



# Handling parts for the returnable glass line

Krones Lifecycle Service

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# Top performance together



## What do you expect from a partner?

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That he exactly knows your requirements and needs and has the appropriate solutions down pat? That you understand each other without words and can rely on each other? That you achieve top outputs as a team? The Krones Lifecycle Service fulfils all of these requirements.

Krones is not only a service provider but also your partner who supports you even after the purchase of a new machine.

## Flexible with Krones handling parts

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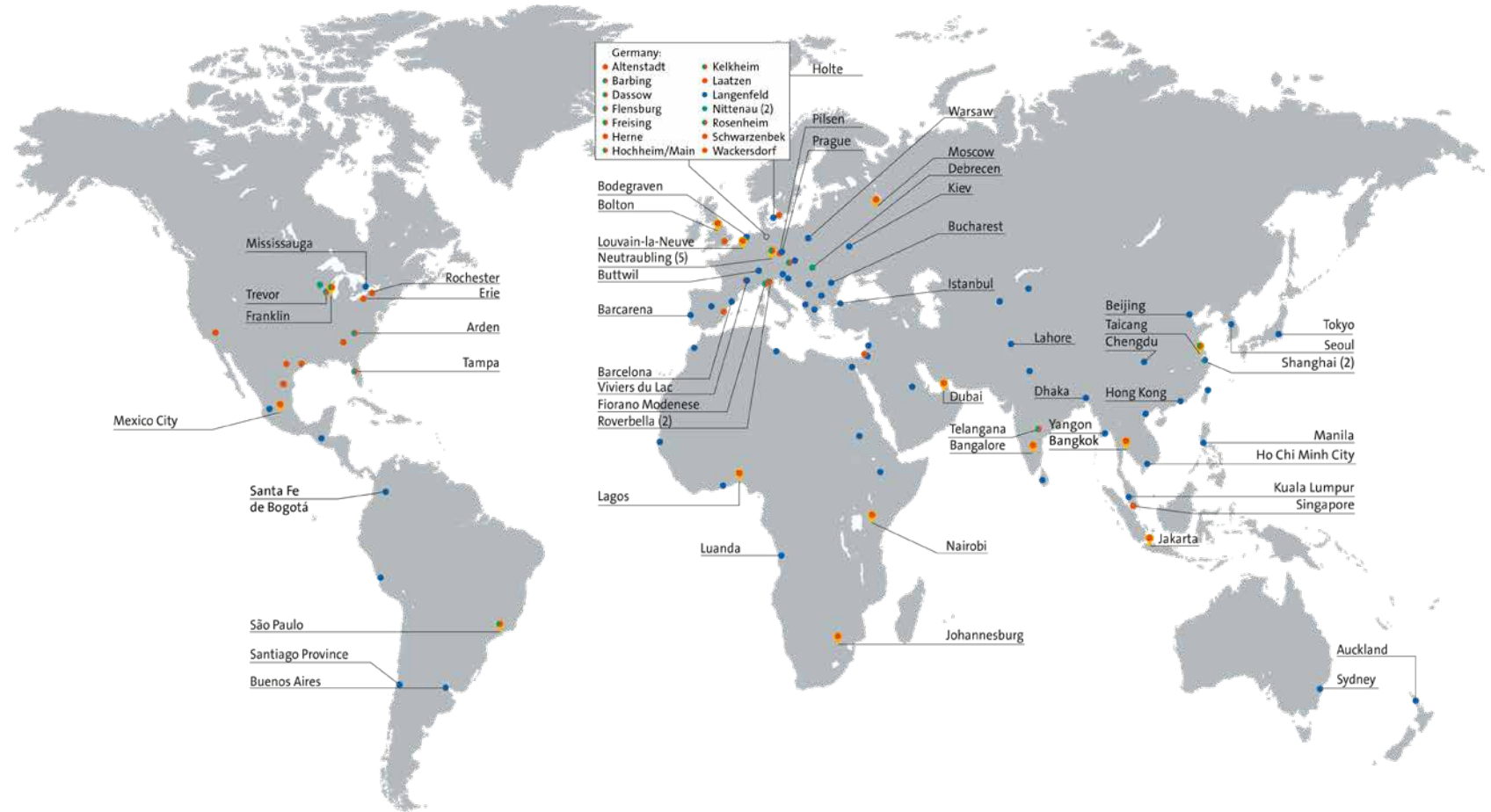
Handling parts are the perfect solution to adjust your existing line to new ideas: individual components are quickly and systematically removed and replaced in no time.



# The world as we see it



To provide you with even better support, we have set up Krones centres at various locations all round the world. Each of these »service nodes« is responsible for a separate set of countries and subsidiaries. This makes it possible for us to serve you quickly and systematically and provide exactly the services you need.



- Centre
- Engineering sites
- Production sites
- Krones subsidiaries and representative offices

# The Krones handling parts business

## Your benefits



### Equipped for the future

- Tailor-made upgrades for your lines, e.g. to relieve the operator or save resources

### Reliable and safe during production

- Documentation of conversion measures for a holistic overhaul
- Administration of master data
- Creation of processing documents for each process step
- Guaranteed quality due to precise functional tests before delivery

### Economical with resources

- Checking existing handling parts for reusability



### Individual complete solutions

- View of the complete line including third-party machines
- Consulting with know-how
- Experienced engineering team for retrofitting
- Service engineers available all over the world
- Sophisticated colour and labelling concepts for marking handling parts

### Top performance all along the line

- Checking individual machines and the complete line for the required output
- Planning of conversion measures if required
- Testing new container and pack types for processibility in the complete line
- Fast change-over of the required handling parts

# The KRONES handling parts business

## Our principles



- 1** We consider the complete line.
- 2** We find the proper concept for you.
- 3** We check your parts for reusability.
- 4** We offer special identification marks.
- 5** We test your handling parts for functionality.
- 6** We inform you about our latest upgrades.





# The Kronos handling parts business – our principles



## 1 We consider the complete line.

The whole is always more than the mere sum of its parts: We therefore do not only consider each individual machine but check the complete line for its performance and for processability of the container and pack types.

