



WE ARE HEUFT!

... and HEUFT knows how!

All-around solutions for the canning line

HEUFT CAN INSPECTION



Empty cans

- Dirt / foreign objects
- Dents
- Flange integrity
- Code inspection



Filled cans

- Fill level check
- Pressure- / leakage check
- Code inspection



- foreign object detection with unique pulsed X-rays



HEUFT solutions for the can filling line

An empty can inspection based on the HEUFT *SPECTRUM II* for simply more product safety and productivity.

HEUFT *canLine II*



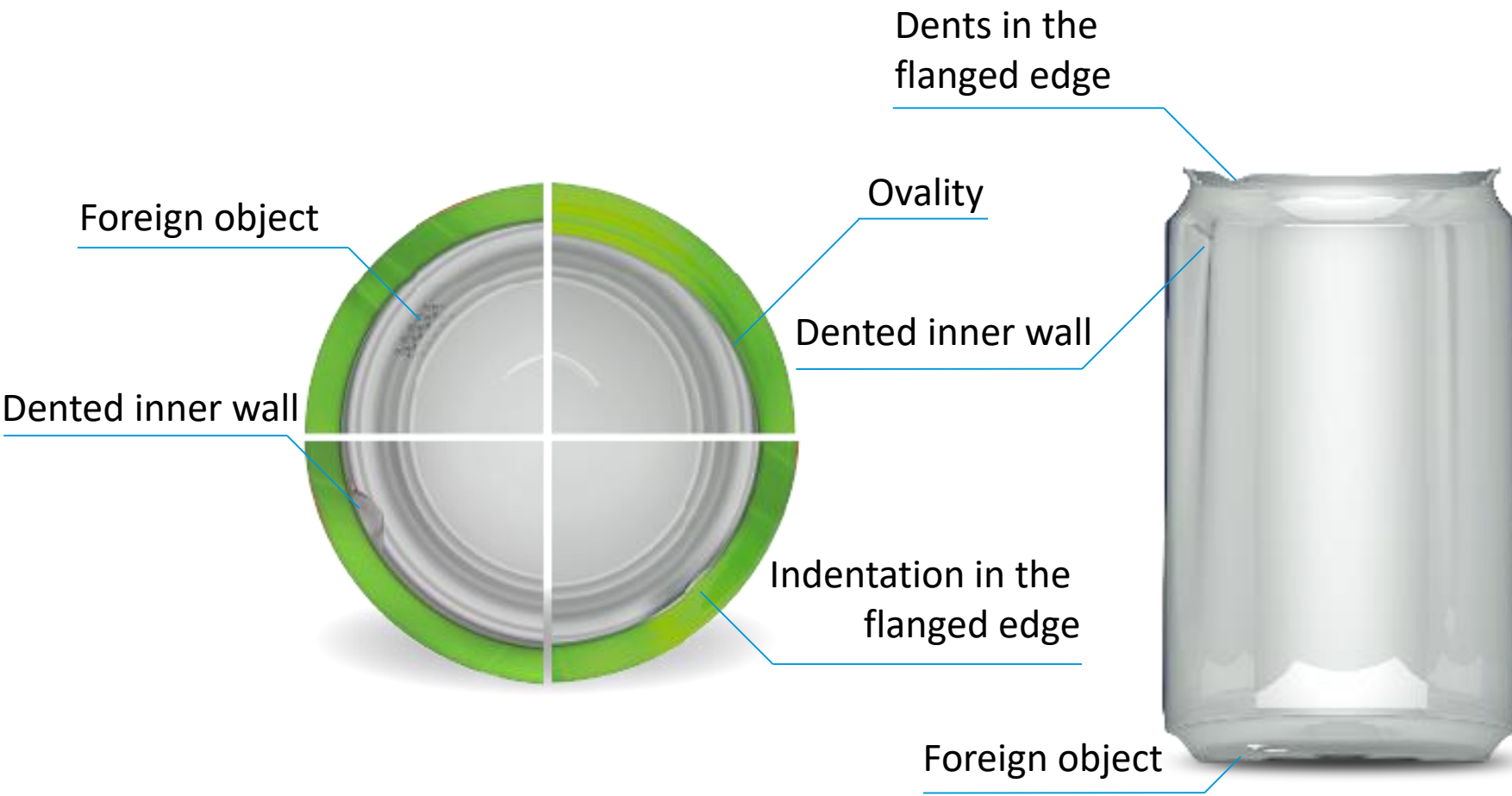


The top-down camera has a slim casing.

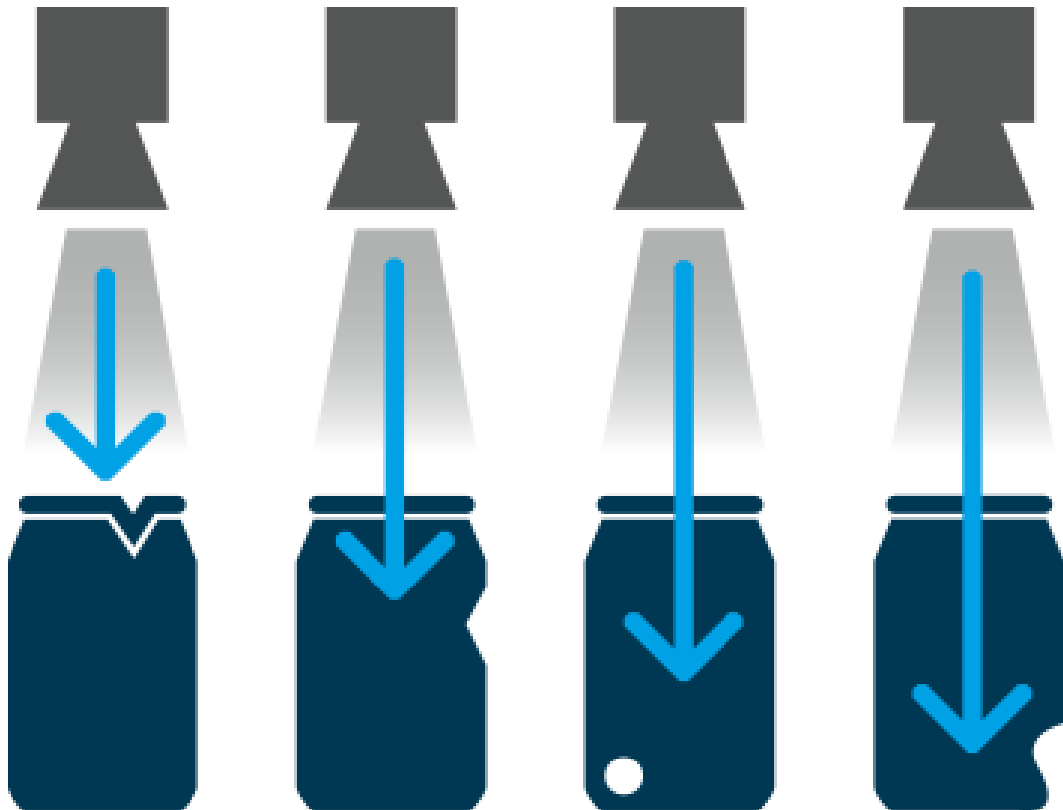
Your advantages:

- improved inspection due to improved illumination
- saves space

A top-down camera with a special LED illumination is used to take an evaluation picture of flange, base and inside of every can.



The HEUFT *canLine II* provides a gapless finish, inner sidewall and base inspection of empty cans. Deformation, dirt, foreign objects as well as flange faults are detected reliably.



 **144,000** *up to*
containers per hour

ONE MODULE FULL INSPECTION
A top-down camera with a special LED illumination is used to take an evaluation picture of flange, inside and base of every can.

That way up to 144 000 cans per hour can be inspected.



