

VARIABLE ENERGY EFFICIENCY

- CHILLQUICK THERMO™ HEAT PUMP SOLUTIONS

Chillquick Thermo™ is a revolutionary range of heat pumps that provide for more flexible and energy-efficient solutions. These double-acting units offer both heating and cooling. One heat pump range is enough to cover the needs of all buildings, up to 2000 kW capacity. Chillquick Thermo™ heat pumps can be connected to the Service Next™ Overall Concept.



CHILLQUICK THERMO™ HEAT PUMPS

- A FLEXIBLE AND ENERGY-EFFICIENT SOLUTION

The Chillquick Thermo™ heat pump range is a variable solution for water-to-water heating and cooling sites. The modular structure means that the heat pumps can be manufactured for the particular requirements of every site and customer.

Chiller Oy, the manufacturer of the Chillquick Thermo™ heat pumps, offers uncompromising quality and expertise, and a comprehensive selection of heat pumps. The company is one of the leading European trend-setters in energy solutions.

Design and service are always based on the customers' specific requirements for which the company finds the optimal solutions in collaboration with the customer. Service Next™ supervision system, which is used via the Internet and enables monitoring and quick response for the customer, provides users with ease of use and cost savings.

Chiller Oy's special expertise is based on its knowledge of cold and warm, as well as warm and moist climate zones. This gives the company opportunities for extensive exports and flexible solutions.

Chiller Oy was established in 1990 and started its own production in 1994. The company is fully owned by Finnish owners. Production facility is located in Tuusula, near Helsinki Airport. The premises include about 5 000 m² of production and office space, and the company has more than 100 direct employees. The company's 2012 net sales totalled approximately 27 million €.



CHILLQUICK THERMO™ HEAT PUMP RANGE



CHILLQUICK THERMO™ H

- ▶ Industry and renovating sites; heat recovery, heating and cooling.
- ▶ Heat production +60...+80 °C.

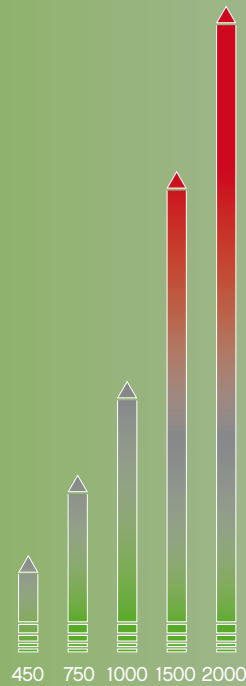
CHILLQUICK THERMO™ M

- ▶ Medium-sized buildings; district heating.
- ▶ Heat production +40...+65 °C.

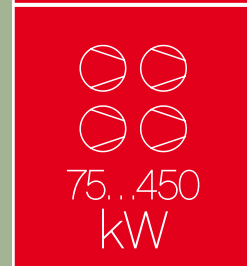
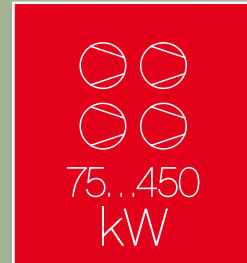
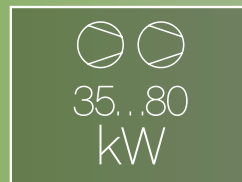
CHILLQUICK THERMO™ L

- ▶ Small and medium-sized buildings; district heating.
- ▶ Heat production +30...+55 °C.





