



FINAL PRODUCT CHECK

HEUFT *FinalView*



The last look before the first



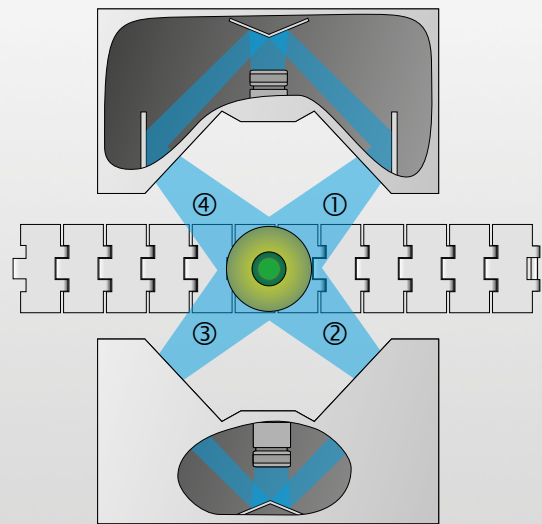
The demands are increasing as regards the appearance and safety of packaging. Misaligned, creased or damaged labels and unreadable imprints or closure faults can result in the consumer deciding in favour of another manufacturer's product. The health of the customer is even at risk if labels are applied which do not correspond to the brand. The HEUFT *FinalView FX* already subjects filled containers to an extensive final examination and ensures that only those

are delivered which fulfil the highest quality requirements. The premium version, the HEUFT *FinalView FO*, provides an even greater detection reliability.

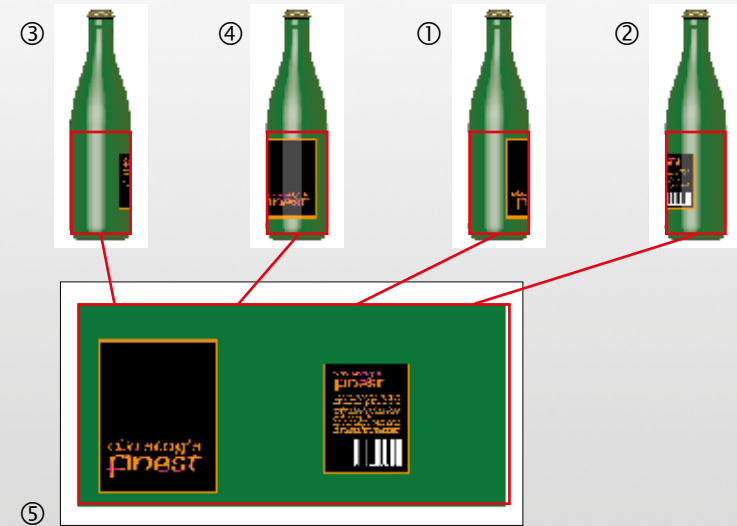
Fully developed, optical systems examine the container dress: the labels are checked to ensure that they are present, properly aligned and that the reference to the product as regards the contents is correct. For example the risk of a drink containing sugar inadvertently

being designated as a dietary product, reaching the market and endangering the welfare of the consumer is therefore ruled out. In addition the full container inspection checks the integrity of the closures.

The HEUFT *FinalView* systems can be tailor-made exactly to your requirements with other highly efficient detections for example which read barcodes and BBDs.



Taking four individual pictures ①②③④ and the total developed view made up of these ⑤



Optimally equipped



Regardless of whether a product is high-priced or favourably priced a faulty container dress results in negative conclusions being drawn about the quality of a product and therefore leads to a negative purchase decision.

The HEUFT *FinalView* devices examine different label dress criteria and guarantee that only containers with an optimal appearance reach the market. For

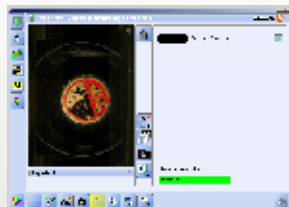
this four pictures offset by 90 degrees are put together into a total developed view. The result: reliable information regarding the presence and the absolute position of the labels as well as their alignment in relation to one another.

