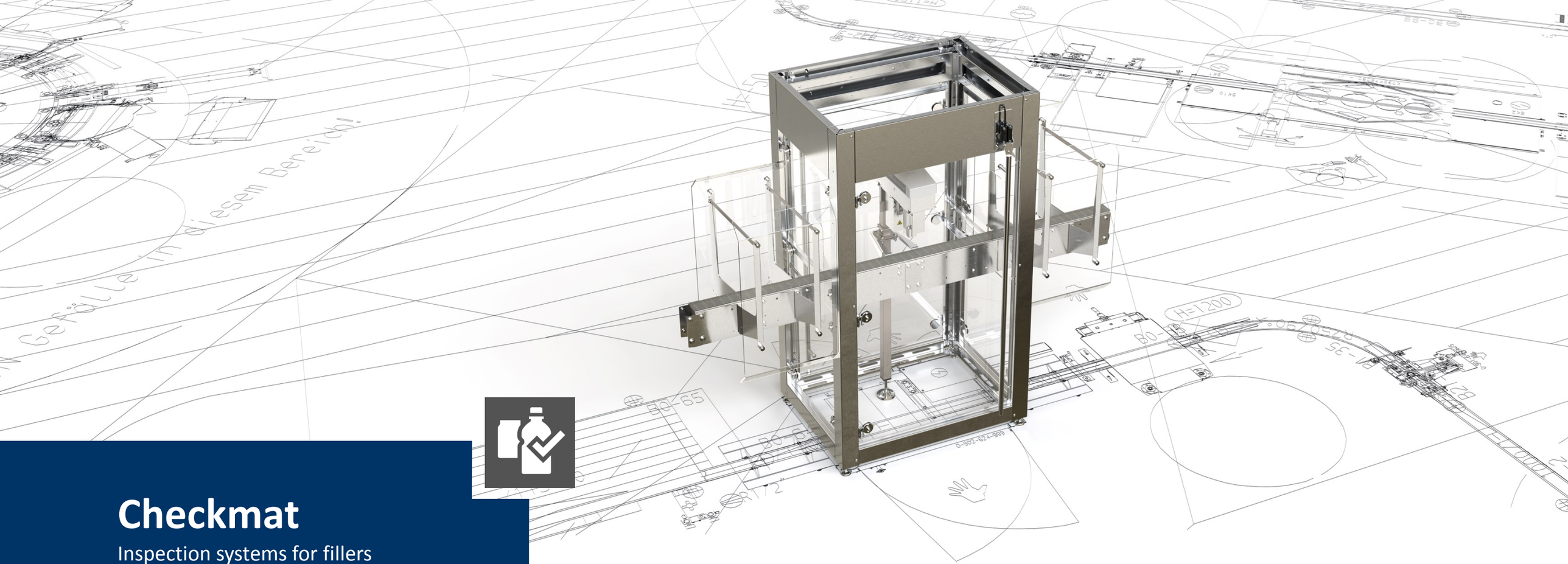


Checkmat

Inspection systems for fillers
and cappers

KRONES

All-around check for maximum safety and performance

Is the fill level in the bottle okay? Is the cap position straight? Does the safety ring justify its name? The Checkmat inspection systems give you a clear answer to each of these questions. For example, by exactly checking the fill level of different types of containers and bottle caps from all sides.

Who is the ideal team partner for the Checkmat inspector? The KRONES filler management solutions. They monitor and record important production data providing you with valuable knowledge about the best optimisation.

At a glance

- Full-container inspection unit
  - Fill level inspection unit with high-frequency, infrared camera, gamma or x-ray technology
  - Cap and safety ring detection unit with sensor and camera technology*
- Filler management
  - Production management
  - Quality management
  - Safety management
- Automatic or manual adjustment of the rail as well as the inspection unit height

Benefits to you

- Maximum product quality and safety thanks to continuous container inspection
- Increased line efficiency thanks to automatic detection and rejection of faulty material

** Prerequisite:*
Cap blower for the removal of water drips from the cap and the support ledge.

Fill level inspection unit: high-frequency

Standard values	
+/- 4 mm at 99 percent	Underfills and overfills

Technical features

- 1 sensor for underfill and overfill inspection (Checkmat K707)
- Display of analog measured values
- Output of up to 72,000 containers per hour

Range of applications

- Suitable for slightly foaming and non-foaming products
- Not suitable for
  - metallised labels or foiling
  - metallised containers
  - oils or products containing oil
  - beverages with an alcohol content of more than 50 percent

Benefits to you

- No registration rights required
- Operation without any radiation protection officer

Fill level inspection unit: Infrared

Standard values	
+/- 2 mm at 99 percent	Underfills and overfills

Technical features

– 1 sensor for underfill and overfill inspection
– Display of analog measured values
– Output of up to 72,000 containers per hour

Range of applications

– Suitable for
  - slightly* foaming and non-foaming products
  - label-free zones
– Not suitable for containers with imprints or embossing at the height of the fill level

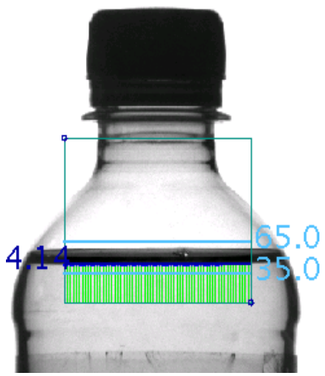
Benefits to you

– No registration rights required
– Operation without any radiation protection officer

