



# Inspection systems

for the convenience industry



**Reliable, precise and user-friendly**

## **X-ray inspection systems, metal detectors and separators from Mesutronic**

### **Why detect foreign bodies?**

Despite all safety precautions, the contamination of convenience products with foreign matter is unfortunately a problem in every manufacturing company. The effects are often dramatic if these are not reliably detected and removed from the production chain. Damage to processing machines, problems during audits, loss of supplier contracts and, in the worst case, severe image problems among consumers are often the result of inadequate control systems. In addition, X-ray inspection systems offer a wide range of other possibilities for checking the quality of frozen and convenience products.

### **Why Mesutronic?**

For more than 30 years, we have been developing inspection systems with and for companies in the frozen products and convenience food sectors. These are used for inspecting ready meals, sauces, frozen vegetables, pasta and much more. For all those who need foreign body detection for their production facilities and value "Quality – made in Germany", Mesutronic is your experienced, solution-oriented, internationally active specialist and loyal partner.

We achieve this because everything from development to design and installation, up to service and maintenance is consistently geared towards individual industry and customer needs.

**» Machine protection and quality assurance  
- reliable and user-friendly.**

**Manufactured in Bavaria, used throughout  
the world. «**

**Christian Boxleitner  
Managing Director**



## Outgoing goods area

In packaging, the task of quality assurance is of prime importance.

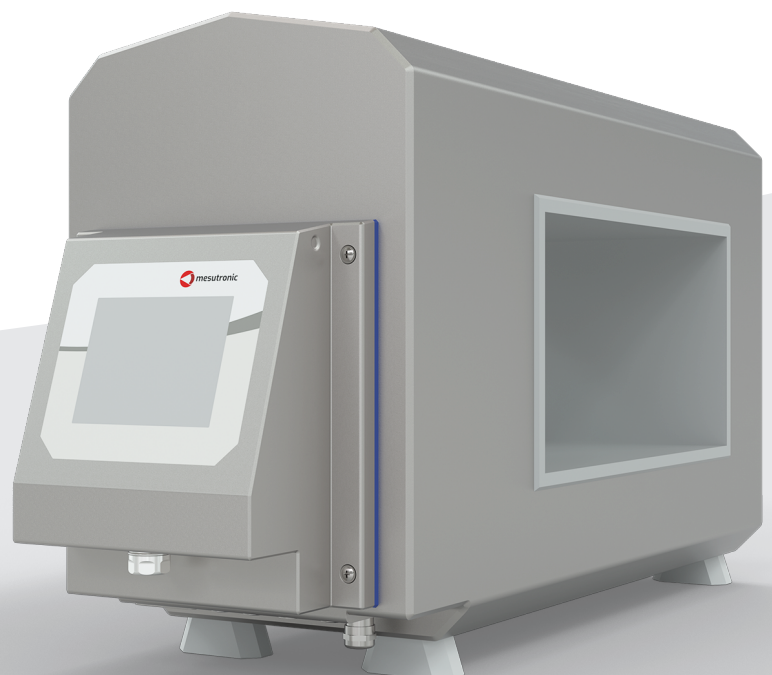
According to the HACCP criteria, a final check for foreign bodies should take place if re-contamination can be excluded. This usually means the inspection of the product when its primary packaging is closed. Inspection in any secondary packaging is also possible. However, here a check must be made of whether the recognition accuracy at this point is still sufficient.

The most common variant of inspection in this area are conveyor belt systems of the **TRANSTRON type**.

As a supplement to our metal detectors, they represent optimum recognition accuracy and stability. Separation variants such as pushers, blower nozzles, belt retractions or hinged belts are standard. Durable components, starting with bearings via motors and conveyor belts, ensure continuous, low-maintenance operation. We are also happy to offer you systems specially adapted to your production, e.g., as ascending conveyor belts after the tubular bagging machine or in special installation positions. Supplementary packages for special trading standards such as BRC, TESCO and others are also available.

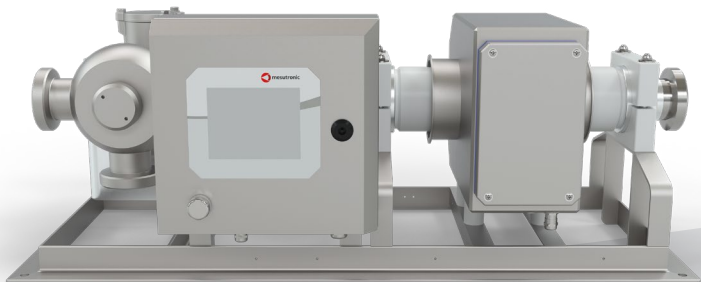
The classic final inspection is carried out using a tunnel metal detector of the **METRON 07 CI** type.

Like all other systems in the 07 series, it allows seamless logging, automated test routines and simple reporting via USB, the mesuNET network or via direct log export.



**METRON 07 FL** metal detection systems are placed directly on the forming shoulder of the VFFS bagging machine. Thanks to the strong shielding, the devices can deliver high accuracy with minimal installation space, regardless of whether it's cooked potatoes or dried fruit being examined.

