Rinnai

REFERENCE GUIDE

Commercial Hot Water

Experience Our Innovation

Heavy Duty Units

What is Rinnai Heavy Duty Continuous flow?

The continuous flow is a hot water system that will never run out, providing a constant outlet temperature at all times. Rinnai Heavy Duty (HD) water heaters are high efficiency gas continuous flow water heaters with minimum 5 Star energy rating which ensures minimal gas consumption. All models have full electronic ignition with no pilot light and operate on demand only, consuming no gas when not in use.

What are some suitable applications?

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

What clearances are required?

All Rinnai continuous flow HD water heaters are fan assisted. This means reduced clearances are required from doors and windows when compared to natural draft water heaters.

Internal:

The unique Rinnai twin skin flue used with the internal HD200i is balanced and classifies the heater as a room sealed appliance. Natural draft common flue also available. See flueing information on page 12.

What are the flow rates for the individual units?

The maximum flow rate through a continuous flow water heater is dependent on the outlet temperature.

Cold Water Temperature + Temperature Rise = Outlet Temperature

The maximum flow rate cannot be exceeded and will be limited to that flow rate to ensure that the temperature does not fall below the set point.

Model	Flow @ 20°C rise l/min	Flow @ 25°C rise l/min	Flow @ 35°C rise l/min	Flow @ 50°C rise l/min	Flow @ 60°C rise l/min	Flow @ 75°C rise l/min	Flow @ 85°C rise l/min
HD200e	32	26	18.6	13.1	10.9	8.7	n/a
HD250e	37	32	24.1	16.9	14.1	11.2	9.9
HD200i	32	26	18.1	12.7	10.6	8.5	n/a

kW		Flow Rate (l/min)				
		5	10	15	20	24
Degrees °C Rise	5	2	3	5	7	8
	10	3	7	10	14	17
	15	5	10	16	21	25
	20	7	14	21	28	34
	25	9	17	26	35	42
	30	10	21	31	42	45
	35	12	24	37	45	
	40	14	28	42		
	45	16	31	45		
	50	17	35			

kW output from HD200 or HD250 based on flow rate and temperature rise when outlet temperature set to 60deg or higher. Maximum flow rate is 24 l/min (0.4 l/s). Water pressure loss dependent on outlet temperature and flow rate. Contact Rinnai Commercial for details.

- Outlet temperature preset and remains constant, even when flow varies
- Standard factory preset 75°C. Temperatures between 55°C and 85°C are site adjustable via DIP switch
- 50°C, 40°C and 42°C preset options are available for ablution areas. State and Territory legislation dependent
- Factory 50°C presets offer site adjustable incremental temperature adjustment to deliver true 50°C at tap
- HD250e set at 95°C is not to be used with heated incoming water or on re-circulating systems
- Maximum flow rate set at 60°C or above: 24/Lmin

HD200 External Model

HD200 Internal Model

HD250 External Model

Heavy Duty Selection Table

Model Identification			HD200e VRM2632WC	HD250e VRM3237WC	HD200i VRM2632FFU
Star Rating			5.9	5.6	6 .1
Installation			External	External	Internal
Gas Consumption MJ/h (Hi / Low)		NG LPG	199/16 199/16	250/21 250/21	195/16 195/16
Gas Pressures Required kPa		NG LPG	1.13 - 2.75 2.75	1.13 - 2.75 2.75	1.13 - 2.75 2.75
Dimensions	mm	Width Height Depth	350 600 224	470 600 244	350 600 224
Weight			22 kg	29 kg	22 kg
Water Flow	L/min	minimum	2.4	2.4	2.4
Antifrost			Standard		Optional
Flue System	(FF=Forced Flued)		FF external	FF external	FF internal
Standard Temp (°C)	Pre-set (default) Temperatures		50 or 75	50 or 75	50 or 75
	On-site adjustable via dipswitch		55, 60, 70, 75 & 85	55, 60, 70, 75 & 85	55, 60, 70, 75 & 85
Made to Order Pre-set Temp (°C)	NSW health approved		40 & 42	42	40 & 42
	Hi-temperature		-	95	-
Burner System			Low Nox, Multi Stage - Fully Modulating		
Connections		gas supply, cold, hot	R 3/4 - 20A (right), R 3/4 - 20A (centre), R 3/4 - 20A (left)		
Maximum Water Operating Pressure kPa			1000		
Maximum Outlet Temperature			85°C	95°C	85°C
Electrical Consumption (Watts) Normal / Standby / Anti frost protection			65 / 6 / 100	83 / 12 / 100	80 / 7.5 / 100
Ignition System			Direct electronic ignition with automatic flame sensing		
Thermal Efficiency (AS 4552:2005)			81.6%	80.8%	83.4%
kW Output			45.9	58.9	44.3
Power Supply	**Appliance**		AC 240 Volts 50 Hz (10 Amp power point required)		
	Remote Control		DC 12 Volts (Digital)		
dB Level			49	49	49
Colour			Titanium		

Note:
1. Factory pre-set 50°C models can have a maximum delivery temperature incrementally increased by the installer to compensate for heat losses in pipework. **2.** Solar preheated units to be set to min 70°C.

Rinnai reserves the right to modify specifications

Manifold Packs

What is a Rinnai Manifold Pack?

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.

What are the key features?

- Outlet temperature is preset and remains constant, even when the flow varies
- Peak flow rate cannot be exceeded
- No flow = no gas consumption
- No wasteful pilot lights
- Usually used for dead leg type installations, however ringmain pumps can be fitted if required*

Note: *Continuous flow water heaters used on flow and return ringmain systems must have correct pipe and pump selection. For further information, please contact your Rinnai Commercial Representative.

What are some suitable applications?

Applications include (with suggested temperatures:)

- Sporting Club Change Rooms - temperature set at 42ºC or 50ºC
- Shower Blocks in Caravan Parks - temperature set at 42ºC or 50ºC
- Cafés, Restaurants and Pubs - temperatures set at 60ºC or 75ºC
- Hot Water Washdown and Manufacturing Process - temperature set at up to 85ºC

What will the system offer your application?

