CEIA
INDUSTRIAL METAL DETECTION SYSTEMS

CEIA THS Metal Detection Systems offer detection, construction quality and reliability characteristics that make them the most suitable and effective solution to automatic elimination of metal contaminants.

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The founder of the company patents a microsensitive solid-state Metal Detector, which uses the first semiconductor devices available on the market. Used in the textile industry, it detects metal fragments which can accidentally find their way into the textiles being processed, thereby preventing damage to the manufacturing machinery and avoiding production delays.

CEIA is founded as a manufacturer of industrial Metal Detectors and ultrasonic cleaning machines for the gold and silversmith sector.

The growing demand for security at entrances to airports and banks stimulates CEIA to start a major research and development program. This leads CEIA to become a major producer of walk-through and portable Metal Detectors for the detection of weapons carried on a person.

CEIA patents the first walk-through Metal Detector using a column type antenna and helicoidal windings.

CEIA begins development and production of solid-state induction generators for no-contact heat treatment of metals.
Research and Technology

1994
CEIA commences production of the new THS series of industrial Metal Detectors, characterized by state-of-the-art performance and standard all-stainless-steel construction.

1996
The CEIA Quality System is awarded ISO 9001 Certification.

1997
CEIA develops technology for the humanitarian and military demining sectors at the request of several international agencies.

1998
In November, CEIA’s "LACE" laboratory is accredited as a "competent body in the matter of electromagnetic compatibility" by the Minister for Communications, a recognition that it still holds today.

2001
CEIA introduces the THS/FB, an integrated system for the inspection of food products which complies with the most stringent requirements of functionality, sanitation, compact size and reliability.
CEIA is a manufacturing company specialized in the design, engineering and production of Metal Detectors

The company presents the THS/PH21 Metal Detector, designed to comply fully with FDA regulations regarding criteria of construction and of electronic management of records and signatures.

CEIA is selected to be the major supplier of Enhanced Metal Detectors (EMDs) for the majority of airports in North America.

Through an alliance with CEIA S.p.A., Heat and Control, Inc. (Hayward, CA) provides exclusive sales and service for CEIA industrial Metal Detectors throughout North, Central and South America.

The company presents the best Metal Detection Solution for compliance with FDA Title 21CFR110 requirements on manufacturing, packing or storing food for human consumption. **CEIA THS 21 Metal Detection Systems** offer detection, construction quality and reliability characteristics that make them the most suitable and effective solution to automatic elimination of metal contaminants.

The new **CEIA THS 21 Conveyor Inspection Systems** revolutionize the food market with available multi-spectrum technology, maximum flexibility, enterprise class performance and breakthrough value.
CEIA THS METAL DETECTORS
for maximum product safety

CEIA THS Metal Detectors detect metal contaminants accidentally present in industrial products with levels of sensitivity, immunity to interference and response speeds exceeding the strictest quality control standards.

THS Detectors allow the interception of magnetic and non-magnetic metals, including high-resistivity stainless steel. An automatic tracking function cancels out any variation in product effect caused by the product under inspection.

The THS Metal Detector’s wide bandwidth allows maximum sensitivity operation at both high and low transit speeds. This line of metal detectors has been adopted by the leading companies in the food, chemical, textile and pharmaceutical fields.
CEIA is a manufacturing company specialized in the design, engineering and production of Metal Detectors. CEIA has more than 40 years of experience, 14 generations of Metal Detectors and more than 50 national and international patents on their design and construction.

CEIA’s approach to the development of its detectors has been to employ the most advanced electronic and mechanical technologies: Surface Mount Technology (SMT), digital signal analysis, software upgrades capability and the use of high-quality materials.

**Multi-Spectrum Technology for extreme compensation of the product effect**

Consistently accurate FDA Title 21 compliant inspection for all types of food products is now possible with CEIA THS/MS21 Metal Detectors. Proprietary CEIA detection technology delivers the industry’s highest sensitivity to all magnetic and non-magnetic metals. CEIA THS/MS21 detectors are all IP69K rated for high pressure and high temperature wash down.

CEIA’s simple **Global Auto-Learn system selects and displays the optimal sensitivity setting to eliminate guesswork and inspection errors**. During operation, the detector continuously tests and recalibrates itself to compensate for product effect conditions. Data for every detection and ejection action are saved for inspection, programming and functional testing, and to certify production quality. Combined with memory for over 500 products, this provides fast, error-free changeovers.

