

# HEUFT SYSTEMTECHNIK GMBH

Full Bottle 360° closure inspection

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Impact on closure inspection systems when implementing tethered caps



-  Burgbrohl, GERMANY
-  Founded 1979
-  18 locations around the world
-  Global 24/7 service
-  ~1,200 employees worldwide

**OUR MISSION**  
Ensuring product quality





HEUFT 

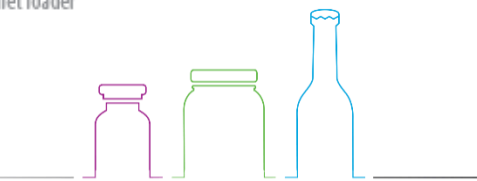
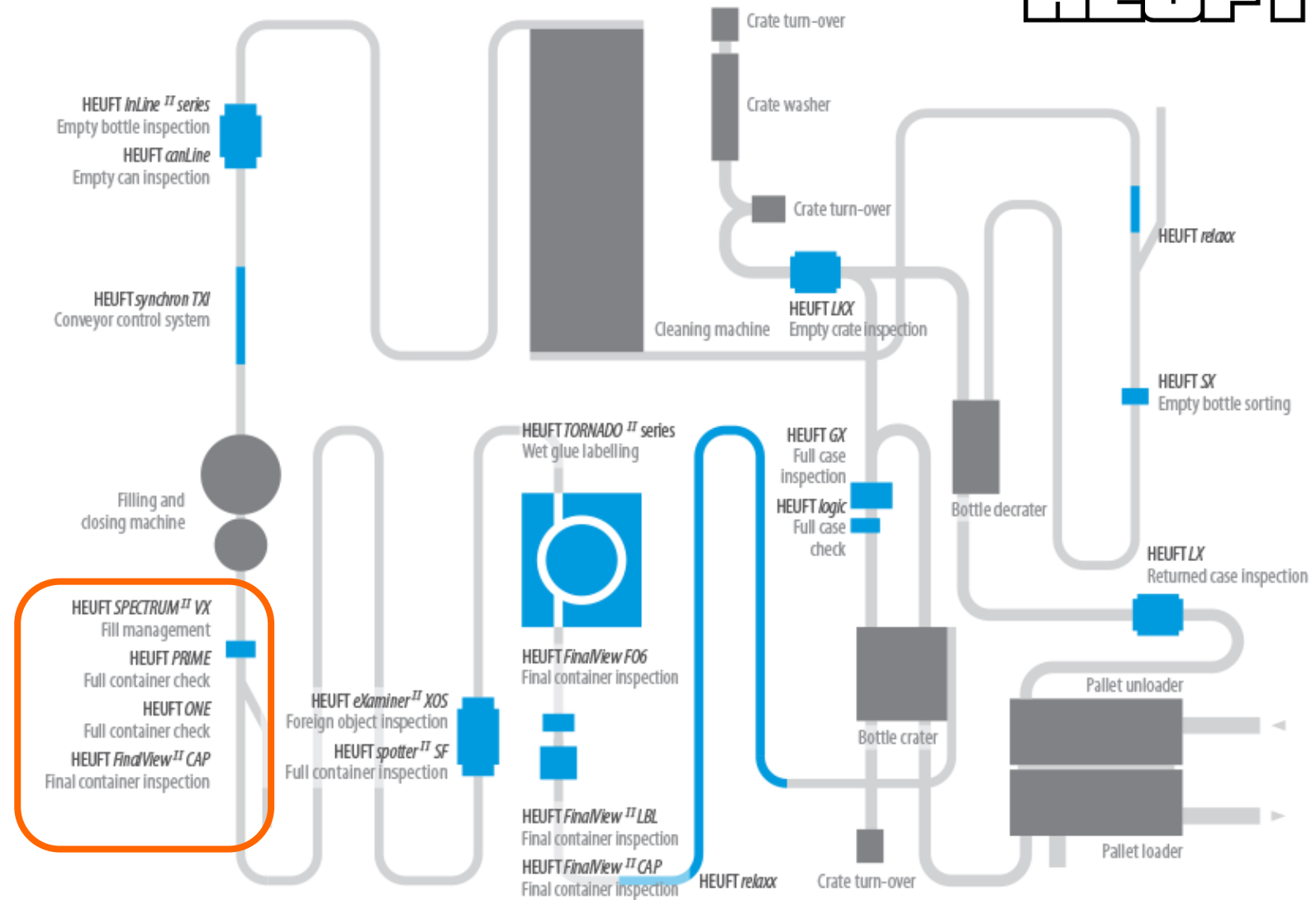
# BEVERAGE

