

Manifold Pack | Specification Guide



Rinnai

What is a Manifold Pack?



A Rinnai Manifold Pack consists of multiple Heavy Duty Continuous Flow Water Heaters plumbed together to offer higher flow rates than a single unit can provide.

The heaters are mounted on a robust frame and combined using copper piping that is perfectly plumbed and insulated to withstand the test of time. Each water heater has an intelligent PCB Controller to manage the hot water delivery with extreme accuracy, however when connected to our Intelligent Management System each water heater constantly makes precise calculations and communicates in unison to manage the hot water delivery and energy usage. Manifold Packs are designed and made in Australia (HD water heaters manufactured in Japan) and backed by Rinnai's global commitment to quality.

What are the key benefits?

- Accurate and constant outlet temperature, even when the flow varies
- Heavy Duty construction perfect for commercial applications
- No gas consumption when not in use saving you money
- No wasteful pilot lights
- Hot water supply never runs out
- Modular construction for ease of installation and transport
- External or internal units available
- Rinnai's unique Electronic Control System managing performance to prolong the life of your investment

What are suitable applications?

- Shower Blocks
- Sports clubs change rooms
- Cafes
- Restaurants and Pubs
- Caravan Parks
- Wash down and manufacturing process

Flow rate capacity

The maximum flow rate through a Manifold Pack is dependent on the outlet temperature and incoming water temperature. Each of our Heavy Duty Continuous Flow Water Heaters have varying capacities and thermal efficiencies to suit your requirements. Below is a table of capacities at various temperature rises.

Model?	Flow @ 20°C rise L/min	Flow @ 25°C rise L/min	Flow @ 35°C rise L/min	Flow @ 45°C rise L/min	Flow @ 50°C rise L/min	Flow @ 60°C rise L/min	Flow @ 75°C rise L/min
HDC32e	37	32	22.8	17.7	16.0	13.3	10.6
HDC32i	37	32	22.8	17.7	16.0	13.3	10.6
HD32e	37	32	24.2	18.8	17.0	14.1	11.3
HD28e	35	28	20.0	15.5	14.0	11.6	9.3
HD28i	35	28	20.0	15.5	14.0	11.6	9.3

Heart of the system

Our Heavy Duty continuous flow range of water heaters are specifically designed for commercial use with inbuilt intelligence and durability to stand the test of time in the harshest of commercial environments. With various efficiency and flow rate options available Rinnai can provide the perfect solution based on your application, whether internally or externally mounted.

Generally, projects with very high energy costs would benefit from the use of our HDC32 higher efficiency condensing technology as the increased capital expenditure is absorbed by the annual energy cost savings.

Heavy Duty Non Condensing (83% Thermal Efficiency)



HD28E
28 L/min



HD28I
28 L/min



HD32E
32 L/Min

Heavy Duty Condensing (97% Thermal Efficiency)



HDC32E
32 L/Min



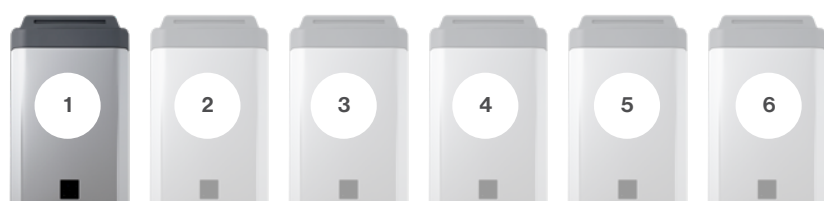
HDC32I
32 L/Min

Intelligent Management System

A standard feature on all Rinnai Manifold Packs is a sophisticated Electronic Control System. Its fundamental function is to maintain a steady water temperature while using minimal energy, it does this by ensuring only the required number of heaters operate to match the desired flow rate.

To prolong the life of the system it is packed with other advanced features, such as sequencing the water heaters usage pattern so that one unit is not working constantly, inbuilt fault detection, BMS connectivity and temperature synchronisation to name but a few. Our Intelligent Management System is a totally integrated arrangement unique to Rinnai that performs various safety checks, performance operations, efficiency calculations and commands.

Demand Sequencing



Hot Water Demand



MP starts with minimal demand, activates a single heater and assigns a priority sequence.



Hot Water Demand



Demand increases and another heater is activated. The priority sequence immediately switches.



Hot Water Demand



Demand increases further and another heater is activated. The priority sequence immediately alternates and continues to do so every time the demand changes.



