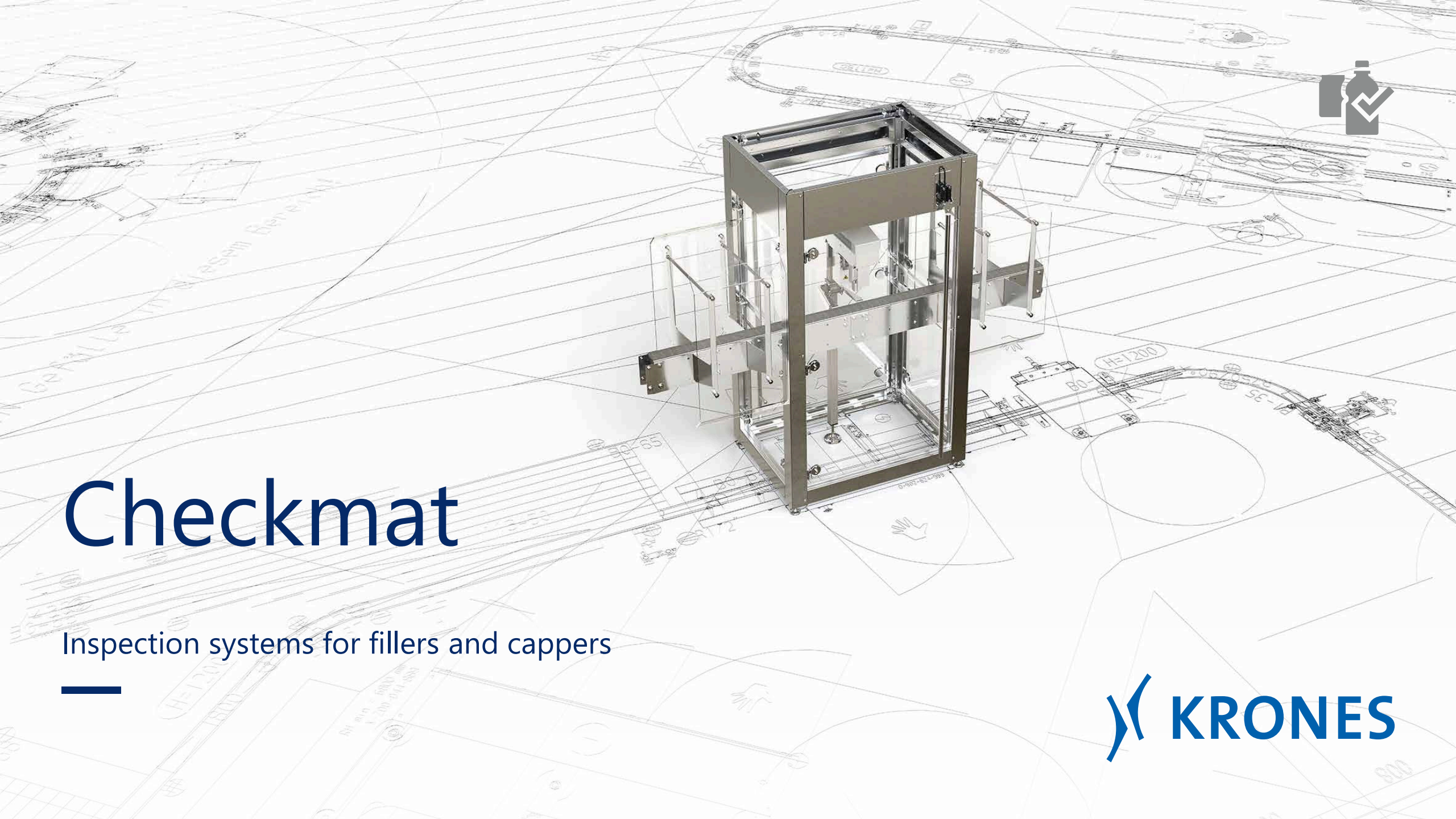


Checkmat

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 tamper-evident 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 the various containers up to within one millimetre and by thoroughly scrutinizing the bottle caps from all sides – regardless whether these are crowns, plastic and aluminium screw caps or tethered caps.

