COMMERCIAL HIGH TEMPERATURE HEAT PUMPS

OPEX SAVINGS OF UP TO: 20% Natural Gas | 50% LPG | 400% Traditional Electric Elements

Powered by
WATERWARE

waterware.co.nz

COMMERCIAL APPLICATIONS

LEADING THE WAY WITH R290 TECHNOLOGY:

Waterware stock the most extensive range of R290 high temperature heat pumps in New Zealand. R290 is refrigerant grade propane with a Global Warming Potential (GWP) = 3 and is recognised to have the most developed potential in the industry.

R290 multi-pass heat pumps provide highly flexible performance for all types of commercial space heating, cooling, and high-capacity domestic hot water applications, and combining this with Waterware's commitment to reducing carbon emissions we're proud to be part of the solution.

A WINNING FORMULA:

The key to unlocking R290's full potential lies in expertise. Since bringing the very first R290 hydronic monobloc heat pump to the New Zealand market in 2019, Waterware has developed unrivalled experience in R290 appliances and advanced control systems.

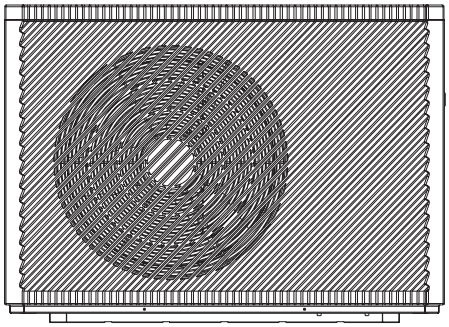
For example, our own Messana MBOX BMS system which can seamlessly integrate heat pumps with traditional boilers in a hybrid configuration, ensuring reliable performance and manageable electrical loading, while maximizing efficiency and minimizing reliance on fossil fuels.

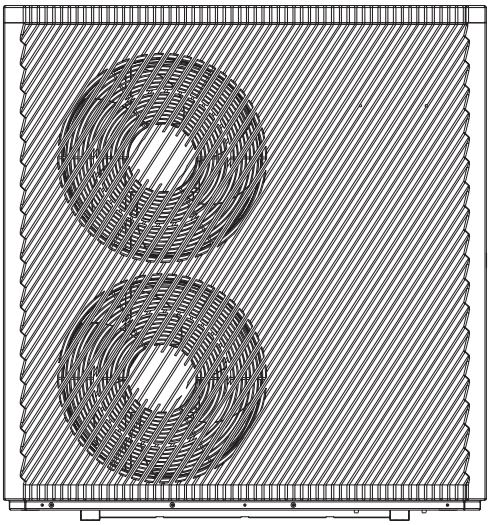
FEATURE LIST:

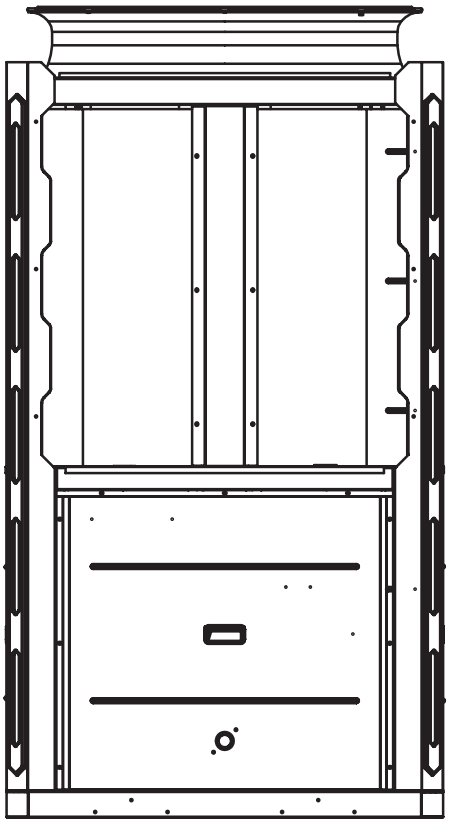
- Full inverter technology.
- Flow temperature up to 75°C.
- Operation down to -25°C outside ambient.
- Flexible multi-pass heat pump technology.
- Domestic hot water production without element boosting.
- All systems designed with "double-wall" heat exchanger technology.
- Satellite DTU for remote diagnostics and commissioning as standard
- MODBUS for BMS integration,
- Cascade, PV and hybrid ready.
- Smart cascade controller for controlling multiple appliances.
- Premium anti-vibration feet available as optional extra.
- Proven track record in New Zealand.