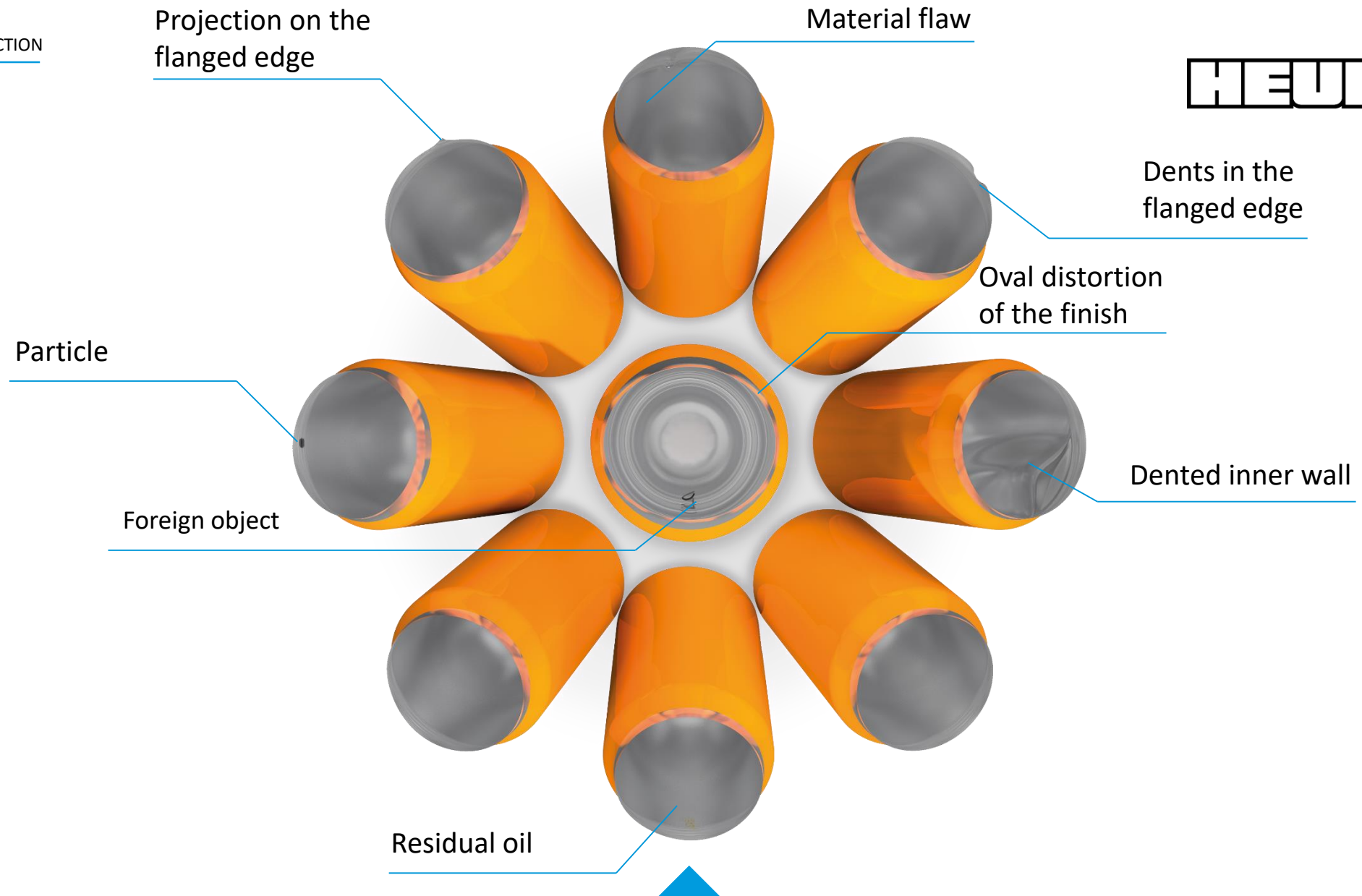
NEW HEUFT *canLine II*

A second camera with 8-fold optics improves the inspection below the shoulder.

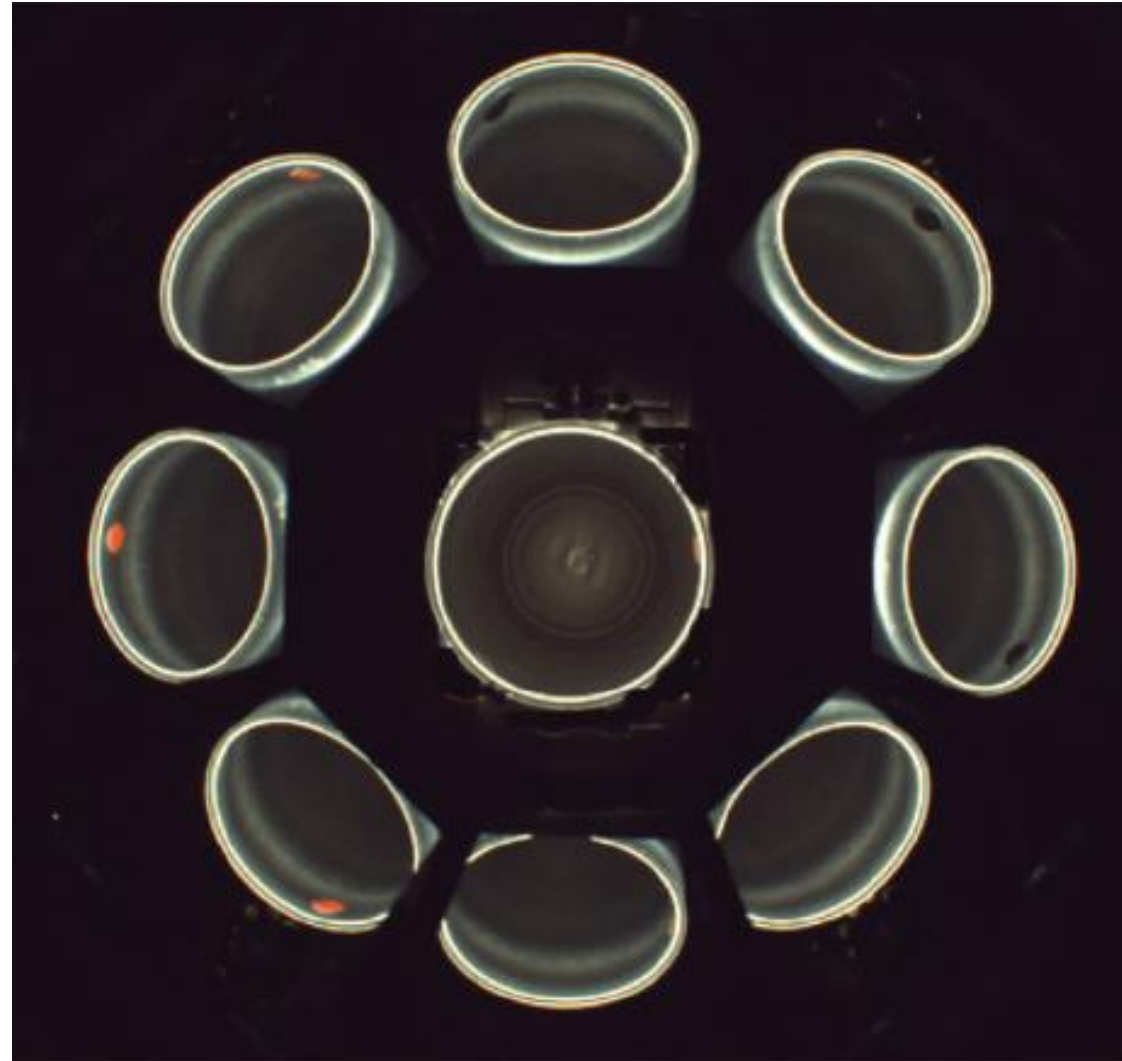
Your advantages:

- improved inspection ability
- can be selected as a option

The new approach – detecting faults below the shoulder!

