

FOREIGN OBJECT INSPECTION

HEUFT eXaminer XL



The smarter Way of Glass splinter detection!

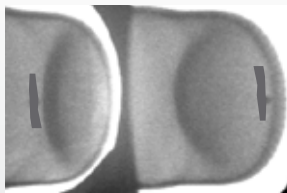
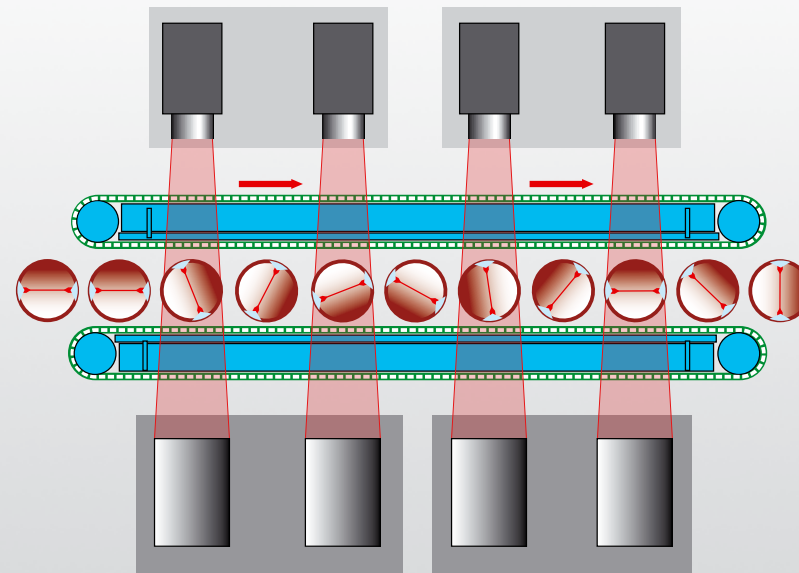


Pieces of glass caused by breakage or manufacturing faults can enter the container when glass containers are being filled. The HEUFT eXaminer XL X-ray inspection was specially developed for the high-speed lines of the drinks industry. It detects foreign objects such as glass, metal and stones even in cloudy or absolutely non-transparent liquids or containers. These foreign objects as well as

lost fill tubes are detected by means of X-ray technology and the downstream HEUFT *reflexx* image processing system in the filled and closed bottles and the faulty containers are reliably rejected.

The specially developed belt drive rotates the bottles so that they are optimally aligned at four X-ray stations in order to guarantee a 100% base co-

verage. This technology makes it possible to carry out an exact inspection using a very low radiation dose.



Base inspection

Specific rotation

The foreign object is aligned with its longest side transverse to the X-rays at least at one station due to the rotation in the belt drive. Even small foreign objects are reliably detected in this way.

Without blind spots

The container is X-rayed at an angle from the top and the bottom using two X-ray generators per station. Blind spots are excluded as a result and 100% of the base area is inspected.



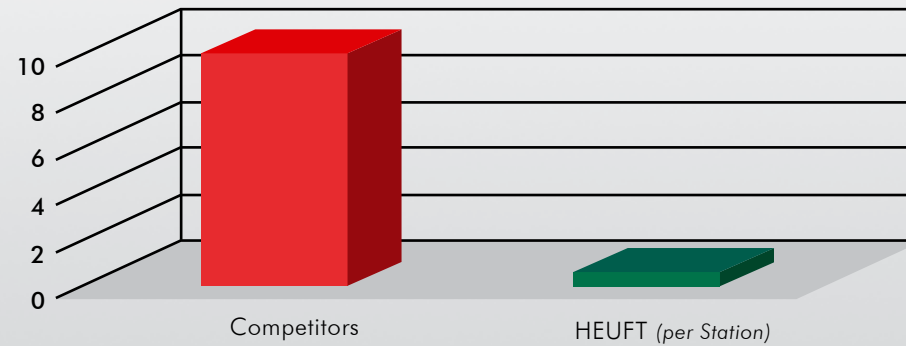
The HEUFT *reflex* image processing card

The HEUFT *reflex* image processing system



Combining two camera pictures in real time can only be achieved by using 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 software controlled picture analysis. The result is a level of accuracy which is unparalleled on the market.



