



SF Quality Control Systems

Protecting your customers and your brand

Metal Detectors

Checkweighers

X-Ray Systems



SF Engineering has partnered with world leaders in quality control inspection systems, namely Ishida and Ceia

Ishida is a global company offering a full range of multihead weighers, snack food bag makers, fresh food weighers, x-ray inspection, checkweighers, tray sealers and weigh price labellers.



CEIA has a reputation for very high performance, ease of operation and outstanding reliability in electromagnetic inspection systems. CEIA's THS range of Metal Detection systems are designed to detect contaminants in the food production chain, operate with high levels of sensitivity, immunity to interference and provide fast response speeds. CEIA is the supplier of choice for quality-conscious food industry customers worldwide.



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THS 21

THS
METAL DETECTOR
GEM

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THS 21
METAL DETECTOR
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Control panel with various buttons and indicators.

Metal Detectors

SF Engineering is proud to partner with the world-leading supplier, Ceia, in order to offer our customers the best in-class solutions.

Ceia is a market leader in designing and manufacturing metal detectors with a range of solutions for inspecting food products, both bulk and packaged and offer full compliance with industrial industry sector regulations. In particular, the Conveyor Inspection Systems features compact construction, accuracy and reliability of response in dealing with accidental contamination in food products.

Head Only Metal Detectors

THS/MS21 THS/21 – Multi-Spectrum

Offering the highest level of metal detection available. These metal detectors are perfect for products, such as cheese, fresh meat, and poultry.

THS/21E-3F THS/21E – Multi-Frequency

An entry-level CEIA metal detector with single- and multi-frequency technology is ideal for processors with all manner of food products.

THS/G21 Series – For Free-Falling Product

These highly sensitive vertical metal detectors inspect all manner of snack foods, powders, liquids and granules that are transported in gravity-fed tubes.



Features

- Ultra-high sensitivity to all magnetic and non-magnetic metals, including stainless steel
- Multi-spectrum technology for extreme compensation of the product effect
- Continuous Auto-Test function ensuring maximum production safety
- Continuous embedded Self-Calibration control
- High immunity to environmental interference
- AISI 316L stainless steel construction to IP66 and IP69K protection levels
- Control Power Box available according to UL 508A and CSA-C22.2 No. 14-05
- Automatic learning & tracking of product effect
- 500 product data memories, selectable by local programming or network software
- 5000 storable events
- High-definition graphic display
- Local programming: 16 keys, 3 with double function
- Quick Access key for fast programming of user parameters

Conveyor Metal Detectors

The THS 21 conveyor inspection system satisfy the most stringent requirements for functionality, compact construction, accuracy and reliability of response in dealing with accidental contamination in food products.

Ceia THS/FBB

Flat Conveyor Belt System for THS 21 & THS/21E Metal Detectors

- Conveyor belt integrated with Metal Detector and ejection system
- Structure and components in AISI 304 stainless steel and food-compatible plastic parts (FDA, USDA compliant)
- Digitally-adjustable belt speed
- High immunity to environmental interference
- Reject systems include air blast, pusher ram ejection system or stop on detect
- Easy to clean and inspect
- High reliability motor driver with stainless steel protection cover and high pull capability



Easy to clean and inspect:
The conveyor belt can be removed without any tools



Structure and components in AISI 304 stainless steel and food-compatible plastic parts

Ceia THS/MBB

Modular Conveyor Belt System for THS 21 & THS/21E Metal Detectors

- Modular conveyor belt integrated with Metal Detector and ejection system
- Structure and components in AISI 304 stainless steel and food-compatible plastic parts (FDA, USDA compliant)
- Digitally-adjustable belt speed
- High immunity to environmental interference
- Reject systems include air blast, pusher ram ejection system or stop on detect
- High reliability motor driver with stainless steel protection cover and high pull capability



In Combination with Checkweigher

When used in combination, a CEIA metal detector and an Ishida checkweigher enable accurate high-speed package inspection of all ferrous and non-ferrous metal contaminants. This includes stainless steel and verification of current product weight or count.

Available with a variety of models, you can create a customized inspection system to meet your production needs. Ideal for packaged products, snack foods, ready and prepared meals, salads, meat, fish and poultry.

Detecting Ferrous in Foil

The THS/MN21 model is a highly reliable detector of ferrous and magnetic metal contamination for products in aluminium trays, foil, and foil-wrapped bags. Offering maximum-sensitivity at both high and low transit speeds.