** Clear transition between liquid and foam*

Fill level inspection unit: camera

Standard values	
+/- 1 mm at 99 percent	Underfills and overfills



Technical features

- 1 camera for underfill and overfill inspection
- Display of analog measured values
- Output of up to 72,000 containers per hour

Range of applications

- Suitable for:
  - transparent containers
  - slightly* foaming and non-foaming products
  - label-free zones
- Not suitable for containers with imprints or embossing at the height of the fill level

Benefits to you

- No registration rights required
- Operation without any radiation protection officer

** Clear transition between liquid and foam*

Fill level inspection unit: gamma

Standard values	
+/- 2 mm at 99 percent	Underfills and overfills

Technical features

– 2 sensors for underfill and overfill inspection
– Automatic gamma source shut-off when machine has stopped
– Output of up to 120,000 containers per hour

Range of applications

Suitable for slightly* foaming and non-foaming products

Requirements

– Application requirements
– Radiation protection officer

Benefits to you

– Suitable for glass container and PET containers as well as cans

** With consistent foam behaviour*

Fill level inspection: X-ray

Standard values	
+/- 1.5 mm at 99 percent	Underfills and overfills

Technical features

– 2 sensors for underfill and overfill inspection
– Automatic gamma source shut-off when machine has stopped
– Output of up to 120,000 containers per hour

Range of applications

Suitable for slightly* foaming and non-foaming products

Requirements

– Application requirements
– Radiation protection officer

Benefits to you

– Precise results – regardless of the product and the label
– Suitable for glass container and PET containers as well as cans

** With consistent foam behaviour*

Cap inspection unit for crowns and plastic screw caps

Inspection of the caps for	Inspection range: 360°
– Presence	

Technical features

– 1 unit

– 1 sensor

– Output of up to 72,000 containers per hour

Cap inspection unit for crowns

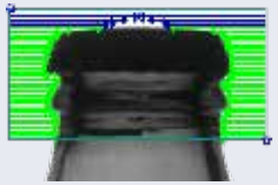
Technical features

- 1 unit
- 2 cameras with an inspection range of 240°/360°
- LED lighting
- Output of up to 72,000 containers per hour

Requirements

No water drops on the caps

Inspection of the caps for	Inspection range: 360°
– Presence	
– Slanted position	

Inspection of the caps for	Inspection range: 240°
– Damage > 90°	
– Diameter	

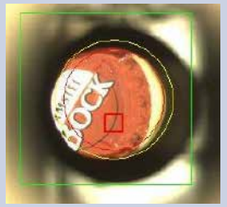
Cap inspection unit for crowns

Technical features

- 1 unit
- 1 camera with an inspection range of 360°
- LED lighting
- Output of up to 72,000 containers per hour

Requirements

No water drops on the caps

Inspection of the caps for	Inspection range: 360°
– Colour and logo	
– Correct cap (product mix-up)	
– Position of the printed image	
– Damaged printed image	

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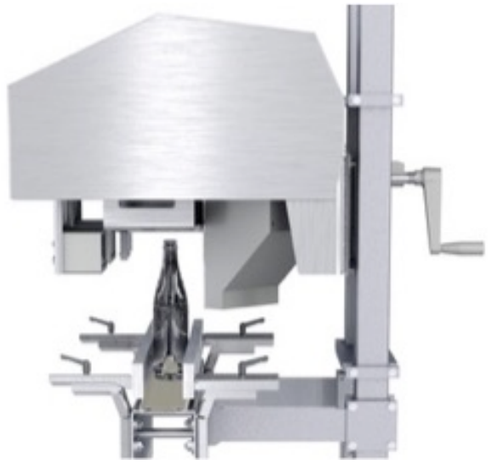
Cap inspection and safety ring detection unit for plastic screw caps

Technical features

- 1 unit
- 2 cameras with an inspection range of 240°/360°
- LED lighting
- Output of up to 72,000 containers per hour

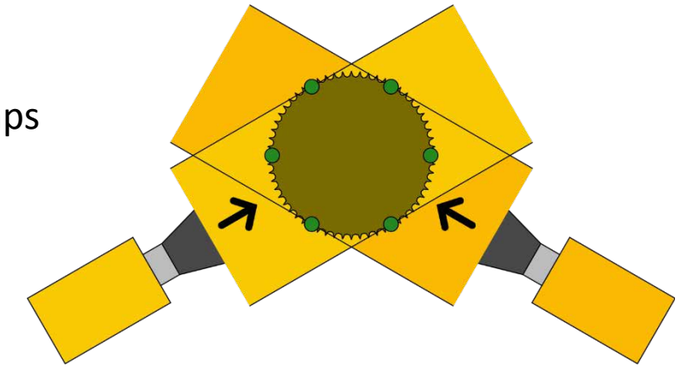


Range of applications

Suitable for non-transparent caps

Requirements

No water drops on the caps



Inspection of the caps for	Inspection range: 360°
– Presence	
– Height	

Inspection of the caps for	Inspection range: 240°
– Slanted cap > 120° of the circumference	