A final check of the contents occurs at the same time: consequently non-brand labels are found directly. Furthermore areas within the 360 degree

developed view can be defined which are examined with a picture resolution which is four times higher. For example the presence of the best-before date or the barcode is checked in this way.



Correctly closed with certainty



It is a widespread problem to ensure that there are no “old” closures in the reservoir and the closer feed after a product change. In addition to this closures with foreign imprints can already find their way into another batch at the manufacturer’s.

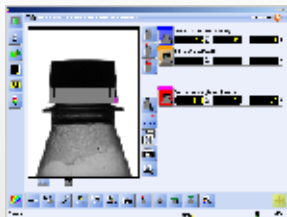
Containers with incorrect closures are identified by the closure logo detection of the HEUFT *FinalView* devices.

For this a camera above the container takes a picture of the closure. Special illumination modules of the HEUFT *FinalView* ensure an environment-independent and high-contrast representation.

The picture which is taken is compared to previously taught-in sample pictures. As a result misprints are also identified in addition to unsuitable closures.



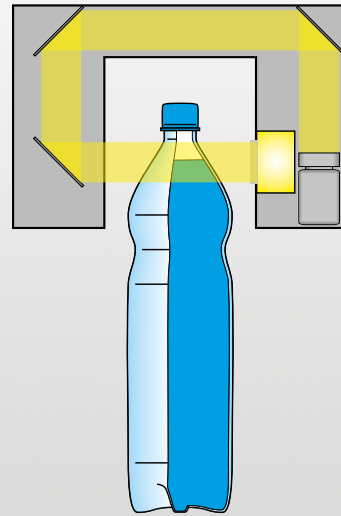
Technologies for detecting closures



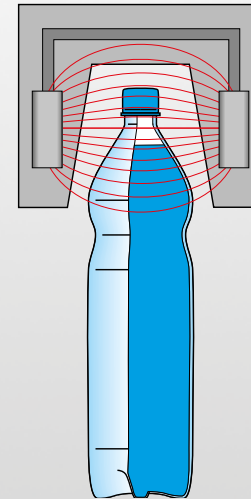
The modular construction of the systems makes it possible to combine different inspection modules which suit the respective requirements exactly. Constant new and further developments ensure that the HEUFT quality assurance systems redefine the state of the art in inspection technology again and again.

Good value photocells for an excessive height check and colour sensors for en-

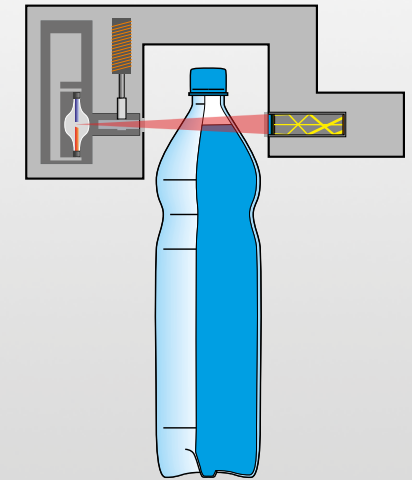
suring brand purity can be integrated besides particularly versatile camera systems which check a wide variety of features such as the correct position of the closure, its completeness and the intactness of its safety elements. The presence and tightness of metal closures is checked by means of inductive or acoustic sensors and canted closures can be detected by means of ultrasonic sensors.



The operating principle
of the camera inspection



The operating principle
of the high frequency measurement



The operating principle
of the X-ray measurement

The fill level check



Underfilling as well as overfilling are conditions which are not wanted (by the customer, the legislator or the producer). A measurement with camera, high frequency or X-ray technology provides the best result depending on the container and the filled product.

Transparent containers can be checked optically. For this LEDs illuminate the

container from the side. The light is directed via a mirror to a CCD camera which takes a picture of the fill level.

The containers pass through an electric field in the case of the high frequency technology. The field is influenced depending on the amount of the product in the container. This change is measured and makes an exact conclu-

sion regarding the fill level possible. Differences in the fill level due to the development of foam are included.

