

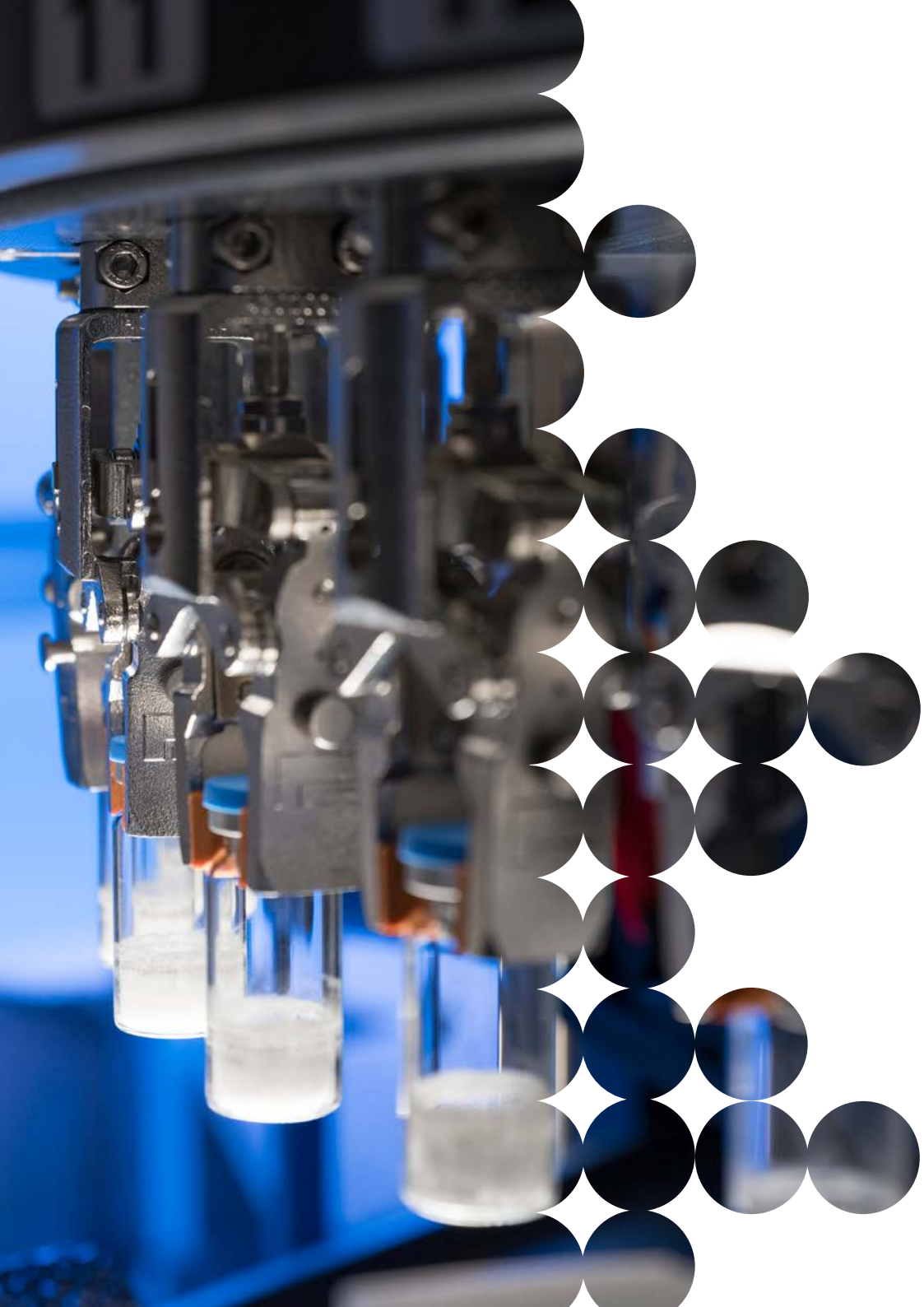


ANTARES VISION
GROUP **LIFE SCIENCE**

DIAMIND | LINE

**INSPECTION
MACHINES**
SOLUTION RANGE





ENGINEERING EXCELLENCE FOR PHARMACEUTICAL INSPECTION AND CCIT

Antares Vision Group's comprehensive range of inspection machines is engineered to guarantee your product's quality, integrity and safety while meeting the most stringent regulatory requirements. Based on our teams' multi-technology expertise, we deliver the industry's most comprehensive inspection and CCIT solutions for parenteral products.

