LinaFlex and LinaFlex Pro
Highly efficient pasteurisation
Better safe than sorry

Product safety is a core issue in marketing your beverage. Pasteurisation is very often procedure number one when it comes to preservation of the just filled products. The LinaFlex tunnel pasteuriser offers a pasteurisation process with precise PU control and an efficient use of resources. You will get a pasteuriser that is specifically designed to meet your operational requirements.

At a glance
- Modular single-deck or double-deck tunnel pasteuriser with precise PU control system
- Main conveyors are exactly adjusted to suit the container characteristics and production conditions
- Quick installation
- Integration of long-lasting components
The concept

- Modular, self-contained single-deck and double-deck design
- PUC³ real-time calculation of PU values
- Patent-protected spraying pipes in S-design to prevent nozzles from clogging
- Central heat supply to the individual zones with CHESS* heating system
- Long-lasting Marathon Belt and Ironman Belt main conveyors
- Available in three designs
  - LinaFlex basic design
  - LinaFlex Pro hygienically optimised design
  - LinaFlex Pro with CLEAR system

* Central heat exchange supply system
The design

- CHESS central heating system
- Stainless steel sliding doors
- Operator platforms at infeed and discharge
- Low infeed and discharge heights (1,200 and 2,120 mm)
- Central cooling system
- All components are mounted on the machine sides
- Easy and safe to handle roof hatches
- Doors along the machine sides
- Maintenance openings for optimum accessibility
- Lateral catwalk for inspection of the simple spraying system
Technical details

**PU controller PUC³**

- All product, treatment and operating parameters are precisely acquired and controlled which ensures a high product quality
- Exact calculation of the product temperature and the resulting PUs for each container series
- Dynamic adjustment of the spraying temperature based on the PUs requested and those already reached
- No underpasteurisation and only minimum deviation from the set-point value thanks to provident algorithms and intelligent control throughout the complete process
- Uniform PU intake is ensured even during interruptions and stops
- Minimum energy requirement, as the controller optimally reacts to the operating conditions of the line
Technical details

Conveyors with long service life

- Minimum friction thanks to high-performance plastic rollers at the conveyor underside, which results in a reduced impact on gears and shafts
- Maintenance-free conveyor substructure without centre bearings and wear strips
- No elongation of the conveyor thanks to a four times increased tensile strength
- Service life of 20 years and more

Marathon Belt

- For glass, cans and PET
- Stable and robust structure thanks to its stainless steel frame
- Plastic body for optimum stability and transfer properties

Ironman Belt

- Developed especially for processing glass bottles
- Used in areas where glass is more likely to break
- Completely made of stainless steel
Technical details

Spray water distribution in S-design
- Clogging-free jetting system
- Rinsable jetting pipes
- Snap-in nozzles for tool-free replacement
- Detachable double sieves for protecting the pumps in the LinaFlex
- Highly-efficient debris removal unit in the LinaFlex Pro

Clean design
- Flow duct without dead ends
- Reduced consumption of chemicals* through reduced water volume
- No residual water in zone tanks due to inclined collecting pans
- Automatic draining
- Manholes in each zone tank
- Fast filling and draining: thereby quickly ready for production

*Use of chemicals also depends on the water quality and volume.
Technical details

Low power-consumption through optimised spraying system

- Spraying nozzles in low-pressure design
- Smaller pumps
- Savings of up to 45% possible

What has changed?

- Nozzle shape: Reduced spraying pressure by up to 0.5 bar with consistent spraying intensity
- Pump design: Transportation of the same quantity with reduced pressure

<table>
<thead>
<tr>
<th></th>
<th>Up to now</th>
<th>New</th>
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<tr>
<td>Connected load</td>
<td>83kW</td>
<td>56kW</td>
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<tr>
<td>Electrical consumption</td>
<td>72kW</td>
<td>40kW</td>
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</table>
Additional equipment

- Split deck for separate product treatment at the bottom and top deck
- Dosing systems for water treatment
- Cooling tower for efficient and economic cooling or for connection to cold-water systems
- Multi-criteria control: active and simultaneous control of two parameters, for instance, PU and time over temperature
- PU recorder for production validation
- PU editor for fine-tuning and changing product parameters
- Rotary sweeper and product change-over on the fly: within minimum time, with minimum energy consumption and without operator intervention
- Stainless steel nozzles
- Stainless steep pumps
- Central lubrication system
- Measuring of all media (air, water, current, heat, cold)
Three machine variants and their features

Options for internal cleaning and hygiene in the machine

<table>
<thead>
<tr>
<th>Feature</th>
<th>LinaFlex</th>
<th>LinaFlex Pro</th>
<th>LinaFlex Pro With CLEAR system</th>
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</thead>
<tbody>
<tr>
<td>Boil out</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Detachable double sieves</td>
<td>✓</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Sedimentation &amp; filtration</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dosing system (standard)</td>
<td>✓</td>
<td>✓</td>
<td>Optional</td>
</tr>
<tr>
<td>UV water treatment system</td>
<td>x</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>ClO₂ water treatment</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional (without UV)</td>
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</tbody>
</table>
LinaFlex

