

technews

BEVERAGES

QUALITY /// SAFETY /// EFFICIENCY



You decide what is good and what is faulty!

No-one knows your quality standards better than you. Therefore the new sidewall inspection for empty bottle crates from HEUFT leaves the final decision to you on how you evaluate an identified object - and remembers your choice permanently.

Is it an unwanted fault, a deviation which can be tolerated or an integral part of the crate design? The operator can determine himself how he assesses a certain characteristic on the high-resolution colour photograph provided by the new sidewall inspection of the HEUFT LGX returned case inspection using the touchscreen. The system determines potential faults for this based on different attributes such as the size or

texture and marks them independently on the HEUFT *PILOT* graphical user interface. These markings can be specifically selected by tapping, or alternatively by entering an allocated number, in order to clearly characterise the objects identified in the sidewall picture: if it is an unwanted characteristic a further tap of the finger suffices and the decision to reject the crate in question has been made.

... discover more on page 2

Clear view of foreign objects

Foreign objects which are close to the bottom of a bottle cannot always be detected by means of conventional methods. A new technology for the HEUFT *eXaminer XO* full container inspection now closes this safety gap.

Glass splinters, small pieces of metal, stones and many other high density foreign objects on the bottom of a bottle are detected by the proven, pulsed X-ray technology of the HEUFT *eXaminer XO*. Low density objects which have sunk and damage can also be precisely identified with integrated optical components. However up to now it was thought that certain areas of the base could not be completely inspected. The detection reliability

can suffer if, for example, nutshells, mould, insects, plastic parts, chips or inclusions are covered by the dome or the edge of the base. Therefore HEUFT has perfected the base inspection with the HEUFT *eXaminer XO* in order to get to the bottom of such sources of danger even more deeply. They are reliably tracked down even in the



supposedly "blind" areas of glass and PET bottles filled with beer, mineral water, apple juice and other transparent liquids.

... discover more on page 3

Innovations for Brau Bevale 2010

Upholding the quality and safety of drinks packaging and its contents and increasing the efficiency of complete filling lines: this is possible with the new and further developments which HEUFT will be showcasing at the Brau Bevale 2010 exhibition (Stand 309 / Hall 5). You can experience the following HEUFT systems, among other things, in action there:

- the HEUFT *SX* for the specific sorting of non-brand returnable bottles
- the HEUFT *InLine* for a precise empty bottle inspection covering the complete container volume
- the HEUFT *VX* for the specific detection of fill level deviations and closure faults as well as the preventive monitoring of filler and closer
- the HEUFT *squeezer QS* for checking filled plastic containers for leaks
- the HEUFT *TORNADO flex* with a camera-based, servo-controlled container alignment for the high-precision application of labels
- the **automatic magazine feed (AMF)** for increasing the label stock of the HEUFT *TORNADO W* labelling machine
- the HEUFT *FinalView FO* for an extensive final container inspection with previously unheard of precision
- the HEUFT *conveyor* for a reliable, careful and quiet transport of up to 72,000 containers per hour
- the HEUFT *beotec* servo direct drive for a high dynamic control characteristic and maximum energy efficiency during the container transport
- the HEUFT *STRATEGY GATE* database server for the central acquisition of operating and production data along a filling line

You decide what is good and what is faulty!

... continued from page 1



A general view is displayed on the HEUFT PILOT graphical user interface at the operating terminal of the HEUFT LGX. It shows the complete sidewall of the empty crate without wasting the picture area.



Label remains and other objects which deviate from the standard can be perfectly identified in the high-resolution photograph. The system marks them independently and submits an initial assessment whether and with what probability these are real faults. The final decision then lies with the operator.

Faulty and good characteristics can be specifically taught in

However this does not only apply for this case. Because the HEUFT LGX is capable of learning and remembers the judgement made. Whether damage such as holes in the crate wall, chips in the recessed grip, contamination, scratches, label remains, unreadable markings and coding or non-brand colours and logos: faults which have been taught in once remain permanently saved in the system and all empty crates with such features are consistently rejected from this time on.

Positive objects can also be specifically taught in in addition to this negative list. Consequently crates deviating from the standard which has been defined once are removed from the product flow each time in the future. For example if a recessed grip fulfils the specific quality criteria of a bottler completely only such crates get through the grips of which correspond exactly to this template. Design parts can also be determined which must not be absent under any circumstances. A later change is also possible without a problem. A crate with an object which was previously characterised as being faulty on the sidewall can be returned and then evaluated as good whilst the system continues - for example in the case of reject rates which are too high. In this case the HEUFT LGX then subsequently tolerates the characteristic which it assessed as faulty previously.