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

- Fill level inspection unit and missing cap inspection unit
  - Fill level inspection unit with high-frequency, infrared camera, gamma or X-ray technology
  - Cap and tamper-evident ring detection with sensor and camera technology*, also suitable for tethered caps
- 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 drops from the cap and the support ledge

High frequency
fill level inspection

Technical features

- 1 sensor for underfill and overfill inspection
- Display of analog measured values
- Output: 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

KRONES

Infrared
fill level inspection

Technical features

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

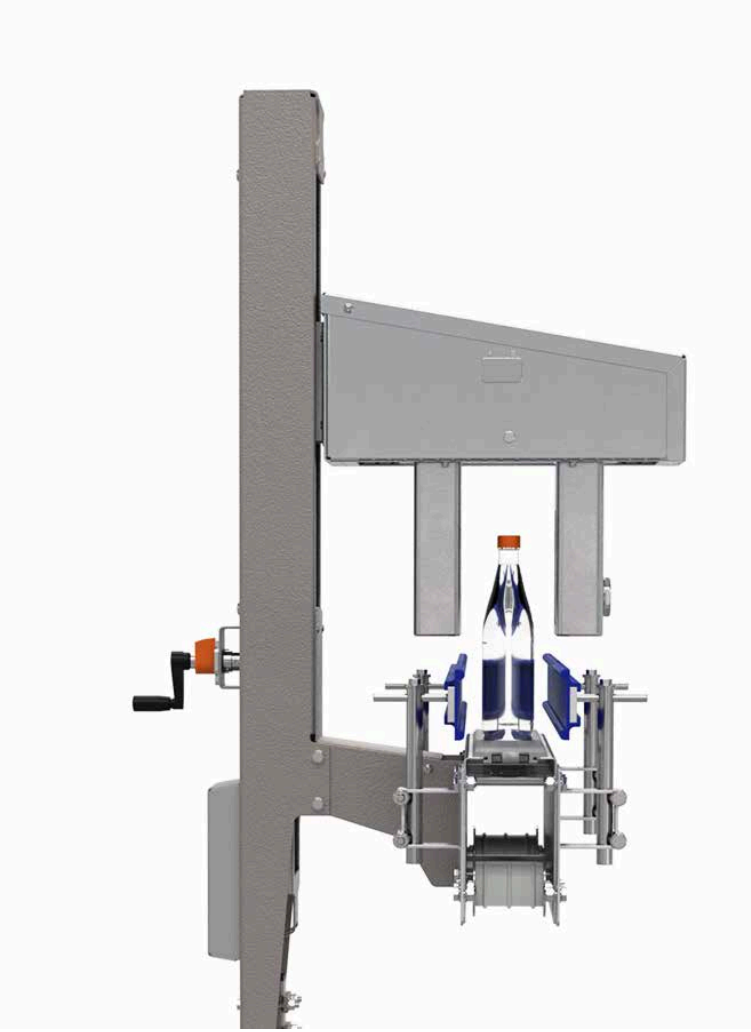
Range of applications

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

Benefits to you

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

* Clear transition between liquid and foam



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Fill level inspection
with camera

Technical features

- 1 camera for underfill and overfill inspection
- Display of analog measured values
- Output: 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 fill level height

Benefits to you

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

* Clear transition between liquid and foam

KRONES

Gamma
fill level inspection

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 and PET containers and cans

* With consistent foaming behaviour

KRONES

X-ray
fill level inspection

Technical features

- 2 sensors for underfill and overfill inspection
- 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 and PET containers and cans

* With consistent foaming behaviour

KRONES

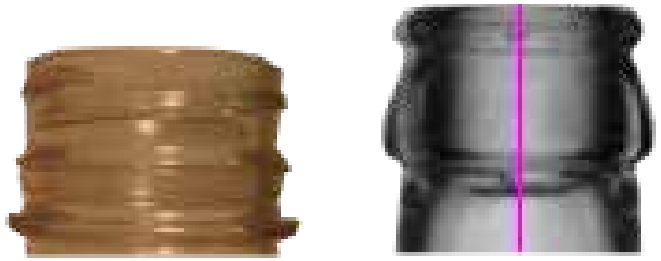
Cap inspection unit for crowns and plastic screw caps

Technical features

- 1 unit
- 1 sensor
- Output: up to 72,000 containers per hour

Inspection of the caps for

Presence



KRONES

Cap inspection unit for crowns

Technical features

- 1 unit
- 2 cameras, LED lighting
- Output: up to 72,000 containers per hour

Requirements

No water drops on the caps

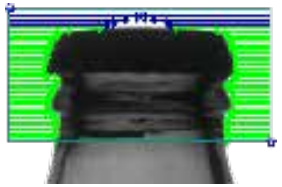
Inspection of the caps for

Presence

Slanted position

Damage > 90°

Diameter



KRONES

Cap inspection unit for crowns

Technical features

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

Requirements

No water drops on the caps

Inspection of the caps for

Colour and logo

Correct cap
(product mix-up)