Energy savings, as there are no tank heat losses, pilot lights and the system only uses gas when in operation. Endless hot water for applications where there is a peak demand for only a few hours and then either low or no demand for hours, days or weeks at a time.

What temperature settings are available?

- Standard HD units are factory set to 75ºC
- Standard HD units can be site adjusted to deliver 55, 60, 70, 75 and 85ºC
- Factory Set and Sealed 50ºC preset units offer site adjustable incremental temperature adjustment to deliver true 50ºC at tap
- NSW health approved 40 and 42ºC are available to replace TMVs for ablution areas. Must be specifically ordered as such. Local legislation dependent
- Solar pre-heated units to be set to a minimum 70ºC

Manifold Pack 2

Manifold Pack 2 Internal installed in a cupboard

2 x Roof Mounted Manifold Pack 4 External

Manifold Pack 4 External installed on a roof

Manifold Packs

How does the system deliver constant temperature?

The heater measures the incoming water flow and the outlet temperature. Any alterations will cause the unit to vary the gas rate to ensure a constant outlet temperature. The set outlet temperature can be altered by an authorised person.

What information do I need?

The following information is required to select a manifold pack:

- Inlet water temperature (eg: 15°C average coastal cold water temperature)
- Temperature required at point of use (eg: 40°C for a shower)
  Therefore net temperature rise is known (eg: 40-15 = 25°C)
- Simultaneous flow rate required (eg: 5 x 3 star (AAA) 9 l/min showers = 45 l/min)
- Internal or external installation

Tropical		Coastal		Inland		Alpine		Model	Gas Rate MJ / hr
Number of Showers	Flow @ 20°C rise l/min	Number of Showers	Flow @ 25°C rise l/min	Number of showers	Flow @ 35°C rise l/min	Number of showers	Flow @ 45°C rise l/min		
3 - 4	32	3	26	2	18	1	14	**HD200**	200
6 - 7	64	5 - 6	52	4	36	3	28	**MP2 200**	400
10	96	8 - 9	78	6	54	4 - 5	42	**MP3 200**	600
13 - 14	128	11 - 12	104	8	72	6	56	**MP4 200**	800
16 - 17	160	14 - 15	130	10	90	7 - 8	70	**MP5 200**	1000
20	192	17 - 18	156	12	108	9 - 10	84	**MP6 200**	1200

Note: Water heaters installed in Coastal locations in Summer can achieve tropical flow rates as ambient water temperature can be 20˚C or higher.

HANDY HINT

Order Code Example:

MP (Unit quantity) 200 +	E (external) + or I (internal)	M (MECS) + or P (PAMS)	N (NG) or L (LPG)	Example: **MP2 200E M N**

Manifold Packs

Why do they require a staging system

Staging systems are designed so that only the required number of heaters start to match the desired hot water flow rate.

A Manifolded Electronic Control System (MECS) is available for 2 to 25 heater manifold systems and uses the water flow valve inside the heater to control its operation. The firing sequence is rotated every tenth shutdown. A single water controller can control the entire manifold outlet temperature.

Staging can also be achieved by using the Rinnai Pressure Activated Manifold (PAM) valve. PAM valves are available for 2 to 6 heater manifold systems.

Note: Rinnai Manifold Packs are not compatible with Smartstart® Water Saver or Deluxe Water Controllers.

How are they supplied
The HD units are mounted fully assembled to our pre-engineered frames with foam insulated pipe work, ready to plumb into position at your project. The Manifold pack is supplied in modular systems of Manifolds of 2 and Manifolds of 3 units. They are packaged in a separate cartons for ease of freight and positioning on site. The Manifold Pack 4, 5 and 6 will be supplied in combinations of MP2 and MP3 with connection kits, as required.

For Example: A Manifold Pack 4 will be supplied as 2 x Modular 2 pack systems with a couplings kit to join the manifolds together when installed.

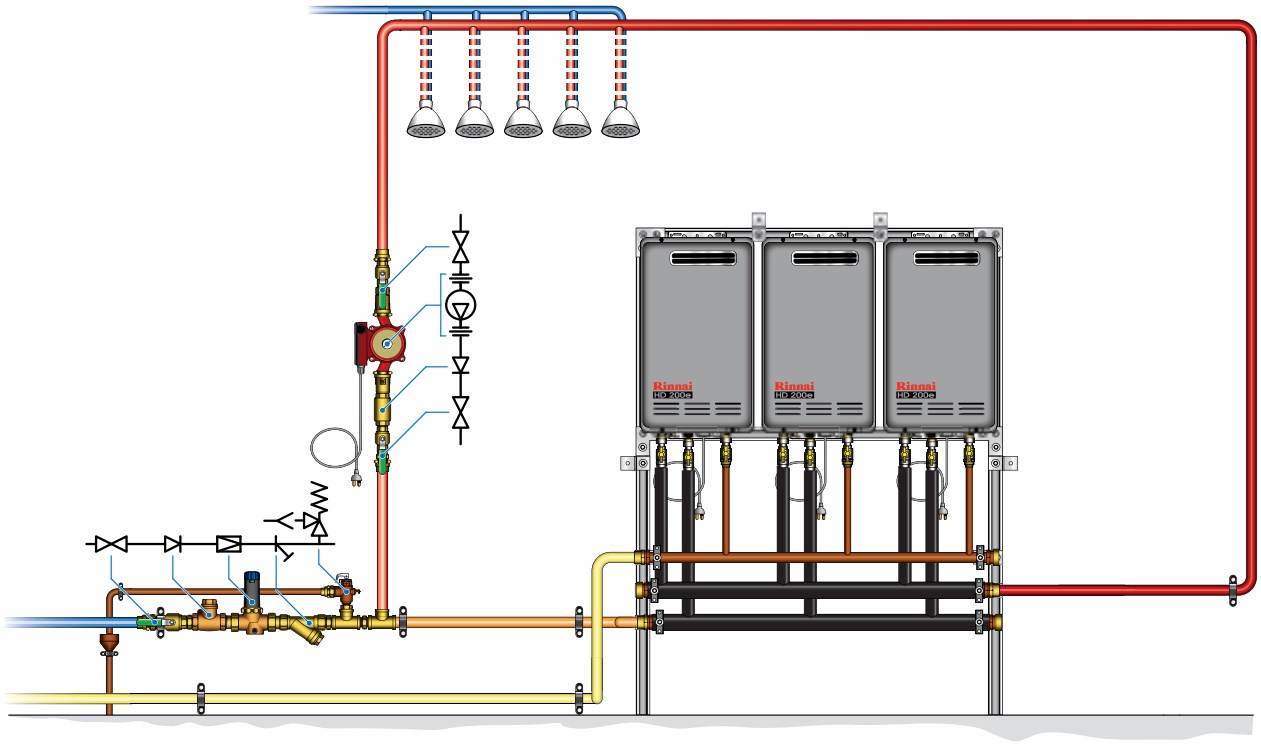
What is included with the system
- Heavy Duty continuous flow units
- 32mm foam insulated Copper Manifold*
- 20mm foam insulated Copper Branches with Isolation Valves to each unit – Hot, Cold and Gas
- Unistrut™ wall Mounting Frame
- Staging System as per specification