Final decision made by the operator

The high-resolution picture of the crate sidewall is the result of an interaction of LED illumination, groundbreaking camera technology and the HEUFT reflex high-performance image processing system. One camera produces two pictures which the software straightens and puts together. The result: a large com-

Any more questions relating to the topics of empty crate inspection and foreign object detection in filled drinks bottles?

Our expert Dirk Henschke will be pleased to assist you further!



Dirk.Henschke@heuft.com
+ 49 (0) 2636 / 56-1850
www.heuft.com

plete picture which shows the whole sidewall without wasting the picture area. The integration of further detection modules makes the inspection of several sidewalls of a crate possible with one device. An all-around inspection of all four sides of an empty crate is even feasible depending on the on site requirements. An initial evaluation takes place in a second step on the basis of different characteristics using a multiple mask area: are the light-coloured objects visible on the photographs more likely faults or more likely desired crate characteristics? This tendency is displayed on the HEUFT PILOT graphical user interface. The final decision then lies with the operator: he determines himself by means of the touchscreen whether the crates with such characteristics should be rejected in the future or not.

It usually suffices to send between 20 and 30 empty crates into the HEUFT LGX in order to determine between 100 and 150 different good and faulty objects. The system learns your quality standards within a very short time and ensures that only those empty crates continue to the production line which do justice to these. If it finds deviations which you have not assessed yet then these are automatically evaluated as faults - the crate in question is rejected as a precaution. The final decision then rests with you again.

Clear view of foreign objects

... continued from page 1

Base pictures without blurring or shadows

The HEUFT eXaminer XO generates several high-resolution pictures of the container base using high-performance cameras on both sides of the infeed and the outfeed. At the same time LED strobes and brand-dependent mirror cabinets, which can be optimally positioned, ensure perfect illumination without shadows and reflections. On the one hand an extremely large viewing

ules adapt themselves automatically to the changed bottle type.

Clear view of foreign objects and damage

The radiolucent, almost non-wearing conveyor chain in the HEUFT eXaminer XO is without edges and interfering recesses and so narrow that the bottom of the bottle juts out to the left and right of it. A servo-controlled belt drive rotates the container on its journey through the



A perfected inspection procedure minimises the risk of low density foreign objects, such as this insect on the bottom of the bottle, being overlooked.



Transparent foil is one of the faults which can now be detected even on parts of the base which are difficult to inspect.

angle per picture is achieved because the cabinets, which are adjusted by motor, can be lowered down a long way and furthermore the specially arranged mirrors can be individually adjusted. On the other hand blurs, distortions, dark areas and other irregularities, which could make the detection of faults in the pictures more difficult, can be eliminated. Brand changes are achieved within a very short time: the push of a button suffices and the detection mod-

device so far so that it can be optimally inspected again from other angles of vision in the outfeed. The result: complete all-around coverage of the whole base area. The high-performance HEUFT reflex image processing system puts the photographs together in real time and makes flexible masks and filters available. Faults such as low density foreign objects or damage are precisely identified in this way - even if they are very close to the edge of

the base, hidden behind the curved base or overlapped by other material structures which have occurred during the manufacture of the bottle.

Inspection without "blind" areas

The new development which achieves an output of up to 72,000 bottles per hour is a useful extension to the proven X-ray inspection of the bottle base. "Blind" areas are there-

fore a thing of the past. The HEUFT eXaminer XO together with the standard optical sidewall inspection covers the whole container volume completely for the identification of foreign objects.



IMPRINT

Editor: HEUFT SYSTEMTECHNIK GMBH
Hans-Ulrich Goller-Masalin
Brohltalstraße 31-33
56659 Burgbrohl
Tel: +49 (0) 2636 / 560
Fax: +49 (0) 2636 / 56256
public.relations@heuft.com
www.heuft.com

Setting and layout: Achim Andre, Inna Fegler
Text and editing: Hilmar Wagner
Translations: Marion Wey-Hughes
Photographs: Achim Andre, Inna Fegler,
Rüdiger Klueß, Jochen Strahl,
Hilmar Wagner
Copyright: The contents are subject
to the copyright of
HEUFT SYSTEMTECHNIK GMBH.

Inline quality assurance with HEUFT

The right solution for each task!