Inspection of the safety rings for	Inspection range: 240°
– Damage > 120° of the circumference	
– Jammed ranges > 120° of the circumference	
– Broken perforation > 120° of the circumference, gap > 1mm	

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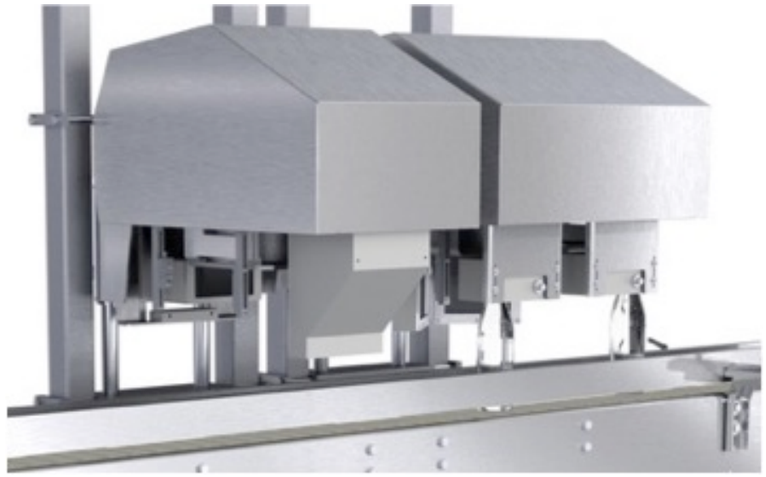
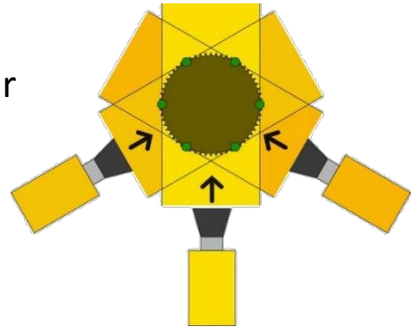
Cap inspection and safety ring detection unit for plastic screw caps



Technical features
- 1 unit
- 3 cameras with an inspection range of 360°
- LED lighting
- Output of up to 72,000 containers per hour

Range of applications
Suitable for non-transparent caps

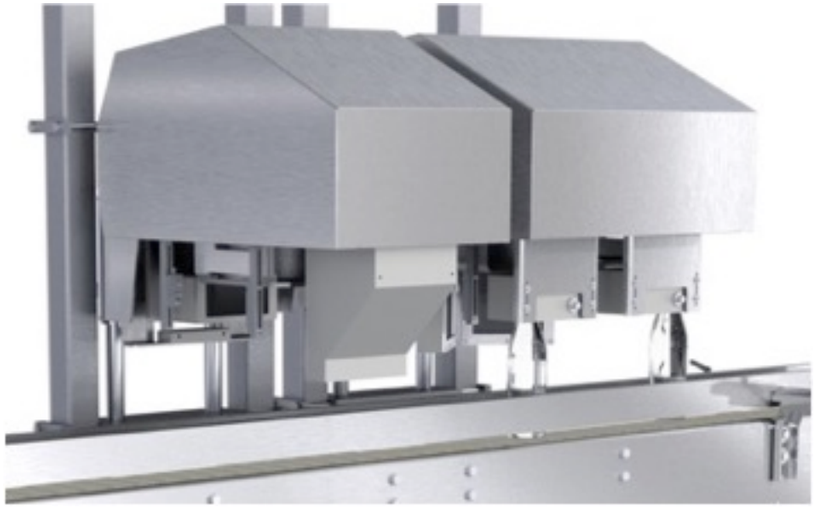
Requirements
No water drops on the caps



Inspection of the caps for	Inspection range: 360°
– Presence	
– Height	
– Slanted cap > 70° of the circumference	

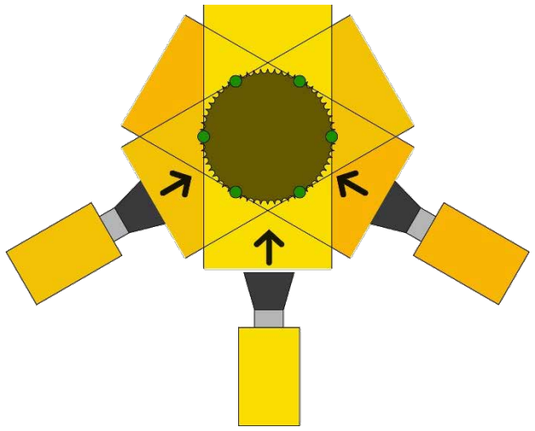
Inspection of the safety rings for	Inspection range: 360°
– Damage > 70° of the circumference	
– Jammed ranges > 70° of the circumference	
– Broken perforation > 70° of the circumference – Gaps > 1 mm	

Cap inspection and safety ring detection for aluminium screw caps



Technical features

- 2 units
- 3 cameras with an inspection range of 360°
- LED lighting
- Output of up to 72,000 containers per hour



Inspection of the caps for	Inspection range: 360°
– Presence	
– Cap height (reform area)	
– Slanted label position	
– Damage > 60°	
– Incorrectly rolled-on cap (crimp fault)	
– Incorrectly rolled-on cap (missing weak grove)	
– No roll-on (missing thread)	