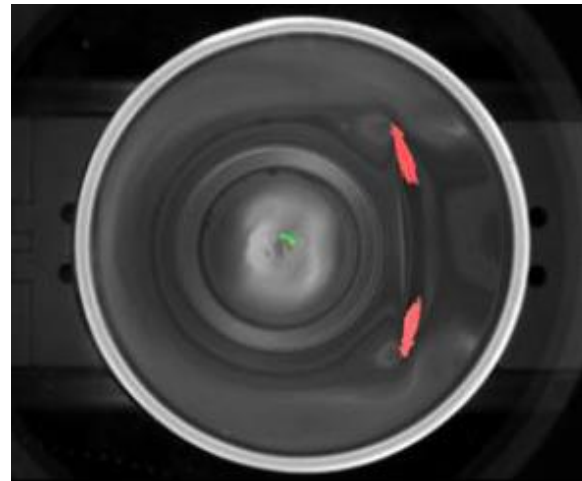


Detecting faults



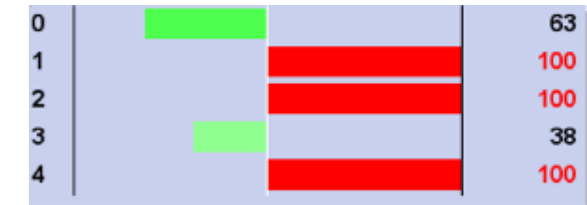
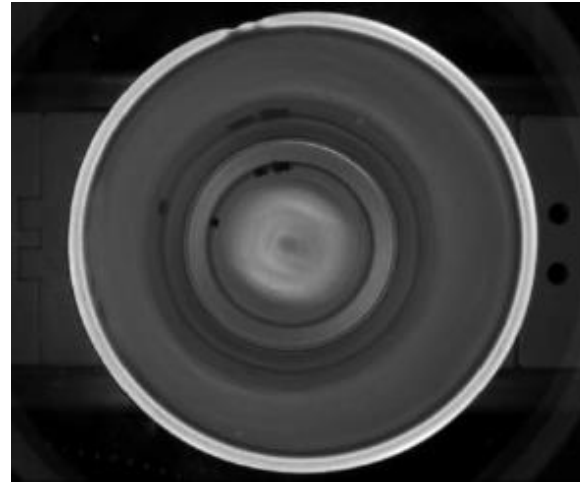
Evaluation picture

HEUFT *canLine II* – detecting faults

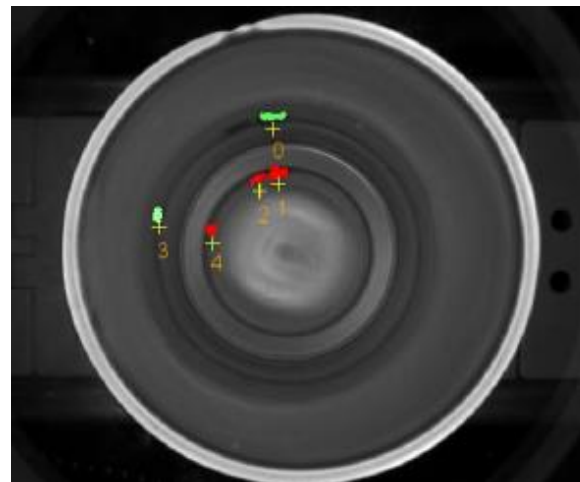


Evaluation picture

The evaluation software searches for structures on the inside of the can. Good structures are taught in during commissioning. Structures like dents are evaluated as faulty structures and marked in red in the evaluation picture.



Evaluation diagram



Evaluation picture

The software searches for objects in the can using the evaluation.

Objects representing foreign objects are marked in red.

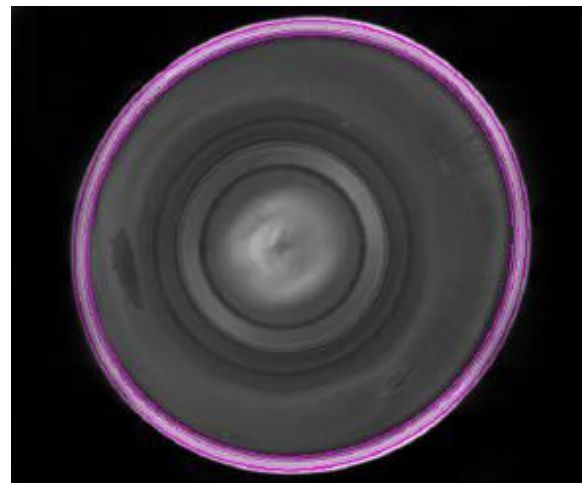
In the example on the left the evaluation diagram shows, that the software distinguishes between the real foreign objects (red) and the reflections of the dirt in the can sidewall (green).

The evaluation software scans the circular structure of the flange to find deviations. They are marked with a red arrow if the deviations exceed a threshold.

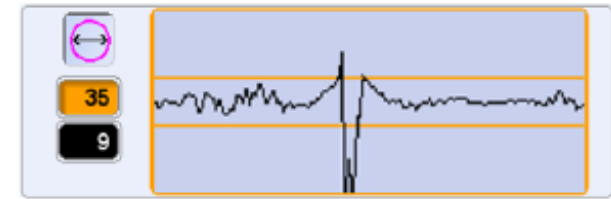
Additionally the ovality of the flange is checked. The can is detected as faulty if it deviates too much from the average and exceeds a threshold.



Evaluation diagram



Evaluation picture



Evaluation diagram



Evaluation picture

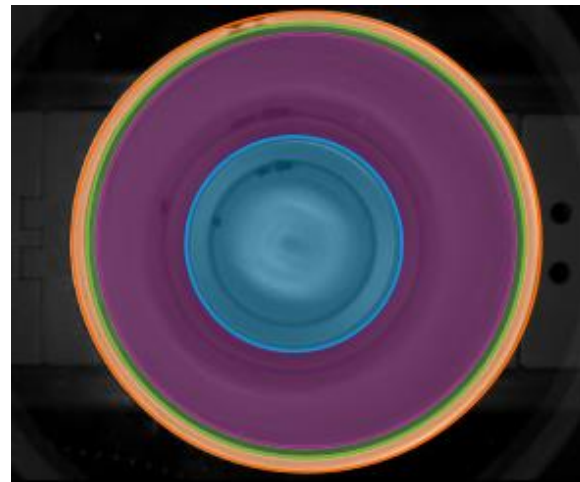
Detection accuracy

Detection of	
Ovality	+/- 1 mm
Faults in the flange	1 x 1 mm
Faults on the base	2 x 2 mm
Dents in the sidewall	app. 3 mm
Dirt on the inner sidewall	app. 2 x 2 x 2 mm
False rejection rate < 0.05 %	

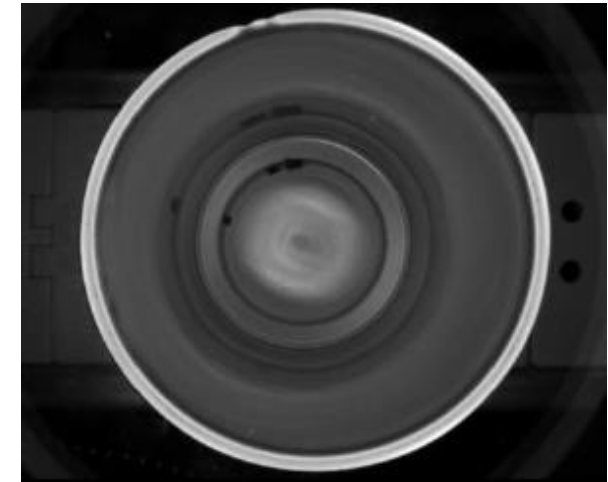


Can areas:

-  A: flange
-  B: shoulder
-  C: sidewall
-  D: base



Inspection areas



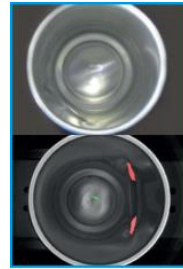
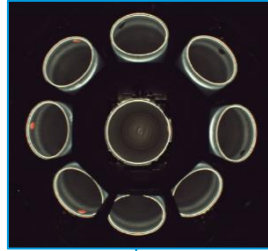
Original device image