### Our experts check ...

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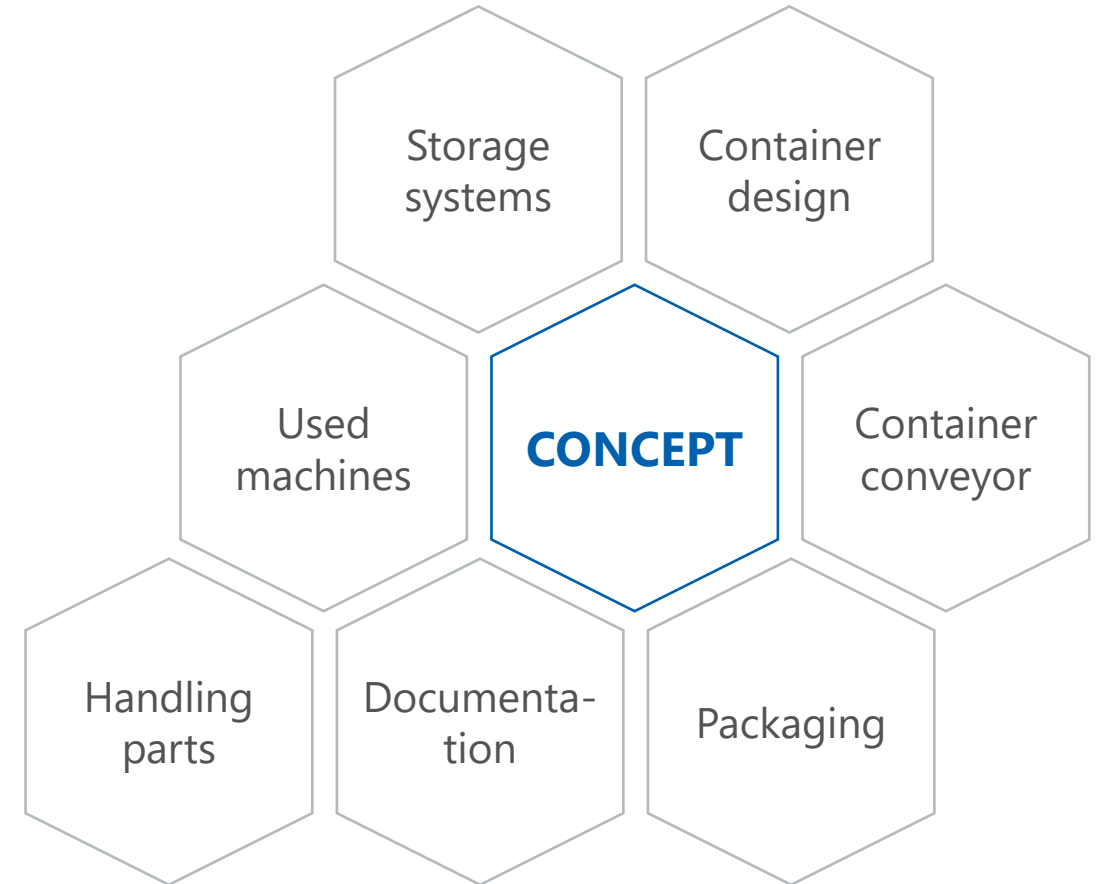
- the container including the preform, cap and pack type, and whether it can be processed in the complete line.
- all customer objects for the complete line.
- the existing parts for reusability.
- important parameters, such as height, diameter, shape, neck radius, neck finish, cap and container contour.



# The Krones handling parts business – our principles

## 2 We find the proper concept for you.

We contribute our ideas – in all possible directions. This means that we do not only design a tailor-made concept for a new container, but provide for all contingencies and adjoining process steps in our concept.



# The Krones handling parts business – our principles

## 3 We check your parts for reusability.

Based on our available data, we can check already while preparing the quotation whether existing handling parts from your line can be reused. It goes without saying that we will assist you in this process.

It is our target to quickly implement your ideas in order to prevent unnecessary extra costs for you.





# The Krones handling parts business – our principles

## 4 We offer special identification marks.

We do not only enhance your machines to achieve top performance but contribute towards relieving your employees' day to day work. For quick and easy identification of the currently required handling parts, we offer special identification variants:

### Standard solutions

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- Labelling and numbering
- Coloured marks, such as identification plates and circular blanks

### Optional

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Completely coloured handling parts



# The Krones handling parts business – our principles

## 5 We test your handling parts for functionality.



A matter of course for us: Prior to handling parts being delivered to our customers, they are subjected to comprehensive quality tests at Krones.

### Measures

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- Exact adjustment to customer objects
- Quality assurance in design and manufacturing
- Test set-up for all container handling parts
- Functional tests
- Outgoing goods inspection



# The Kronos handling parts business – our principles

## 6 We inform you about our latest upgrades.

It is quite important to us, as an innovative company, to keep your machines and technologies up to date and to continuously improve them, even after the purchase. We therefore offer our tailor-made upgrades.

### Improvements

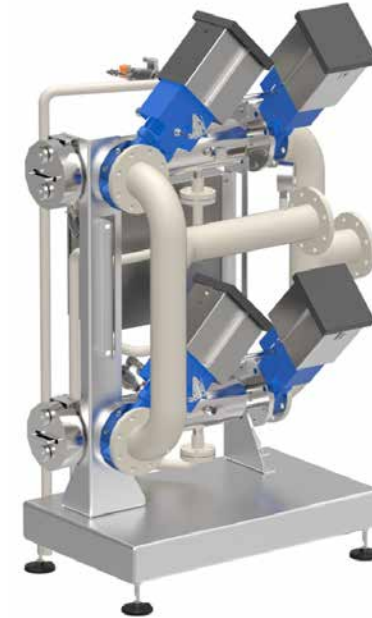
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- More efficiency of your machines
- Reduced consumption of energy and media
- Easier operation and high operational safety
- Higher product quality
- Improved hygiene standards