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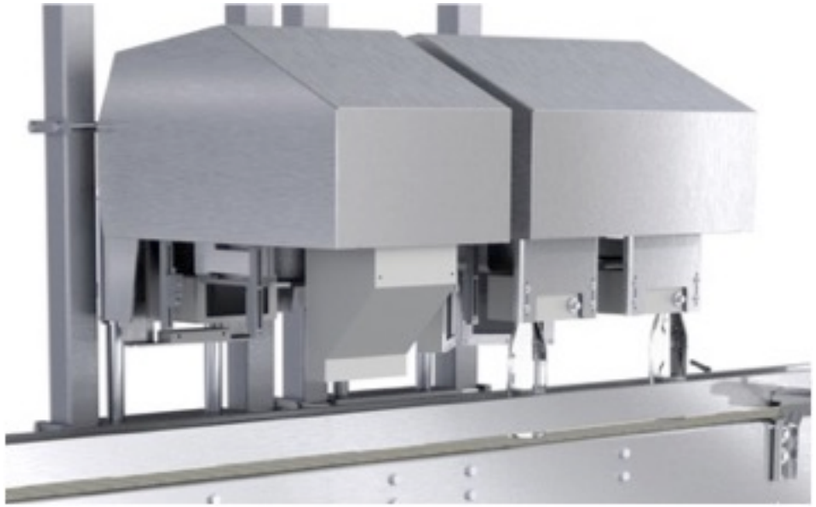
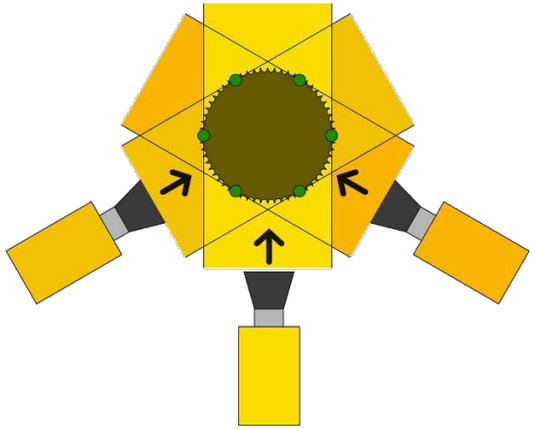
Cap and thread inspection unit for aluminium screw caps



Technical features

- 2 units
- 3 cameras with an inspection range of 360°
- LED lighting
- Output of up to 72,000 containers per hour



Inspection of the thread for	Inspection range: 360°
– Damage (weak thread)	

Inspection of the safety rings for	Inspection range: 360°
– Broken perforation – Gaps > 1.3 mm, depending on the container colour	

Filler management

Production management

- Monitoring of the rinsing and filling valves and capping heads
- Assignment of the filling valves and capping heads
- Detection of consecutive faults
- Creation of type and trend statistics
- Creation of output histograms

Quality management

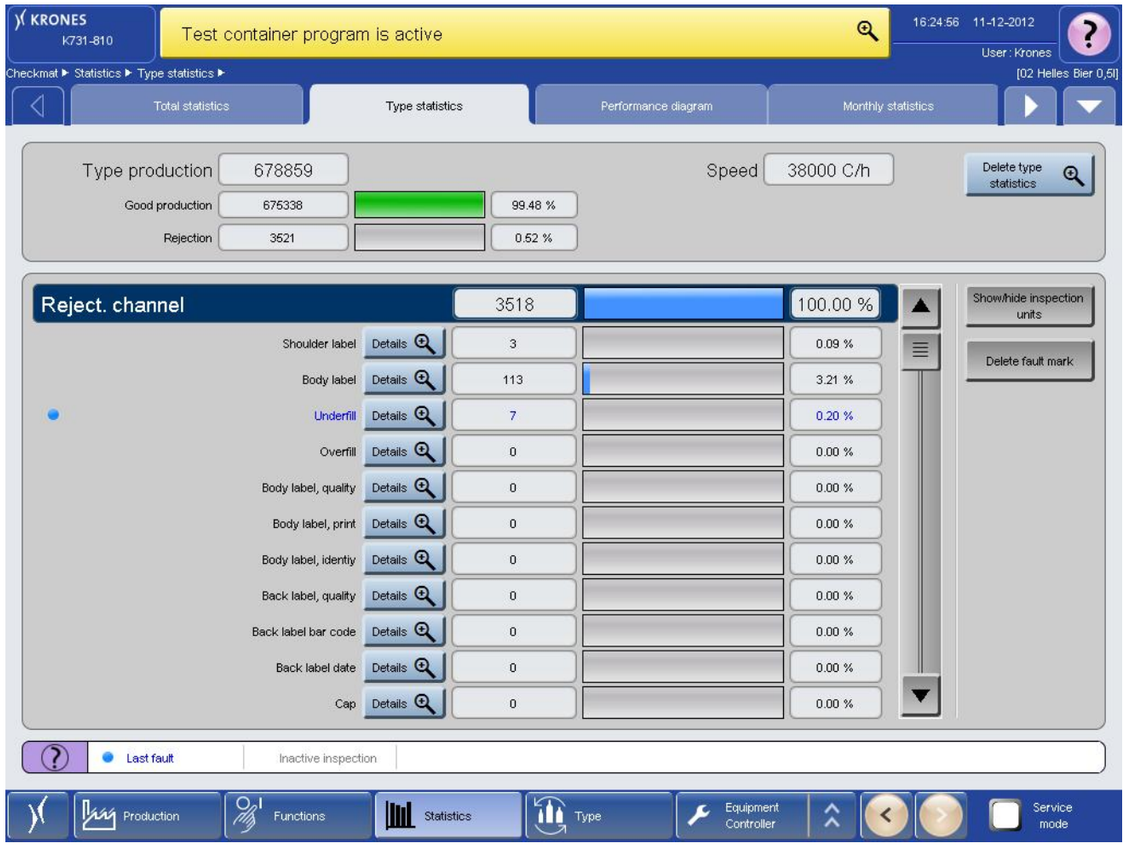
- Air content rejection
- Dating/coding management
- Service rejection
- Vent tube detection
- Broken bottle detection system