The product attenuates the measuring beam in the case of the fill level examination by means of the X-ray measurement. A receiver records this and the fill level of the container is provided by evaluating the result.



Freshness guaranteed



Most customers depend solely on the printed best-before date for information relating to the freshness of a product. The container is disposed of to be on the safe side if this cannot be clearly identified due to a poor print image. It is even worse if an incorrect date has been printed on it.

The HEUFT *via* OCR ensures that only perfectly coded products reach the

market. The intelligent mini camera records the best-before date and checks its readability.

Difficult ambient conditions do not present a problem either: the HEUFT *via* OCR ensures a constant, optimal picture quality due to the integrated multicoloured LED illumination.

It is always up-to-date as regards production due to its different possibilities for automatic data adaptation.



Examples of market specific symbols - no problem for the HEUFT *FinalView FX!*

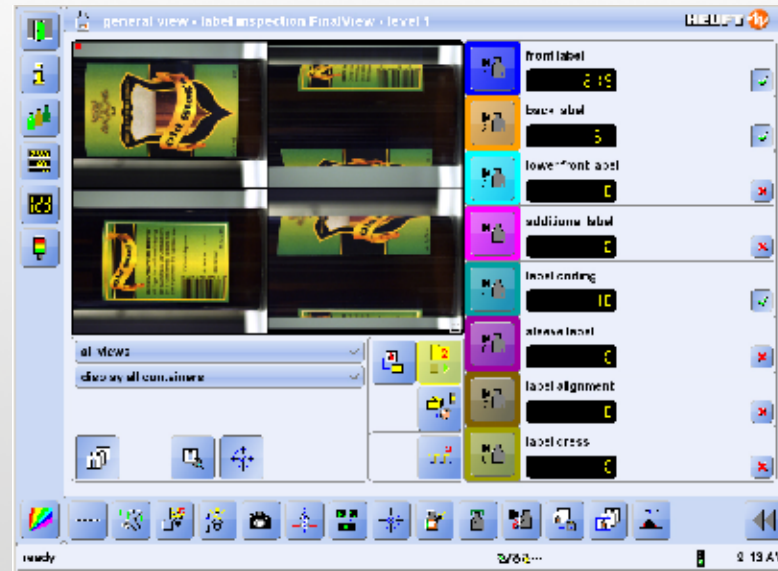
Never losing track



Increased sales areas have resulted in many products being supplied to different countries. The labels used often only vary in minor details e.g. addresses or recycling icons.

Therefore camera-based label checks not only ensure that the label is correctly positioned but also that it really is the correct label. This infor-

mation is determined by taking four individual pictures of the unaligned container which are put together into a total developed view by the software in the same way as in the case of the position check. Special areas can be defined on this developed view on the basis of which perfect identification is possible.



The HEUFT *FinalView FO* for maximum detection reliability

The label and closure inspection has to be carried out in detail and very precisely in the premium segment and along drink production lines with a great diversity of brands. This is possible with the specially developed HEUFT *FinalView FO*: even the slightest damage is reliably detected due to a highly dynamic, brand-specific LED all-around illumination, the very latest Gigabit Ethernet colour cameras and an extremely powerful image analysis.

LED modules which are exactly controllable and a conveyor chain which lets light through ensure that the containers are illuminated in a particularly harmonious way. Consequently matt or shining areas are specifically illuminated so that neither reflections nor shadows can impair the detection. Up to four cameras on two levels produce pin sharp photographs which are combined into a 360 degree view. Their resolution is twice that of the HEUFT *FinalView FX*.

Therefore the smallest details such as cracks, cutting marks or closure logos are much easier to recognise. Even imprints on a background with a similar colour can be reliably identified. The photographs are digitised per Gigabit Ethernet and transferred to the HEUFT *reflexx* image processing system for evaluation. It clearly distinguishes actual faults from tolerable deviations and thus minimises the proportion of costly false rejections.



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.



