Series R™ Helical-Rotary Liquid Chiller

Model RTHC, 550–1600 kW

Reliable Sources of Chilled Water

Trane introduces the Series R™ chiller for the medium-tonnage, water-cooled market

The model RTHC chiller offers high reliability, improved energy efficiency, and ease of installation due to its advanced design, its low- speed, direct-drive compressor, and its proven Series R performance.

Reliability

Trane is a leading manufacturer of helical-rotary compressors. Continuous, extensive research and development, testing, and advanced manufacturing processes provide the most reliable compressor in the air-conditioning and refrigeration industry.

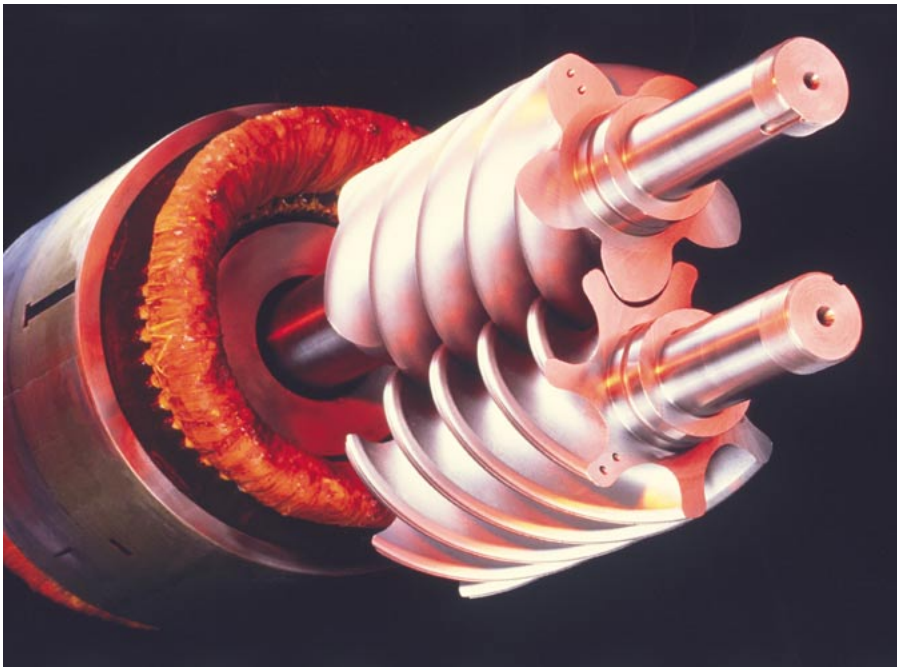
Tens of thousands of commercial and industrial installations worldwide have proven that the Trane helical-rotary compressor has an unequaled reliability rate of greater than 99.5 percent in the first year of operation. How does Trane achieve these world-class standards?

Reliability is proven with

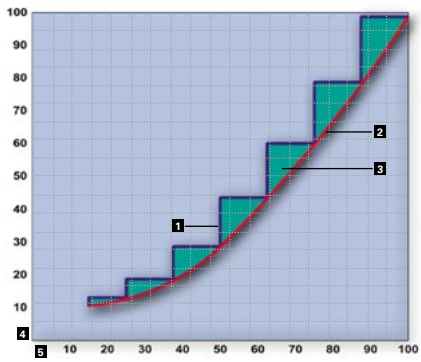
- only three moving parts
- no gearboxes, shaft seals, or shaft alignment
- suction-gas-cooled motor

The combination of these elements ensures less chance for failure, lower operating costs, and a longer motor life.

Efficiency



Unloading Curves for Typical Part Load Performance



KEY

1 = Step Unloading

2 = Infinite Unloading

3 = Needlessly Expended Energy

4 = % Full Load kW Input

5 = % Full Load Capacity

High efficiency is achieved thanks to

- its direct-drive, low-speed, semi-hermetic compressor
- precise rotor-tip clearance

The use of advanced heat-transfer technology has allowed the Series R™ chiller to achieve record efficiency levels. Trane offers superior full-load performance and optimized part-load performance. The efficiency level of the model RTHC is comparable to that of many competitive gear-driven centrifugal chillers.