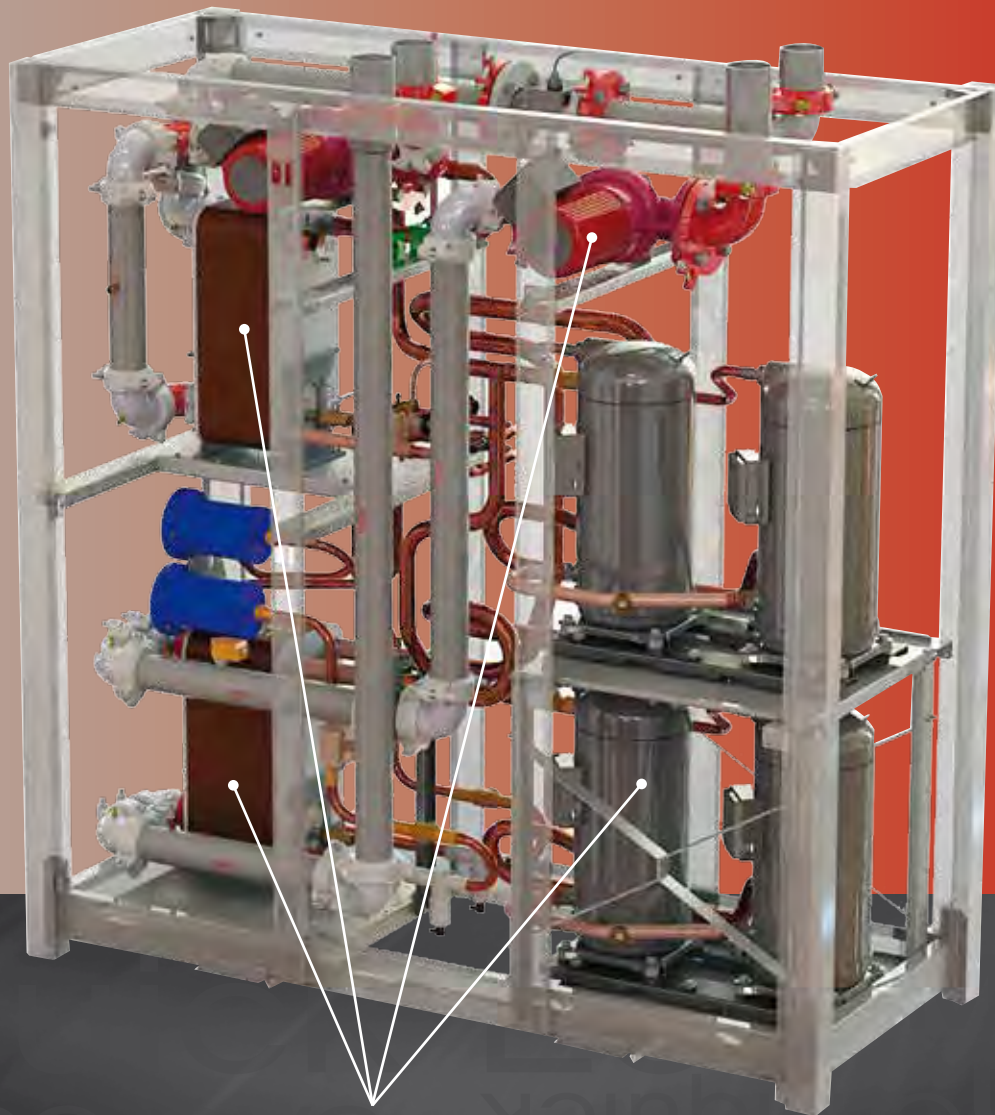
MULTIPLES
UP TO 450...2000 kW



CHILLQUICK THERMO™ HEAT PUMPS

HIGH
MEDIUM
LOW

Chillquick Thermo™ heat pumps are divided into three models according to the production of water temperature: **LOW (L)**, **MEDIUM (M)** and **HIGH (H)**. In ground heat pump systems, the temperature of outgoing water in a typical L model is limited to 55 °C. The M model, which is designed for district heating applications, can have max water temperature of 65 °C. In the H model, the temperature of outgoing water can be as high as 80 °C. The M and H models are optimal solutions for demanding sites in district heating and process industry. All units use common modules that provide customers with reasonable overall solutions.



UNIT SELECTION CAN BE MADE WITH THE MOST ADVANCED SELECTION PROGRAMME IN THE MARKETPLACE.

► READ MORE: www.chiller.fi/programs

CHILLQUICK THERMO™ L, M AND H HEAT PUMP RANGES

ServiceNext™
Overall Concept

- The heat pumps have a capacity range of 15...450 kW.
- Automation enables parallel use of several units, capacity of over 2000 kW.
- Full-scale tested units, with electrical, adjustment and safety devices.
- The 15...40 kW models have one compressor.
- The 50...450 kW models are dual-circuit models with two or four compressors.
- The modular structure makes it possible to place a boiler of, for example, 800 litres in the same unit; larger boilers are available as separate deliveries.
- Possibility to use different pump and control valve solutions.
- CHT control automation (adjustment of the heating or cooling circuit) either works as an independent system or can be connected to the building automation system.
- Additional services: **COPtronic™** coefficient of performance and **Kiotronic™** refrigerant leak detection monitoring systems.
- Desuperheating exchangers for production of tap water.
- Intelligent **Service Next™** overall concept provides the optimal coefficient of performance and optimization of energy efficiency at various plants.