The Antares Vision Ecosystem of Inspection Technologies

Our diverse inspection technology ecosystem guarantees:

- **100% quality inspection** across all production volumes
- **Stand-alone and in-line integrated solutions** for maximum flexibility
- **Highest reliability** minimizing false rejection rates and inaccurate inspections
- **Best-in-class technologies** engineered for each specific application
- **Flexible design approach** adaptable to evolving production needs
- **Optimized cross-technology integration** for comprehensive inspection and leak detection coverage



AUTOMATIC SOLUTIONS



SEMI-AUTOMATIC SOLUTIONS



LABORATORY EQUIPMENT

Convel Technology brings over 25 years of pharmaceutical inspection innovation to Antares Vision Group. Patented high voltage and visual inspection technologies, combined with proven reliability and ease-of-use, now strengthen our comprehensive inspection solutions portfolio. This integration enables us to deliver even more robust, versatile inspection capabilities backed by decades of specialized pharmaceutical industry expertise.

Inspection Capabilities Highlights

- Inspection and leak detection of glass and plastic containers
- Vials, ampoules, cartridges, pre-filled syringes, glass bottles, BFS/FFS, multidose, bottles, ampoule cards
- All product types: liquids (water-like, oily, suspension, emulsion, gel), freeze-dried (lyophilized), powders
- Speed up to 400 products per minute
- Single-point or top & bottom handling
- Continuous motion or intermittent motion technology
- Advanced detection technologies including: embossing recognition, container orientation, air bubble filtration, particle tracking
- Patented high voltage leak detection technology
- Quick format changes and simplified maintenance



AUTOMATIC INSPECTION TECHNOLOGY

Antares Vision Group's new-generation vision technologies enable comprehensive product inspection on any container and product content from multiple angles throughout different production phases.

Our advanced optical systems deliver unmatched accuracy, speed, and reliability for modern pharmaceutical manufacturing.





PRODUCT HANDLING

- Fast, smooth, and versatile product handling systems
- Top & bottom handling or advanced single-point handling with ultra-light grippers
- Optimized throughput without compromising inspection quality

OPTICAL LAYOUT

- Proprietary optical layout solutions for optimal illumination
- Extended inspection capability coverage
- Superior image clarity and defect detection accuracy

ADVANCED SOFTWARE

- Proprietary algorithms and powerful image processors
- Simultaneous processing of multiple imaging and CCIT data
- Fast and smart elaboration for maximized efficiency



COMPREHENSIVE MULTI-TECHNOLOGY CCIT

Container Closure Integrity Testing (CCIT) requires a comprehensive approach essential to determine that pharmaceutical products maintain sterility throughout their lifecycle. Antares Vision Group's multi-technology CCIT solutions provide the industry's most thorough non-destructive testing capabilities.

OUR UNIQUE CCIT ADVANTAGE

Antares Vision Group stands apart as the only provider capable of offering all four leading CCIT technologies. Whether implemented on standalone dedicated machines or integrated with Automatic Visual Inspection (AVI) systems, our solutions ensure optimal testing configurations for every specific application.

The simultaneous availability and strategic combination of these technologies deliver the most effective Container Closure Integrity testing possible.



VDLD

PDL

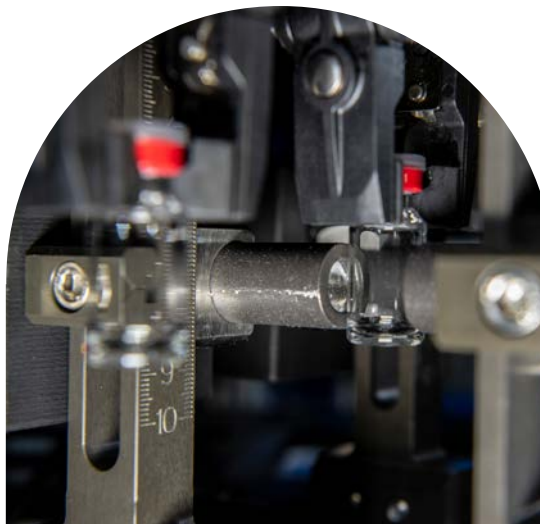
Vacuum Decay Leak Detection Pressure Decay Leak Detection

- In-process technology for 100% non-destructive leak testing across the entire container surface
- Based on accurate pressure measurement
- Easy cleaning with top mounted chambers
- Chamber-embedded sensor allows quick reinstatement after leaks
- Configuration for either VDLD or VDLD/PDL
- Optimized lifting platform configuration to reduce the load on pipes