Integrated Pipeline Metal Detectors with Ejection Systems

THS/PL 21 series

For Liquid and Viscous Products

- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction to IP66 and IP69K protection levels (THS/PLMS21)
- Easy to clean and inspect
- Minimum installation space required
- Wide range of flanges available for connection to bagging and clipping machines

THS/PLV 21 series

Integrated System with Ejection Valve for Liquid and Viscous Products

- Standard pipe sizes available to suit all applications
- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction
- Easy to clean and inspect

THS/PLVM 21 series

Integrated System with Ejection Valve for Meat

- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction to IP66 and IP69K protection levels (THS/PLVM MS21)
- Rapid electrical and mechanical connection system for bagging and clipping machines
- Wide range of flanges available for connection to bagging and clipping machines

THS/FFV 21 & THS/FFV 21S series

Integrated System with Ejection Valve for Free-Falling Granular and Powder Products

- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction
- Very compact size
- Fast and efficient: achieve fast ejection speeds and accuracy, with the minimum amount of rejected product
- Pipe in antistatic material, certified for contact with food products



Check Weighers

Checkweighers: weight compliance and production optimisation

Checkweighers contribute to product quality by ensuring each pack falls within a pre-defined weight range. Their use in this role is overseen by organisations like OIML and WELMEC and enforced through directives like MID (Measuring Instruments Directive), and their data can be kept as evidence of compliance.

However, they can also contribute to product integrity (as in the number of pieces per pack) and when combined with a metal detector in eliminating potential harmful foreign bodies.

Where are checkweighers used?

Checkweighers are used in a wide variety of applications and locations within a production line from accurate weight on naked and packaged products to missing items in cartons/boxes of products. Typically, they are used as a final check on packaged products and applications guidance and support around product infeed and rejection is often critical to achieving a suitable level of performance on site.

What's unique about our Checkweighers?

Ishida maintain a strong R&D capability in the development of load cells, electronics and software. These are developed and brought to market entirely in-house. They offer unique SNR (Signal to Noise Ratio) characteristics which provide both high accuracy and speed. The weigh cells also offer a variety of novel features like force dislocation mechanisms that protect load cells from excessive loads, along with market leading AFV (Anti-Floor Vibration) capability.

Working together in partnership on all your application requirements

You won't find a partner with more checkweigher experience and expertise than SF Engineering. We now offer our largest ever range whilst maintaining a strong technical edge, supporting entry level requirements through to high speed production environments.

We use that edge and our applications expertise (based on an extensive install base), to fully understand your needs.

Whether you seek a set of brand new production lines or simply want to integrate a single machine into an existing line we will spend the time to fully understand your brief and come up with the optimum solution.

The Checkweigher range

An unrivalled choice, backed by industry-leading knowledge and advice. Our range of checkweighers are recognised internationally and across industry for their accuracy and robustness.

Strain gauge or force balance loadcells, simple keypad interface or top-of-the-range colour touchscreen, we offer not only the widest choice but the industry knowledge and advice to go with it. Our worldwide industry experience covers not just checkweighing but whole production lines, packing operations, factories and multi-site enterprises, so that we are uniquely placed to link your checkweighing operations into surrounding systems and environments.



Checkweigher Range Options

Performance-Line Performance with value

Our entry level platform offers simplified operation and outstanding reliability. It comes in two range options: up to 1.2kg and up to 5.0kg. These models can operate in MID and non-MID mode and are offered with a range of options to suit many different applications.

Excellence-Line Versatility and precision

This highly versatile platform comes in two weight categories: up to 1.5kg and up to 6kg, both offering MID and non-MID performance. Depending on your requirements for speed and accuracy, either weight range can operate in precision or standard mode. These checkweighers offer our most extensive range of options to facilitate even the most challenging applications.



We offer all our checkweighers with a range of options to meet different application requirements.

Control interface: minimising the staff training burden

This highly versatile platform comes in two weight categories: up to 1.5kg and up to 6kg, both offering MID and non-MID performance. Depending on your requirements for speed and accuracy, either weight range can operate in precision or standard mode. These checkweighers offer our most extensive range of options to facilitate even the most challenging applications.

Advance-Line Accuracy with speed

These models feature force balance technology and offer two different weight bands: up to 1.5kg and up to 3kg. They can operate in precision or standard mode and can handle very low weights at high speed, in MID or non-MID mode. Again, options are available to meet a wide range of applications, reflecting extensive SF Engineering experience.