### My upgrades

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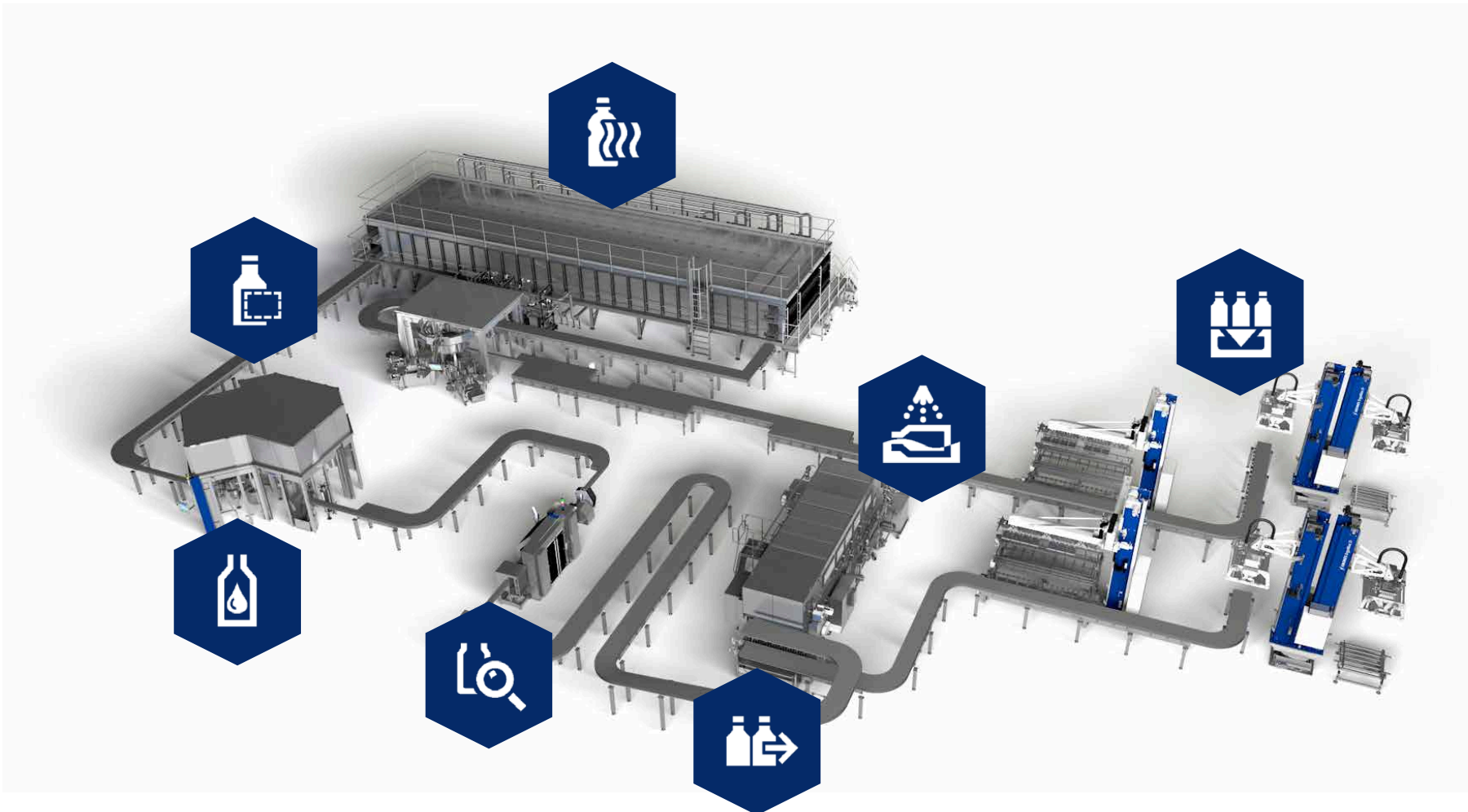
For a personalised overview, customised to suit your line's requirements, see the Kronos.shop in "Product Upgrades" in your user account.



**Example of a schematic representation:**

Conversion measures on the washer for the PSL package upgrade for self-adhesive labels

# Handling parts for your returnable glass line



-  Storage
-  Cleaning technology
-  Inspection technology
-  Filling technology
-  Labelling technology
-  Product treatment technology
-  Packaging and palletising technology
-  Conveyor technology



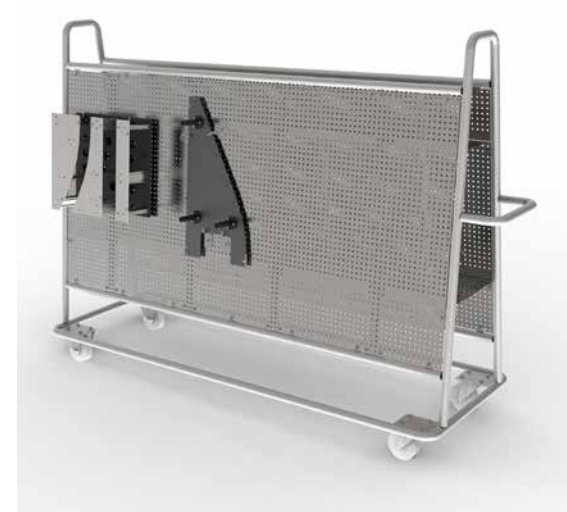
# Storage of handling parts



Keeps production organised: Our specially developed trolleys and storage systems not only store your handling parts and gripper unit handling parts (for packers for returnable containers) professionally, but also in a way which makes them optimally accessible for your employees.

## Handling parts trolley

- Professional storage of unused handling parts
- Safe and ergonomic delivery and return during change-over
- Protection from damage
- Reduced change-over times due to format-specific storage
- Made of non-corroding material
- Design with aluminium profile rails for intermittent packers



Design for intermittent packers

# Storage of handling parts



## Storage systems for gripper unit handling parts (for packers for returnable containers)



Shelf magazine



Flat magazine



With scissor-type lifting table



# Cleaning technology

## Our service



- The containers and filling medium are checked to see if they are suitable for cleaning
- Attachment for bottle guide at the infeed for the processing of new bottle types
- Inspection to determine the label processability  
→ Label detachment trials can be performed in the Krones technical centre
- When using film or foil labels, the washer can be converted or retrofitted to suit the respective needs with a range of upgrades



The bottle guides can be easily replaced during product change-over



Bottle guides

# Inspection technology

## Our service



### Inspection of customer objects for processability

Verification of design changes and evaluation of the effects on the inspection and monitoring technology

- Container design
- Customer objects
- Output

### Adjustments on site

- Creating new types
- Machine parameterisation



# Inspection technology

## Our service



### Test laboratory

Optimally equipped technical centre with numerous inspection technology machines:

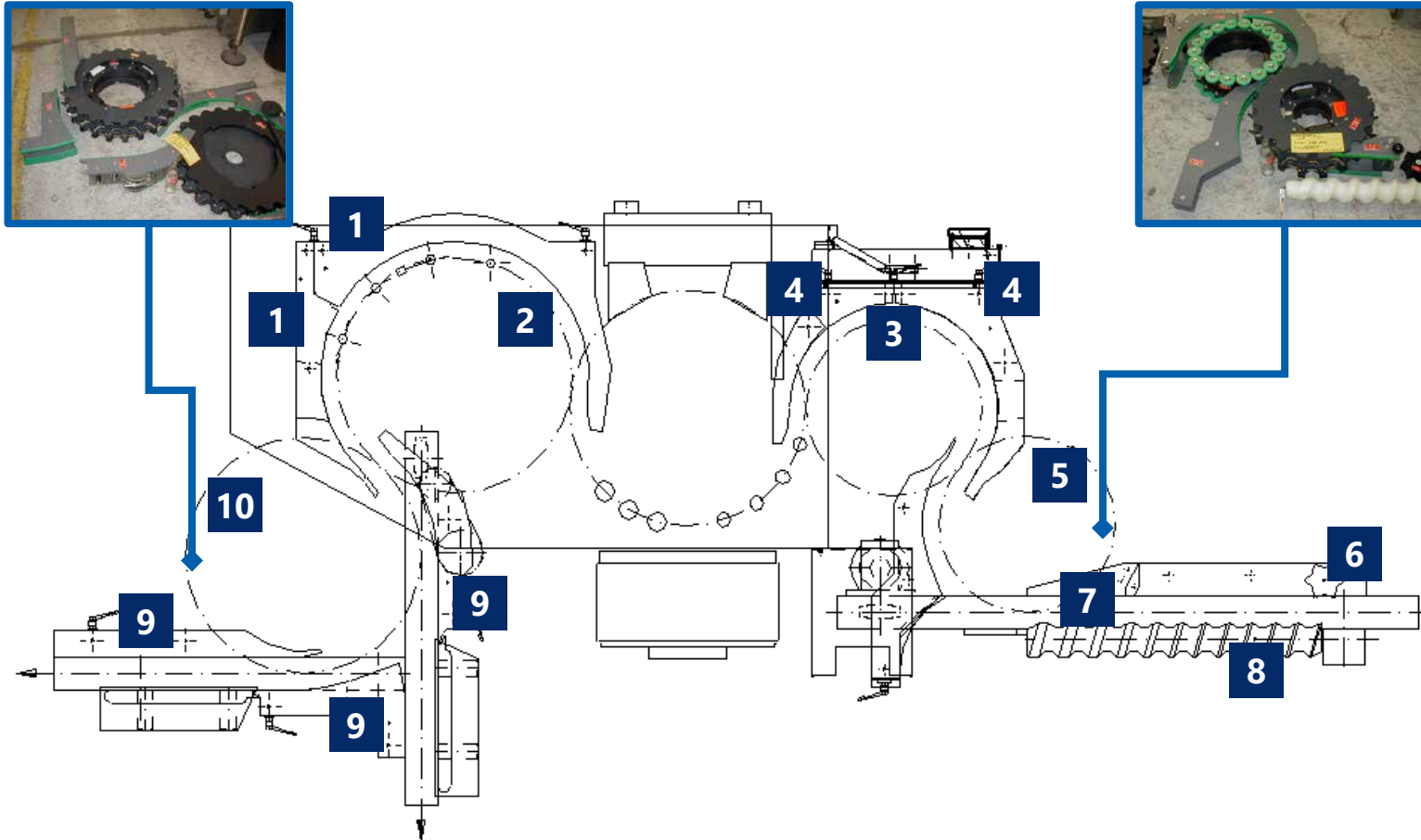
- Testing of the required inspections with the original container design
- Execution of customer tests: Checking of customer objects for processability, suitability for inspection, inspection precision and speed
- Creation of test bottles for the inspection technology



Krones inspection laboratory

# Inspection technology

## Handling parts for rotary machines



- 1** Inspection guide
- 2** Inspection starwheel, top and bottom
- 3** Infeed starwheel
- 4** Curved infeed guide
- 5** Infeed starwheel and neck guide
- 6** Stop starwheel
- 7** Infeed flap
- 8** Infeed worm
- 9** Curved discharge guide
- 10** Rejection starwheel and neck guide



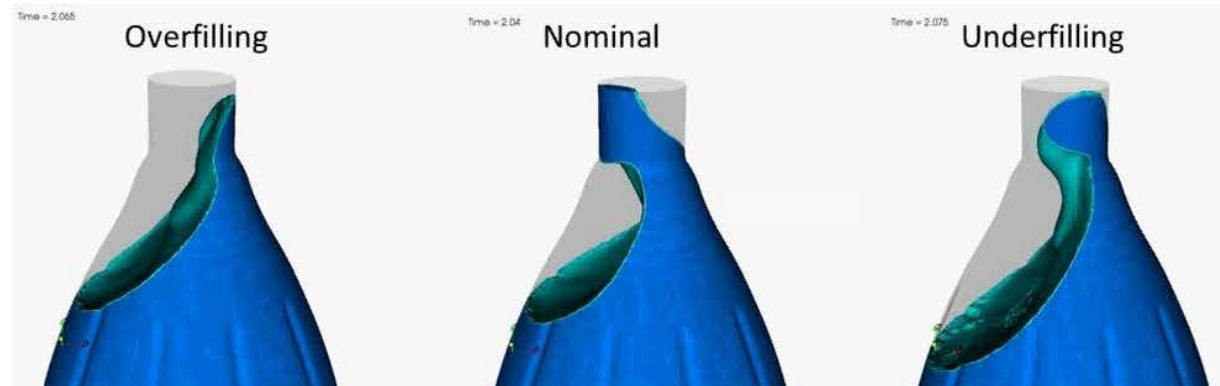
# Filling technology

## Our service



### Checking of containers, caps and filling medium

- Verification of changes in the design, already in the run-up using prototype containers:
  - Filling tests
  - Capping tests
  - Swashing simulation
- Checking of the flow characteristics based on the container contour and neck geometry
- Testing of caps based on different parameters such as dimensions, plate thickness, colours and scuffing or head pressure



