KRONES Checkmat
The series of inspection units for all situations

)(KRONES

Please meet us: we are the Checkmat family

Fill level, cap, label – the product sale readiness depends on many factors. Only precise inspections make sure you will meet your quality requirements. KRONES Checkmat challenges your products and gives them the rating of "it fits, it closes, it looks good".

But, be careful: Checkmat isn't simply Checkmat. Because, here at KRONES, there is a whole series of inspection units going by this name. Each member of this family is a specialist at his own field. Together, they cover the entire inspection range of a bottling line. Thanks to this versatility, you can choose between price-efficient small modules and systems which can be integrated into the filler or labeller. Or you decide for the Checkmat 731 – the unbeatable high-performance system which easily masters all monitoring and inspection tasks.

Small modules: Checkmat 707

Concentrating on the essential

The "small members" of the Checkmat family are convinced and convincing followers of minimalism: They assume any clearly defined task and go without any extras. A measuring bridge and a small operating panel – this is all they need for working.

Your benefits

- **Cost-efficient:**
  These cost-efficient modules of the Checkmat 707 series are the optimal solution for individual applications.

- **High security**
  Individual protection via transponder guarantees high safety standard.

- **Remote diagnostics and maintenance**
  On request, monitoring and parameterisation can also be carried out via Remote Service through a KRONES specialist.

- **Uniform operating concept**
  All KRONES machines are equipped with a uniform operating concept for maximum user friendliness.

Application

- Fill level inspection
- Cap inspection
- Filler management
- Label inspection

Operation

Operation is via 5.7 inch touch-screen.

Strong systems with low requirements

The systems of the Checkmat 752 series exercise modesty: they are installed directly in or at the machine and therefore require only little space. They even go without their own operating panel, they just use the visualisation system of the main machine. This is a perfect symbiosis of which the operating personnel profits as well.

Your benefits

■ **Low space requirement**
Due to the installation at the filler or in the labeller, the existing space is used optimally.

■ **Open system**
Additional functions can be retrofitted easily and cost-efficiently at a later point.

■ **Low maintenance requirement**
The robust inspection system works reliably and it has hardly any maintenance requirements.

■ **Remote diagnostics and maintenance**
On request, monitoring and parameterisation can also be carried out via Remote Service through a KRONES specialist.

Application

■ Fill level inspection
■ Cap inspection
■ Filler management
■ Label inspection

Operation

Depending on the application, the Checkmat 752 makes use of the filler's or labeller's visualisation system. This way, inspection unit and main machine can be operated centrally on one operating panel.

The all-rounder: Checkmat 731

Everything is possible

It is definitely the head of the Checkmat family. This multi-talented system knows all measuring methods and knows how to handle all products. Depending on the demand, every version of the fill level, cap, or label inspection can be connected with a centralised basic device. You decide for yourself which one to use. Should your inspection requirements change at a later date, the Checkmat 731 can be equipped with additional modules simply and cost-efficiently. This way, you keep all possibilities for the future open.

Basic column

Below its stainless steel surface, the heart of the Checkmat 731 accommodates all electronic control elements and a central computer. Thanks to its high-quality hygienic design, the column is easy to clean, and above all it looks brilliant.

Application

- Fill level inspection
- Cap inspection
- Filler management
- Label inspection

Operation

- Operation is via 15 inch touchscreen.
- The new software package makes operation of the Checkmat 731 as easy as never before: a help assistant guides through the menus and allows safe, task-oriented navigation.

Your benefits

- **Speed record**
  Depending on the application, this high-performance inspector checks up to 120,000 containers per hour.

- **High security**
  Individual protection via transponder guarantees high safety standard.

- **Expandability**
  Thanks to the sophisticated modular design, additional functions can be retrofitted at any time.

- **Remote diagnostics and maintenance**
  On request, monitoring and parameterisation can also be carried out via Remote Service through a KRONES specialist.

- **Uniform operating concept**
  All KRONES machines are equipped with a uniform operating concept for maximum user friendliness.

Figures, data, facts
Model variants

	Checkmat 707	Checkmat 752	Checkmat 731
Fill level inspection with			
■ High frequency	x	x	x
■ Infrared	x	x	x
■ X-Ray	x	x	x
■ Gamma	x	x	x
■ Camera	–	–	x
Cap inspection with			
■ Camera	–	x	x
■ Sensor	x	x	x
■ Camera in the feed chute	–	–	x
■ 360° camera	–	–	x
Filler management	**–**	**x**	**x**
Label inspection with			
■ Camera (container oriented)	–	–	x
■ 360° camera	–	–	x
■ Sensor	x	x	x

x Possible
– Not possible

Figures, data, facts
Fill level inspection

Fills well

Both your customers as well as leg-
islators demand correctly filled
containers. With KRONES fill level
inspectors underfilled and overfilled
containers have no chance. Our prod-
uct specialists willl gladly consult you
about which measuring method is
the best for your needs.

Figures, data, facts
High-frequency fill level inspection

- Suitable for slightly foaming or non-foaming products
- Output: up to 72,000 containers/h

Your benefits

- **Cost-efficient technology**
  With the high-frequency technology you will receive a reliable and inexpensive measuring system.

- **Easy handling**
  Contrary to other measuring methods, this high-frequency technology does not require any special logon and safety rules.
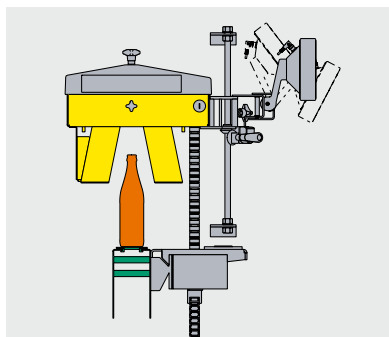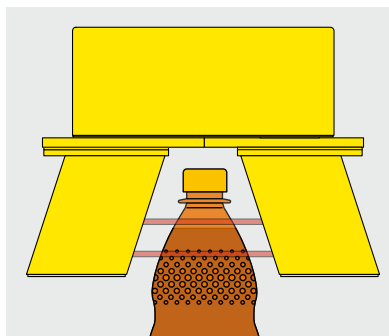
High-frequency measuring bridge

Figures, data, facts
Infrared fill level inspection

- Suitable for non-foaming or slightly foaming products in transparent containers without engraving and label in the measuring area.
- Output: up to 72,000 containers/h

Your benefits

- **Precise method**
  Very precise and reliable operation with infrared inspection.