Hot Water Demand



As demand decreases the heaters assigned with the lower priority will deactivate and the necessary number of heater(s) will remain active to maintain hot water delivery.

Added Feature

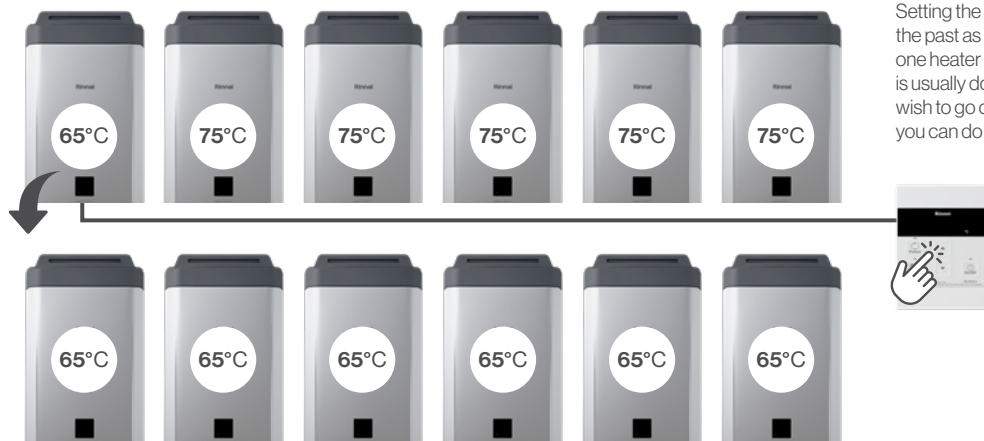


Hot Water Demand



Many commercial applications have a reticulation system that operates continuously. To enhance the life span of the water heaters further Rinnai's engineers built in a control feature to alternate the priority every 24 hours.

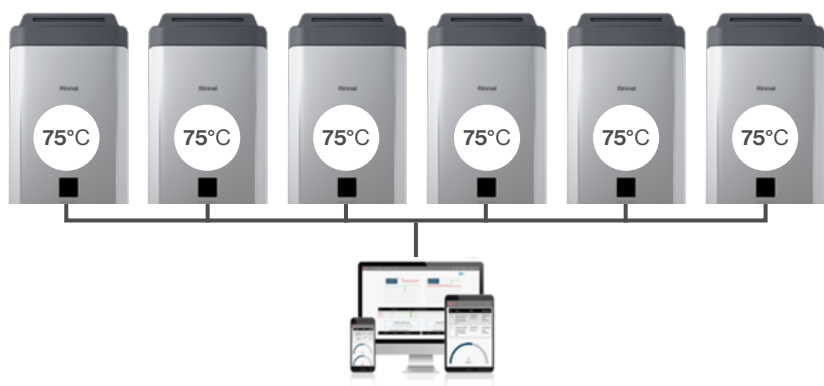
Temperature Synchronisation



Fault and Error Management



Connectivity



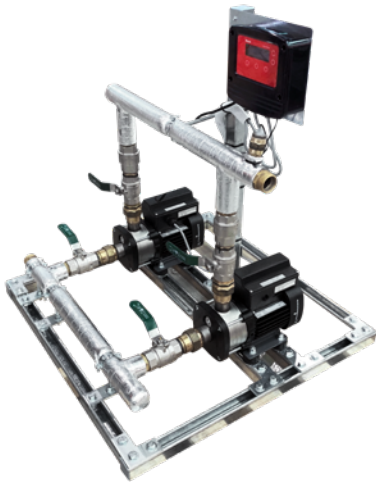
Solutions and Accessories

Rinnai can offer a customised solution with a high focus on your core deliverables.

The aesthetic appearance of developments is paramount. We can tailor solutions to suit your business, bespoke systems can be constructed to suit specific requirements including (but not limited to) lower frame size, precise wall mounting application or different size pipework. Rinnai's Commercial Hot Water Solutions match minimum height requirements, are modular and compact, and can be easily integrated into the building, with easy access for future serviceability. To compliment this, we have an extensive range of accessories.

