

Cooking Sous-Vide Cooking Pasteurizing

Hoegger® In-Package CookChill System

Continuous process for exceptional quality and product safety





Applications

Provisur has continuously developed its Hoegger® CookChill model series to meet the requirements of the ever-evolving products and packaging developments. Each model is available for a wide range of applications and will be fine-tuned to meet your specifications. Our application engineers will be happy to assist you in selecting the model that suits your production needs best.

Product examples		Process	Package style	Packed
Sausages (1-3 layer)		Core Pasteurization	Vacuum packed	Cold or warm
Ham		Surface Pasteurization	Vacuum packed	Cold
Menu Components e.g. Potatoes, Rice, Goulash, Knödel etc.		Core Pasteurization Cooking Sous vide	Vacuum packed / Pouches / Trays	Cold or warm
Fresh Pasta, Dumplings		Core Pasteurization	Pouches	Cold or warm
Cheese		Core Pasteurization	Vacuum packed	Cold
Tofu, Tempeh		Core Pasteurization	Vacuum packed	Cold or warm
Egg Bites		Cooking – Sous vide	Vacuum packed	Cold
Roast Beef, Spare Ribs, Chicken etc.		Cooking – Sous vide	Vacuum packed	Cold
Meat Pastes (Liver Pâté)		Cooking	Cups	Cold or warm
Pet Food		Core Pasteurization Cooking Sous vide	Vacuum packed / Pouches / Trays	Cold or warm



Automated Hoegger® CookChill Systems

- ◆ Fully automated, continuous process
- ◆ No damaged packages
- ◆ Optimized production planning
- ◆ Intense but gentle water shower and steam atmosphere
- ◆ Multi-layer design
- ◆ Minimal labor costs
- ◆ Tailor made system

CookChill System

Fully Automated

Provisur offers a completely automated system solution, from the packaging machine to the pack-off. This process ensures a high efficiency and performance with low operating costs. The proven technology fulfills high yield, exceptional quality and product safety for a wide range of applications.

CookChill Unit

- Gentle and accurate Cooking, Sous-Vide and Pasteurizing Process.
- Fully automated and continuous inline system.
- Fully customized smallest footprint.

Feeding Conveyor system

- Connect with up to 5 packaging machines.
- Possibility to process different products at the same time.
- A sophisticated control system builds full formation for a whole tray load.
- The control system tracks the products from the Thermoformer until the end packaging.
- Manually loading can be added.

Hydrojet water distribution

- Perfect water distribution guarantees uniform thermal treatment.
- Process reliability with lowest cleaning effort.
- Highest machine availability.
- Reduction of operating costs (cleaning chemicals).

Discharge Conveyor

- After the thermal process, the product is unloaded from the CookChill unit onto a conveying belt.
- A slower, continuous flow ensures an optimal drying result.

