METAL DETECTION SYSTEMS

FOR LIQUID & VISCOUS PRODUCTS

THS/PL21 SERIES
FOR LIQUID AND VISCOUS PRODUCTS

THS/PLV-MEAT21 SERIES FOR APPLICATIONS
ON MEAT VACUUM FILLER MACHINES

THS/PLV21 SERIES FOR LIQUID AND VISCOUS PRODUCTS

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Quality control at its finest

The **CEIA Pipeline Integrated Systems** are especially designed for the inspection of liquid, and viscous products and the elimination of any contaminating metals, whether magnetic, non-magnetic or stainless-steel.

THE CEIA INTEGRATED SYSTEMS are especially designed for metal contaminant detection in products transported by pipeline especially meat, soup, preserves...

The carefully selected materials used in construction do not interact with food products, and thus do not modify or alter their composition. The design of these systems incorporates a fast reject valve drive response time to detect and reject the contaminant without slowing down the product flow.

The construction guarantees quick, easy cleaning of the components that are in contact with the product. The technological choices made by CEIA allow the parts in contact with the product to be disassembled and maintained in a short time.

The systems operate in fail-safe mode, thus avoiding the risk of contaminants passing through even when the system is deactivated or when the electrical power supply is interrupted.

MULTI-SPECTRUM TECHNOLOGY

EXCLUSIVELY DEVELOPED BY CEIA, this is a **unique metal detection technology that both optimizes sensitivity to all metal contaminants and minimizes product effect** in a very wide range of possible products.

By recognizing the different frequency response of conductive products and metals, this **innovative technology cancels product effect and maintains high performance levels** for all types of metal contaminants, both magnetic and non-magnetic.

EXCLUSIVE AUTO-LEARN SYSTEM

- The **AUTO-LEARN** system for food products provides **simultaneous maximum sensitivity to all metals starting from a single learning transit.**
- The system allows **optimization of the detection sensitivity to all metals with the maximum speed and precision**, equivalent to hundreds of conventional learning transits: these results in levels of precision and efficiency have never been obtained before.
- For products with changing or varying product signal after autolearn, the **THS/21 Series includes an advanced autolearn function** that runs in the background, to capture this product signal during normal production while still detecting metal. When the recording is ended, the operator has the option to analyze the data immediately, or wait until a later time when the line is stopped so as not to interrupt production.
- **The data that was added during the background autolearn is analyzed**, along with the original autolearn data, and the detection parameters are modified in order to also cancel the varying product signal.

THS/PL21 *SERIES*

THS/PLV21 *SERIES*

THS/PLV-MEAT21 *SERIES*

CEIA reserves the right to make changes, at any moment and without notice, to the models (including programming), their accessories and options, to the prices and conditions of sale.

THS/PL21 SERIES

PASS-THROUGH INTEGRATED SYSTEM FOR **LIQUID** AND **VISCOUS PRODUCTS**

KEY FEATURES

- Detection of magnetic, non-magnetic and stainless steel metal contaminants
- Very high sensitivity.
  Multi-spectrum technology available
- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction to IP66 and IP69K protection levels
- High immunity to environmental interference
- Control Panels are listed according to UL 508A and CSA-C22.2 No. 14-05
- Easy to clean and inspect

THS/PLH21 *MODEL WITH INTEGRATED TWISTING EXTENSION KIT*

ADVANCED AUTOTEST FUNCTION

ROBUST
AISI 316L stainless steel construction to **IP66** and **IP69K** protection levels

MINIMUM INSTALLATION SPACE REQUIRED

WIDE RANGE OF FLANGES
for connection to bagging and clipping machines

STANDARD PIPE SIZES AVAILABLE TO SUIT ALL APPLICATIONS

LOCAL AND ADVANCED CONNECTIVITY

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THS/PLV21 SERIES

PASS-THROUGH WITH **EJECTION VALVE** INTEGRATED SYSTEM FOR **LIQUID** AND **VISCOUS PRODUCTS**

KEY FEATURES

- Detection and ejection of magnetic, non-magnetic and stainless steel metal contaminants
- Very high sensitivity.
  Multi-spectrum technology available
- Wide range of flanges available for connection to bagging and clipping machines
- Very High Reliability
- Maximum Operator Safety