# FOOD

# PHARMA



Safe all around!







SPECTRUM



PRIME



ONE

- Inspection tasks affected by tethered caps
- Rotational symmetric (slitted) and rotational asymmetric (moulded) tamper evident bands
- Transmitted light inspection or transmitted- and incident light inspection
- Black/white cameras or colour cameras
- Single camera solution or 360° inspection
- Software to overcome rotational asymmetry and avoid increasing the tolerances and compromising on inspection accuracy

## Topics



## Not affected

- Presence
- Correct colour (if included in the technology)
- Over height\*
- Canted\*

\* Evaluation method by closure contour to be changed for protruding hinges

## Affected depending on the cap

Tamper evident band inspections

- Broken bands
- Wedged in thread
- Broken bridges
- etc.



Asymmetric (moulded)

&

Symmetric (slitted)





Moulded

or

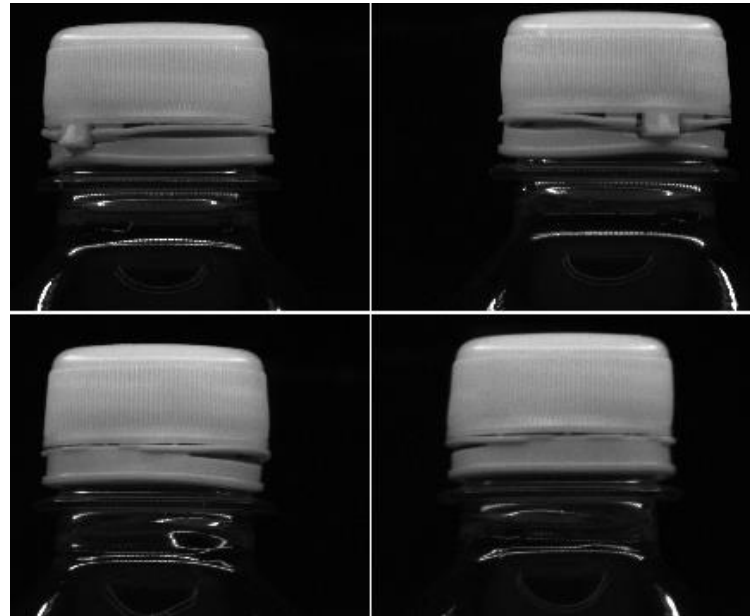
Slitted

CAM 1

CAM 2

CAM 3

CAM 4



Transmitted light and incident light

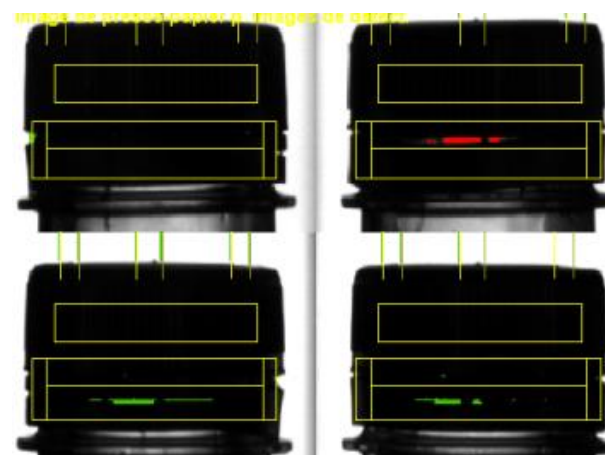
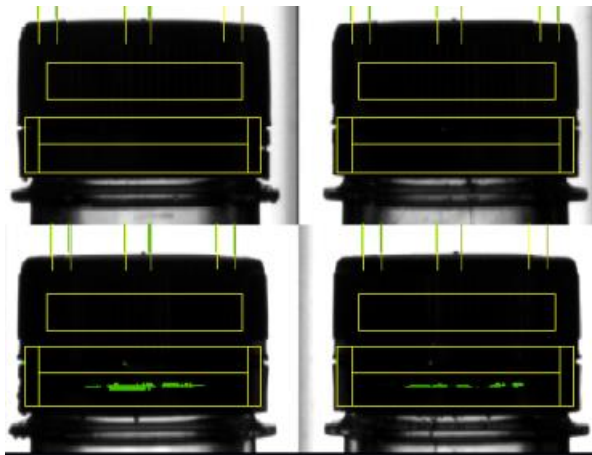
GOOD