End-Packaging

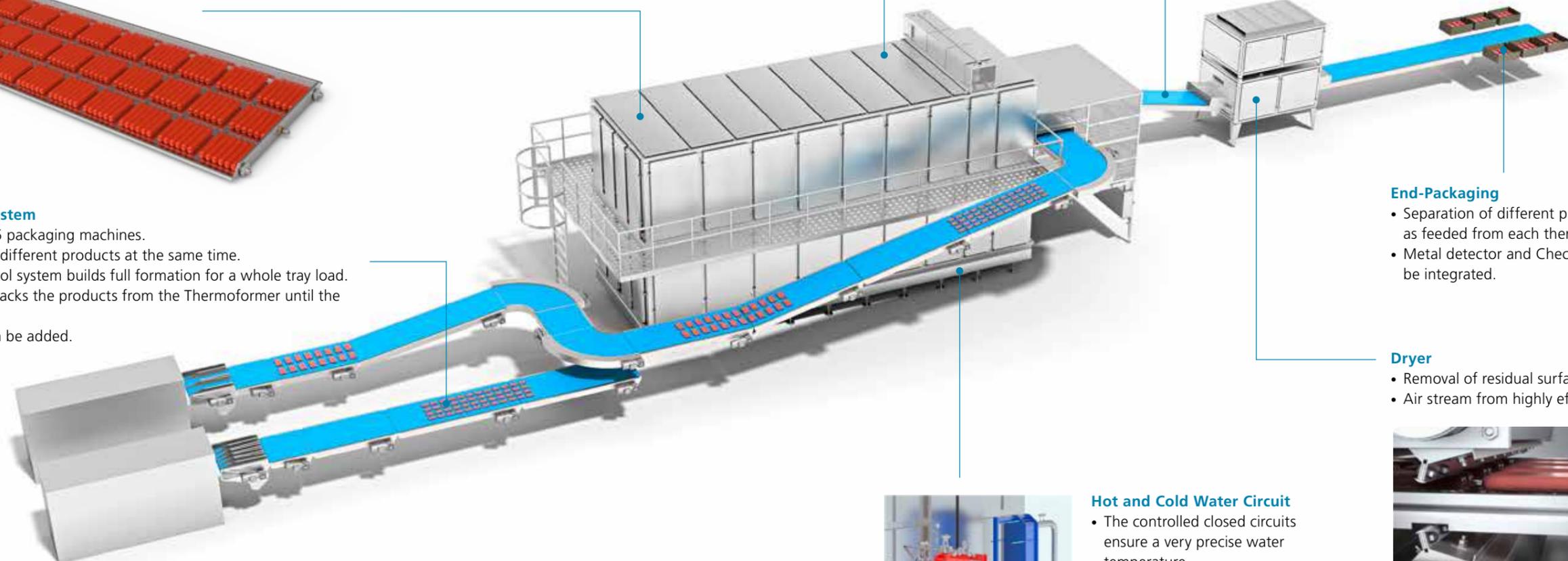
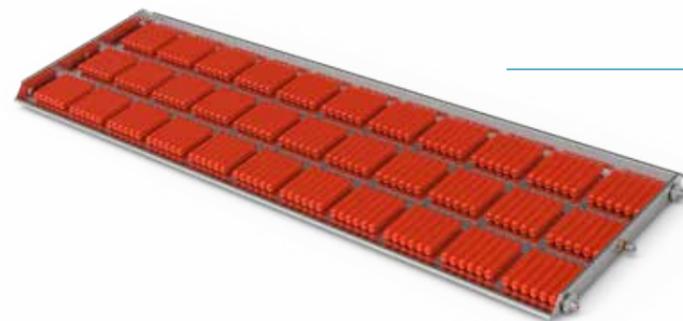
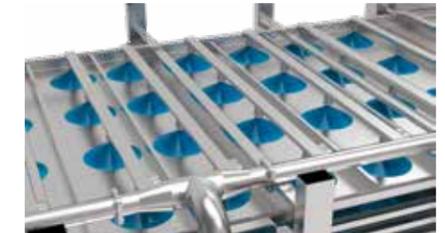
- Separation of different product types possible, as fed from each thermoformer.
- Metal detector and Checkweigher System can be integrated.

Dryer

- Removal of residual surface water.
- Air stream from highly efficient air knives.

Hot and Cold Water Circuit

- The controlled closed circuits ensure a very precise water temperature.
- The system consists of heat exchangers, pumps, control valves and monitoring equipment.



	Pasteurizing	Cooking Sous-vide
Performance	1000–7000 kg/hour	500–3000 kg/hour
Max. product height	up to 150 mm	

Semi-automated Hoegger® CookChill Systems

- ◆ Semi-automated, continuous process
- ◆ No damaged packages
- ◆ Optimized production planning
- ◆ Intense but gentle water shower and steam atmosphere
- ◆ Multi-layer design
- ◆ Tailor made system

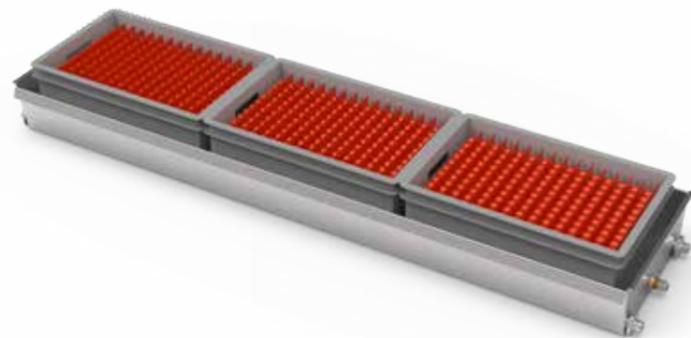
CookChill Basket System

Semi-automated

This semi-automated and intelligent process allows high flexibility for manually or automatically loaded baskets.