Examples of different, typical faults (crooked label, underfilled, wrong label, damaged label, wrong closure, incorrect label position)

Specifications



The following specification values have been determined for the HEUFT *FinalView* FX using standard containers:

- the maximum conveyor speed is up to 2 m/s and the maximum set output 72,000 containers per hour
- 99% of the labels with an alignment which deviates from the nominal alignment by 2 degrees or more are detected
- containers with a height between 150 mm and 360 mm and a diameter between 40 mm and 100 mm are inspected
- vertical faults in the label positioning (= 2 mm) and horizontal faults in the positioning (= 3 mm) are detected with a reliability of 99% in each case

Even better inspection results can be achieved with the HEUFT *FinalView* FO. We would be pleased to determine the exact reliability values using containers from your own portfolio.



Your cost advantages with HEUFT



We do everything in order to provide the highest quality at the best price:

- a future-proof investment due to modular construction with simple retrofitting, upgrading and converting options
- minimum false rejection rates due to more detailed filter and image analysis technologies
- the HEUFT *SPECTRUM* range with a uniform hardware and software architecture
- easy integration into existing lines
- minimum changeover times
- high-performance image processing specially developed for the task and its requirements
- minimum maintenance required due to the use of robust and stable components
- long service life
- space-saving construction
- a high level of reliability regarding spare parts due to in-house developed components
- fast trouble shooting due to the HEUFT *PILOT* graphical user interface
- easy identification of wearing parts and spare parts due to an integrated spare parts catalogue with exploded views and photographs
- connection to the HEUFT *TeleService* - fast troubleshooting by means of help for self-help

The HEUFT *flip*The HEUFT *mono*The HEUFT *DELTA-FW*

The HEUFT *rejector*

The following rejection systems can be used with the HEUFT *FinalView FX*:

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
- specially suitable for heavy containers

The HEUFT *DELTA-K*

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

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

The HEUFT *mono*

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

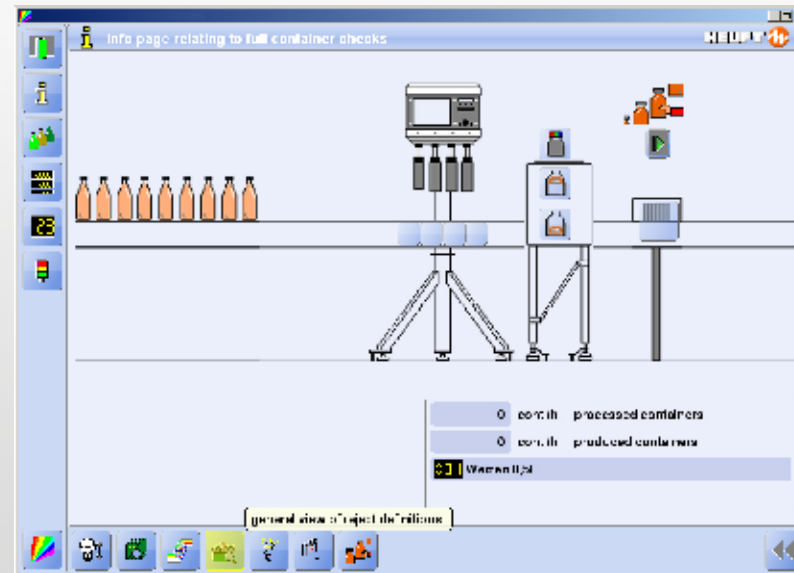




Networking



- 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 interface 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, comprehensible menu structure with extensive help boxes and complete on-line user's manual - the user interface can be supplied in any language / graphic characters if required
- can be adjusted to suit the tasks of the operating staff, the quality assurance department etc. by means of password-protected and customisable user levels
- 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 VX



The HEUFT squeezer QA



The HEUFT eXaminer XAC

Other HEUFT products



The following products can also be used to safeguard product quality:

The HEUFT eXaminer XAC

- inspection for detecting foreign objects even in non-transparent products or containers
- the well thought-out construction also makes it possible to detect foreign objects on container bases which are curved

