



**FULL CONTAINER INSPECTION**

**HEUFT *spotter* SF**

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## Full container inspection without "blind" areas



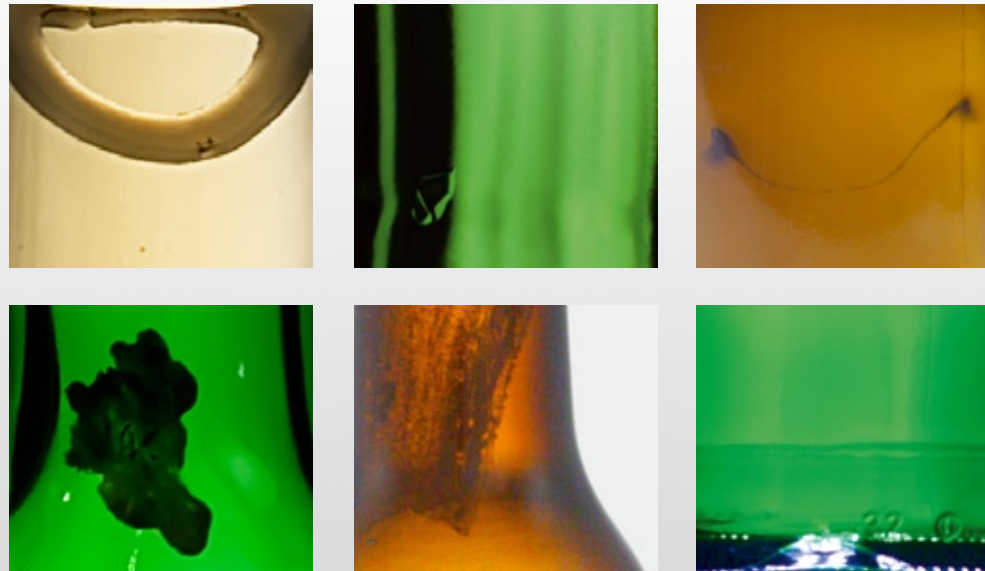
Foreign objects in and damage to newly filled bottles endanger product safety. Therefore it is essential that the drinks packaging in question is detected whilst still on the filling line and rejected. This is possible with the compact HEUFT *spotter SF* full container inspection. The system, specially developed for glass and PET containers filled with transparent liquids such as beer and mineral water, identifies foreign objects floating in the product as well as foreign objects which have sunk to

the bottom of the bottle such as foil remnants and bits of paper, insects and mould. Scratches, cracks, inclusions, chips and breaks are also detected.

The optical examination covers the complete container volume and even includes such areas which have been deemed impossible to be inspected until now: the HEUFT *spotter SF* reliably tracks down contamination and material defects hidden behind the dome or

covered by the base edge and other structures. For this the device has been equipped with an in-house developed detection technology. In addition an optional integrable module checks the presence of the closures.

The full container inspection which is delivered as a complete solution including a rejection system checks up to 72,000 bottles per hour directly after the closer.



## Complete optical inspection



The HEUFT *spotter SF* is equipped with two modules each comprising LED strobes, specially arranged mirror cabinets and CCD cameras in order to track down floating and sunken foreign objects as well as damage.

Several views of the complete neck, body and base area are already produced in the infeed in this way. The mirror cabinets, which can be optimally positioned depending on the

brand, ensure perfect illumination without shadows and reflections in the course of this. The conveyor chain in the HEUFT *spotter SF* is so narrow that the bottom of the bottle juts out to the left and right of it in order to provide a clear view.

A servo-controlled belt, the height and passage width of which can be adjusted at the push of a button, aligns the containers on their way to the

other inspection modules in the outfeed so that they can be photographed there again from another angle. The result: a complete all-around sidewall and base inspection. Even base faults covered by the dome and other container structures are reliably identified in this way. There are two methods available for this: the dark field detection finds reflecting and transparent faults and the bright field detection non-transparent faults.



The HEUFT *reflex* image processing card

## The HEUFT *reflex* image processing system



Combining several camera pictures in real time can only be achieved with an extremely powerful image processing technology. The calculating speeds of image processors available on the market are quickly exhausted in this connection and can only meet these requirements at low production outputs. These basic processing steps can be carried out in a very short time on a hardware level by using the HEUFT *reflex* image processing

card which has been specially developed for such tasks. This leaves more time for the software controlled picture analysis. The result is a level of accuracy which is unparalleled on the market.



## Product monitoring and self-tests



It must be ensured that each container is really examined, each fault detected and each bottle affected is removed from the production flow even at high line speeds. Therefore the HEUFT *spotter SF* has integrated monitoring and self-test tools like all the systems of the HEUFT *SPECTRUM* series.

In this way triggers in the infeed and outfeed as well as inside the device determine the exact position of each individual con-

tainer and encoders the respective transport speed. Because of this the system always knows where each bottle to be examined is. In addition a reject verification ensures that all the containers which have been identified as being faulty are really rejected.

