

Press release

More pulsed X-ray power at FachPack

Covering more, penetrating more, finding more and stopping less: the focus of the HEUFT exhibition presence at FachPack 2019 on Stand 3-405 will be on genuine X-ray innovations for even more performance not only when detecting foreign objects reliably at the end of the line.

Completely new perspectives regarding the careful and precise X-ray inspection will open up at the important industry get-together at the end of September in Nuremberg. And not only in the true sense of the word due to considerably more flexibility when combining, arranging and aligning exclusive X-ray flash modules which the further developed HEUFT *eXaminer^{II}* XS now has to offer for a space-saving foreign object detection at the end of the line. The systems engineers have also perfected the unique pulsed X-ray technology altogether for all the systems of the HEUFT *eXaminer^{II}* series to be showcased.

It offers real innovations especially during the generation of X-ray pulses only lasting a millisecond as well as in terms of real-time image conversion and processing. On the one hand this provides significantly more coverage: the risk that certain areas of the packaging, possibly contaminated with dangerous foreign objects, remain unexamined is practically eliminated. A single X-ray unit is often enough for the gapless complete inspection of smaller packaging materials such as bags of biscuits. The inspection even covers extra high full containers with two of them using a straight or an oblique angle of vision.

In addition each individual X-ray flash now penetrates significantly larger packaging volumes and product quantities than before so that the reliable identification of foreign objects or product incompleteness, for example in particularly large size food cans or entire trays, is possible.

And all this with an optimised lifetime for all the X-ray modules. Therefore standstills and loss of production are virtually eliminated. This is because the user is informed in advance so that he still has enough time for

preventive maintenance before the total failure of important parts can occur. Essential X-ray components are even integrated redundantly: if one fails the other takes over directly so that the entire filling or packaging line does not have to be stopped immediately – as with a car which not only has a spare wheel but also a fully adequate spare tyre. The only difference here is that there is no need to change the tyre because the function is carried out automatically without manual intervention. Due to this cross-device X-ray innovation the respective end-of-line system can be declared without hesitation as a critical control point (CCP) which must be available around the clock every day of the year.

From the compact HEUFT *eXaminer II* XS to the space-saving full container inspection via the HEUFT *eXaminer II* XT pipeline inspector to the HEUFT *eXaminer II* XBL top-down inspector: all three X-ray systems of the new generation to be shown at FachPack already feature the further developed pulsed X-ray technology – and therefore simply achieve more coverage, penetration and detection accuracy as well as a significantly longer life cycle with minimum radiation!

The following can also be experienced live and in action on the HEUFT stand: the HEUFT *ONE* for a smart entry to a marking or fill level and closure examination for full containers as well as the HEUFT *PRIME* for even more possibilities when checking full containers. The HEUFT *squeezer II* QS and the HEUFT *SPECTRUM II* ATEX are two further systems of the new generation which, amongst other things, carry out leakage checks on filled food containers and aerosol cans.

Therefore completely new perspectives will open up on Stand 3-405 at FachPack from 24 to 26 September 2019 in Nuremberg not only in terms of a careful and precise X-ray inspection at the end of the line.

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More detection reliability in the smallest of spaces

The new options of the compact HEUFT *eXaminer II* XS optimise the detection reliability during a pulsed radiometric lateral inspection. Not only foreign objects on the container base become even more visible in this way.

Space-saving, powerful and flexible: the HEUFT *eXaminer II* XS has been enjoying an extremely high demand since its world premiere at FachPack last year. After all it achieves maximum detection reliability in the tightest of spaces during the pulsed X-ray inspection of food cans, doypacks, beverage cans or carton packaging at the end of the line: dangerous high density foreign objects in the product are identified carefully and precisely.

The compact system of the new generation can be extended by further modules and equipped with one or two lateral X-ray strobes (depending on the height of the full packaging to be inspected) in order to ensure that the inspection always covers the entire fill volume. Foreign objects such as small pieces of metal or hard plastic fragments can be seen twice where two X-ray flashes overlap – from two different perspectives thus again increasing the detection accuracy significantly. In addition the use of two strobes makes the complete inspection of particularly large size containers with a straight view of the sensitive area of the fill line possible.

