



# LinaFlex and LinaFlex Pro

Highly efficient pasteurisation



# Better safe than sorry



Product safety is a core issue in marketing your beverage. Pasteurisation is often the number one method when it comes to the preservation and stabilisation of freshly 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

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- 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
- Integrated monitoring of the process and product quality

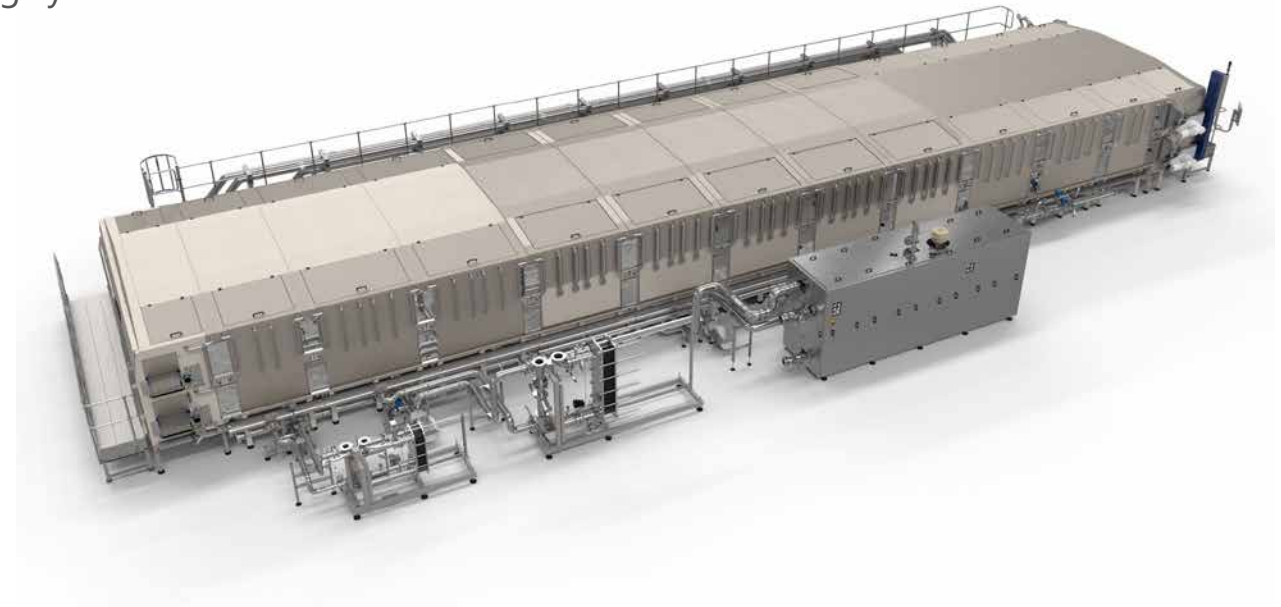


LinaFlex double-deck tunnel pasteuriser

# The concept



- Modular, self-contained single-deck and double-deck design
- PUC<sup>4</sup> real-time control of the PU values without a PC
- Patent-protected spraying pipes in S-design to prevent nozzles from clogging
- Central heat supply to the individual zones with the 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 self-cleaning variant with CLEAR system