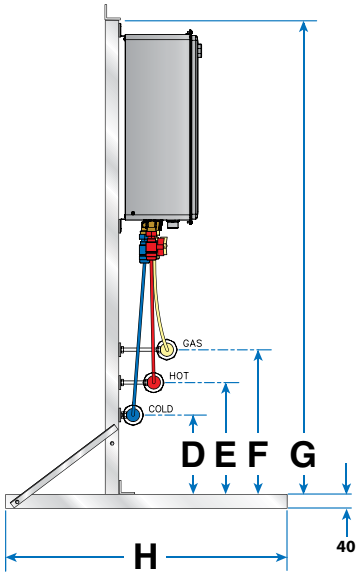
Optional Extras:
- Freestanding Frame
- Recirculation Pump
- Freestanding base or full welded and galvanised premium skid base
- Pre-wired General Power Outlet (GPO) Package
- Ultra Violet (UV) Sterilisation System (legislation dependent)

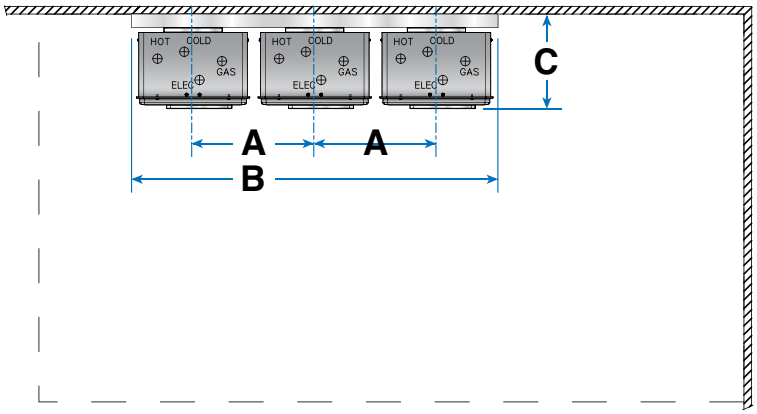
Note: A GPO is required for each HD unit and pump. Larger systems may require more than 10amps and/or hard wiring.
*Larger MP's may require greater than 32mm manifold.

Compact installation of 6 x Manifold Pack 6 External

Typical Manifold Pack Installation







Wall mounted frame supplied as standard. Optional DDBASE as shown. Premium skid also available.

This is not a formal engineering drawing
Insulation not shown on site pipework
Ablution areas: temper as required
Installation as per local regulations
Details subject to change without notice
For ringmain pump selection consult Rinnai Commercial
Non return and cold expansion valves are only required on circulating systems
Please refer to Rinnai Commercial Representative when designing systems

Manifold Pack	A	B	Dry Weight	MJ	C	D	E	F	G	H	I
MP2	375	750	60 kg	400	280	340	440	540	1500	850	From flue centre to wall including frame thickness
MP3		1125	90 kg	600							
MP4		1500	120 kg	800							
MP5		1875	150 kg	1000							
MP6		2250	180 kg	1200							

Note: Dimension to top of base: Base = 40mm

Demand Duo

What is a Demand Duo System?

Rinnai Demand Duo is a combination of between 1 and 6 gas Heavy Duty continuous flow water heaters that maintain the temperature in a heavily insulated stainless steel storage tank. The storage tank allows a short period of high hot water flow rate, greater than the continuous flow rate of the HD water heater(s).

How does it work?

Demand Duo is a complete packaged storage hot water system made up of one or more HD water heaters with a manifold system, primary pump(s), thermostat and a stainless steel storage tank.

The thermostat senses the temperature of the water in the tank and when it drops below the set point, the primary pump is activated. This flow in turn starts the Rinnai continuous flow HD water heater(s) which returns heated water to the tank.

What are some suitable applications?

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

Installations of this type typically have a predictable hot water volume, usually based on number of people living in a particular building either showering, washing or eating, or industrial machines that require regular peaks of water.

Demand Duo are often used on projects on a flow and return system to distribute the water around the building. It should be noted that flow and return systems continually lose heat through the circulation pipework and this adds running costs to the project.

How is the selection made?

The following information is required to select a Demand Duo system:

- Temperature rise required. Assumed to be 50°C (15 - 65°C)
- Volume of hot water used per event (i.e. people having a shower)
- Number of times this event occurs (i.e. 6 uses of each shower head per hour)
- Internal or external installation (i.e. whether a flue system is required)

Refer to the table on the next page for selection examples.