HSGA

Head-Space Gas Analysis

- In-process technology for 100% non-destructive gas concentration measure and process testing
- Focuses on the critical space between container closure and product
- Measures gas concentration with high precision
- Typically measures O₂ with capability for CO₂ and H₂O vapor analysis
- Perfect for freeze-dried products and sensitive formulations



MULTI-TECHNOLOGY INTEGRATION

- Capability to combine technologies for comprehensive testing
- Best solution approach for each unique case
- Flexible combination with visual inspection technology
- Flexibility to adapt testing protocols to product requirements



HVLD

High Voltage Leak Detection

- Exploits electrical conductivity of packaged liquid products in insulated containers
- High-frequency, high-voltage potential is applied through specialized electrodes
- Measures discharge current for precise leak detection
- Ideal for conductive liquid formulations
- Patented detection technology significantly enhances measurement dynamic range and stability, enabling the detection of micro-leaks with outstanding accuracy and precision

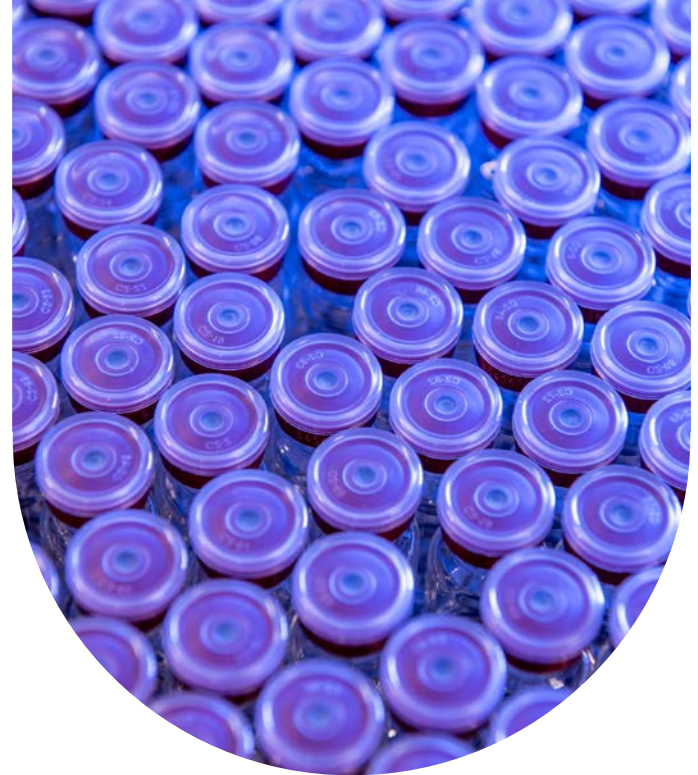
BEYOND INSPECTION

With a holistic approach to quality control, Antares Vision Group combines visual inspection with enabling technologies that elevate product quality, integrity, and process efficiency. Through the integration of complementary solutions we can enhance control, traceability and automation across every stage of pharmaceutical manufacturing.

PRIMARY PACKAGING SERIALIZATION

By using global standards for identification and barcoding, it is possible to enable **single unit traceability** and mitigate the risk of counterfeiting, allow precise product identification - both within the production facility and at point of dispense into patient health records - and facilitate recalls or adverse event reports.

Through inline printing technology optionally installed on inspection machines, we can apply batch data or **serialization data directly on primary packaging** (e.g. vials flip off caps or aluminum seals) with black or UV ink.



ARTIFICIAL INTELLIGENCE EMPOWERMENT

Our internally developed artificial intelligence algorithms can support automatic visual inspection by **enhancing defect detection** rates while **reducing false rejects**. AI technology also serves as a powerful complement to traditional vision systems, especially when processing **difficult-to-inspect products**.

Moreover, our AI-powered **Anomaly Detection System** can minimize machinedowntime,anticipatepotentialfailuresandmaximizeoperational efficiency, ensuring continuous, reliable production performance.

ROBOT HANDLING TECHNOLOGY

Cooperating with primary industrial partners, Antares Vision Group can integrate automatic inspection with robot handling - typically but not only DE_NESTERS & RE_NESTERS - to deliver significant operational advantages:

Design & Efficiency Benefits:

- Simplified design architecture
- Reduced non-ergonomic processes
- Higher reproducibility of controls and operations

Operational Excellence:

- Improved efficiency and enhanced flexibility
- Complete process traceability
- Reduced repetitive tasks for operators

HSE (Health, Safety, Environment) Optimization:

- Higher safety standards
- Lower contamination risk
- Enhanced quality control



SEMI-AUTOMATIC SOLUTIONS

Designed for enhanced operator efficiency, our semi-automatic machines feature advanced lighting patterns and optimized backgrounds that facilitate accurate cosmetic and particle inspection with superior defect identification capabilities.