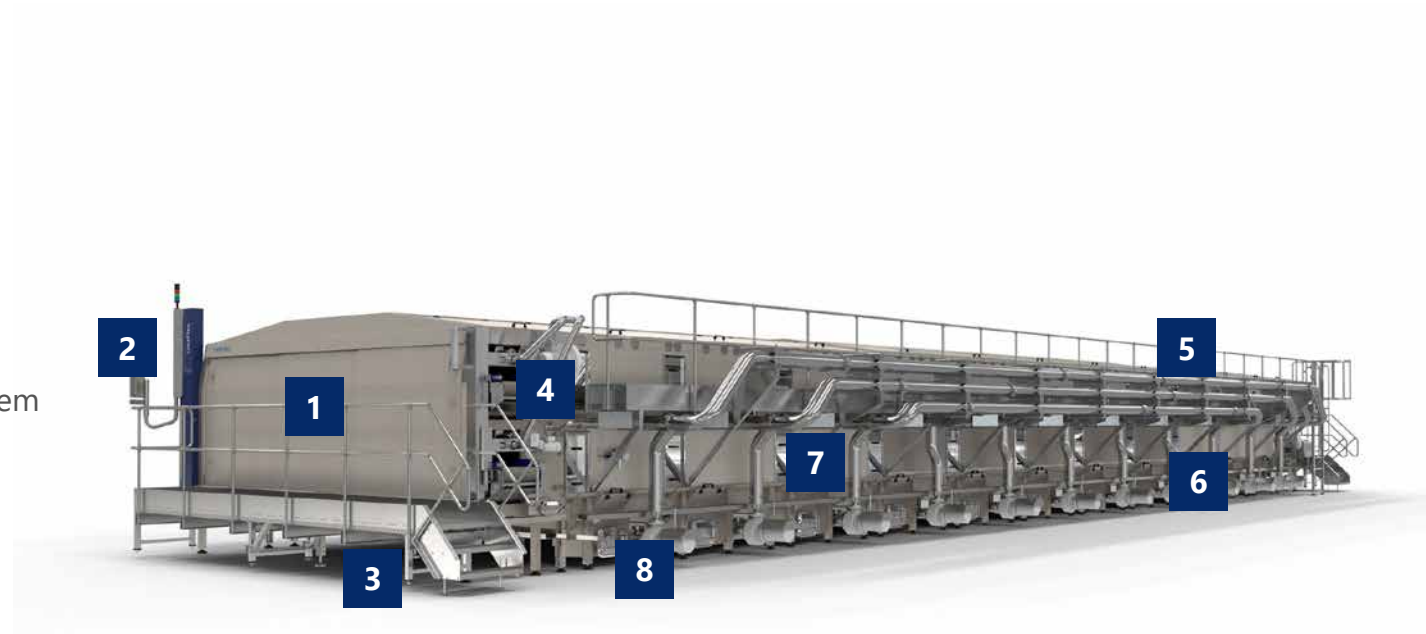


LinaFlex tunnel pasteuriser

# The design



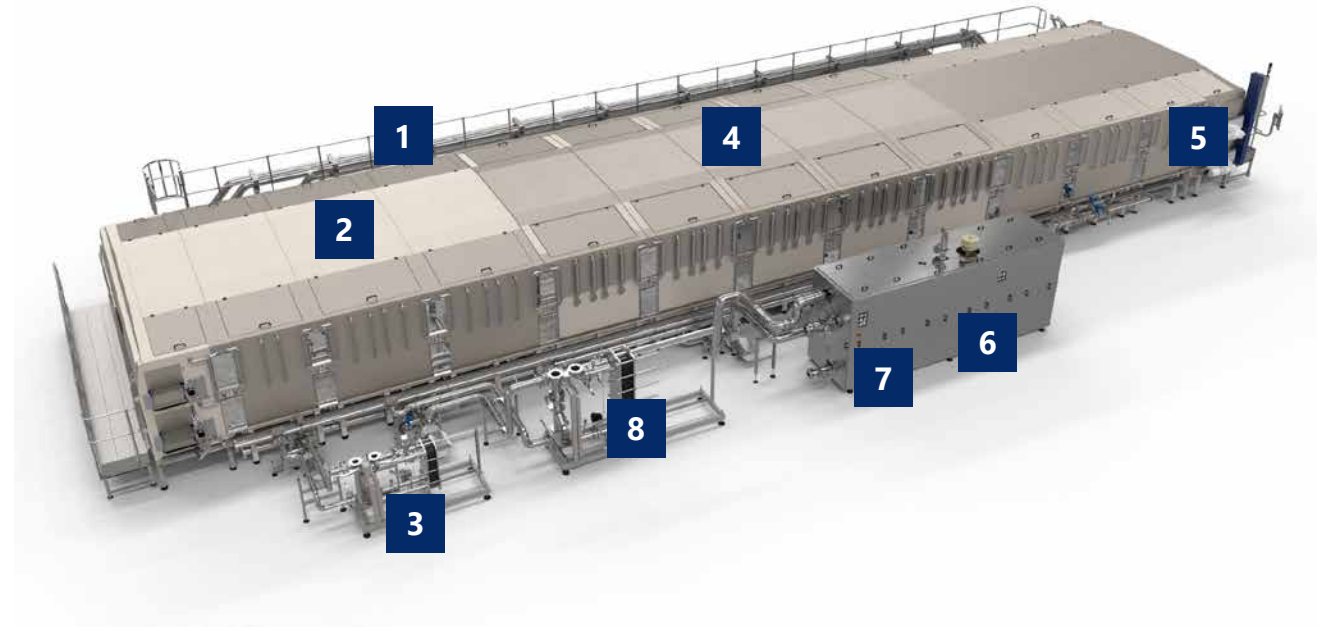
- 1 Stainless steel sliding doors and platforms
- 2 21 inch touch-screen on the machine
- 3 No components underneath the machine
- 4 Low infeed and discharge heights (1.2 m and 2.1 m)
- 5 Lateral catwalk for optimum access to the S-shaped jetting system
- 6 All of the components are attached to the side of the machine
- 7 Side doors for easy cleaning
- 8 Maintenance openings for optimum accessibility



