Commercial Heat Pump PLUS Range

When your sustainable hot water requires serious horse power, the Rheem commercial Heat Pump Plus range is now available with capacities of up to 213kW and compact design.

AIR TO WATER HEAT PUMP PLUS

HEAT PUMP | HOT WATER TO 65°C | ENVIRONMENT SOURCED ENERGY | HIGH CAPACITY

FOR WHERE CAPACITY IS ESSENTIAL

SUITS MOST NEW ZEALAND CLIMATES

Rheem has been leading the way in commercial heat pump technology since 2008 with local design and manufacturing supported by an in-house Service team, with local technical support. Detailed engineering has tuned the system operation allowing the heat pump to operate in ambient conditions as low as 0°C when feature is engaged, reducing the reliance on auxiliary heating methods, thereby improving overall annual efficiency.

SIMPLICITY IN INSTALLATION

Using less heat pumps and circulators to generate high-volume hot water supply, the installation, connection and commissioning is vastly simplified.

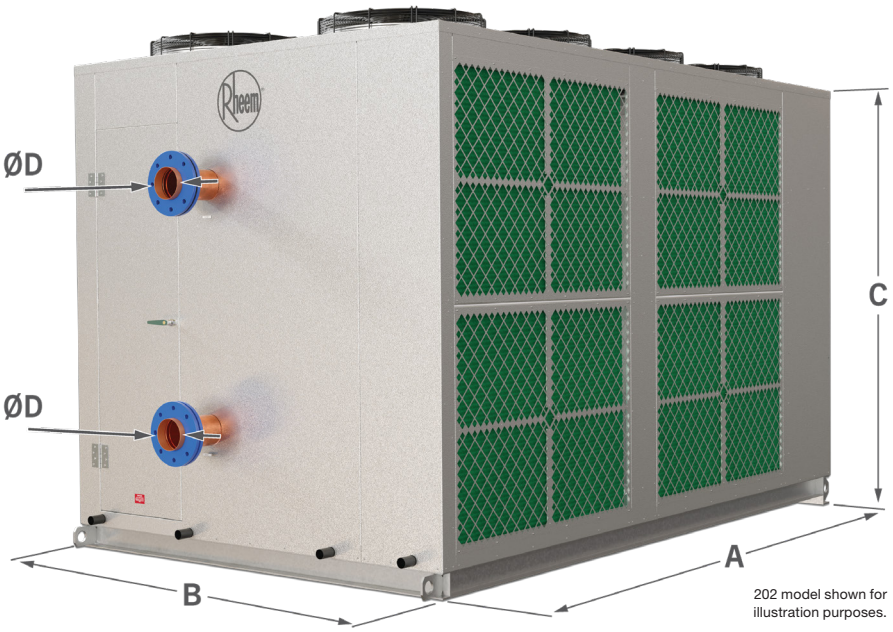
Designed for outdoor installation the Heat Pump Plus range is supported by matching accessories for optimum performance and integration with BMS.

SAVINGS PLUS

The Plus range features factory built and tested multi-stage units which operate like a bank of smaller units with vertical discharge, but provide footprint, installation time and installation cost benefits by offering simplified plumbing and electrical works requirements.

FURTHER PRODUCT IMPROVEMENTS

An upgraded micro-controller now allows multi-stage units to provide redundancy by operating separate refrigerant circuits in a “first in-first out” configuration whilst rotating the lead compressor to provide even duty. Energy reduction and product life improvement is also achieved owing to better control of the operating parameters.



202 model shown for illustration purposes.

