

HEAVY DUTY GAS STORAGE

The workhorse hot water system that keeps on working, in a wider range of water quality environments.

We have used Rheem Heavy Duty Gas in many situations.

Very happy with the performance and durability and would recommend them as a reliable workhorse.

John Lewis, Maintenance Manager -
Chadoak Pty Ltd

CASE STUDY

ADVANTAGED CARE AT PRESTONS LODGE

Challenge

Prestons Lodge is a 132-bed aged care facility built in 2016 by Advantaged Care. With a daily hot water load of 9175 litres, the challenge was to provide energy efficient, budget-conscious options for the hot and warm water plant requirements.

Hot Water Solution

Approached during the design stage, Rheem provided an energy efficient solar and warm water proposal that included budget estimates and pay back periods.

The final installed solution included:

- 3 x Heavy Duty Gas water heaters,
- 38 x NPT solar collectors and
- 14 x storage tanks along with
- 1 x 240L/min Guardian warm water and 2 x 250L/min ultraviolet disinfection.



HEAVY DUTY GAS STORAGE

SUITED TO ALL
APPLICATIONS IN
ANY POTABLE WATER



IMPERVIOUS



FAST
REPLACEMENT

EASY TO
MAINTAIN



HEATS
WATER
UP TO

82°C

The workhorse hot water system that keeps on working, in most water chemistries.

Highly reliable and impervious to a wider range of water types

A staple of the market for over 25 years, the storage cylinder is made from a special grade of steel, lined with a double coat of heavy duty vitreous enamel, and incorporates multiple anodes, by making it impervious to the widest variety of water chemistries.

Gold-standard redundancy and easy to maintain

As each unit is standalone, the failure of a single component doesn't render the entire system offline. The simple design combines the burner and the tank without the need for pumps, making it more reliable and easy to maintain.

Multiple installation options

There are three sizes in outdoor and indoor versions, and indoor models can be flued individually or joined into a common flue.

Accurate and reliable temperature management

Electronic thermostat provides fine temperature control with digital setting display on the 265 and 275. Hot Surface Ignition (HSI) removes the need for a pilot light, lowers operating costs and improves reliability because of a built-in 100% flame failure control.

Reduces energy use

The flue damper on the 624275 indoor closes off the primary flue when the burner isn't operating, reducing maintenance rates by up to 60% when compared to AGA maximum allowance.



More key features

- Sizes include 260 (51MJ), 265 (110MJ), 275 (200MJ)
- No electrical connection required for the smallest unit (260)
- BMS capable with the addition of a module - 265 and 275 models

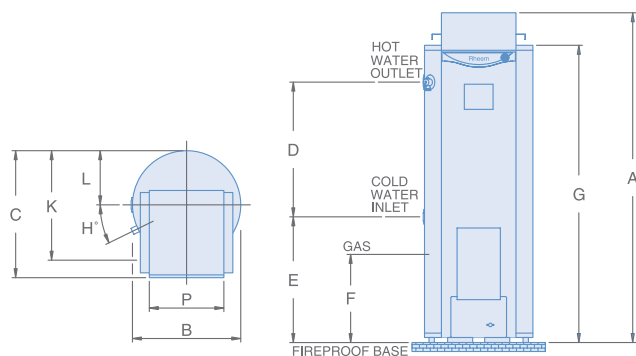
Heavy Duty Gas Storage warranty: 5 years on cylinder, 1 year on parts & labour