# The design



- 1 Easy and safe to handle roof hatches
- 2 Pre-assembled modules for quick installation
- 3 Modular cooling systems for cold-water systems (including regenerative cooling)
- 4 Insulation for lower energy consumptions
- 5 One drive per deck
- 6 CHES central heating system: Guards to protect personnel and components
- 7 CHES compatible with heat accumulators, CHPs, heat pumps and other heat generators
- 8 Modular cooling tower heat exchanger systems

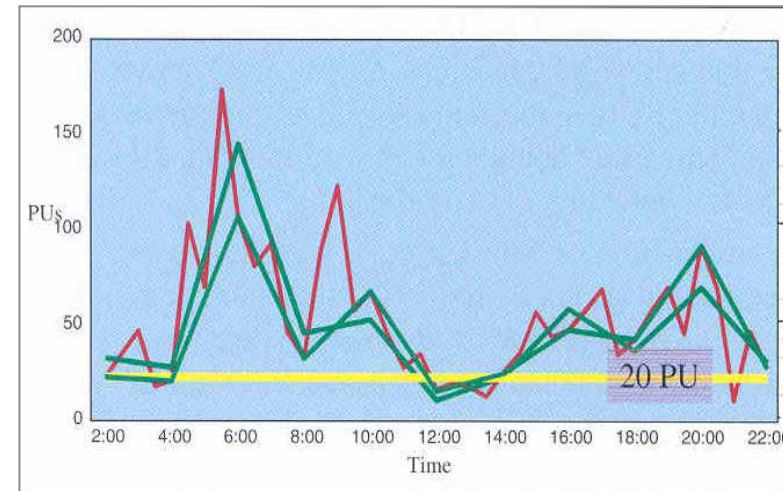


# Technical details

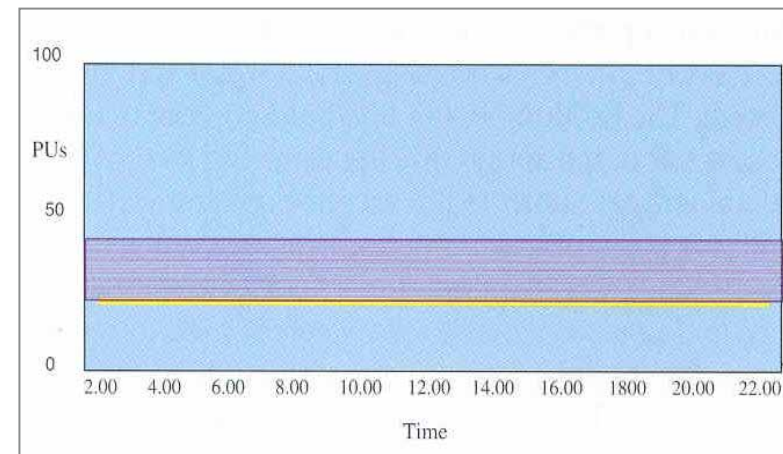


## PU control PUC<sup>4</sup>

- All product, treatment and operating parameters are precisely acquired and controlled, which ensures the highest product quality
- High-performance controller without PC
- 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 a minor deviation from the set-point value thanks to provident algorithms and intelligent control
- Uniform PU intake is ensured even during interruptions and stops
- Minimum energy requirement as the controller optimally reacts to changes in the line operating conditions



Pasteurisation without ...