DD1 and Manifold Pack 3 with horizontal flueing. Note: now available with new front casing

DD4 with a dual flow and return pump set

Demand Duo Selection Table

Apartments No of eq mix of 1 & 2 Bedroom	Apartments No of 2 Bedrooms	Apartments No of eq mix of 2 & 3 Bedrooms	Hotel No of Beds, 1-3 Star rated	Hotel No of Beds 4-5, Star rated	Amenities No of 3 Star (AAA) showers	Demand Duo Model	Location	First Hour litres @ 50°C rise (15°-65°)	Recovery litres @ 50°C rise (15°-65°)	Tank size (litres)	Burners	Gas Rate MJ / hour (Nominal)
17	13	11	46	29	6	**DD1 200(E or I) 250(N or L)**	Ext or Int	1010	760	250	1 x HD200	200
18	14	12	49	31	7	**DD1 200 315**	Ext or Int	1075	760	315	1 x HD200	200
21	17	14	57	36	8	**DD1 250E 250**	Ext	1250	1000	250	1 x HD250E	250
22	18	15	60	38	8	**DD1 250E 315**	Ext	1315	1000	315	1 x HD250E	250
30	24	20	80	51	11	**DD2 200 250**	Ext or Int	1770	1520	250	2 x HD200	400
31	24	20	83	52	11	**DD2 200 315**	Ext or Int	1835	1520	315	2 x HD200	400
42	34	28	115	72	16	**DD3 200 250**	Ext or Int	2530	2280	250	3 x HD200	600
43	35	29	118	74	16	**DD3 200 315**	Ext or Int	2595	2280	315	3 x HD200	600
55	44	37	150	94	20	**DD4 200 250**	Ext or Int	3290	3040	250	4 x HD200	800
56	45	37	153	96	21	**DD4 200 315**	Ext or Int	3355	3040	315	4 x HD200	800
68	54	45	184	116	25	**DD5 200 250**	Ext or Int	4050	3800	250	5 x HD200	1000
69	55	46	187	118	25	**DD5 200 315**	Ext or Int	4115	3800	315	5 x HD200	1000
80	64	53	219	137	30	**DD6 200 250**	Ext or Int	4810	4560	250	6 x HD200	1200
81	65	54	222	139	30	**DD6 200 315**	Ext or Int	4875	4560	315	6 x HD200	1200
87	69	58	236	148	32	**2 x DD3 200 315**	Ext or Int	5190	4560	2 x 315	6 x HD200	1200
112	89	75	305	192	41	**2 x DD4 200 315**	Ext or Int	6710	6080	2 x 315	8 x HD200	1600
137	110	91	374	235	51	**2 x DD5 200 315**	Ext or Int	8230	7600	2 x 315	10 x HD200	2000
163	130	108	443	279	60	**2 x DD6 200 315**	Ext or Int	9750	9120	2 x 315	12 x HD200	2400

First Hour Delivery = Tank volume + 760 litres per HD200

First Hour Calculations Apartments: 1 bedroom 45 litres, 2 bedroom 75 litres, 3 bedroom 105 litres
Amenities: 6 x 27 litres hot water per shower per hour
Hotel: 1-3 star 22 litres, 4-5 star 35 litres. Allows for showers, meals and laundry

Demand Duo

What are the benefits of Rinnai Demand Duo?

Demand Duo storage hot water systems store 250 to 315 litres of hot water per system. This is available where high peak flow rates for short periods of time occur. Recovery is matched by selecting the required number of Rinnai Heavy Duty water heaters. The heater(s) can also be mounted many metres (remotely) from the tank.

Note: Extended primary pipe runs must be oversized and/or a primary pump upgrade. Please contact your Rinnai Commercial Representative for further information.

Rinnai Demand Duo systems can also be used instead of Manifold Packs for projects where limited gas supply is available.

How is the Rinnai Demand Duo system supplied?
DD1 is a stand-alone appliance and includes an integrated HD water heater, thermostat and pipework mounted on the tank behind a dress cover.

DD 2-6 are supplied in separate packages:
- HD heaters
- 32mm foam insulated copper manifold, c/w 20mm hot, cold and gas riser with union and isolation valve per heater, mounted on rapid rail sub frame
- Primary pump(s). DD 5 and 6 dual pump set includes pump manifold.
- Stainless Steel Tank, 850 kPa PTR valve(s), 32mm connections (optional 50mm on 315 litre tank) with pre-wired thermostat

DDF 2-6 are supplied in separate packages
- HD heaters and 32mm foam insulated copper manifold, c/w 20mm hot, cold and gas riser with union and isolation valve per heater, mounted on unistrut™ frame
- Primary pump(s). DD 5 and 6 dual pump set includes pump manifold.
- Stainless Steel Tank, 850 kPa PTR valve(s), 32mm connections (optional 50mm on 315 litre tank) with pre-wired thermostat

To complete a DD / DDF 2-6 system, all that is required on site is positioning and fixing, joining any modular manifolds, GPO's and final 32mm insulated pipework between the manifold, pump and tank.

Optional Extras:
- Single and Dual Flow and Return Pumps
- Pump Control Boxes
- Wall Mounting & Freestanding Frames
- Pre-wired General Power Outlet (GPO) Package
- Premium Skid Mounted System c/w electrical, tank manifolds for multiple systems & GPO Package (as required per project)

Note: DD1 requires 1 x GPO, DD(F) 2-6 requires 1 x GPO per tank and HD heater. **For example: a DD(F) 4 requires 5 x GPO's**

Efficiency

The efficiency of any component based water heater package must include the performance of all components, not just the tank heat loss and burner efficiency.

Heat Loss for DD1200E250 ≈ 28.5 MJ per day including all losses from tank, burner, pump and primary pipework. Pump and burner do not operate when the tank doesn't require heating, saving energy.

Dual Flow and Return Pumps

Dual Pumps supplied with swing check valves and union sets with isolation valves.

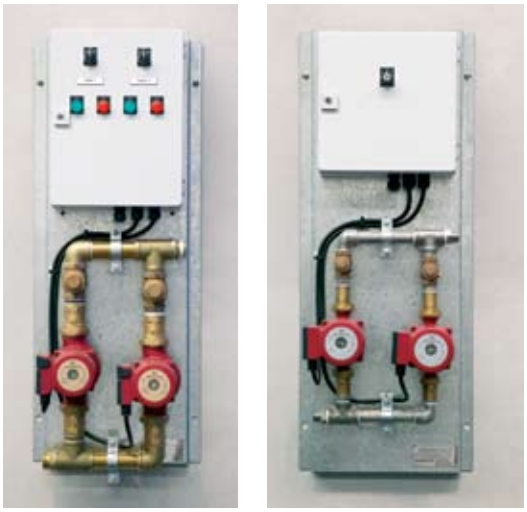
Dual Pumps available complete with the option of:

Standard Control Box: Automatic 12 hour changeover

Selector switch: Pump 1/Auto/Pump 2

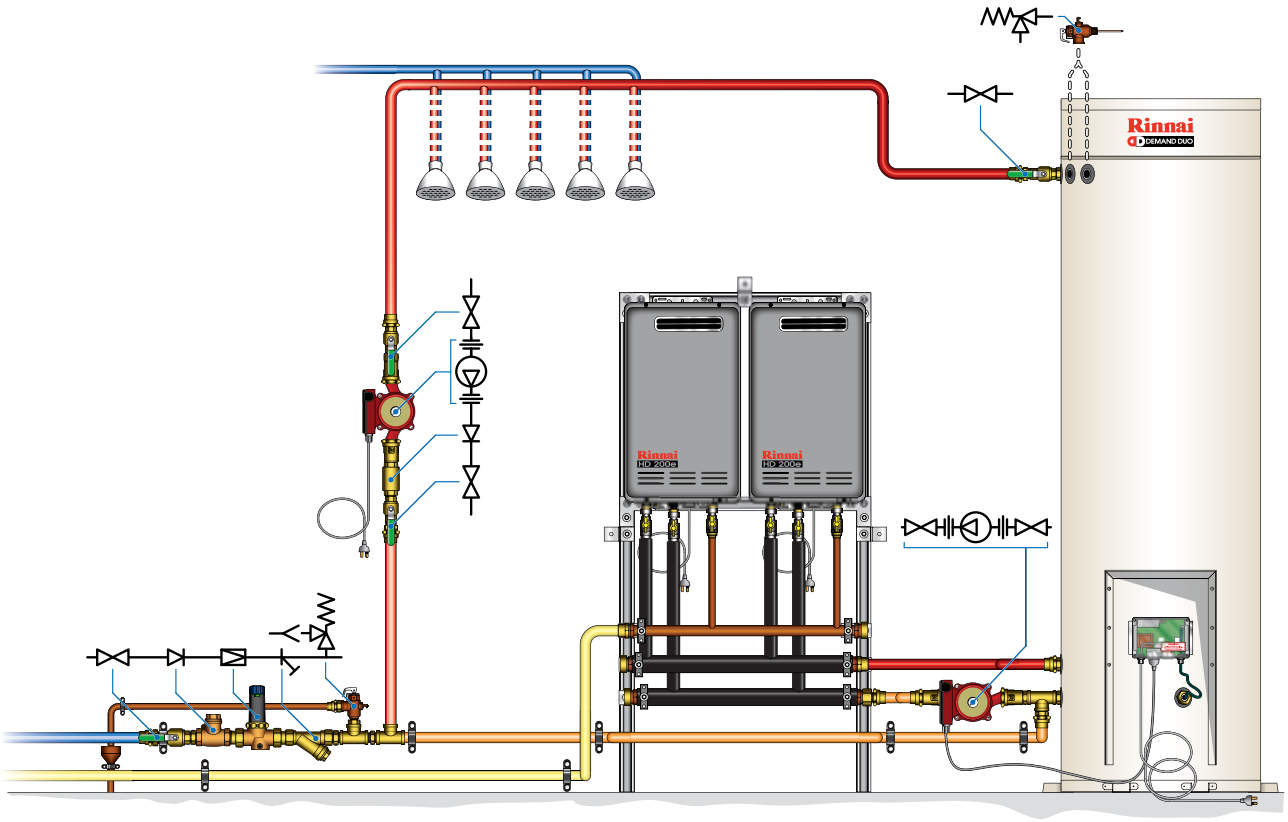
Deluxe Control Box: Automatic 12 hour changeover
Selector switch: Pump 1/Auto/Pump 2
Individual Manual/Auto switch per pump
Individual pump fault/Run & Manual/Auto selector

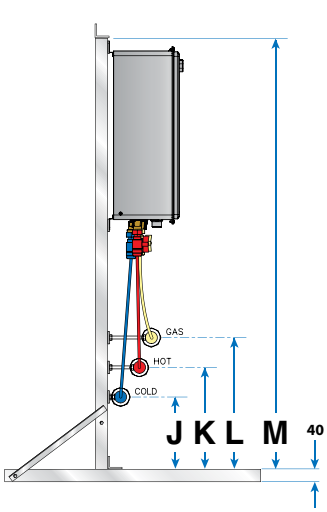
Note: Weather cover required for external use – not supplied.

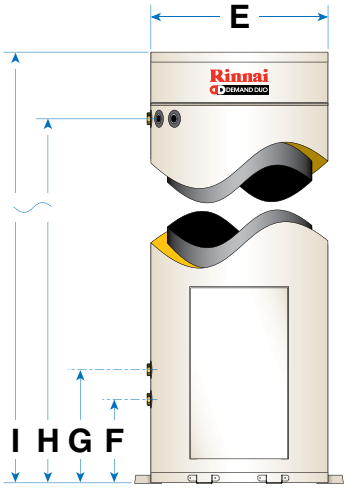


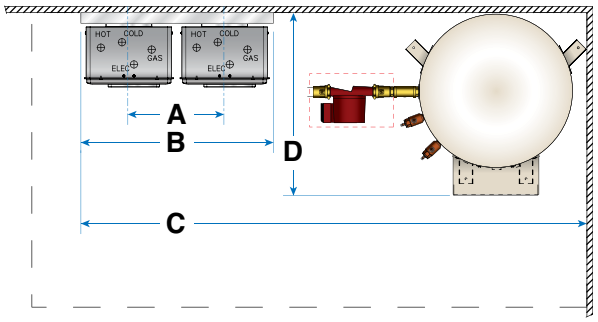
Dual Flow & Return Pumps with Control Boxes

Typical Demand Duo with Frame (DDF) Installation









Wall mounted frame supplied as standard. Optional DDBASE as shown. Premium skid also available.

