

Industrial metal detectors are used in the pharmaceutical, food, beverage, textile, plastics, chemicals, and packaging industries. Contamination of food by metal shards from broken processing machinery during manufacture is a major safety issue in the food industry. Metal detectors are not new to food processors. Metal contamination has always been a major problem. Sources include mechanic's tools and pieces broken off equipment, tags and staples carried into the plant with ingredients, and personal effects like jewelry and pens. Companies have installed systems in their plants for years to protect expensive production equipment from damage and to produce metal-free finished products.

WHY SHOULD A FOOD PROCESSOR CONSIDER A METAL DETECTOR? SOME OF THE REASONS ARE:

- 1. Product safety
- 2. Equipment protection
- 3. Contract (customer) requirement
- 4. Regulatory compliance

Metal detectors are installed in three basic configurations: pipeline, conveyor and free-fall. Pipeline detectors are used for any product conveyed in tubes or pipe.

SENSITIVITY:

Sensitivity usually refers to the smallest sphere of a particular metal that the unit can detect as the sphere passes through the center of the metal detector aperture. The sensitivity of a metal detector is adjustable, and the user generally sets it to the largest setting that will detect the expected contaminants.

Technical Specifications	
Model	TARGET MICRO SCAN METAL DETECTOR
Detection Method	Balanced Coil Principle
Detection Ability	Ferrous, Non Ferrous and Stainless Steel metal contaminations.
Detection Adjustment	Sensitivity, Phase Angle, Timers
Tunnel Width & Height	Depends up on the Products (Custom Build)
Annunciation	Audio (Buzzer) & Visual (LED)
Belt Speed	Adjustable
Power Source	AC110V/220V 50-60HZ
Rated Output	Appr. 140W



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SHAPE OF METAL CONTAMINANT:

As long as the smallest dimension of the metal contaminant is larger than the spherical sensitivity of the detector, shape is not a concern. However, for thin pieces of metal, such as a piece of wire where the diameter is smaller than the spherical sensitivity of the detector, the orientation of the piece in the product will affect its likelihood of detection. For example, ferrous wire is easiest to detect when it is in line with the direction of movement and most difficult to detect when it is across the direction of movement. Stainless steel and non-ferrous wire are just the opposite.

HOW TO DECIDE THE APERTURE DIMENSIONS:

A small aperture is more sensitive than a large aperture, and the sensitivity increases from the center to the corners. Therefore, for best performance, the aperture should be sized as close as possible to the dimensions of the largest product that will pass through it.

REJECTION MECHANISMS:

The purpose of rejection mechanisms is to remove the contaminants from the product/process stream. The mechanism must be designed to remove 100 percent of the detected contaminants along with a minimum amount of saleable product. The contaminants are removed and stored in a manner that eliminates any possibility of their being reintroduced into the product or process stream.

TARGET MICRO SCAN METAL DETECTOR



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an ISO 9001-2000 Certified Company

MICRO SCAN METAL DETECTOR:

TARGET MICRO SCAN Metal Detection Systems are designed to meet the strict demands of the bulk food and packaged food industries monitoring for metal impurities. TARGET INNOVATIONS MICRO SCAN metal detectors are custom designed for use in a wide range of conveyorized applications including loose raw materials, processed products or packaged, finished products. Micro Scan metal detectors with a single frequency are suitable for dry and wet environments offering cost-effective metal detection. Our metal detectors are suitable for the inspection of large products and packs such as bulk bags, sacks and boxes.

HOW OUR METAL DETECTOR WORKS:

TARGET MICRO SCAN metal detectors use a balanced, three-coil, system to detect small particles of non-ferrous and stainless steel. The coils are wound on a non-metallic frame, each parallel with the other. The center coil is connected to a high frequency radio transmitter. Coils on either side of the transmitter coil are receivers. As these two coils are identical and placed the same distance from the transmitter, they receive the same signal and produce an identical output voltage. When the coils are connected in opposition, the output is cancelled, resulting in a zero value. If a metal object passes through the metal detector, the detector experiences a change in the field based on the magnetic and electrical properties of the metal object. The state of balance is lost and the output from the coils is no longer zero. It is this phenomenon that is used to detect metal. All types of metals (i.e. non-ferrous, ferrous and stainless) are detected.

