

/ Pet Food Inspection

Challenges & Solutions



Rising Complexity, Rising Expectations

Pet owners increasingly treat dog snacks and functional pet food with the same expectations they place on their own food. Safety, consistency, and compliance are essential. Even minor deviations – foreign bodies or incorrect fill weights – can lead to complaints, recalls, and lasting brand damage. The global pet food market continues to grow across dry food, wet food, treats, nutraceuticals, and fresh pet food. At the same time, packaging formats are becoming more diverse, line speeds are increasing, and consumer as well as regulatory expectations for safety and accuracy are rising. For manufacturers, this creates a complex inspection environment in which contamination detection, checkweighing, and line efficiency must be addressed simultaneously.

/ Stand-Up and Flexible Pouches for Dry Food & Treats

Dry treats, semi-moist snacks, and functional pet food products are predominantly packed in stand-up pouches. These flexible formats offer strong shelf appeal but place high demands on inspection systems due to unstable product flow, variable fill levels, and metallized films.

While metal detectors often struggle with these conditions, our X-ray systems reliably detect foreign bodies based on density differences, independent of packaging material. Checkweighers, in parallel, ensure every pouch complies with declared net weight and local regulations. Inspecting the primary instead of the secondary packaging helps to reduce value loss and increases detection capabilities.



Curtain-free X-ray Inspection: Designed for Maximum Efficiency

For lightweight and flexible stand-up pouches, our optional curtain-free X-ray designs offer decisive operational advantages.

Key Advantages

- Smooth, stable product transport without mechanical interference
- No lead curtains as wear parts – reducing maintenance and spare parts costs
- Increased line availability & improved OEE
- Decreased value loss for rejected products compared to secondary packaging inspection

Checkweighing: Compliance, Yield, and Cost Control

When integrated with X-ray inspection, Checkweighers deliver:

- 100 % weight compliance for stand-up pouches
- Reduced product giveaway and raw material savings
- Stable filling processes through filler feedback
- Improved line transparency and performance monitoring
- Reduced operating costs due to use of similar parts as X-ray

Dynamic checkweighers verify that every pouch meets declared net weight requirements. Underweight products are automatically rejected to ensure regulatory compliance, while overweight products are identified to prevent unnecessary giveaway.

Together, X-rays and Checkweighers form a comprehensive inspection solution covering both product safety and weight accuracy.

/Cans for Wet Food

Wet pet food is commonly filled into metal cans at very high speeds, often exceeding 1,000 units per minute. Cans guarantee long shelf life, are easy to store and to recycle, while providing safety against leaks or contamination after packaging.

Key Inspection Challenges

- No gaps between containers, limiting inline inspection
- Wet conveyor surfaces preventing the use of X-ray curtains
- High speeds do not allow in-line checkweighing, thus no filler feedback
- Stiffening corrugations in cans reducing X-ray sensitivity



Portfolio for Can Inspection

We offer high-speed sideview X-ray systems combined with different product handling technologies to create product gaps without reducing line speeds. Curtain-free X-ray systems help with slippery, wet conditions, while dual-beam machines help with improved detection in sidewalls and base areas.

Modular multi-lane checkweighers allow inline dynamic checkweighing, providing direct filler feedback. This reduces product giveaway, shortens ROI, and significantly increases process transparency – all while using the existing line space before cartoning.



SC-S 5020

/ Bags and Large Flexible Formats for Dry Food & Treats



Large bags for dry pet food and treats are often filled vertically. These products are heavy, segmented, and mechanically demanding.

Key Inspection Challenges

- Difficult handling due to product shape and segmentation
- High False Rejection Rates (FRRs) caused by corner effects and trigger issues
- High mechanical load on conveyors

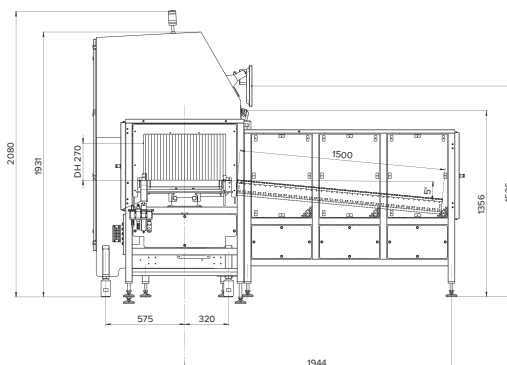
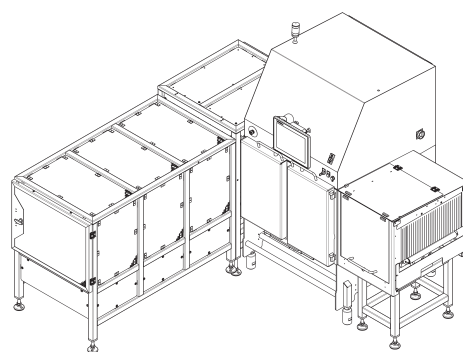
Portfolio for Bags and Large Flexible Formats

Low-speed, high-power X-ray configurations with optimized diode technology enable reliable inspection of dense products, while using heavy-duty SL conveyor systems guarantee long service intervals at high loads.