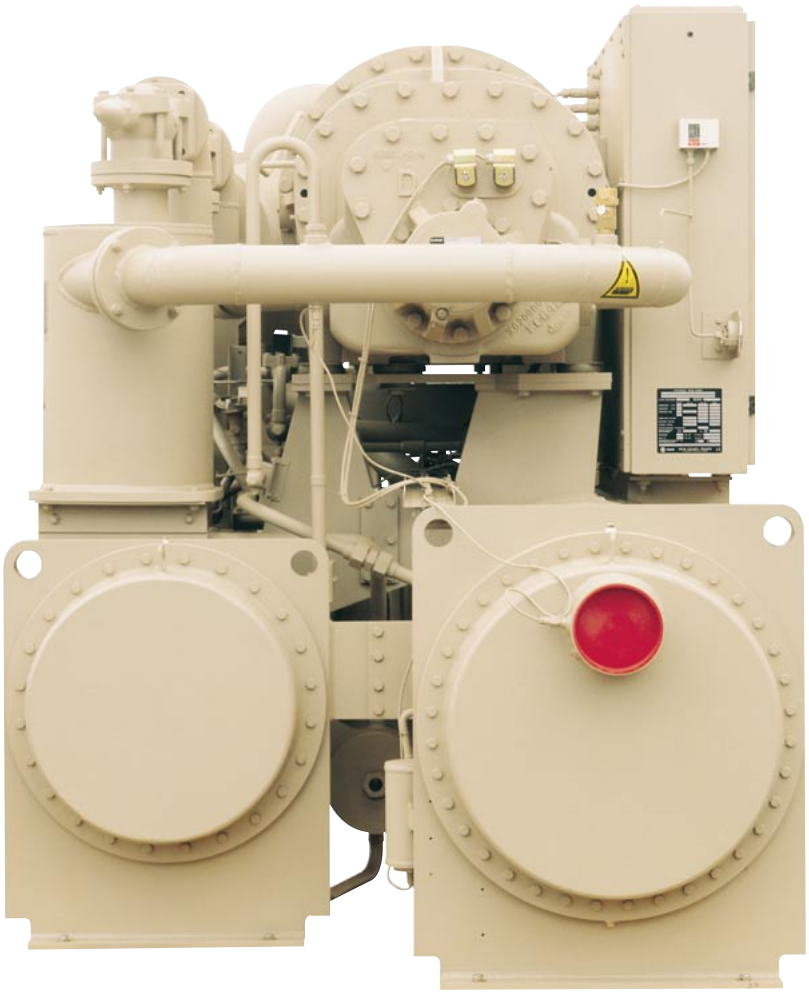
Energy consumption can be further reduced by using a compressor that has infinite unloading and can match the cooling load. Not all helical-rotary compressors are the same. Some competitive screw compressors actually have step unloading, similar to reciprocating compressors of the past. Under part-load conditions, these chillers would typically be either over-cooling or under-cooling the chilled water. This results in increased chiller operating costs and unwanted variations in chilled-water supply temperatures. The Series R™ compressor unloads the chiller smoothly and allows it to more closely match a building's cooling load or an industrial process load. This increases control over the chilled water temperature, at the same time reducing annual operating costs.

Ease of installation

Small footprint = ideal for replacement jobs

The compact Series R™ chiller is an excellent choice for any retrofit or replacement job. It is smaller than most of the chillers it might replace, and easier to fit into existing buildings. All units fit through a standard double-width door. For extremely tight installations, the standard bolt-together design allows for easy unit disassembly.

Units come from the factory fully charged with refrigerant and oil. Extensive factory testing helps ensure trouble-free startup, resulting in lower installation costs and faster startup.



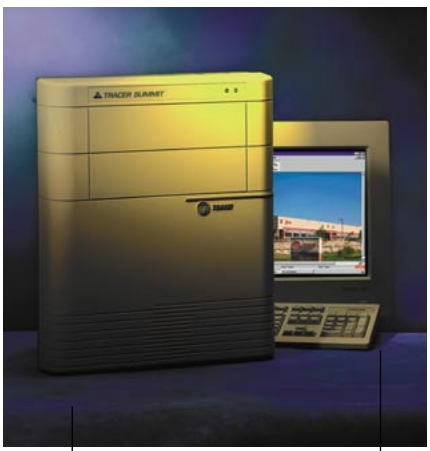
Controls

Adaptive Control™ ensures that the chiller stays on line

Trane's Adaptive Control™ microprocessor is the most advanced chiller controller available in the HVAC industry. It offers internal control logic that monitors the chiller's operation and keeps it running during extreme operating conditions. While controls on other chillers will shut down machine operation, the Trane Series R™ chiller will modulate system components to keep the chiller on line, producing chilled water.

The unit control panel, UCP2™, has the ability to display information in many different languages to serve the global market, and includes over 120 diagnostics and operating points. This makes it one of the most versatile and user-friendly control panels on the market. Combined with the Trane Tracer Summit™ building management system, the model RTHC becomes part of the Trane Integrated Comfort™ System (ICS).

