



Industry:

Food and Beverage



Applications:

Post application inspection for labeling, decorating or marking machines



Problem:

A product label speaks for the product. If it is damaged, defective, missing or skewed, consumers perceive the product inside to be compromised or of low quality. Proper label placement and appearance is also critical in preventing risk to processors from liability due to improper use of the product.

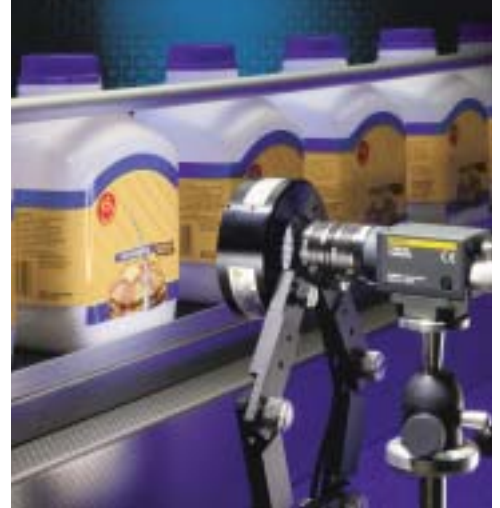


Omron "FACTS" Advantage

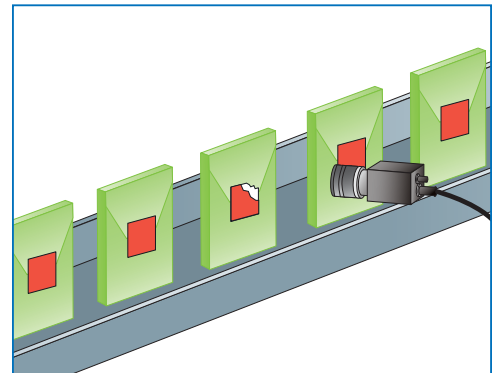
F210 Vision Sensor

F160-2 Vision Sensor

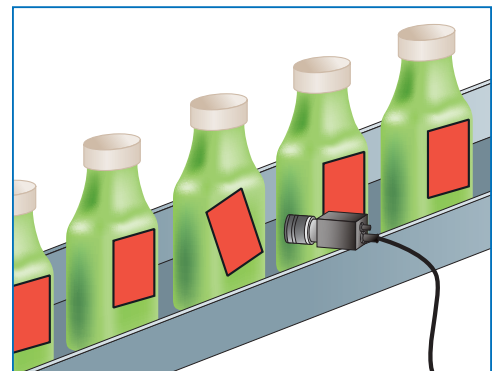
Omron's vision sensors are proven to provide accurate and reliable automated label inspection that enable packagers to implement 100% verifiable inspections quickly and easily. Easy, step-by-step, menu-driven setup instructions and powerful image processing tools make setup and changeovers fast and easy. No PC or external software is required. All programming is done with a simple hand-held programmer. Built-in trending software and live video output let you monitor your results in real time and log data for SPC analysis.



Application Diagrams



Inspecting label tears and defects.



Inspecting skewed label on bottles.

Label Quality Inspection Application Details

Issue

Proper label print quality and placement on a package is as important as the reproduction of the company's logo. The label is the brand. Defective labels suggest defective products. They are not purchased, ultimately scrapped or returned to the manufacturer for a refund. To protect brand image, minimize waste and maximize profitability, packagers must implement 100% quality inspection of labels to prevent products with bad labels from entering the supply chain. On-line, high-speed image processing is essential to keep up with a high-speed packaging process. Production line changeovers must also be accommodated quickly and easily. Inspection results must be reliable and repeatable.

Cause

While seemingly a simple process, the correct application of labels in an automated labeling system is actually the culmination of numerous carefully choreographed variables. Problems occur when any of these variables falls out of specification. These include:

- Label/container alignment
- Label/container synchronization
- Incorrect label
- Label adhesive
- Label applicator adjustment
- Container fixturing/presentation
- Label printing
- Label/container presence

If any of the above is out of specification, labels may be torn, wrinkled, skewed, missing, unreadable, upside down or incorrect for the product.

Omron's Unique Solution

The Omron F210 and F160-2 vision sensors feature high accuracy edge detection and pattern matching image processing tools that make label inspection reliable and repeatable. They offer reliable, non-intrusive quality monitoring without manual intervention and can detect virtually any label quality problem.

From simple pattern matching to ensure label correctness to sophisticated print defect assessment functions, the vision sensors ensure that the label is properly positioned and the logos are clear and legible.

Simple step-by-step, menu-driven instructions ensure easy setup and fast changeovers. No PC is required.

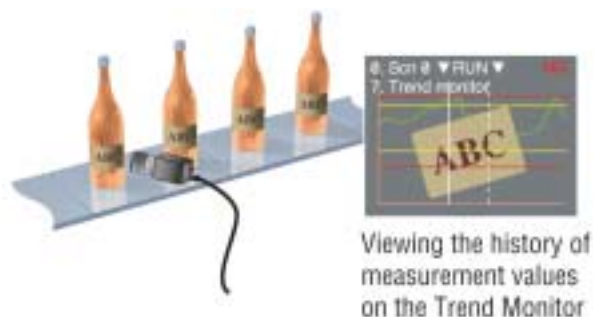
Built-in image processing tools include rotational compensation, image quality, accurate edge detection and edge location. This allows all inspection to be done simultaneously in a single unit. The F210 and F160-2 also accept inputs from two cameras that allow inspection of the front and back labels simultaneously and without a second controller.

The vision sensor's unique "partial image scan" functionality provides extremely fast response times up to 2800 inspections per minute - allowing them to keep pace with high-speed labeling machines.

Omron's unique ability to offer a total automation solution, not just a vision product solution, is backed by our expertise integrating inspection with control systems. We offer local, national and international support to develop solutions and support our customers.

Results

Reduced waste, higher customer satisfaction, and high profits result from 100% verifiable quality inspection of labels using Omron's F210 and F160-2 vision sensors. High-speed image processing keeps up with fast line speeds and simple menu-driven configuration makes setup and product changeovers fast and easy.



Viewing the history of measurement values on the Trend Monitor



Label defect



Label position



Label position



Label defect

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