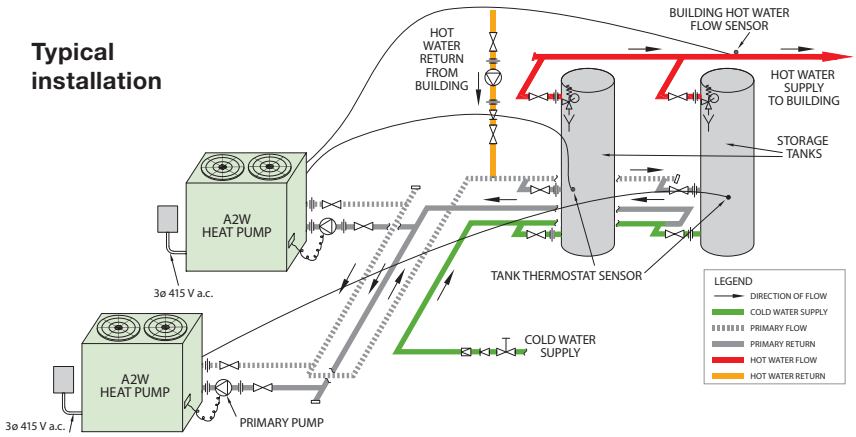
WaterMark
AS 3498
Lic WMK 21549
SAI Global

SEALED SYSTEM 2 YEAR WARRANTY

PARTS & LABOUR 1 YEAR WARRANTY

*Conditions apply: For full terms and conditions please contact Rheem or visit rheem.co.nz/support/commercial-warranties/

Typical installation



TECHNICAL DATA

AIR TO WATER MODELS							
Product data		**953060DP / 953060DV**	**953079DP / 953079DV**	**953101DP / 953101DV**	**953126DP / 953126DV**	**953152DP / 953152DV**	**953202DP / 953202DV**
Heating Capacity[1]	kW	60.72	81.96	101.08	132.06	159.69	211.73
Power Input[1]	kW	13.72	19.22	24.44	32.02	36.78	49.02
COP[1]		4.42	4.26	4.14	4.12	4.34	4.32
Recovery @50°C Rise[1]	L/hr	1044	1410	1739	2271	2747	3642
Operating Range (ambient)	°C	0 - 45					
Maximum DHW Temperature[2]	°C	65					
Refrigerant		R134a					
Hot Water Side							
TPR Valve Setting (VE/RT/RW)	kPa	1000 / 850 / 700					
ECV Setting (VE/RT/RW)[3]	kPa	850 / 700 / 550					
Maximum Water Supply Pressure							
- Without ECV (VE/RT/RW)	kPa	800 / 680 / 560					
- With ECV (VE/RT/RW)[3]	kPa	650 / 550 / 450					
Heat Exchanger Design	DP / DV	DP - 316 Stainless Steel Double Wall Brazed Plate / DV = Copper Tube in Tube Vented					
Design Pressure Drop	kPa	50					
Design Flow Rate	L/s	3.63	4.89	6.04	7.90	9.54	12.66
Air Side							
Air Flow (at maximum static pressure)	L/s	4583	7083	7222	11800	13333	17778
Maximum Static Pressure	Pa	5	5	5	5	5	5
Electrical Connection							
Power Supply		3 Phase / 380-415V / 50 Hz					
Max Current per Phase (heat pump running, excluding pump)	Amps	41.4	60.6	85.6	88.3	127.1	169.5
Max Current per Phase (pump running only)	Amps	3.7	3.7	3.7	3.7	3.7	11.0
Minimum Circuit Breaker size (per phase)	Amps	50	80	100	100	150	200
Installation Data							
Length Dim A	mm	2180	2180	2465	2540	3650	3650
Width Dim B	mm	1135	1135	1135	1260	1970	1970
Height Dim C	mm	1360	1545	1625	1935	2290	2290
Water Connections - Flange Table E Dim D[4]	mm	65	80	80	100	100	125
Approx Weight: Empty	kg	400	600	650	1180	1500	2200
Full	kg	450	650	725	1255	1600	2300
Clearances							
Evap Coils (both sides)	mm	1000	1000	1000	1000	1000	1000
Display / Compressor Access Side	mm	850	850	850	850	850	850
Water Connection Side	mm	500	500	850	850	850	850
Top (vertical discharge)	mm	3500	3500	3500	3500	3500	3500

[1] 20°C ambient / 60%RH. 39°C water in / 43°C water out.
[2] When ambient temperature is not likely to drop below 5°C during operation and low ambient temperature mode is not selected.
[3] ECV not supplied with water heater.
[4] Counter flange, gasket, bolts and nuts are not supplied.