Chillquick Thermo™

Variable & Efficient Heating & Cooling



CHILLQUICK THERMO™

HIGH

The Chillquick Thermo™ model H enables heat recovery from the ground or process and transfer it to a radiator network in old buildings or to district heating. The Chillquick Thermo™ model H is the optimal solution for increasing heat to up to 80 °C. The warm water produced can be utilized inside the building or it can be sold to others through district heating. This helps to reduce the payback cost of flat owners.

The Chillquick Thermo™ model H is perfectly suited for heating old buildings in sparsely populated areas. It uses geothermal wells as the source of heat. The process industry or data centres can provide waste heat that can be transferred to heating at a high temperature level.

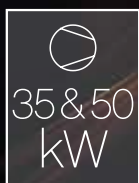
Connecting the heat pump to the unique Service Next™ overall system guarantees the customer trouble-free operation of the plant for years to come.



HEAT PUMP FOR DEMANDING AND RENOVATION SITES



A COMBINATION OF VARIOUS UNITS



35 & 50
kW



70 & 100
kW



70 & 100
kW



70 & 100
kW



70 & 100
kW

▶ CHT-HT-10 & -14

▶ CHT-HT-20 & -28

▶ CHT-HT-40 & -56...

▶ Dual-compressor module: 1240x750x1850 mm, and its multiples



CHILLQUICK THERMO™ MEDIUM

The Chillquick Thermo™ model M offers cold for air-conditioning and condensation into district heating networks at a temperature level of 65 °C. The value chain of the M model is based on cooling and thereby the recovery of heat. The unit provides cold water for air-conditioning. The water temperature can be separately adjusted for air handling and terminal units.

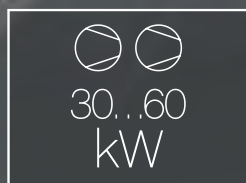
The Chillquick Thermo™ model M, which is based on cold water, is equipped with a tank made from stainless steel and an internal pump for air-conditioners. The unit can also be delivered with two pumps, one of which serves cooling of the supply air and the other, by using a 3-way valve and enthalpy adjustment, beams or fan coils in room areas. The last one runs dry-cooling at a higher water temperature. For instance water at 8/13 °C is produced for the air handling unit and water at 15/18 °C for the cassette fan coils in rooms.

The Chillquick Thermo™ model M can be integrated as part of the district heating network in locations that do not have district cooling. The warm water produced can be utilized inside the building or it can be sold to others through district heating. This revolutionary innovation enables heating and cooling in a truly competitive manner, because this solution eliminates the need for a dry-cooling device, pump and pipeline. The Service Next™ overall concept guarantees a care-free solution in terms of energy technology.

DUAL-FUNCTIONAL HEAT PUMPS OF DISTRICT HEATING NETWORKS



A COMBINATION OF VARIOUS UNITS



▶ CHT-3-1...12-1

▶ CHT-12-2...24-2

▶ CHT-28-4...48-4 & 56-4...120-4

▶ Dimensions of basic modules:
1240–1790x750x1850 mm (LxWxH)

▶ 2100x900x1950 mm



CHILLQUICK THERMO™ LOW

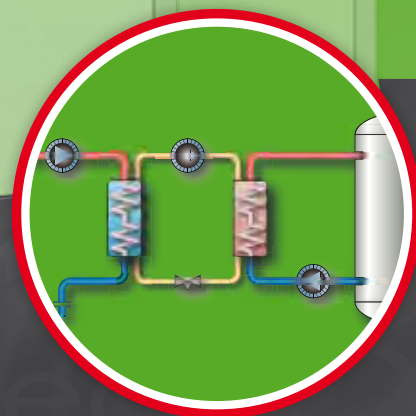
The Chillquick Thermo™ model L is typically used for heating terraced houses, apartment buildings and small industrial halls. It is suitable for sites where geothermal wells are the source of heat. The highest temperature of outgoing heating water in the LOW product range is 55 °C; desuperheating exchangers can be used to reach a level of 65 °C for heating of tap water.

