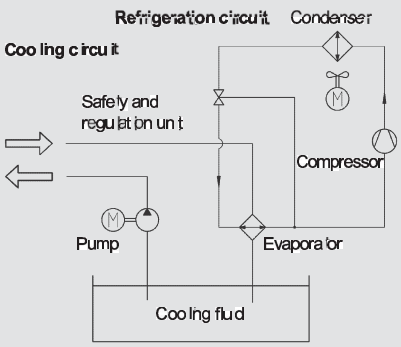
Chiller System
RFCS

Symbol



General

The RFCS cooling unit (chiller) is used to cool various liquids such as water, water glycol or oil down to the ambient temperature or below. The chiller system consists of refrigerator, pump, tank and controller and is able to set the temperature of the cooling media to a previously configured target value independently.

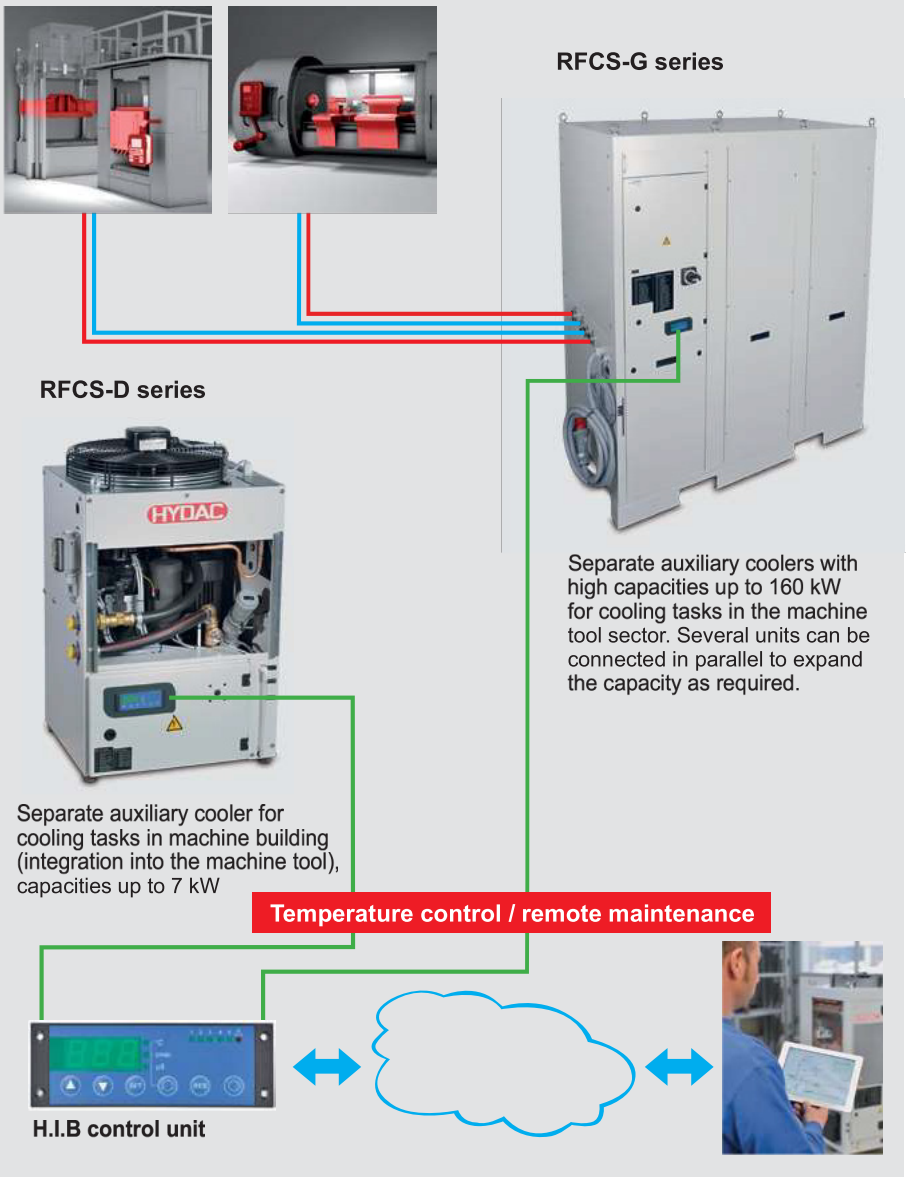
Product Features

- Fluid cooling system as separate auxiliary cooler or for integration into a machine
- Can be used for any cooling tasks
- Stand-alone control of the system by means of innovative controller design
- Condenser available as water-cooled or air-cooled variant
- Multiple cooling circuits
- Precise temperature control accuracies from ±0.1 K
- Optional outdoor installation
- Think green – act green: energy-efficient mixer principle available as an option

Application Field

- Machine tools
- Presses
- Milling machines
- Welding systems
- Laser cooling

Whether integrated into a machine or used as a separate auxiliary cooler or insertion cooler, the RFCS range of chillers will tackle any cooling task and guarantees quality for your products with utmost precision.