Accessories

- Single Circulation Pumps for reticulation systems
- Dual Circulation Pumps for reticulation systems with intelligent controller packed with features
- Building Management System (BMS) integration
- Common flueing for internal installations
- Heat Exchange Systems offering flexibility in design of pressure zones or water quality management
- Remote Monitoring Systems to manage your hot water plants from anywhere at anytime
- Non modular packages with engineered frame and lifting points for easy hoisting and placement on site



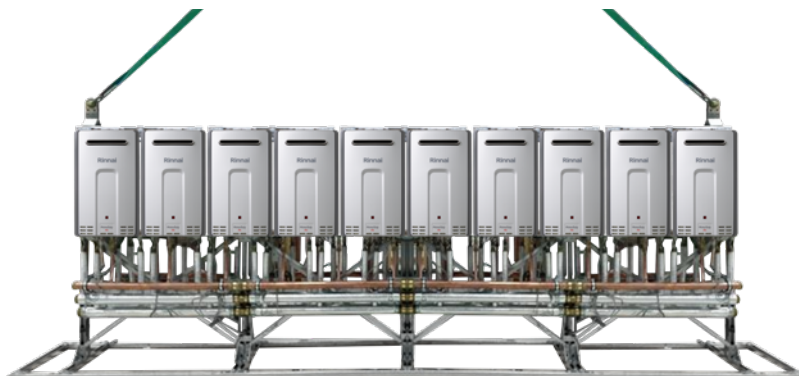
Large Pumpset



Pump Plate



Heat Exchange Systems



Large MP Lifting engineered frame

► Commonwealth Games Village | QLD

With 6,600 athletes and officials descending on the Gold Coast in 2018 for the Commonwealth Games accommodation was required. The Queensland government decided to develop 7 hectares of the 29 hectare parklands reserved for the athletes Village into 1170 apartments and 82 townhouses.

Of course 6,600 athletes are going to need a hot shower so this large undertaking required many individual systems tailored to meet the constraints of the various internal plant areas across the entire project.



◀ Bunjil Place – VIC

Architecturally designed arts and entertainment building with outdoor open spaces. Located in Narre Warren in the Southern suburbs of Melbourne the design and architecture has won a series of design awards since its opening to the public. Bunjil Place is the first facility of its kind, bringing together creativity, entertainment and community in a way that is unparalleled in Australia.

Rinnai provided a large Manifold Pack delivering above 14,000 litres of hot water per hour. Customisation was critical to suit the plant requirements and minimise installation time.

► Canon Foods | WA

Canon Foods embarked on building a brand new state of the art facility from the ground up in Jandakot, Western Australia. It was developed with a focus on environmentally efficient practices, placing great value on sustainability and reducing their carbon footprint. An integral part of a food processing plant is a reliable supply of hot water to maintain strict cleanliness standards.

Rinnai provided a Manifold Pack using our high efficiency Condensing Water Heaters. An accurate temperature and consistent flow rate are critical for wash down applications for hygiene reasons. High Efficiency Condensing Water Heaters was the natural choice to minimise energy consumption and reduce their carbon footprint.



Selection

What information do I need?

The following information is required to select a Manifold Pack System:

- Temperature required at point of use (eg: 42°C for a shower or 65°C for a kitchen sink)
- Incoming water temperature
- Simultaneous flow rate required (eg: 5 x 3 star (AAA) 9 l/min showers = 45 l/min)
- Internal or external installation (i.e. whether a Flue System is required)
- Available installation space for the system

A Manifold Pack is selected based on the number of fixtures operating at the same time.
The flow rate is expressed in litres per minute.

Example:

An ablution block with 10 showers requires hot water at a delivery temperature of 42°C. Each shower delivers 9 l/min.

1. Calculate the required flow rate = 9 l/min x 10 showers = 90 l/min
2. Temperature rise = delivery temperature – incoming temperature = 42°C - 20°C = 22°C
3. Determine which HD heat source you wish to employ and refer to the tables below