Carton-Line Handling heavy weight and volume

Carton-Line checkweighers are an excellent way of ensuring that cartons/ boxes contain exactly the right number of primary packs. In line with this task, standard weight ranges are up to 15kg, up to 30kg and up to 60kg.



Optimising removal of non-compliant product

Product weight, size, shape, and fragility, together with production line speed, will determine which reject system we recommend. For example, a high-powered air blast may be best on fast lines. Mechanical arms often work well for irregular or heavy packs, while a pusher reject is suitable for heavy products moving at relatively low speeds.

Reject receptacles for safe storage

Receptacles into which product can be diverted include fully enclosed bins of various sizes. Roller tracks can be provided, to move more fragile products to reject and inspection or for re-work.

Software options that extend functionality

Ishida checkweighers feature an impressive level of functionality as standard. Additional software options include feedback control, to enable filling machines to respond to variations in the actual weights being packed, and reference weight renewal which can alter the nominal weight target in line with environmental changes.

Software that supercharges your data

The quality control data you generate can go far beyond your immediate inspection objectives to materially improve the quality of your products and processes and increase profitability. SF Engineering offers you software that unlocks the potential of thousands of recorded measurements that would otherwise remain as passive statistics.

Ishida Sentinel™ Get the power of remote access and control behind your inspection data

Ishida Sentinel is a unique remote customer care software solution that combines machine performance monitoring with comprehensive data capture and in-depth analysis. It ensures that food manufacturers and packers can operate their lines to maximum performance and efficiency. Sentinel triggers early awareness of likely upcoming problems, thus helping avoid downtime.

IDCS - Captures data to improve performance and ensure full compliance

A critical requirement for most food producers is the ability to demonstrate pack weight compliance within production batches. The Data Capture System (IDCS) consists of both machine hardware and server software that captures and records checkweigher settings and data for every pack. Operators can review the information at any time, facilitating compliance with regulations such as the Measuring Instruments Directive (MID). The IDCS enables the accumulated data to be interrogated and analysed, providing reports that can be applied to significantly improve the Overall Equipment Effectiveness (OEE) across lines, plants and companies.

Supporting your journey towards Industry 4.0

Most Ishida machines and complete line solutions can be configured to interface to the Ishida Sentinel™ software to deliver remote performance monitoring, remote machine control and remote performance intervention.

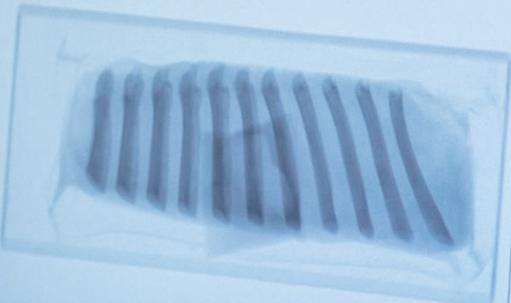




ISHIDA

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1 在途中



OK

异物级别	欠品级别
级别1	43
级别2	136
级别3	214
级别4	159
级别5	220
级别6	160
级别7	180

识别数量	OK	NG
-	43	21
1-1	NG率	6.27%

测试

IX X射线



IX-GN-4044

ISHIDA X-ray Inspection System
High Sensitivity
Simple Operation
Safety Measures

X-RAY ON

X-Ray Inspection – Foreign Body Detection And More

X-rays can evaluate the varying densities in a product or pack to reliably identify dangerous foreign bodies such as metal pieces, glass or ceramic fragments, stones, bones and high density rubber or plastic.

Where X-ray inspection is used?

X-ray inspection of finished packs or secondary packs is very common, but the technique is also widely used for checking incoming raw materials, or even within the production process itself.

What's unique about Ishida X-ray equipment?

Performance depends mainly on three factors: the X-ray generator and associated electronics that produce the rays, the sensor that picks up the rays that have passed through the product and the software that analyses the resulting image.

Ishida offers a range of high quality generators as well as line sensors with very small pixel sizes, resulting in unrivalled foreign body detection. Combined with Ishida's unique and patented GA (Genetic Algorithm) technology, these factors optimise detection sensitivity for commonly occurring foreign bodies while minimising costly false positives.