Position of the printed image

Damaged printed image

KRONES

Cap inspection
for plastic screw caps

Technical features

- 1 unit
- 1 compact camera
- Output:
  up to 72,000 containers per hour

Lateral inspection area inspection of the caps for

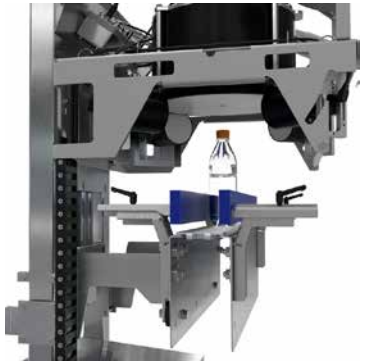
Colour on the side

KRONES

360° cap inspection and detection of pilferproof ring
also suitable for tethered caps

Technical features

- Unit
- 4 cameras with an inspection range of 360°
- LED lighting
- Output: up to 84,000 containers per hour
- 360° light reflection principle without "blind" areas



Range of applications

Suitable for non-transparent caps

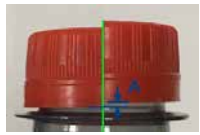
Requirements

No water drops on the caps

Inspection of the caps for*

Presence and colour

Height



Slanted position

Damage

Pinched sections

Broken perforation

* Use of a blower unit required

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Detection of angle of rotation
inspection of support ledge and cap

Technical features

- 1 unit
- 1 camera with an inspection range of 360°
- LED lighting
- Output: up to 84,000 containers per hour

Requirements

- No water drops on support ledge/cap
- Positive marking at the support ledge
- Visible support ledge
- Marks on the cap

* Use of a blower unit required

Detection of angle of rotation

- Analysis of capping angle
- Conclusion to correct capping angle

KRONES

Cap inspection and pilferproof ring detection
for aluminium screw caps

Technical features

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

Inspection of the caps for

Presence

Damage
(cut in thread)

Damage (wingout)

Damage
(wingout, not sticking out)

Perforation broken,
gap larger than 1.3 mm

KRONES

Cap inspection in Capcade cascade sorter
also suitable for tethered caps

Technical features

- 1 camera
- LED lighting
- Camera for cap inspection integrated in sorting elevator

Detection of

- Ovality (no sport caps)
- Tamper-evident ring included, broken or protruding in/out
- Position of the cap (inverted)
- Incorrect inside-base colour (inlet or cap)
- Seal film/liner/seal included inside the cap
- Seal film/liner/seal damaged in plastic flat caps
- Cap height (optional)

Cap inspection unit

- Plastic cap, flat cap, super shorty, tethered cap
- Cap colour: red, green, yellow, white, translucent, dark caps, e.g. in blue, brown or black

Benefits to you

- Increase in effectiveness
- No vacuum conveyor needed, no energy consumption
- Self-learning function

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
Coding/dating management
Service rejection
Vent tube detection
Broken bottle detection system

Benefits to you

- Increased line performance
- Quicker malfunction analysis
- Complete protocols

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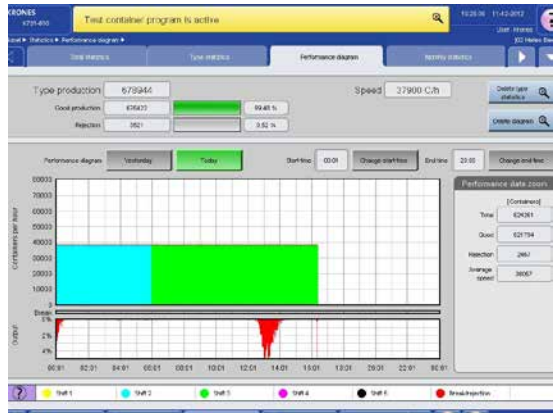
Production management

