

# PRODUCTS ON HOLD?

Examining The Costs & Contingencies of Rework





# Contents

---

- Executive Summary ..... 3**
- A Real-World Scenario ..... 5**
- Doing Internal Rework ..... 7**
- Disposing of Product ..... 9**
- Hiring a Foreign Material Inspection Service..... 10**
- Conclusions..... 13**
- 5 Things to Look For in a Foreign Material Inspection Service ..... 14**
- About FlexXray..... 15**

# Executive Summary

---

What's the best way to manage a large amount of food product on hold due to possible foreign material contamination? In this white paper, we'll answer that question, beginning with a real-world example.

During a production run, the metal detector starts rejecting product and line inspection reveals that the root cause is a damaged blade from the grinder that began to break down and release metal fragments. As a precautionary measure, 100,000 pounds of product are put on hold. Of these, 25,000 pounds are particularly at risk of being contaminated with smaller fragments that an in-line metal detector wouldn't be able to detect.

Shipping finished product—except that which was rejected—is not a viable solution, as it will still expose the company to potential consumer complaints and product recall. A safer choice would be to reinspect the entire lot; however, this approach would cause severe disruption to the production schedule, and it might not even be possible to recalibrate the metal detector to the level of detection necessary to detect smaller metal fragments.



# Executive Summary

---

The restricted detection limits of in-line equipment for reinspection are particularly critical for the 25,000 pounds where the contamination is more likely to have gone undetected. A safer solution would be to dispose of this part altogether to reduce risk and the time needed for internal rework. That, however, would double production costs and lower the company's sustainability score. Furthermore, the additional ingredients and packaging supplies needed for the new production run may not be immediately available.

**A solution that avoids all these downsides is to contract with a third-party inspection and recovery company to unbox the affected product, reinspect it, remove those that are contaminated and repack those that are safe to ship.**

Typically, this operation is carried out in a few hours by skilled operators in a dedicated facility, using inspection systems with high detection capabilities.

## **With a third-party provider, food manufacturers can:**

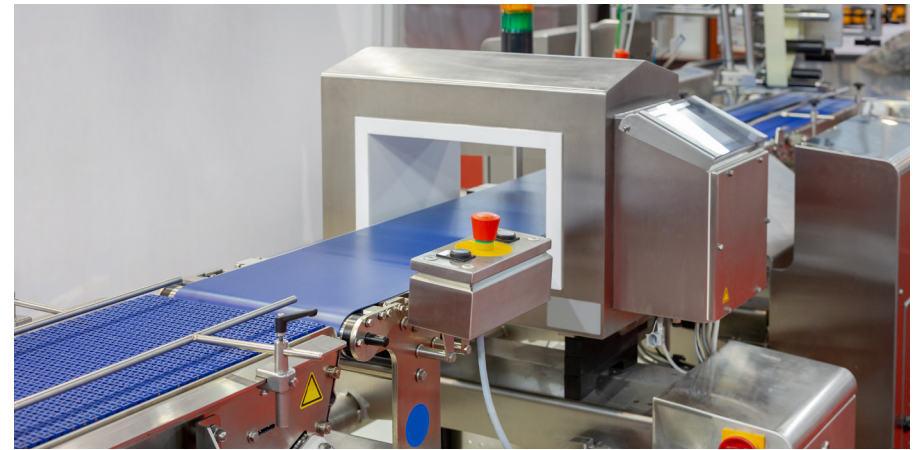
- Minimize the risk of shipping contaminated product
- Limit production downtime
- Keep most of the batch out of the landfill
- Gain insights into what caused the contamination
- Obtain an unbiased opinion in case of disputes with suppliers

# A Real-World Scenario

Right in the middle of a production run in a food manufacturing plant, the metal detector starts rejecting the product. Following the HACCP plan, the Food Safety and Quality Assurance team (FSQA) brackets the batch from when the issue might have started through the production line and sets aside all the product from the first reject onward, as they are at risk of being contaminated. The total is 75,000 pounds.

Once the production run is completed, the line is stopped for inspection. The cause of the contamination, as it turns out, is one of the blades of the grinder, which started to flake due to metal-on-metal contact. Typically, these incidents generate very small fragments at first, smaller than an in-line metal detector can detect. As the metal-on-metal contact continues and the blade becomes more damaged, the metal fragments also become larger.