Application-specific light barriers and advanced segmentation algorithms significantly reduce FRRs, while rejection systems with roller conveyors avoid unnecessary line stops, increasing uptime and extending the lifetime of packaging equipment.



SC 5000



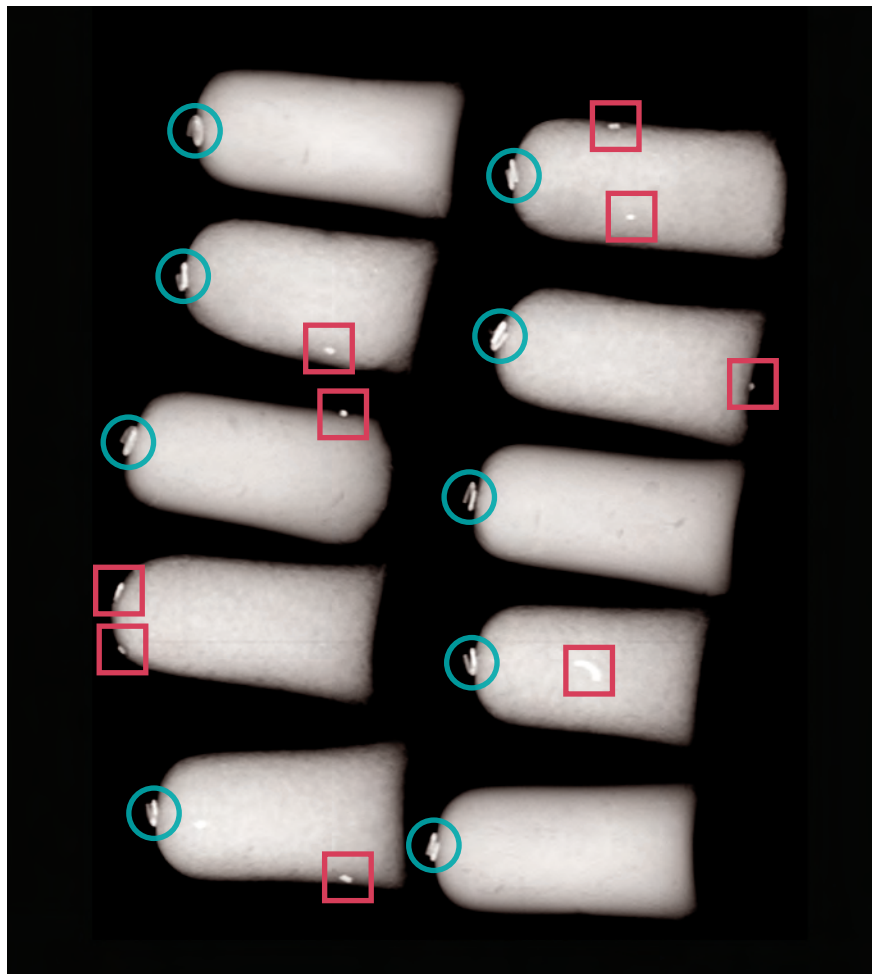
/Clipped Bags for Fresh Pet Food

Fresh pet food in clipped, sausage-style packs follows a fundamentally different production and inspection logic compared to dry or shelf-stable products.

The typical process consists of an upstream vacuum filling machine, followed by a clipping machine.

Key Inspection Challenges

- High product density and inhomogeneous composition in the bulk product
- Risk of foreign bodies entering before or during filling
- Metal clips at both ends of the product affecting X-ray evaluation
- Product movement and deformation during transport
- Wet, cold, or washdown environments



Overcoming Fresh Pet Food Inspection Challenges with a Two-Stage Approach

Stage 1

Pre-Fill Bulk Product Inspection

A dedicated pipe X-ray system inspects the product before filling and clipping.

This early-stage inspection detects foreign bodies in the bulk material, preventing contamination from being enclosed in the final product.

The result is a significant reduction in downstream rejects and product loss.

Stage 2

Final Pack Inspection and Weight Control

After clipping, each pack is inspected using curtain-free X-ray technology, ensuring smooth transport while eliminating wear parts and improving line availability and OEE.

Integrated clip detection and blanking software accurately identifies metal clip positions, preventing false rejects while maintaining high detection sensitivity within the product.

An integrated dynamic checkweigher verifies net weight and provides real-time feedback to the vacuum filler and clipping machine, ensuring consistent portioning and reducing product giveaway.

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