Creation of type statistics

Creation of a type and trend statistics

Assignment of the rinsing and filling valves and capping heads

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



Quality management

Coding/dating management

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

Service rejection

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

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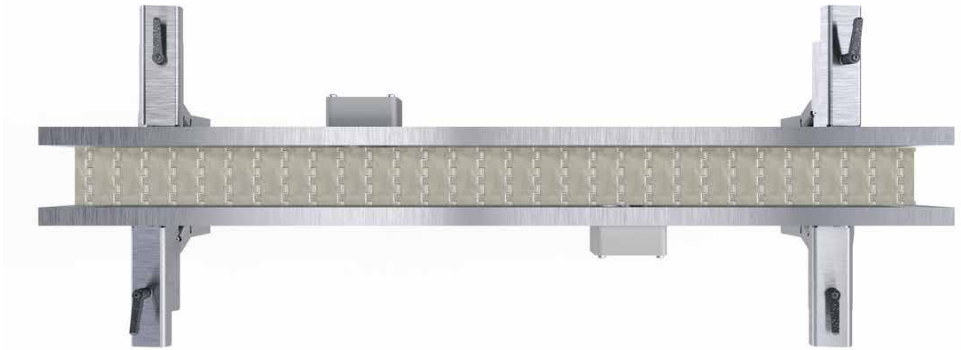
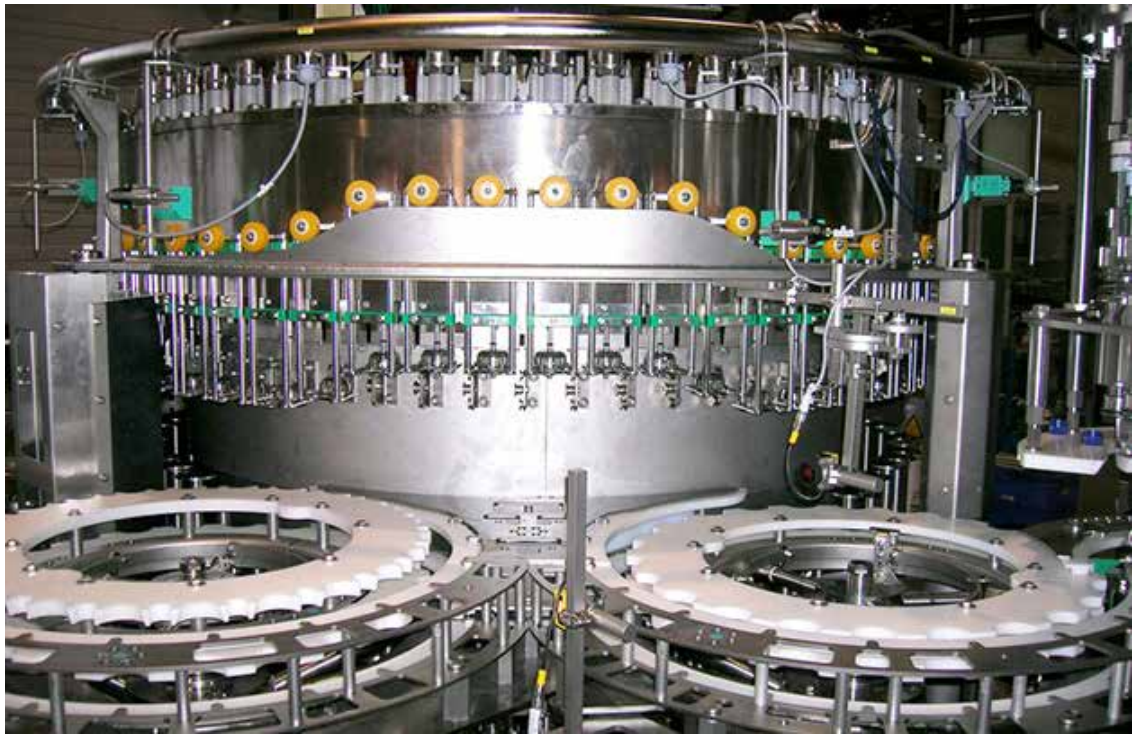
Quality management

Vent tube detection unit with 2 sensors



Broken bottle detection



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Safety management

Password protection with transponder

- Logon of an authorised person prior to 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

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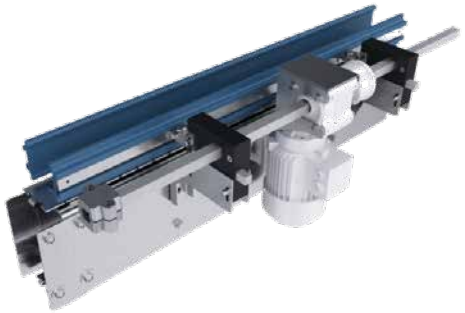
Height adjustment system of the inspection units and rail adjustment system