... and with PUC<sup>4</sup>

# Technical details



## Conveyors with long service life

- Minimum friction through powerful plastic rollers on the underside of the conveyor: Reduced load for 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 provided by its stainless steel frame
- Plastic body for optimum stability and transfer properties

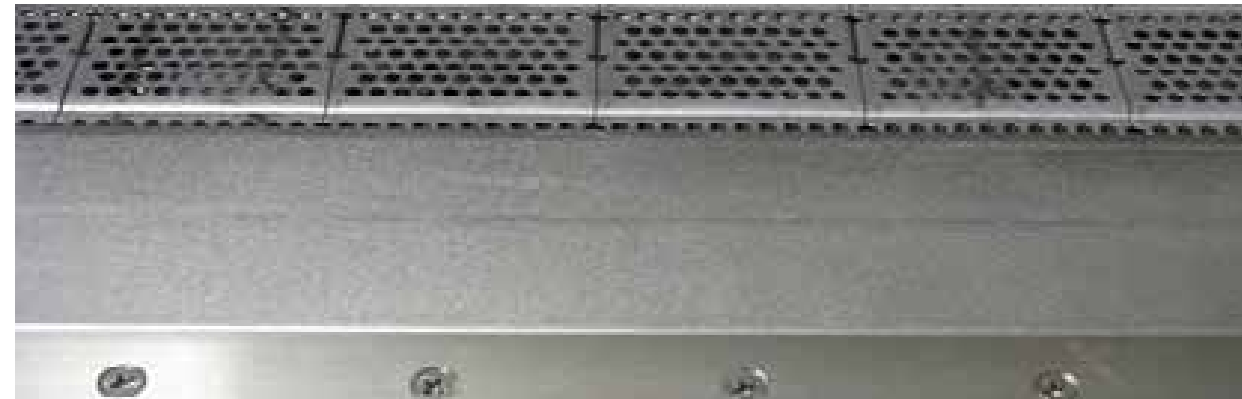
## Ironman Belt

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

\* The service life depends on the working environment, and how the equipment is cared for and maintained



Underside of the Marathon Belt



Ironman Belt with transfer

# Technical details



## Water channels in S-design

- Clogging-free jetting system
- Low power consumption thanks to optimised nozzles and pumps
- Optionally with manual or automatically flushable 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

- Power supply line without pipe ends
- Reduced consumption of chemicals through reduced water volume\*
- Complete and automatic emptying at a central drain
- Manholes in each zone tank
- Fast filling and emptying
- Low water volume reduces consumptions

\* The use of chemicals also depends on the water quality and volume.



Spraying nozzles in the LinaFlex



Underside of the LinaFlex with inclined collecting pan



# Additional equipment



- Split deck for separate product treatment at the bottom and top deck
- Dosing systems for water treatment
  - Highly efficient dosing system with chlorine dioxide
  - Dosing pumps for descaler and biocides
- VapoChill cooling tower for the most efficient cooling
- Multi-criteria control: Active control of multiple parameters simultaneously, e.g PU and time via the temperature
- PU recorder for production validation
- PU editor for fine-tuning and changing product parameters
- Rotary sweeper and flying product change-over for automatic type change-over without operator
- Stainless steel nozzles
- Stainless steep pumps
- Central lubrication system
- Measuring of all media (air, water, current, heat, cold)
- And much more



Chlorine dioxide dosing system



VapoChill

# Three machine variants and their features



## Options for internal cleaning and hygiene in the machine

Machine variant	LinaFlex	LinaFlex Pro	LinaFlex Pro With CLEAR system
Boil out	✓	✓	✓
Detachable double sieves	✓	x	x
Sieving conveyor in zone	Optional	x	x
Sedimentation and filtration	x	✓	✓
Dosing system (standard)	✓	✓	✓
UV water treatment	x	x	✓
ClO <sub>2</sub> water treatment	Optional	Optional	Recommended