The coefficient of performance at your plant is improved significantly in cases where a lower supply-water temperature is used, such as for underfloor heating at 35 °C. Also, accessories can be installed in the heat pump to cool the building in the summertime. Cooling is produced, with a high coefficient of performance, from ground wells without any need to run compressors. Warm water boilers with the necessary coils are included in each unit delivery.

For room air-conditioning we use BOX Vari™ cassette fan coils and GRAND Vari™ fan coils, manufactured by the ceiling product division of Chiller Oy. Connecting your plant to the Service Next™ overall concept guarantees a care-free solution in terms of energy technology.



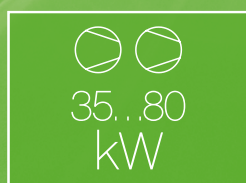
GEOTHERMAL HEAT PUMPS FOR MEDIUM-SIZED BUILDINGS



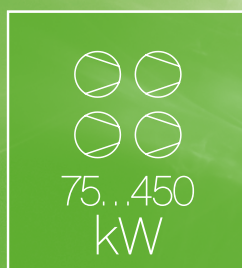
A COMBINATION OF VARIOUS UNITS



▶ CHT-3-1...12-1



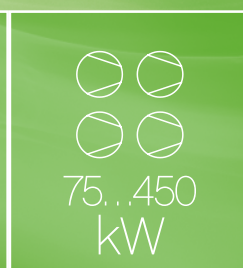
▶ CHT-12-2...24-2



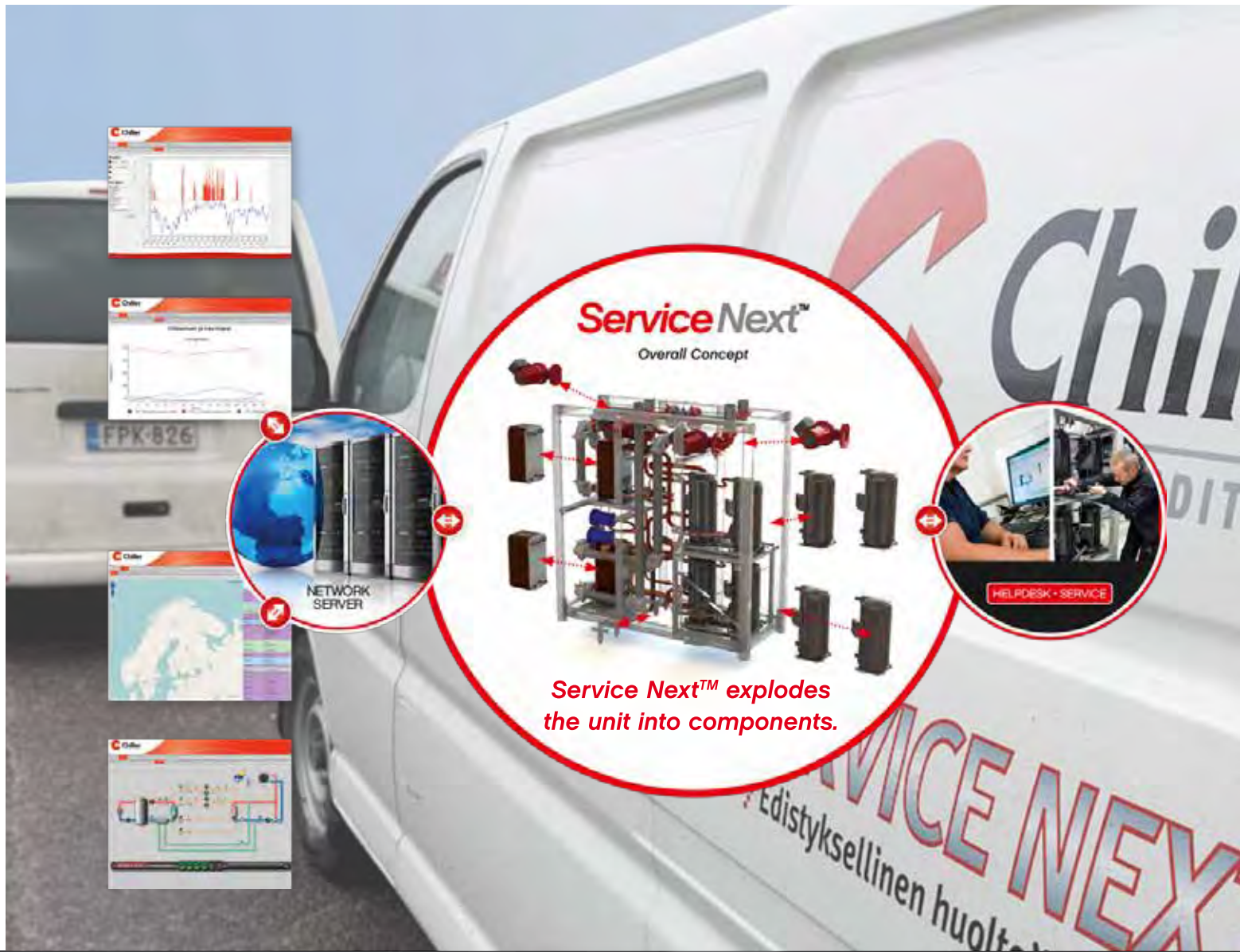
▶ CHT-28-4...48-4 & 56-4...120-4



▶ 1790x750x1850 mm – 2100x900x1950 mm



▶ Dimensions of basic modules:
1240–1790x750x1850 (LxWxH)



CHILLQUICK THERMO™ -OPTIONS

SERVICE NEXT™ OVERALL-CONCEPT

ServiceNext™

Overall Concept

The Service Next™ overall concept is a service for real-time supervision and control. It can be used to prevent unit malfunction and optimize the unit's functions to the best possible range of coefficient of performance. Service Next™ helps you to forecast e.g. the need for servicing.





BOX Vari



GRAND Vari

- cassettes and fancoils
for the indoor
climate solutions



ChilquickThermo™

- heat pumps
for the needs of processes and buildings



GROUP Controller™

- for controlling
groups of units



- Three-in- one
room controllers

VariPRO™



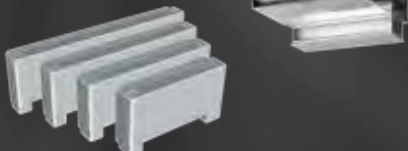
Chilquick™ Chilquick Eco™ Chilquick Light™

- water chillers and cold water stations
for the needs of processes and buildings