NO MATTER THE PROJECT **RITTER COMMERCIAL** HAS YOU COVERED

The Ritter R290 Collection offers a solution for any project, from hot water to central heating and cooling.







SPECIFICATIONS

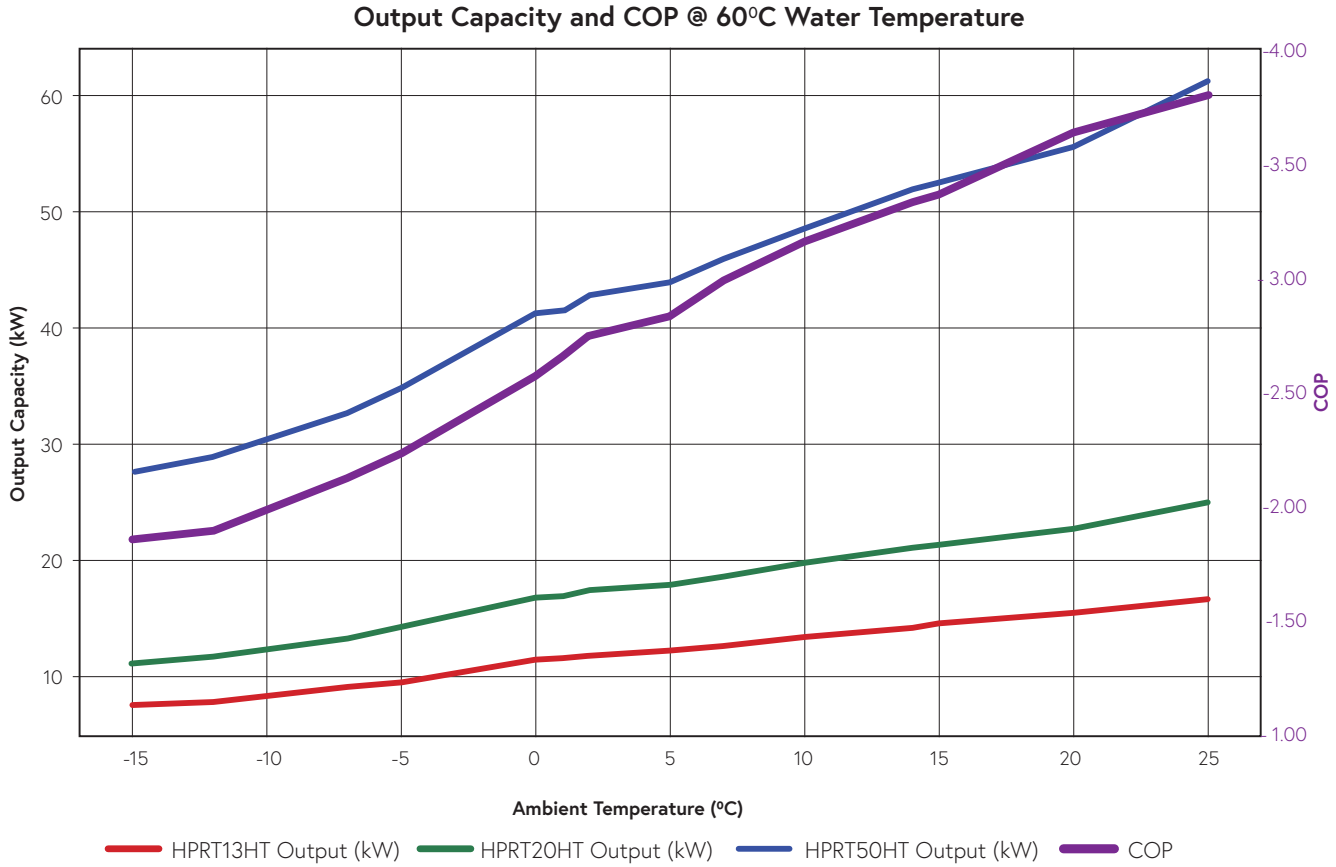
Ritter Thermal R290 Commercial Heat Pumps		HPR13HT	HPR20HT	HPR50HT
Power Supply		230V-1PH	230V-1PH	380-415V~3PH
Heating Condition -Ambient Temp. (DB/WB): 7/6°C, Water Temp. (In/Out): 30/35°C				
Heating Capacity Range	kW	5.40-14.95	8.00-22.00	13.63 - 50.00
Heating Power Input Range	kW	1.05-3.85	1.60-6.90	4.36-16.00
Heating Current Input Range	A	4.60-16.9	7.00-30.3	6.97-25.60
Cooling Condition -Ambient Temp. (DB/WB): 35/24°C, Water Temp. (In/Out): 12/7°C				
Cooling Capacity Range	kW	3.60-10.50	4.20-15.00	9.27-34.00
Cooling Power Input Range	kW	1.12-4.47	1.80-7.30	3.91-14.35
Heating Current Input Range	A	4.90-19.6	7.90-32.1	6.26-22.96
Hot Water Condition -Ambient Temp. (DB/WB): 20/15°C, Water Temp. (In/Out): 15/55°C				