**Bluetooth connectivity** facilitates programming and data collection. **Ethernet connection** is also available.

NEW GLOBAL AUTO-LEARN SYSTEM PROVIDES SIMULTANEOUS MAXIMUM SENSITIVITY TO ALL METALS STARTING FROM A SINGLE LEARNING TRANSIT
CEIA THS
INDUSTRIAL METAL DETECTION SYSTEMS

ENHANCED METAL DETECTORS FOR QUALITY CONTROL

THS/21 & THS/MS21

METAL DETECTOR WITH MULTI-SPECTRUM TECHNOLOGY

- Ultra high sensitivity to all magnetic and non-magnetic metals, including stainless steel
- Multi-spectrum technology for extreme compensation of the product effect
- Continuous Auto-Test function ensuring maximum Production Safety
- Continuous embedded Self-Calibration control
- High immunity to environmental interference
- AISI 316L stainless steel construction to IP66 and IP69K protection levels
- Control Panels are listed according to UL 508A and CSA-C22.2 No. 14-05
- Automatic learning & tracking of product effect
- 500 product data memories, selectable by local programming or network software
- 5000 storable events
- High-definition graphic display
- Local programming: 16 keys, 3 with double function
- Quick Access key for fast programming of user parameters

THS/G21 & THS/GMS21

METAL DETECTOR FOR FREE-FALLING PRODUCT APPLICATIONS

THE THS/G21 IS DESIGNED TO INSPECT POWDERS, LIQUIDS, GRANULES AND OTHER LOOSE MATERIALS IN PIPES

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CEIA THS 21 Conveyor Inspection Systems satisfy the most stringent requirements for functionality, compact construction, accuracy and reliability of response in dealing with accidental contamination in food products.

**CEIA THS/FBB**

**FLAT CONVEYOR BELT SYSTEM**
- Conveyor belt integrated with Metal Detector and ejection system
- Structure and components in AISI 304 stainless steel and food-compatible plastic parts (FDA, USDA compliant)
- Digitally-adjustable belt speed
- High immunity to environmental interference
- Air blast or pusher ram ejection system with belt stop
- Easy to clean and inspect
- High reliability motor driver with stainless steel protection cover and high pull capability

**CEIA THS/MBB**

**MODULAR CONVEYOR BELT SYSTEM**
- Modular conveyor belt integrated with Metal Detector and ejection system
- Structure and components in AISI 304 stainless steel and food-compatible plastic parts (FDA, USDA compliant)
- Digitally-adjustable belt speed
- High immunity to environmental interference
- Air blast or pusher ram ejection system with belt stop
- High reliability motor driver with stainless steel protection cover and high pull capability

**EASY TO CLEAN AND INSPECT:**
**THE CONVEYOR BELT CAN BE REMOVED WITHOUT ANY TOOLS**

**STRUCTURE AND COMPONENTS IN AISI 304 STAINLESS STEEL AND FOOD-COMPATIBLE PLASTIC PARTS (FDA, USDA COMPLIANT)**

**STANDARD BIN WITH TRANSPARENT WINDOW AND SECURITY LOCK**

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INTEGRATED SYSTEMS WITH METAL DETECTOR AND EJECTION VALVE

THS/PLMS21 & THS/PL21E
FOR LIQUID AND VISCOUS PRODUCTS
- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction to IP66 and IP69K protection levels (THS/PLMS21)
- Easy to clean and inspect
- Minimum installation space required
- Wide range of flanges available for connection to bagging and clipping machines

THS/PLMS21 & THS/PL21E
INTEGRATED SYSTEM WITH EJECTION VALVE FOR MEAT
- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction to IP66 and IP69K protection levels (THS/PLMS21)
- Rapid electrical and mechanical connection system for bagging and clipping machines
- Wide range of flanges available for connection to bagging and clipping machines

THS/PLVMS21 & THS/PLV21E
INTEGRATED SYSTEM WITH EJECTION VALVE FOR LIQUID AND VISCIOUS PRODUCTS
- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction
- Easy to clean and inspect

THS/FFV21 - FFVMS21 & THS/FFV21E
INTEGRATED SYSTEM WITH EJECTION VALVE FOR GRANULAR AND POWDER PRODUCTS
- Standard pipe sizes available to suit all applications
- AISI 316L stainless steel construction
- Fast and efficient: achieve fast ejection speeds and accuracy, with the minimum amount of rejected product
- Pipe in antistatic material, certified for contact with food products
CEIA THS METAL DETECTORS
Main advantages