Operating Data

Series	Cooling power [1] [kW]	Condenser		Refrigerant			Pump capacity / flow rate	Electrical supply [1]	Dimensions LxDxH [mm]	Weight [kg]
		air-cooled	water-cooled	DI [2]	IW [3]	Direct [4] (without tank)				
G0	1.0	●	●	●	●	●	10 l/min @ 1.5 bar	230V - 50/60Hz	443 x 524 x 443	43
	1.5	●	●	●	●	●	10 l/min @ 1.5 bar	230V - 50/60Hz	443 x 524 x 443	45
	2.3	●	●	●	●	●	10 l/min @ 1.5 bar	230V - 50/60Hz	443 x 524 x 443	48
D2	3.3	●	●	●	●	●	15 l/min @ 2 bar	230V - 50/60Hz	480 x 420 x 800	80
	3.3	●	●	●	●	●	15 l/min @ 2 bar	400/440V - 50/60Hz	480 x 420 x 800	80
D3	4.5	●	●	●	●	●	15 l/min @ 2 bar	400/440V - 50/60Hz	595 x 555 x 1,131	130
	5.6	●	●	●	●	●	15 l/min @ 2 bar	400/440V - 50/60Hz	595 x 555 x 1,131	130
D4	7.5	●	●	●	●	●	40 l/min @ 3 bar	400/440V - 50/60Hz	601 x 601 x 1,361	160
G4	7.5	●	●	●	●	●	40 l/min @ 3 bar	400/440V - 50/60Hz	601 x 601 x 1,527	200
	9.5	●	●	●	●	●	40 l/min @ 3 bar	400/440V - 50/60Hz	601 x 601 x 1,527	250
G5	12	●	●	●	●	●	40 l/min @ 3 bar	400/440V - 50/60Hz	601 x 601 x 2,131	300
	15	●	●	●	●	●	40 l/min @ 3 bar	400/440V - 50/60Hz	601 x 601 x 2,131	300
G6	20	●	●	●	●	●	40 l/min @ 3 bar	400/440V - 50/60Hz	1,230 x 610 x 2,131	350
	26	●	●	●	●	●	40 l/min @ 3 bar	400/440V - 50/60Hz	1,230 x 610 x 2,131	380
	32	●	●	●	●	●	40 l/min @ 3 bar	400/440V - 50/60Hz	1,230 x 610 x 2,131	400
G7	40	●	●	●	●	●	90 l/min @ 3 bar	400/440V - 50/60Hz	1,860 x 1,000 x 2,134	1,000
	50	●	●	●	●	●	90 l/min @ 3 bar	400/440V - 50/60Hz	1,860 x 1,000 x 2,134	1,000
	60	●	●	●	●	●	90 l/min @ 3 bar	400/440V - 50/60Hz	1,860 x 1,000 x 2,134	1,000
	70	6)	●	●	●	●	150 l/min @ 3 bar	400/440V - 50/60Hz	1,860 x 1,000 x 2,021	750
	90	6)	●	●	●	●	150 l/min @ 3 bar	400/440V - 50/60Hz	1,860 x 1,000 x 2,021	770
	100	6)	●	●	●	●	150 l/min @ 3 bar	400/440V - 50/60Hz	1,860 x 1,000 x 2,021	780
	135	6)	●	●	●	●	250 l/min @ 3 bar	400/440V - 50/60Hz	1,860 x 1,000 x 2,021	800
	155	6)	●	●	●	●	250 l/min @ 3 bar	400/440V - 50/60Hz	1,860 x 1,000 x 2,021	900

1) Cooling capacity based on +35 °C ambient air / water to condenser and +20 °C process fluid supply temperature
2) DI = deionized water
3) IW = industrial water
4) Direct = Direct vaporization without refrigerant
5) Standard, additional voltages on request
6) Available as air-cooled variant with external condenser or heat exchanger

Accessories

- Higher capacity pumps available
- Several parallel circuits
- Ambient temperature-dependent control using separate temperature sensor
- Serial interface for system monitoring
- Filtration units for the refrigerant circuit
- Flow indicator and flow monitoring
- Extremely accurate control up to ±0.1 K, standard ±1.5 K
- Speed-controlled fans

Design

In the standard versions, the RFCS cooling units are designed complete with compressor, air cooled condenser, submersible pump and electronic control. Optionally available with energy-efficient mixer control where a small hysteresis is required.

G0

D2

D3

D4

G4

G5

G6

G7

RFCS water-chiller with heat exchanger and HY-ECOBOX

RFCS water chiller:
The RFCS is used to prepare cold water. Regardless of the particular ambient temperature, cold water can be provided in a wide range of capacity classes and fed to the customer application.