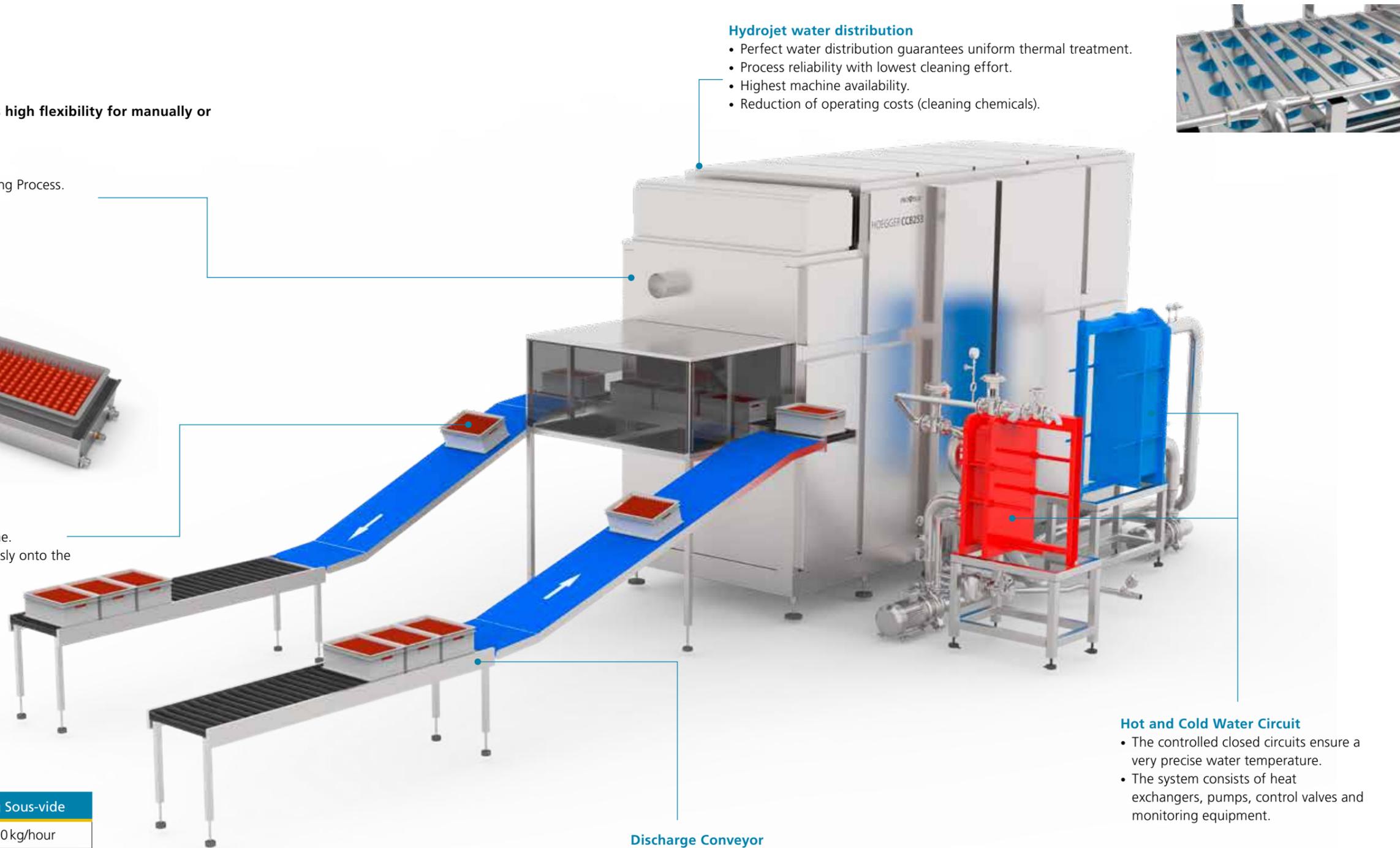
CookChill Unit

- Gentle and accurate Cooking, Sous-Vide and Pasteurizing Process.
- Continuous inline system or stand alone solution.
- Fully customized unit with smallest footprint.



