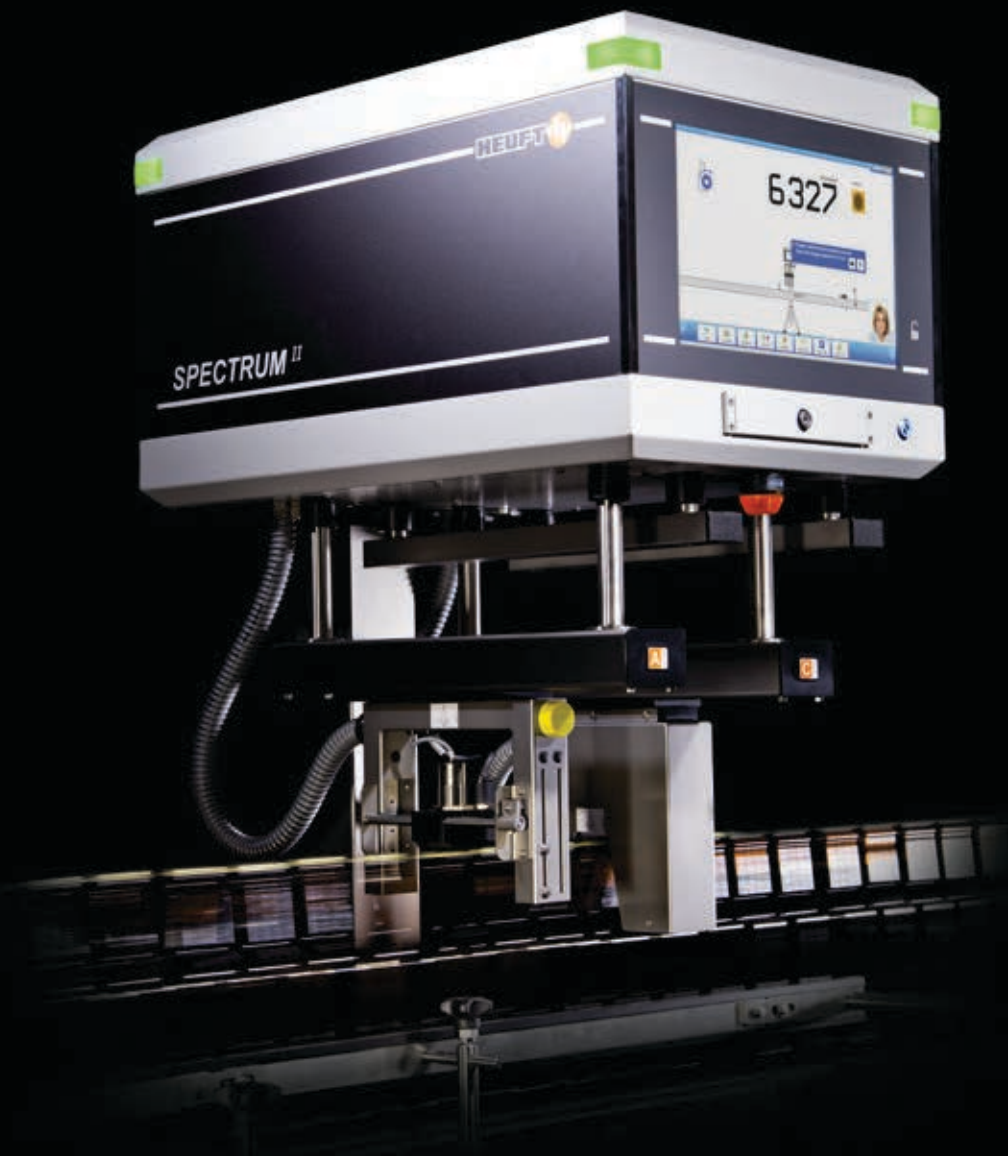


HEUFT



HEUFT *SPECTRUM II*

Modular HEUFT systems of the new generation. Highly automated, self-explanatory and **SIMPLY EASY!**

HEUFT IS SYSTEMTECHNIK

Quality, safety and efficiency: this is what matters when filling and packaging food, drinks and pharmaceuticals! The modular solutions from HEUFT SYSTEMTECHNIK GMBH put these key factors into practice simply and effectively. They ensure during maximum productivity that only perfect products reach the market.