- **Easy handling**
  This measuring method does not require any special logon and safety rules.
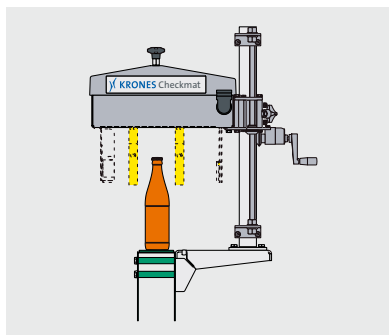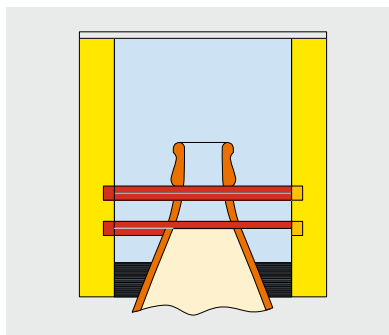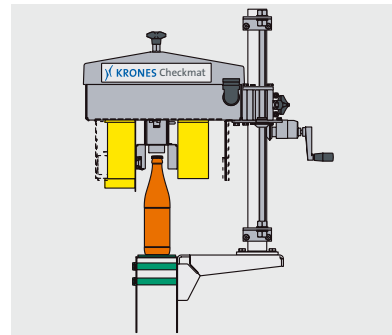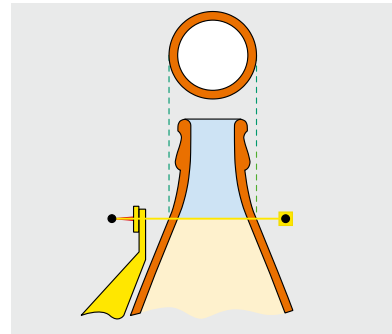
Infrared measuring bridge
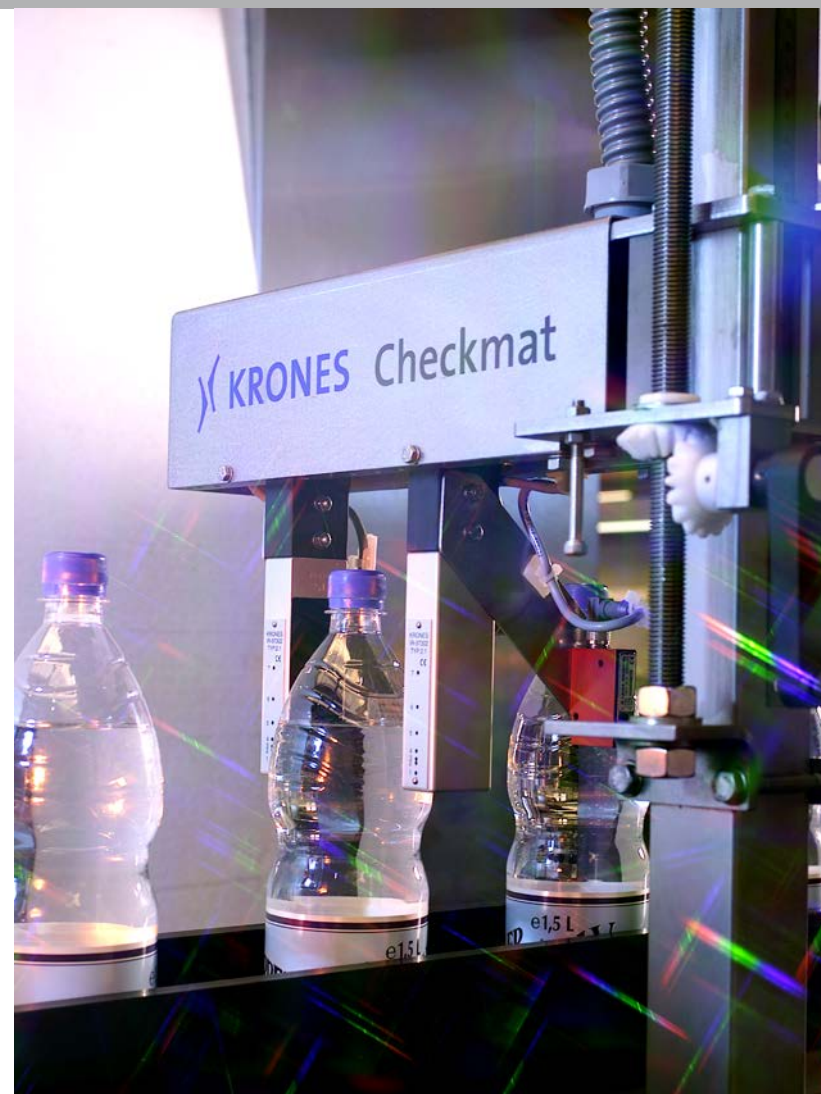
Figures, data, facts
Gamma fill level inspection

- Suitable for non-foaming or slightly foaming products and container types including cans (with or without labels).
- Output:
  up to 120,000 containers/h

Your benefits

- **Cost-efficient measuring method**
  The gamma measuring technology enables inexpensive precise monitoring.

- **High security**
 In the case of a machine standstill, the radiation source closes automatically.


*Gamma
measuring bridge*

Figures, data, facts
X-ray fill level inspection

- Suitable for all products and container types including cans (with or without labels).
- Can be provided with and without protective enclosure
- Output:
  up to 120,000 containers/h

Your benefits

- **Precise monitoring**
  This fill level inspector with x-rays operates with high precision and reliability.