This is not a formal engineering drawing
Insulation not shown on site pipework
Tank control box cover not shown
Ablution areas: temper as required
Installation as per local regulations
Details subject to change without notice
For ringmain pump selection consult Rinnai Commercial

Model	A	B	C	D	E	PTR INCLUSIONS	Primary Pump	Mj Rating (HD200's)	Total System Weight (315 L)
DD1	375	N/A	600	825	600	1 x HT575	UPS20-60N	200	92
DD2		725	1825	715		2 x HT575	UP25-80N	400	115
DD3		1100	2200			3 x HT575 + Tee	UP25-80N	600	135
DD4		1475	2575			1 x HT575 & 1 x Boiler Valve	UP25-80N	800	155
DD5		1850	2950				UP25-80N x 2	1000	175
DD6		2225	3325				UP25-80N x 2	1200	190

Tank Model	F	G	H	I	Dry Weight	Wet Weight
250 Litre	285	385	1475	1690	60 kg	310 kg
315 Litre			1855	2080	72 kg	385 kg

HD Model	J	K	L	M
HD200 e	340	440	540	1500
HD200 i	340	440	540	

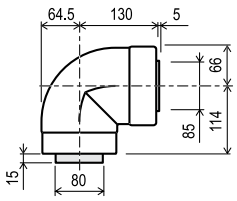
Note: Dimension to top of base: Base = 40mm

Internal Flueing

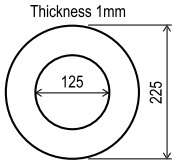
There are 4 flueing options that enable the installation of an internal Continuous Flow model virtually anywhere:

1. **Vertical Direct Flueing** - Straight up through the ceiling and penetrating the roofline
2. **Horizontal Direct Flueing** - 90º 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

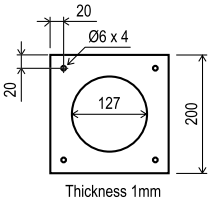
FFSBEND



FFWSEAL



FFWPLATE



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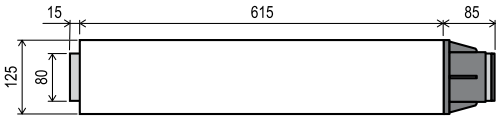
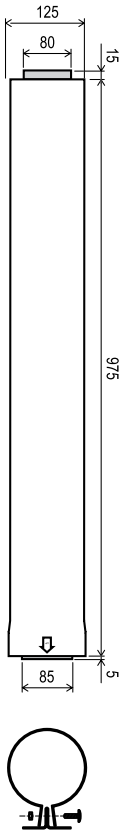
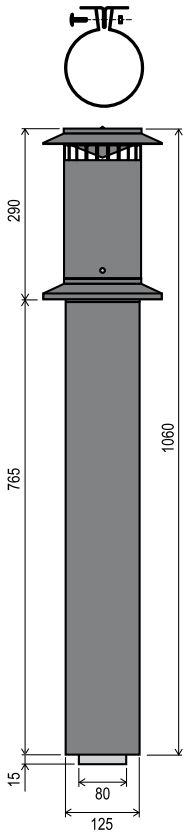


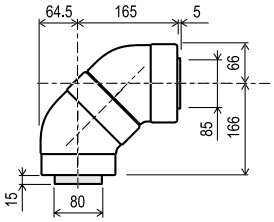
FFPIPE1000



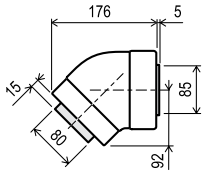
FFROOFCOWL

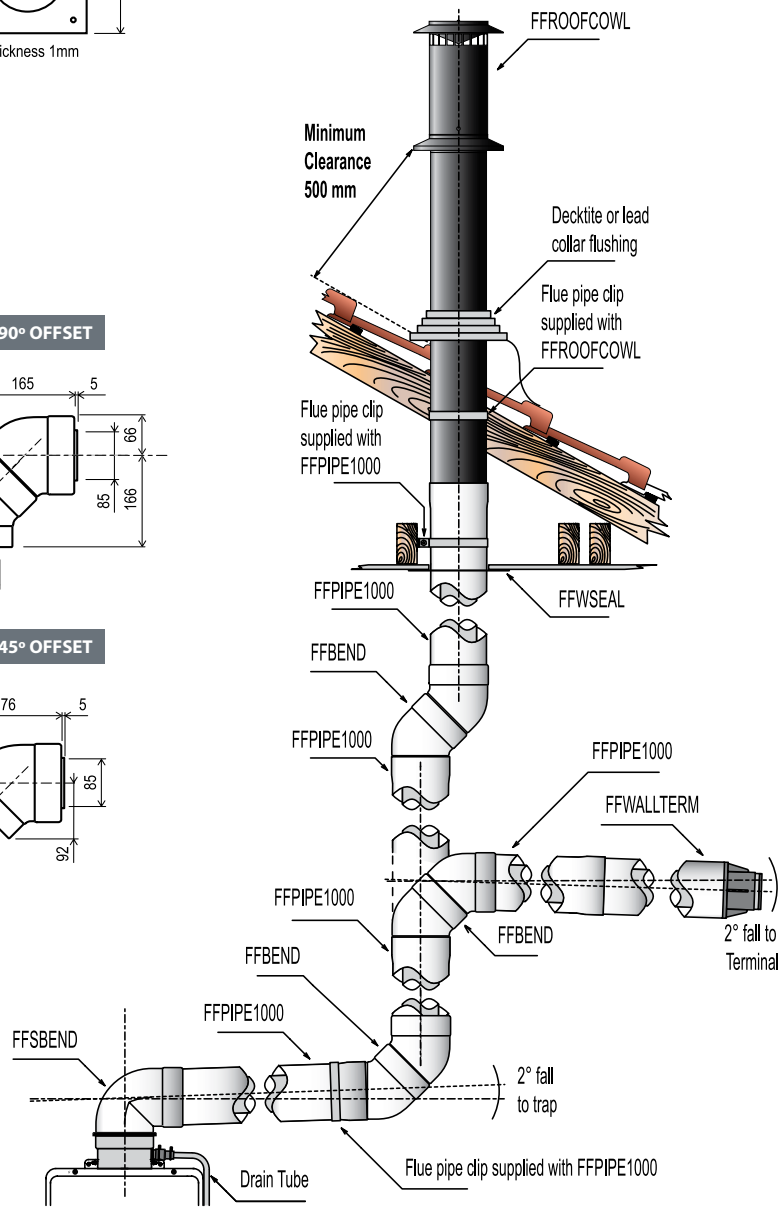


FFBEND 90º OFFSET



FFBEND 45º OFFSET





Important points:

- There is one flue per water heater installed
- The water heater is a room-sealed appliance with a balanced flue
- There is a maximum flue length of 9 metres with a maximum of 3 x 90º bends per heater
- The main flue lengths (FFPIPE1000) can be cut to length on site
- A condensate drain tube must be fitted if the vertical flue length exceeds 1.5 metres
- Please note when joining flue components each joint consumes 35mm from total length
- Rinnai proprietary coaxial flue system components must be used for internal flueing.