Benefits to you

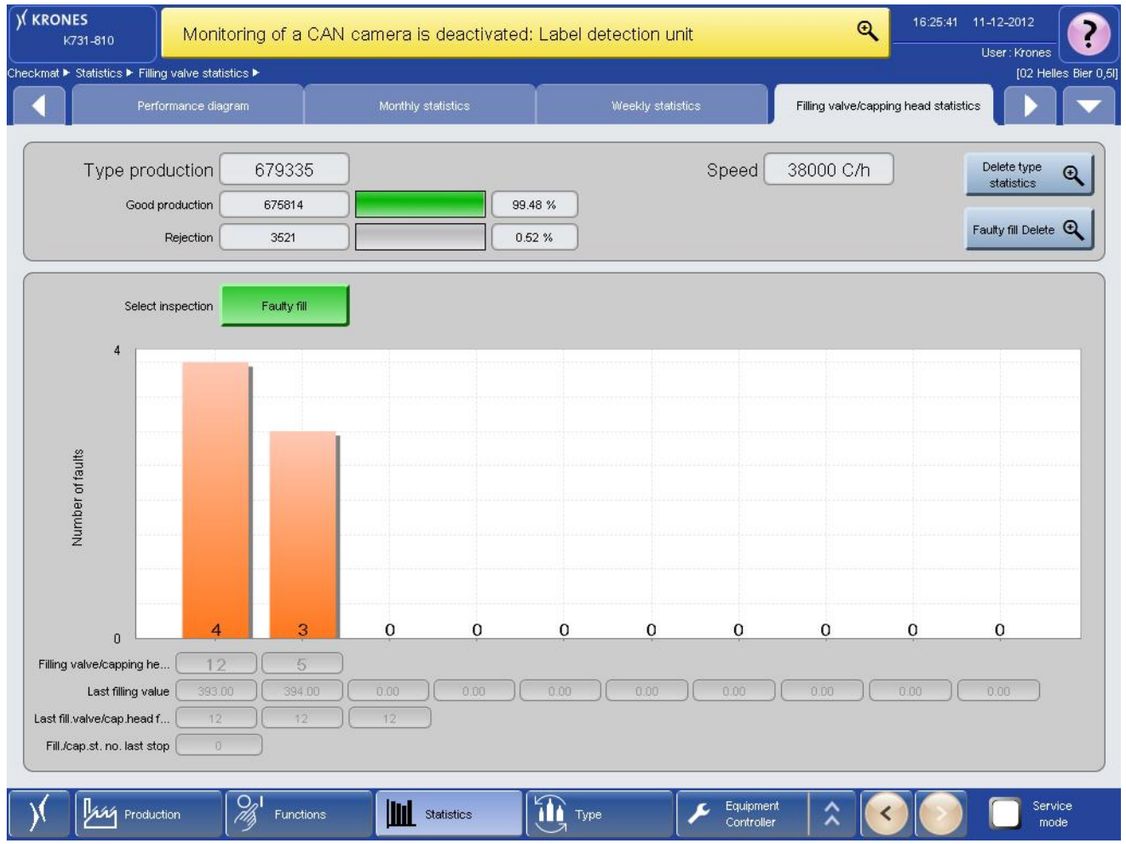
- Increased line performance
- Quicker malfunction analysis
- Complete protocols