Unique camera, X-ray and image processing technologies for a precise empty and full container inspection, trend-setting labelling technology and smart tools for container flow optimisation, production data acquisition and performance analysis ensure product quality and line efficiency sustainably!

A consistent modular design principle with a cross-system control unit for different technologies, procedures and modules generates, together with a high component similarity, the correct automation solution for every application. Those who decide in favour of a user-friendly HEUFT system can depend on a high level of operational reliability. Competent support is always guaranteed with the long-term availability of spare parts and the 24/7 on call service. This concept keeps the globally operating company on a dynamic course of growth. In the meantime the number of employees has long since exceeded the 1,000 mark. Its own locations in 14 different countries and a comprehensive network of service bases on all five continents meet the huge demand for the HEUFT systems which are manufactured exclusively in Germany.

The result: more safety, quality and efficiency during the filling and packaging of food, drinks and pharmaceuticals. HEUFT knows how!



THE HEUFT SPECTRUM " "

THE PLATFORM FOR SMART DEVICES

The focus is on the human being. The high level of automation makes manual intervention the exception – the machine human interface (MHI) explains itself: with the HEUFT SPECTRUM " " complex technologies for an in-line inspection and the sustainable safeguarding of product quality and line efficiency can be mastered without any previous knowledge! The consistent further developed platform for different modules, systems and applications forms the basis for real smart devices which set standards. The latest hardware and software for significantly increased computing power and real-time data transmission create even more precision during the purposeful tracking, inspecting and rejecting of products. The self-explanatory machine human interface with the audiovisual HEUFT NaVi user guidance makes the error-free operation of the quality assurance systems simply easy.

FUTURE-ORIENTED TECHNOLOGY

- highly automated universal control unit – 70 per cent cross-system component equality for long-term availability of spare parts
- core processors, MHI and image processing cards of the latest generation for considerably more computing power
- own operating system and in-house developed software – independent of external support cycles and no vulnerability to viruses or malware
- HEUFT ISI bus for real-time signal transmission with a minimum amount of wiring and least possible susceptibility to faults
- future-proof network interface (Gigabit Ethernet and TCP / IP) and online connection via the Internet as well as SQL / DDE database interface – WLAN

VALUABLE FUNCTIONS

- automatic vertical and horizontal adjustment of the transport and detection units for fast and error-free brand changes
- HEUFT TeleService for online remote diagnosis and maintenance
- reliable detection and rejection of faults even at high line speeds of up to 180,000 containers/h
- continuous product tracking including reject verification with a precision which has quadrupled – position determination of the containers exact to 0.5 mm
- specific object detection and classification (teaching in) with the HEUFT reflex² image processing system – see pages 8 and 9
- production data acquisition and line analysis
- live display and specific archiving of the detection pictures
- reliable, fault-specific rejection
- varied sampling functions
- special detection to avoid serial faults
- test bottle programs to regularly check and document the detection performance

EASY HANDLING

- self-explanatory machine human interface (MHI) with voice output
- audiovisual HEUFT NaVi user guidance with extensive support and individual step by step assistants
- high resolution 15 inch touchscreen with an organised, intuitively understandable user interface
- indicator lights for clearly displaying the current device status
- HEUFT checkPoints for directly identifying components to be manually adjusted



HEUFT InLine " IXS
Empty bottle inspection

HEUFT SPECTRUM " VX
Fill management

HEUFT eXaminer " XOS
Foreign object inspection

THE HEUFT *NaVi* AUDIOVISUAL USER GUIDANCE

Previous knowledge is not required in order to operate smart devices based on the HEUFT *SPECTRUM*'' reliably. The HEUFT *NaVi* user guidance explains itself and supports the user step by step with all his tasks – intuitively, individually and audiovisually! A personalised user interface with a flat, clear menu structure and integrated tutorials, tools and assistants ensures this. In addition HEUFT *checkPoints* flash at each of the device components in question and a virtual assistant speaks to the user and explains to him exactly what has to be done when and where: the HEUFT *NaVi* makes the reliable control of highly automated HEUFT *SPECTRUM*'' systems simply easy!