Bringing quality control to a new level

The quality control benefits of X-ray technology go far beyond product safety. With the right inspection system you can:

- identify missing items
- detect product inclusions in trays
- ensure correct pack fill
- monitor product shape and completeness
- calculate the weights of individual pieces



X-Ray Range



IX-EN Series Entry Level Excellence

The IX-EN Series is perfect for your first step into Ishida X-ray technology. The X-ray inspection system enhances quality control on your production line, both affordably and effectively.

- Reliable inspections are suitable for uniform products.
- It is easy to set up and integrate into your production line.
- Complete with a 15" user-friendly touch screen control.

Dual Energy Sensor Enhanced G2 Technology

Dual Energy Sensor detects what other inspection systems miss. It has the most effective X-ray detection of low-density objects, including bone, shell, metal, glass and rubber.

- Offering pinpoint detection of foreign bodies under 0.6 mm thanks to its enhanced G2 technology, from shell and stone, to metal and bone.
- An accurate X-ray inspection system capable of handling packaged products with uneven surfaces, granular products and product overlaps.
- GA image processing automatically generates optimal sensitivity for fast and efficient product changeovers.
- Its ergonomic, stainless steel design, makes it hygienic and easy to clean.

IX-GN Series Optimum Value Model

The IX-GN Series is the definite choice for a wide range of products. It provides high-performance X-ray inspection for an unrivalled range of foreign matter.

- The solution offers unrivalled versatility for a wide range of packed and unpacked products.
- Complete with GA image processing which automatically generates optimal sensitivity for fast and efficient product changeovers.

IX Large Series Models for larger products

For the security of X-ray inspection for larger items, we recommend the X-EN-5592 / IX-GN-5523

- High sensitivity and latest sophisticated X-ray inspection system for large sized products.
- Ishida X-ray inspection systems IX-EN-5592 and IX-GN-5523 can be used at any stage in your production line to identify, with the greatest accuracy, when foreign bodies are contaminating your product, thus protecting your brand and reassuring your customer.

X-Ray Ancillaries



Getting product rejection just right

Because all customer products are different, we can offer a range of reject solutions to meet the varied demands. The X-ray ancillaries range includes air blast rejects for lightweight products, arm based rejects and overhead paddles with roll tracks for heavy products.

These food-grade quality removable reject bins are on wheels to allow easy and convenient movement of defective products away from the line with a minimum amount of machine downtime.

Software to enhance your specific application

We offer a range of software options for particular applications. Examples include product-in-seal detection and the monitoring and masking of clips and other artefacts that form part of your product or its packaging.

Expert product handling

Rejected product can be directed into collection bins or delivered to other locations, such as a reworking station. SF Engineering's handling expertise, using roller tracks for example, will help you minimise damage and wastage, however fragile your product.

Easy maintenance improves effectiveness

The innovative guarding and reject bin design allows full access for cleaning and maintenance, while the protective curtains and the conveyor belts lift out with no need for tools. It all contributes to minimising downtime and maximising Overall Equipment Effectiveness (OEE).



Customer Partnership Support

SF are here to help you through every stage of your new project. This can often start in the consultancy stage where we offer feasibility studies that can help to increase product throughput or yield, an assessment to reduce product recalls or evaluating a greenfield site for a food processing facility.

Once all our assessments are carried out, our Planning, Design and Project Management experts take over to co-ordinate the project right through manufacture, installation and commissioning. All teams are very familiar with the demanding conditions that arise across the food processing industry and have gained a vast knowledge of solving complex industry challenges on a daily basis.

- **Consultancy**
- **Planning**
- **Design**
- **Project Management**
- **Manufacture**
- **Installation & Commissioning**

Service & Spare Parts Support

Our Service Team are here to support you through the life-time of your equipment. Yet, we still prefer to prevent problems before they happen. We highly recommend carrying out regular calibration, verification and preventative maintenance checks as well as staff training to ensure you can get the best from your investment. Should any unexpected technical issues occur, we offer a range of Service Level Agreements including, remote assistance and diagnostics as well as on-site support.

Keeping your production lines running smoothly is our main priority. Our Spare Parts Team supply only the highest standards of genuine parts, including, belts, motors, sprockets, bearings, electrical components and pneumatics from industry leading manufacturers. Offering a quick and reliable service when you need it the most.

- **On-site Service Support**
- **Spare Parts**
- **Preventative Maintenance**
- **Remote Support**
- **Training**
- **Calibration & Verification**

SF offer expert support and guidance through the entire planning process and for the life-time of your equipment



CEIA
THS
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