Production management

Creation of type statistics



Assignment of the rinsing and filling valves and capping heads



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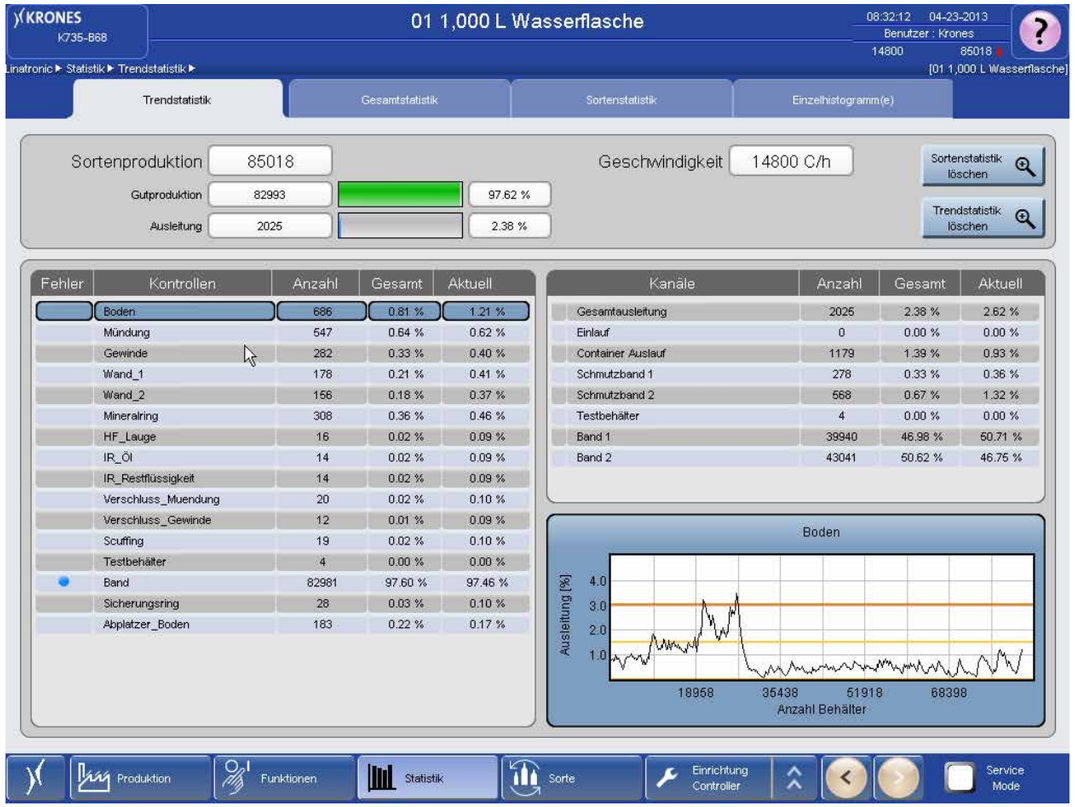
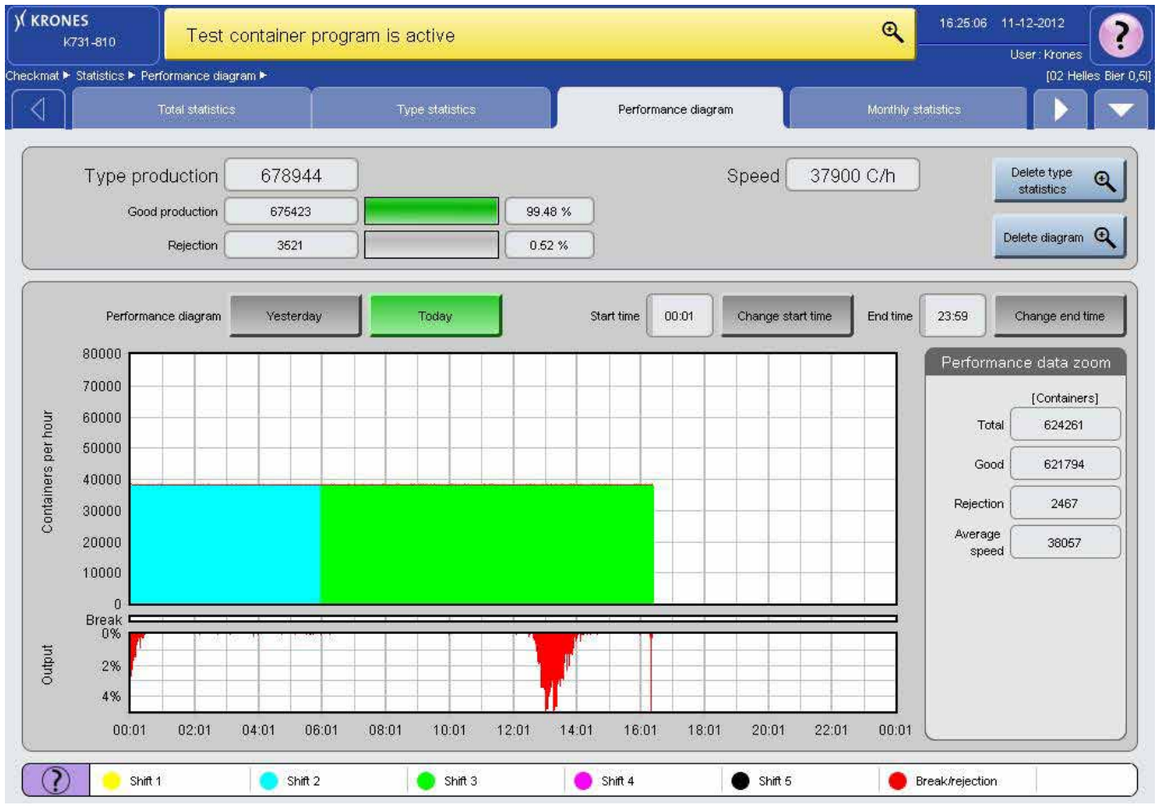
Production management

