Genesis Packaging Technologies

Advisum AI

Powered by Boon AVIS

Once You Know What Normal Is, Detecting the Abnormal Is Easy.. Even With the Toughest Products. Our Anomaly Detection Platform for Visual Inspection Advisum AI, Powered by Boon AVIS, Trains on Defect-Free Product Instead of Getting Lost in Unknown Defect Types and Other Anomalies.

Enhancing Upstream Inspection with AI

Traditional systems for vial inspection rely on rules-based camera setups that require detailed programming for each defect, often necessitating vision experts and OEM support for recipe training. These systems also face issues with outdated software and hardware, limiting their ability to adapt to evolving production needs. These limitations lead to inefficiencies in production, missed defects, and increased costs due to rework or recalls.

To address these challenges, Genesis Packaging Technologies and Boon Logic developed Advisum AI, powered by Boon Logic's AVIS platform. This solution uses unsupervised machine learning to learn from normal, compliant products and detect defects with a high degree of accuracy. Advisum AI can be retrofitted to existing capping machines with rules-based camera systems or deployed as a standalone inspection station for machines without cameras.

Advisum AI offers several advantages over traditional inspection systems:

Quick and Efficient Recipe Training
Advisum AI uses compliant units for training, learning from normal product variations without requiring extensive libraries of pre-labeled defect images. Training is completed in minutes, significantly reducing setup time.

Optimized Defect Detection with Reduced False Rejects
Using unsupervised machine learning, Advisum AI accurately detects defects such as misaligned caps, missing stoppers, and cracks while minimizing false rejects.

Simplified Validation and Compliance
Once the machine learning model is trained, it can be locked for straightforward qualification and validation.

Types of Defects Detectable by Advisum AI

Advisum AI can detect a range of defects during both pre- and post-capping inspections, including:

Misaligned or Cocked Caps
Detects caps that are improperly seated, which can compromise container closure integrity.

Missing or Raised Stoppers
Identifies vials with missing or improperly inserted stoppers, preventing contamination or leakage.

Cracked or Chipped Vial Necks
Recognizes damage to vial necks, such as cracks or chips, caused during the capping process.

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Particulate Contamination
Detects foreign particles, such as metal or plastic shavings from the capping machine, trapped under the cap.

Deformed Cap Skirts
Identifies defects in the cap's skirt, such as dents or irregularities, that can impact sealing and vial appearance.

Discoloration in Product or Wrong Cap Color
Can correctly identify the proper appearance of your product and also determine if the wrong color cap has been applied.

Deployment Options

Advisum AI is flexible and can be integrated into different types of capping machines, allowing manufacturers to upgrade inspection capabilities without costly overhauls or downtime:

Retrofit Capping Machines with Existing Camera Systems
Advisum AI can be integrated with existing hardware, maximizing the return on investment.

Retrofit Downstream Semi-Automated Visual Inspection Systems
Replace human inspectors by automating semi-automated visual inspection (SAVI) machines.

Standalone Inspection Station
Advisum AI can also be installed as a standalone inspection solution for machines without built-in cameras.

Proven Results: Case Studies and Field Performance

Testing conducted by Genesis Packaging Technologies and Boon Logic demonstrated that Advisum AI reliably detects defects on capping lines. In one case study involving a vial capping line, Advisum AI identified over 90% of defects while maintaining a false reject rate below 1%. It effectively detected issues such as crooked caps and missing stoppers, while significantly reducing false rejections, which previously led to production delays and increased costs.

Conclusion

Advisum AI helps manufacturers identify defects earlier in the production process, preventing costly product waste, reducing rework, and avoiding production delays. By enabling real-time adjustments at the capping stage, it ensures higher product quality and process efficiency, while minimizing the risk of defects reaching final inspection or distribution. This proactive approach to inspection not only safeguards product integrity but also enhances overall operational efficiency in pharmaceutical manufacturing.

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Genesis Packaging Technologies is a Worldwide Leader in the Science and Technology of Parenteral Vial Sealing and Residual Seal Force Testing

We provide advanced vial sealing equipment for the packaging of critical injectable pharmaceutical products. Genesis designs, develops and builds vial cappers with innovative technologies that meet the technical challenges of parenteral pharmaceutical packaging, assuring seal integrity in compliance with advancing regulatory requirements for aseptic processing and container closure integrity. Offering our customers the tools and knowledge to consistently achieve container closure integrity remains our priority.

Purchasing equipment from Genesis provides customers support from a company with over 75 years of experience dealing specifically with vial handling equipment and technologies. Service is available on all equipment manufactured by Genesis and the former Machinery Systems Division of The West Company.

For the better part of a century Genesis Packaging Technologies has been at the forefront of sealing technology. Providing the pharmaceutical industry with parenteral vial sealing solutions is what we do.

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