

Fruit and Vegetables

Checkweighing, Metal Detection and X-ray Inspection



2 News

GARVENS

Checkweighing

SAFELINE

Metal Detection & X-ray Inspection

SAFELINE Metal Detectors Assure Food Safety and Product Quality

Dedicated to producing the highest quality product to satisfy its discerning customers, a leading fresh prepared foods company relies on PowerPhasePLUS* metal detectors from METTLER TOLEDO SAFELINE to assure food safety and quality standards are consistently achieved.

When selecting their metal detectors, they considered four things: consistent detection sensitivity, equipment uptime, sanitation and service. After installing their first PowerPhasePLUS eight years ago, they've since added 32 more, replacing older technology and equipping new production lines.

Detection sensitivity

Featuring an advanced coil design for superior detection sensitivity, PowerPhasePLUS metal detectors zero in on all types of metal, including ferrous and non-ferrous tramp metal as well as stainless steel fragments. A "Faraday Screen" is located between the detector coil and the product to filter out unwanted frequencies, which further improves detection sensitivity while virtually eliminating false rejects.

Providing confidence

"The SAFELINE detectors give us confidence that the products we ship are safe," said the Chief Operations Officer. "Customers know they can count on us to deliver products that meet or exceed their expectations – products that are worthy of being sold under their brand names." The company began in 1977 as a fresh produce re-packer and distributor. Their focus is on fresh, ready-to-eat, high quality foods that are healthy, convenient and affordable. Their products include pre-cut fresh fruit, salads, quick snacks, wet salads and hot foods.

Versatility is vital

The company produces products from a 2.4 oz pouch to large trays of sliced tomatoes. The PowerPhasePLUS metal detectors are versatile enough to handle



METTLER TOLEDO

all these products. Each of the company's lines are equipped with the exact same metal detector, which eases operator training, simplifies maintenance and reduces spare parts inventory.

"We measure the success of the metal detectors based on the safety of the

consumer. It's all about keeping our customers happy, satisfied and safe.

METTLER TOLEDO SAFELINE is phenomenal from both an equipment and a service perspective."

* The PowerPhasePLUS brand is marketed under the Signature brand name outside the USA.

► www.mt.com/metalDetection

Dynamic Weighing and Contamination Detection In One Compact System

METTLER TOLEDO announces the launch of the new GARVENS X-ray CombiWeigher, silver medal winner of the European Foodtec Awards 2009 for the successful implementation of innovative concepts in the European food industry, which combines world-leading checkweighing and x-ray inspection technologies in one revolutionary and unique space-saving system.

The XS3 AdvanCheK represents a breakthrough in modern product inspection, offering exceptionally high quality standards to meet the needs of the food processing and pharmaceutical industries. It is a complete inspection system which performs highly accurate over and underweight checkweighing while simultaneously inspecting for foreign bodies such as glass, metal, stone and high density plastic.

Fulfilling regulations

The main difference between the XS3 AdvanCheK and other x-ray quality control systems is the inclusion of a true checkweigher with EMFR weighcell technology offering accurate dynamic weighing which fulfils all local Weights and Measures regulations (MID certified). This is opposed to the normal x-ray mass measurement method utilised by other systems which measure product mass based on x-ray density.

Built to the highest quality and safety standards, the HACCP and IRR 1999 compliant, stainless steel (V2A) design, with sealing up to IP65, meets strict hygiene standards and requirements, making this system suitable for use in harsh working environments with a strict hygiene regime.

Save time and money

Bringing the two technologies together ensures that you will save both time and money in your production processes. The single, multilingual 15" colour touchscreen user interface, with multi-level passwords and user profiles, is the central point for both technologies, reducing operator errors, avoiding repetition and ensuring faster production changeover to minimise downtime. Additionally, by using one compact system, the time and costs associated with line integration, operator training and documentation are also vastly reduced. A wide variety of options including statistics, feedback control, and integration with the METTLER TOLEDO SQC/SPC programmes make this product inspection system a driving force in maximising profits and eliminating process waste.

► www.mt.com/garvens



XS3 AdvanCheK X-ray CombiWeigher

Total Cost is Total Value

SAFELINE Reliability Contributes to Business Performance

In today's fast moving fruit and vegetable industry, staying ahead of the competition requires more than just developing new and exciting products. Maintaining high quality standards while increasing throughput and reducing downtime costs are all key considerations for manufacturers to retain the competitive edge.