The modular HEUFT *eXaminer II* XS can now also examine the special area where only a base inspection is required on its own as in the case of liquid products in carton packaging or other weakly absorbent packaging materials – with an "unfolded" base view carried out by the HEUFT *reflexx²* image processing system. Therefore small foreign objects lying flat on the bottom of the packaging are even clearer to see.

A special "oblique" alignment during the flashing process with only one generator and image converter is a completely new option for tall containers and packaging where the entire volume has to be examined. It not only makes it possible to identify foreign objects on the base but everywhere in the packaging. A new type of full surface image converter

ensures maximum sensitivity in the course of this and also that each individual X-ray pulse covers a much larger area of the container than before.

And that with minimum space requirements: the HEUFT *SPECTRUM*^{II} head as the central control unit of the highly automated, self-explanatory system can be positioned almost anywhere even far away from the actual X-ray stations. In addition further detections can be connected to this – among other things for a detailed label and closure inspection or for the reading and reliable verification of product markings.

This makes the further developed HEUFT *eXaminer*^{II} XS a real turnkey solution at the end of the line which can be tailored to a wide range of requirements and applications flexibly and provides clear results not only during the targeted detection of foreign objects.

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More coverage during the top-down inspection

The HEUFT *eXaminer^{II}* XBL achieves a new level of coverage during the careful and precise top-down inspection at the end of the line with perfected X-ray flash technology and an extra large full-field image converter. Oversized products and packaging material such as whole frozen pizza boxes and even complete trays are also inspected for foreign objects, defects and incompleteness completely gapless and without blind spots.

The new HEUFT *eXaminer^{II}* XBL provides considerably more coverage with the unique pulsed X-rays with lifetime optimised high-voltage components and generators in addition to the proven multiple X-ray flash option which makes the careful and precise inspection of longer products and packaging materials possible. A single top-down strobe now generates X-ray flashes lasting a millisecond which also penetrate extra large products completely and strike an innovative, full coverage image converter.

For the first time gapless photographs of oversized primary and secondary packaging material such as frozen pizza boxes or entire yoghurt trays are possible besides those of compact end products such as chocolate bars, pouches, flow packs or thermoform packaging. The high-resolution images each show the complete product. They remain free of motion blurs or blurred or distorted border areas even at high or fluctuating conveyor speeds – in contrast to conventional X-ray scanners.

The HEUFT *reflexx²* image processing system divides the objects which can be clearly identified on them into different contrast categories in real time. In this way the small piece of metal in the cereal bar can be clearly distinguished from the nut, the plastic sphere in the fruit puree from the air bubble and the glass splinter on the pizza from the ham cube. Foreign objects as well as missing containers in the tray or faulty packaging components are also detected reliably.

A new type of retraction table in the extra wide conveyor which simply lets

the faulty products fall through also enables the targeted rejection of more flexible packaging materials such as pouches or large size repackaged end products with which standard feed rejection systems have difficulties.

The separation between X-ray detection and the HEUFT *SPECTRUM*^{II} control unit now also makes the uncomplicated integration of further inspection modules possible – for example for the safe verification of product marking as part of the same process. Furthermore it offers more flexibility for different installation positions for an end of line integration and makes maintenance easier. The highly automated HEUFT *SPECTRUM*^{II} platform ensures extremely precise product tracking with impressive performance – from the infeed via the compact, safely encased X-ray unit and the additional detections to the reject verification.

Brand and program changes can be carried out quickly and easily without manual mechanical intervention and recalibration of the X-ray components. The HEUFT *NaVi* user guidance supports and assists the user individually and audiovisually.

Therefore the perfected pulsed X-ray and image conversion technology in the HEUFT *eXaminer*^{II} *XBL* achieves a new level of coverage and precision during the careful top-down inspection at the end of the line with a significantly increased lifetime for fewer standstills and production downtimes.