TECHNICAL DATA

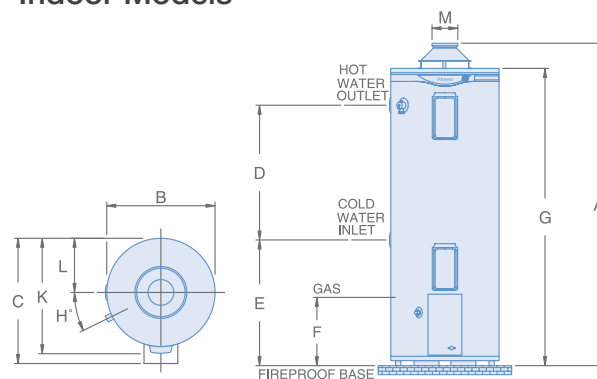
DIMENSIONS AND TECHNICAL DATA TABLE			OUTDOOR MODELS			INDOOR MODELS		
Model			630260N0*	634 265	634 275	620260N0	624 265	624 275
Storage Capacity	litres		260	265	275	260	265	275
Dimensions								
	A	mm	1640	1835	1865	1660	1795	1895
	B	mm	590	610	640	590	610	640
	C	mm	680	710	780	670	750	780
	D	mm	990	750	760	990	750	760
	E	mm	330	700	700	330	700	700
	F	mm	295	380	340	297	380	340
	G	mm	1520	1655	1695	1520	1655	1695
	H	degrees	27	36	36	27	36	36
	K	mm	655	660	722	655	660	722
	L	mm	295	302	320	295	302	320
	M	mm	–	–	–	100	125	200
	P	mm	420	420	320	–	–	–
Weight – Empty	kg		110	132	197	101	129	187
Inlet/Outlet Connections (BSPF)			RP1¼	RP1¼	RP1¼	RP1¼	RP1¼	RP1¼
Gas Connection (BSPF)			RP½	RP¾	RP¾	RP½	RP¾	RP¾
T&PR Valve Connection (BSPF)			RP¾	RP¾	RP¾	RP¾	RP¾	RP¾
T&PR Valve Setting	kPa		1000	1000	1000	1000	1000	1000
Expansion Control Valve (ECV)* Setting	kPa		850	850	850	850	850	850
Max. Water Supply Pressure								
without ECV* fitted	kPa		800	800	800	800	800	800
with ECV* fitted	kPa		680	680	680	680	680	680
Max. Thermostat Setting	°C		65	82	82	65	82	82
Factory Thermostat Setting	°C		60	70	70	60	70	70
Min. Thermostat Setting	°C		off	60	60	off	60	60
Manifold – Min. Centre to Centre	mm		920	920	890	845	860	890
Electrical Connection			–	2m 10A Plug and Lead		–	2m 10A Plug and Lead	
Electrical Rating 240V 50Hz			–	150 Watts	250 Watts	–	150 Watts	150 Watts
				0.65 Amps	1.1 Amps		0.65 Amps	0.65 Amps
Maintenance Rate	MJ/day		30.7	42.7	50.7	33.9	53.3	26.1

*Expansion control valve not supplied with water heater.

Outdoor Models



Indoor Models



TECHNICAL DATA

PERFORMANCE DATA									
Model	No. of Units in Parallel	Initial Storage Capacity (Litres)	Thermal Input (MJ/h)	Litres hot water at 50°C rise over peak period (based on natural gas)					
				1 hour	2 hours	3 hours	4 hours	6 hours	8 hours
620260N0 & 630260N0	1	260	51	380	570	760	950	1330	1700
	2	520	102	770	1140	1520	1900	2650	3410
	3	780	153	1150	1720	2280	2850	3980	5110
624 265 & 634 265	1	265	110	620	1030	1440	1850	2670	3490
	2	530	220	1240	2060	2880	3700	5340	6980
	3	795	330	1870	3100	4330	5560	8010	10470
624 275 & 634 275	1	275	200	970	1710	2460	3200	4690	6180
	2	550	400	1930	3420	4910	6400	9380	12370
	3	825	600	2900	5130	7370	9600	14080	18550
	4	1100	800	3860	6840	9820	12810	18770	24730
	5	1375	1000	4830	8550	12280	16010	23460	30910
	6	1650	1200	5790	10260	14740	19210	28150	37100
Model	No. of Units in Parallel	Initial Storage Capacity (Litres)	Thermal Input (MJ/h)	Litres hot water at 65°C rise over peak period (based on natural gas)					
				1 hour	2 hours	3 hours	4 hours	6 hours	8 hours
624 265 & 634 265	1	265	110	530	840	1160	1470	2100	2730
	2	530	220	1050	1690	2320	2950	4210	5470
	3	795	330	1580	2530	3470	4420	6310	8200
624 275 & 634 275	1	275	200	790	1370	1940	2510	3660	4810
	2	550	400	1590	2730	3880	5030	7320	9610
	3	825	600	2380	4100	5820	7540	10980	14420
	4	1100	800	3170	5470	7760	10050	14640	19230
	5	1375	1000	3970	6830	9700	12570	18300	24030
	6	1650	1200	4760	8200	11640	15080	21960	28840

Note: Hot water figures rounded to the nearest 10 litres.