When purchasing new production equipment, budgetary pressure can lead to the initial purchase price of equipment being one of the key drivers. An alternative approach takes the view that the purchase price is only one element of the total cost to the business. The "life-time costs" are far greater than the initial purchase price and include the costs associated with downtime and product wastage, the cost of spare parts and even the costs incurred through a product recall if a contaminated product is found in the market place.

Reliable detection

METTLER TOLEDO SAFELINE metal detectors are extremely reliable and can typically operate in a production line for many years. So, rather than viewing equipment purchase as a one-off expense, many manufacturers are beginning to consider how much the piece of equipment will actually cost their organisation over its lifetime. Better understanding of this concept ensures maximum value for the business is achieved.

Maintain profitability

This "total cost is total value" proposition is at the heart of the product development and support METTLER TOLEDO SAFELINE. How the equipment performs over time and how it is supported throughout its lifetime is key to maintaining profitability for manufacturers.

Preventing downtime

'Prevention is better than cure' and in today's pressurised world of around the clock production, preventing downtime, rather than trying to cure it, is the most cost effective way of tackling this issue. Profile metal detectors feature an in-built condition monitoring system that constantly checks the status of many key functions. This system gives advanced warning of any potential problems well before they actually happen. These may be changes which, if left unchecked, could develop into a more serious breakdown.

This early warning system does not compromise production output as it enables preventative maintenance procedures to be scheduled at a time when the system is 'off-line' rather than in a potentially costly full-scale breakdown situation.



Early warning of problems



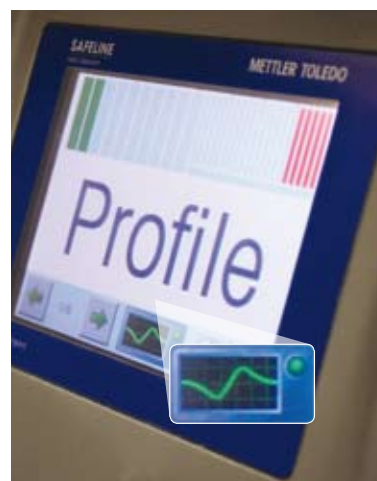
Healthy status

Profile's Condition monitoring 'heart beat'

Early warning systems

Reducing downtime and maximising uptime are significant considerations for today's fruit and vegetable manufacturers. Early warning systems and sophisticated performance verification software to check operating efficiency can help to ensure the lowest equipment life-time costs, increase productivity and increase competitiveness.

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Easy to use intuitive full colour touch screen

Nähr-Engel Checks for Completeness with METTLER TOLEDO GARVENS Technology

Tasty mashed potato is constantly monitored using GARVENS checkweighers – Nähr-Engel GmbH processes around 120,000 tonnes of fresh potatoes a year making it one of the leading manufacturers of dehydrated potato products.



The company supplies culinary innovations and individual recipe solutions to customers all over the world in the further processing industry, ready meal sector and food retailing trade. 220 employees in Goch are actively involved in making what is good even better because quality is Nähr-Engel's top priority and the driving force for the business. Nähr-Engel understands that quality does not just start on their own premises and thus selects its suppliers with the utmost care to ensure that its products fulfil the highest quality standards on the market.

Completeness checking

Nähr-Engel has been working with METTLER TOLEDO GARVENS for many years and uses an S-Series checkweigher on all product lines to check the weight of the dehydrated potato products. Their

newest acquisition, a GARVENS XE3 with wire strain gauge weighcell, checks whether the packing machine has packed all three mashed potato sachets into the carton on the mashed potato flakes line. The XE3 checkweigher is thus the last quality control station at Nähr-Engel and automatically rejects all cartons where potato sachets are missing. This completeness checking is done at a conveyor speed of up to 45m/min, checking up to 100 cartons a minute whereby the carton weight for the finished products can vary between 100 and 2,000 grams. As the XE3 checkweigher is only used for checking completeness, the strain gauge weighcell accuracy of 2 grams is totally adequate for this task.