The concept
- LinaFlex pasteuriser in modular basic design
- Integration of all basic components such as PUC³, Marathon Belt or Ironman Belt

What's the solution for cleaning and hygiene of the LinaFlex?
- Boil out of the housing and manual cleaning procedures
- Removal of particles and dirt using detachable double sieves
- Manual cleaning of the detachable sieves
- Regular water changes
- Use of chemical disinfectants
LinaFlex Pro

The concept
- Automatic removal system for glass fragments and other particles
- Individual LinaFlex Pro pasteuriser configuration with the desired LinaFlex components
- Optional: Retrofitting option for the CLEAR system

What can the LinaFlex Pro removal system do?
- Reliable extraction and removal of particles
- Reliable protection of the nozzle system against clogging
- No manual cleaning of detachable sieves necessary
- Better removal capacity as compared to filter conveyor systems
LinaFlex Pro with CLEAR system

The concept
- Integration of the CLEAR system
- Individual configuration of the LinaFlex Pro pasteuriser with the desired LinaFlex components

What can the future-oriented CLEAR hygiene system offer?
- Continuous cleaning and treatment of the water
- Reliable extraction and removal of particles
- Efficient limitation of biological growth in the pasteuriser
- Cleaning of surfaces
- Safe protection of the nozzle system against clogging
LinaFlex Pro with CLEAR system: Cleaning and treatment process

C  Cleaning  –  automatic cleaning during operation
L  Long-life  –  prolonged service life of all components
E  Efficient  –  reduced water consumption, less chemicals
A  Automated  –  fully automated without additional cleaning shifts
R  Regenerative  –  no additional consumption for heating or cooling

High efficiency during operation
–  Reliable product treatment at any time
–  Prolonged cleaning cycles
–  Reduced personnel requirement

Reduced operating costs
–  Lower dosing of expensive chemicals
–  Less water consumption
–  Reduced energy consumption for boil out programs
–  Longer service life of components and avoidance of corrosion due to aggressive chemicals
Water treatment with ClO₂

The concept
- Generator for disinfectant near to the pasteuriser
- Optimum integration in the machine process
- For all pasteuriser variants:
  - LinaFlex
  - LinaFlex Pro
  - LinaFlex Pro with CLEAR system
  - LinaFlex Compact
  - Third-party manufacturers

Benefits and function at a glance
- Efficient limitation of biological growth
- No corrosion on the machine and crowns due to aggressive dosing agent
- No unpleasant odours at the pasteuriser
- Safe protection of the nozzle system
- Greatest production reliability

Decoration variants
- Basic variant
- With pH monitoring
- With pH control
- Equipment adjustment to specific demands
Benefits to you

**Maximum product safety**
The third-generation PU control system ensures maximum product safety and a constant product quality dynamically and in real time.

**Best hygienic conditions**
The clean design enables optimum cleaning with minimum personal requirement.

**High resource efficiency**
The LinaFlex excels with regard to numerous energy saving aspects:
- Optimised water volumes thanks to integrated zone tanks
- Up to 20 % reduced energy consumption during heating
- Low consumption of chemicals and energy
- The drive output per deck is 0.75 kW
- Full insulation as an option for a reduction in emission losses of up to 60 %

**Low maintenance required**
Maintenance and service costs are reduced as readjusting the tension and replacement of wear strips are no longer required.

**Conveyors with a long service life**
The conveyors have an efficiency of at least 98 % and a service life of up to 20 years Thanks to a four times increased service life, up to 25,000 euros a year can be saved.

**Fully automatic product change-over**
The product change-over with sweeper is performed automatically and includes an automatically adjustable blower as an option. Thereby, the machine can be changed over to new types within less than 10 minutes*.

* Depending on the zone configuration
Certified ecological efficiency: Machines with enviro label

At KRONES, the blue enviro label stands for excellent ecological efficiency. Products that bear the enviro label have proven in an objective test procedure that they efficiently use energy and media, and that they produce in an environmentally friendly way. The requirements are defined by the EME standard that has been developed by the TÜV SÜD (technical inspection authority) for assessing production plants. The enviro test procedure has also been certified by TÜV SÜD as an independent expert. Therefore, you can be sure that an enviro label stands for ecological efficiency.

Benefits of the enviro-classified LinaFlex?

Energy efficiency
– Design exactly tailored to suit production process
– Optimum thermal insulation: complete insulation for reduced loss of heat

Media efficiency
– Measuring systems for media consumptions
– Media monitoring (steam, water, power and air) by the virtual pasteuriser

Environmental compatibility
– Gear oil, grease and chemical dosing according to enviro criteria
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.
We do more.

Digitalisation
Process technology
Bottling and packaging equipment
Intralogistics
Lifecycle Service

KRONES