Designed with a compact and modular layout to fit all products' needs with configurable infeed: by trays, in-line or with rotary table. Denester and renester integration is available for pre-filled syringes inspection.



PRODUCTS RANGE:

- Vials, ampoules, pre-filled syringes, glass and BFS round-shaped bottles
- Liquids, powders, lyophilized products
- Empty containers

REJECTION SYSTEM OPTIONS:

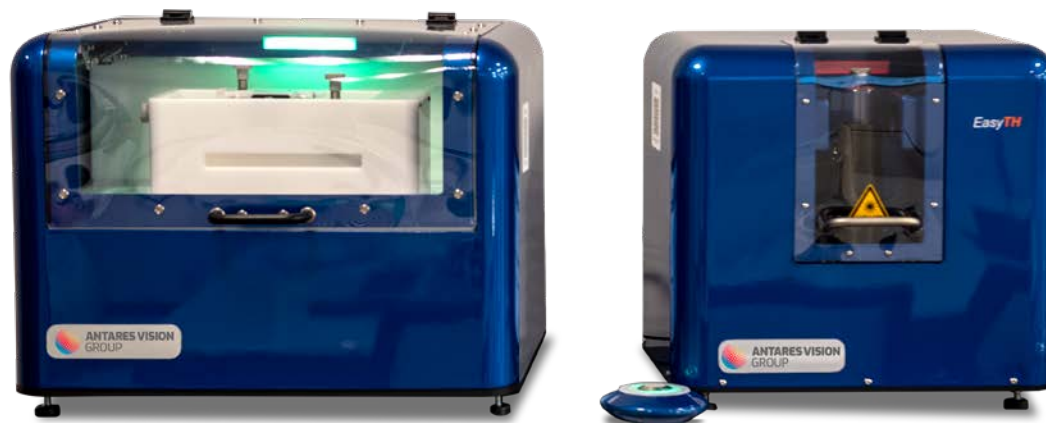
- Manual: Containers classified as defective are removed manually by the operator and placed in the dedicated area. This operation can be performed without the need to stop the machine.
- Automatic: The operator selects the container to be rejected via the dedicated touch bar. A dedicated LED bar then tracks the container along the line until it reaches the rejection point, where a pneumatic device performs the rejection.



LABORATORY EQUIPMENT

Our laboratory solutions provide maximum flexibility and reliability for AQL (Acceptable Quality Level) testing, small batch inspection, and research applications, ensuring consistent quality standards from development through production.

Antares Vision Group's lab-grade benches cover a full spectrum of integrity and visual inspection tasks – from headspace gas analysis and vacuum decay to high-voltage leak detection and manual visual review - all within compact, configurable units. Each model is designed to support method development, sampling verification, and process R&D, enabling seamless transfer from lab scale to full production.



FEATURES

- Multi-tech insp. cap. (Headspace Gas analys, vacuum or pressure decay, HVLD, visual inspection)
- Support for a wide variety of container types (vials, ampoules, syringes, bottles, bags, BFS)
- Compact footprint, fast changeover, easy cleaning and maintenance
- Remote connectivity, CFR 21 Part 11 compliance
- Flexible parameter settings and threshold alarms for pass/fail classification
- Programmable container rotation (round containers) and adaptive sensor distance control



GLOBAL SOLUTIONS, LOCAL SUPPORT

Antares Vision Group solutions are delivered and supported through our comprehensive global network. A Service Management Agreement can be agreed according to the requirements of the customer, ensuring optimized response times, cost-effectiveness, and maximum flexibility for all service and maintenance activities, backed by qualified partners worldwide.

OUR MANUFACTURING EXCELLENCE

Antares Vision Group's inspection machines are developed and manufactured within our network of specialized facilities:

- **Dedicated R&D and Test Labs** for feasibility studies, algorithm development and new technology innovation.
- **Two specialized production sites** based in Italy, covering 6,000 sqm overall.
- **Expert workforce** spanning design, testing and service.
- **Dedicated Quality Assurance** for acceptance testing and validation support.

A COMPLETE SERVICE PORTFOLIO

REMOTE ASSISTANCE
ON-SITE SERVICES
SOFTWARE MAINTENANCE
SPARE PARTS
CONSULTING



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