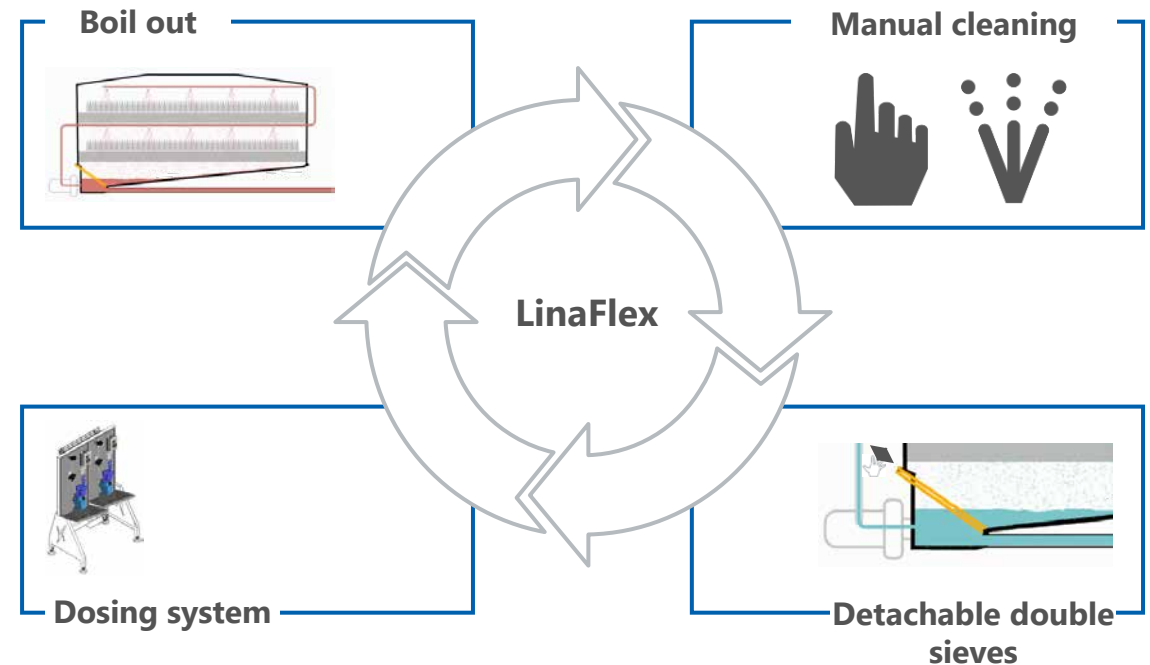


## The concept

- LinaFlex pasteuriser in modular basic design
- Integration of all basic components such as PUC<sup>4</sup>, 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 contamination using detachable double sieves
- Manual cleaning of the detachable sieves
- Regular water changes
- Use of chemical disinfectants