Dividing the can into different areas

EMPTY CAN INSPECTION



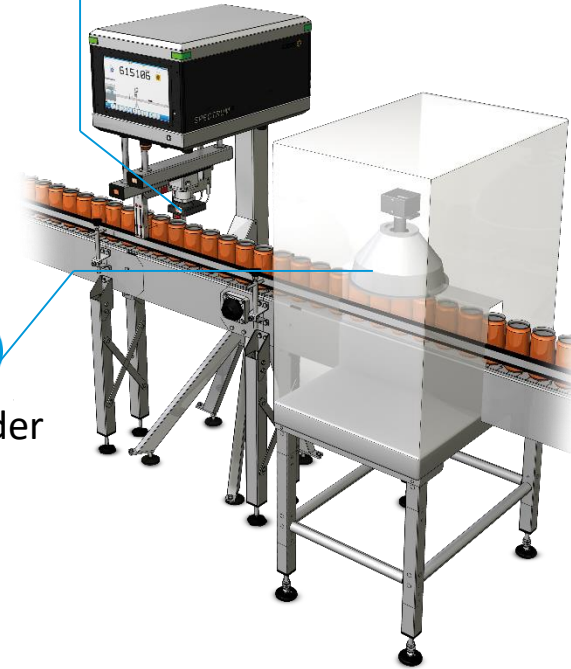
inner shoulder inspection



top-down camera



top-down camera at the terminal

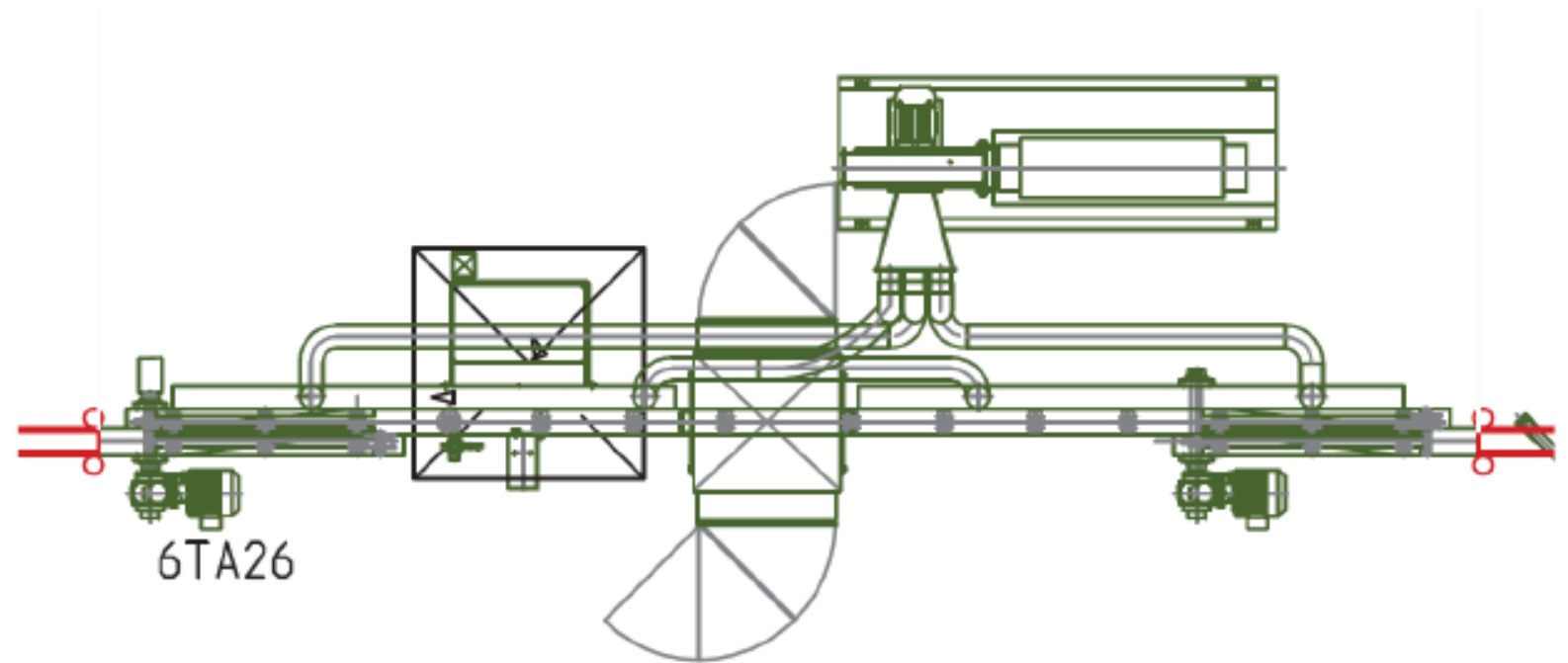


inner shoulder inspection

flexibly positionable top-down camera

HEUFT *canLine II* – structure modules

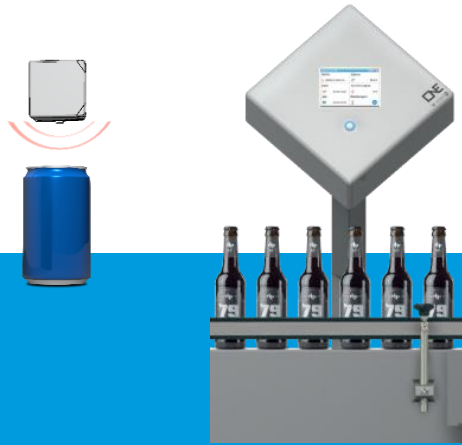
Periphery



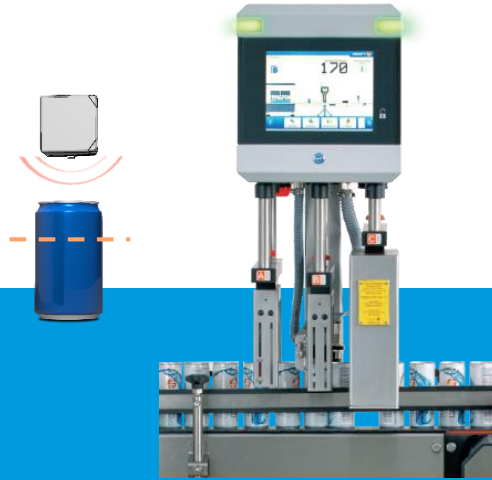
The reliable rejection of all the faulty cans from the production flow is carried out by the HEUFT *pusher*.

Additionally a vacuum conveyor can be installed and provided by HEUFT to ensure the stable and reliable transport of the empty cans.





HEUFT ONE



HEUFT PRIME



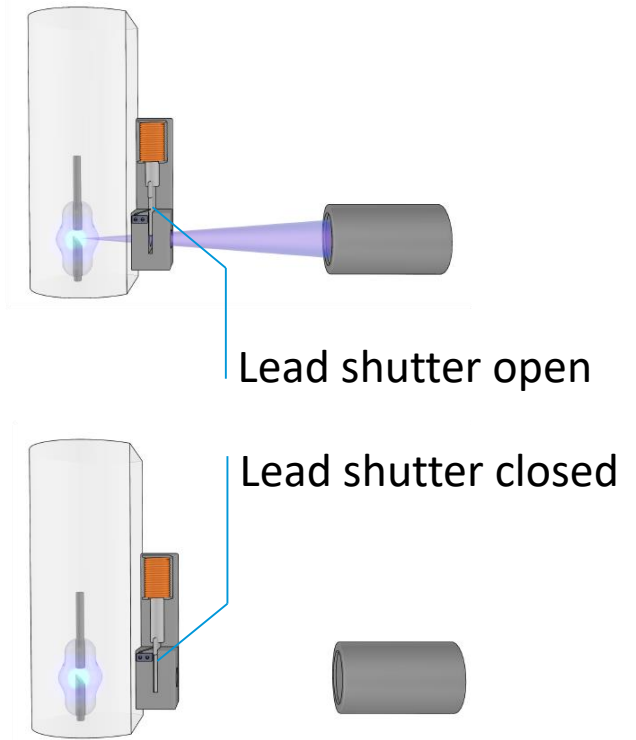
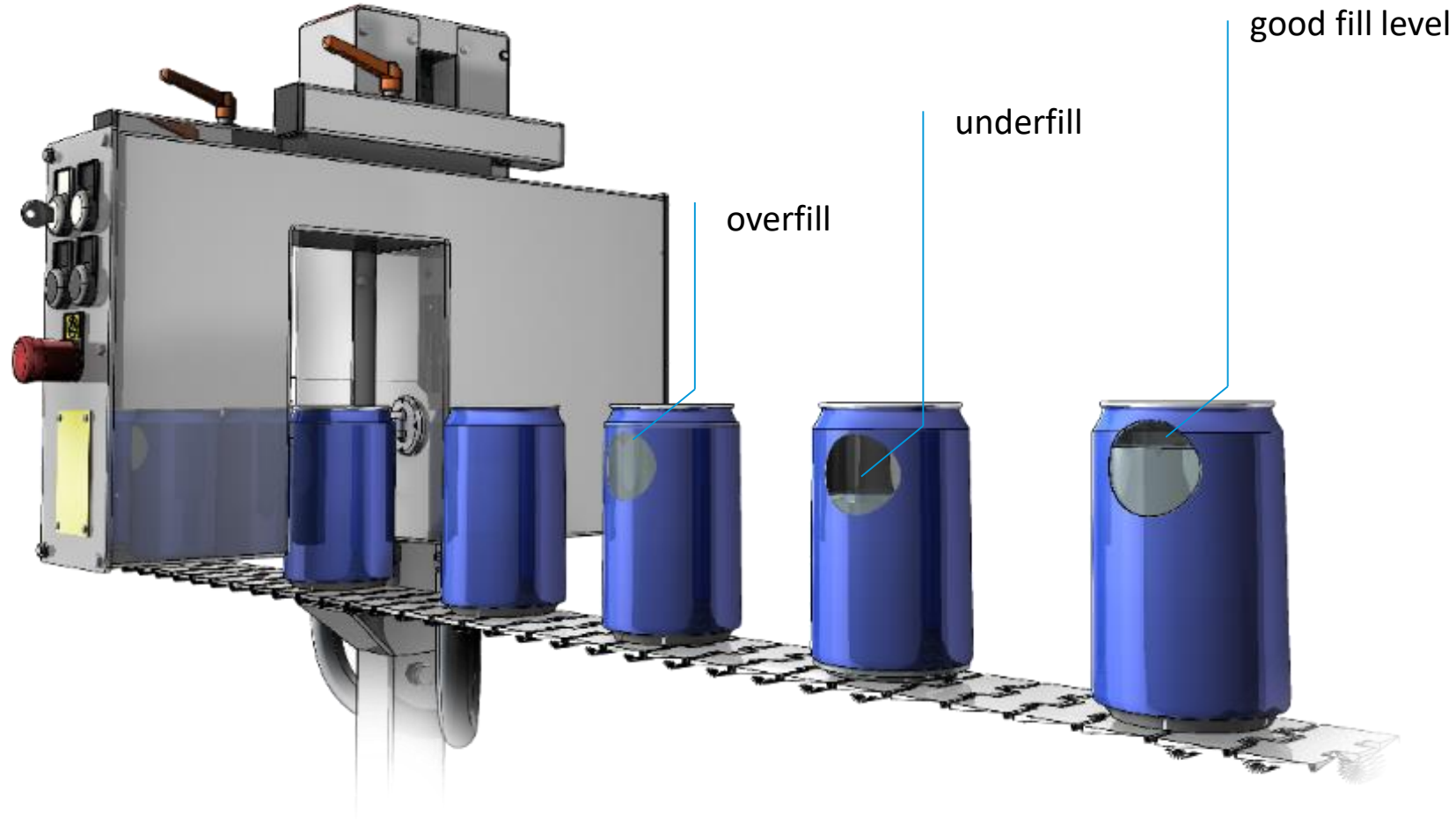
HEUFT SPECTRUM II VX