- **High security**
  In the case of a machine standstill, the radiation source closes automatically.
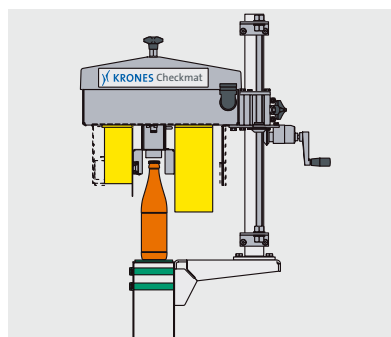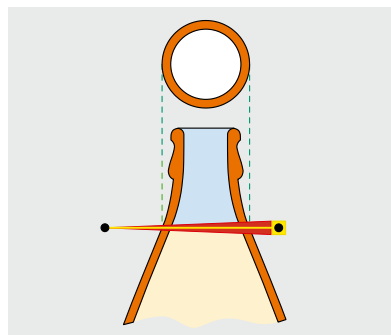
X-ray measuring bridge

Figures, data, facts
Fill level inspection with camera

- Suitable for non-foaming or slightly foaming products in transparent containers without engraving and label in the measuring area.
- Lighting via low-energy, long service life LED units (no cooling required)
- Does not require any special logon and safety rules.
- Output: up to 72,000 containers/h

Your benefits

- **Precise monitoring**
  Camera technology provides highly precise results.

- **Multi-tasking**
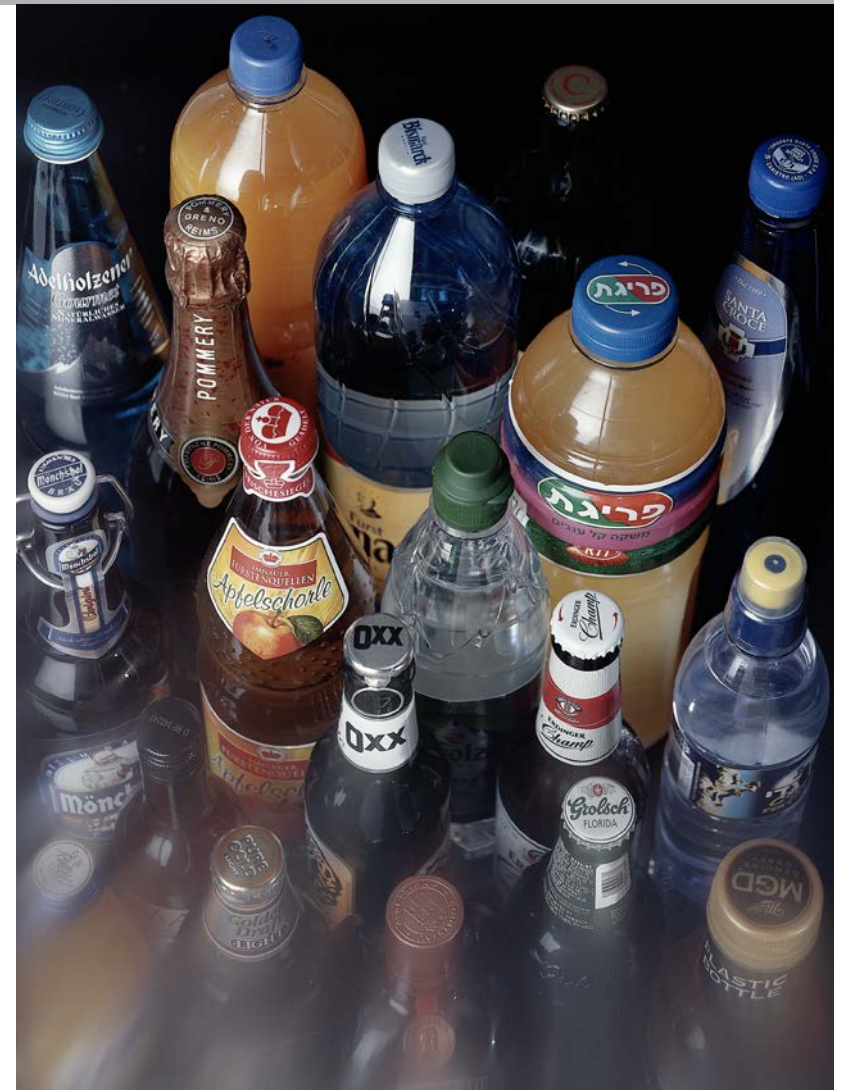 Fill level and cap can be measured with the same system.
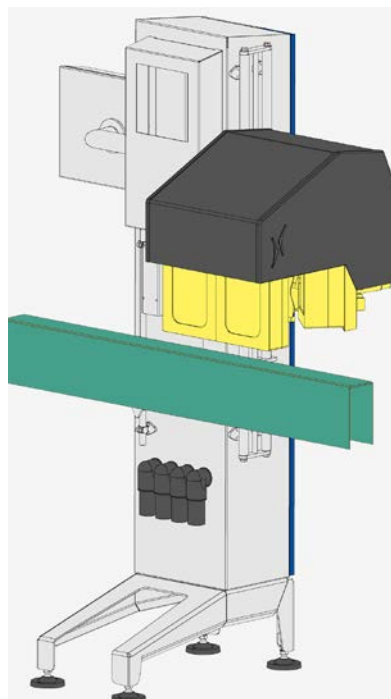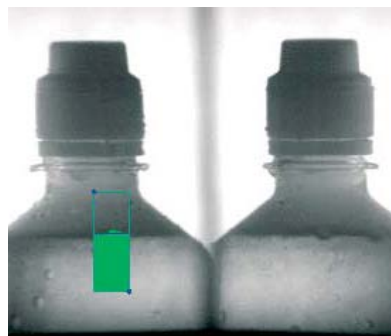
Camera module

Figures, data, facts
Cap inspection

Keeping tight

KRONES offers also different systems for checking caps: depending on the product and the used Checkmat, you can choose between simple present cap inspections via sensor all the way to comprehensive overall inspections via camera.
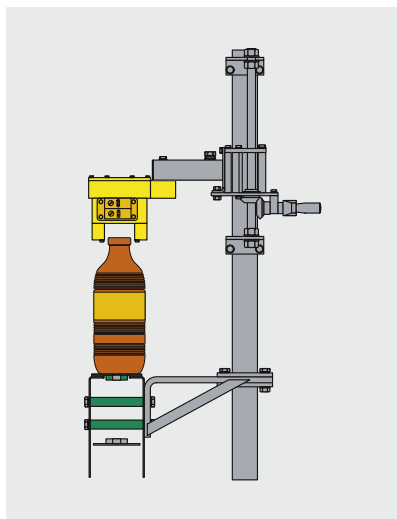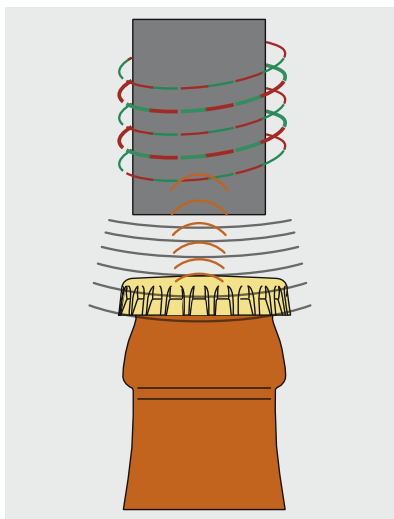
Figures, data, facts
Cap inspection, sensor