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More precision during the pipeline inspection

The pulsed X-ray technology in the highly automated HEUFT *eXaminer II XT* has now also been further optimised for the reliable identification of foreign objects in an unpacked product mass.

The compact pipeline inspector not only offers more performance and precision during a careful foreign object detection but also during the rejection of contaminated partial quantities due to further developed pulsed X-rays and computing power on a HEUFT *SPECTRUM II* level. The X-ray flashes cover an even larger area than before with perfected generators and extensive new full-field image converters. Moreover they now also penetrate larger volumes of highly absorbent product mass such as sausage meat just as completely as syrup or yoghurt in order to identify small pieces of metal, glass particles, stones or bone fragments even before the filling and packaging process starts.

The further developed pulsed X-rays ensure clear detection images without motion blurs with minimum radiation even when the transport speed in the pipeline is very high or fluctuates which make high density foreign objects clearly visible and distinguishes them from harmless product inhomogeneities distinctly using special filters during the HEUFT *reflexx²* real-time image processing.

And the compact, easily accessible construction of the hygiene and maintenance optimised HEUFT *CleanDesign* in combination with the strong performance of the highly automated HEUFT *SPECTRUM II* device platform ensures the highest accuracy when specifically rejecting partial quantities contaminated with dangerous foreign objects: the pipeline which is illuminated by unique X-ray strobes is now positioned vertically instead of horizontally. Therefore the mass in question can simply flow downwards through a valve while the product which is free of foreign objects carries on to be filled and packaged.

Brand and program changes are carried out fully automatically and without time-consuming recalibration. The audiovisual HEUFT *NaVi* user

guidance supports each user individually and step by step in the course of this. And also during the regular self-tests in order to check the detection performance by means of an innovative procedure. For this up to four carbon fibre fingers prepared with different test objects are sent directly into the radiation path so that the detection accuracy can be checked under real production conditions and fully documented.

The result: a space-saving, careful and precise foreign object detection on a true HEUFT level even before the filling and packaging process starts. The pipeline inspector of the new generation achieves exactly that which is becoming increasingly important in the supply chain with a significantly increased life cycle for all the X-ray components: the delivery and processing of already pre-inspected bulk goods free of foreign objects. This minimises the risk of small pieces of metal, glass splinters or stones only being found in the ready packaged end product and at the same time provides effective protection against food and packaging waste.

Press release

More performance when checking full aerosol containers

Replacing lengthy water bath checks and weighing methods: the HEUFT *SPECTRUM II* ATEX tracks down leaking and incorrectly filled aerosol cans without contact in potentially explosive areas.

Butane, propane or dimethyl ether: it is dangerous when highly explosive propellant escapes from aerosol cans. Furthermore microleaks and leakages threaten the stability of the containers. The HEUFT *SPECTRUM II* ATEX therefore finds them without contact using innovative laser technology. It also checks the filling quantity of each individual aerosol can and exposes even the smallest deviations.

The X-ray fill level detection has the potential to replace weighing systems which slow down productivity. Just as the laser-based leak detection is able to eliminate lengthy and energy-intensive water bath checks: up to 1,000 aerosol containers per minute can be checked reliably with the HEUFT *SPECTRUM II* ATEX in-line and rejected specifically if required.

The system can be used without hesitation in areas where a dangerous mixture of air and gas can form – due to a strict separation between the highly automated control unit and the respective inspection modules: whereas the former is outside the hazard zone the latter can operate safely and without any problems in an ATEX Group II / Category 3 risk area. The detections are protected against heat, electrical and electrostatic energy – the risk of life-threatening explosions is averted.

The container tracking of the HEUFT *SPECTRUM II* platform with millimetre precision ensures that the measuring results are clearly allocated to the product in question – and thus the accurate rejection of every single leaking, underfilled or overfilled aerosol can. The self-explanatory HEUFT *NaVi* user guidance with audiovisual step-by-step assistance makes the reliable operation of the compact linear machine simply easy.

Press release

More detection reliability when detecting leaks

Microleaks, cracks and closure faults: the HEUFT *squeezer*^{II} QS has the necessary performance for identifying leaking plastic bottles reliably and rejecting them precisely.