ACCESSORIES FOR ALL AIR TO WATER HEAT PUMP PLUS MODELS

BMS Interface	Card
BACnet TCP/IP	17520
BACnet MS/TP	17521
Modbus RS485	17522

PUMP AND PIPE SIZING CHART

		Header Size for Number of Heat Pumps in Parallel				Primary Circulator	Primary Circulator
		1	2	3	4	Pump Model	Pump Connection Flanges
953060	mm	80	100	125	150	CRN 32-2, 4 Pole	DN65, PN40
953079	mm	80	125	N/A	N/A	CRN 45-2-2, 4 Pole	DN80, PN40
953101	mm	100	125	N/A	N/A	CRN 45-2-2, 4 Pole	DN80, PN40
953126	mm	100	150	N/A	N/A	CRN 64-2-1, 4 Pole	DN100, PN16
953152	mm	125	150	N/A	N/A	CRN 64-2-1, 4 Pole	DN100, PN16
953202	mm	150	200	N/A	N/A	CRN 95-1, 4 Pole	DN100, PN16

Note: Header pipe sizing is based on 20 bends and a total length of primary and return piping of:
- 40m for heat pumps under 120 kW, excluding equa-flow manifolds on storage tanks and heat pumps, or
- 60m for heat pumps above 120 kW, excluding equa-flow manifolds on storage tanks and heat pumps for maximum velocity of 1.2m/s. One pump per heat pump.

RECOVERY AT 50°C TEMPERATURE RISE

Ambient Temperature °C	5	10	15	20	25	30	35	40
	Recovery - Litres per hour							
953060	803	902	967	1029	1062	1163	1194	1224
953079	1022	1162	1259	1353	1405	1568	1618	1669
953101	1318	1495	1618	1739	1805	2013	2077	2142
953126	1639	1859	2011	2161	2243	2501	2580	2662
953152	1977	2243	2426	2608	2707	3020	3115	3213
953202	2636	2991	3235	3477	3610	4026	4153	4284

RECOVERY AT 55°C TEMPERATURE RISE

Ambient Temperature °C	5	10	15	20	25	30	35	40
	Recovery - Litres per hour							
953060	730	820	879	935	965	1057	1085	1113
953079	929	1057	1144	1230	1278	1425	1470	1517
953101	1198	1359	1471	1581	1641	1830	1888	1947
953126	1490	1690	1828	1964	2039	2274	2346	2420
953152	1797	2039	2206	2371	2461	2745	2832	2921
953202	2396	2719	2941	3161	3282	3660	3776	3894

CASE STUDY

Calvary Hospital – Bruce, Australian Capital Territory

Total hot water plant installed included:

- 16 x 953016 – 16kW vertical discharge Air to Water Heat Pumps
- 9 x 1000 litre RT1000 stainless steel storage tanks, each with 15kW Commercial Electric Heating Unit
- 5 x 2000 litre RT2000 stainless steel storage tanks, each with 30kW Commercial Electric Heating Unit

CASE STUDY

Rio Tinto – Gudai-Darri Mine, Western Australia

Total hot water plant installed included:

- 10 x 953035 – 35kW horizontal discharge, stackable Air to Water Heat Pumps
- 9 x 3000 litre RT3000 stainless steel storage tanks, each with 30kW Commercial Electric Heating Unit

---

CASE STUDY

Star Casino – Gold Coast, Queensland

Total hot water plant installed included:

- 8 x 954035 – 35 kW stackable Water to Water Heat Pumps
- 3 x 1000 litre RT1000 stainless steel storage tanks with Tankpak boosting