Creation of a type and trend statistics



Creation of a performance diagram structured by day, week and month



Quality management

Dating/coding management

Coding of

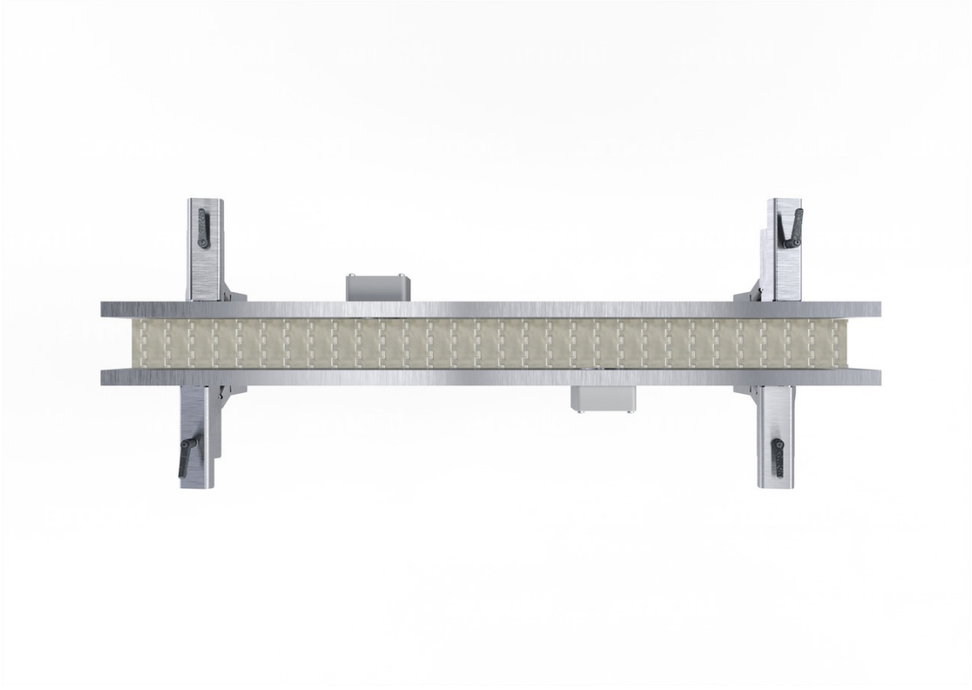
- Injection unit
- Rinsing valve
- Filling valve
- Capping head

Service rejection

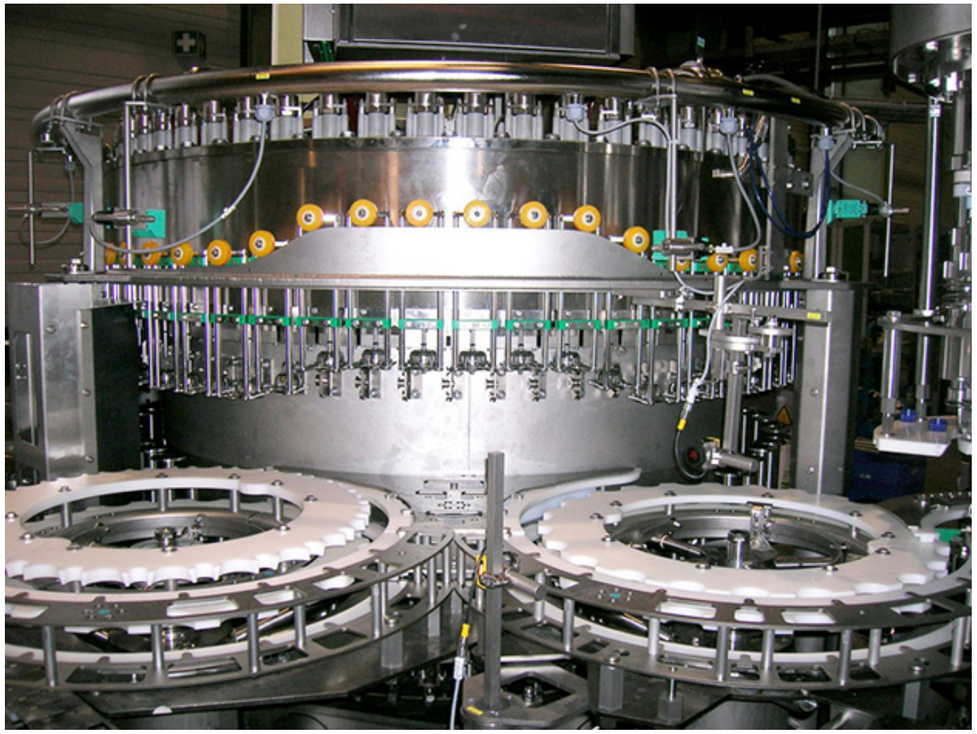
- Monitoring of the production quality
- Number of units and revolutions freely selectable

Quality management

Vent tube detection unit with 2 sensors



Broken bottle detection system



Safety management

Password protection with transponder

- Logon of an authorised person prior to the start of production
- Permanent password protection with automatic log-out function
- Logon via uniform transponder technology, e. g. filler, labeller, etc.

