

Fruit and Vegetables

Checkweighing, Metal Detection
and X-ray Inspection



1 News

GARVENS

Checkweighing

SAFELINE

Metal Detection & X-ray Inspection

Inspection of Bulk Flow Products Provides Fast, Efficient Contamination Detection

Ozgur Tarim A.S., one of the leading exporters of dried Turkish vine fruits, relies on x-ray inspection systems from METTLER TOLEDO SAFELINE to ensure the highest product quality and safety. Eliminating not only metal contaminants but also stones and glass from the fruit, quality is assured before the final packaging of the product.

Founded over 20 years ago, Ozgur now employs 150 people and produces over 25,000 tonnes of dried fruit per year, exporting into European countries including UK, Germany, France, Netherlands, Belgium, Italy, Denmark, Spain and Austria, and as far a field as Australia. Their stringent manufacturing procedures and commitment to quality lead them to consider the product inspection solutions available for food processing.

With the primary contaminants being metal and stone, and glass to a lesser extent, an x-ray inspection system from SAFELINE was selected as it has the capability to detect and eliminate these foreign bodies simultaneously, offering a reliable solution to contamination

detection. With five to seven tonnes of fruit being processed an hour SAFELINE's InspireX R40 bulk flow system (with a 600 mm inspection width), was positioned at the end of the processing line before the packaging and casing of the fruit, providing the final quality assurance check.

The system was installed in August 2006. Mr Halil Adali the General Manager commented, "the SAFELINE x-ray inspection system has been very easy to use and was installed into our existing production line with minimal adjustment. The reliability of the system has been very good, exceeding our expectations." Fitted with a multi flap reject mechanism, only rejecting a minimum of good products directly



METTLER TOLEDO

adjacent to detected contaminants.

Ms Bilge Taskin from the quality assurance team remarked, "we are very satisfied with the performance of the InspireX R40 bulk flow system, running at a capacity of six to seven tonnes per hour, with successful detection of not only metal but also quartz, one of the more common stone contaminants."

► www.mt.com/safeline-xray



Ozgur produce a range of dried fruit



SAFELINE's R40 bulk flow system is integrated into the production line

Key Benefits of InspireX bulk flow systems:

- Assurance of product quality and brand protection
- Highest hygiene standards in the industry to prevent bio-contamination
- Detection and elimination of metal, stone, bone, glass and high density plastic contaminants
- Multi lane flap reject mechanism to minimise waste and improve productivity
- Automatic product set up in minutes and self calibration to maximise uptime
- Easy to retrofit with fully customised conveyors and a choice of in-feed mechanisms
- Optimised throughput with an inspection capacity of up to 12 tonnes per hour and widths from 300 mm to 600 mm (larger sizes are available)
- Full traceability via a unique user sign-in system
- Local service and support network with global reach

Reliable and Efficient Weighing Solution For Fresh Vegetable Packers

METTLER TOLEDO have recently installed three of their highly renowned over/under checkweighers at the Cambridgeshire division of vegetable packers, Fenmarc Produce Ltd. This has enabled the fruit and vegetable manufacturer to enhance both their productivity and efficiency.

Requiring a solution that would increase the speed and reliability of their packaging line – and aware of METTLER TOLEDO's reputation for the design and manufacture of quality products offering high levels of speed, accuracy, durability and ease of use – Fenmarc Produce Ltd., purchased three of the company's BBA 449 manual checkweighers.

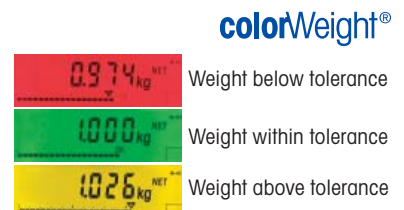
The perfect solution for efficient checkweighing, BBA 449 models offer hygienic design, fast processing of measurement values and an innovative colour display for unmistakable information as to whether or not the weight is within the tolerance limits. They are also provided with high levels of support.

Fenmarc's Lenny Evennett, Engineering Leader commented, "we are delighted with the checkweighing solution provided by METTLER TOLEDO. The ability to weigh produce quickly and precisely has enabled us to speed up operations, while the IP69K protection will ensure that the scales do not break down through moisture penetration. Overall, the BBA449 models offer high capacity and excellent levels of accuracy, which will help enhance the efficiency and productivity of our operation."