Knowing this, the FSQA team decides to expand the bracket and hold all the product that was processed one hour prior to the first rejection. The amount of the affected lot is now 100,000 pounds.



## A producer has three options:



**Internal rework**



**Partial disposal**



**Hire an inspection and recovery service**



# What is the next step in this scenario?

---

The most straightforward option to minimize downtime and product loss would be to ship the finished product as usual, only excluding those that were rejected by the metal detector. However, such a decision would still expose the company to potential consumer complaints and recall, even though the risk of contamination with metal fragments that are large enough to pose a choking hazard may be low.

In this white paper, we'll explore the advantages and disadvantages of two other solutions—reworking the product internally and disposing of part of them—and make the case for a much better approach: hiring an inspection and recovery service.



# Doing Internal Rework

---



One way to mitigate risk would be to unbox the affected product, put it through the metal detector again to find the smaller metal fragments, and then get it ready for distribution.

**This option has two serious drawbacks.**

First, increased downtime. At this point, the safety and maintenance procedures following the discovery of the contamination (inspecting the line, replacing the damaged blade and removing any remaining fragments) have already disrupted the production schedule. As most food manufacturers do not have extra detection equipment or space in their facility, the only way to carry out rework internally would be to use the in-line metal detector, keeping the production line occupied for several more hours.

Other factors that might slow the process further would be the slower pace of reinspection (to ensure the maximum performance of the metal detector), and the lack of specific skills of line operators, who do not normally reinspect product for foreign material detection.

# Doing Internal Rework

---

Additionally, extended downtime will delay deliveries to customers with a cascade effect on the rest of the supply chain. When production finally resumes, it may be necessary to work extra hours and increase the time between routine machine inspections, resulting in higher labor costs and potential impacts on product quality and safety.

The slow pace of internal rework might also have tax implications at the end of the year, as the product on hold would be considered inventory, making it a tax liability rather than a stream of income.

The other issue with internal rework is its very efficacy. In-line detection equipment is calibrated based on the size and type of contaminant, line speed, type of product and packaging material. If there is a reason to believe that some smaller metal fragments were not picked up the first time, a second pass under the inspection tunnel is unlikely to find them. For reinspection to work, the sensitivity of the metal detector would have to be recalibrated to the level of detection not normally used in this equipment, which might not always be possible. For example, if a product has high conductivity, recalibrating the sensitivity might cause false positives.





# Disposing of Product



Internal rework might seem like a relatively easy task, but it is likely to become a disruptive activity that might still fail to minimize the risk of a product recall. Thinking back to the scenario at the beginning of this paper, its limited efficacy is particularly critical for the 25,000 pounds of product that is potentially contaminated with smaller metal fragments. For this, a safer solution would be to dispose of it altogether to reduce risk and the time needed for internal rework.

These advantages, however, come with significant costs. Reprocessing those 25,000 pounds will effectively double production costs, with the addition of hauling and disposal charges. Following the same logic, throwing away and reprocessing a large amount of food will double its environmental costs in terms of GHG emissions, with a negative impact on the company's sustainability score and metrics.

The new run will also require extra ingredients and packaging materials, which may not be in stock or readily available from suppliers. In the end, opting for this solution might not even help production resume sooner.

# Hiring a Foreign Material Inspection Service



**Another option is to have the rework done by a foreign material inspection and recovery company.**

**This would work in four steps:**

1. The manufacturer sends in a sample of the product that needs to be tested, along with a list of contaminants that could be found in the product.
2. Once it has been determined that the contaminant can be found, the product is sent to the facility of the service provider.
3. The provider will then inspect all the product and pull out those that have been contaminated.
4. Any product not contaminated is available to be released to the market.

# The Benefits of External Inspection

---

Depending on the needs of the food manufacturer, the reinspection service might simply mark the contaminated product with red tape and dispose of it, or retrieve the foreign objects to be used for making corrective actions, either with issues with the supplier or issues in production.

Hiring an inspection service provider is a much better solution for various reasons. The rework is carried out by skilled operators in a dedicated facility, using medical-grade X-ray systems that can detect smaller fragments of foreign objects even with low-density materials such as plastic and bones. Additionally, most providers will be able to turn around a semi-load of product in as little as five hours.

In fact, the way a third-party inspection service is carried out is much more similar to an airport security check than food production: product is put through the X-ray tunnel at a slower pace, while an operator checks the items one by one on the screen, searching for any possible foreign objects.