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The Nähr-Engel GmbH Company:

- 220 employees
- Head office in Goch, Germany
- Produces 250 finished products
- Processes 225 raw materials
- 350 recipes
- 210 customised solutions
- Certification according to DIN ISO 9001 / 14001, IFS, Halal



GARVENS XE3 checkweigher upstream of the sealing machine



Even unsealed boxes can be gently weighed and sorted



XE3 checkweigher inspects potato products



Bulk Flow X-ray Inspection System Ensures Contaminant Free Products



To ensure detection and elimination of foreign contaminants such as metal and stone from its imported food ingredients, John Morley Importers Ltd, a leading supplier to the UK bakery, cereal and food service sectors, has installed an InspireX R40 bulk flow x-ray inspection system from METTLER TOLEDO SAFELINE X-ray at its Cheshire plant in the UK.

John Morley imports premium quality basic ingredients including whole fruit, berries, raisins, dates, coconut and nuts for cakes, pastries, breakfast cereals and confectionery products. Quality is considered paramount and its products are sourced from the best producers and growers in over 20 countries around the world. One of the final stages in quality control is checking the products for foreign bodies like metal, stone and glass prior to packaging.

Improving quality control

As a supplier to high profile customers within the food sector, John Morley were required to tighten their contamination detection capabilities. Being a METTLER TOLEDO customer for a number of years and having purchased several of the company's highly acclaimed SAFELINE metal detectors, John Morley were already highly satisfied with the levels of technology, reliability and service provided by METTLER TOLEDO and therefore approached the company for a new x-ray inspection solution.

Inspecting bulk fed food products

The solution for John Morley was an InspireX R40 Bulk Flow x-ray inspection system – part of METTLER TOLEDO SAFELINE X-ray's range. The InspireX R40B is especially designed to detect and eliminate foreign bodies from bulk fed food products like fruit, vegetables and cereals. Situated after a vibratory-fed metal detector on a 600 mm wide conveyor belt, the unit inspects 6 tonnes of product per hour at speeds of up to



InspireX R40 Bulk Flow X-ray System

120 metres per minute with a multi-lane reject system. Sealed to IP65, the InspireX R40B has the highest hygiene standards in the industry, ensuring fast and thorough cleaning. Its hygienic design also offers greater assurance that the line is free from bacteria. Extremely simple to set up and operate without requiring an engineer, the unit has low energy requirements and offers full traceability via a unique sign-in and event log system.

Ensuring product safety

“At John Morley a key objective is to ensure nothing less than the highest levels of product safety” explained Technical Director Simon Brown. “We found the METTLER TOLEDO SAFELINE x-ray equipment has provided us with exceptional capability in identifying and rejecting foreign bodies within our imported food ingredients. The InspireX R40B x-ray system was the most cost effective solution for our processing plant and its installation has helped to eradicate complaints, minimise wastage and increase productivity thus helping to put us ahead of the competition.”

A range of capabilities

Automated x-ray inspection technology is growing in popularity in the food processing industry because of the real advantages it offers compared to other types of inspection. It also complements and extends established technologies such as conventional metal detection and checkweighing systems with a broad range of additional inspection capabilities.

► www.mt.com/safeline-xray



The multi-lane reject mechanism ensures minimal product wastage

Dispelling the Myths of X-ray Unleashing the Potential

When x-ray inspection systems appeared in the food industry about twenty years ago, some thought the days of metal detection could be numbered. But x-ray has not displaced metal detection. Even in the sectors for which it is the more suitable technology, metal detection often reigns. In no small part, argues Nick Bridger, Technical Manager at METTLER TOLEDO SAFELINE X-ray, because its features and benefits simply aren't fully understood.

Compared to the global market for metal detectors, x-ray is undoubtedly smaller. However, x-ray technology is developing quickly and growth has accelerated significantly. The speed and extent of this expansion is dependent on improving the understanding of x-ray, dispelling the myths surrounding it and clarifying its role and suitability for different applications.

X-ray: A new force in food quality control

Most people are introduced to x-ray at the dentist, in hospital or at an airport. Used for decades in these environments, it started making inroads into the food industry in the early 1990s. The driving force behind this was the increasing number of foreign bodies like glass, rubber, stone, bone or plastic which could not be identified by traditional inspection methods. A further benefit of x-ray is its ability to carry out other types of inspection, including component counting, the identification of misshapen

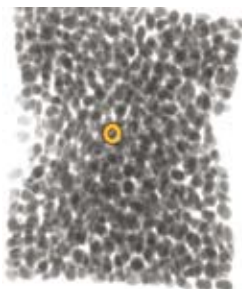
parts, mass and zoned mass verification, fill level control and seal integrity inspection as well as the detection of premium inserts e.g. promotional objects in a box.