WATER TO WATER HEAT PUMP PLUS

HEAT PUMP | WASTE HEAT RECOVERY | COMPACT | UP TO 7.0 COP EFFICIENCY

CONNECT TO BUILDING CONDENSER LOOP FOR EXCEPTIONAL COP PERFORMANCE

High-capacity heating with a compact footprint

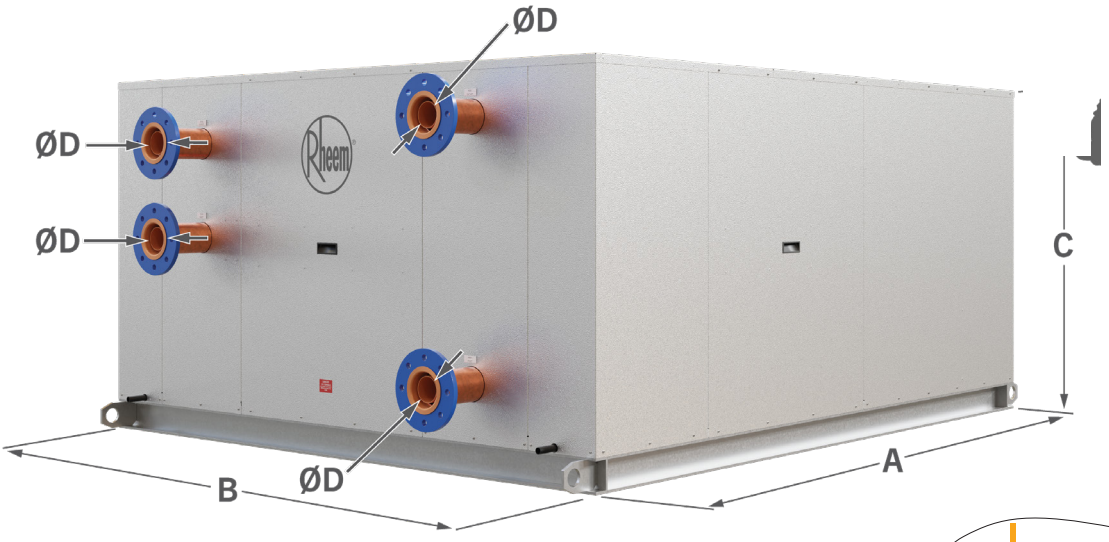
The Rheem Water to Water (W2W) heat pump has captured the imagination of system designers as a compact system that can be installed virtually anywhere with no ventilation requirements.

SIZING RE-IMAGINED

With the ability to produce up to 63% more hot water than the equivalent A2W version when connected to a 35°C condenser circuit, heat pump sizing is turned on it's head, providing the ability for more recovery kW and less storage with reduced complexity, plant footprint and weight.