Average current intensity [mA]

X-ray strobe

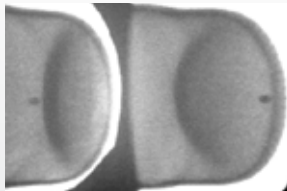
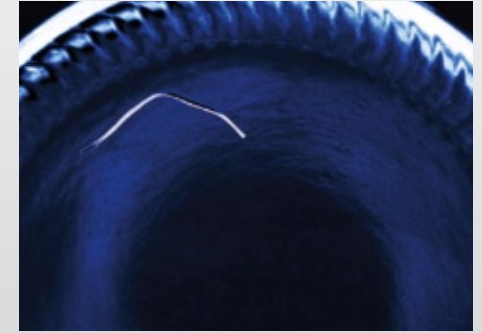
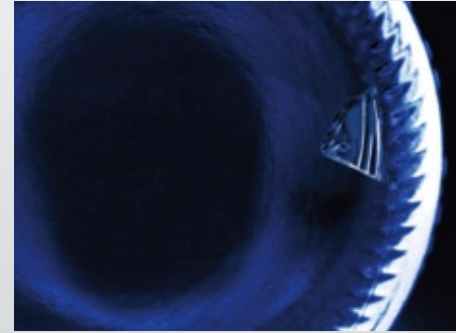
Compared to systems with permanent radiation sources the radiation exposure as regards the HEUFT eXaminer XL is considerably reduced. The quantity of radiation is reduced by magnitudes due to the use of X-ray strobes.

This means that the product is subjected to considerably less exposure

and therefore complies with the increased demands of the consumer in the food sector.

Furthermore the components of the inspection device are subjected to less wear and tear because they are only activated when a product actually has to be X-rayed.

In addition the low amount of radiated power means less space is required. All the necessary protection devices are integrated in the device and therefore ensure small installation dimensions.



Specifications

Detection accuracy

Specification values for the base and sidewall detection for the HEUFT X-ray foreign object inspection for containers with a diameter between 40 mm and 80 mm:

- A glass splinter 6x2x2mm is identified as a fault with a reliability of at least 99,5% and rejected.

- A glass ball with a diameter of 2mm is identified as a fault with a reliability of at least 98% and rejected.
- A steel ball with a diameter of 1mm is identified as a fault with a reliability of at least 98% and rejected.
- The false rejection rate (number of containers without an identifiable

fault in relation to the total number of containers produced) is less than 0.2%.

The exact specifications for original sample containers is determined for individual containers upon request.

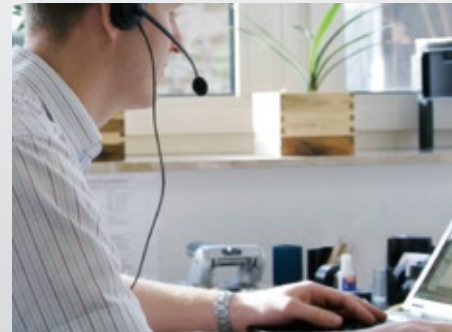


Your cost advantages with HEUFT



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

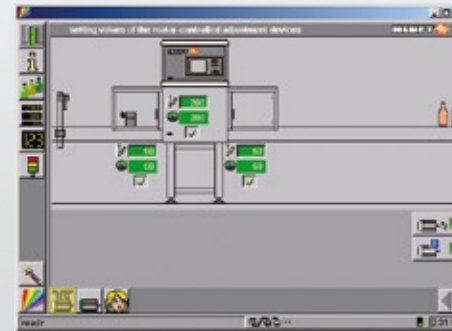
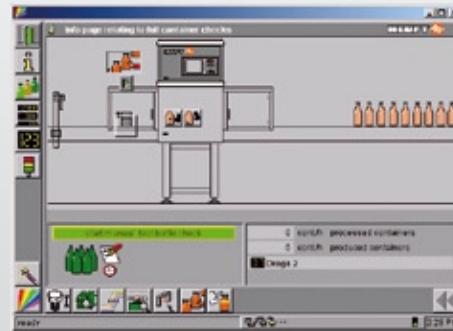
- high development achievement so that the devices are optimally geared to the task
- series production due to the modular design of the HEUFT *SPECTRUM* series
- easily integrated into existing lines
- advantageous spare parts storage
- shorter downtimes
- fast changeover times
- change parts not necessary
- fast trouble shooting
- short maintenance times
- cost-cutting as a result of reducing downtimes and ensuring the production flow
- robust and stable components
- increased service life
- minimum wear and tear
- low failure rates
- the HEUFT *TeleService* - cost savings: the service technician must not be called out
- an investment is considerably less than the costs involved due to loss of image caused by faulty products