**COPTronic™
KICTronic™**

- for monitoring
the coefficient of
performance and
leak of refrigerant



Studio Vari

- fancoils
for the indoor climate solutions



GIANT Vari



SMART Vari

- precision air-conditioners
for efficient cooling of computer and data rooms

FOR COMPREHENSIVE LIFE CYCLE MANAGEMENT AND OPTIMATION.

► READ MORE: www.chiller.fi/servicnext

Chiller Oy offers the Service Next™ overall concept is free of charge for two years. The end user only has to provide an Internet connection to the unit without any extra equipment or software. The operative technical support - **Help Desk** - belongs to the service, there is no need for guesswork at site.

Service Next™ provides reports on, e.g. energy consumption, alarms, refrigerant leaks and utilization rates.

All events, regulations and disorders will be stored in the systems database. Knowledge about those factors allows the lifecycle control and optimization. Savings can be reached only by measuring and analyzing.

L
55

M
65

H
80

IMPROVED SAFETY, BETTER COEFFICIENT OF PERFORMANCE

– MODELS L - M - H

Chillquick Thermo™ distinguishes itself from the competition thanks to its versatility. This solution is based on Chiller Oy's more than 20 years of experience and innovative expertise as an equipment manufacturer. When it comes to design, we always take both heating and cooling into consideration – both are energies which can be utilized and which support each other.

KIOTronic™



REFRIGERANT LEAK DETECTION SYSTEM – RESPONSIBLE ENVIRONMENTAL EFFICIENCY

Kiotronic™ measures the concentration of refrigerant in a Chilltronic™ unit and sounds an alarm in case of a leak. The Kiotronic™ system, which complies with the EN 378 standard, cuts the number of leak inspections by 50 % if a unit equipped with the Service Next™ system has more than 30 kg of refrigerant. In addition to being environmentally friendly, the Kiotronic™ system helps users reduce direct costs.