# LinaFlex with debris removal unit

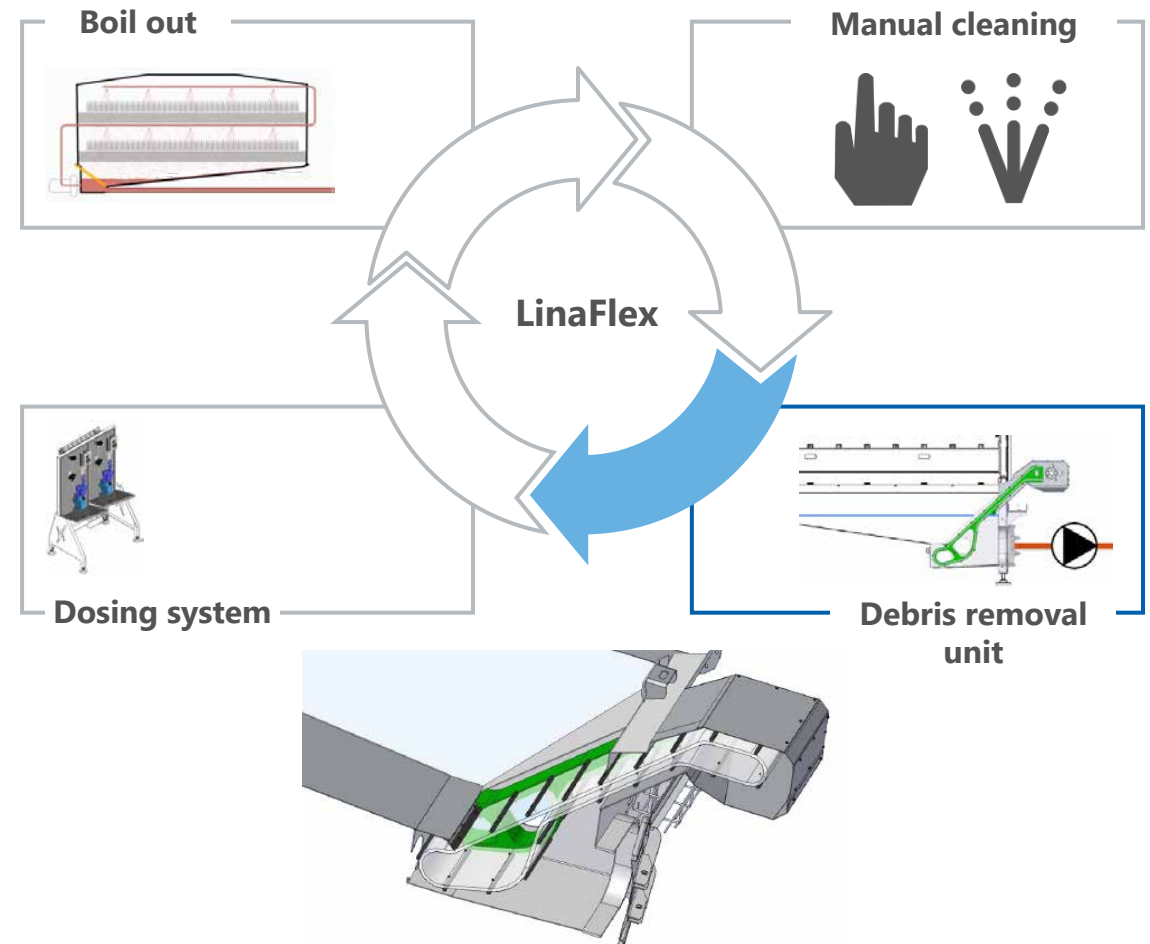


## The concept

- LinaFlex pasteuriser in modular basic design
- Automatic sieving conveyor in zone tank
- Effective protection of the nozzles and pumps against glass fragments
- Flushing of the conveyor into a central collecting chute
- Integration of all basic components such as PUC<sup>4</sup>, 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 contamination using an automatic sieving conveyor
- Regular water changes
- Use of chemical disinfectants