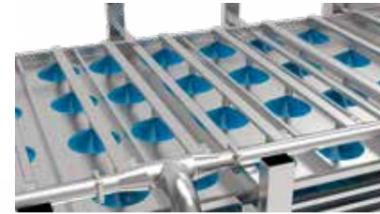
Feeding Conveyor system

- Manually or automatically loaded into baskets.
- Possibility to process different products at the same time.
- The feeding conveyor system led the baskets continuously onto the CookChill system.



Hydrojet water distribution

- Perfect water distribution guarantees uniform thermal treatment.
- Process reliability with lowest cleaning effort.
- Highest machine availability.
- Reduction of operating costs (cleaning chemicals).



Hot and Cold Water Circuit

- The controlled closed circuits ensure a very precise water temperature.
- The system consists of heat exchangers, pumps, control valves and monitoring equipment.

Discharge Conveyor

- The basket get unloaded automatically and will led to the end-packaging area or into warehouse.
- An optional drying station removes remaining water off the products and the basket.

	Pasteurizing	Cooking Sous-vide
Performance	800–3000 kg/hour	400–1500 kg/hour
Max. product height	up to 220 mm	
Smallest possible footprint	L 7.8 m (40' 8") W 2.7 m (16' 11") H 4.3 m (13' 11")	

Process

- ◆ High quality pasteurizing / cooking
- ◆ High degree of product safety
- ◆ Long shelf life
- ◆ Water temperature $\pm 1^{\circ}\text{C}$
- ◆ Consistent quality

High level of Food Safety

The CookChill Technology provides exceptional value and efficiency for pasteurization, cooking, sous-vide cooking, and chilling of products in a varied range of packaging options.

Water distribution

Hydrojet nozzles provide a self-cleaning effect. The nozzles spray the process water evenly at high speed and light pressure into the shower plates. This prevents contamination and clogging from the distribution system. The clean shower plates permanently guarantee perfect thermal treatment of each products.



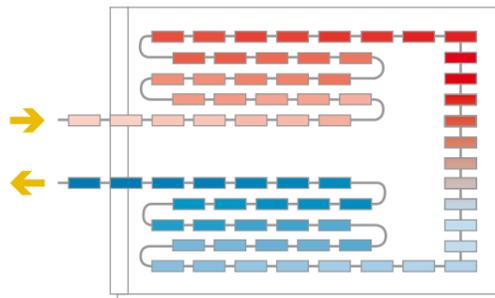
Water shower

As the product moves through, it is exposed to a continuous water shower as well as a controlled pool of water in the carrier. This ensures an optimal and gentle heat transfer. The multi-layer horizontal counter flow method guarantees a gentle warming up and cooling down. This method has the advantage that it heats the individual packages gradually, controlled, and consistently without shocking.



Heating

The heating zone consists of a hot water shower in a hot, saturated air atmosphere. The trays are designed in such a way that the packages are subjected to intense sprinkling while lying in a shallow water pool. This allows for gentle handling of the product and accurate temperature control. To use the space as efficiently as possible, the trays are moved through the heating zone in a multi-layer arrangement in counter current flow.



Chilling

Finishing the heating process, the product is rapidly chilled by an intense water shower of 0.5°C (32.9°F) and aided by a controlled pool of water in the product trays. At this stage, the product is chilled rapidly to $<4^{\circ}\text{C}$ (39.2°F) core temperature. With the counter flow, the coldest product comes in contact with the coldest water, which allows for gentle and effective chilling (e.g., no ice crystals). Once the chilling cycle is finished, the product is discharged onto a conveyor belt.



Pasteurizing

The CookChill unit will be customized according to the specifications of the products. Core pasteurization as well as surface pasteurization is possible.

With individual recipes the required temperature or F-Value can be reached and guaranteed.

Features:

- Extremely gentle
- Retaining flavor, color and vitamins
- High food safety
- Extended shelf life – without preserving agents

Cooking / Sous-Vide

The cooking or sous vide cooking in vacuum packed results in very high quality because of the extremely gentle heating process.