BAD



BAD

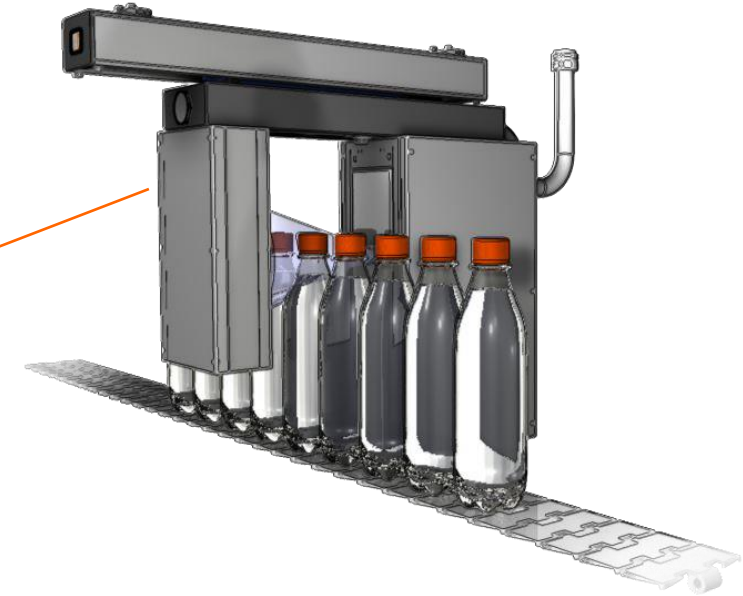
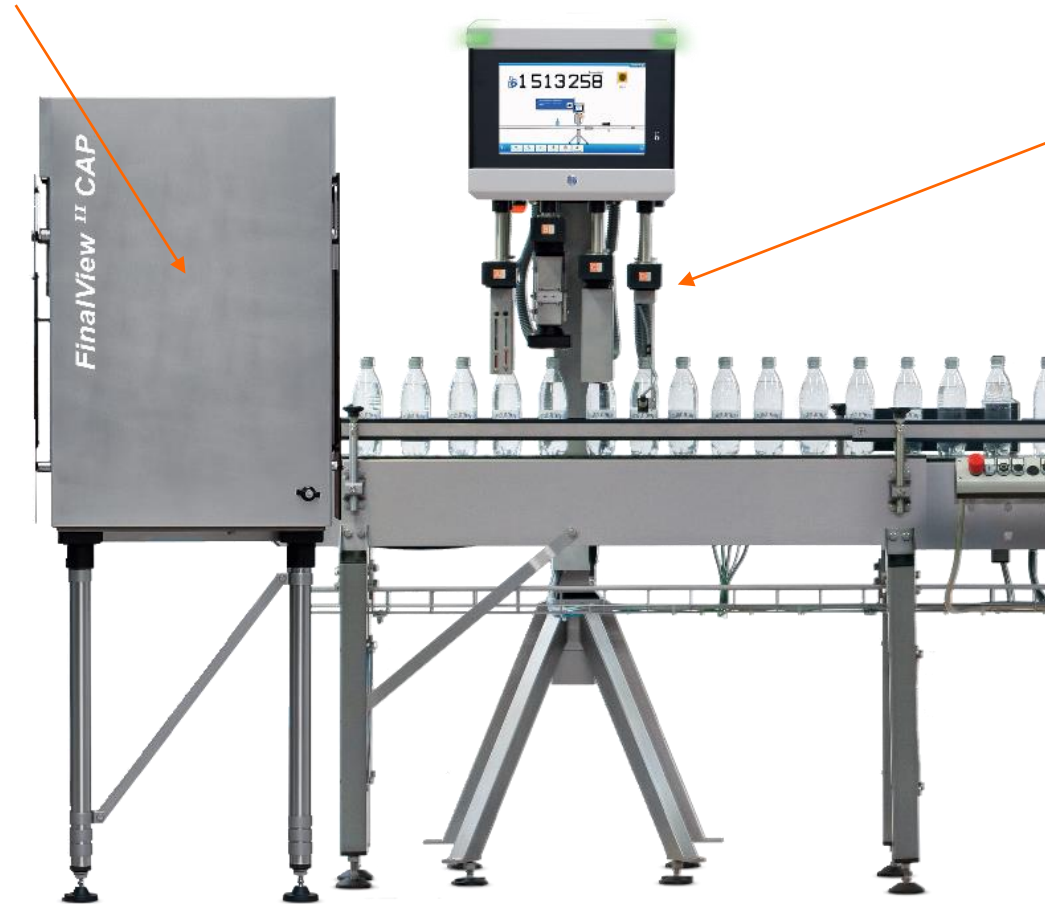