The HEUFT *spotter SF* checks its own detection performance at regular, freely configurable intervals using standardised test bottle programs during which containers

prepared with typical faults are introduced. Information about malfunctions diagnosed during the course of this can be saved in the system just as detection pictures of the products identified as faulty, details about standstills and interference as well as all other relevant production data. This important information can be retrieved at any time from the device itself as well as from each office PC connected to the network.



## Specifications



The HEUFT *spotter SF* full container inspection achieves the following reliability values during the inline quality inspection of filled, transparent containers with a diameter between 40 mm and 80 mm:

- maximum throughput - 72,000 bottles per hour
- transparent foil remnants 10 mm x 10 mm in the body area are identified with a reliability of 99.9% - the same applies to 6 mm x 6 mm x 6 mm opaque foil in this area
- transparent and opaque foil 4 mm x 4 mm x 4 mm is identified with a reliability of 98% in the neck area of the bottles
- the detection accuracy is also 98% for 10 mm x 2 mm x 2 mm foreign objects on the base
- the proportion of falsely rejected containers without faults is less than 0.2% in the case of the sidewall inspection and even less than 0.1% in the case of the base inspection

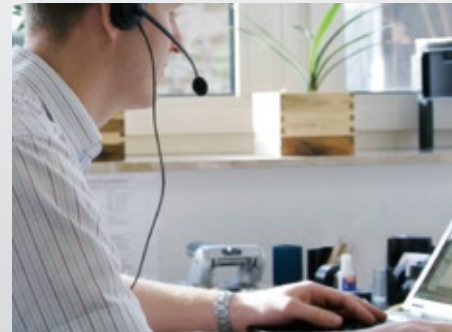


## Your cost advantages with HEUFT



We do everything in order to combine the very highest quality with fair prices:

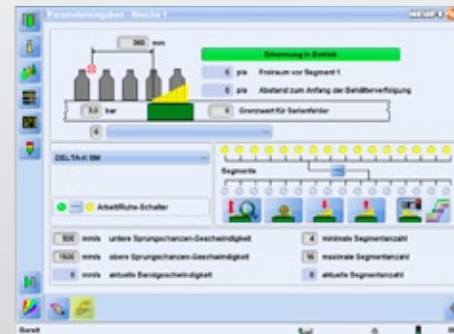
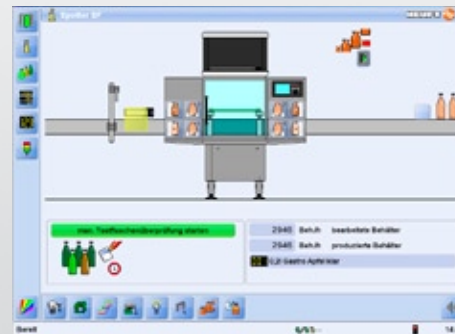
- series production due to the modular design of the HEUFT *SPECTRUM* series
- easy integration into existing lines
- advantageous spare parts storage
- shorter downtimes
- fast changeover times
- fast brand changes completely without change parts
- fast trouble shooting
- short maintenance times
- cost-cutting due to reduced downtimes and ensuring the production flow
- high development performance so that the devices are optimally geared to the task
- robust and stable components
- increased service life
- low wear and tear
- low failure rates
- the HEUFT *TeleService* cost savings - the service technician must not be specially called out
- an investment is considerably less than the costs involved due to loss of image caused by faulty products



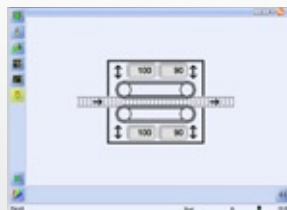
## Networking



- multilingual, simply arranged, comprehensible menu structure with extensive help boxes and complete online user's manual - the user interface can be supplied in any language / graphic characters if required
- password-protected operator levels which can be freely adjusted to suit the tasks of the operating staff, the quality assurance department etc.
- single button operation via jog shuttle with the most advanced TFT display
- easy identification of spare parts with online and offline spare parts list with photographs and exploded views
- access to all networks with Ethernet and TCP/IP - equipped with two Industrial Ethernet interfaces by default
- connection to a preconfigured DDE interface and SQL database



## Device operation and the HEUFT PILOT



- multilingual, simply arranged, comprehensible menu structure with extensive help boxes and complete online user's manual - the user interface can be supplied in any language / graphic characters if required
- password-protected operator levels which can be freely adjusted to suit the tasks of the operating staff, the quality assurance department etc.
- easy identification of spare parts with online and offline spare parts list with photographs and exploded views - the order can be sent from the device either to an internal purchasing department or directly to HEUFT
- the operator receives all the information during a brand changeover regarding the necessary steps in order to exclude possible operating errors
- clear fault messages with service notes and support in order to avoid downtimes



The HEUFT *flip*



The HEUFT *DELTA-FW*



The HEUFT *DELTA-K*

## The HEUFT *rejector*



The following rejection systems can be directly integrated into the HEUFT *spotter SF* full container inspection:

### The HEUFT *flip*

- single-segment, high-speed rejector for cylindrical containers
- particularly smooth transversal acceleration of the containers
- very compact construction

### The HEUFT *DELTA-FW*

- reliable upright rejection due to a virtual follow-on multi-segment rejection curve
- particularly suitable for heavy containers

### The HEUFT *DELTA-K*

- multi-segment rejector as a virtual follow-on guide rail

- upright rejection of shaped containers due to single point guidance

### The HEUFT *mono*

- single-segment, high-speed rejector for cylindrical containers
- very compact construction
- suitable for steady containers



The HEUFT *eXaminer XO*



The HEUFT *floater*



The HEUFT *InLine*

## Other HEUFT products

The following products can be used alternatively for similar tasks:



### The HEUFT *eXaminer XO*

- a combination of a careful pulsed X-ray measurement and an optical inspection for detecting high density and low density foreign objects in filled bottles
- sidewall and all-around base inspection

- optimised to detect minute glass splinters

### The HEUFT *floater*

- optical detection of floating foreign objects in containers filled with transparent liquids
- easily retrofitted into existing lines

### The HEUFT *InLine*

- empty bottle inspection
- a varied range of modules for an extensive inspection of all types of containers before they are filled



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# The HEUFT *spotter SF* full container inspection

for detecting faults in filled, transparent bottles



## FUNCTIONS

- detects foreign objects floating in the product and lying on the container base
- reliably identifies low density contamination such as foil, paper, insects, wood and mould
- detects scratches, cracks, chips and other material defects
- optional integrable detection module for checking the presence of closures

[more] \*

## THE ADVANTAGES

- maximum detection reliability due to the use of the HEUFT *reflexx* technology
- complete coverage of the total container volume
- extensive base inspection without "blind areas"
- optimal container alignment by means of a specially developed servo-controlled belt drive
- automatic function monitoring by means of integrated tools such as a test bottle log, container tracking, reject verification and message stack

• up to 72,000 bottles per hour

[more] \*

Innovative technology for a 360° base inspection also identifies faults hidden behind the dome and other container structures

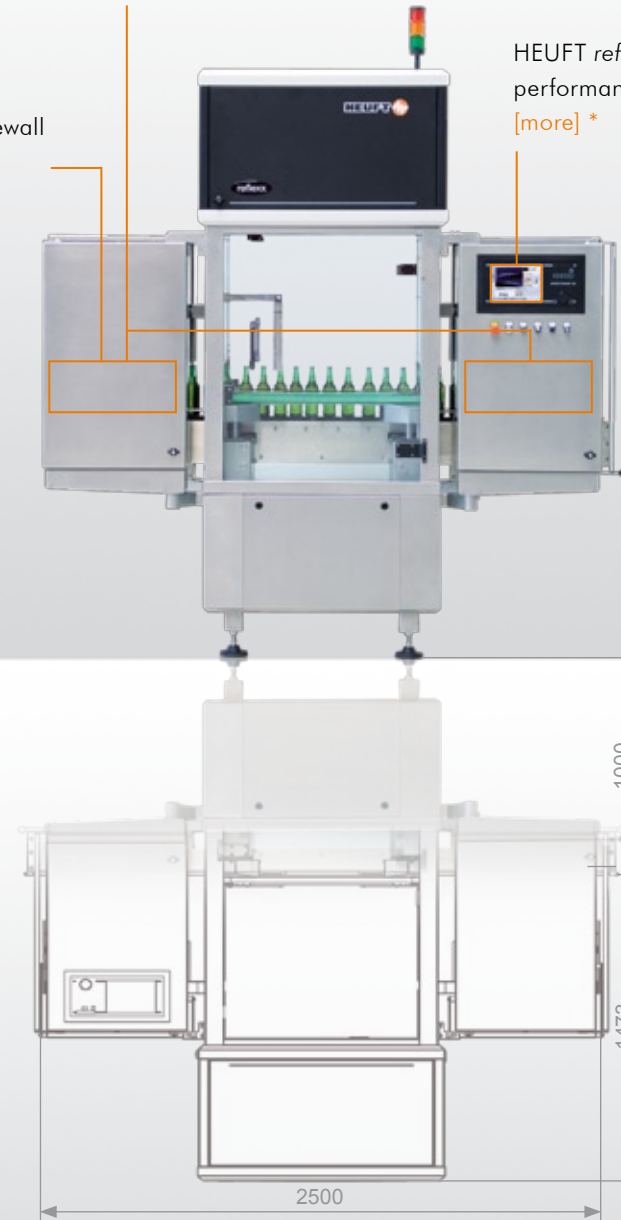
[more] \*

Optical sidewall inspection

[more] \*

HEUFT *reflexx* technology for high-performance image processing

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\* [more] detailed information on [www.heuft.com/sf](http://www.heuft.com/sf)