Features:

- Extremely gentle
- Retaining flavor, color and vitamins
- Cook in pack – less weight loss, energy saving

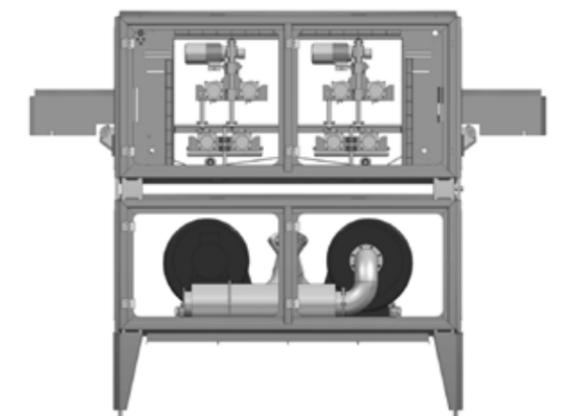
Dryer

The machine consists of a special wire mesh belt conveyor that guides the packages as they go through the tunnel where residual surface water is blown off by air nozzles. The air blowers with silencers and the required actuators and sensors are all contained inside the unit with two large access doors on each side.

Features:

- High drying efficiency
- Adjustable air knives
- Gentle wire belt conveying
- No damaged packages

Package height: up to 150 mm
Basket height: up to 220 mm
Belt conveyor width: 400/700/900 mm

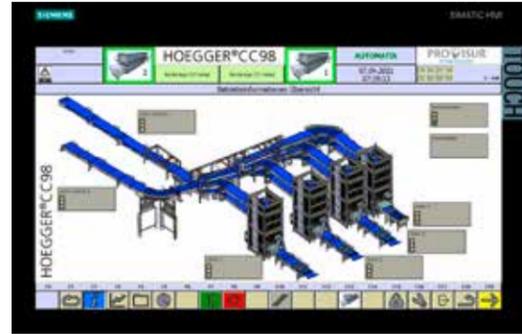


Control & Quality System

User-friendly Process Control

A state of the art, fully integrated safety control regulates the entire process. The system receives the relevant parameters from the operator or from the higher-level control system. The automatic control of operation, maintenance and cleaning ensure maximum process reliability, availability and hygiene of the system. Process data, events and interventions are recorded and are available for quality audits.

- Easy to operate user interface
- High degree of reproducibility
- Grafical overview of each process section
- Ready for industry 4.0

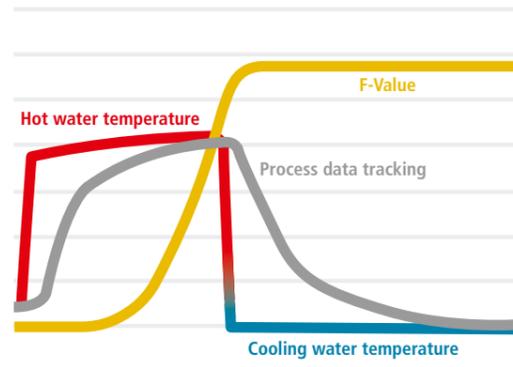


Quality Assurance System with Automatic Discharge

The CookChill software automatically monitors every tray load of product during the entire process and only releases correctly treated products for pack-off. Based on the constant monitoring of water temperature, retention time, as well as water flow, an over- under pasteurization / cooking assessment can be done automatically for each tray load.

If the pasteurization value or cooling temperature is not reached, only the identified number of trays is diverted to off spec, which in turn maintains the high level of total yield.

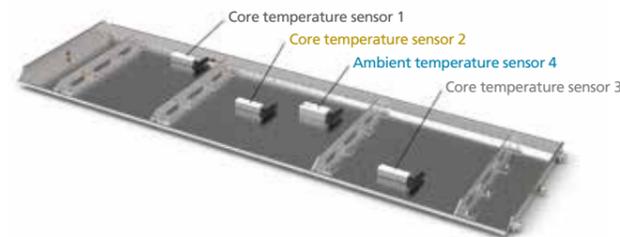
- High food safety
- No over or undercooking / pasteurizing
- Ejection of insufficient cooked / pasteurized or cooled products
- Absolute regular and even process



Real-Time Core Temperature Display

The perfect, constant quality of the process is measured and recorded fully automatically in a continuous, real-time core temperature logging system. These measurements record the temperature profiles in «dummy» product and the actual shower water temperature, which serve as a reference for effective pasteurization on the product. The process is thus completely monitored and recorded with each tray cycle.