Swash simulation



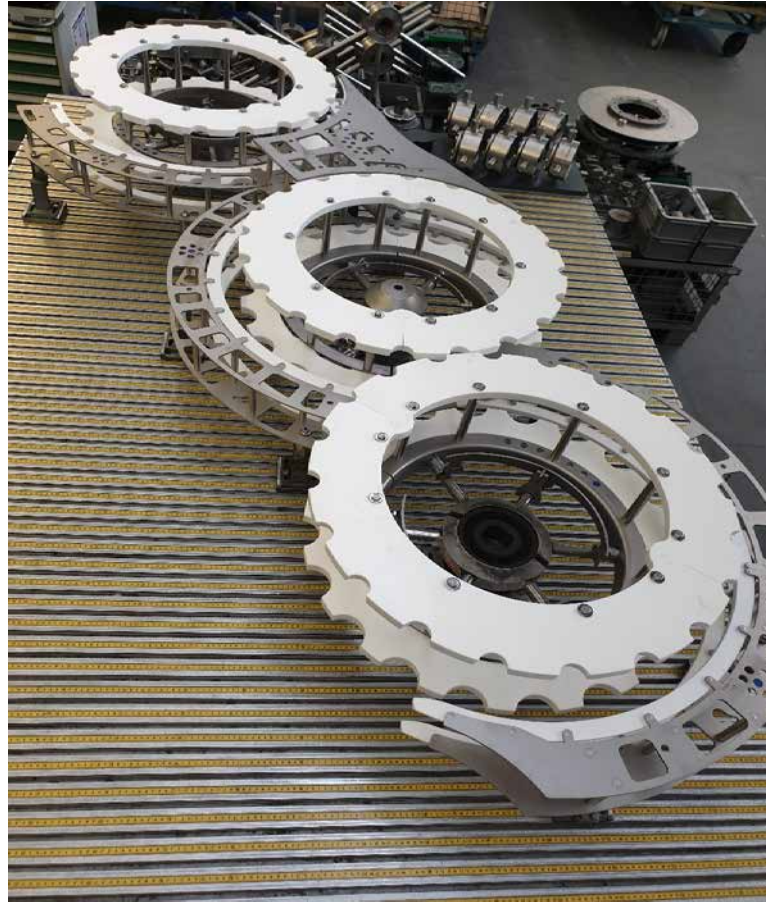
Kronos filling laboratory

# Filling technology

## Handling parts for the rinser



Infeed worms



Handling parts complete with starwheels



Grippers with neck and body gripper



Curbed infeed/discharge guide with starwheels



Coloured identification marks



# Filling technology

## Handling parts for the filler



Starwheels and guides



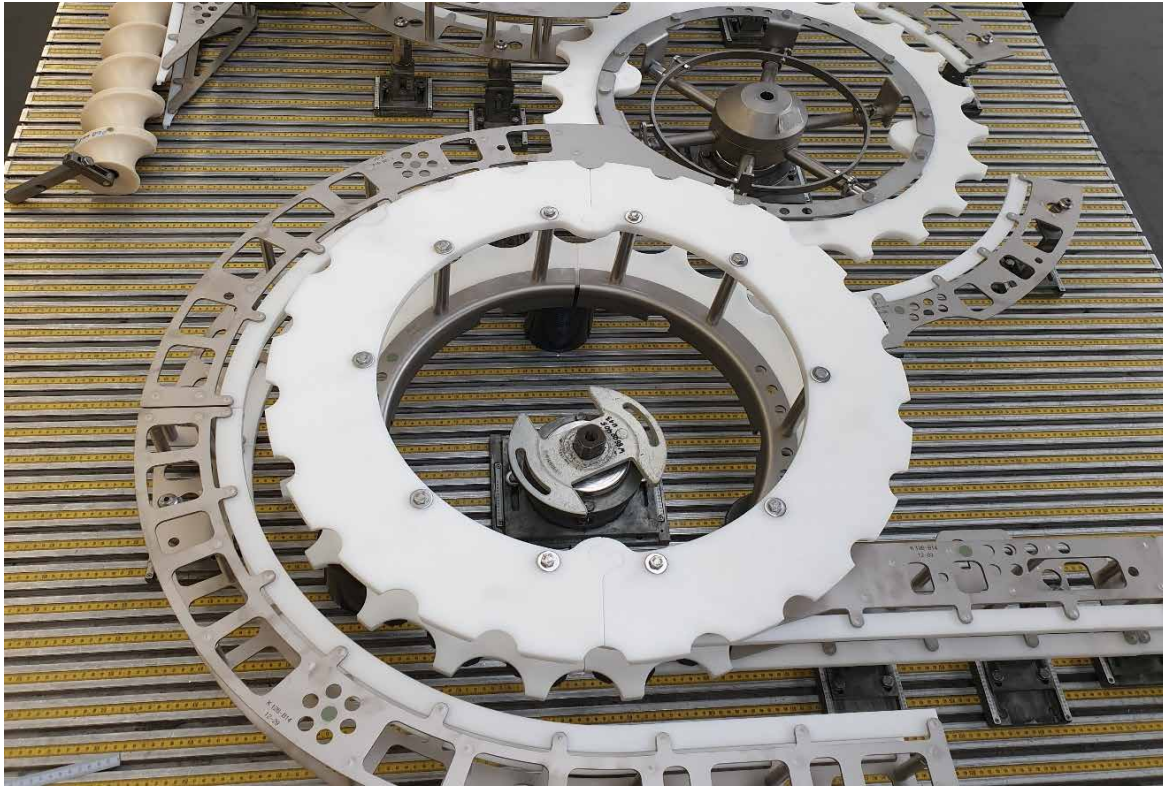
Vent tubes



Curved infeed and discharge guide with starwheels

# Filling technology

## Handling parts for the capper



Container handling parts for the capper



Discharge starwheel for the capper



# Labelling technology

## Our service



### The Kronos test centre at a glance

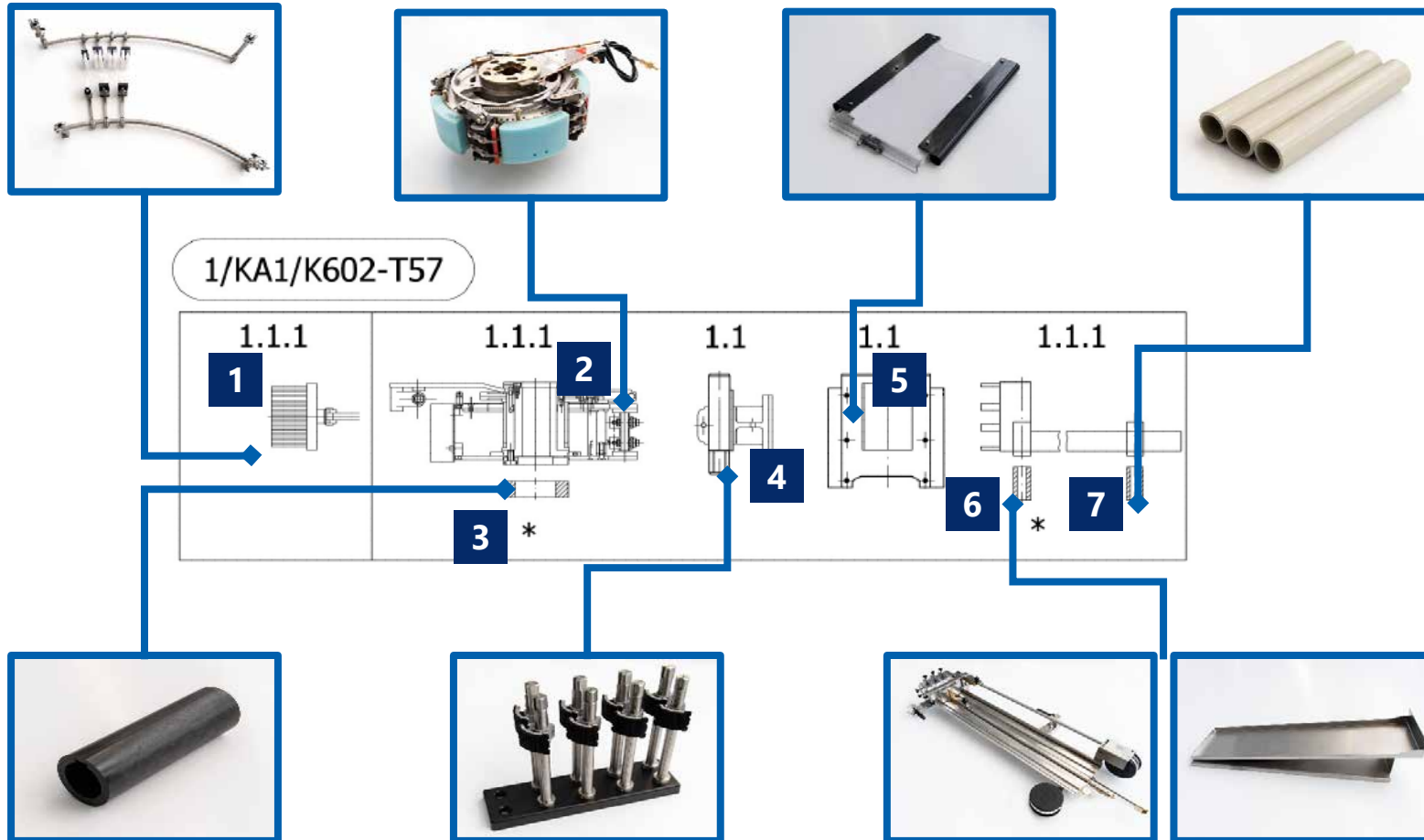
- Optimally equipped technical centre with the latest labellers:
  - Label testing for each type of technology (sleeves, pre-cut or plastic labels)
  - Checking the label specifications in the laboratory
  - Orientation tests for containers
- Execution of customer tests: Checking the labels for processability, shrink test, determination of the maximum splicing speed, checking of the label seat in a test loop
- Analysis of label shape, dimension and label seat on the original container
- Testing the glue for proper functioning and usability in close cooperation with KIC Kronos