- compact construction in accordance with the hygiene-friendly HEUFT *CleanDesign*

The HEUFT VX

- quality control system with varied possibilities for fill analysis
- fill level detection with high frequency, X-ray, infrared or camera technology

- detailed monitoring and evaluation of the filler valves and the closer heads

The HEUFT squeezer

- leakage check for plastic containers
- optimal measuring accuracy due to the unique combination of different measuring technologies
- construction in accordance with the HEUFT *CleanDesign*



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The HEUFT *FinalView* final product check a final check before delivery



FUNCTIONS

- inspects the label with regard to presence, type, correct position, damage, relative and absolute alignment
- verifies that the type of label is correct
- checks the BBD printed

- overfill and underfill check
 - inspects the correct fit, tightness and type of the closure
 - vacuum inspection
 - automatic and manual sampling
 - serial fault detection which emits a switch-off pulse
- [more] *

Real 360 degree view by means of an overlapping composition without loss and without edges and artefacts

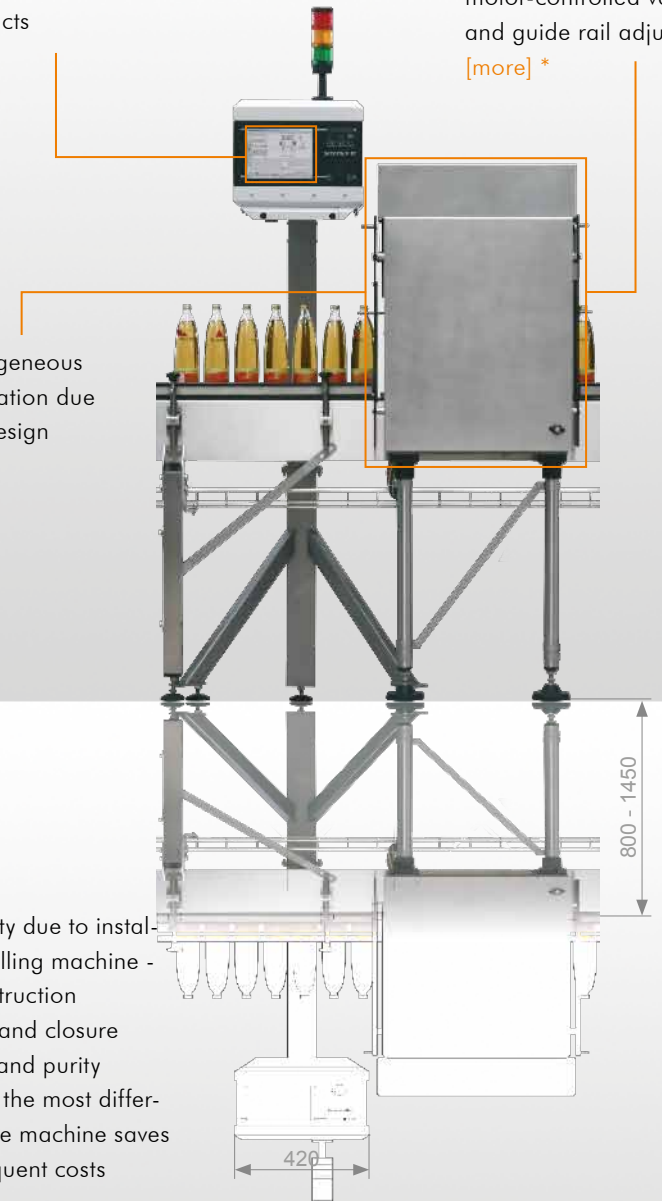
[more] *

Fast brand changeover due to automatic motor-controlled vertical and guide rail adjustment

[more] *

Absolutely homogeneous container illumination due to special light design

[more] *



THE ADVANTAGES

- a high level of reliability due to installation outside the labelling machine - irrespective of its construction
 - a more detailed label and closure inspection for extra brand purity
 - a concluding check of the most different elements in a single machine saves investment and subsequent costs
- [more] *

* [more] detailed information on www.heuft.com/fx