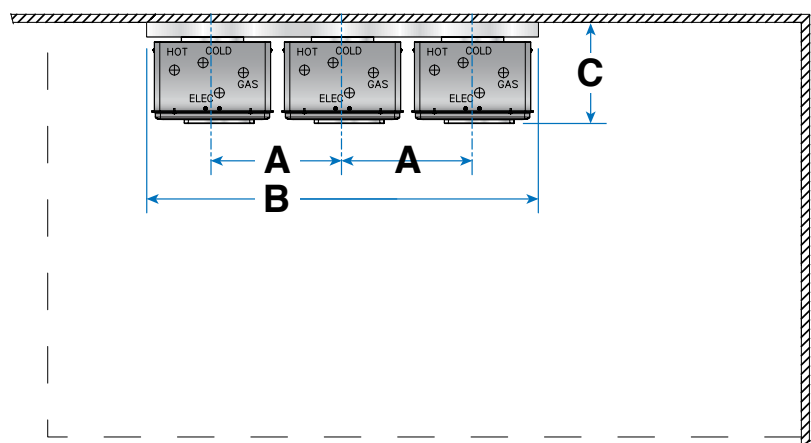
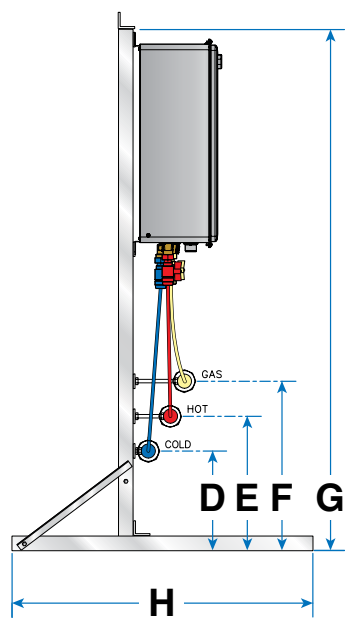
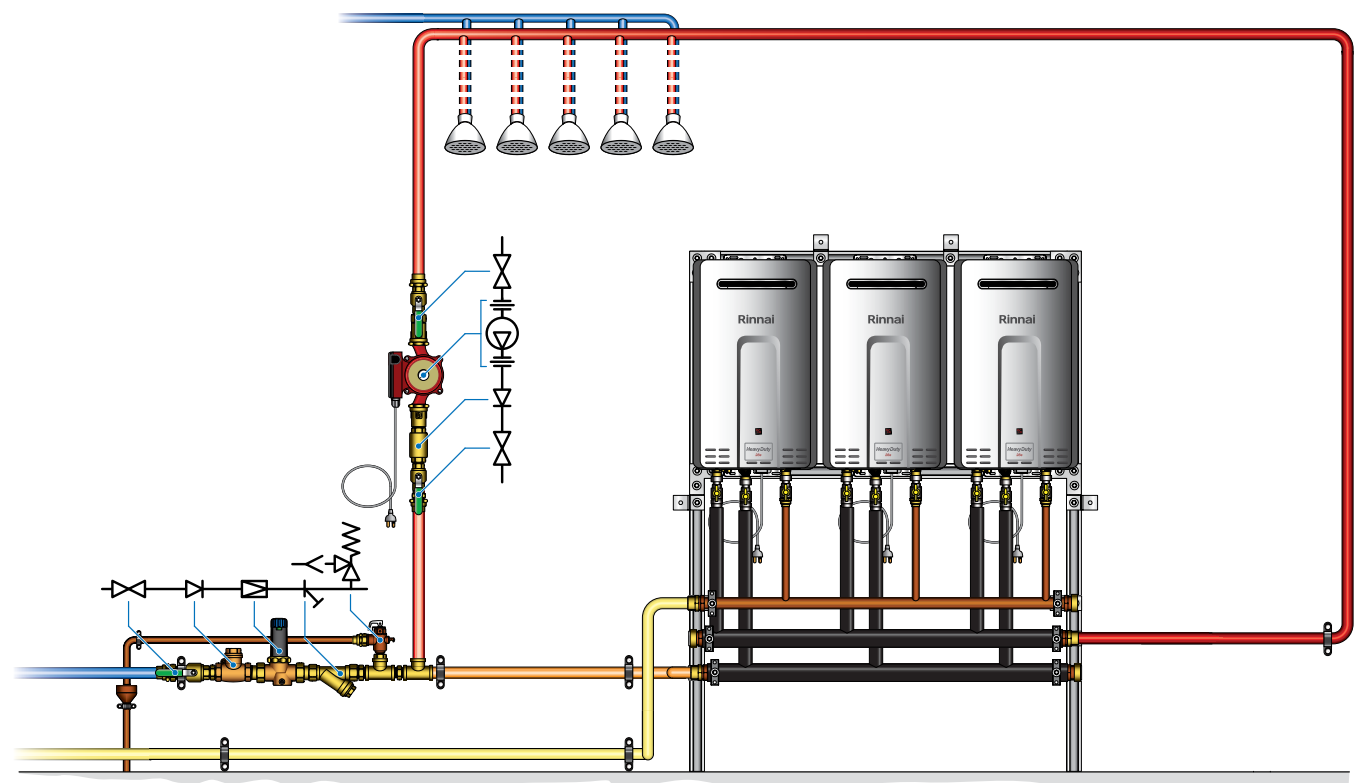
Maximum flow rates (l/min) using HD28e/i water heaters																					
Region		Alpine					Inland					Coastal					Tropical				
Incoming water temperature (°C)		10°C					15°C					20°C					25°C				
Water delivery temperature(°C)		42	50	65	75	85	42	50	65	75	85	42	50	65	75	85	42	50	65	75	85
Temperature rise (°C)		32	40	55	65	75	27	35	50	60	70	22	30	45	55	65	17	25	40	50	60
Model	Gas rate																				
HD28	210	22	17	13	11	9	26	20	14	12	10	32	23	16	13	11	37	28	17	14	12
MP2 28	420	44	35	25	22	19	52	40	28	23	20	64	47	31	25	22	74	56	35	28	23
MP3 28	630	66	52	38	32	28	78	60	42	35	30	95	70	47	38	32	111	84	52	42	35
MP4 28	840	87	70	51	43	37	104	80	56	47	40	127	93	62	51	43	148	112	70	56	47
MP5 28	1050	109	87	64	54	47	129	100	70	58	50	159	116	78	64	54	185	140	87	70	58
MP6 28	1260	131	105	76	65	56	155	120	84	70	60	191	140	93	76	65	222	168	105	84	70
MP7 28	1470	153	122	89	75	65	181	140	98	82	70	222	163	109	89	75	259	196	122	98	82
MP8 28	1680	175	140	102	86	75	207	160	112	93	80	254	186	124	102	86	296	224	140	112	93
MP9 28	1890	197	157	114	97	84	233	180	126	105	90	286	210	140	114	97	333	252	157	126	105
MP10 28	2100	218	175	127	108	93	259	200	140	116	100	318	233	155	127	108	370	280	175	140	116
MP11 28	2310	240	192	140	118	102	285	220	154	128	110	349	256	171	140	118	407	307	192	154	128
MP12 28	2520	262	210	152	129	112	311	240	168	140	120	381	280	186	152	129	444	335	210	168	140