Different solutions for a full can inspection depending on the requirements

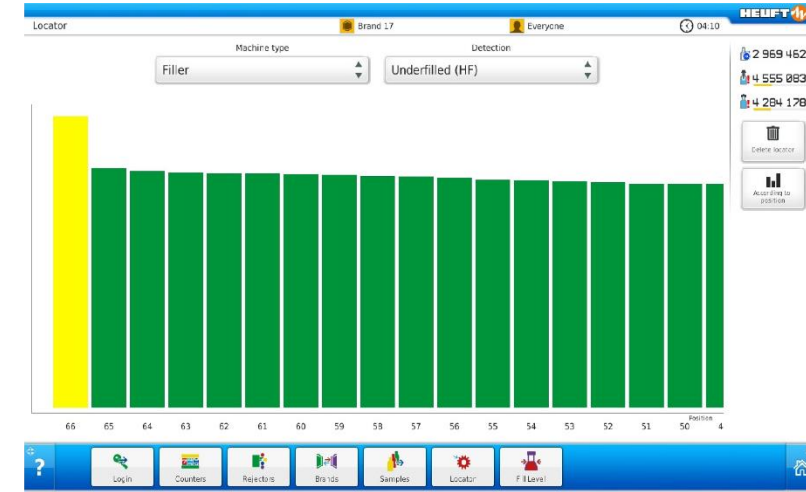
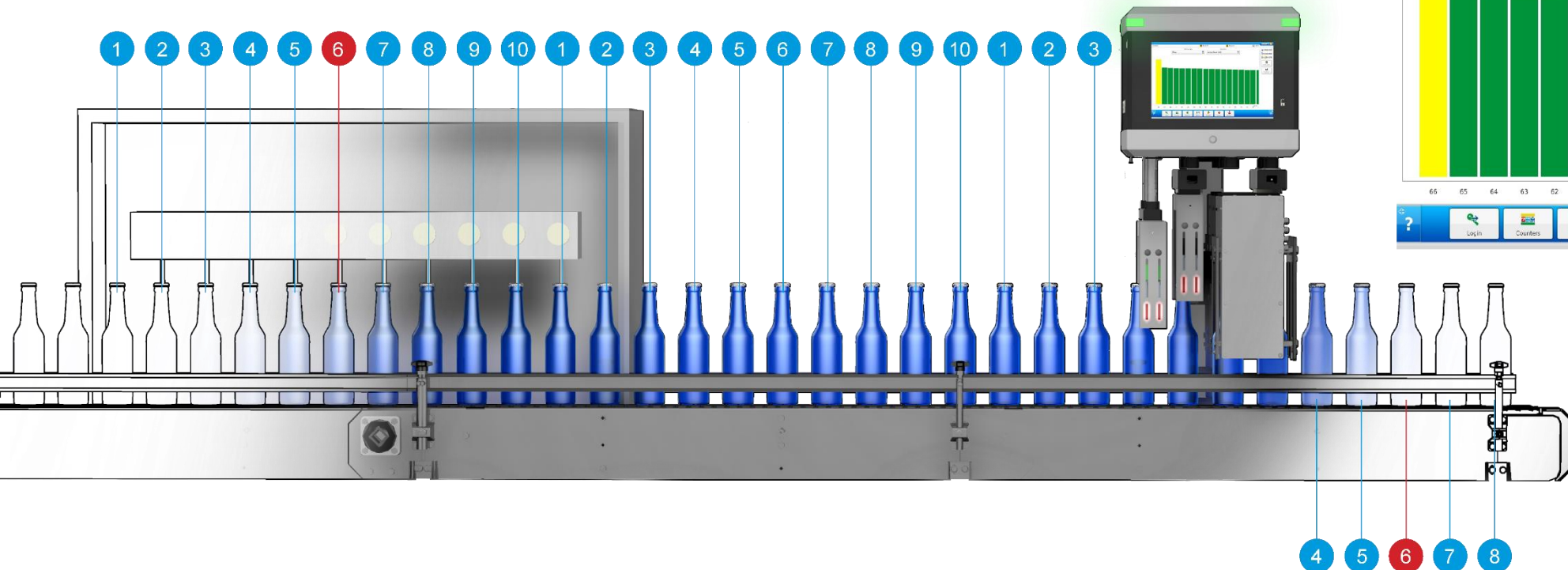


Fill level inspection

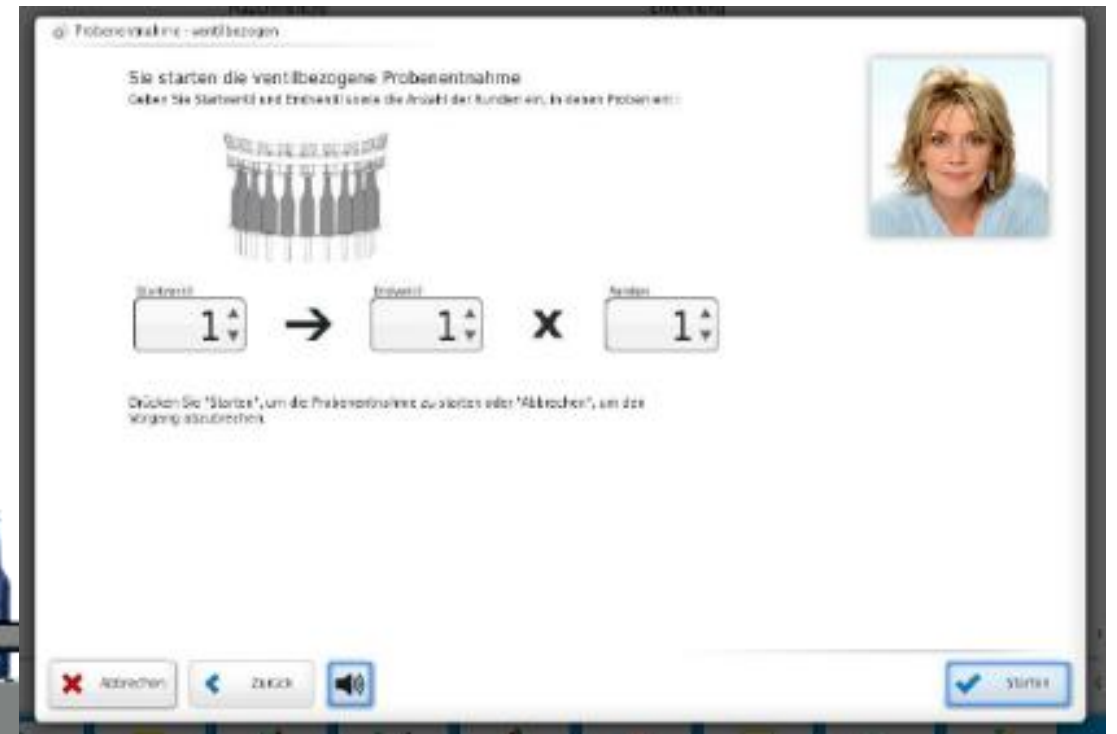




HEUFT X-ray fill level inspection



Locator



Sampling



HEUFT *SPECTRUM II VX*

Maximum output	140,000 cont/h
Vertical adjustment devices	4+
Automatic vertical adjustment	✓
Machine connection	✓
Sensor cameras	5
Additional inspection casing	✓
Rejectors	3+
HEUFT <i>NaVi</i> assistance systems	✓
HEUFT <i>checkPoints</i>	✓





