

LinaCool

Chiller for Hotfill lines



The Clean Design chiller

What do people playing sports and hot-filled beverages have in common? Both appreciate a welcome cool-down. The latter, at least, can rely on the KRONES LinaCool to provide just that: With its sophisticated spraying nozzle system, it cools all products gently down to ambient temperature, in order to avoid distorting their taste or colour.

At a glance

- Spraying nozzle system for quick and defined bottle treatment
- For cans, glass bottles and PET containers
- Stainless steel pumps and conveyors and housing, and the conveyors either of plastic (Marathon Belt) or stainless steel (Ironman Belt), depending on the container type.
- Low infeed height of 1,200 millimetres: easy connection to the line





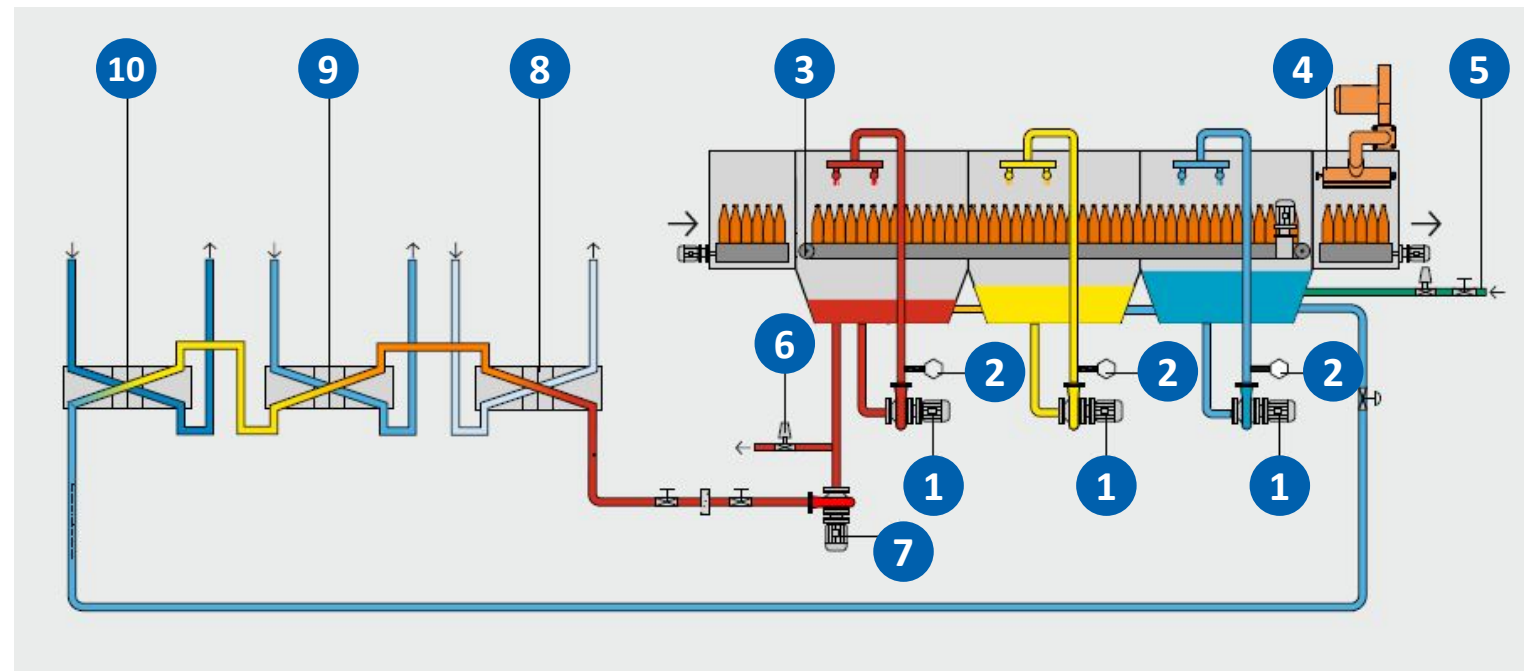
Facts and figures

Applications

Cooling of all products in glass bottles, PET containers and cans

Output

10,000 to 90,000 containers per hour



Layout of the LinaCool

1. Zone pump
2. Temperature sensor
3. KRONES conveyor
 - Marathon Belt
 - Ironman Belt
4. Optional: Blower
5. Fresh water pipe
6. Automatic draining
7. Cooling water pump
8. Optional: Heat exchanger for pre-heating of juice (thermal heat recovery of at least 50 percent)
9. Optional: Heat exchanger for the cooling tower
10. Optional: Heat exchanger for refrigeration system