Detection reliability up and false rejection rate down: the self-explanatory system achieves simply more when checking the tightness of filled PET and HDPE containers simply due to the latest version of the highly automated HEUFT *SPECTRUM*^{II} device platform.

The flexible belt drive which guides, rotates and presses the bottles together by applying the right amount of pressure is extra long – and this therefore also applies to the inspection path available. This increases the precision of the comparative fill level detection in a non-compressed and compressed condition. The sensor system for an exact internal pressure measurement is now also even more sensitive.

The HEUFT *FinalView*^{II} CAP for a 360° closure inspection has now been directly integrated into the HEUFT *squeezer*^{II} QS – a detailed all-around inspection of the PET bottle closures and all their safety elements is achieved with partial modules in the infeed and the outfeed from a contour and thread inspection via a lid logo detection to the identification of defective tamper evident rings.

The new generation leakage check carries out brand and program changes fully automatically: the position of all the detection modules as well as the height and passage width of the servo-controlled belt drive adapt to the changed container format automatically. The ergonomic construction of the hygiene-optimised HEUFT *CleanDesign* makes operating and cleaning the HEUFT *squeezer*^{II} QS easy and convenient. For example the new individually adjustable gooseneck panel creates more flexibility. Therefore the user always has an eye on the clearly arranged touchscreen with the audiovisual HEUFT *NaVi* user interface.

Press release

More possibilities for checking full containers

The latest release of the HEUFT *PRIME* full container check now offers more performance – and a new detection module for a reliable label inspection, closure logo and marking verification.

The highly automated HEUFT *PRIME* now has even more to offer due to an increase in computing power and functionality. Thus a clever sensor camera with integrated picture evaluation which has been specifically developed, designed and constructed by HEUFT can be optionally incorporated. The result: significantly more possibilities when checking the quality of up to 72,000 full containers per hour. Non-brand lid logos can be identified just as reliably as incorrect and misaligned labels or product markings which are inaccurate as regards appearance or contents such as printed text, best before dates, barcodes and 2D codes. It now also deals with challenging optical inspection, OCR and verification functions at the same time which the highly automated full container check has not been able to offer up to now.

And all this without compromising the proven detections which include, among other things, the fill level detection with X-ray or high frequency technology, a burst bottle detection and a closure check. And a very special function which sets the HEUFT *PRIME* apart from the slim HEUFT *ONE* entry-level device (see below) just as much as its degree of automation and its audiovisual HEUFT *NaVi* user guidance for automatic and self-explanatory brand and program changes, sampling and test container programs: a locator which exposes the filler valve responsible for the respective incorrect filling.

Remote maintenance for the compact device via the HEUFT *TeleService* is just as possible as the specific acquisition of production data due to a network connection. The HEUFT *IS* isochronous serial interface allows the easy integration of additional components with minimum wiring. For example the intelligent new sensor camera can be easily retrofitted if required.

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More precision for first-time users

The compact, flexible HEUFT *ONE* entry-level devices set standards in terms of detection accuracy, operational reliability and price / performance ratio when checking the quality of filled primary packaging material. HEUFT will be showing the model for code verification and closure detection in the tightest of spaces at FachPack.

ONE for all: the in-house developed innovations make an affordable entry to HEUFT cutting-edge technology possible as extremely compact stand-alone devices which are very easy to integrate into existing filling lines. They combine innovative detection technology with customised hardware and software as well as proven procedures for highly precise product tracking and fault rejection. The network-compatible complete solution fits into even the smallest installation space due to combined detection and evaluation modules directly at the conveyor which are connected to a space-saving, freely positionable control unit.

One more sophisticated detection can be combined with simple sensor technology in one device. In this way the HEUFT *ONE* not only checks the container closures for presence and excessive height but at the same time also carries out a genuine code verification which is far beyond mere optical character recognition: best before and expiry dates, barcodes and 2D codes as well as article and serial numbers which have been incorrectly applied and are inaccurate as regards content are detected using in-house developed colour sensor camera technology and real-time picture evaluation. The closure examination can also be combined with a fill level detection as an alternative to the sensor camera.

