



Industry:

Food and Beverage



Applications:

Stand-alone capping machines or capper machines integrated with fillers including:

- Rotary cappers
- Roll-on cappers
- Crowning cappers
- Heat seal cappers
- Snap cappers
- Over-under cappers
- Cap sealers



Problem:

Regardless of the capping method employed, the integrity of the seal and cap/tamper band on bottled products is critical to maintaining both customer confidence and product freshness. Damaged or missing seals or tamper bands results in wasted product, costly product returns and loss of consumer confidence. 100% monitoring must be conducted to ensure bottle seals and cap/bands are correct and undamaged without slowing line speeds.



Omron "FACTS" Advantage

F210 Vision Sensor

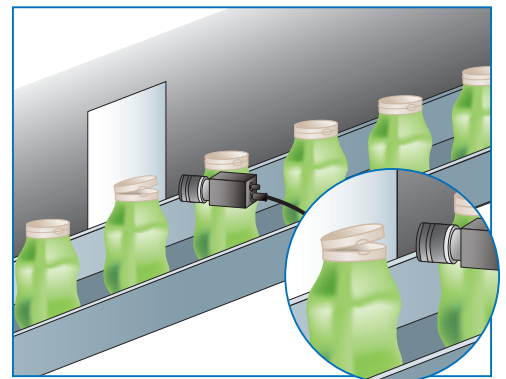
F160-2 Vision Sensor

Omron's F210 and F160-2 vision sensors are proven to provide highly accurate inspection of bottle seal caps and cap tamper bands on high-speed bottling equipment. The sensors feature highly accurate measurement, multiple edge detection and profiling image processing tools that can be specifically applied to cap/seal inspection operations.

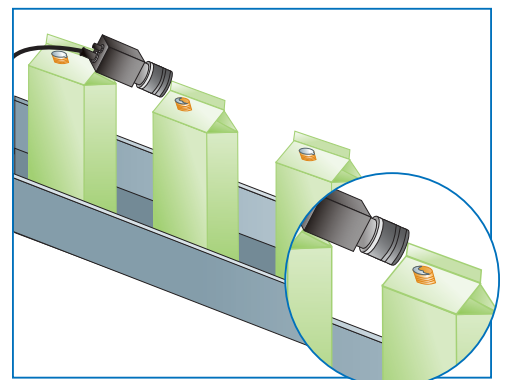
Special profiling tools and dual camera capability further assist bottlers in detecting and eliminating defective products.



Application Diagrams



Inspecting lid closure with backlight.



Inspecting correct foil tamper seal.

Bottle Cap/Seal Inspection Application Details

Issue

Seals, caps, and tamper bands are the primary methods processors use to protect the product from leakage, spoilage and tampering. Compromised or damaged seals or cap tamper bands have a direct impact on company profitability due to waste, customer rejection and potential liability. The integrity of these seals and caps is also a signal to the consumer about a product's safety and quality. Producers must find reliable and cost-effective means of detecting these defects and weeding them out before they get into the supply chain. Conventional sensor based inspection methods have proven to be expensive and difficult to set up and change.

Cause

Cap and Seals may be misapplied for a variety of reasons including:

- Damaged caps from the manufacturer (cracked, missing tamper band)
- Mis-alignment between the bottle and the cap
- Over/under-tightened caps
- Improperly installed foil seals
- Excessive force causes bottle deformation

Omron's Unique Solution

Omron's F210 and F160-2 vision sensors provide a highly accurate, reliable and repeatable inspection solution that enables 100% verifiable results and can keep pace with the fastest bottling lines.

The vision sensors are very easy to set up and changeover using a step-by-step, menu-driven process. No PC or external software is required. A simple hand-held keypad used with the sensors is all that is needed.

Unique multi-edge detection and profiling tools built into the units tremendously simplify setup and improve defect detection accuracy.

Multiple regions of the cap/seal can be inspected simultaneously and configured to determine which areas of the cap/seal are failing. This capability, along with the built-in logging and real-time trending function, allows users to identify potential problem areas before substantial defects occur and directly feed data to SPC systems for further analysis and historical reference.

The F210 and F160-2 also feature dual camera capability that enables the front and back or top of the cap/seal to be inspected simultaneously.

Omron's unique capability to offer a total automation solution provides not just a vision product solution, but the capability and expertise to deliver an entire system of inspection and integration as well as local, national and international support to develop and support our customers.

Results

100% verifiable seal, cap and tamper band inspection eliminates defective packaging from getting into the supply chain where they erode customer confidence and present the possibility of liability. Sensors offer easy setup and changeover; provide accurate, reliable and repeatable inspection of caps and seals; and provide detailed data logs and trending that helps spot problem areas before defects occur.



Snap cap position



Foil seal defect



Drink cap seal defect



Drink cap position



Viewing the history of measurement values on the Trend Monitor

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