HEUFT *PRIME*

Maximum output	99,000 cont/h
Vertical adjustment devices	3+
Automatic vertical adjustment	optional
Machine connection	✓
Sensor cameras	2
Rejectors	1
HEUFT <i>NaVi</i> assistance systems	✓
HEUFT <i>checkPoints</i>	✓





HEUFT ONE

Maximum output	72,000 cont/h
Vertical adjustment devices	2
Sensor cameras	1
Additional inspection casing	✓
Rejectors	1



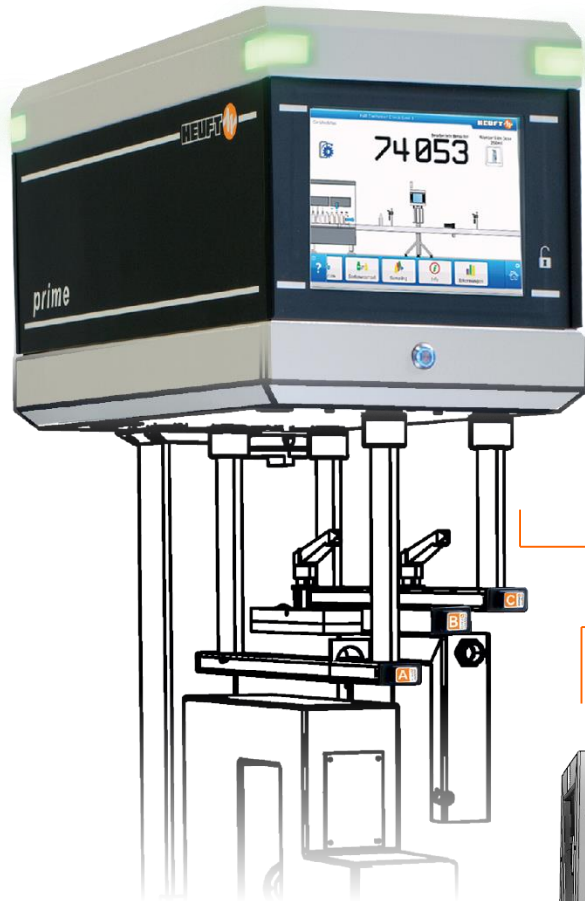


Maximum of 4



HEUFT SPECTRUM II VX

Modular detection solutions!



HEUFT PRIME

Maximum of 3



Modular detection solutions!

Main trigger

- closure detection (inductive / optical / excessive height)
- pressure check (inductive / cans)

Intelligent inspection modules

- fill level detection – HF (+ foam)
- fill level detection – X-rays
- camera inspection

HEUFT ONE



Modular and flexible: combining intelligent inspection modules simply.

Pressure and
leakage check





container with excessive internal pressure



container with insufficient internal pressure

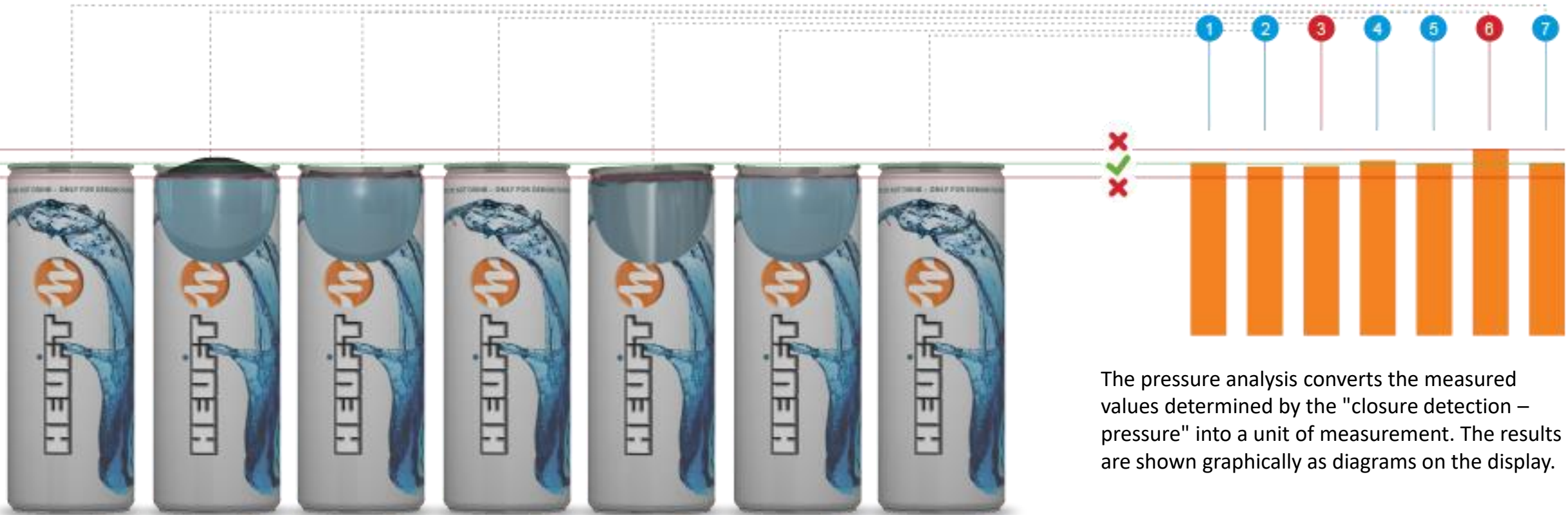


closure too high



unsealed container

Inductive pressure check: ensuring the perfect can closure.



The pressure analysis converts the measured values determined by the "closure detection – pressure" into a unit of measurement. The results are shown graphically as diagrams on the display.