Hot Water Capacity Range	kW	6.50-18.50	10.00-27.00	16.36-70.00
Hot Water Power Input Range	kW	1.27-4.65	1.90-7.10	5.29-19.40
Hot Water Current Input Range	A	5.60-20.4	8.30-31.2	8.22-30.14
Max. Power Input	kW	5.3	7.5	24
Max. Current Input	A	24.5	32	30
COP		COP 35-30°C @ 7°C: 4.53	COP 35-30°C @ 7°C: 4.37	COP 35-30°C @ 7°C: 4.62
Rated Water Flow	m^3/h	1.7	2.9	6.0
Refrigerant/ Charge weight	kg	R290 / 0.85kg	R290 / 1.30kg	R290/1.50kg x 2
CO2 Equivalent	Ton	0.003	0.004	0.0092
Sound Pressure Level (@ 1m)	dB(A)	42	48	53
Sound Power Level (EN121021)	dB(A)	57	64	69
Operating Ambient Temperature	°C	-25 to 43		
Max. Water Temperature	°C	75	75	70
Water Pressure Drop (max)	kPa	20	64	20
Circulation Pump Water Head	m	7.5	12.5	N/A
Water Connection Size	in	G1"	G1"	G1.5"
Unit Dimension (LxWxH)	mm	1287 x 458 x 928	1250 x 540 x 1330	1195 x 980 x 1921
Shipping Dimension (LxWxH)	mm	1420 x 540 x 1080	1380 x 570 x 1480	1195 x 980 x 2150
Dry Weights	Kg	160	202	490