Rejection monitoring

- Monitoring of the rejection unit

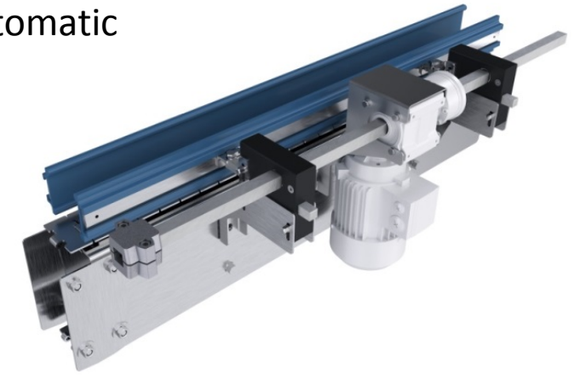
Height adjustment system of the inspection units and rail adjustment system

Height adjustment system of the inspection units

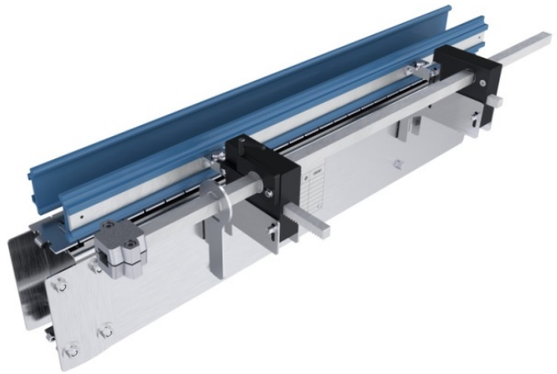
- Automatic or manual

Rail adjustment

- Automatic



- Manual



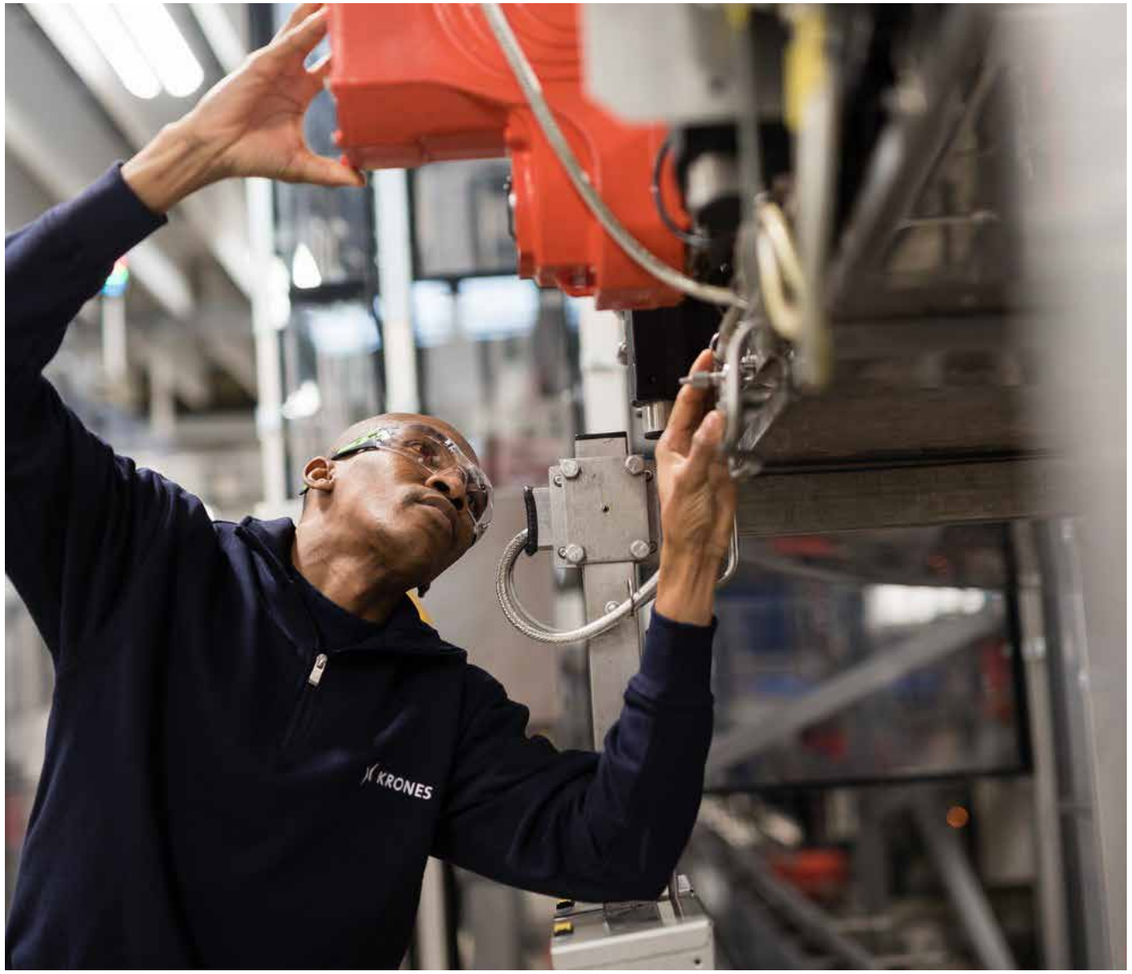
Everything from a single source

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.

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.



KRONES

Digitalisation

Process technology

Bottling and packaging equipment

Intralogistics

Lifecycle Service

We do more.

KRONES