Technical details

Spraying nozzle system

- Snap-in spraying nozzles
- Quick access for maintenance jobs
- Cleaning of spraying nozzle without removal of spraying pipes

Marathon Belt

- Patented roller conveyor of stainless steel and plastic bodies
- Suitable for all container types
- Long service life and low-maintenance due to minimum friction
- Short transfer section for gentle product change-over
- Idle end with welded profiles, no turning shaft

Ironman Belt

- Stainless steel roller conveyor
- Special further development of the well-proven Marathon Belt
- Used in areas where the glass is more likely to break





Technical details

Machine design

- Multi-part, modular machine concepts with infeed and discharge heights of 1,200 millimetres each
- Frequency-controlled drives
- Detachable sieve system for pumps and spraying nozzles protection
- Infeed and discharge with stainless steel doors for optimal protection and good accessibility
- Level switch for automatic refilling of fresh water

Hygiene concept

- Clean Design with centralised draining and inclined drip pans
- Optional: Boiling function for optimum cleaning and thereby requires a minimum number of staff

Control

- Operation via touch-screen with display of the operating status
- Automatic filling
- Change-over to another product within minutes
- Type management
- Optional: control of the cooling capacity with CPC





Additional equipment

- System for recovery of the process heat
Cooling Performance Control (CPC)
- Dosing system for water treatment
- Measuring system for media consumptions
- Rotary sweeper for automatic feeding of containers in the transfer area
- Automatic interior cleaning system
- Heat retention in zones according to customers' specifications
- Cooling already at the infeed conveyor
- Dew point control
- Cooling system with chiller
- Cooling system with cooling tower



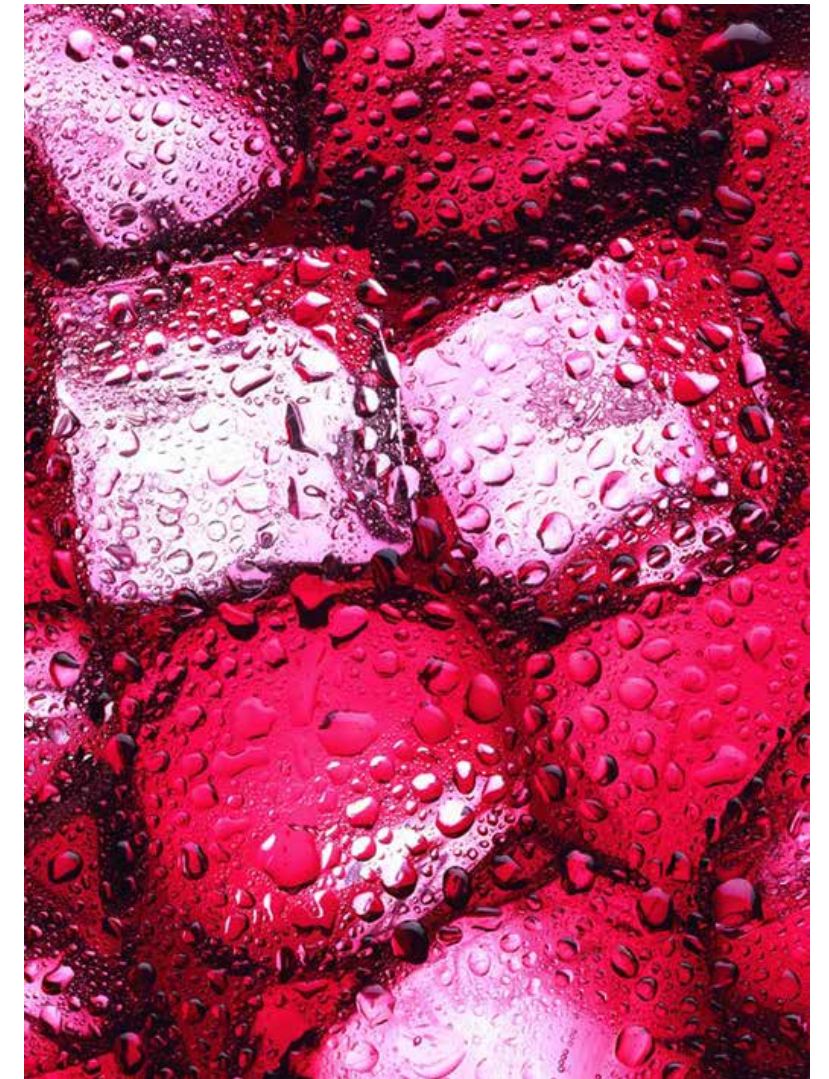
Heat recovery with Cooling Performance Control and EquiTherm Hotfill