ECONOMIC BENEFITS

Ritter R290 heat pump technology offers a compelling economic advantage. Not only is the capital cost typically lower than comparable systems, but it also delivers excellent energy efficiency—with high COPs maintained across a broad range of operating conditions. This translates into significantly reduced running costs over the system's lifetime. The result is an unbeatable combination of affordability and long-term performance, making R290 the smart choice for forward-thinking developers and building owners.

OPEX SAVINGS OF UP TO: 20% Natural Gas | 50% LPG | 400% Traditional Electric Elements

The graph above demonstrates the capacity and efficiency of all three models in a high temperature application across a wide range of ambient conditions. Unlike other hot water heat pump systems, Ritter multi-pass R290 heat pumps provide the significantly improved flexibility for covering partial loads, standing losses and ring main losses without any need for any electric element boosting or backup.



FEATURES

Eco Friendly

R290 natural refrigerant with ultra-low GWP and ODP combined with multi-pass technology means the lowest possible environmental impact.

Capabilities

The versatility of R290 appliances means they can power all Waterware's solutions including radiant surface heating & cooling technologies, fancoils and hot water production.

Low costs

The capital cost of R290 technology is typically lower than competing systems and with good COP maintained in a wide variety of applications it's an unbeatable combination.

CASE STUDY: Premium aged care provider

The client had an ageing gas fired plant of 300kW powering a combination of underfloor heating and hot water production which was due for replacement. As an organization they had a strong drive for decarbonization and environmental responsibility. Replacing the existing plant with a hybrid gas and heat pump solution allowed them to guarantee performance while at the same time drastically reduce their carbon footprint.

What were the critical requirements that needed to be taken into consideration during the hot water production & heating solution implementation?

It was critical to manage the system change over, a temporary system was implemented so we could provide hot water while the existing plant room was stripped and rebuilt with the new equipment. Then changeover was then completed in a couple of hours.

Note: Image shows first generation Ritter R290 Heat Pumps

What specific solution did Waterware provide to address the Client's hot water production needs?

The system was split into two standalone plants, a dedicated system for hot water and a dedicated system for heating and cooling via the floor. Part of the transition to a heat pump driven system opened the possibility of adding slab cooling functionality to the existing floor heating system. The ability to cool the building radiantly via the floor was a brand-new concept to the client, being able to use existing infrastructure to provide this new functionality was an unexpected gain for them.

A complete plantroom for hot water production

In what ways does waterware's hot water production solution differentiate itself from other solutions available in the market?

Two main unique expertise used in this project is advanced hybrid control which integrates gas and heat pump in an intelligent way, the gas boiler backup's are only activated if the heat pumps can not keep up with the loads by themselves. Due to the system design with multiple heat pumps in cascade with gas boiler backups gives a scalable solution with a huge range of efficient operation. The second area of expertise is in radiant cooling, being able to control the water temperature to avoid the dew point allows the existing floor heating system to provide some cooling power to the building during summer.

What were the key products or technologies utilized in Waterware's solution for the Client's hot water & heating systems?

The use of Ritter high temperature R290 air to water heat pumps in conjunction with Vaillant gas condensing boilers with advanced Messana system controls allows for the package to be delivered in a trouble free and cost-effective way.

How can Waterware extend its expertise and assistance to other projects in the field of hot water & heating?

Waterware has a ground up solutions based focus, with a full range of products and expertise we can provide innovative solutions in the renewable energy space for hot water and heating/cooling space.

Pureflow
COMMERCIAL DHW

THE SMARTER WAY TO DESIGN COMMERCIAL HOT WATER SYSTEMS

Designing an efficient commercial hot water system requires precision, expertise, and the right components working seamlessly together. **PureFlow** simplifies this process by leveraging Waterware's advanced product range, including our high-performance Ritter air-to-water R290 heat pumps.

With **PureFlow**, consultants can provide system specifications, and within 48 hours, we deliver a comprehensive, cost-estimated proposal—ensuring every component is correctly sized and optimized for performance.

By using **PureFlow**, consultants mitigate risk, knowing that every element in the system is fully compatible and designed to work together. This not only improves reliability but also saves significant time and resources, eliminating the hassle of sourcing individual components.

With Waterware's expert support and **PureFlow's** precision, you can confidently design and implement high-efficiency, future-proof hot water solutions.

OTHER COMPONENTS

CALEFFI PUMP STATIONS
(25MM,-32MM)

- **Constant Flow Temperature:** Maintains set flow temperature for low-temperature systems (underfloor radiant panels or radiators).
- **Comprehensive Design: I**ncludes a high-efficiency pump, optional thermostatic 3-way mixing valve with built-in sensor, temperature gauges, shut-off valves, and pre-formed insulation.
- **Reversible Installation:** Flow direction can be switched from right to left based on installation needs.

CALEFFI XF MAGNETIC FILTER
(32MM,-50MM)

- **Durable Design:** Technopolymer body with female connections and compression end.
- **Versatile Installation:** Adjustable for both horizontal and vertical pipes.
- **Convenient Features:** Drain semi automatic self cleaning.
- **Pressure & Temperature:** Max. working pressure of 3bar, temperature range of 0-90°C.

CALEFFI 6000 LEGIOMIX
(20MM - 80MM)

- **High-Demand Use:** Suitable for centralised hot water systems with flow rates of 8-172L/min.
- **Adjustable Temperature:** Range from 20-85°C with +/-2°C control.
- **Pressure & Performance:** Recommended pressure of 100-500kPa, Kv = 140L/min.
- **Max Temp:** 100°C inlet temperature**.**
- **Sizing:** Sized by flow rate, not pipe size; contact our technical team for assistance.