- Detects missing caps of metal and plastic
- Checks the positive sealing of the caps
- Detects caps by their colour
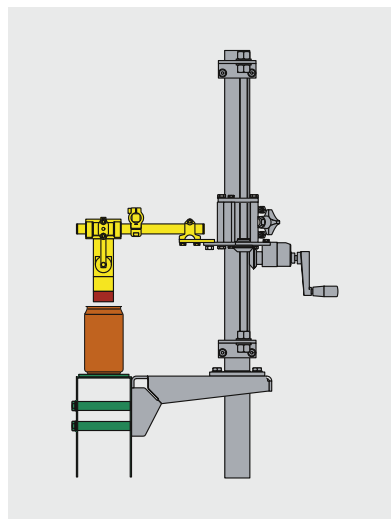- Output: up to 72,000 containers/h

Your benefits

- **Low purchasing costs**
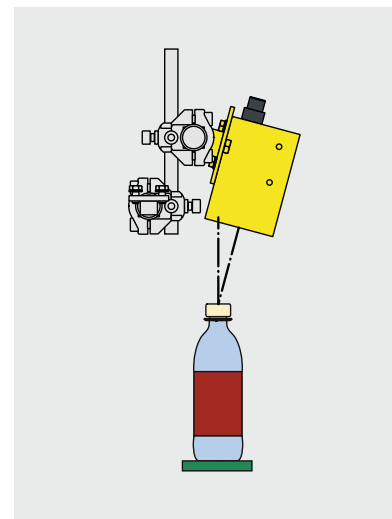 With sensor technology, you can ensure high product quality at a surprisingly low price.

Inspection of missing caps

Crown leakage detection

Can leakage detection

Colour sensor

Figures, data, facts
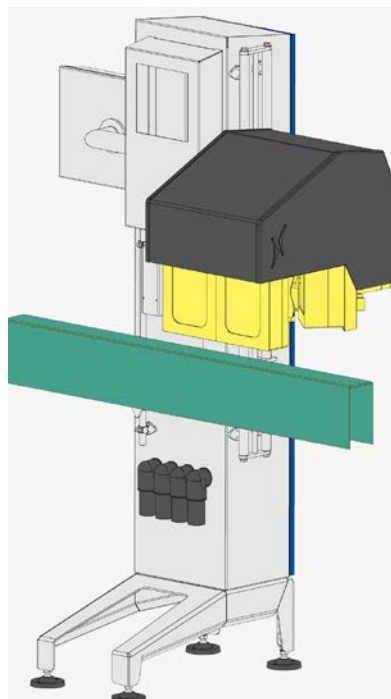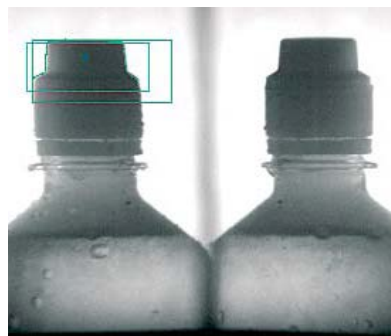# Cap inspection system, camera

- Detects caps of metal and plastic
- Detects missing and slanted caps, or caps which are too high
- Optionally available with logo detection
- Output: up to 72,000 containers/h

Your benefits

- **One system – many functions**
  With the clever KRONES camera technology, you can monitor the fill level and the cap with only one system.

- **Maximum precision**
  The high-resolution cameras detect even the smallest irregularities thus securing high product quality.
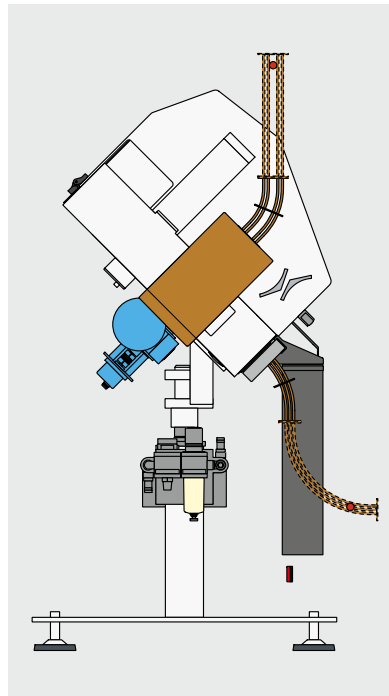

Camera module

Figures, data, facts
Cap inspection unit in the feed chute

- Suitable for metal and plastic caps
- Checks the cap's quality before they reach the capper
- Sorts out damaged caps and caps from different productions
- Output: up to 42,000 caps/hour
- Optionally available with leakage or colour detection

Your benefits

- **Quality gain**
  The cap inspection ensures that your products will be closed with perfect caps only.

- **Higher efficiency**
  Deformed caps often lead to machine stops. If they are rejected, the line efficiency will be increased sustainably.

Camera module

Figures, data, facts
360° cap detection unit at the conveyor

- Suitable for all containers with plastic caps
- Detects damage to the cap and safety ring
- Output: up to 42,000 containers/h

Your benefits

- **Overall check**
  With a total of eight views, two cameras inspect the cap from all sides. This will prevent the containers from leaking due to damaged caps.