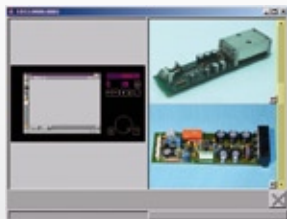
Networking



- integrated Ethernet interfaces as well as TCP/IP access to all networks
- connection capability to a pre-configured DDE interface and SQL database
- the HEUFT *PILOT* graphical user surface with a comprehensible menu structure for easy operating
- operation possible either via jog shuttle or touchscreen on the TFT screen at the device or via a network
- automatic transfer of counter readings or fault messages by SMS to a mobile phone or by e-mail if required
- firewall protected connection to the remote service by Ethernet – the HEUFT *TeleService* can access the line directly and rectify faults at short notice by means of remote diagnosis if the customer wishes



Device operation and the HEUFT PILOT



- Multilingual, simply arranged, easy to understand menu set-up with extensive help boxes and complete on-line user's manual. The operating surface can be supplied in any language/graphic characters if required.
- Password-protected operator levels, can be adjusted to suit the tasks of the operating staff, 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.

The HEUFT *flip*The HEUFT *DELTA-K*The HEUFT *DELTA-FW*

The HEUFT *rejector*

The following rejection systems can be integrated into the HEUFT eXaminer XL foreign object inspection:

The HEUFT *flip*

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

The HEUFT *DELTA-FW*

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

The HEUFT *DELTA-K*

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

- The upright rejection of shaped containers by means of single point guidance.

The HEUFT *mono*

- A single-segment, high-speed rejector for cylindrical containers.
- A very compact construction.
- Suitable for steady containers.





The HEUFT eXaminer XA



The HEUFT eXaminer XO



The HEUFT VX

Other HEUFT products



The following products may also be of interest to you:

The HEUFT eXaminer XA

- low radiation rate
- the detection of foreign objects even if the container bases are curved
- optimal detection by using the HEUFT *reflexx* image processing technology

The HEUFT eXaminer XO

- optical detection of transparent foreign objects in the bottle
- specially for the drinks industry
- up to 72,000 bottles per hour

The HEUFT VX

- fill level detection (HF or X-ray)
- closure inspection with the HEUFT *VISION*, the HEUFT *sonic*,

- optical, inductive and HEUFT *magnetic tracking*
- bottle burst detection

The HEUFT floater

- the inspection of transparent/semitransparent (polarising) foreign objects



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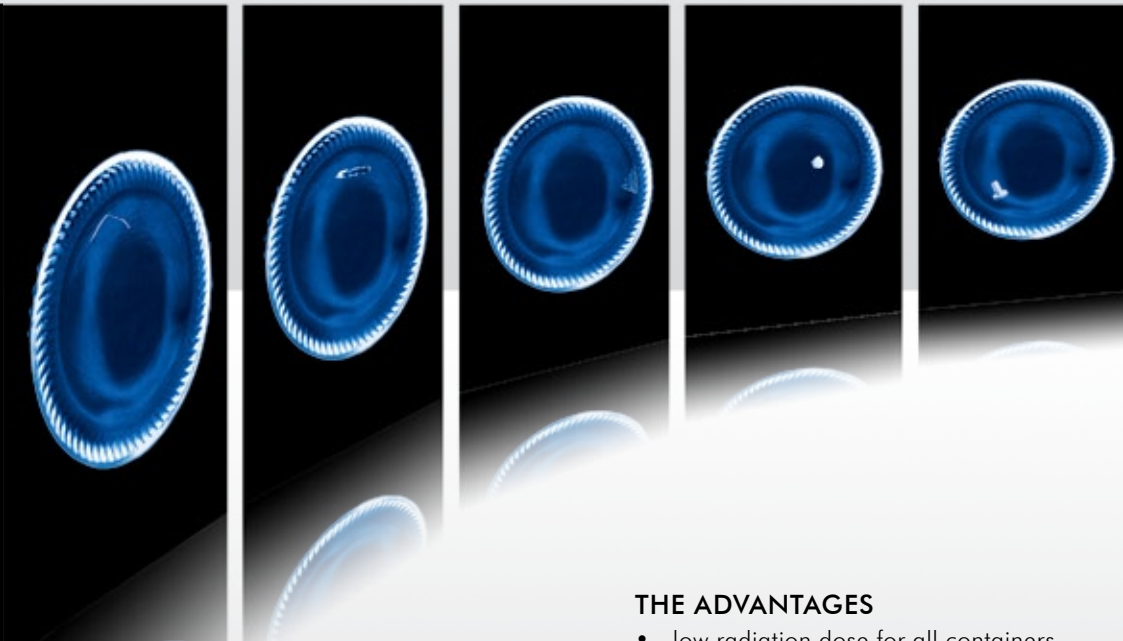
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The HEUFT *eXaminer XL* foreign object inspection for high-speed lines