Common Flueing

The Rinnai Common Flue System Rinnai internal commercial Hot Water Systems can now be flued in a single common, natural draft flue.

Previously the need to install a Rinnai proprietary coaxial flue system sometimes limited opportunities to capitalise on the benefits available with Gas Continuous Flow internal systems.

The Rinnai Common Flue System has been designed with flexibility in mind for both new and existing installations. Rinnai HD200i units can now be flued in a single, common, natural draft flue. Natural draft flues rely on the principle that hot air from the products of combustion are less dense, and so lighter, than the surrounding air.

This heated air will rise up through the flue and discharge at an approved gas flue cowl. To accommodate this change, the air for combustion must now be drawn from within the room and adequate ventilation must be provided in accordance with AS5601. This applies to common flue installations it does not apply to internal flueing installations.

Installation Flexibility

This concept is not only suitable for new buildings, but also in existing buildings where there is a previously installed correctly sized flue that is in sound condition and meets the design and sizing criteria of AS5601. To simplify the changeover and minimise costs, Rinnai have introduced a number of standard components to enable compatibility with a new or existing natural draft common flue.

Design Flexibility

Often space is a consideration when designing a hot water system. Whether using a Demand Duo or Manifold Pack system, the Rinnai Common Flue System can be used in both single in-line applications usually mounted on a wall, or back to back configuration mounted on freestanding frames. The Common Flue Headers are sized accordingly and are available in 200, 250, 300, 350, 400, 450 and 500mm diameters (ordered separately).

A range of fan assisted Common Flue packages are available for use where necessary.

4 x DD6 back to back with 2 x Common Flue headers (power flue assisted)

Warm Water Valve

The Rinnai Demand Duo Warm Water Valve (DDWWV) is a circulating warm water valve designed to accept 60°C - 90°C incoming hot water from a storage hot water system and deliver a reduced constant outlet temperature across a full range of flow rates with minimal pressure drop.

Save on Installation & Maintenance Costs

The DDWWV is suitable for commercial applications such as apartments, hotels, hospitals and nursing homes where multiple tempering or thermostatic mixing valves can be replaced with a centralised valve.

The installation of a centralised DDWWV has many benefits:

- Reduces the installation cost of multiple valves and associated heat loss
- Reduces the cost and inconvenience of having to service multiple units
- Maintenance can be fully managed at the hot water plant room
- Improved maintenance scheduling with reduced interruption
- Improves the aesthetics

Retrofit

Supplied as a complete assembly on a freestanding or wall mounted frame, the Rinnai DDWWV is also suitable to retrofit to existing (non-Rinnai) storage hot water systems. Plumbing connections are simple. There must be a ringmain with a suitable pump fitted to allow the valve to function as designed.

Solar Pre-Heating

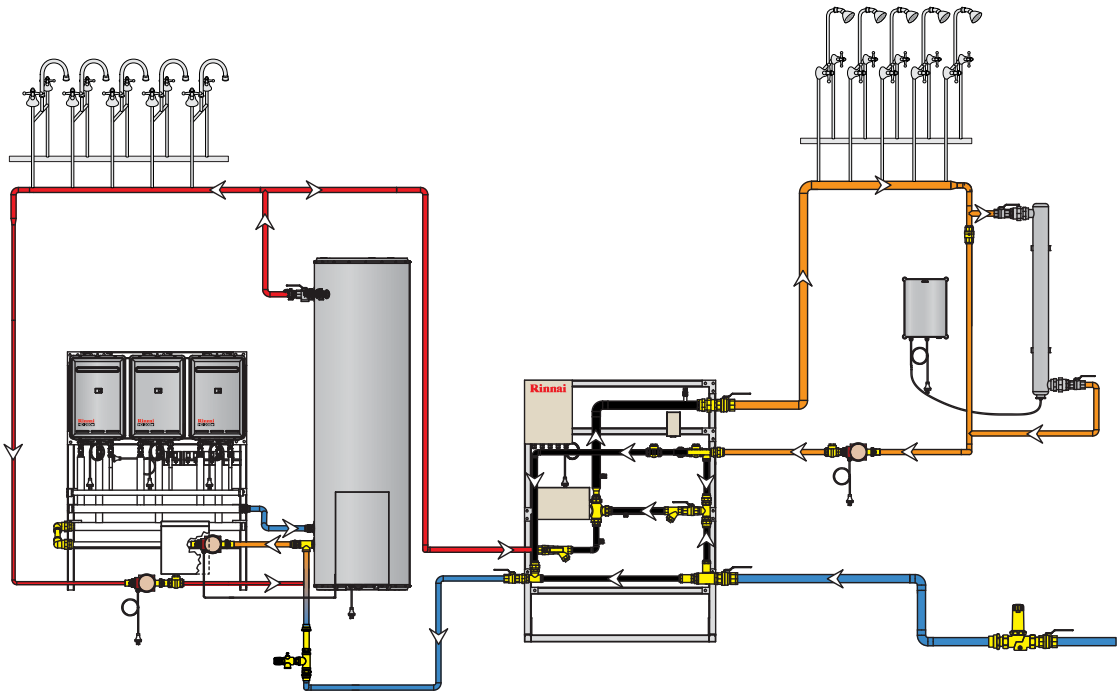
When used in conjuction with the Rinnai Demand Duo range, the DDWWV is also compatible with Solar Boosting. Contact Rinnai Commercial for a plumbing schematic.

Fully Approved

The DDWWV is approved to AS 4032.1 as a Thermostatic Mixing Valve and to AS 4032.2 as a Tempering Valve. It is also approved as a Warm Water System by NSW Health.