- **Easy integration**
  Thanks to its small size, the system can be retrofitted easily in existing lines.
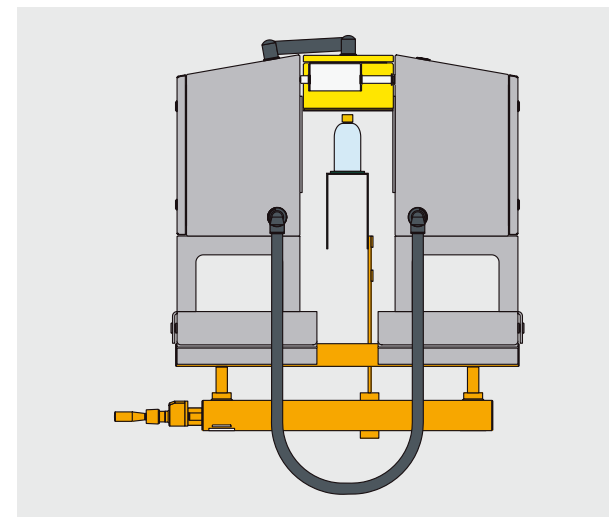
System expansions
Filler management and broken bottle detection

Knowing what happens

With KRONES filler management you have control over the bottling process. This clever software provides you with all data you need to get the most out of your bottling or canning line. From production and safety management to malfunction diagnostics all the way to quality management: this system monitors, records, and analyses all values that play a role in line efficiency.

- Monitors rinsing and filling valves and capping heads
- Assesses productivity
- Diagnoses the cause of machine stops
- Records productivity and performance of each individual filling valve and capping head
- Creates meaningful trend analyses
- Broken bottle detection system: detects broken bottles and bottles that might contain dangerous glass fragments and rejects them safely. Number of neighbouring bottles and following rounds individually adjustable. System independent from filler.

Your benefits

- **Increased line performance**
  With the filler management system, you can keep your line's productivity at a continuously high level.

- **High product quality**
  This system ensures your product quality and reduces product losses to a minimum.

- **Detection of cause of malfunction**
  If containers are rejected, the software immediately detects the valves or capping heads responsible for the fault.

- **Safety for your customers**
  The broken bottle detection system prevents dangerous glass fragments from ending up in your products.

- **Protected access**
  Individual passwords or transponders protect the device from undesired access.

- **Uniform operating concept**
  All KRONES machines are equipped with a uniform operating concept for maximum user friendliness.
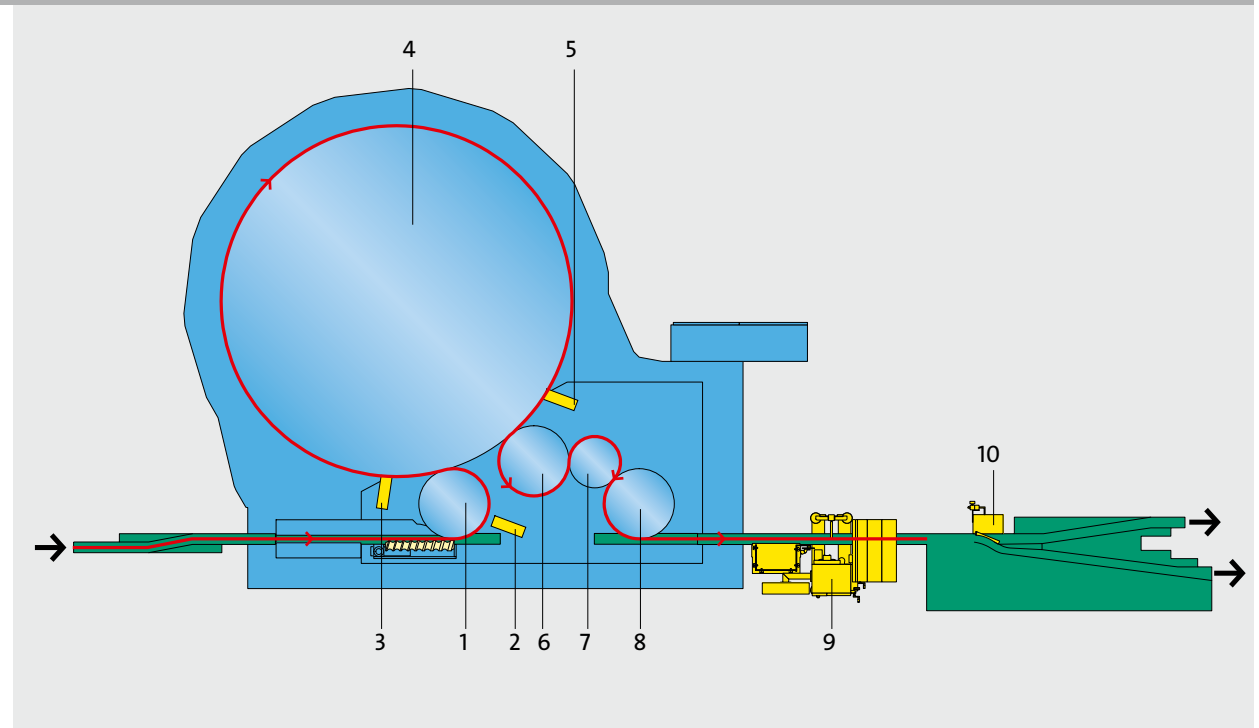
Filler with broken bottle detection

1 Infeed starwheel
2 Sensor - bottle present
3 Sensor 1, broken bottle
4 Filler
5 Sensor 2, broken bottle
6 Transfer starwheel
7 Screw capper or crowner
8 Discharge starwheel
9 Checkmat fill level inspection
10 Rejection system