FUNCTIONS

- the detection of foreign objects such as pieces of metal splinters and stones by means of X-rays in closed and filled containers
 - base inspection specially optimised for the drinks industry
- [\[more\]](#) *

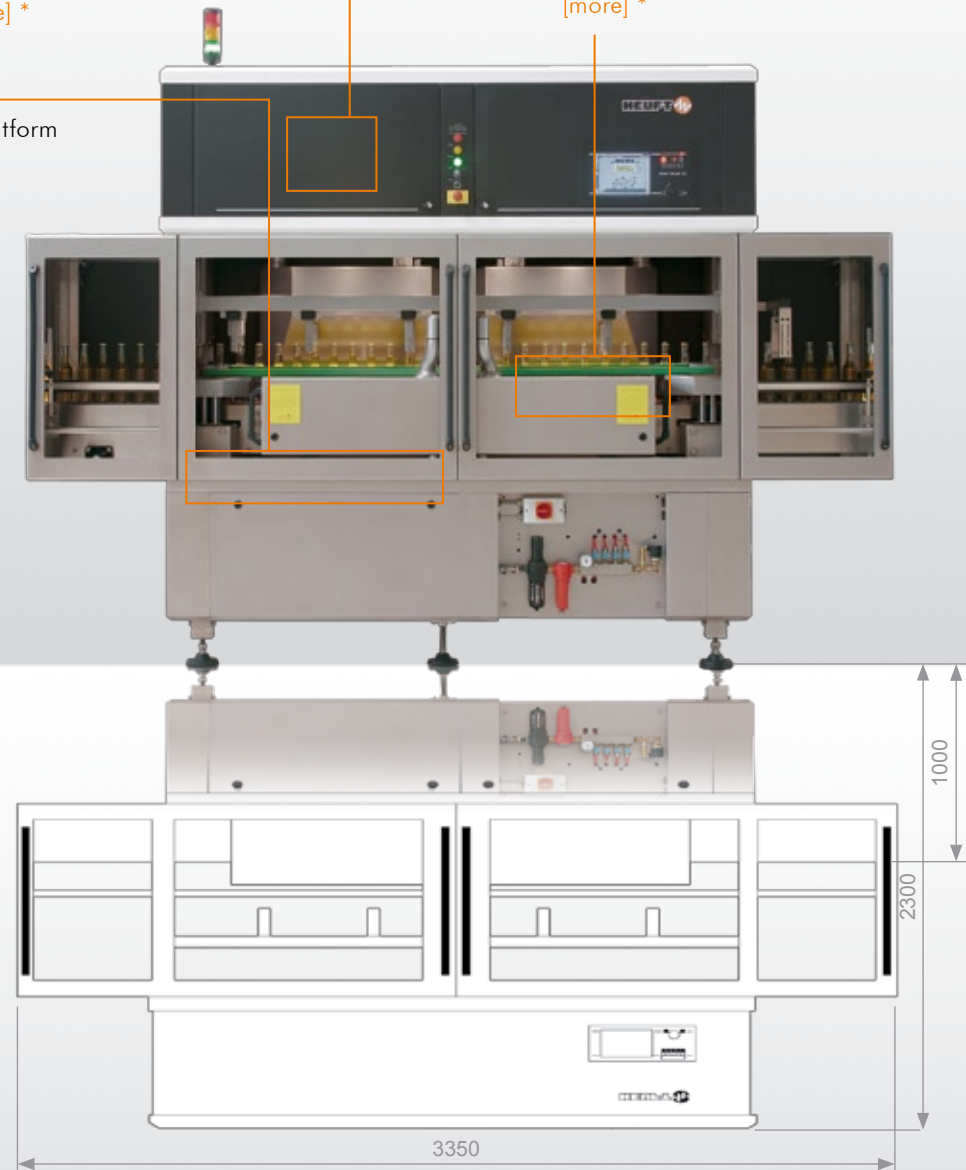
THE ADVANTAGES

- low radiation dose for all containers irrespective of the speed at which they pass through
 - 100% base inspection even in the case of curved bases
 - complete mechanical and electronic brand changeover by pushing one button
 - up to 72,000 bottles per hour
- [\[more\]](#) *

Optimal detection by using the HEUFT *reflexx* technology
[\[more\]](#) *

Specially developed belt drive
[\[more\]](#) *

Robust construction with the HEUFT *CleanDesign* machine platform
[\[more\]](#) *



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