# LinaFlex Pro

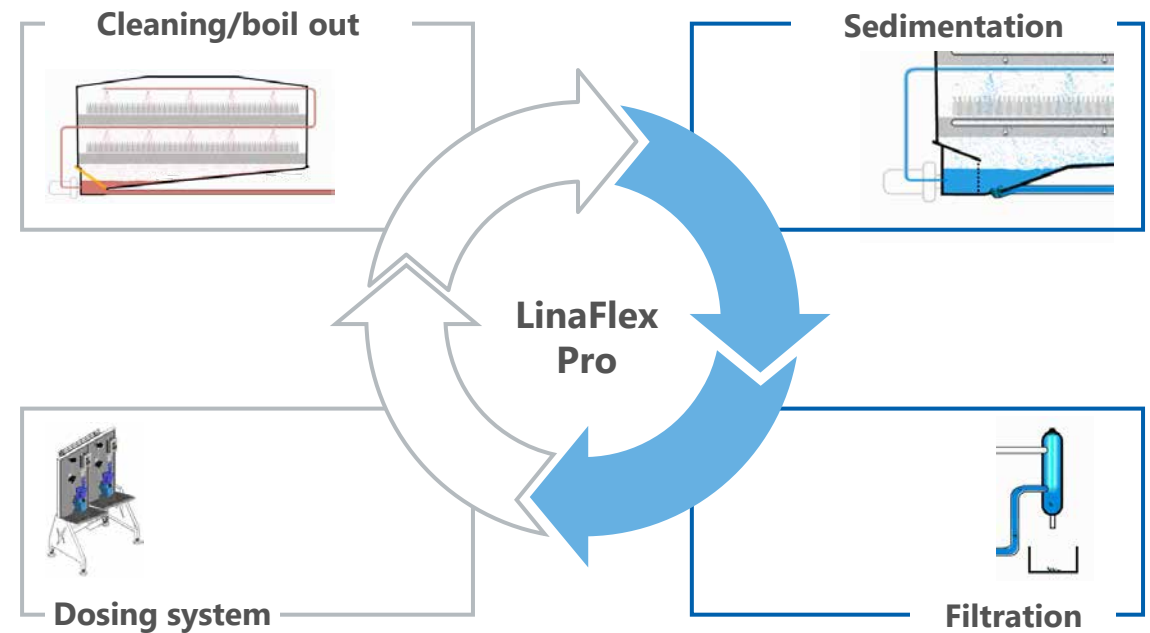


## The concept

- 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

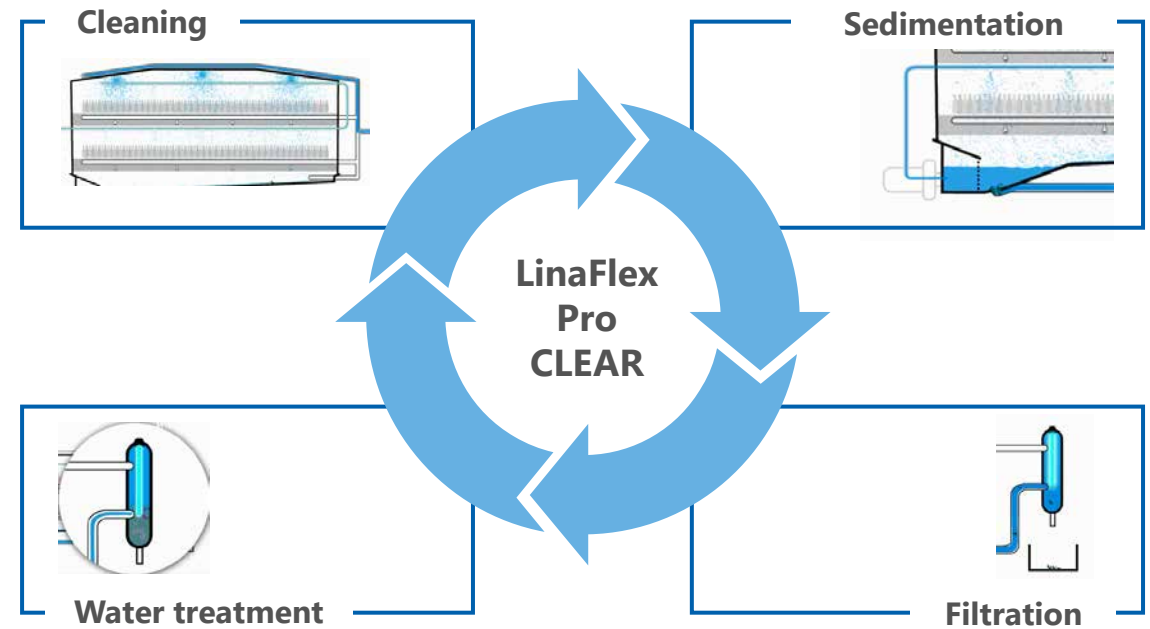


## The concept

- 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
- Limitation of biological growth in the pasteuriser
- Cleaning of surfaces
- Safe protection of the nozzle system against clogging
- Recommended with highly efficient  $\text{ClO}_2$  dosing system