FOR A FULL LIST AND COMMERCIAL PRICING PLEASE CONTACT US:
info@waterware.co.nz

RITTER BUFFER CYLINDER
(50L, 100L, 200L, 500L, 1000L)

- **Compact & Versatile:** Floor or wall-mounted for hydraulic isolation.
- **Heating & Cooling Ready:** Ideal for various applications.
- **Seamless Integration:** Supports dual heat pumps, hybrid HP & boiler setups, and hydraulic separation for underfloor systems.

CALEFFI EXPANSION TANK
(8L - 200L)

PROTANK HWC
(500L, 1000L)

- **High-Demand Hot Water:** Supports large-scale production.
- **Flexible Operation:** Works with Habanero heat exchanger or as a buffer for direct water heaters.

MBOX5 & MSENSE – SMART CLIMATE CONTROL

- **mBox HVAC Controller:** Part of Messana's BLACK SERIES, managing cooling and heating for up to 10 zones and hot water.
- **Precision & Efficiency:** Regulates ceiling panels, radiant floors, and fan coils with advanced logic for temperature, humidity, and ventilation.
- **Seamless Integration:** Works with heat pumps, chillers, boilers, circulator pumps, and 3-way mixing valves and fancoils.
- **Air Quality Management:** Supports Messana ATUs and ERV/HRV units for optimal indoor climate.
- **Built to Last:** Industrial-grade components ensure reliability in high-end residential and light commercial spaces.
- **Advanced Comfort Monitoring:** Measures operative temperature, relative humidity (dew point), and air quality.

SMARTCART

SECURE YOUR NEXT PROJECT

Waterware are taking a proactive approach in helping protect your business and customers. With many suppliers cutting back on shipments during this tough period it is inevitable that there will be stockouts and now is the time to think ahead!

Don't let supply chain disruptions catch you off guard. By utilising SmartCart, you're securing your future and ensuring a steady flow of essential products.

Avoid the costly consequences of missed opportunities and customer dissatisfaction. Don't wait until it's too late!

Mitigate risk:

- Avoid potential disruptions caused by stockouts
- No one can "afford to be delayed or lose jobs due to the inability to supply"
- Guarantee today's prices for up to 12 months for residential and commercial projects
- Secure supply before market recovery.

Special discounts:

- Benefit from exclusive offers and pricing.

JOIN THE SMARTCART MOVEMENT TODAY AND SAFEGUARD YOUR BUSINESS'S SUCCESS.

Best practice, best solution

Sentinel offers water treatment products that provide the best lifetime protection for heating and hot water systems.

Sentinel products protect heat source - heat exchangers from scale build-up, making the system more efficient.

Once a system has been cleaned with Sentinel, the radiators or underfloor systems will deliver more uniform heat throughout the property, so the heat source doesn't have to work as hard to keep the house warm.

Clean	Protect	Maintain
to prepare for greater performance	to prolong system life and efficiency	to ensure durable protection
"Cleaning a dirty central heating system could save you at least $240 every year"	**"The absence of correct water treatment can reduce system effectiveness by around 15%"**	**"1 in 5 households in NZ have suffered a heating breakdown"**
The facts • Building Regulations now state that when installing a heat source onto a new or existing central heating system, the system should be thoroughly cleaned. • Cleaning a new system will remove any installation debris and flux residues which if left inside the system will cause corrosion. • Restoring an old system will remove sludge build-up, improving the efficiency of the system and help save on fuel costs.	The facts • After cleaning, it is important to protect your system from returning scale, corrosion and sludge build-up. • Both chemical inhibitors and physical system filters are proven to provide ongoing protection for the life of the system.	The facts • It is important to ensure that once a system is cleaned and protected it is maintained on an annual basis. • Many factors can reduce the level of protection of a central heating system, for instance system water losses by the removal of a radiator whilst decorating. We therefore advise checking the quality of water and level of protection annually.

SENTINEL OFFERS COMMERCIAL GRADE TREATMENT PRODUCTS

Proud members of

New Zealand Institute of Central Heating

Powered by

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