Operations at temperature above 80°C

Rheem commercial gas models 624 265, 634 265, 624 275, 634 275 are designed to operate at temperatures up to 82°C for sanitising and other applications.

Where the water supplied by the water heater is required consistently at any temperature above 80°C, we strongly recommend you use a pumped recirculation system. (Please refer to the Equa-Flow® section.)

Gas pipe supply

The gas supply piping should be sized in accordance with AS/NZS 5601.1.

The gas supply pipe must be sized so that the minimum gas pressure is available at the inlet to each water heater when all appliances are operating at maximum gas consumption.

The minimum gas pressures are 1.13 kPa for Natural GAS and 2.75 kPa for ULPG.

TECHNICAL GAS PERFORMANCE DETAILS							
Model		620260N0 & 630260N0		624 265 & 634 265		624 275 & 634 275	
Gas Type		Nat	ULPG*	Nat	ULPG*	Nat	ULPG*
Thermal Input	MJ/h	51	58	110	117	200	210
Output	kW	11	11.0	23.8	25	43.3	45.5
Min. Gas Supply Pressure	kPa	1.13	2.75	1.13	2.75	1.13	2.75
Test Point Pressure	kPa	1.0	2.7	0.9	2.5	0.90	2.65
Max. Gas Supply Pressure	kPa	3.5	3.5	3.5	3.5	3.5	3.5
Litres Recovery Per Hour at Rise of	20°C	480	490	1030	1098	1870	1968
	30°C	320	330	690	738	1250	1314
	40°C	240	250	520	552	940	984
	50°C	190	195	410	444	750	786
	60°C	160	165	350	372	630	660
	65°C	150	154	320	342	580	606
	70°C	140	144	300	318	540	564
75°C	130	133	280	294	500	528	

* Based on NZ ULPG 60/40 mix

HEAVY DUTY GAS BMS INTERFACE MODULES

The Rheem Heavy Duty Gas BMS interface module is designed to interface between individual gas water heaters and the building management system to remotely provide facility managers with real-time water heater status.

Features

- The module mounts to the outside of the water heater and is provided with Common, N/O and N/C contacts for field connection by on site trades
- Suits models 624265, 624275, 634265, 634275
- Provides Run/Fail signal via voltage free contacts (common, N/O, N/C)
- Contact rating 1A @ 48V
- Uses water heater's own power supply
- Suitable for indoor and outdoor installation – IP34
- On board LED status
- Suitable for new installations or retrofit to existing heaters
- Dimensions (mm): 231(h) x 112 (w) x 78 (d)
- Order Code: 299239



INDICATOR CODE	
GREEN	Normal Operation (Relay Energised)
RED OR NO INDICATION	Attention Required (Relay de-energised)
Voltage Free Contact Load: Max 1A, 48V	



VENTILATION AND FLUEING

Ventilation for indoor gas water heaters

In Australia and New Zealand, gas water heaters installed indoors (non-room sealed) require to be ventilated in accordance with AS5601 or AS/NZS 5601.1 depending on the local regulations.

AS/NZS 5601.1 also has further requirements regarding compliance of mechanical ventilation.

Please consult the appropriate standard when designing plant room ventilation requirements.

Notes

1. Although a room sealed water heater installation draws the air required for combustion from outside, ventilation may be necessary to prevent a rise in the ambient temperature in the room.
2. In plant rooms, wherever possible, more than one wall should be used to provide ventilation. This allows a flow of air across the room and helps prevent excessive temperatures in the room.
3. In rooms other than plant rooms, ventilation is required if the total thermal input of the water heaters exceeds 3 MJ/h per cubic metre of room volume.

Power flueing / Mechanical ventilation

You can either install an individual Rheem gas model or a bank of multiple 624 265, 624 275 models with a power flue or mechanical air supply.