# LinaFlex Pro with CLEAR system

## Cleaning and treatment process



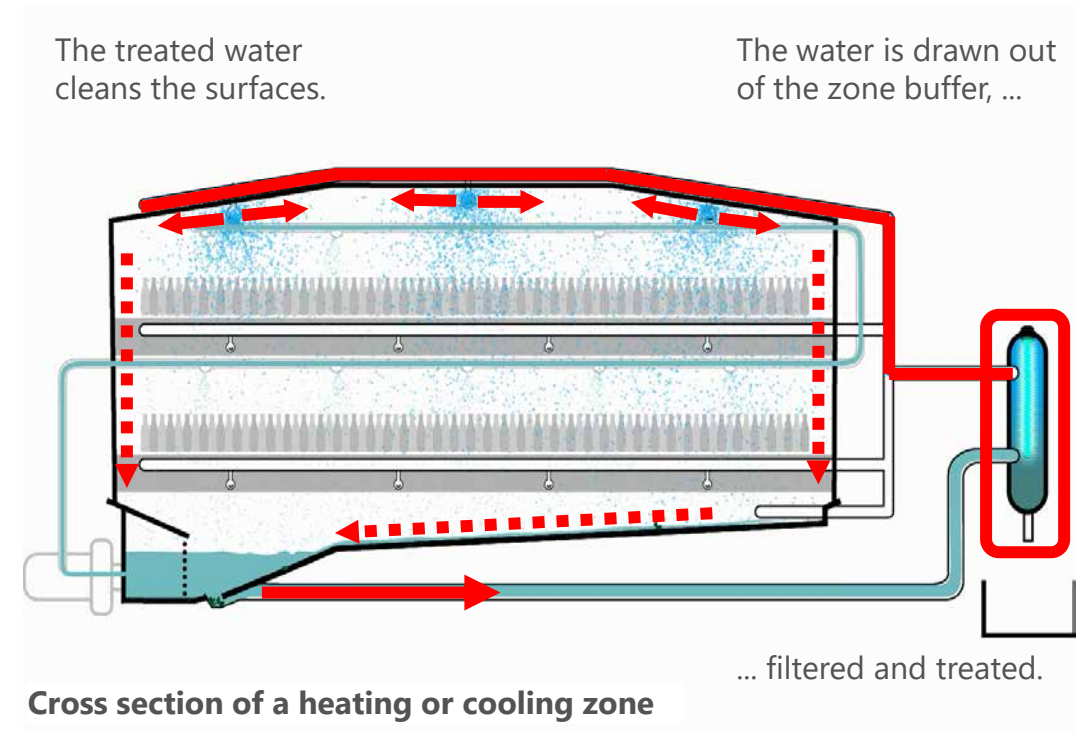
### High efficiency during operation

- 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

- |          |              |   |
|----------|--------------|---|
| <b>C</b> | Cleaning     | → automated cleaning during operation   |
| <b>L</b> | Long-life    | → all of the components have a longer service life                              |
| <b>E</b> | Efficient    | → reduced water consumption, fewer chemicals                                    |
| <b>A</b> | Automated    | → automatic activation without additional cleaning shifts                       |
| <b>R</b> | Regenerative | → recovery of resources without additional heating or cooling-water consumption |



# Water treatment with ClO<sub>2</sub>



## The concept

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- 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

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- 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

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- Basic variant
- With pH monitoring
- With pH control
- Adjustment of the scope of supply to specific requirements



Chlorine dioxide  
generator station



# New perspectives for heat supply



## The concept

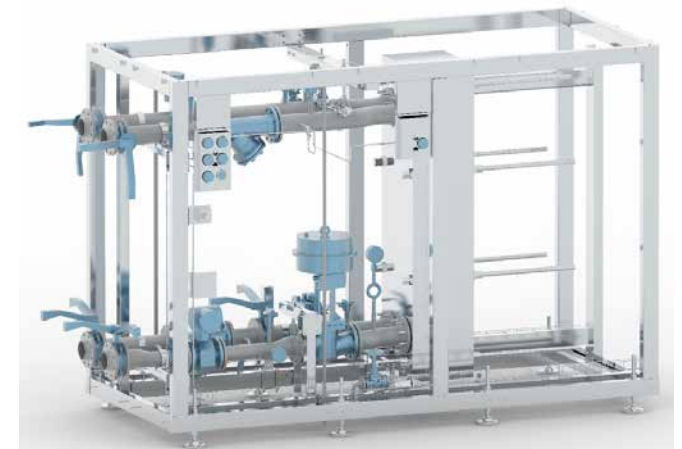
- Simultaneous use of different heat transfer media possible
- Modular procedure in the Linaflex makes it possible to use the widest variety of heat transfer media:
  - Steam
  - High-pressure hot water
  - Hot water at 75 °C to 95 °C
  - Heat pumps
  - Combined heat and power plants
  - Heat recovery systems/heat accumulators

## What does the CHES system achieve in the LinaFlex?

- Reliable supply of the machine with heat
- Combination of optimum accessibility and protection
- Digital monitoring of the process
- Optimisation to the most efficient heating medium
- Future-proof
  - Retrofitting of additional heat transfer media possible
  - Highest flexibility through modular LinaFlex procedure



CHES (steam) with guards



CHES (hot water) without guards

# Benefits to you



## Maximum product safety

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

## Conveyors with long service life

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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.

## Best hygienic conditions

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The unit is designed in accordance with Clean Design principles to achieve the best possible cleaning results with minimal personnel effort and time.

## Fully automatic product change-over

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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

# Benefits to you



## 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.

### Requesting a new machine

You can easily send a request for a non-binding quotation in our [Krones.shop](#).



# Certified ecological efficiency

## Machines with enviro seal



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 TÜV SÜD (technical inspection authority) for assessing production plants. The enviro test procedure, too, has 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?

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#### Energy efficiency

- Design exactly tailored to suit the production process
- Optimum thermal insulation: Complete insulation for reduced heat losses

#### 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 for an increased efficiency of your line

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The multifaceted offer by the Krones Academy ranges from operation, servicing and maintenance courses through to management training. We will gladly also create your individual training programme.

## KIC Krones cleaning agents and disinfectants make your machine shine

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An immaculate production environment is essential if your product is to shine. KIC Krones provides you with the optimum cleaning agents and disinfectants for each individual production step.

## KIC Krones lubricants for each production step

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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

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It goes without saying that also after the purchase of new machines, Krones takes care of your lines: The Krones LCS experts are always there to help you reaching your goals and turn your wishes into optimal LCS solutions.

## Evoguard – excellent valve technology all along the line

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

**SOLUTIONS  
BEYOND  
TOMORROW**