SIMPLY EASY

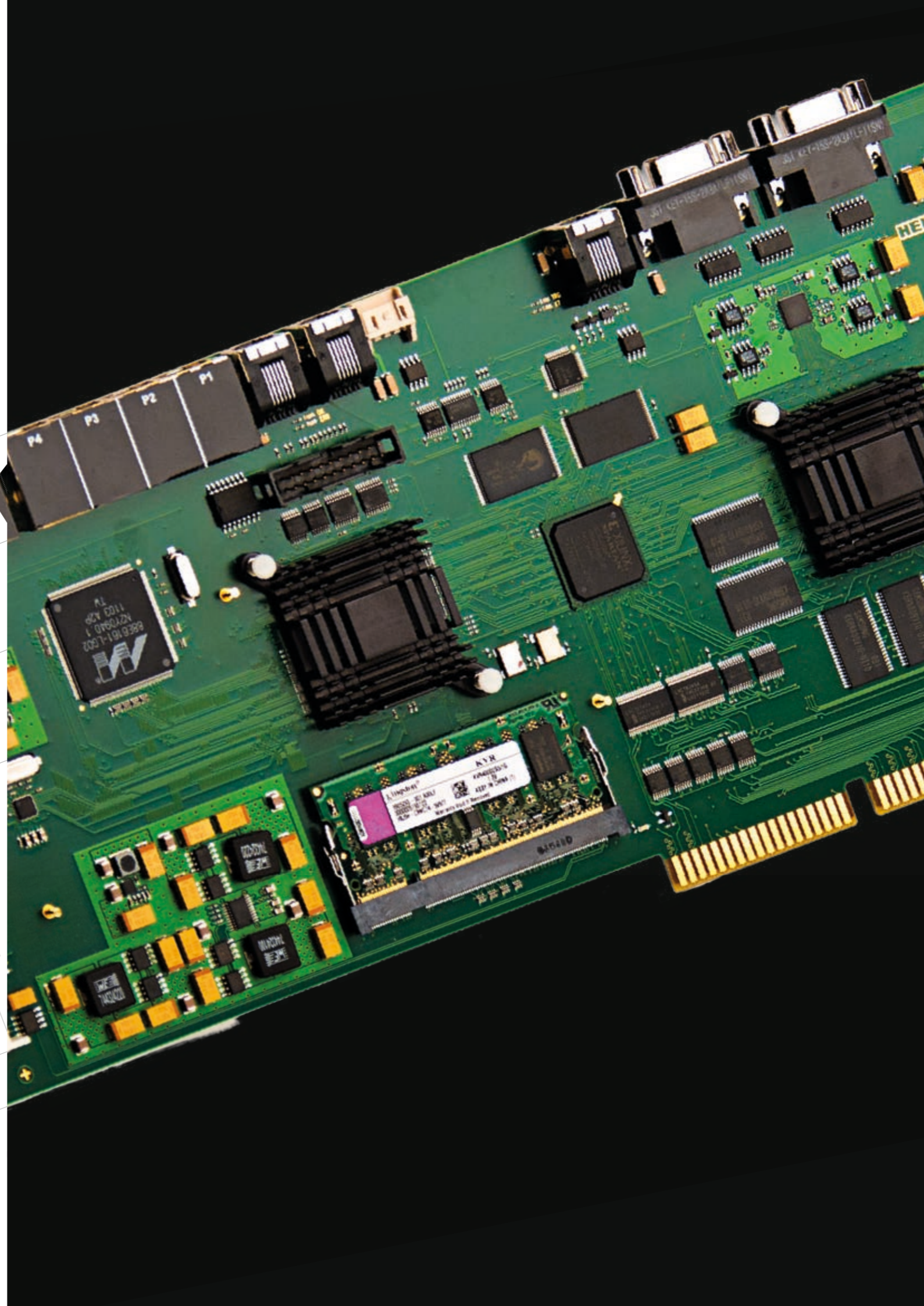
- easy login using RFID card with user-related access rights
- organised user interface with flat, intuitive menu structure
- audio output by means of integrated speakers or Bluetooth headsets
- extensive audiovisual support e.g.
 - cleaning and maintenance assistant
 - change assistant for easy and fast brand changes
 - sampling assistant for easy automatic sampling
 - assistant for checking the test bottles
 - point of quality for an overview of the tasks and functions of the respective system
 - quick start guide for a short introduction on how to operate the device
 - cleaning and maintenance guide with helpful information on how to maintain operational reliability
- HEUFT *checkPoints* for the easy and direct identification of modules to be manually adjusted