Kronos offers comprehensive expertise with regard to the acquisition and stock keeping of labels. We are pleased to provide our collected know-how in our label specification or in the context of an individual consulting.



# Labelling technology – Label handling parts per label

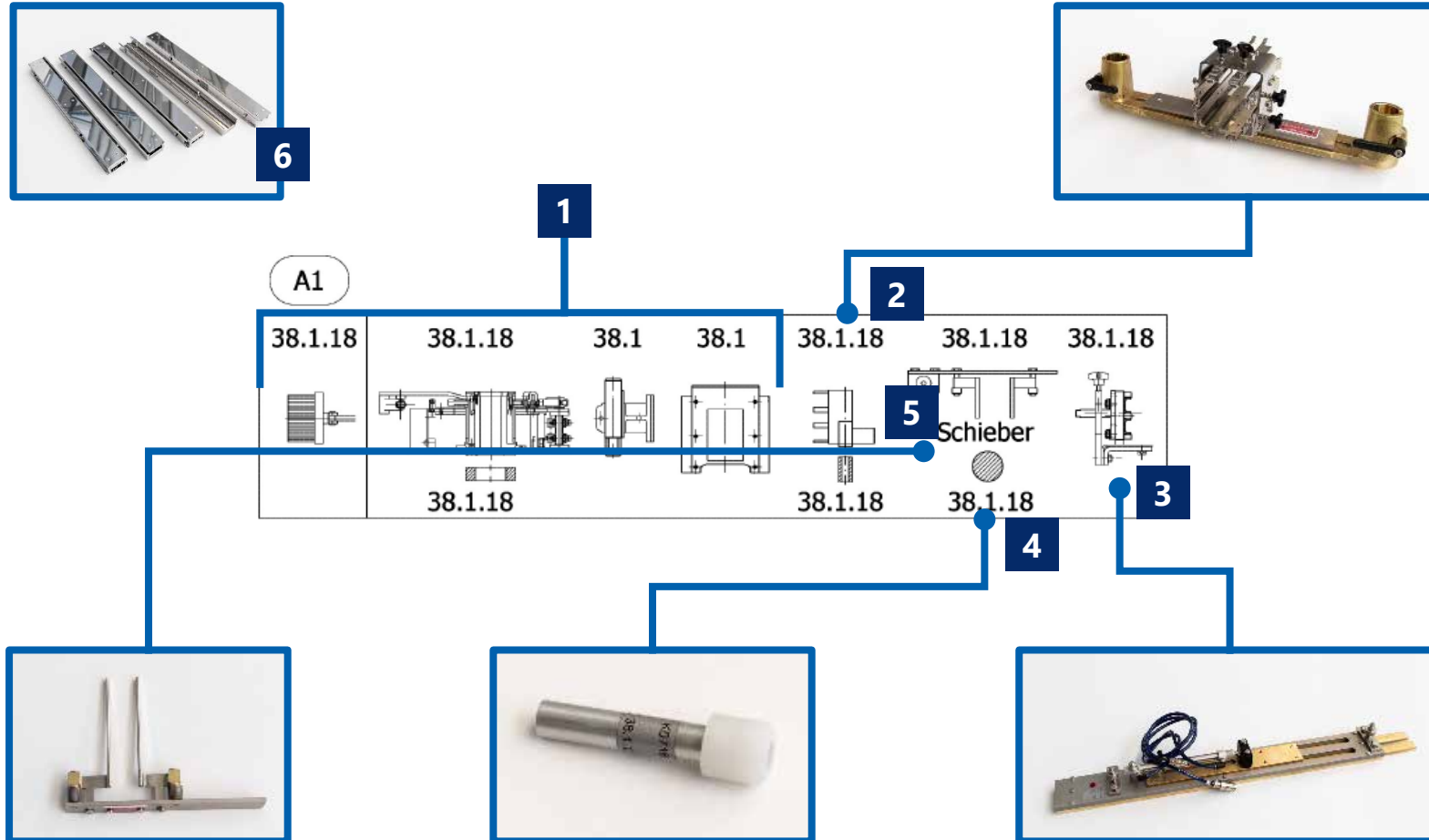
## Variant 1 – Standard



- 1** Label brush-on unit
- 2** Gripper cylinder
- 3** Spacer gripper cylinder
- 4** Pallet supports including pallets
- 5** Guards
- 6** Standard label magazine and mount with interchangeable magazine
- 7** Label magazine spacers