Identifying damage, contamination and foreign objects, detecting fill level deviations and closure faults, applying labels ... You know best which tasks have to be performed along your filling line. The modular, strictly upward compatible construction of the HEUFT range of products allows you to decide for yourself with which functions you wish to equip your systems for the sustainable quality assurance of empty and filled containers. The options are countless!



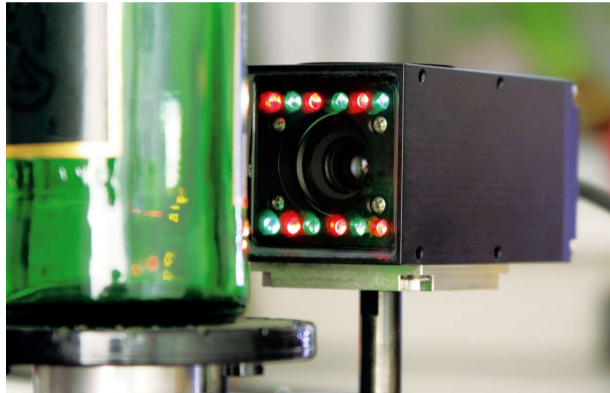
Perfected code verification

New illumination technology and the latest software extensions improve the performance of the HEUFT *vio* OCR during the specific inline inspection of newly applied product markings. Coding is reliably detected even on curved or reflective surfaces.

Checking best-before dates (BBDs), barcodes and other product markings on curved, highly reflective surfaces such as directly on the bottom of a drinks can presents code readers with their greatest challenges. The latest version of the HEUFT *vio* OCR overcomes these - with a new container illumination and the latest improvements to the HEUFT *reflexx* image processing system.

sion onto the container base. This occurs so fast that the human eye only perceives a single flash. Several high-resolution pictures of the newly coded area are produced

the same way as the distortions caused by the curvature of the surface to be inspected. In addition the number of characteristics which can be read increases: up to two line codes can be checked at the same time with the latest version of the HEUFT *vio* OCR even in the high speed section of up to 72,000 individual containers per hour - the detection performance can be further expanded with optional software extensions.



Homogeneous overall picture

Special multicoloured LED ring strobes are integrated into the new, bell-shaped lighting unit of the camera module. They send out their light at staggered intervals several times in succes-

used in this way which are merged into a homogeneous overall picture in real time by the software. At the same time interfering reflections are compensated for in

Verification of the correctness of the contents

Not only the presence and readability of product markings are checked in the process. In addition the detec-

Any more questions relating to the topics of final container check and code verification?

Our expert Achim Schwäbig will be pleased to assist you further!



Achim.Schwaebig@heuft.com
+49 (0) 2636 / 56-1960
www.heuft.com

tion unit, which can be directly integrated into labelling machines, final container check devices and many other HEUFT systems, verifies the correctness of the contents by comparing the read out data with reference values saved in the system. An automatic date adaptation prevents misadjustments when checking the BBD codes. This reduces the false rejection rate to a minimum.

New building 2.0

Everything in quick succession: the 8,000 square metre extension has almost been completed. The new exhibition, training, service and production areas of HEUFT SYSTEMTECHNIK GMBH will be occupied at the turn of the year - and the go-ahead has already been given for another building project.



Two additional production halls will be erected in order to fulfil the soaring demand for HEUFT quality assurance systems for the food, drink and healthcare industries. Important production sectors which were relocated due to an acute shortage of space will be integrated at the HEUFT „Am Wind“ location in Burgbrohl again upon completion of this project. With that the com-

plete development and production process will soon be concentrated in one location again.

A new production hall was already built during the first, in the meantime virtually completed, construction phase. HEUFT is optimally prepared for a successful future with the two which will be added now. The new building not only creates

the best possible conditions for the best possible service to customers as regards production. The "Customer Care & Technical Service" department will also have its own very spacious area there. Furthermore the just completed buildings accommodate the new customer centre, as its centrepiece, with modern conference and training rooms and a 800 square metre showroom.

A large number of the HEUFT systems from all the device families can be experienced in action there at any time - even live tests with customer-specific products, containers and packaging will be possible there.



HEUFT SYSTEMTECHNIK GMBH

Brohltalstraße 31-33 • D - 56659 Burgbrohl, Germany • Tel: +49 (0) 26 36 / 560
Fax: +49 (0) 26 36 / 56 256 • info@heuft.com • www.heuft.com