Cooling Performance Control (CPC) is a control and regulating system to precisely adjust the cooling capacity of the chiller in KRONES Hotfill systems to the production conditions. Connecting to the flash pasteuriser allows the heat which escapes from the products to be reused there.

The concept

- Intelligent control of the LinaCool's cooling capacity
- Recirculation of the coolant between the LinaCool and the heat exchanger upstream from the flash pasteuriser
- Efficient use of the existing cooling energy
- Guidance of the heating energy for flash pasteurising and inclusion in the product pre-heating system
- Adjustment of the cooling capacity if production is stopped or if there are gaps in the product flow

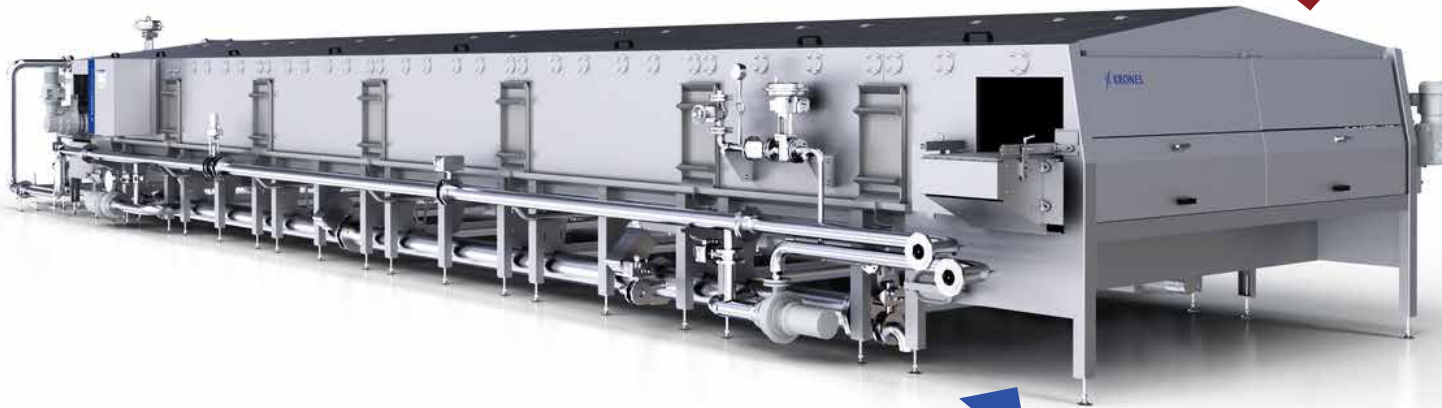


Heat recovery with EquiTherm Hotfill – system overview



Thermal energy saving:

- The thermal energy removed in the LinaCool is supplied to the flash pasteuriser for product reheating.