THE HEUFT *reflexx*²

REAL-TIME IMAGE PROCESSING WITH INDIVIDUAL TEACHING IN PROCEDURE

HEUFT *SPECTRUM* ¹¹ systems are equipped with the HEUFT *reflexx*² technology as standard. The new generation of in-house developed hardware and software for image processing provides four times the processor speed of its predecessor. It converts the images of the individual camera or X-ray units into high resolution, noiseless detection pictures in real time. At the same time the HEUFT *reflexx*² not only carries out the specific detection of the most varied objects but also their individual classification using up to 50 different characteristics such as size or texture. Uncritical characteristics such as scuffing, mould seams or embossing can quite simply be taught in as good objects. Therefore the containers in question are no longer rejected. Only that which really has to be removed is rejected. This reduces the false rejection rate and upholds the efficiency and productivity of the complete filling line.



THE HEUFT *InLine* ¹¹ IXS

X-RAY EMPTY BOTTLE INSPECTOR BASED ON THE HEUFT *SPECTRUM* ¹¹

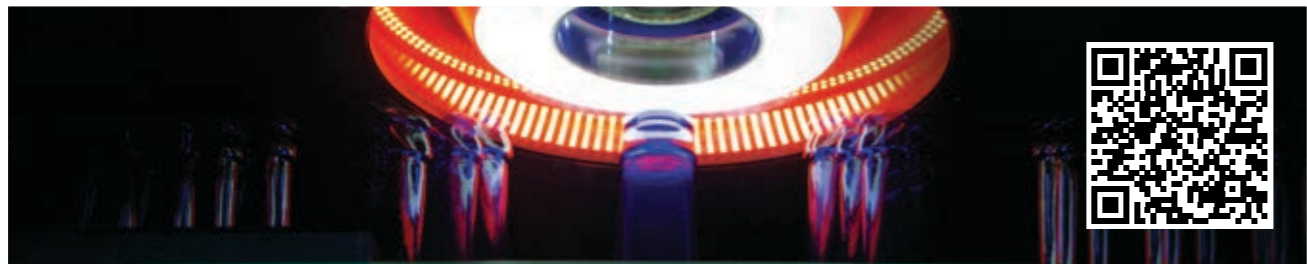
The HEUFT *InLine* ¹¹ IXS simply achieves more precision during the continuous complete inspection of empty containers. It is the only empty bottle inspector to combine proven detection procedures with pulsed X-ray technology. As a result even faults which could hardly be identified up to now, such as chips, chipping, cracks and glass splinters surrounded by residual liquid on the bottle base, are tracked down reliably. The highly automated HEUFT *SPECTRUM* ¹¹ platform with the audiovisual HEUFT *NaVi* user guidance makes working with the X-ray assisted empty bottle inspector simply easy.

FUNCTIONS

- optical base inspection with specially positioned, flexibly adjustable LED illumination and modern GigE cameras
- radiometric base inspection with X-ray strobes
- optical fourfold sidewall inspection with LED strobes, cleverly arranged mirror cabinets and modern GigE cameras
- optical finish, sealing surface and thread inspection with LED colour strobes and GigE cameras
- precise residual liquid detection using high frequency and infrared technology

THE ADVANTAGES

- unique pulsed X-ray technology for extremely clear detection pictures without any motion blurs and with minimum radiation exposure
- innovative optical detection procedures
- reliable identification of opaque, semi-transparent and transparent foreign objects
- glass in glass detection and reliable detection of chips, chipping and cracks in the bottle base
- clear identification of cracks, defects, contamination and foreign objects at the sidewall, finish and thread
- continuous complete inspection of the total container volume due to optimal container alignment
- highly automated HEUFT *SPECTRUM* ¹¹ platform with self-explanatory HEUFT *NaVi* user guidance
- maximum detection reliability with a minimum false rejection rate due to the HEUFT *reflexx*² real-time image processing system