System expansions
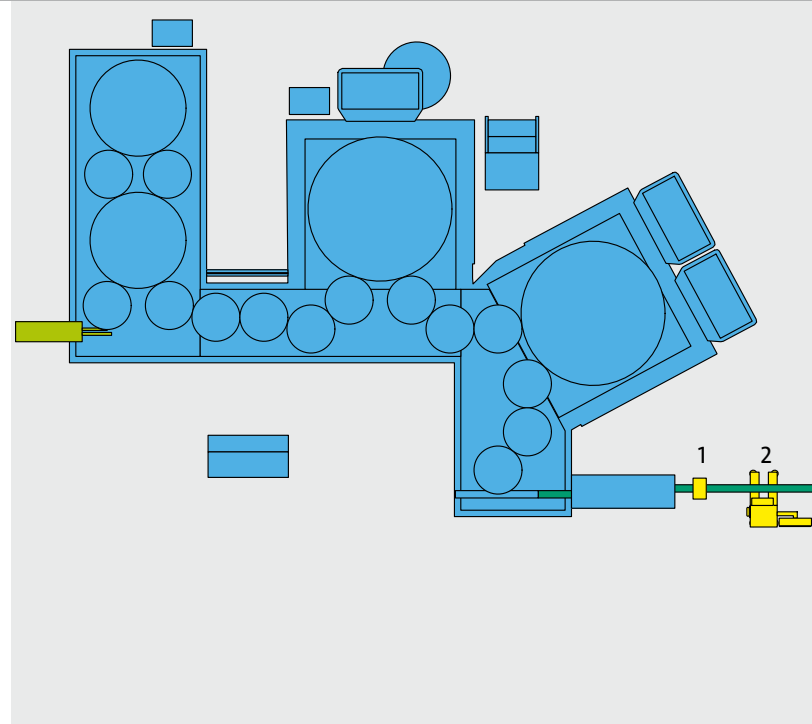# Dating/coding management

Knowing where it comes from

The dating/coding management system provides valuable transparency during filling and capping. It provides each bottle with a print marking precisely that filling valve and capping head that has handled this bottle. This code is almost invisble to your customers. But to you it means won information which only pays off in case of complaints.

- Monitors rinsing and filling valves and capping heads for product tracking.

Your benefits

- **Optimum traceability**
  Bottle coding enables detailed tracking of the product's travelled distance. Thus you can analyse complaints and react to them directly.

- **Uniform operating concept**
  All KRONES machines are equipped with a uniform operating concept for maximum user friendliness.

Filler with dating/coding management system
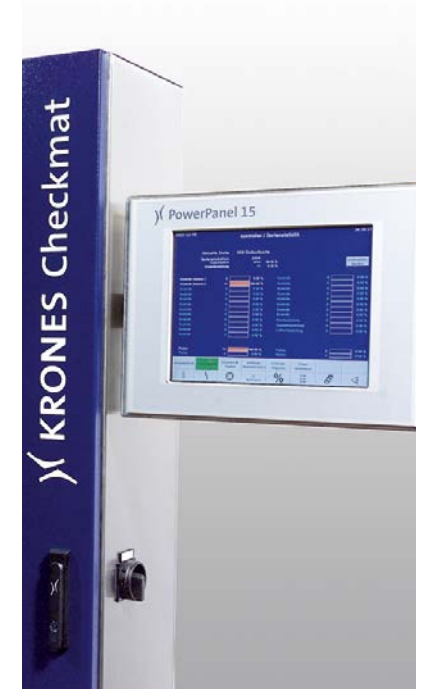
1   *Printer*
2   *Main device with dating/coding management software*

Figures, data, facts
Label inspection

Attractive and informative

Make sure only properly labelled products reach the point of sale: we deliver and install the right technology for any of your inspection tasks ranging from the cost-efficient container presence inspection to monitoring the best before date all the way to the comprehensive detection of sample and text.

Figures, data, facts
Label inspection, sensor

- Inspection in the lead machine with oriented containers
- Inspection at the conveyor with non-oriented containers
- Inspection of wrap-around labels
- Selection of sensors:
  - Standard sensor
  - Special sensor (UV sensor/colour sensor)
  - Intelligent sensor
  - Bar code sensor
- Monitors the presence of labels or bar codes
- Output: up to 72,000 containers/h

Your benefits

- **Optimal cost-performance ratio**
  The sensor inspection is a cost-efficient and reliable method for all basic inspections.

- **Broad range of applications**
  The sensor and bar code inspections can be used in all devices of the Checkmat series.
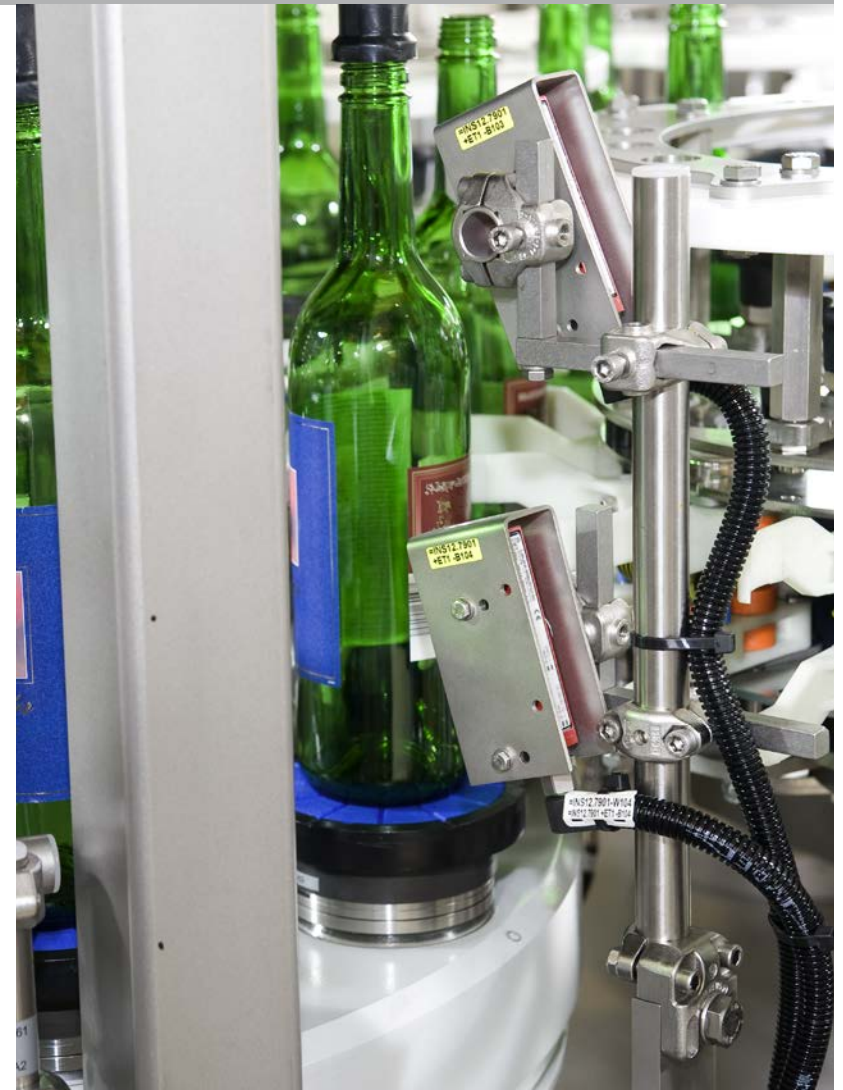