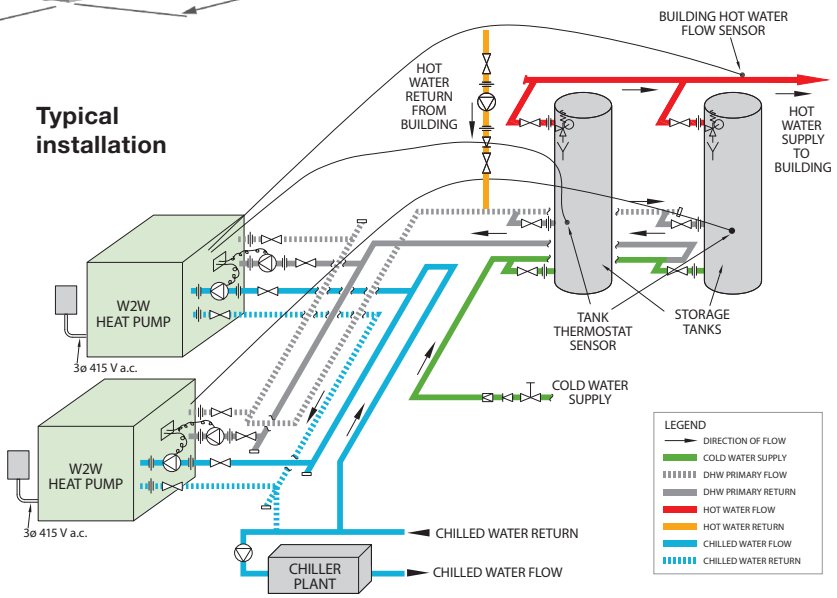
PRODUCT ENHANCEMENTS

The evaporator heat exchanger is now copper shell-in-tube, suited to the conditions found in HVAC condenser circuits. An upgraded micro-controller now allows for operating separate refrigerant circuits in a "first in-first out" configuration whilst rotating the lead compressor to provide even duty, redundancy, energy reduction and product life improvement.



213kW model shown for illustration purposes.

Typical installation



WaterMark
AS 3498
Lic WMK 21549
SAI Global

SEALED SYSTEM 2 YEAR WARRANTY

PARTS & LABOUR 1 YEAR WARRANTY

*Conditions apply: For full terms and conditions please contact Rheem or visit rheem.co.nz/support/commercial-warranties/

TECHNICAL DATA

WATER TO WATER MODELS							
Product data		**955071SDP / 955071SDV**	**955088SDP / 955088SDV**	**955116SDP / 955116SDV**	**955142SDP / 955142SDV**	**955176SDP / 955176SDV**	**955213SDP / 955213SDV**
Nominal Heating Capacity at 20°C Cold Water Temperature[1]	kW	71.15	87.79	114.52	142.31	175.58	213.46
Nominal Cooling Capacity at 20°C Cold Water Temperature[1]	kW	56.97	70.47	91.49	113.93	140.93	170.9
Nominal Heating Capacity at 35°C Cold Water Temperature[2]	kW	102.93	126.8	165.49	205.86	253.59	308.78
Power Input[1]	kW	14.19	17.32	23.03	28.37	34.64	42.56
Coefficient of Performance (Heating)[1] at 20°C		5.02	5.07	4.97	5.02	5.07	5.02
Coefficient of Performance (Cooling)[1] at 20°C		4.02	4.07	3.97	4.02	4.07	4.02
Coefficient of Performance (Heating)[2] at 35°C		7.01	6.97	6.97	7.01	6.97	7.01
Maximum DHW Temperature	°C	65					
Refrigerant		R134a					
Hot Water Side							
TPR Valve Setting (VE/RT/RW)	kPa	1000 / 850 / 700					
ECV Setting (VE/RT/RW)[3]	kPa	850 / 700 / 550					
Maximum Water Supply Pressure							
- Without ECV (VE/RT/RW)	kPa	800 / 680 / 560					
- With ECV (VE/RT/RW)[3]	kPa	650 / 550 / 450					
Heat Exchanger Design	DP / DV	DP = 316 Stainless Steel Double Wall Brazed Plate / DV = Copper Tube in Tube Vented					
Design Pressure Drop	kPa	50					
Design Flow Rate	L/s	4.25	5.24	6.84	8.50	10.48	12.75
Cold Water Side							
Maximum Water Supply Pressure	kPa	660					
Cold Water Side Flow Rate	L/s	3.40	4.21	5.46	6.80	8.41	10.20
Heat Exchanger Design	S	S = Shell in Tube					
Design Pressure Drop	kPa	50					
Electrical Connection							
Power Supply		3 Phase / 380-415V / 50 Hz					
Max Current per Phase (heat pump running, excluding pump)	Amps	40.2	46.1	61.8	80.6	93.7	120.6
Max Current per Phase (2 pumps running only)	Amps	4.1 (230V)	11.1 (230V)	7.3 (400V)	7.3 (400V)	7.3 (400V)	22.0 (400V)
Minimum Circuit Breaker size (per phase)	Amps	50	63	80	100	120	150
Installation Data		**DP = 316 Stainless Steel Double Wall Brazed Plate / DV = Copper Tube in Tube Vented**					
Length Dim A	mm	2120 / 2120	2120 / 2540	2400 / 2540	2400 / 2540	2400 / 2590	2590 / 2890
Width Dim B	mm	805 / 805	805 / 1250	1150 / 1250	1150 / 1250	1150 / 2205	2205 / 2205
Height Dim C	mm	1100 / 1100	1100 / 1175	1175 / 1175	1175 / 1175	1175 / 1380	1380 / 1380
Water Connections - Flange Table E Dim D[4]	mm	65	80	80	100	100	125
Approx Weight: Empty	kg	400 / 420	450 / 500	625 / 675	725 / 775	825 / 875	1300 / 1400
Full	kg	450 / 470	500 / 550	700 / 750	800 / 850	925 / 975	1400 / 1500
Clearances							
Plain Back (Controller & Compressor Access for 955213 only)	mm	50	50	50	50	50	850
Right Side	mm	50	50	50	50	50	50
Left Side	mm	50	50	50	50	50	50
Front Side (Water Connections / Controller & Compressor Access)	mm	850	850	850	850	850	850
Top (Clearance above unit required for service personnel to stand)	mm	350	350	350	350	350	350