Compared to other inspection equipment, it is relatively immune to product effects and similar physical interactions, including:

- the effects of metallised film and foil packaging. In fact, x-ray systems can inspect aluminium and steel cans.
- the presence of metallic items such as premium inserts, pouring spouts, clips, etc.
- the effects of conductivity or polarised molecules and products produced in brine (salt solution) or similar conductive liquids.
- temperature - products can be inspected at temperatures between -20 °C and +90 °C.
- vibrations from surrounding equipment.
- the proximity of metallic objects, magnetic fields or conductive materials.

The role of the metal detector

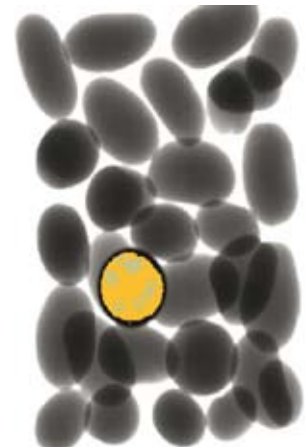
Apart from the cost implication of installing a new inspection system, the main reason behind the enduring prevalence of metal detectors is that, for many manufacturers, they remain an effective “first line of defense”. If there is minimal risk of non-metallic contamination in the product, a metal detector will consistently and accurately identify the most likely foreign bodies – swarf, filings, nuts, bolts, etc. Similarly, due to more rigorous demands from their customers and legislation, many processors require inspection systems at various points on their production lines. Often these will be early on, for incoming ingredients; after mixing / immediately prior to primary packing; and just before dispatch.



X-ray image highlights contamination in a pack of frozen peas



A razor blade is identified in a can of sweetcorn



A golf ball is detected in a pack of potatoes



Fear of the unknown

Some manufacturers, whose processes are suited to x-ray inspection, have concerns over installing new equipment. There is a relatively widespread, although unfounded, perception that x-ray systems are difficult to set up and operate due to far more complex technology. However, x-ray technology is surprisingly simple – the machine looks for objects that are denser than the surrounding product. With a highly intuitive user interface and touch screens, the equipment is also very easy to navigate. The safety of the equipment is also a subject of discussion when considering x-ray inspection systems. X-ray beams (which are electromagnetic rays, as are microwaves and visible light) are contained within the machine and do not pose any risk to human health or safety. No protective clothing or equipment is required and no impact on health has been found among operators who have used x-ray machines for extended periods of time.

Installing the right inspection equipment

The choice of inspection equipment is based on many variables, including the potential contaminants, the product itself, its packaging material, the physical space available and of course,

budget. As a result, it is advisable to speak with suppliers who offer a range of solutions rather than only one product. It is not uncommon for manufacturers to have three or four different machines installed at different positions on the line. A gravity fall metal detector or bulk x-ray machine to inspect incoming raw materials may be followed by a vertical packaging detector between weighing and bagging. Then, after a checkweigher, an x-ray machine or metal detector may be employed to conduct a final check on the case-packed product.

Starting to work with x-ray

There is no doubt that x-ray inspection has considerable advantages in many food processing environments. Easy to install, safe and simple to use, even without previous experience, x-ray offers comprehensive contaminant detection and much more. It quickly and consistently identifies substandard products, reducing product recall, customer returns and complaints, therefore protecting manufacturers' brands. Furthermore x-ray helps to demonstrate due diligence, complies with HACCP, industry standards and legislation, retailers' QC requirements and national and international regulations. The use of x-ray can improve

customer confidence, satisfaction and retention and assist in the generation of new business. With all these benefits on offer, and reassurance about installing and using x-ray systems, the future is looking bright for this innovative and exciting technology.

► www.mt.com/safeline-xray



ServiceXXL

Tailored Services

METTLER TOLEDO offers a full range of standard or customised service contracts, enabling you to select the type of agreement which best suits your application and production requirements.



Field based local engineer network

The most comprehensive network of field based technicians and engineers for rapid local service.

Equipment installation and performance verification packages

Maximise the performance of your equipment from day one with our unique IPac, commissioning and regular audit packages.

Modular training programmes

Maximising the benefits of your investment through the development of operator skills, with customised training courses to suit all skill levels.

Spare parts at your disposal

Spare parts and customised spare part kits are available for express despatch.

Certified test samples and weights

A comprehensive range of certified contaminant test samples and weights to aid equipment qualification and performance verification.

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