PRODUCT TRANSIT PIPE FEATURES

- FDA and EC 1935/2004 compliant
- High resistance to food industry C.I.P.
- Flanges integrated with pipe for best cleanability

***THS/PLV21-C** MODEL DESIGNED TO BE MOUNTED ON CUSTOM STRUCTURES, WITHOUT THE REJECTED MATERIAL BIN*

FAST ACTING REJECT DEVICE
for a limited quantity of rejected product

EASY TO CLEAN AND INSPECT

ROBUST
AISI 316L stainless steel construction to **IP66** and **IP69K** protection levels

STANDARD PIPE SIZES AVAILABLE TO SUIT ALL APPLICATIONS

CONTROL PANELS LISTED ACCORDING TO UL 508A AND CSA-C22.2 NO. 14-05

LOCAL AND ADVANCED CONNECTIVITY

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THS/PLV-MEAT21 SERIES

PASS-THROUGH WITH **EJECTION VALVE** INTEGRATED SYSTEM FOR **APPLICATIONS ON MEAT VACUUM FILLER MACHINES**

KEY FEATURES

- Detection and ejection of magnetic, non-magnetic and stainless steel metal contaminants
- Very high sensitivity. Multi-spectrum technology available
- High immunity to environmental interference
- Easy to clean and inspect

The THS/PLV-Meat21 series is design to operate in Harsh conditions

- Use of high pressure levels
- High risk of impact during movement and handling operations
- Strong vibration working conditions due to the filler and clipper machines
- Hard wash down conditions

ALARM SIGNALLING
High-visibility LED with IP69K water protection. The cap is completely filled with resin, which ensures mechanical resistance and water tightness.

VALVE EXTRACTOR TOOL

FAST ACTING REJECT DEVICE
for a limited quantity of rejected product

STANDARD PIPE SIZES AVAILABLE TO SUIT ALL APPLICATIONS

ROBUST
AISI 316L stainless steel construction to **IP69K** protection level

RESET AND EMERGENCY BUTTON
Integrated in a Stainless Steel waterproof box in order to reduce possible effects of dirt and to protect electrical cables.

STAINLESS STEEL CABINET
Completely watertight, the cabinet protects both pneumatic and electronic components.

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AUTOTEST AND **AUTO-QC™ TEST** FUNCTIONS

Industrial Metal Detectors for food application are usually equipped with basic diagnostic functions based on their emitter/receiver signals monitoring.

This type of diagnosis is not able to detect aging as well as thermal drift and other sources of minor deviations. Any of the above may result on a sensitivity reduction that could lead to non-detection of metal contamination.

THS/21 & **THS/MS21 SERIES** METAL DETECTORS ARE NATIVELY EQUIPPED WITH AN **ADVANCED AUTOTEST FUNCTION** ENSURING THE FOLLOWING FEATURES:

- **CONTINUOUS BACKGROUND REAL-TIME MONITORING** and **STABILIZATION** of the amplitude and phase response for each working frequency