Quantifying – pressure analysis

Code verification



Bar code reading

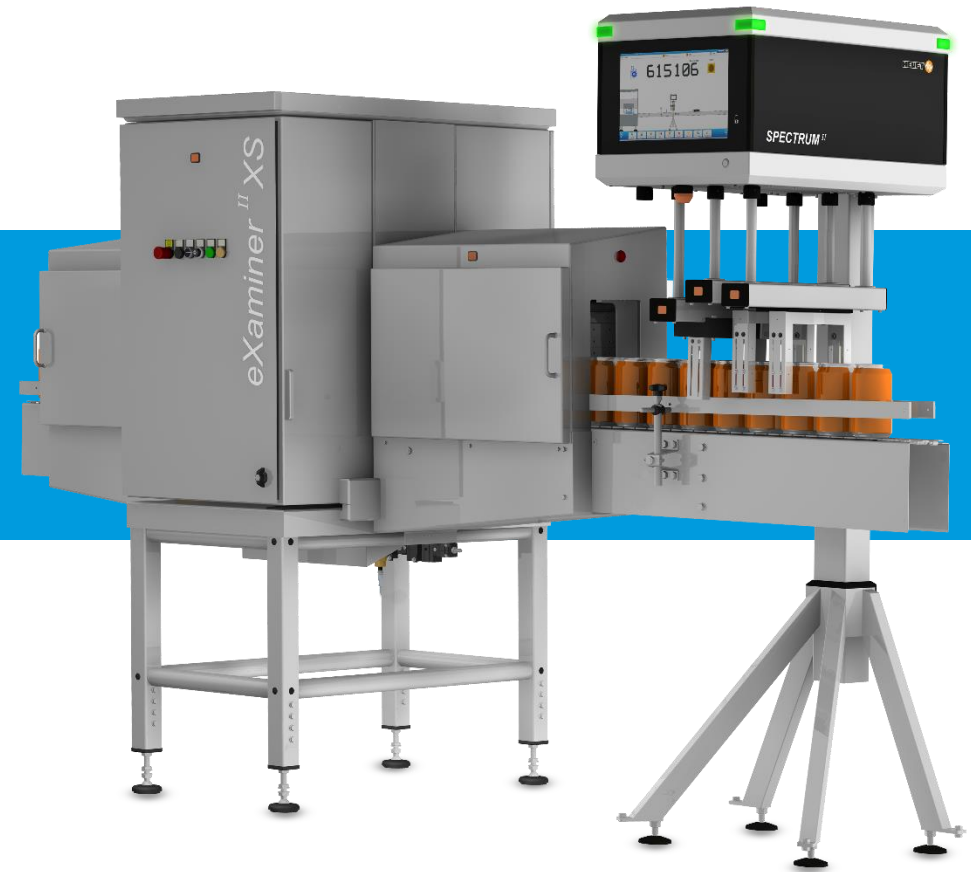


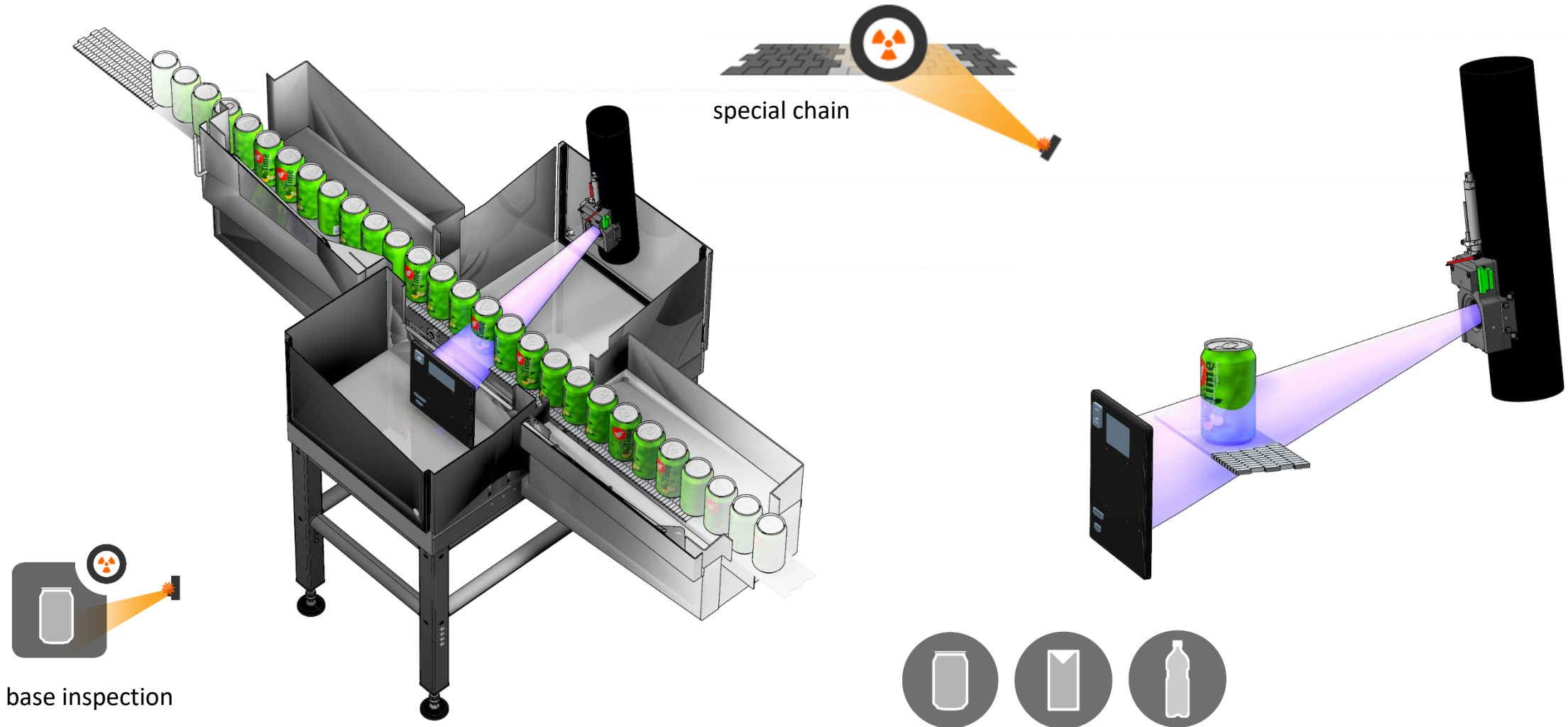
Code presence



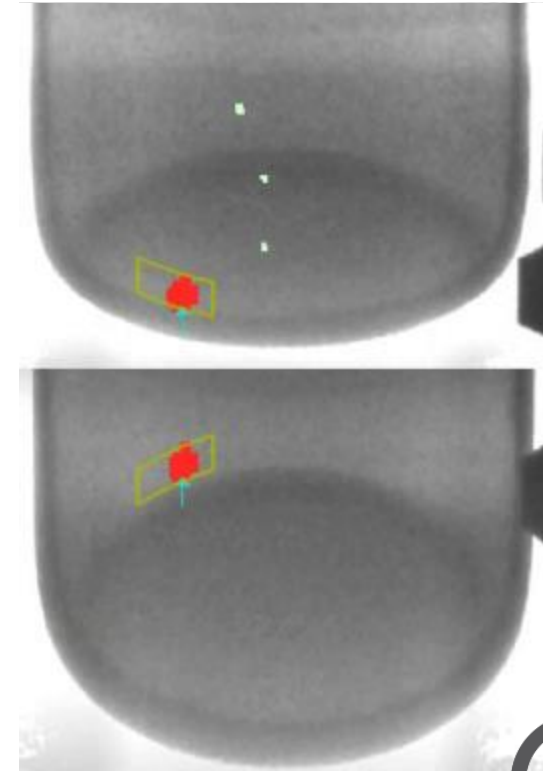
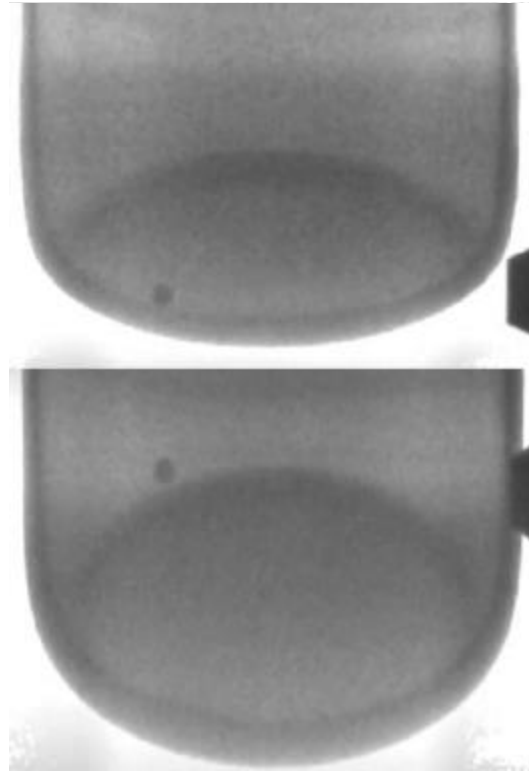
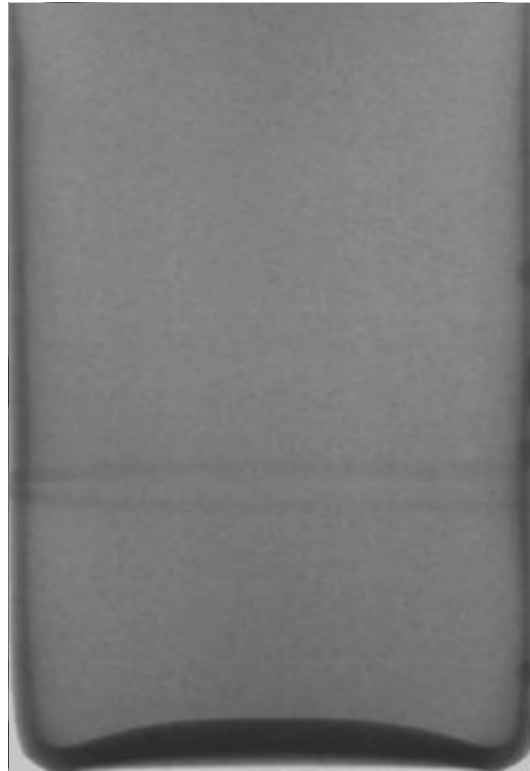
Space-saving end of line X-ray system of the new generation for a full coverage sidewall inspection.