[1] Rating Conditions: Heating 39°C water in / 43°C water out, 51°C SCT, Cold 20°C water in / 14.5°C water out.
[2] Rating Conditions: Heating 39°C water in / 43°C water out, 51°C SCT, Cold 35°C water in / 29.5°C water out.
[3] ECV not supplied with water heater.
[4] Counter flange, gasket, bolts and nuts are not supplied.

ACCESSORIES FOR ALL WATER TO WATER HEAT PUMP PLUS MODELS

BMS Interface	Card
BACnet TCP/IP	17520
BACnet MS/TP	17521
Modbus RS485	17522

PUMP AND PIPE SIZING CHART

		Header Size for Number of Heat Pumps in Parallel				Primary Circulator	Primary Circulator
		1	2	3	4	Pump Model	Pump Connections
955071	mm	80	100	125	150	MAGNA1 40-120 F N	DN40, PN10
955088	mm	100	125	N/A	N/A	MAGNA1 65-150 F N	DN65, PN10
955116	mm	100	150	N/A	N/A	CRN 45-2-2, 4 Pole	DN80, PN40
955142	mm	125	150	N/A	N/A	CRN 64-2-2, 4 Pole	DN100, PN16
955176	mm	125	200	N/A	N/A	CRN 64-2-1, 4 Pole	DN100, PN16
955213	mm	150	200	N/A	N/A	CRN 95-1, 4 Pole	DN100, PN16

Note: Header pipe sizing is based on 20 bends and a total length of primary and return piping of:
- 40m for heat pumps under 120 kW, excluding equa-flow manifolds on storage tanks and heat pumps, or
- 60m for heat pumps above 120 kW, excluding equa-flow manifolds on storage tanks and heat pumps for maximum velocity of 1.2m/s. One pump per heat pump (hot side and cold side)

RECOVERY

Temperature Rise °C	50			55		
Chilled/Condenser Water Temperature °C	12	20	35	12	20	35
	Recovery - Litres per hour					
955071	984	1224	1770	894	1113	1609
955088	1215	1510	2181	1105	1373	1983
955116	1582	1970	2846	1439	1791	2588
955142	1967	2448	3541	1789	2225	3219
955176	2431	3020	4362	2210	2745	3965
955213	1231	3672	5311	1119	3338	4828

Certified System™
Quality
ISO 9001

Rheem®
Install a Rheem®

Rheem New Zealand Limited
475 Rosebank Road, Avondale 1026, PO Box 19011, Avondale, Auckland 1746. Freephone 0800 657 336 – www.rheem.co.nz