- Perfect process quality control
- Real time measurement of core and water temperature
- Automatic process validation for each individual product

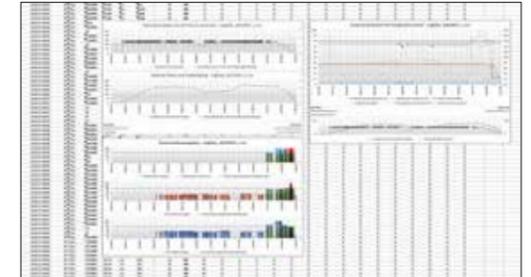


Options

Data Management System

Constant recording of all relevant process parameters (water temperature, dwell time) and set and actual values, recipe data, actual state of process data, etc.

- Easy transfer of the data
- Easy access to quality data



Remote Access / Camera System

Easy and fast troubleshooting thanks to remote access to the system, as well as preventive maintenance and customer service support

- Fully remote control for each system device
- High IT security guaranteed
- Camera system ensures perfect overview over the whole line - on site and remotely.



RFID Login

Compared to the login by a password, the login by personal RFID-Chips offers the following advantages:

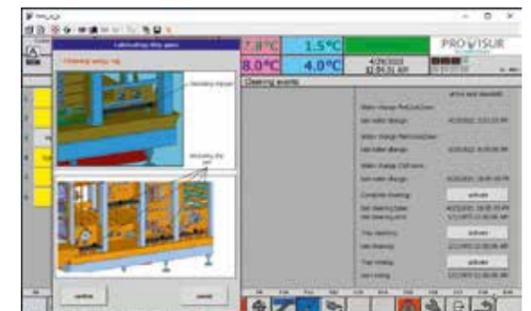
- Modification in the settings are linked to a specific user. Changes can thus be easily assigned
- Less miss operation
- The user level and authorization range is also easier to handle.



Guided Cleaning & Sanitizing

Complete system for metering the cleaning agents can be fully integrated.

- Fully automated and programmable cleaning process
- Fully automated water change process
- Guided cleaning process



Guided maintenance

The machine operators are guided by this assistant on HMI during operation maintenance.

- The maintenance events performed are stored and can be viewed at any time.

Features



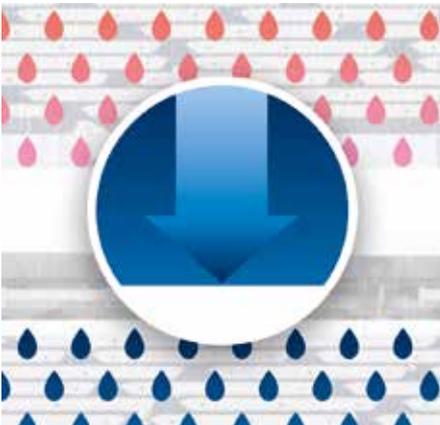
- Integrated quality control for the individual package
- Maximum product safety



- Organized product formation throughout the process
- Cook in pack, saving weight loss and energy



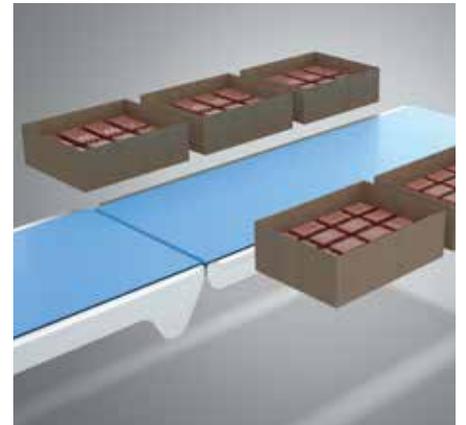
- Minimal variation of core temperature +/- 1°
- High degree of cooking accuracy
- Extended shelf life, the natural way, without preserving agents



- Optimal and efficient cooling to <math><4^{\circ}\text{C}</math> (39.2°F)
- Consistent product quality



- Dry packages



- Yields >99.5%
No damaged packages
- Optimized product planning, less change over
- Continuous operation minimizes production peaks and operating costs

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