# Labelling technology – Label handling parts per label

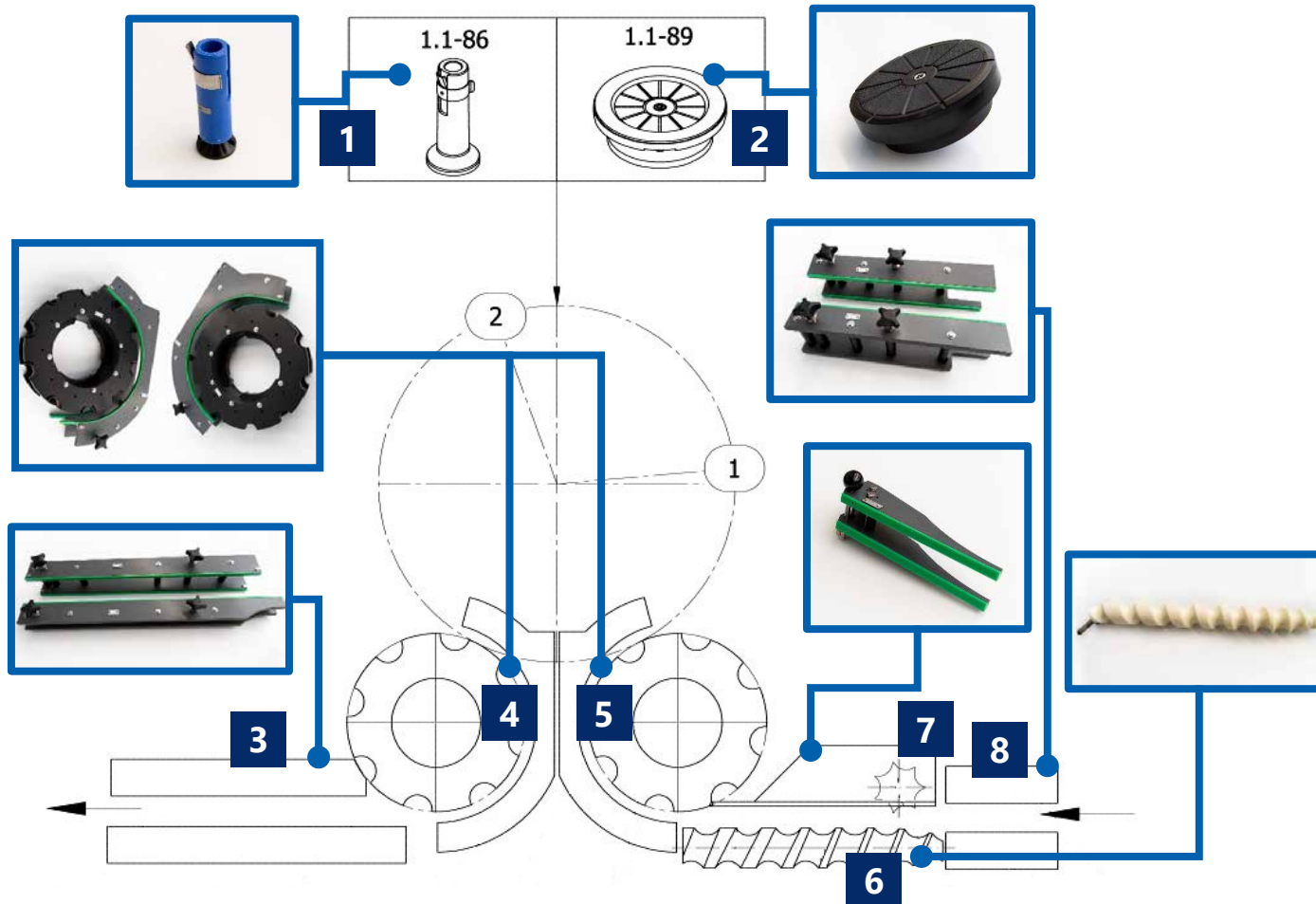
Variant 2 – AMB (automatic magazine loading system) for increased machine output



- 1** Compare to variant 1
- 2** Label magazine
- 3** Guide plate
- 4** Pusher
- 5** Label follower with double flaps
- 6** Interchangeable magazine

# Labelling technology

## Container handling parts



- 1** Centring bell
- 2** Container plate
- 3** Inner and outer discharge guide
- 4** Central guide bend at discharge including discharge starwheel
- 5** Central guide bend at infeed including infeed starwheel
- 6** Infeed worm
- 7** Infeed flap
- 8** Inner and outer infeed guide



# Product treatment technology

## Our service



### Checking containers and filling medium

- Analysing glass bottle and filling medium with a mini pasteuriser in the Krones technical centre
- Determining the necessary heat transfer coefficient
- Significant reduction of installation works at the pasteuriser on site thanks to previous product test
- Checking bottle and filling medium for processability in the tunnel pasteuriser (performance, flushing temperatures)