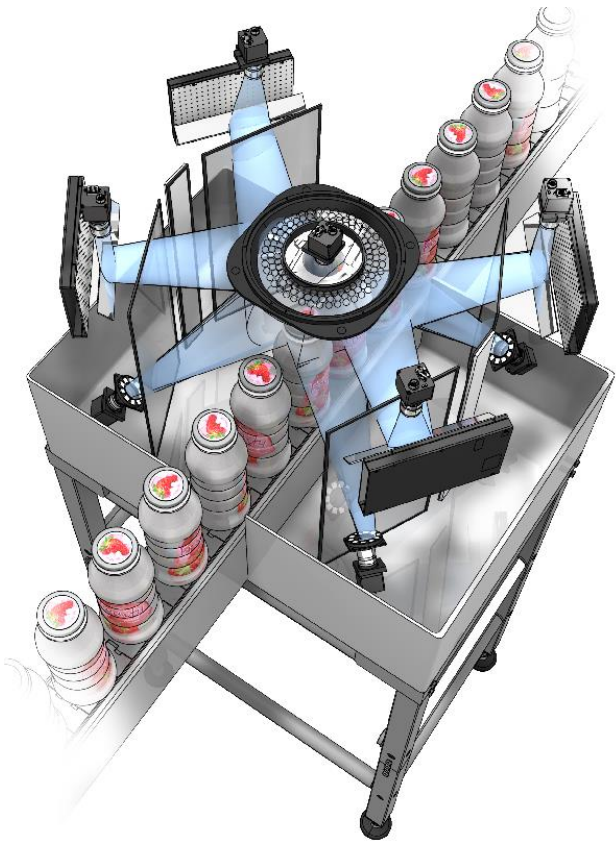


Field experiences when only using transmitted light with moulded asymmetric TE bands

