# ADVANCED DETECTION SYSTEMS
The Need for Metal Detection

When companies discuss metal detection requirements, it is often from a business perspective. In the food industry, product purity and the protection of processing equipment are the primary reasons for metal detection. In the industrial, mining, and aggregate world, the protection of downstream equipment, grinders, extruders, and crushers is paramount and product purity is a convenient after-effect. Regardless of the specific industry, lack of metal detection brings an ugly and potentially harmful aspect to light.

The automation of the food processing industry guarantees that the food we eat will come in contact with be handled by various types of equipment, from automated pickers in the field, to conveyance, to processing and packaging equipment. Inevitably, equipment wears down and sometimes breaks, allowing for contaminants to enter the product stream and eventually find its way into our packaged goods.

Here are some examples of contaminants that ADS metal detectors discovered in our customers' products. Without metal detection, these harmful pieces of metal could very easily have ended up in your food.
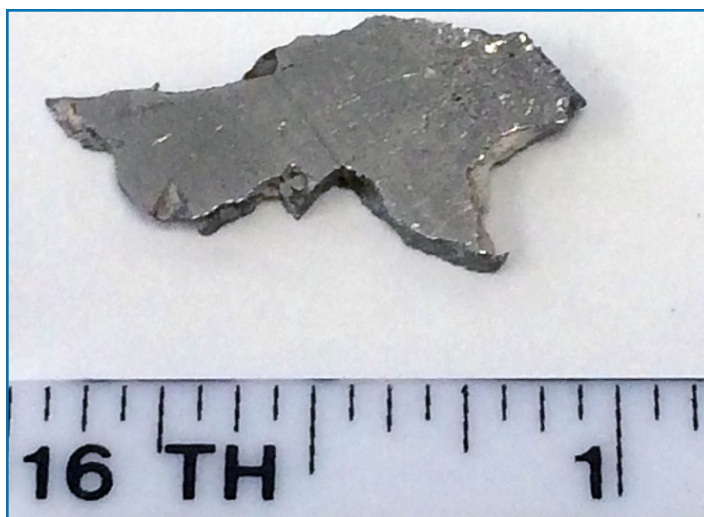
This piece of stainless steel was taken from a shelf-ready retail food package. The detector was triggered, and the box was pulled from the product stream and examined. This razor-sharp shrapnel is a piece of a liner from a shaker tray used to process granulated products such as corn, grain, and nuts. is one Interestingly, utilizing this piece of metal,

the producer was able to locate the source of the problem and replace the equipment. Fortunately, all of the broken pieces were accounted for and no recall of product was required.

This is a piece of stainless steel extruding screen, used in the production of cheese. This particular piece of steel was removed from a customer's product during the setup of a new metal detector. The screen fragmented as a result of the cheese being too cold and pushed too hard through the extruder, resulting in the fracturing of the screen at one of the mounting points. Fortunately, the ProScan Max II metal detector was able to detect this piece without difficulty, the screen was removed and the pieces reassembled like a jigsaw puzzle and accounted for. The producer destroyed the product that contained the metal, and revised their production process to prevent this from happening in the future.

Although it's easy to get caught up in the negative "what-if" possibilities of these contaminants finding their way to the consumer, there is a positive side as well – these dangerous contaminants were found, removed, and the processes changed to prevent it happening again. In both of these instances, the customer acknowledged that the metal detector paid for itself many times over with a single discovery of metal. As a consumer, it is reassuring to know that companies are making the extra effort to ensure their product purity is of the highest standard. As a manufacturer of metal detection equipment, Advanced Detection Systems is proud of

our equipment's ability to meet those stringent food safety requirements!

Although product purity is the ultimate priority in food processing, the protection of equipment in the industrial and mining industries is just as important. Grinders and shredders in the plastics and recycling industries are vulnerable to metal contaminants, and can cause thousands of dollars in damage.

This is what's left of a 3-inch steel bolt that made its way through a roller mill. Unfortunately, the customer didn't use metal detection until after this bolt damaged the mill and caused thousands of dollars in damage. After repairs, loss of production time, and man hours to repair the equipment, the damages from this incident exceeded the cost of a new metal detector!

Metal contamination doesn't always have to be on the scale of a 3-inch bolt. In many instances, the contaminants are very small, but can still problematic.
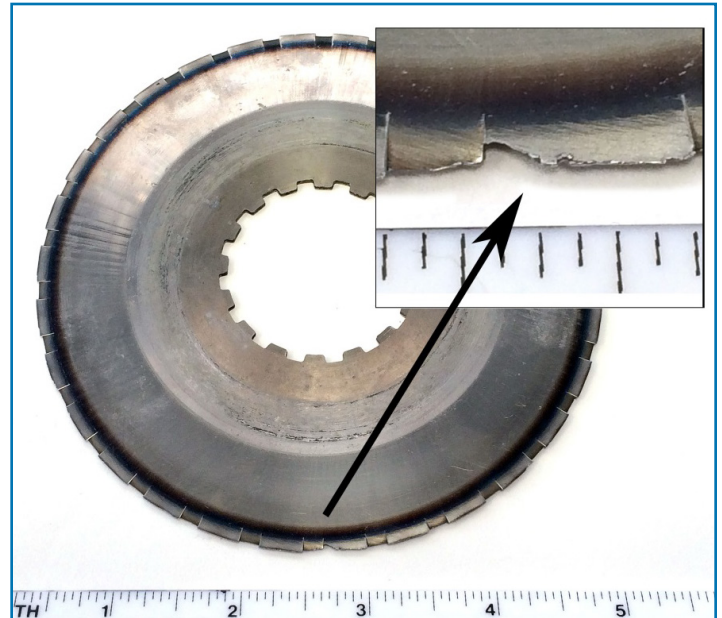
This cutting wheel from a food processing facility has struck a hard contaminant and subsequently damaged the blade. A close-up inspection indicates that pieces of the cutting blade are fractured and are lost within the product, including whatever contaminant that caused the fracture. In this instance, both product purity, consumer safety, and the protection of downstream equipment were compromised. Had a metal detector been in place, the offending contaminant would have been located and the damage to the wheel never occurred, thereby negating the concern for product purity and consumer safety.

Advanced Detection Systems offers a variety of metal detection solutions to meet your specific application requirements. Each application is custom-engineered to prevent incidents like those shown here, from costing your organization time, money, man-hours, and reputation.

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