Exchangeable funnels can be used to easily fill different bag diameters. These represent a good alternative, especially when packaging films containing aluminium are used, as they make later investigation with a metal detector more difficult or impossible.



**PIPELINE 07 O** Metal separators are used to inspect liquid or pasty compositions. If the viscosity does not allow the use of fine filters or if wear-and-tear occurs regularly, it is recommended to use this technology.

Typically, this happens for sauces before they are filled.

The inspection of final packaged products with metallised film is also possible, but here we generally recommend the use of an **easySCOPE** X-ray scanner.

# X-ray inspection

In the frozen foods and convenience sector in particular, inspection for foreign bodies by means of X-rays offers diverse advantages in addition to the search for metals alone. In addition to the detection of other types of contamination such as glass or stones, quality algorithms make a significant contribution to customer satisfaction.

For the inspection of products with metallic components, X-ray inspection systems are the only meaningful way to carry out a final, policy-compliant inspection. Metal detectors offer, in the case of products which are easy to test and have no intrinsic conductivity, advantages for the detection of low-density types of metal, such as aluminium. In very rare cases, this is also applicable to magnetic impurities, for example iron or nickel. Here, a combination of the two technologies can be the best solution for maximum protection.

The **easySCOPE** X-ray machine, designed for the examination of medium and large packaged products, such as cartons with frozen berries or vacuumed pasta, with belt widths of 400 or 600 mm complements the Mesutronic product portfolio for the frozen food and convenience industry. Even for beginners in X-ray technology, the device, with its moderate price, high-quality, and thus low-maintenance, components, as well as its extremely intuitive operation, is their best chance of entry into this type of foreign body control. The system detects metallic and non-metallic impurities such as, for example, glass, stones or plastics, by means of an imaging process – X-ray technology.

The **easySCOPE ST**, on the other hand, is the optimal solution for the inspection of smaller, flat products. Without compromising on X-ray performance, it combines easy cleanability with an extremely compact footprint.

As with all other X-ray inspection systems in our portfolio, the easySCOPE ST is also available with fitted separation units, sensor packages to meet trade standards, and designs for hot or dusty environments.



# Image processing functions

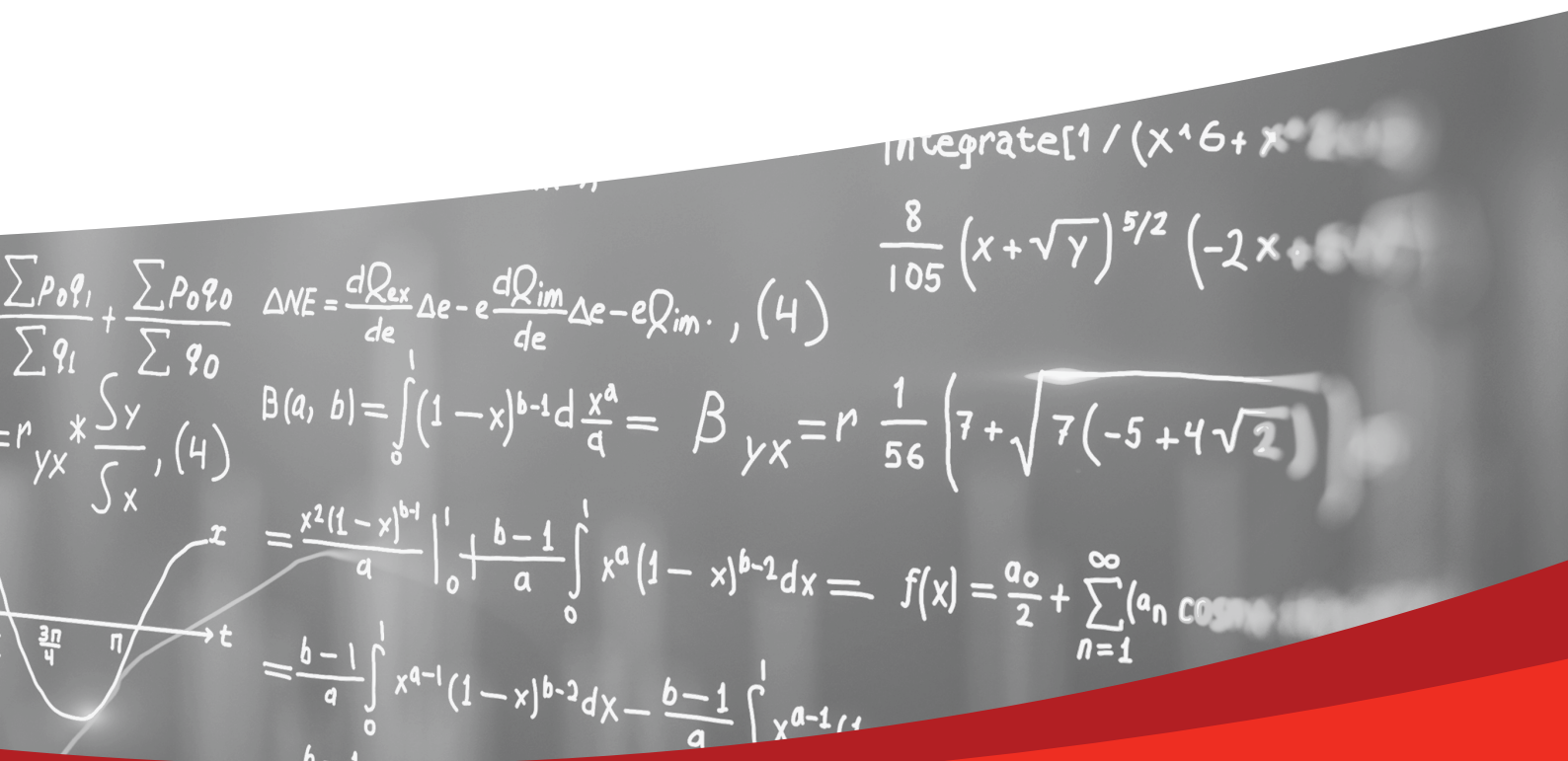
The following functions are offered in particular for convenience products, adding significant value beyond pure foreign body control:

## Weight check

This software extension allows the weighing of entire products or product parts. It can therefore reliably detect, for example, missing toast slices in a package.

## M1 integrity check

This extension, consisting of various algorithms, monitors almost all shape parameters of the entire product or product parts. It recognises broken products, products that are too large or too small, cavities, errors in the external profile and much more. In particular, fragile products in opaque packaging can also be checked again while intact after primary packaging.





## Digital products and services

The successful operation of inspection systems is no longer solely dependent on purchasing of the right product, but also on how well the system is connected to the people and machines in its environment. Mesutronic offers a wide range of support services that increase the integration of our products.

Depending on the type of electronics used, our systems can already provide information as standard via analogue signals, various bus systems or Ethernet. Information is received by either controllers, process control systems or other, higher-level machines along the line. In addition to other protocols, with digital networking the OPC UA protocol is used here for the smooth transmission of operating conditions and production-critical values.

If a networking solution is desired purely at the level of foreign body detectors, here **mesuNET** offers optimal performance for the simple creation of reports, evaluation of statistical data, central backup of the event history and as an intermediary to higher-level databases or control systems. This facilitates the easy collection of important OEE data with secure, web-based access without attachment to a single computer.



The **mesuEXPORT** software feature is another easy, automatic and cost-effective way to back up reports. Here, systems with the AMD 07 electronics series are connected to the customer's network drive via Ethernet. The system can then be configured to store event reports for specific events or at specific times. Data is therefore redundantly backed up and cannot be lost - even if the system is completely destroyed.



**mesuREMOTE** allows our service specialists from Kirchberg im Wald to access any connected system, often avoiding time-consuming on-site deployment. Communication is secured according to current IT standards, encrypted and takes place solely after approval by the customer at all times.

All of this can additionally be secured on the hardware side via a key switch. This means that any uncoordinated manipulation of systems by Mesutronic or third parties is reliably excluded.



The electronic **autoTEST** tester allows significant reduction in manual test cycles in devices of the 07 electronics series.

Signals from physical test bodies are copied via an interference coil that operates independently of the detector. As a result, short test cycles, and thus maximum process reliability, can be implemented without additional effort.





In order to reduce introduction barriers and ensure smooth, long-term operation, we recommend our **training programmes**. We offer a wide range of solutions, from simple operator training included with commissioning to multi-day events on our premises. As with our physical products, we strive to make training as efficient and economical as possible for our customers while still in the coordination phase. The content is recommended by us and then individually adapted to your needs according to the number of participants, their educational background or previous experience.



We are also happy to offer regular training courses at a reduced rate in connection with **maintenance contracts**. These courses are also designed to be customer-oriented. Frequently selected options include, for example, annual on-site maintenance or reduced prices for spare parts. It is also possible to flexibly add or remove devices from the scope of the contract.

Options for maintenance contracts and training in our systems are usually also available for indirect customers of our local partners or OEMs.



The cornerstone of our **after-sales service** is our motivated, trained and customer-oriented service staff. Our promise of “detecting what matters” includes accessibility without compromise and without additional costs, 24 hours a day, 365 days a year. This is supplemented by our cost-effective board exchange programme with reprocessed electronic components as well as the possibility to repair every system ever sold to the market.

## Customer-specific projects

Special challenges may arise in particular when retrofitting inspection systems into an existing production environment. The development of solutions for these tasks is one of the core competencies of Mesutronic GmbH. The ways shown range from simple consultation on the deployment of a standard solution in an unusual way, through smaller and larger modifications, to the complete, customised customer system.

We focus on the permanent, reliable and economically optimal fulfilment of your requirements. This is made possible by our company's competent team of employees, who are trained in all relevant areas from sales to application, mechanical and electronic development, up to production and after-sales. They are supported by modern work equipment and a process world embedded in ISO 9001.

We make projects, which we see as a permanent dialogue, transparent for our customers at all times.

The way we see it, our work is not finished when products are delivered, but when production is again functioning smoothly after conversion.







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