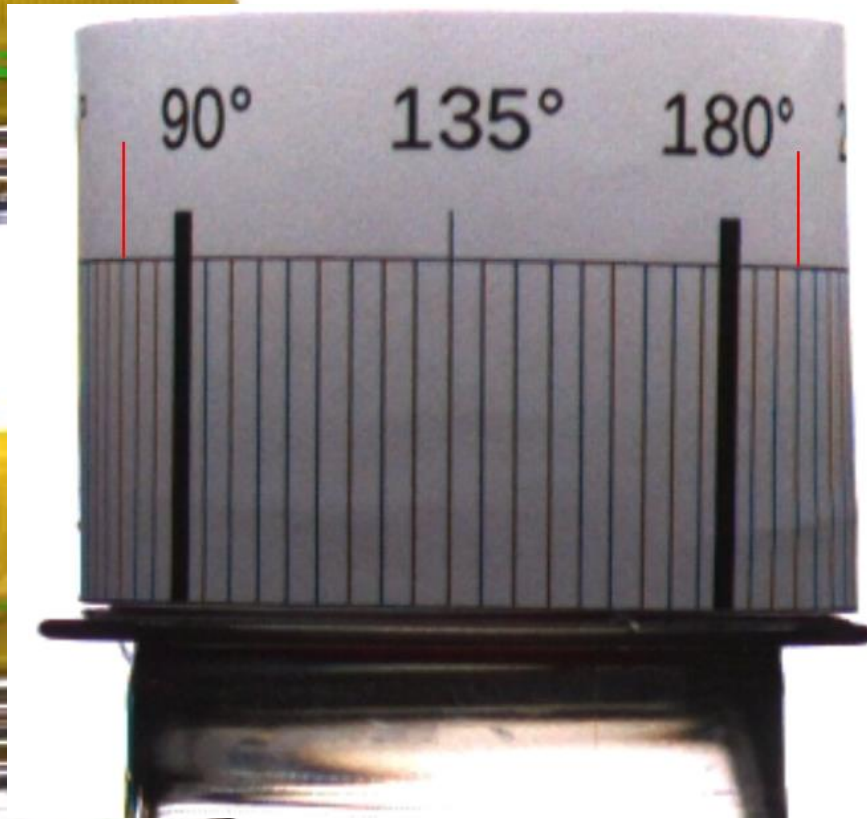




Black/White cameras or colour cameras



Single camera solution or 360° inspection



CAM 1

CAM 2



CAM 3

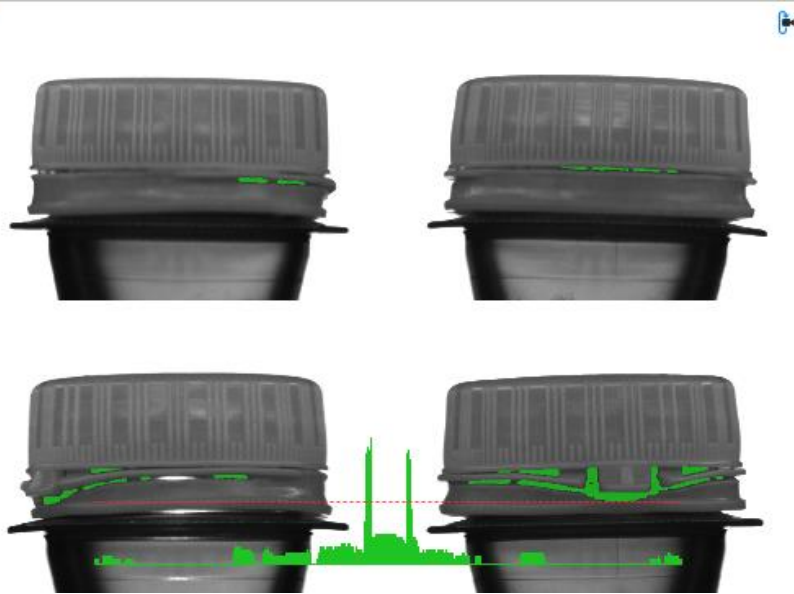
CAM 4



Single camera solution or 360° inspection



Good cap deviating pixels



Automatic teach in of tolerances



Defects found exceeding histogram



Developed view software to overcome rotational asymmetry



Proven concept: smallest deviations of the standard histogram can be found





WE ARE HEUFT!



*And HEUFT knows how!*