

Sustainability through innovation - rethinking packaging!

With **AIT ReBox Check**, we are revolutionizing the handling of empty cartons from returns. Our intelligent AI solution enables automated inspection of over **1000 empty return cartons per hour**. By checking for reusability - from all six sides and even from above for remnants such as snippets or staples - we make an active contribution to conserving resources.

Our aim: To identify reusable cardboard boxes and bring them back into the cycle

The result: Less waste, lower costs for new packaging and a sustainable use of resources



How it works

- **High-precision inspection:** The system uses state-of-the-art AI machine vision to analyze damage such as tears, dents, moisture or unstable adhesive tape.
- **Smart sorting:** defective cartons are automatically sorted out, while reusable cartons are sent to a buffer store.
- **Residual stock detection:** Automatically detects residues such as snippets or staples.
- **Barcode check:** Reliably reads and checks barcodes, even at high speeds.

Technical highlights

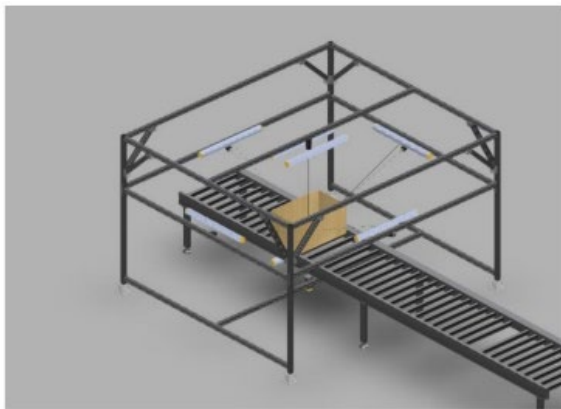
- **Capacity:** Inspection of up to **1250 cartons/hour** on a conveyor belt at **0.65 m/s**.
- **Camera systems:**
 - **5 megapixel cameras** for inspection from all sides.
 - **Line scan camera** for bottom side inspection.
 - **3-megapixel camera** for color inspection.
- **AI technology:**
 - **VisionPro DeepLearning** for pattern and defect recognition.
 - **Adaptable algorithms** that can continuously learn new defect classes.
- **Software:**
 - **AIT EasyPlus** controls the cameras and interfaces.
 - **Integration** into existing ERP and MES systems possible.

Areas of application

- **Logistics:** Automated inspection of returned cartons in central warehouses.
- **Consumer goods industry:** Efficient inspection of packaging with high returns.
- **Textile industry:** Sustainable packaging processes through cardboard recycling.

Procedure of the system

1. **Delivery of empty cartons** from the production site to the central warehouse.
2. **Automated transport** of the cartons to the inspection system.
3. **Inspection using 6 camera perspectives** with real-time evaluation:
 - **Good:** Karton is channeled to the buffer warehouse and used for the next transport.
 - **Bad:** Karton is sorted out and disposed of properly.



Advantages at a glance

- ✓ **Sustainable conservation of resources:** Reduction of packaging waste and repackaging costs.
- ✓ **Automated inspection:** High quantities with very short cycle times.
- ✓ **100 % precision:** Complete inspection from all sides.
- ✓ **Flexibility through AI:** Customizable algorithms and thresholds for maximum efficiency.
- ✓ **Cost savings:** Reduced returns and optimized logistics processes.
- ✓ **Environmental protection:** An active contribution to a greener world.

Rethinking packaging – with AIT ReBox Check!

For more information, please contact sales@AIT.de.