Cooling energy saving:

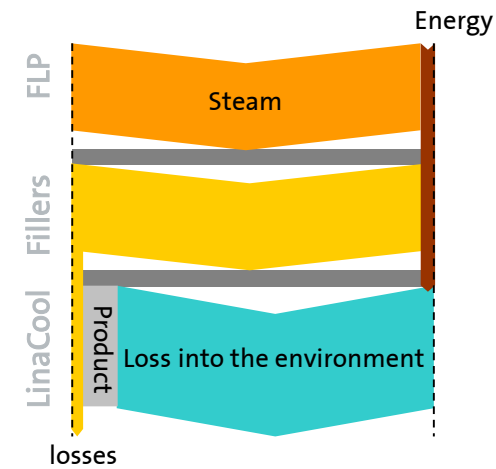
- The cooled medium is supplied to the cooling tower, cooled down and then used in the LinaCool.
- The CPC dynamically adjusts the cooling capacity to the current situation.

Heat recovery with EquiTherm Hotfill – method of operation

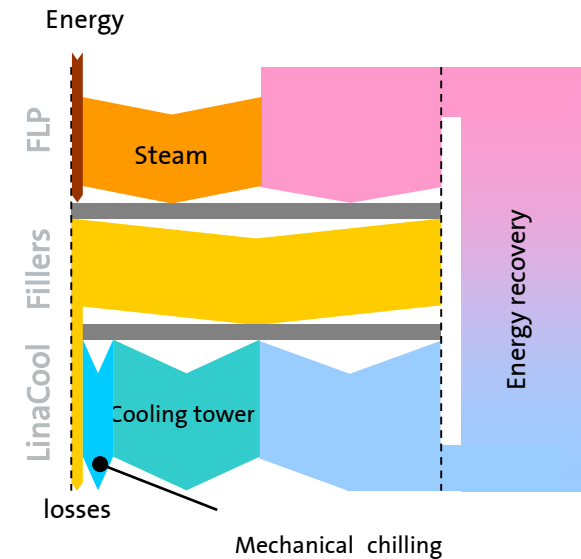
- Return of the removed thermal energy into the LinaCool for flash pasteurising (FLP)
- Pre-heating of the product through one of the heat exchangers upstream from the flash pasteuriser with heat loss from the LinaCool
- Less steam required in the flash pasteuriser as the product is already preheated
- Return of the chilled coolant from the flash pasteuriser to the LinaCool



Energy flow without recovery



Energy flow with recovery





Benefits to you

Optimal control of the cooling capacity

Temperatures and volume flow rate can be dynamically controlled in the LinaCool. The plus points are obvious: a very low consumption of energy with maximum process safety and highest product quality at the same time. When activated, the Cooling Performance Control reduces the required cooling energy by 10 percent at a consistent discharge temperature.

Conveyors with a long service life

In order to transport all containers safely, the LinaCool counts on plastic conveyors (Marathon Belt) or stainless steel conveyors (Ironman Belt). Thanks to their minimal friction, they are resistant to wear and provide a long service life of up to 20 years.

Highest hygiene standard

The Clean Design with inclined drip pans and centralised draining provides ideal hygienic conditions and guarantees that no water remains in the machine.

Modular machine concept and high-quality design

The LinaCool consists of multiple modules which are pre-assembled and tested prior to shipping. This significantly reduces the installation time on site by up to 50 percent.



Everything from a single source

Training sessions at the KRONES Academy – trained personnel increases your line efficiency

The versatile training offer ranges from operation, servicing and maintenance to management training. We will gladly also establish your individual training programme.

KIC KRONES cleaning agents make your machine shine

Only if the production environment is immaculate, can your product be brilliant. KIC KRONES provides you with the optimum cleaning agents and disinfectants for each individual production step.

Lubricants from KIC KRONES for every production step

Whether for gears, chains or central lubrication systems – our greases and oils are true all-round talents. They can reach every lubrication point, protect your line and ensure gentle treatment for your products thanks to their food-grade quality.

KRONES Lifecycle Service – partner for performance

Also after having purchased a new machine, KRONES will take care of your line; the LCS experts are always ready to consult you and translate your goals and wishes into optimal LCS solutions.

EVOGUARD – excellent valve technology all along the line

The valve series of EVOGUARD comprises a modular system with hygienic and aseptic components which contributes to every point of the production line with increased performance and which has the perfect solution for every process step.



Digitalisation



Process
technology



Bottling and
packaging equipment



Intralogistics



Lifecycle
Service

We do more.

 **KRONES**