The metal detector is integrated with a conveyor. Metal passing through the metal detector unit will be detected and optional devices can be used to reject the contaminated product. Metal detectors can be integrated with existing production lines or provided with a conveyor specifically matched to the requirements. Basic systems can be built with a simple stop alarm whilst more sophisticated designs can include failsafe systems to ensure contaminated product is rejected.

AUTOMATIC REJECT DEVICES:

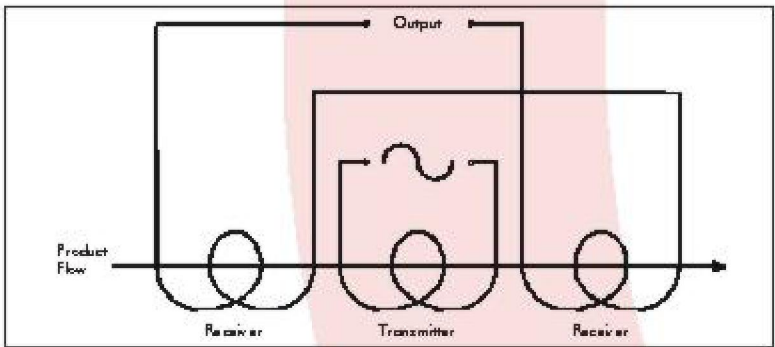
Automatic rejection systems are designed by Target Innovations as an integral part of the conveyor system for scanning metal contaminations in products. The purpose of rejection mechanisms is to remove the contaminants from the product/process stream. A wide variety of rejection systems can be used on any conveyor, to insure contaminated product is removed without disruption to product flow. Our compact and more accurate design assures that contaminated product will be automatically rejected without impeding product flow. The contaminants are removed and stored in a manner that eliminates any possibility of their being reintroduced into the product or process stream.

TARGET MICRO SCAN METAL DETECTORS ENSURES THAT :

Continuous Product flow shall be allowed for evenly spaced products; this will minimize the number of products rejected when metal has been detected.

- Reject mechanism shall be fast enough and strong enough to remove product without disturbing product flow
- Conveyor Belting should be matched and designed to environment and reject concerns

Proper product transfer between metal detector conveyor and existing conveyors



Simple Testing Procedure for HACCP and Quality Assurance:

When testing a conveyor system normal product flow should be maintained. This will allow for a realistic test of all aspects of the conveyor system. A test package should be created with an imbedded metal test piece, such that it is located in the center of the aperture when passing through the metal detector. This test package should be introduced into regular flow before the metal detector conveyor, and allowed to be automatically rejected by the reject mechanism.

Features:

- Detects Ferrous, Non-Ferrous and Stainless Steel
- The whole stainless steel structure with detecting head by adopting advanced electric and mechanical designing technique which is very durable
- Digital Signal Processor (Digital Models)
- Logging Capability to a Printer for HACCP and ISO 9001 Documentation
- Product Type Memory (100 Different Products Can Be Stored in Memory)
- LCD Display and very friendly user interface.
- Adjustable conveyor speed from 10m/min to 25m/min
- Simple conveyor structure makes it convenient to disassemble and assemble
- Fairly good waterproof ability.
- Phase discriminating technology that can effectively arrest the product effect.
- Steady Performance.
- Stainless steel structure for Special products.
- Advanced mechanical design

ADVANTAGE OVER OTHER METAL DETECTORS:

- High sensitivity of ferrous, especially in stainless steel, copper, aluminum, tin foil etc.
- Special designed phase adjust knob. Minimize the effect of electric of the product.
- Special specification of the detector can be made by requirement. Operating convenient, conveyor apparatus can be selected links to production line.

PRODUCT APPLICATIONS:

- Food ingredients and Packets
- Packed Spices.
- Food Processing.
- Pharmaceuticals.
- Dough Feeding
- Plastic Recycling
- Bulk Drugs.
- Namkeens.
- Rubber Calendaring.
- Dehydrated Materials.



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