Maximum flow rates (l/min) using HD32e water heaters																					
Region		Alpine					Inland					Coastal					Tropical				
Incoming water temperature (°C)		10°C					15°C					20°C					25°C				
Water delivery temperature(°C)		42	50	65	75	85	42	50	65	75	85	42	50	65	75	85	42	50	65	75	85
Temperature rise (°C)		32	40	55	65	75	27	35	50	60	70	22	30	45	55	65	17	25	40	50	60
Model	Gas rate																				
HD32	250	26	21	15	13	11	31	24	17	14	12	39	28	19	15	13	37	34	21	17	14
MP2 32E	500	53	42	31	26	23	63	48	34	28	24	77	57	38	31	26	74	68	42	34	28
MP3 32E	750	79	64	46	39	34	94	73	51	42	36	116	85	57	46	39	111	102	64	51	42
MP4 32E	1000	106	85	62	52	45	126	97	68	57	48	154	113	75	62	52	148	136	85	68	57
MP5 32E	1250	132	106	77	65	57	157	121	85	71	61	193	141	94	77	65	185	170	106	85	71
MP6 32E	1500	159	127	92	78	68	188	145	102	85	73	231	170	113	92	78	222	203	127	102	85
MP7 32E	1750	185	148	108	91	79	220	170	119	99	85	270	198	132	108	91	259	237	148	119	99
MP8 32E	2000	212	170	123	104	90	251	194	136	113	97	308	226	151	123	104	296	271	170	136	113
MP9 32E	2250	238	191	139	117	102	283	218	153	127	109	347	254	170	139	117	333	305	191	153	127
MP10 32E	2500	265	212	154	130	113	314	242	170	141	121	385	283	188	154	130	370	339	212	170	141
MP11 32E	2750	291	233	170	143	124	345	266	187	155	133	424	311	207	170	143	407	373	233	187	155
MP12 32E	3000	318	254	185	157	136	377	291	203	170	145	462	339	226	185	157	444	407	254	203	170