The unit is a water-cooled water chiller. The plate heat exchanger condenser transfers its process heat to a separate cooling-water circuit.

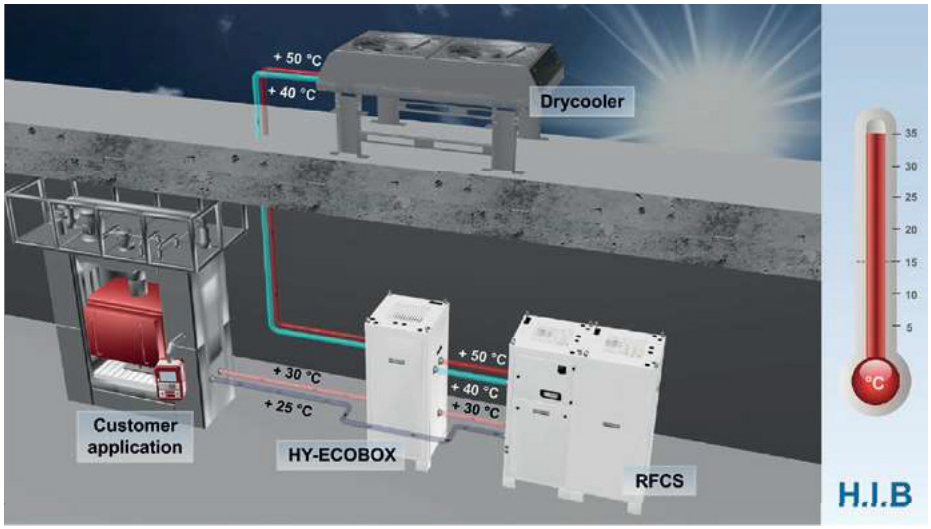
Heat exchanger:
RFCS cooling units with water-cooled condenser require a cooled water supply for heat removal. A heat exchanger is used when it is either not practical or not desirable to utilize mains water.

HY-ECOBOX:
The HY-ECOBOX is an optional module which contributes to improved energy saving: when the ambient temperature drops below a certain level, the cooling machine's active cooling is switched off. The system then operates in passive cooling mode, using the heat exchanger. This energy manager can therefore only be used in combination with a heat exchanger.

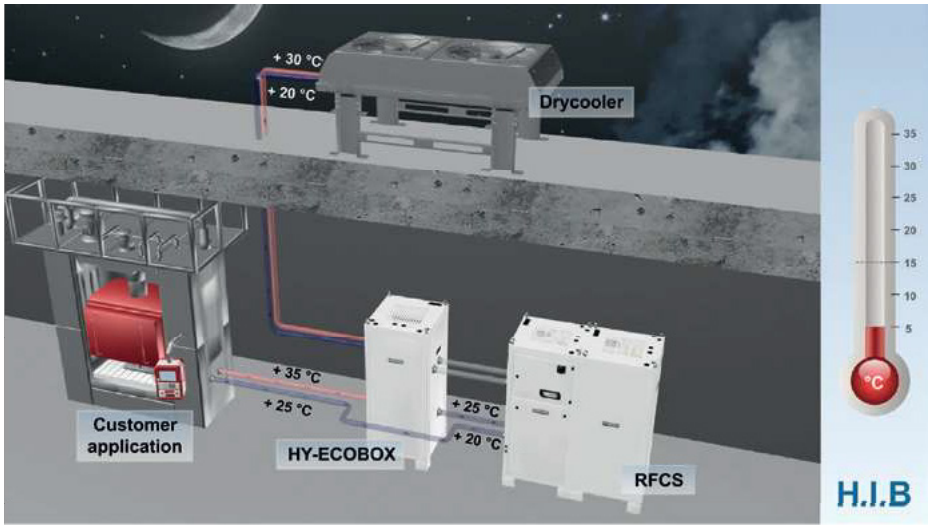
Advantages:

- Saves resources, as no water is used
- High energy-saving potential thanks to the HY-ECOBOX*
- The RFCS transfers no heat into the building

* ECOBOX: optional accessory for passive free cooling operation



Functioning at high external temperatures



Functioning at low external temperatures

From the prototype to series production

- **Planning and advice** from our specialists on site.
  You provide the task, we supply the solution.
- Our own **development centre** produces market-driven, energy-efficient and cutting-edge solutions,
  to stay one step ahead of the “state of the art”.
- The coolers are **produced** in the Bavarian town of Friedberg
  and rightly deserve the “Made in Germany” seal of quality!
- In order to provide **quality** that is consistently very good, all equipment must undergo a function and performance test.
- For **service** you can call on an international network of service engineers.
  Consultation and service – with global reach.