Although current HFC refrigerants are harmless to the ozone layer, they are greenhouse gases nevertheless. Even a small refrigerant deficiency reduces the unit's coefficient of performance and increases indirect emissions. Monitoring for leaks of greenhouse gases is part of occupational safety and quality assurance.



COPtronic™

FOR MONITORING OF ENERGY EFFICIENCY AND COEFFICIENT OF PERFORMANCE

COPtronic™ Basic is a system, embedded in the Chilltronic™ adjustment system, for monitoring the coefficient of performance that measures and monitors the efficiency of the Carnot circulation. It is not always necessary to specify an absolute coefficient of performance ; instead, the significant value is the precision of the figure. For example, a small shortage of refrigerant in the cooling circuit may cause a considerable increase in energy consumption. Often such shortages are not detected until annual maintenance visits, so the equipment unnecessarily consumes extra energy for a long time. The COPtronic™ Basic is monitored and managed from the Service Next™ supervision control system.

COPtronic™ Advanced is designed for precise measurement and control of energy and coefficient of performance. It measures energy used and produced, including any circulation pumps. There is also a Dual model that can be used to measure energy output from two liquid circuits, such as cooling and heating. The COPtronic™ Advanced measures, at maximum, the flow and temperatures of two water circuits (outgoing and returning) and the input power of the three-phase supply; it uses the values to calculate output used and produced, as well as the coefficient of performance (COP). It also calculates all energies. The system can produce effective values as a current output (0–20 mA) or through a bus interface.

FREE COOLING

Free cooling has been installed in thousands of units delivered by Chiller. It is an essential part of the plant when heat pumps use wells as a source of heat.

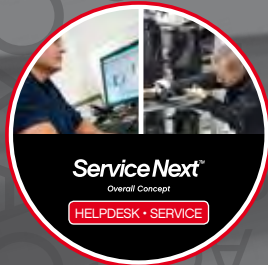
The coefficient of performance in heating is approximately 3–5, but the coefficient of cooling is 18–20. In terms of price, cooling is very affordable and energy-efficient. Connecting the unit to Chiller's proprietary REC (recharge) function ensures that the wells are in good condition during the next heating season.

SUPERHEAT

HIGH-TEMPERATURE SERVICE WATER, AUTOMATICALLY

In superheating operation, the temperature of hot gas exiting from a compressor can be utilized at a level higher than the temperature required by heating. Usually, an L model heat pump has a water temperature of maximum 55 °C, but the energy from superheating can be obtained even at temperatures in excess of 65 °C.

Superheating accounts for almost 30 % of the heat production, so it has a significant energy value. Superheating is recovered with a heat exchanger and pumped into a warm water boiler with a pump. The customer can use the water in the warm water boiler as ordinary tap water.



OUR SALES AND MAINTENANCE NETWORK AT YOUR SERVICE

Chiller Oy is one of Europe's leading manufacturers of energy-efficient and optimized air-conditioning solutions. Design and service are always based on the customers' specific requirements. For more information, please contact our head office or foreign business partners.

► *Read more: www.chiller.fi*

Head office

Chiller Oy
Louhostie 2
FI-04300 Tuusula
FINLAND

Tel. + 358 9 2747 670
info@chiller.fi
www.chiller.fi

Sweden

Chiller Sverige AB
Stockholm
Tel. +46 8 54 50 2080
info@chillersverige.se
www.chillersverige.se

Forsberg & Tibell Kyl AB
Jönköping
Tel. +46 36 132 650
info@kyla.nu
www.kyla.nu

Norway

Chiller Norge AS
Oslo
Tel. +47 95 86 89 18
rune.nordgard@chillernorge.no
www.chillernorge.no

Estonia

Climaref OÜ
Tartu
kaarel@climaref.ee
www.climaref.ee

Lithuania

UAB Leslat
Kaunas
leslat@takas.lt
www.leslat.lt

Poland

StepSystems Sp. z o.o.
Radom
biuro@stepsystems.pl
www.stepsystems.pl



ServiceNext™
Overall Concept

Chillquick™
Chillquick Eco
Chillquick Light

Chillquick Thermo

GIANT Var

SMART Var

BOX Var

GRAND Var

Var TEC

Studio Var

FEEDBACK Var

EcoTronic

COPTronic
KIOTronic

GROUP Controller™