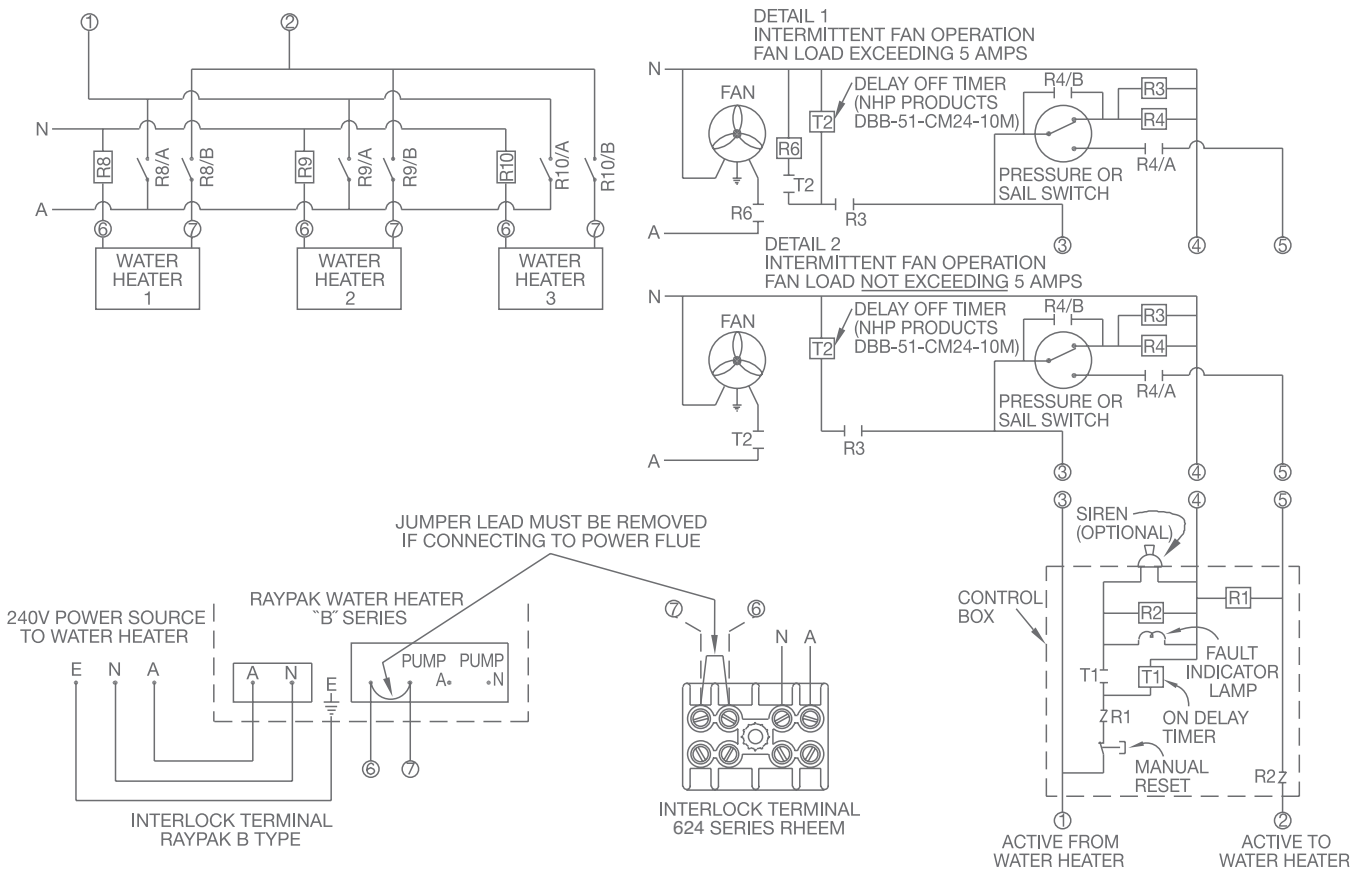
It's essential to prove the flue system operates correctly before the main burner is allowed to operate.

How is this achieved? A self proving relay interlocked with either a vane switch or pressure differential switch will prove both air flow and functionality of the control circuit before ignition of the main burner.

Please refer to AS/NZS 5601.1 for full details of what's required.

For multiple installations, the operating principle is the same as for a single water heater.

Any water heater can switch on the fan, and the burners can only come on when the sail switch is closed.



Intermittent PowerFlue Fan Control – Multiple Water Heater Rheem 624 Series & Raypak Type B Series.

TECHNICAL DATA

Power Flue and Remote control

Rheem commercial models 624 265, 634 265, 624 275, 634 275 may be controlled by a remote device such as a time clock, BMS remote isolating switch, pressure switch or sail switch. Additionally, Rheem can assist with Power Flue design solutions for Rheem and Raypak® commercial gas water heaters. Please contact your local Rheem technician service team for further details.