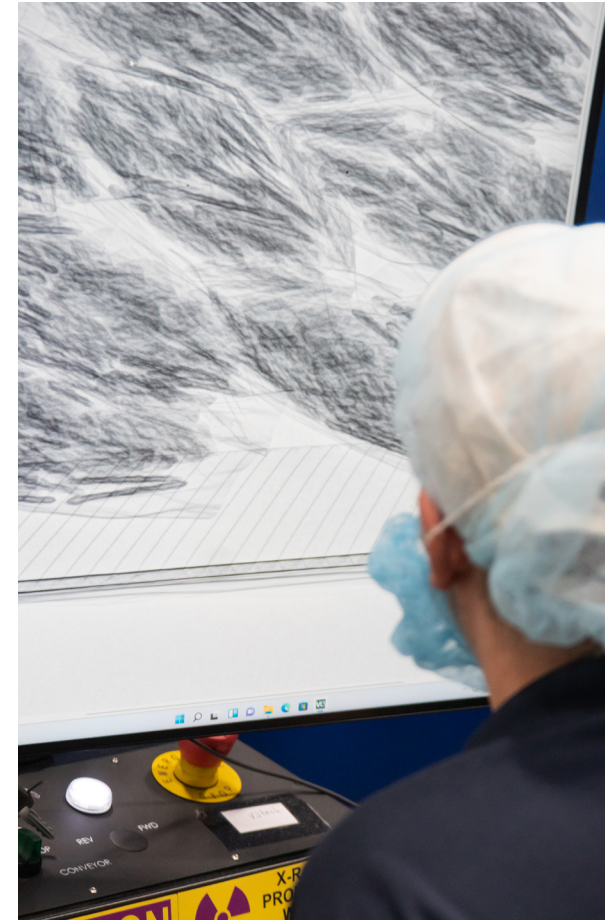
# External Inspection in Action

---

It will also help solve disputes with the suppliers. Let's suppose there is an instance where metal is discovered in breaded chicken tenders. Upon inspection, the FSQA team finds no issue with their production equipment and concludes the root cause is from the raw ingredients. However, the supplier rejects that conclusion. In this case, a third-party inspection service will be able to determine if the contaminant was found in the breading or in the meat.

## Hiring an external inspection service enables food manufacturers to:

- Minimize the risk of shipping contaminated product
- Resume production much more quickly
- Keep most of the batch out of the landfill, avoiding extra costs and a negative carbon score
- Gain insights on what caused the contamination in order to prevent similar incidents in the future



# Conclusions

---



When dealing with product on hold due to possible foreign material contamination, carrying out internal rework and disposing of part (or all) of the product are two equally unsatisfactory solutions. While the former will cause prolonged downtime with a negative impact on the production schedule, labor costs and relationships with customers, the latter will erode the company's profit margins and stymie its sustainability efforts. More importantly, neither of these solutions is guaranteed to minimize the risk of sending contaminated product to the market.

A third-party inspection and recovery service will be able to find more and smaller contaminants in less time, thereby preventing perfectly safe products from going to waste.

However, the best moment to prepare for an emergency is before it happens. Our advice to food companies is to start looking for a reinspection provider today, even if they are not currently dealing with a foreign material contamination crisis. Preparing ahead of time will speed up the onboarding process once the need inevitably arises.

# 5 Things to Look For in a Foreign Material Inspection Service

The ideal reinspection provider must be **fast, accurate and prevent microbiological contamination of products during rework**. There are five must-have requirements that food manufacturers should expect.



1. Fast turnaround time for rework, within five hours or less



2. Medical-grade X-ray technology to guarantee higher detection capabilities



3. Variety of additional services, such as package re-bundling, reporting and temperature-controlled facilities



4. Track record of successful reworks with different food products and contaminants



5. USDA and FDA-registered facilities that comply with Good Manufacturing Practices and food safety regulations





FlexXray is North America's leading foreign material inspection company and your partner in food safety. Our custom-built direct X-ray technology detects issues before products go to market, saving companies like yours millions of dollars each year. We inspect for contaminants and foreign materials, including: metal, plastic, rubber, gasket and bone.

Based in Arlington, Texas, we serve the largest food companies across the United States. We offer inspection solutions at our USDA-registered and temperature-controlled facilities or at your facility.

---

1.817.803.2659 | [info@flexxray.com](mailto:info@flexxray.com)



Arlington, TX | Aurora, IL | Fort Mill, SC | Vineland, NJ