► www.mt.com/over-under



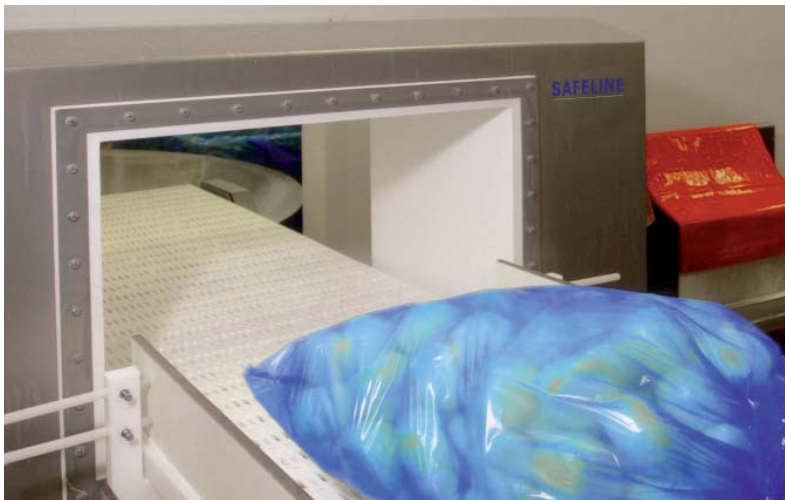
The portioning scale has helped to increase productivity



Signature Detectors

Excel Under Difficult Conditions

METTLER TOLEDO SAFELINE's R-Series Signature detectors are put to the test, inspecting onions for metal contamination for a leading UK-based contract packing company that processes onions for the catering sector.



Onions are inspected for metal contamination with a SAFELINE R-Series Signature detector

Onions are one of the most difficult products to inspect for metal contamination and can present a big challenge to most metal detection systems. The high moisture content combined with high acidity levels of onions give off a large electro-magnetic signal or “product effect” when passing through the detector. This signal can interfere with the operation of even the most sophisticated of metal detectors by masking signals from actual metal contamination or causing false rejections to occur.

Critical control points

The contract packer processes onions in a variety of formats including whole, peeled, diced, sliced and pureed. A decision was taken to install metal detection equipment at the end of their lines after processing and packing following an internal HACCP audit. The detectors are designated as critical control points (CCP's) for the complete processing and packing lines.

Complete confidence

The company has benefited from the use of R-Series Signature detectors which utilise high frequency coil technology combined with enhanced filtering techniques, allowing them to detect tiny pieces of metal even in highly conductive products. SAFELINE metal detectors provide unparalleled online sensitivity to all metal types, including ferrous, the normally difficult-to-detect

non-magnetic stainless steels and non-ferrous metals including aluminium.

Non-spherical contaminants such as wire, swarf or small slithers of metal which can be difficult to detect due to a phenomena known as the “orientation effect” are also readily detected.

Ensuring your customer's satisfaction

Supplying consistently high quality products is necessary for the company to be able to maintain its reputation and its relationships with its customers. The equipment from SAFELINE plays a key role in this process. “The Signature machine means both we and our customers have confidence that our onions are being inspected at the best possible level,” confirmed the company's Project Engineering Manager.

► www.mt.com/metaldetection





Valenzi Focuses on Product Quality with METTLER TOLEDO GARVENS Technology

Nestled within the idyllic Lüneburger Heath area lies a company with international operations: Valenzi has been processing mushrooms and forest fruits to produce preserves and frozen products since 1954. Valenzi ensure product quality with METTLER TOLEDO GARVENS checkweighers.

Strict quality demands

Soup ingredients, mushrooms, meat dumplings and berries are key areas of production at Valenzi. Valenzi sells its products throughout the world and meets the strictest quality demands. Only top-grade aromatic products can meet the company's own high standards. "Quality is a vital success factor in our company", explains Mathias Koeppen, CEO at Valenzi. "Strict quality demands govern the entire production process". Many of the raw ingredients the company uses grow in the wild. As soon as they arrive, trained staff assesses their quality and the ones that pass the tests are then forwarded for ISO-certified processing. The mushrooms and forest fruits, which are gathered by hand in their country of origin, are washed, desalinated, handsorted and checked for foreign bodies such as metal particles prior to filling.



XS3 checkweigher inspects 140 jars per minute



S3 checkweigher inspects tins of mushrooms to ensure the correct product weight is achieved

Complete compliance

"We produce in compliance with the IFS (International Food Standard) and place great emphasis on employing the latest technology and intelligent production machines," adds Mathias Koeppen. To perform the legally required weight checks, the company relies on the inline checkweighing technology of GARVENS.