Maximum flow rates (l/min) using HDC32e/i water heaters																						
Region			Alpine					Inland					Coastal					Tropical				
Incoming water temperature (°C)			10°C					15°C					20°C					25°C				
Water delivery temperature(°C)			42	50	65	75	85	42	50	65	75	85	42	50	65	75	85	42	50	65	75	85
Temperature rise (°C)			32	40	55	65	75	27	35	50	60	70	22	30	45	55	65	17	25	40	50	60
Model	Gas rate	Unit qty																				
HDC32	210	1	25	20	15	12	11	30	23	16	13	11	36	27	18	15	12	37	32	20	16	13
MP2 C32	420	2	50	40	29	25	21	59	46	32	27	23	73	53	35	29	25	74	64	40	32	27
MP3 C32	630	3	75	60	44	37	32	89	68	48	40	34	109	80	53	44	37	111	96	60	48	40
MP4 C32	840	4	100	80	58	49	43	118	91	64	53	46	145	106	71	58	49	148	128	80	64	53
MP5 C32	1050	5	125	100	73	61	53	148	114	80	66	57	181	133	89	73	61	185	160	100	80	66
MP6 C32	1260	6	150	120	87	74	64	177	137	96	80	68	218	160	106	87	74	222	192	120	96	80
MP7 C32	1470	7	174	140	102	86	74	207	160	112	93	80	254	186	124	102	86	259	224	140	112	93
MP8 C32	1680	8	199	160	116	98	85	236	182	128	106	91	290	213	142	116	98	296	256	160	128	106
MP9 C32	1890	9	224	179	131	110	96	266	205	144	120	103	326	239	160	131	110	333	288	179	144	120
MP10 C32	2100	10	249	199	145	123	106	295	228	160	133	114	363	266	177	145	123	370	320	199	160	133
MP11 C32	2310	11	274	219	160	135	117	325	251	175	146	125	399	292	195	160	135	407	352	219	175	146
MP12 C32	2520	12	299	239	174	147	128	354	273	191	160	137	435	319	213	174	147	444	384	239	191	160

Specifications



HD28 External/Internal Manifold Packs									
Model	A	B	C	D	E	F	G	H	Weight
MP2 28	375	750	280	340	440	540	1500	790	60 Kg
MP3 28		1125							90 Kg
MP4 28		1500							120 Kg
MP5 28		1875							150 Kg
MP6 28		2250							180 Kg
MP7 28		2625							210 Kg
MP8 28		3000							240 Kg
MP9 28		3375							270 Kg
MP10 28		3750							300 Kg
MP11 28		4125							330 Kg
MP12 28	4500	360 Kg							

HD32 External Manifold Pack									
Model	A	B	C	D	E	F	G	H	Weight
MP2 32	500	1000	310	340	440	540	1500	790	68 Kg
MP3 32		1500							102 Kg
MP4 32		2000							136 Kg
MP5 32		2500							170 Kg
MP6 32		3000							204 Kg
MP7 32		3500							238 Kg
MP8 32		4000							272 Kg
MP9 32		4500							306 Kg
MP10 32		5000							340 Kg
MP11 32		5500							374 Kg
MP12 32		6000							408 Kg

HDC32 External/Internal Manifold Packs									
Model	A	B	C	D	E	F	G	H	Weight
MP2 C32	500	1000	310	340	440	540	1500	790	90 Kg
MP3 C32		1500							135 Kg
MP4 C32		2000							180 Kg
MP5 C32		2500							225 Kg
MP6 C32		3000							270 Kg
MP7 C32		3500							315 Kg
MP8 C32		4000							360 Kg
MP9 C32		4500							405 Kg
MP10 C32		5000							450 Kg
MP11 C32		5500							495 Kg
MP12 C32		6000							540 Kg

Order Information

Ordering a Manifold Pack could not be any simpler

For example a Manifold Pack with 3 x HDC32E Heaters using Natural Gas would be **MP3C32ECN**.

Manifold Pack	HD Quantity	Model / Internal / External	Control System	Gas type	Premium Skid
• MP (Manifold Pack)	• HD Quantity	• 28E (HD28 ext.) • 28I (HD28 int.) • 32E (HD32 ext.) • C32E (HDC32 ext.) • C32I (HDC32 int.)	• M (Mecs) • C (Cascade)	• N (NG) • L (LPG)	• Blank • SS (Premium Skid)

Note: Mecs control system is compatible with the HD28 and HD32 Non Condensing Water Heaters while the Cascade Control System is compatible with the HDC32 High Efficiency Condensing Water Heaters.

Warranty info

Heavy Duty Continuous Flow		
Warranty	Domestic Use	Commercial Use
Heat Exchanger	12 Years	5 Years
Parts	5 Years	3 Years
Labour	5 Years	3 Years

Rinnai Australia Pty Ltd

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TOTAL HOME COMFORT



HOT WATER



HEATING



COOLING

Rinnai