Intelligent sensor in the lead machine (top)

Bar code detection in the lead machine (right)
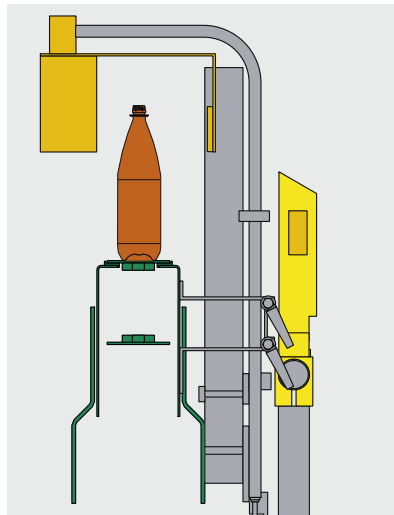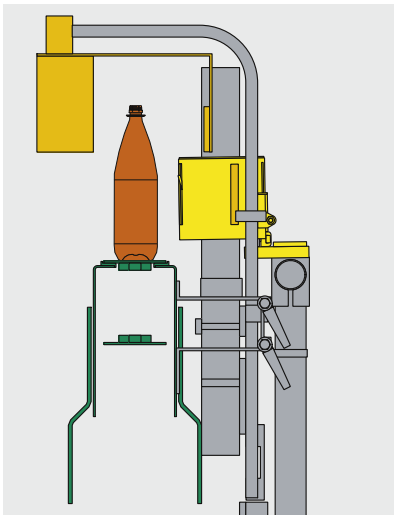
Standard sensor at conveyor (left)

Intelligent sensor at conveyor (right)

Figures, data, facts
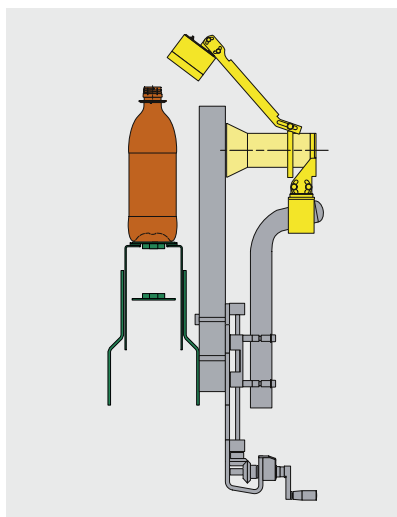# Label inspection, camera

- Inspection in the lead machine with oriented containers
- Inspection at the conveyor with non-oriented containers (at wrap-around labels)
- Checks the label's presence and correctness
- Checks angle of rotation, single position, and position to each other
- Matches sample and logos
- Reads bar codes
- Detects and inspects plain text
- Output: up to 72,000 containers/h

Camera in the lead machine

Camera at a modular labeller

Your benefit

- **Maximum safety**
  Slanted labels, wrong print – there is nothing these highly specialised cameras will overlook. This way you will ensure your product's quality sustainably.

Figures, data, facts
BBD inspection, camera

- Checks printed data such as BBD or product codes
- Inspection of the date code for presence, correctness and completeness
- Inspection in the lead machine with oriented containers
- Inspection at the conveyor with non-oriented containers
- Is employed right after laser printing and does not require any previous container orientation
- Output: up to 72,000 containers/h

Your benefit

- **High product safety**
  With the code/date inspection you can ensure each container has its best before date.

Dating/coding inspection via camera

Figures, data, facts
# BBD inspection, sensor

- Checks the presence and best before date of PET containers
- Inspection at the conveyor with non-oriented containers
- Is employed right after laser printing
- Output: up to 72,000 containers/h

Your benefit

- **High product safety**
  With the code/date inspection you can ensure each container has its best before date.

*Dating/coding inspection via sensor*
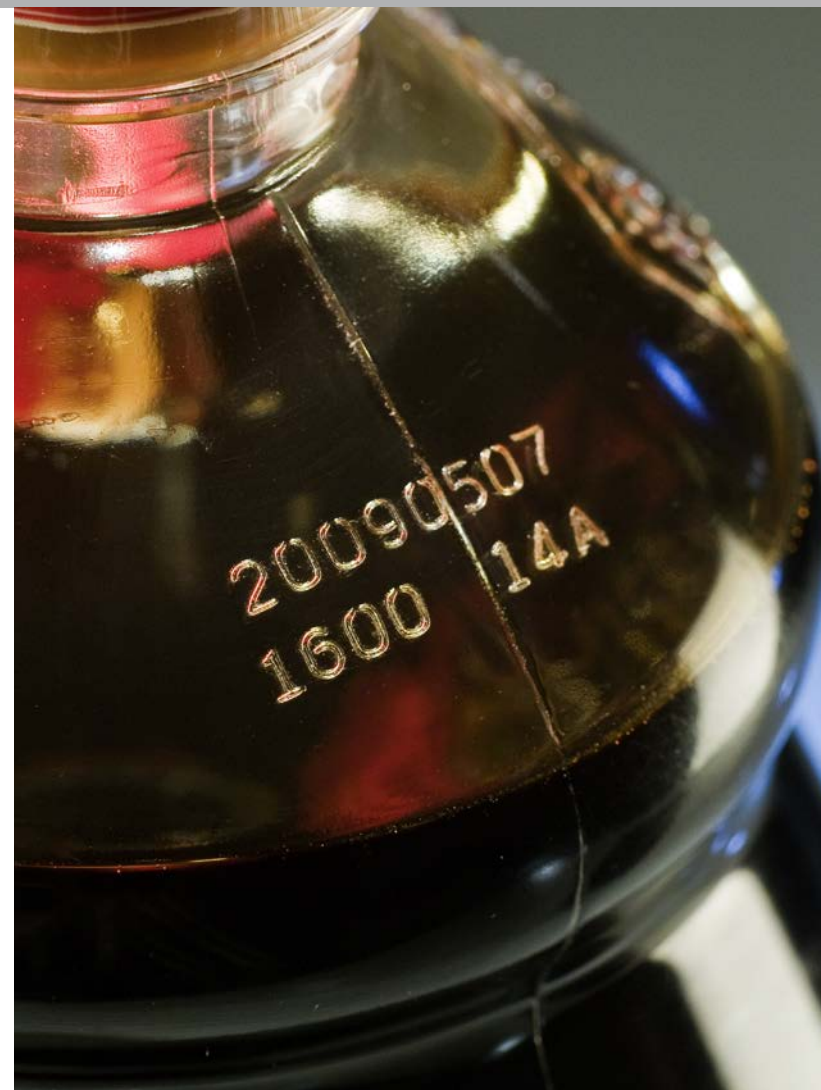
Figures, data, facts
360° label inspection