Integrated comfort



Components designed to work together

The water-cooled Series R™ chiller, with its factory-installed unit control panel (UPC2), combines with a Trane Tracer Summit™ building management system to become part of a Trane Integrated Comfort™ system (ICS). An ICS is a building comfort system comprised of Trane HVAC equipment, integral unit controllers, and building management, designed and commissioned with Trane application expertise. It provides comfort, efficiency, and reliability, as well as single-source warranty and service.

With Trane ICS, every component is engineered to work as a complete system. In addition, installation costs are often lower, because the HVAC units have turn-key factory controls and all components of the system are designed to fit together. Efficiencies are higher because the components are optimized to work together. And finally, owning the system is easier because it's manufactured, installed, and serviced by a single source.

In the central plant, Trane Integrated Comfort Systems offers chiller plant optimization, including pumps and towers, seamless operation, comprehensive monitoring and reporting, in-depth diagnostics, simplified maintenance, and single-source support.

Applications

It's the smart way to operate

The highly reliable semi-hermetic design, combined with an Adaptive Control™ microprocessor, allows the Series R™ chiller to be used in a wide variety of applications.

- Comfort Cooling
- Industrial Process Cooling
- Low-Temperature Process Cooling

This flexibility in the application of the Series R™ chiller makes it ideal for office buildings, hospitals, schools, retail buildings, and industrial applications.

In the central plant, Trane Integrated Comfort Systems offers chiller plant optimization, including pumps and towers, seamless operation, comprehensive monitoring and reporting, in-depth diagnostics, simplified maintenance, and single-source support.

Refrigerant

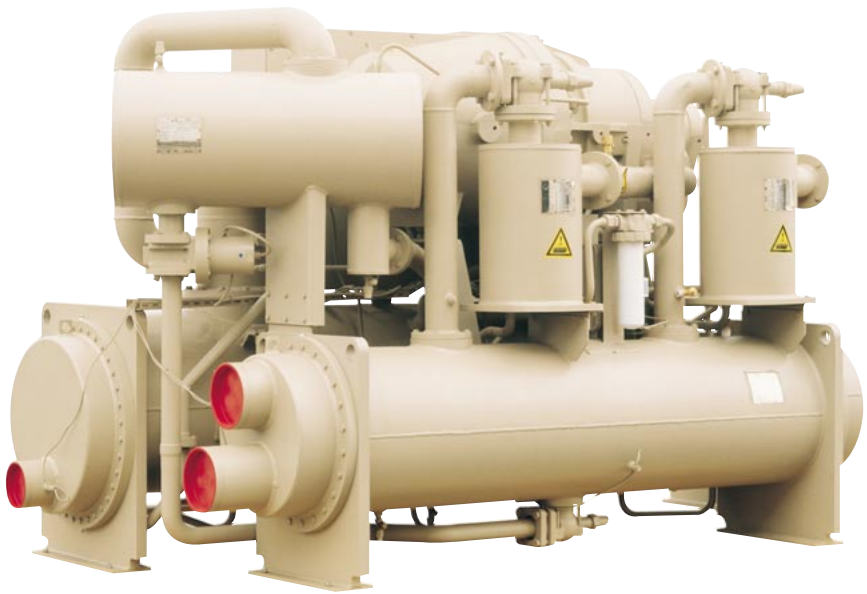
RTHC + R134a = Low GWP (Greenhouse Warming Potential)

The refrigerant 134a used in the model RTHC chiller is chlorine-free, with an Ozone Depletion Potential (ODP) equal to zero. But the ODP is not the only thing to consider. The greenhouse effect of the unit is also an important factor. The model RTHC is the unit designed for minimizing direct and indirect greenhouse effects. The indirect effect is reduced by increasing the unit efficiency. A better efficiency means fewer kilowatts consumed.

Data charts

RTHC	B1	B2	C1	C2
Cooling Capacity (kW)	550	600	750	900
COP (kW/kW)	5.7 – 6.1	5.7 – 6.2	5.7 – 6.2	5.7 – 6.4
Length (mm)	3300	3300	3300	3300
Width (mm)	1400	1400	1575	1575
Height (mm)	1900	1900	1980	1980
Operating Weight (kg)	5700	5700	6600	6700

RTHC	D1	D2	D3	E3
Cooling Capacity (kW)	1100	1200	1300	1500
COP (kW/kW)	5.4 – 7.0	5.6 – 7.0	5.4 – 7.0	5.6 – 7.0
Length (mm)	3500	3500	3500	3400
Width (mm)	1575	1575	1575	2000
Height (mm)	2000	2000	2000	2145
Operating Weight (kg)	7300	7400	7400	8600



Quality Management System Approval

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