and Other Hot Water Systems		Rinnai Demand Duo and Rinnai Manifold Pack systems				Other Hot Water				
		Continuous Flow Water Heaters used as gas boosters in Demand Duo and Manifold Pack Systems - Heavy Duty (HD) Models <sup>(1)</sup>		S/Steel storage cylinders	Components <sup>(3)</sup>	Rinnai Roofmaster		Under & Over Sink		Commercial Common Flue and Warm Water Systems <sup>(2)</sup>
		Heat Exchanger	All other components			Cylinder	Components <sup>(3)</sup>	Cylinder	Components <sup>(3)</sup>	
Domestic Use	Parts	10 Years	3 Years	10 Years	1 Year	7 Years	1 Year	6 Years	1 Year	NA
	Labour	3 Years	3 Years	3 Years	1 Year	1 Year	1 Year	1 Year	1 Year	NA
Commercial Use	Parts	5 Years	1 Year	5 Years	1 Year	1 Year	1 Year	1 Year	1 Year	3 Years
	Labour	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year

(1) One (1) year warranty on Heat Exchanger when pre-set to 85 or 95°C. (2) Excludes UV system. UV system warranty is covered by the UV system manufacturer (3) Components include pumps, system controllers, sensors, thermostats, valves, electric heating elements and anodes where applicable.

## Definitions

### Domestic Use:

The warranty periods that are allocated under "Domestic Use" are based on hot water usage patterns of a typical family.

### Rinnai "Domestic Use warranty periods apply to:

1. Water heaters installed to supply heated water to domestic dwellings.
2. Water heaters installed to supply heated water to commercial installations such as motel units, hotel rooms, caravans, mobile homes, nursing homes, retirement village complexes and other care institutions and like accommodation provided that maximum delivery temperatures for gas boosted models do not exceed 65°C and do not exceed 70°C for electrically boosted models and that the hot water systems are not installed as component(s) of centralised bulk hot water systems and the installation does not incorporate building flow and return systems.

### Commercial Use:

The warranty periods that are allocated under "Commercial Use" are for applications other than domestic use and include premises such as commercial and industrial buildings, cafes, caravan parks and sporting complexes, but not limited to these.

### "Commercial Use" warranty applies to:

1. Water heater(s) supplying central shower blocks.
2. Water heater(s) supplying kitchens used for the bulk preparation of food.
3. Water heater(s) delivery temperatures pre-set to exceed 65°C for gas boosted systems and pre-set to exceed 70°C for electric boosted systems.
4. Water heater(s) used in commercial or industrial heating processes.
5. Water heater(s) used in hydronic space heating installations.
6. Any application that uses Rinnai water heater(s) in conjunction with building flow and return systems.
7. Water heater(s) installed as component(s) of centralised bulk hot water system(s).

Full warranty conditions including exclusions, water purity, solar frost tolerant collector (FTC) conditions are available with the appliances and can be viewed on-line at [www.rinnai.com.au](http://www.rinnai.com.au).

Dimensions are subject to production tolerances and may vary slightly from those given.  
Rinnai Australia Pty. Ltd. Reserves the right to make modifications and change specifications without notice.  
We will however endeavour to communicate any major changes well before implementation.



At Rinnai Australia  
we are committed to on  
going innovation to deliver  
efficient, well engineered  
and designed products.

We aim to offer a superior  
range of home appliances that  
provide a clear insight into  
what the future holds for  
Australian homes.

The simple pleasures of  
unlimited hot water, with  
precise temperature control,  
efficient and stylish heating  
solutions and the superb  
quality of a Rinnai Outdoor  
Kitchen - all designed to  
enhance your lifestyle with  
the environment in mind.

The Rinnai logo consists of the word "Rinnai" in a white, bold, serif font, centered within a solid red rectangular background.

**RINNAI AUSTRALIA PTY. LTD**

ABN 74 005 138 769

10-11 Walker Street Braeside VIC 3195

For further information visit

**[www.rinnai.com.au](http://www.rinnai.com.au)**  
**or call 1300 555 545**