Ringmain Pump Sizing

The specified minimum ringmain pump flow rate is to be maintained. See detailed Warm Water Valve flyer or contact Rinnai Commercial.



Demand Duo (Including a Hot Water Ring Main) | **Warm Water Valve** | **Warm Water Ringmain**

This is not a formal engineering drawing. Insulation not shown on site pipework. Ablution areas: temper as required. Installation as per local regulations. Details subject to change without notice. Non return and cold expansion valves are only required on circulating systems. Please refer to Rinnai Commercial Representative when designing systems. For ringmain pump selection consult Rinnai Commerical.

Solar Pre-Heat

Rinnai Solar Pre-heat systems can be used in conjunction with a Rinnai Demand Duo or Manifold Pack system, combining the energy from the sun with high efficiency gas hot water heating – the best of both worlds!

Rinnai high-efficiency Solar Collectors are installed on a roof aligned to face the sun and pitched at around the same angle as the latitude in order to maximise the solar energy collected.

Three collector types are available:

Enduro (SP200A) for non frost areas
Equinox (SP200A FTC) for mild frost areas (-5˚C)
E-Frost for high frost areas (-12˚C)

The high efficiency Solar Collectors in conjunction with low heat loss storage tanks, provide for an overall high performance solar pre-heat system. This is reflected in the high number of Small Scale Technology Certificates (STCs) formely called RECs.

Save on CO2 Emissions

Using solar energy to pre-heat commercial gas and electric boosted hot water systems allows lower energy consumption as well as significantly reducing CO2 emissions.

Save with STCs Rebates

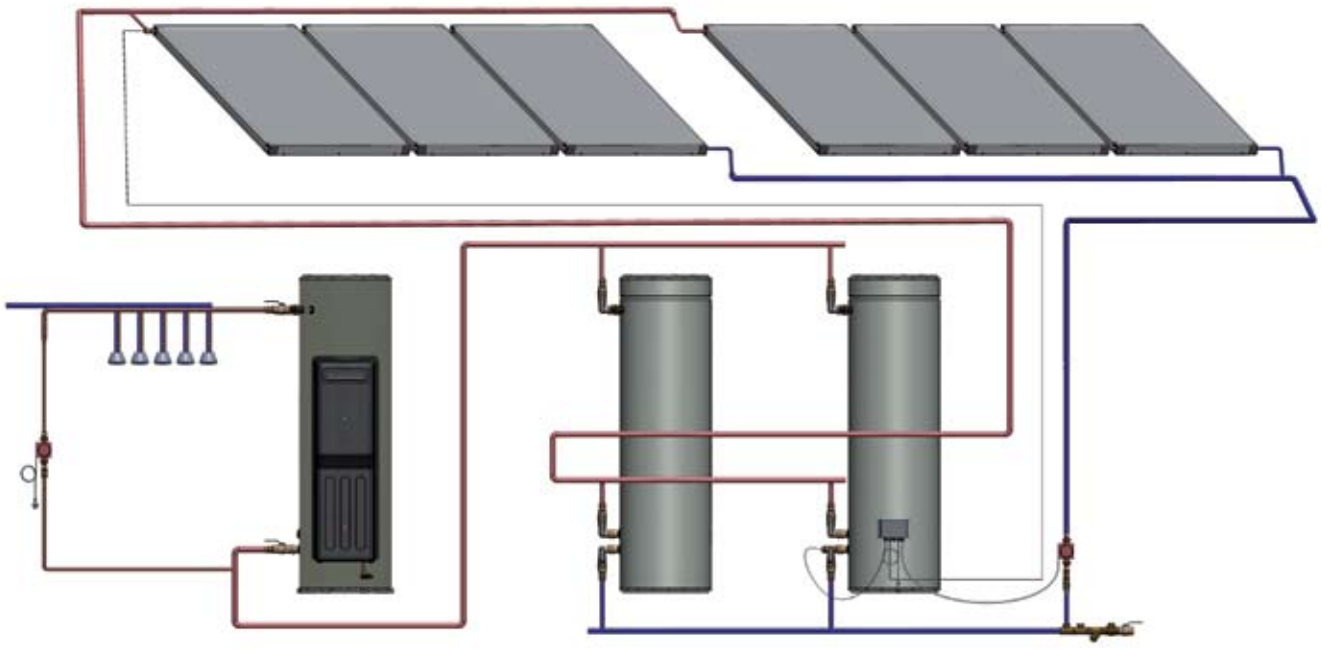
All Rinnai solar preheat systems are performance tested and modelled as a complete system. The energy savings are awarded STCs and can offer substantial rebates for commercial solar installations.

EXAMPLE

Daily load 3000 litres
6 Tanks and 18 collectors
Zone 3 = 258 STCs.
If STCs were valued at $18*
STCs Rebate is around $4644
***(subject to market fluctuation)**

Save on Running Costs

Common practice is to select a Solar Pre-Heat System to contribute around 50% of the annual energy required to heat an average day's hot water. This is close to 100% solar contribution in Summer (depending on solar zone). All these factors in combination with government incentives (where available) make solar pre-heating a valuable and responsible investment.



Demand Duo **Pre-heat Storage**

Rinnai Commercial Hot Water Warranty

Commercial and Electric Hot Water Systems		Rinnai Demand Duo and Rinnai Manifold Pack systems				
		Continuous Flow Water Heaters used as gas boosters in Demand Duo and Manifold Pack Systems - Heavy Duty (HD) Models[1]		S/Steel storage cylinders	Components [3]	Commercial Common Flue and Warm Water Systems [2]
		Heat Exchanger	All other components			
Commercial Use	Parts	5 Years	1 Year	5 Years	1 Year	3 Years
	Labour	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 matches the UV system manufacturer **(3)** Components include pumps, system controllers, sensors, thermostats and valves.

Definitions

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 terms and conditions including water chemistry requirements, exclusions and requirements for solar panels in areas subject to frost conditions are available with the appliances and can be viewed online at 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.

RINNAI AUSTRALIA PTY. LTD
ABN 74 005 138 769
10-11 Walker Street Braeside VIC 3195
For further information visit
www.rinnai.com.au or call 1300 555 545

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