Detection
- **High sensitivity** to ferrous, non-ferrous and stainless steel metals
- **Sensitivity independent** of the product speed
- **State-of-the-art autolearn function** for product effect compensation:
  - Multi-band technology
  - Two-step digital procedure
  - Highly accurate and repeatable analysis

Automatic product effect compensation
To detect even the smallest metal fragments, this procedure automatically acquires product characteristics and compensates for product effect variations

Cleanability
- Construction in FDA and USDA approved materials
- Detection head in AISI 316L
- Smooth surfaces
- IP 69K compliant

Reliability
- Extended mechanical life due to **robust construction and careful material selection**
- **Very high MTBF** (mean time between failure) obtained through Large Scale Integration devices and **150 hours burn-in testing**
- Protection of the electronic boards via high thickness **conformal coating**

Conformity
- Control Panels for THS are listed according to **UL 508A** and **CSA-C22.2 No. 14-05**

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AUTOMATED MECHANICAL PRODUCTION

Automated welding robot ensures a very high production quality as well as very high reliability and repeatability of the final equipment.
RESEARCH and TECHNOLOGY

CEIA maintains its dedication to cutting edge electromagnetic research. Nearly 20% of CEIA’s staff is focused on researching tomorrow’s metal detection technology.

The quality and reliability levels of CEIA equipment are recognized throughout the world by Private Companies and Governmental Institutions, who have chosen it following stringent comparative testing. This objective has been achieved by using the most advanced technology in all phases of production.

CEIA creates breakthrough value for its customers by combining state of the art materials, advanced components and extensive manufacturing automation. This provides superior quality, reliability and consistent performance to CEIA products.
Internal view of the shielded anechoic chamber in LACE facility
CEIA has been conducting electromagnetic compatibility measurements on equipment it manufactures since 1987, and since 1994 has been recognized as a “highly-qualified laboratory authorized by the Ministry for Universities and Scientific Research to carry out research of an applied nature on behalf of small and medium-sized businesses”.

Since 2007, the LACE Laboratory has been recognized by the EU as Notified Body in the field of electromagnetic Compatibility (Notified Body number: 2046)

LACE can carry out emission and immunity measurements within the following sectors:
- Industrial equipment
- Medical and scientific equipment
- Information technology equipment
- Electrical appliances and electrical equipment for household use
- Illumination equipment and fluorescent lights
CEIA’s Quality System extends throughout the company, from the design stage through production, quality control and after-sales service.

CEIA equipment has a strong reputation for reliability and maintenance free operation. This is achieved through extensive factory testing for product conformance to strict internal standards. Detailed adherence to ISO 9001 Standards also provides the traceability to support clients for many years after their equipment goes out of production.

The tight tolerances employed during the factory acceptance test produce such consistent metal detectors that field calibration is not required.

CEIA follows ISO 9001 Standard Guidelines, for which it has been certified since 1996.
FACTORY ACCEPTANCE TEST

CEIA SUPPLIES METROLOGICAL SAMPLES CERTIFIED FOR DIAMETER AND ELECTROMAGNETIC SIGNAL ISSUED BY LACE, CEIA’S ELECTROMAGNETIC COMPATIBILITY LABORATORY

METROLOGICAL TEST SAMPLES

MANAGEMENT SOFTWARE

THS PRODUCTION FOR STATISTICAL AND OPERATIONAL MANAGEMENT OF NETWORKED THS SYSTEMS
Applications

FOOD INDUSTRY

- snack foods
- biscuits/crackers
- candy confectionery
- bread and pizza
- meat
- pasta
- rice
- mills
- powdered beverages
- frozen vegetables
- frozen fruits
- fluid milk
- butter
- cheese
- ice cream
- preserved foods/
  - in oil/pickled
- coffee
- pet foods
- frozen foods
- poultry
- breakfast cereals
- nuts
- cakes
- chocolate
- sugar/confectionery
- condiments
- baked products
- edible oils
- jams and preserves
- sausages
- vinegar
- chilled foods
- fish products
- beer and cider
- fruit juice
- mineral water
- carbonated soft drinks
- still soft drinks
- dehydrated foods
- paper
- tobaccos
- wine and spirits

PHARMACEUTICAL
CHEMICAL INDUSTRY
PLASTICS INDUSTRY
CEMENT WORKS
MINING INDUSTRY
TEXTILE INDUSTRY
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