THE HEUFT SPECTRUM¹¹ VX

FILL MANAGEMENT BASED ON THE HEUFT SPECTRUM¹¹

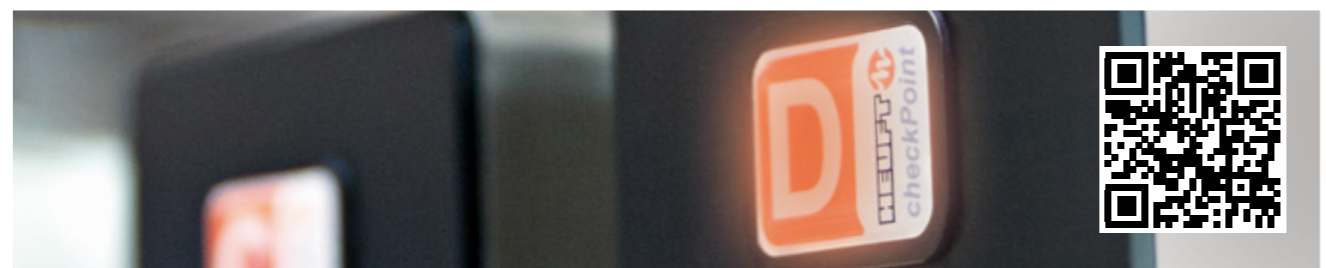
Ensuring the highest product quality with maximum filler and closer efficiency – with the HEUFT SPECTRUM¹¹ VX this is simply easy! Proven functions for checking and inspecting full containers safeguard the quality of the products. The system uncovers losses in filler and closer performance before this can impair the efficiency of the complete line using an integrated quantifying system, serial fault detection and continuous monitoring. The high level of automation of the HEUFT SPECTRUM¹¹ platform and the self-explanatory HEUFT NaVi user guidance take fill management to a new level.

FUNCTIONS

- fill level detection by means of camera, high frequency or X-ray technology
- checking the presence, position, completeness and integrity of the closures using sensor, camera and ultrasonic technology
- checking the tightness of metal closures and detecting residual air by means of acoustic procedures
- checking the label presence using optical technologies
- bottle burst management
- continuous monitoring of the filler valves and the closer heads
- quantifying for automatically converting the individual fill level measurements into the actual fill value
- reliable rejection / individually definable distribution of the containers onto up to seven lanes

THE ADVANTAGES

- reliable detection of all the critical faults during the filling process
- foam compensation during the HF fill level detection
- determination of the average fill volume value
- avoidance of cost-intensive production downtimes due to the early diagnosis of filler or closer malfunctions
- detection of valves which intermittently fill incorrectly
- optimal for preventive maintenance of filler and closer
- detection, forced underfilling and rejection of bottles which could contain glass splinters in the case of burst bottles
- highly automated HEUFT SPECTRUM¹¹ platform with self-explanatory HEUFT NaVi user guidance
- minimum false rejection rate due to the HEUFT reflex² real-time image processing system with teaching in procedure



THE HEUFT *eXaminer* ¹¹ XOS

FOREIGN OBJECT DETECTION BASED ON THE HEUFT *SPECTRUM* ¹¹

Identifying solid foreign objects on the bottle base just as reliably as low density contamination floating about in the product and tracking down transparent objects just as certainly as those which are not transparent: this functions simply precisely with the HEUFT *eXaminer* ¹¹ XOS. The compact full container inspector is not only equipped with powerful optical detection procedures for this but also with X-ray strobes. The high level of automation of the HEUFT *SPECTRUM* ¹¹ platform and the self-explanatory HEUFT *NaVi* user guidance make the intuitive control of the system simply easy.

FUNCTIONS

- 360 degree base inspection by means of pulsed X-ray technology
- extensive base and sidewall inspection by means of LED illumination, GigE cameras and a special bright / dark field detection
- simple optical fill height check
- additional modules for a precise fill level and closure check
- HEUFT *sonic* for acoustically checking the tightness of metal closures
- end of line system for the sustainable protection of the product safety

THE ADVANTAGES

- reliable identification of foreign objects lying on the base such as glass splinters
- precise detection of low density contamination floating in the product such as paper and film
- unique combination of optical and radiometric detection technologies
- X-ray strobes for extremely clear images without any motion blurs and with minimum radiation exposure
- optimal container alignment for a continuous complete inspection of the total bottle volume
- reliable detection of opaque, semi-transparent and transparent objects
- clear identification of cracks, chips and defects
- highly automated HEUFT *SPECTRUM* ¹¹ platform with self-explanatory HEUFT *NaVi* user guidance
- minimum false rejection rate due to the HEUFT *reflex*² real-time image processing system with teaching in procedure





GLOBAL PLAYER

● HEUFT Subsidiaries ● HEUFT Partners



HEUFT SYSTEMTECHNIK GMBH

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