After filling the Shiitake mushrooms, the correct weight of the jars is checked in the product line by an in-line XS3 checkweigher. With its touchscreen display, the calibrated checkweigher is easy to use, and its flexible modular

structure allows it to be integrated into existing production lines. Valenzi uses the checkweigher to check up to four different products ranging from 120 to 900 grams. The calibrated checkweigher inspects up to 140 jars per minute and guarantees accuracy of up to 1 gram. Before the jars reach the XS3, they are aligned and fed securely to the checkweigher by two laterally adjustable side-grip belts. Jars that are too light or too heavy are gently rejected with the help of a product divider system that uses a GARVENS line divider.

Tin inspection

Valenzi also relies on GARVENS to inspect its tin line. Up to 100 tins of chanterelles are weighed per minute. The S3 dynamic checkweigher offers an adjustable belt speed and can therefore easily and automatically adapt to the requirements of any production process. The S3 is also used in conjunction with side-grip belts to offer optimum feed of the cans onto the weighing belt.

Quality assurance

The METTLER TOLEDO solution gives Valenzi the confidence to supply only the highest quality products to their customers using the latest technology supported by a competent service offering including installation and maintenance of the equipment.

► www.mt.com/garvens



Side-grip belts for product separation

Measuring Instrument Directive (MID) Rules and Regulations in EUROPE

The European Directive 2004/22/EG (MID = Measuring Instrument Directive) describes the “approval procedure of a measuring instrument” for checkweighing until “putting into use of the instrument” and a “final conformity assessment procedure.”

The conformity assessment procedure which replaces the traditional “initial official calibration” shall determine and confirm the conformity of a checkweigher with the Directive 2004/22/EG and other applicable directives (such as the R51-1) and the EU sample test certificate of the checkweigher.

The MID changes the responsibility for the measuring instruments put into use. Prior to the MID, the national official calibration authorities were solely responsible for determining and confirming whether the checkweighers complied with the respective error limits (initial official calibration). With the MID it is now the manufacturer himself who is responsible for determining and confirming that the delivered measuring instruments, at the location of installation, comply with the error limits as per MID and thus comply with the OIML R51-1 under production conditions.

What about Checkweighers from METTLER TOLEDO GARVENS?

METTLER TOLEDO GARVENS has been authorised to carry out the conformity assessment stages 1 and 2. At GARVENS, the checkweighers are submitted to extended tests and are in possession of the conformity assessment stage 1 – which is documented with a protocol/certificate. A GARVENS service engineer then carries out the “conformity assessment stage 2” on site, thus there’s no more need for a member of the official calibration authority who would perform the “initial official calibration” at the customer site.

New Integrated MID Box

The integrated MID box of X Series checkweighers allows for software downloads under the official calibration seal and protects the checkweigher against alien software. Moreover, the optional PrintStick (USB port) may be used without any restriction. A detailed log file is created which documents all changes and updates. Software downloads can be carried out by a GARVENS service engineer or authorised service partner without the need of involving a member of the official calibration authority for a subsequent, official re-calibration. This means that time and money is saved – a plus-point for all customers!

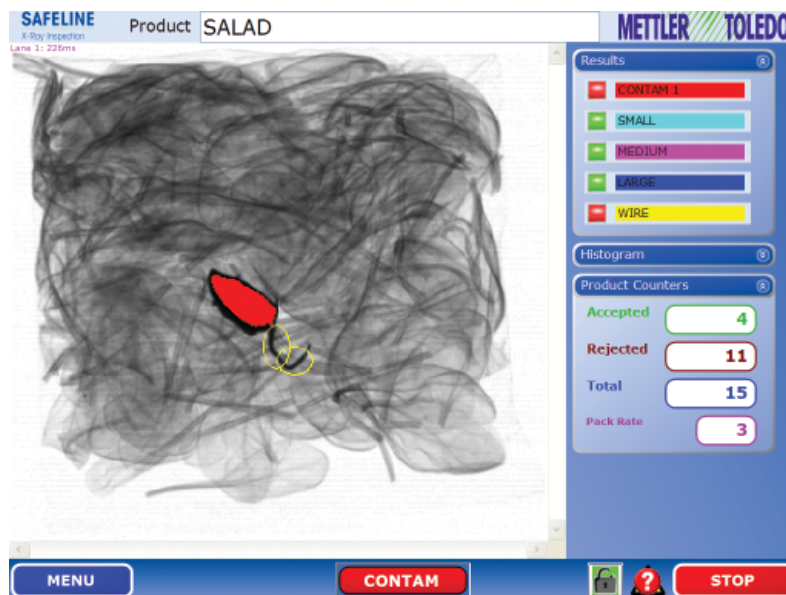
► www.mt.com/garvens

Customer benefits:

- Only one partner to contact for initial operation (commissioning) and putting into use of the checkweigher, saving time and money as presence of official calibration authority is no longer necessary
- Preparation of official calibration, assessment of conformity and answering of questions are performed in a competent manner by the METTLER TOLEDO service team
- With X Series checkweighers software updates are possible without the need of official re-calibration due to the MID box

X-ray Technology Discovers the Hidden Dangers

The majority of fruit and vegetables come from plants in the ground or from trees. The produce is harvested and then transported in trailers or large containers to the factories. All of these stages are possible points of entry for a large number and wide variety of foreign bodies. In addition to the washing and general cleaning of incoming goods, factories use a combination of inspection techniques, to provide a combined total inspection solution.



Inspirex system detects a small rodent in a bag of salad

Some typical produce applications where x-ray excels:

- Mushrooms , broccoli, potatoes in bulk flow – detects stones, glass, metal and golf balls
- Carrots in bulk flow – detects clay or small pieces of brick
- Potatoes – detects stones that the potatoes have grown around and hollow hearts in Bakers
- Peas in cans – detects chalk as peas grow in fields with good drainage or coke from the paths for the tractors
- Apricots – detects lead shot in the fruit, from the farmers shooting at the birds in the trees
- Bagged lettuce – detects small rodents, frogs and snails

Choosing the right machine for your processing line

Many types of visual inspection are used which include manual inspection on blue belts, camera systems, laser sorters and colour sorters – each of which may be looking for product colour, shape and size irregularities. None of these however can detect contaminants buried underneath product, inside product or even detect internal product defects but x-ray can!

X-ray – it’s all about density difference

METTLER TOLEDO SAFELINE X-ray offer unsurpassed detection on metal, glass

and mineral stone, as these objects have a much greater density than the background density of the food. SAFELINE X-ray can



InspireX CanCheK can measure vegetable fill level in the base, before a liquid waterfall in a production line

also use a beryllium tube on both the AdvanCheK and InspireX range of systems, typically on bulk flow applications to give even better glass and stone detection, via soft x-ray filtration.

A full colour touch screen interface offers user friendly machine setup on even the most complex of packs. Complete customer satisfaction, the highest level of protection against possible expensive product recalls and total brand protection is offered by SAFELINE X-ray, for those who want to set the highest quality standards.

Guiding the Way To Effective Metal Detection



In today's increasingly competitive fruit and vegetables marketplace, new legislation, industry standards and the growing influence of regulatory bodies have accelerated the demand for effective metal detection programmes. The exacting requirements of retailer organisations have also fuelled the need for efficient metal detection in all fruit and vegetables processing procedures.

Installing metal detectors is not enough

In most modern manufacturing plants, the mere installation of metal detectors will not guarantee that metal-free product is produced. For that to be achieved, the detectors must form part of an overall metal detection strategy.

It is essential that all manufacturers endeavour to implement procedures which provide the peace of mind that all possible steps are being taken to minimise instances of contamination.

The definitive guide

To assist in developing such a strategy, METTLER TOLEDO SAFELINE has published a 64-page comprehensive metal detection manual.

Specifically developed for the global food production industry, this definitive guide is essential reading for those involved in understanding and implementing metal detection technology – key for effective brand protection, proving due diligence and showing compliance with legislation.

Significantly updated

Entitled 'Reduction of Metal Contamination – Building an Effective Programme', this guide replaces the original SAFELINE Guide to Reducing Metal Contamination ('The Red Book').

It has now been significantly updated, presenting the most up to date thinking and practices. The guide details the critical aspects for the creation,

implementation and maintenance of an effective metal detection programme, in a clearly written format, supported by useful diagrams, charts and illustrations.

In producing this guide, METTLER TOLEDO SAFELINE aims to ensure that manufacturers have access to all of the necessary information to set up such a programme.

For more information, or to request your own personal copy, please visit:

► www.mt.com/mdguide



Request your personal copy today!

The guide has been made available free of charge to all manufacturers. To request your free personal copy, please visit:

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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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