Metal Detection

Enhanced Due Diligence

Effective Metal Detection

Optimised System Control

Failsafe Operation

Maximised Product Security

Enhanced Due Diligence

Managing CCP's To Greater Effect

METTLER TOLEDO

Compliance With Industry Standards
Satisfying Your Due Diligence Needs

The GFSI standards which include BRC, IFS, SQF and FSSC 22000 are all based on the HACCP process. The starting point to meeting compliance with standards, regulations and legislation is conducting a HACCP audit then establishing necessary critical control points (CCP's) to mitigate the risks identified. Once the need for a metal detection system is established, then attention should focus on specifying the system correctly.

Protecting the welfare of your customers is important for the future of your business. As a food manufacturer you will be aware that if metal contaminated product reaches the consumer, the repercussions could be disastrous. Having effective metal detection systems in place can reduce risks and help your business in proving due diligence has been exercised in manufacturing processes.

More Than Just a Metal Detector

Although installing a metal detection system can reduce the risk, the opportunity for metal contamination reaching the end consumer is still too high in some cases. Research points to procedural and system failure rather than metal detector failure as the main cause. The "due diligence" enhancement from METTLER TOLEDO Safeline improves the level of control and management of the inspection system. This ensures the critical control point (CCP) delivers not only high performance metal detection but also, an increased level of failsafe functionality that improves the capability and performance of the complete system.

Meeting Standards, Minimising Costs

Requirements differ from standard to standard. To be sure of meeting compliance needs and maximising the opportunity to prove due diligence, a metal detection system should be correctly specified. A well designed system will include a high quality detector and an array of control equipment, sensing devices and failsafe systems.

Even the smallest product recalls can be costly. As the scale increases, so does the potential for damage to your business. Physical recall costs are relatively easy to calculate. Much more difficult to understand is the hidden cost of damage to your brand and hard earned reputation.

The Most Advanced Metal Detectors for Maximum Security

Advanced Metal Detector Search Head

Critical to the performance of any metal detection system is the actual search head. Profile metal detectors include the following features to maximise performance and process efficiency:

- **Condition Monitoring Technology**
  Provides advanced warning of adverse trends which could lead to the potential for downtime.
- **High-Security Operator Access and Event Logging**
  Access to all metal detection system controls are password protected via a highly secure, dual level user name and individual password login function. Data captured and displayed on-screen includes date, time and name of individual login-in.
- **Reject Bin Door Status Control**
  Ensures the reject bin 'lock' and 'unlock' functions are controlled through the metal detector operator interface via a password protected login access.

Pack In-feed Sensor

Essential for the optimum timing and operation of the reject device. Ensures the correct contaminated pack or packs are removed from the line regardless of the size and position of the contaminant in question.

Key Switch Reset

All of the failsafe system devices which result in the conveyor stopping should be linked to a key-operated reset switch linked to the restart button. Only authorised key holders should be permitted to restart the system after faults are identified and subsequently rectified.

Automatic Contaminated Pack Reject Mechanism

A choice of rejection mechanisms are available dependent on line speed, pack speed, pack weight, pack dimensions and the nature of the packaging material. Reject devices are normally pneumatically operated and controlled via input from both the metal detector and the pack infeed sensor.

Reject Confirmation Sensor

Some metal detection system fault conditions can allow metal contaminated product to pass through the system without being rejected. To minimise the risk of this, a reject confirmation system should be utilised. This takes the form of a sensor situated in or across the mouth of the reject bin. Upon detection of metal, the system can be configured to expect a further signal from the reject confirmation sensor that a pack or number of packs has been rejected. If confirmation is not received, the system will alarm and stop the conveyor.

Reject Check Sensor

The addition of a reject check sensor provides real-time monitoring of the pack in-feed sensor. This in turn monitors the performance of the reject check sensor itself. Therefore, the sensors constantly monitor each other. If failure of either sensor occurs, the system alarms within 3 packs of the failure allowing the necessary corrective action to be undertaken. By monitoring the health of these sensors, reject failure is averted. The reject check sensor also acts as a back-up check for the performance of the primary reject confirmation system.

Reject Bin With Bin-Locked Sensor

Metal detection systems that include an automatic reject device should include a lockable reject bin. In some scenarios, the reject bin can inadvertently be left unlocked leading to a risk of contaminated product being taken from the bin and placed back on the production line after the metal detector. Profile metal detectors include a unique bin locked feature that allows entry into the reject bin for a preset time only. If the bin is left unlocked and the preset open-time is exceeded, a signal is generated raising an alarm and shutting down the conveyor system.

Improving Security and Reliability
Reducing Overall Costs

The requirement to periodically test in-line metal detection systems is well documented. The frequency of tests required is directly linked to the ability to quarantine suspect products and conduct a re-inspection of any potentially contaminated product if an inspection system fails its scheduled test.

The cost of conducting tests can be high. Reducing the frequency of performance verification testing can result in considerable cost saving for manufacturers. Systems fitted with the METTLER TOLEDO Safeline Due Diligence Enhancement considerably increase the performance of the metal detector and its associated system to such an extent that the chances of an unidentified failure occurring are significantly reduced.

Increasing the level of failsafe monitoring provides the opportunity for manufacturers to review the frequency of the scheduled testing and make an informed, risk considered decision to reduce the frequency of testing without compromising performance or levels of security.

A System Checklist - Ensure Your System Makes the Grade

A well specified inspection System should include the following enhancements in order to maximise performance and ensure due diligence needs are met:-

- High Performance Metal Detection Search Head with Condition and Fault Monitoring Technology
- Fully Automatic Product Reject Mechanism
- Rejected Product Collection Bin with Lockable Door
- Pack or Product In-Feed Sensor
- Reject Confirmation System
- Reject Check System
- Bin Door Open / Unlocked Sensor
- Key-Operated System Reset Switch

HACCP METTLER TOLEDO

Making a Good System Even Better!

In addition to the features included in the METTLER TOLEDO Safeline standard Due Diligence Enhancement, system performance and security can be further improved by including the following optional extra sensors and warning systems:-

- Warning Beacon Stack
- Conveyor Belt Speed Encoder
- Bin Full Sensor
- Air Failure Switch

IPac Provides Further Support of Compliance

All metal detection systems are supplied with a METTLER TOLEDO IPac installation and performance verification package. This provides the necessary documentation to support compliance with standards, prove due diligence has been exercised and simplifies the task of meeting external auditor requirements.

www.mt.com/metaldetection

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