The construction of the new HEUFT *ONE* is extremely compact. The slim modules at the conveyor not only carry out the detection but also the complete evaluation and therefore they can be positioned flexibly and even a long way away from the compact control terminal.

Press release

Striving forwards for more than 40 years

What started over 40 years ago today has in the meantime long since developed into the world's leading manufacturer of innovative checking, inspection, rejection and labelling systems for continuous in-line quality assurance when filling and packaging beverages, food and pharmaceuticals: HEUFT SYSTEMTECHNIK GMBH was founded on 1 April 1979!

Bernhard Heuft started the company back then in Burgbrohl in the Volcanic Eifel with just twelve skilled people he knew. The fact that the strength of his highly motivated team has increased a hundredfold over the past 40 years to over 1,200 employees worldwide impressively illustrates that this was the right decision at that time for putting the young family business on the road to sustainable success.

In fact in the truest sense: HEUFT received the first patent for a truly ingenious invention by the company founder which still defines the state of the art today regarding the accurate upright high-speed rejection of faulty empty and full containers: the HEUFT *DELTA-FW* multi-segment flow rejector.

Over 500 further patents have been added since then – and therefore genuine unique technological features which not only optimise in-line quality assurance when filling and packaging beverages, food and pharmaceuticals sustainably but also the efficiency of complete lines.

From the first optical fill level detection to the fill management system with multi-processing capabilities, from the first empty bottle inspector in an efficient straight-through system to the all-surface empty container inspection on less than one square metre of floor space, from the unique pulsed X-rays to the company's own real-time image processing system, from clean labelling to the precise marking inspection, from the harmonious conveyor control system to the comprehensive line analysis: a wide range of innovative technologies from the modular HEUFT system has been setting the standards for efficient in-line quality assurance for 40

years.

Basic research and the development of solutions not only focused on maximum automation during precise product tracking, reliable fault detection and specific fault rejection but also on consistent user support from the start. In this way HEUFT introduced the very first systems with a monitor into the bottling hall for a simply better overview. The company's own graphical user interface was soon to follow, then the audiovisual HEUFT *NaVi* user guidance and most recently even real voice control for full operational reliability and productivity.

It is not only innovative striving forward with countless technological pioneering achievements over the past 40 years which has set the medium-sized family business on a sustainable course for success but also the resulting continuous growth regarding company premises, international sales and service locations as well as competent employees i.e. in research and development, production, project planning and support.

Today HEUFT SYSTEMTECHNIK GMBH, which manufactures exclusively in Germany, is the world's leading manufacturer of modular systems not only for checking and inspecting the quality of beverages, food and pharmaceuticals sustainably during the filling and packaging process.

Press release

Company profile: 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 safeguard product quality and line efficiency sustainably!

A consistent modular design principle with a cross-system control unit for the most varied technologies, procedures and modules generates, together with a high component equality, 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 18 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!

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Fact sheet

Company:	HEUFT SYSTEMTECHNIK GMBH
Management:	Alexandra Heuft, Bernhard Heuft Dr Thomas Jahnen, Tilman Kerstiens, Johann Kolovitsch
Head office:	Burgbrohl, Rheinland-Pfalz, Germany
Other locations:	Argentina, Australia, Austria, Brazil, China, Denmark, France, Great Britain, Hong Kong, India, Italy, Mexico, the Netherlands, Russia, Spain, Thailand Thailand and the USA
Founded on:	1 April 1979
Employees:	more than 1,200 in the HEUFT group
Industry:	special mechanical engineering
Product range:	inspection, quality control, labelling, rejection, transport and IT systems for the food, beverage and pharmaceutical industries
Tasks:	returned case inspection, bottle sorting, empty container inspection, fill management, full container inspection, foreign object detection, rejection systems, transport optimisation, conveyor control systems, labelling technology, full case inspection, code reading, label inspection, closure inspection, production data acquisition and line analysis
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