Height adjustment system of the inspection units

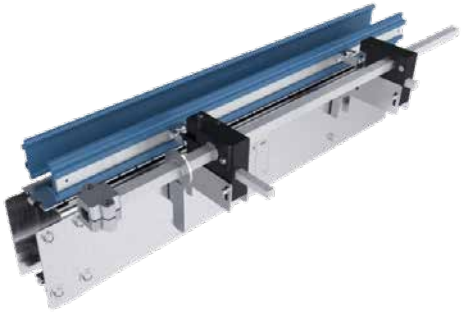
Automatic or manual

Rail adjustment

Automatic



Manual



KRONES

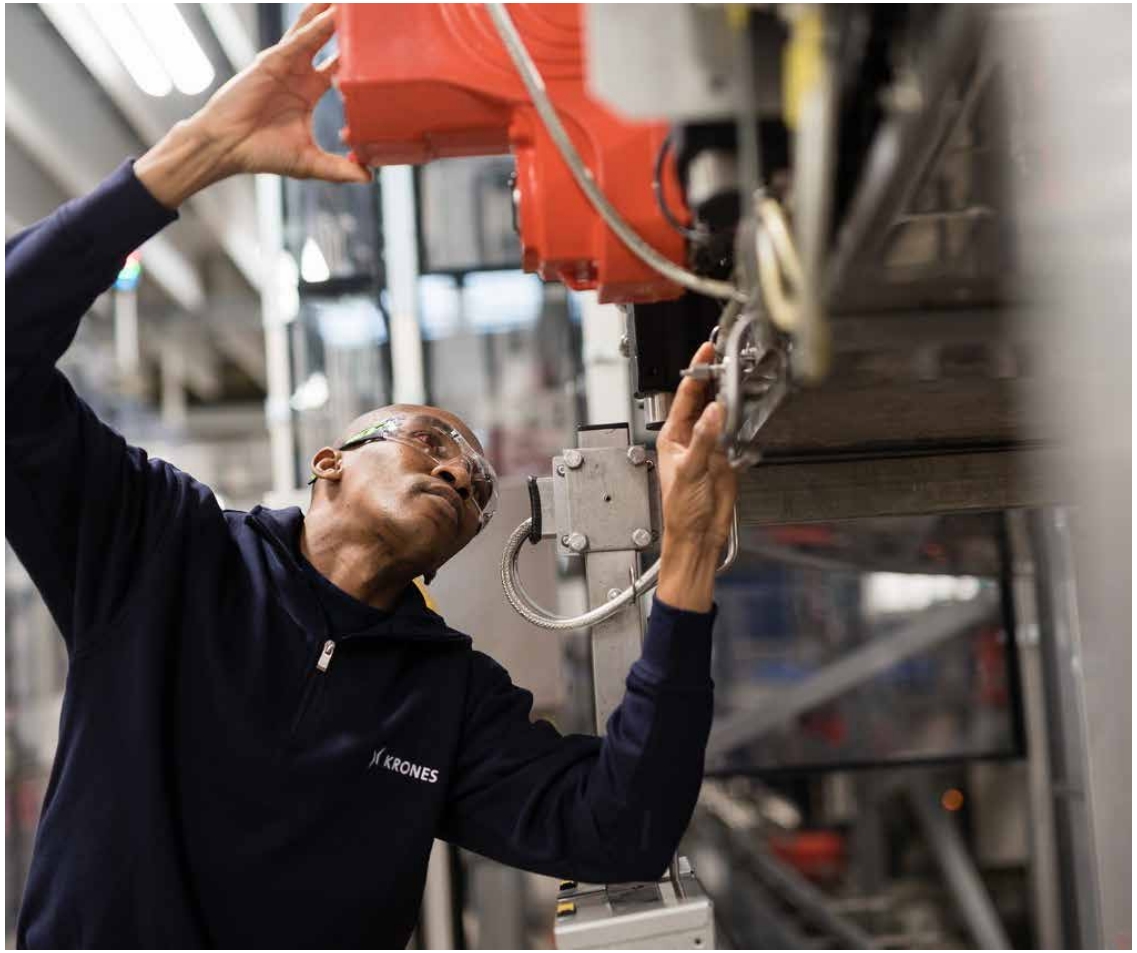
Everything from a single source

Training sessions at the Krones Academy – trained personnel for an increased efficiency of your line

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

Krones Lifecycle Service – Partner for Performance

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.



SOLUTIONS BEYOND TOMORROW

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