Flueing: minimum distances for outdoor gas water heaters

Rheem outdoor gas water heaters have a balanced flue and do not require the addition of secondary flueing. Minimum clearance requirements, as stated in AS/NZS 5601.1, apply to the location of outdoor balanced flue, room sealed or power flue terminals.

The Standard also states that where a balanced flue or room sealed terminal is installed under a covered area, the covered area is to be open on at least two sides and the terminal is to be located to ensure a free flow of air across the terminal.

Flueing: indoor gas water heaters

Manifolded water heaters can either be flued individually or connected to a common flue. The design of the flue must comply with Appendix H of the Standard.

AS/NZS 5601.1 states the vertical rise directly out of the water heater must be the maximum possible height before any change in direction.

The total length of the lateral (horizontal) section must be as short as possible, not exceeding 50% of the total flue height of the system.

The table and diagram below are extracted from the Flue Tables in AS/NZS 5601.1 and are meant as a quick guide only. Any variations should be referenced from AS/NZS 5601.1.



Appropriate authorities should be consulted before any work is commenced on flues other than single appliance flues.

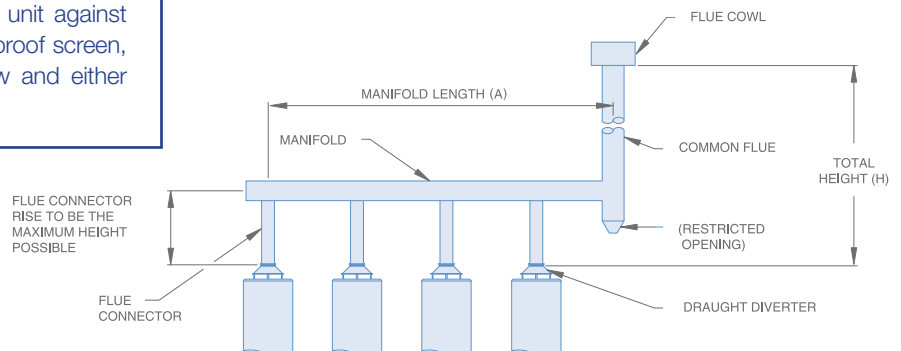


Additionally, Rheem requires the water heater be installed with the back of the unit against a wall, or alternatively against a solid fireproof screen, extending at least 500mm above, below and either side of the flue terminal.



Rheem indoor gas water heaters are designed for connection to a flue system in accordance with the requirements of AS/NZS 5601.1.

Multiple Manifold Flue System



Notes: The length of manifold "A" should not exceed 50% of total flue height "H".

FLUE SIZING FOR GAS WATER HEATERS

Model	Total Flue Height (H) (m)	1		2		4		6		8	
		Max. Lateral (m)	Flue Dia (mm)	Max. Manifold Length (A) (m)	Flue Dia (mm)	Max. Manifold Length (A) (m)	Flue Dia (mm)	Max. Manifold Length (A) (m)	Flue Dia (mm)	Max. Manifold Length (A) (m)	Flue Dia (mm)
620260N0	2	1.0	100	1.0	150	–	–	–	–	–	–
51 MJ/h	3	1.5	100	1.5	125	–	–	–	–	–	–
	6	3.0	100	3.0	125	3.0	175	–	–	–	–
	12	6.0	100	6.0	100	6.0	150	6.0	175	–	–
	24	7.6	150	12.0	150	12.0	150	12.0	175	12.0	200
624 265	2	1.0	150	1.0	200	–	–	–	–	–	–
	3	1.5	125	1.5	200	–	–	–	–	–	–
	6	3.0	125	3.0	175	3.0	250	–	–	–	–
	12	6.0	125	6.0	150	6.0	200	6.0	250	–	–
624 275	2	1.0	175	1.0	300	–	–	–	–	–	–
	3	1.5	175	1.5	250	–	–	–	–	–	–
	6	3.0	150	3.0	250	3.0	300	–	–	–	–
	12	6.0	150	6.0	200	6.0	300	6.0	350	–	–
200 MJ/h	24	7.6	150	12.0	200	12.0	250	12.0	300	12.0	350

Notes: • The table is based on a natural draft system with an insulated type flue or a flue installed indoors.
• The table is extracted from the Flue Tables in AS/NZS 5601.1 and is meant as a quick guide only. Any variations should be referenced from AS/NZS 5601.1