Case Study

Fortress Technology's smart metal detector boosts efficiency for cheese supplier

The technology offers Vepo Cheese increased sensitivity and fewer false rejects.

Vepo Cheese in The Netherlands recently upgraded all of its production lines with a new incline layout comprising the hig sensitive Fortress Interceptor metal detectors. The identical systems reduce maintenance and spare part costs.

April 27, 2021

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Vepo Cheese, a Dutch cheesemaker that serves both national and international markets, recently chose Fortress Technology to upgrade its inspection process and introduce a more fail-safe solution for its growing production demands. The company outlined high performance, future-proofing and an independent reject system on each line as key criteria for new equipment in its Oudewater, Netherlands-based factory.

Vepo first examined Fortress' Stealth system — approaching Dutch manufacturer Jansen Control Systems to design the compact incline inspection lines, each integrated with a vertical packaging machine. However, the company soon realized the increased sensitivity of the Fortress Interceptor metal detector and the advantages it could bring for cheese applications.

A solution for conductive products

Cheese comes in many forms and has high conductivity, so it is one of the most challenging products for metal detection.

Inspecting wet products has for many years presented cheesemakers with several challenges. Due to the high moisture content, combined with minerals and salt, cheese — like metal — can be very conductive resulting in high level of product effect. Also, in many cases the product effect of cheese may lack a specific phase point as it moves through the aperture of a metal detector, adding to the challenge of overcoming the product effect.

The Interceptor overcomes the propensity of "wet" product effects that can drown out the signal — in particular, signals caused by a stainless-steel contaminant. Software algorithms make this possible by distinguishing between indicators specific to the product and those that flag anomalies. By singling out low-frequency signals, the Interceptor leaves the alert from stainless steel more readily identifiable in the higher-frequency range.

The result of separating these two readings is that any genuine contamination from metal is not swamped by product effect.

Maintaining automation efficiency

The ability to isolate rejected packs without interrupting the production flow was also crucial to Vepo. On previous inspection lines, the company did not have an automated reject system. If a contaminated pack was identified, the belt would stop. An operative would have to intervene,

remove the pack and restart the inspection process. This business interruption impacted productivity.

Reaffirming the importance of automation efficiency, Technical Operations Manager at Vepo, Hugo van Put comments: "The automated reject system gives us 100% control over production. There's less human involvement, therefore less risk of human error. This also lowers the risk of a metal contaminant slipping through the safety net. From an efficiency perspective, continuous production is one of the main benefits."

Noting that the one-day installation went smoothly with clear training support, van Put adds that false-positive rejects have also fallen since the systems was implemented.

"Fortress metal detectors are really sensitive," he says. "This helps us to feel confident that the risks of contaminants are minimal, with less chance of a food safety issue. Having the double readings within the Interceptor system also lowers the risk of false-positive rejects, which saves on food waste."

Using data for total traceability

Processing transparency is another advantage of the fully integrated packing system. Each metal detector features Contact Reporter software. Data from each packaging line is collated in a universal collection system, enabling quality assurance and production leaders to monitor processing and inspection performance from a centralized location. This automated record-keeper developed by Fortress also helps the factory to keep track of and record data for rejects, tests and process settings. Therefore, maintenance and spare parts costs are lower.

"We are extremely satisfied with the innovation and level of industry knowledge and support that Jansen and Fortress deliver between them," says van Put, commenting on the metal detector's installation — which went live in August 2019. "As a third-generation owner-managed business, we operate a modern and highly automated cheese production plant. Efficiency is integral to our production process. And the two teams understand exactly where we are coming from in terms of balancing product quality and enhancing operational productivity."

Eric Garr is the regional sales manager for Fortress Technology.

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