- Checks the labels' presence, position and angle of rotation
- Checks all labels to each other at a time
- Does not require any previous container orientation
- Output: up to 48,000 containers/h

Your benefits

- **Small size**
  Thanks to its compact size, this inspector can be retrofitted easily.

- **Quick type change-over**
  If the container is changed, no equipment change-over Is necessary. This relieves the operating personnel and reduces standstill times.
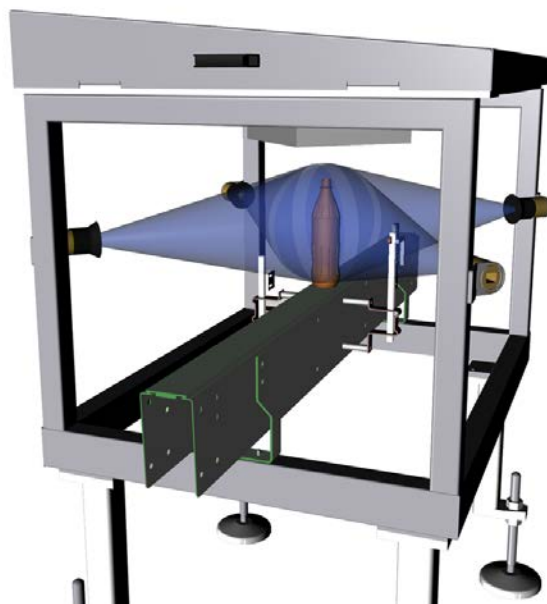
360° inspection via cameras

Figures, data, facts
Imprint inspection at the conveyor

- Checks printed data such as BBD or product codes
- Inspection of the date code for presence, correctness and completeness
- Inspection at the conveyor with non-oriented containers
- Is employed right after printing and does not require any previous container orientation
- Output: up to 60,000 containers/h

Your benefit

- **High product safety**
  With the code/date inspection you can ensure each container has the correct best before date.
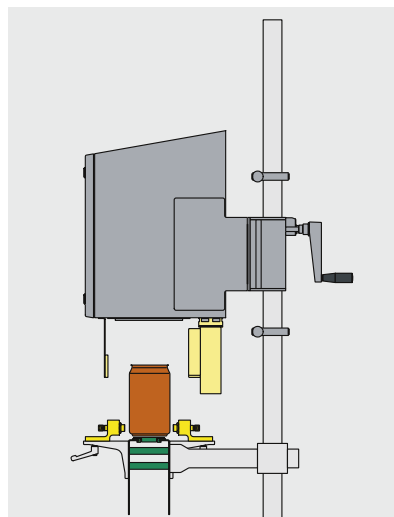
Dating/coding inspection via camera

System expansions
Rejection systems

Setting the right course

"Failed": only faultless containers will pass the strict inspections of the Checkmat systems. What happens with the faulty ones? They must be rejected from the production flow as quickly as possible, best, via a KRONES rejection system. Depending on the output, the container type, and the space requirements, you can choose between different designs.

Clamping starwheel

- Processes different container types without change-over

Varioglide

- Application: rejection and distribution of containers
- Rejection on up to four parallel conveyors
- Suitable for PET and glass containers of different types and sizes; rejection in upright position possible
- Modular design
- Output: 70,000 containers/hour

Softslider

- Rejection onto parallel conveyor
- Suitable for full glass and PET containers
- Compact and hygienic design
- Quality-check rejection
- Output: 50,000 containers per hour

System expansions
Rejection systems

Directpush

- Rejection of cans
- Rejection into collecting containers
- Compact design
- Cost-efficient system
- Output: 120,000 containers per hour

Ecopush

- Application: rejection and distribution of containers
- Rejection onto a parallel conveyor, onto a rejection table, or into a collector
- Compact design
- Suitable for empty glass as well as full glass and PET containers
- Cost-efficient system
- Very low maintenance
- Savings in energy, no air consumption
- Output: 100,000 containers per hour

We do more.

IT solutions

The SitePilot modular system includes IT solutions which we developed especially for the beverage and food industry. Whether you want to increase the utilisation of your line capacity, monitor product quality, or make spare parts handling more efficient: With SitePilot, you will always get the best result.

enviro

High-performance technology with low consumption of resources offering safety for humans and the environment – this is all guaranteed by the enviro sign. TÜV SÜD (technical control board) as an impartial assessor has confirmed, that the enviro method leads to energy- and media-efficient and environment-compatible machines and lines.

Lifecycle Service

Your company is unique – why be satisfied with conventional solutions? The KRONES Lifecycle Service will support you and your production also after the purchase of new machines. These are services which are individually tailor-made to suit your products and location.

KRONES Academy

Make your colleagues high performers: The training of KRONES Academy provides first-hand trade information proven in field. You will find the suitable know-how package for almost any field and hierachy level ranging from technical courses to management training.

KRONES Service Line

You need support with a technical problem? Or you have an urgent question about you line? No problem: We are just a call away from you. Dial +49 9401 708090 to get quick and straightforward assistance – in several languages around the clock!

KRONES AG
Böhmerwaldstraße 5
93073 Neutraubling
Germany

Phone   +49 9401 70-0
Fax   +49 9401 70-2488
E-mail   info@krones.com
Internet www.krones.com

KRONES