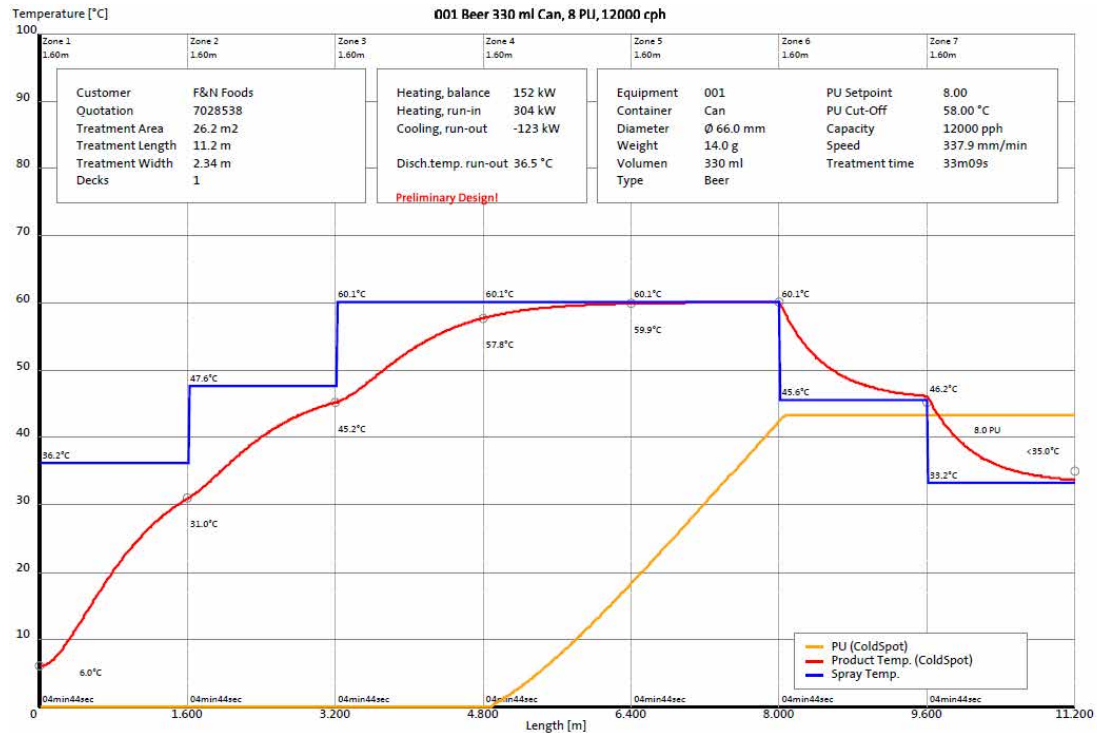
Krones mini pasteuriser

# Product treatment technology

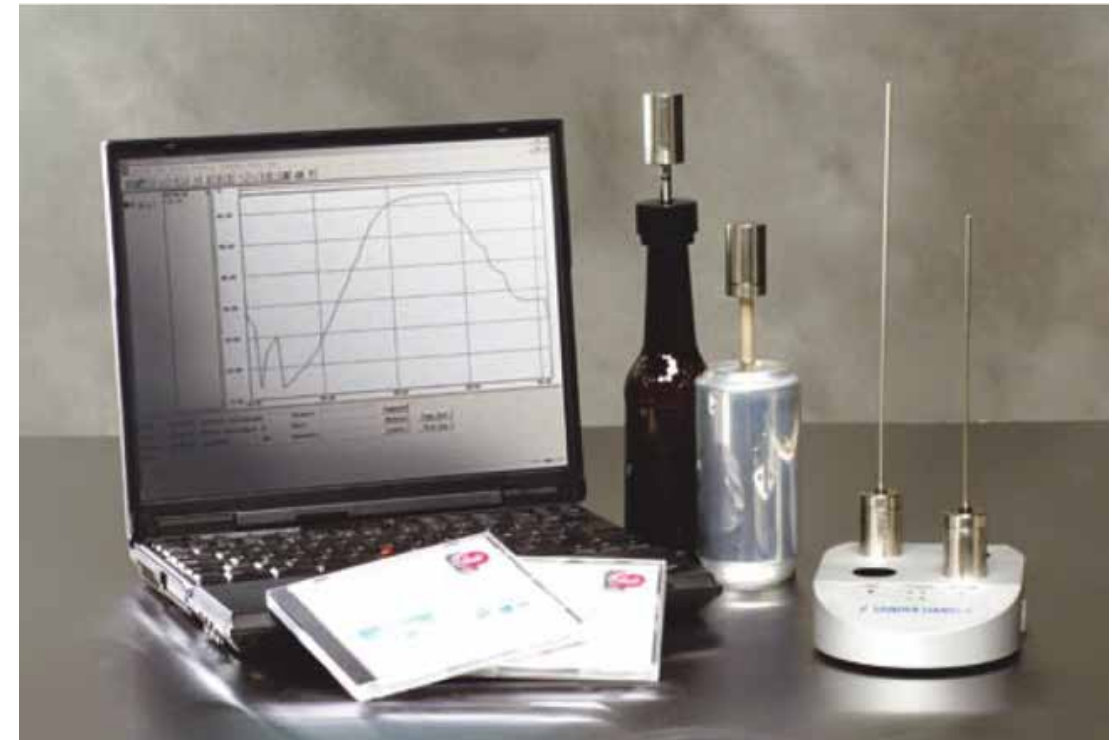
## Handling parts



### Creating new product types



### Measuring and validation with Krones upgrade PU recorder



# Packing and palletising technology

## Our service



### Packaging

- Deciding on the handling parts required based on the crate and bottle drawings and/or sample material
- Checking of storage options; possibly the creation of a layout proposal for additional gripper unit handling parts
- Consideration of the existing change system for handling parts (manual/automatic)

### Palletising

- Development of suggestions for layer patterns
- Consulting with regard to customer's suggested layer patterns
- Deciding on the gripper unit components required based on the crate and bottle drawings and/or sample material
- Checking of storage options; possibly the creation of a layout proposal for an additional gripper unit
- Consideration of the existing gripper unit change-over system (manual/semi-automatic/automatic)





# Packing technology

## Handling parts



If the differences in container diameter are minimal:

- Bottle guides
- Spring assembly and adjustable adapters for the gripper unit (only for gripper heads that can be pulled in one-dimensionally and for an existing crate)



Gripper unit handling parts (unpacker)



Type expansion

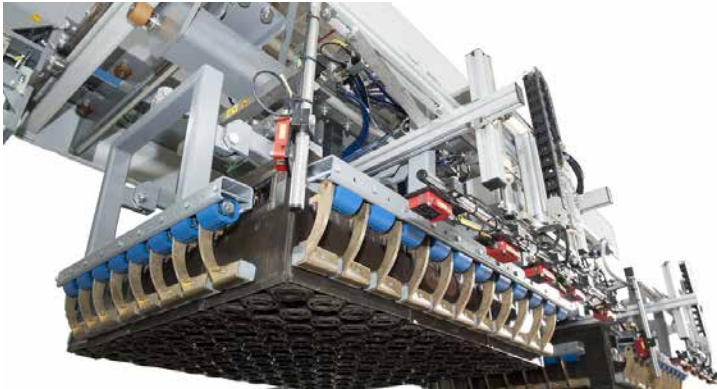


Gripper unit handling parts (packer) with insertion frame, bottle guide plates and vibrator



# Palletising technology

## Handling parts



Clamp gripper unit for palletising (or depalletising)



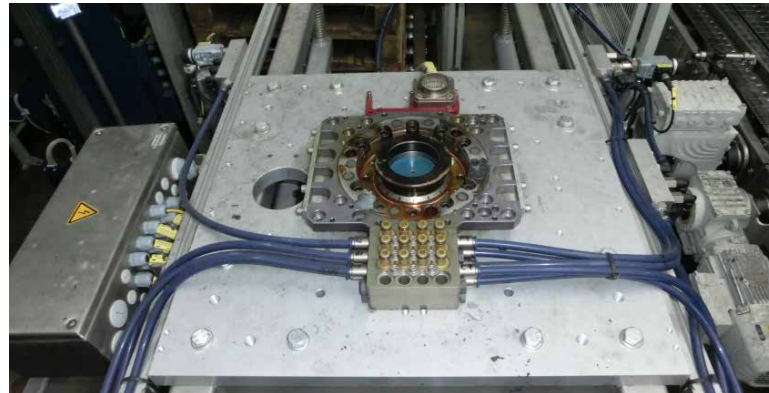
Example: Head support frame for gripper unit storage



Type expansion



Hook gripper unit for palletising



Example: Automatic change-over system for gripper heads



Stopper bridge for depalletising



# Conveyor technology

## Our service

The settings and parameters of the conveyors are compared to the characteristics of new customer objects and modified in such a way that they ensure optimum processing.

## Container conveyors

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Possible modifications:

- Conversion to an adjustable rail (longer locking pins or set collars)
- Adjustment of the wear strip to protect the containers and labels
- Rail adjustment depending on the bottle shape and size



# Conveyor technology

## Our service



### Pack conveyor

Possible modifications:

- Conversion to an adjustable rail (longer locking pins or set collars)
- New pointers and colour charts for new pack dimensions

### Pallet conveyor

Possible modifications:

- Conversion to an adjustable rail (longer locking pins or set collars)
- Adjustment or conversion of the functional groups (stopper, centring unit, pallet magazine, pallet inspection unit)
- Checking of the feasibility of gripper unit change-over (including heavy-duty stopper and centring unit)



**SOLUTIONS  
BEYOND  
TOMORROW**