HEUFT *eXaminer II XS*





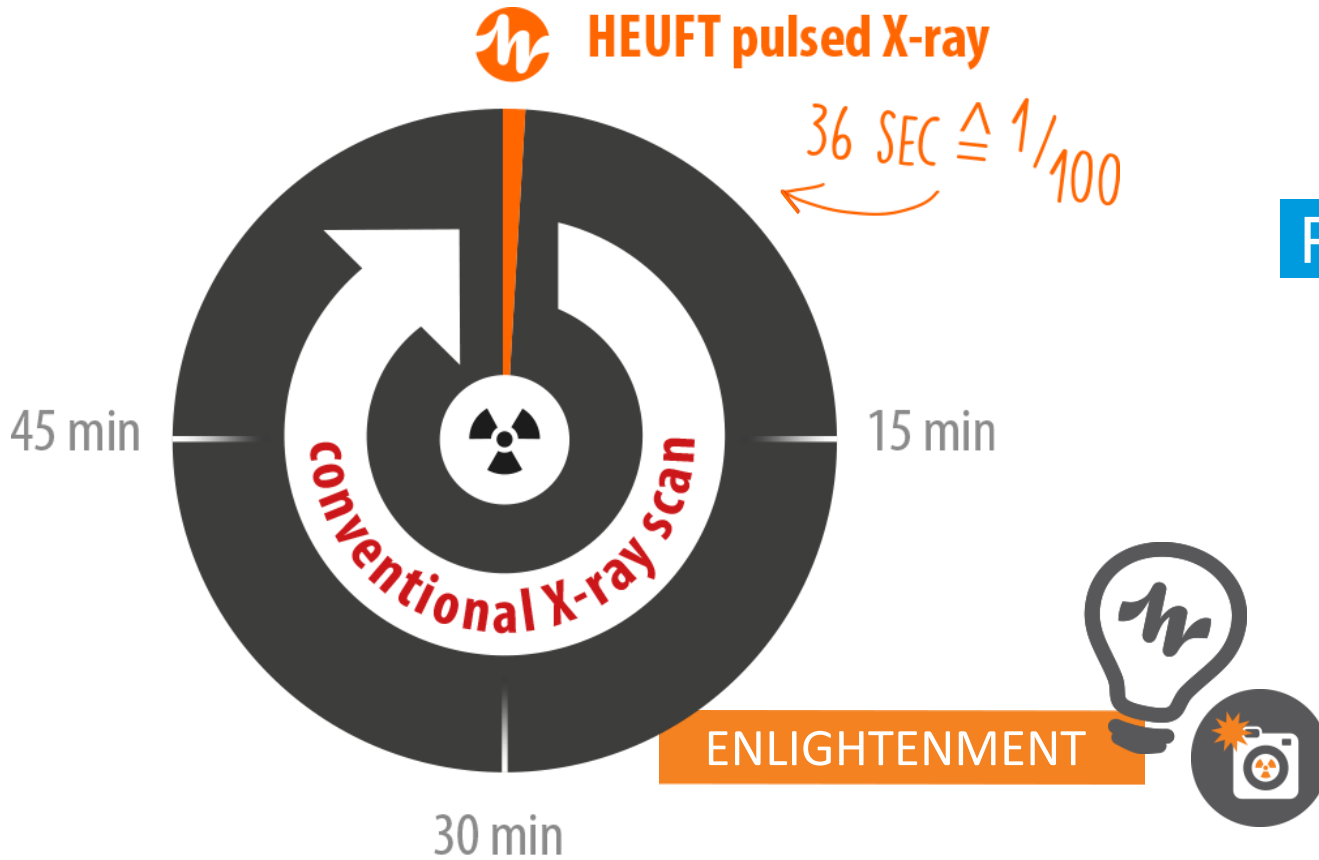
HEUFT *eXaminer II XS*: base inspection



ENLIGHTENMENT



X-ray – base inspection



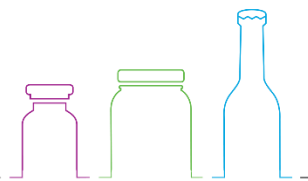
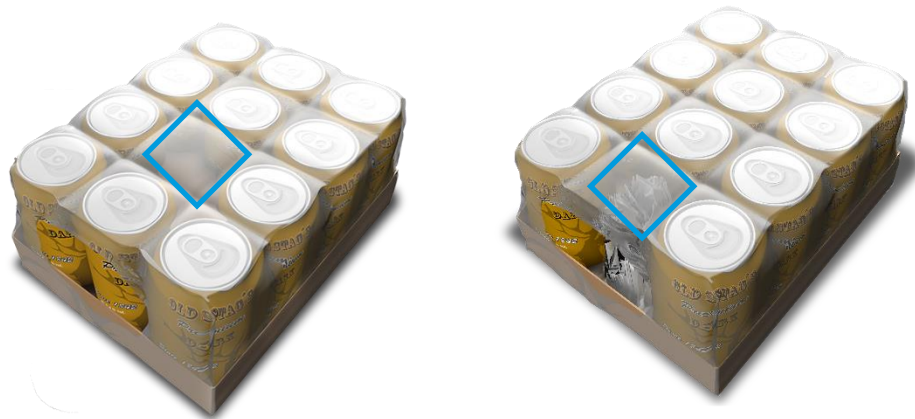
Pulsed X-ray technology
HEUFT *eXaminer II* series

**MAXIMUM PRECISION AND
MINIMUM RADIATION!**

Pulsed X-ray technology

Full case and tray inspection for outer packaging in top shape.

HEUFT GX



HEUFT *pusher*
compact discharger

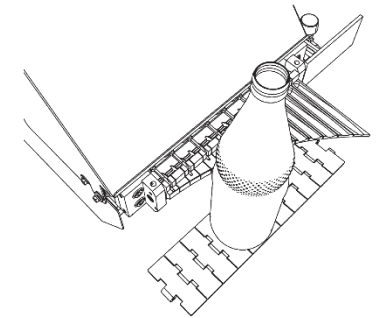
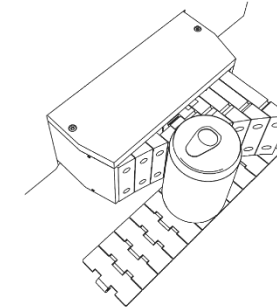
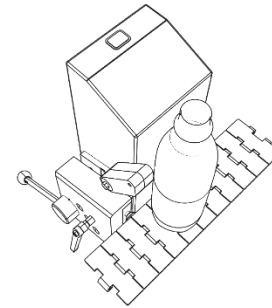
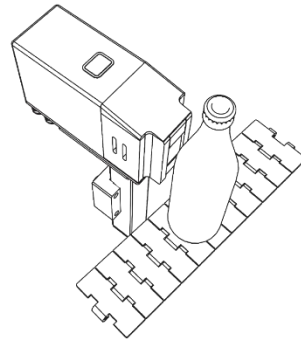
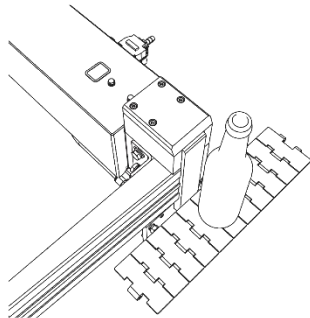
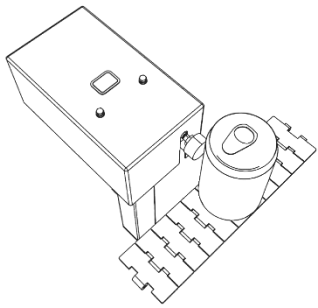
HEUFT *mono*
careful rejector

HEUFT *e-mono*
high-speed rejector
without Compressed air

HEUFT *flip*
smooth rejection

HEUFT *DELTA-FW*
dynamic rejection curve

HEUFT *DELTA-K*
gentle folding rejector



HEUFT *PROFILER*-family

Production data acquisition (PDA) and line analysis in real time.



HEUFT *STRATEGY II* -Server



HEUFT *PROFILER* advanced

Extension



HEUFT *PROFILER*

Upgrade



HEUFT *PROFILER* elemental



HEUFT SYSTEMTECHNIK GMBH – heuft.com

Thank you for your attention!