- **CONTINUOUS COMPENSATION** of environmental and age-related changes

- **IMMEDIATE ALERTING** in case of permanent out of standard conditions

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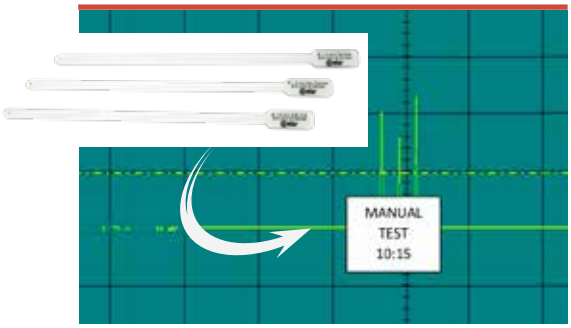
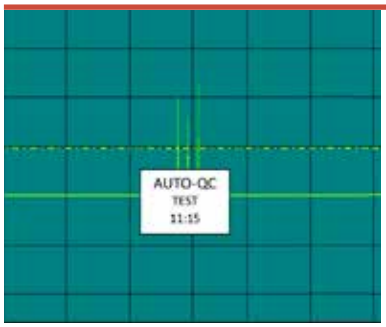
In addition to the AUTOTEST function, THS/21 and THS/MS21 detectors can be programmed so that **periodic verifications of the calibration are carried out automatically. This feature is called AUTO-QC™ TEST**.

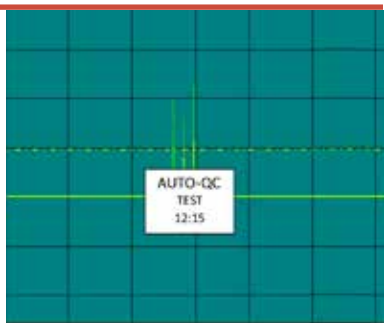
AUTO-QC™ TEST EXAMPLE

AT 10:15 A MANUAL TEST, after product setup, is requested during which the Metal Detector records the signals of three user-defined Test Samples.

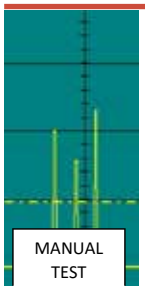


AT 11:15 AND 12:15 THE METAL DETECTOR PERFORMS TWO AUTO-QC TESTS, providing the previously recorded signal stimuli to the probe-emitter-receiver system and verifying the actual detection and product ejection (if applicable).





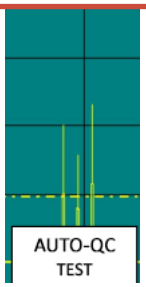
*The example below shows an **extract of the Metal Detector Events Buffer** relevant to a manual and automatic test:*




```
[015]   10/11/22 - 14:16:06     Test Passed
        Product: PRODUCT1       Fe diameter: 0.8        Amplitude(FE): 6.1 dB
        Name: USER04            Surname: USER04         Descript: USER04
        -066133-

[015]   10/11/22 - 14:16:07     Test Passed
        Product: PRODUCT1       Fe diameter: 0.8        Amplitude(NFE): 5.0 dB
        Name: USER04            Surname: USER04         Descript: USER04
        -036533-

[015]   10/11/22 - 14:16:08     Test Passed
        Product: PRODUCT1       Fe diameter: 0.8        Amplitude(SS): 7.2 dB
        Name: USER04            Surname: USER04         Descript: USER04
        -135178-
```




```
[058]   10/11/22 - 15:16:06     AUTO-QC Test Passed
        Product: PRODUCT1       Ej.Op.time: 0.102       Amplitude(FE): 6.1 dB
        -126135-

[058]   10/11/22 - 15:16:07     AUTO-QC Test Passed
        Product: PRODUCT1       Ej.Op.time: 0.105       Amplitude(NFE): 5.0 dB
        -156237-

[058]   10/11/22 - 15:16:08     AUTO-QC Test Passed
        Product: PRODUCT1       Ej.Op.time: 0.103       Amplitude(SS): 7.2 dB

        -033510-
```

AUTO-QC™ BENEFITS

- The **AUTO-QC TEST** allows the manual verification of calibration by the operator to be reduced or eliminated
- The **METAL DETECTOR** provides a programmable output that can be connected to the conveyor line stop during the AUTO-QC test to avoid product ejection and waste during automatic test
- **CEIA AUTO-QC TEST provides an effective calibration check along with a programmable 0 ÷ 100 % reduction of the manual verifications**, resulting in a corresponding reduction of:
  - LABOUR COST
  - ACCIDENTAL PRODUCT CONTAMINATION
  - PRODUCT WASTE

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