ISRA Vision Group, the market leader in many areas of industrial image processing, presents a new turn-key inspection system that provides 100% inline quality control of metal packages for the beverage and food industry.

Fast, Reliable, Highly Precise:
Image processing system for beverage and food industry

The process of producing metal cans as packaging for food products is highly complex and in the beverage area, for example, is characterized by a high utilization ratio and conveyor belt speeds of 240 m/min. Production generally runs around the clock, 365 days a year. Fifty cans run through the conveyor every second. Both of these factors lead to high demands on quality control: A challenge for the leading image processing specialist ISRA VISION. The modularly structured vision system, CanExpert, transfers ISRA’s expertise in numerous areas of quality inspection into the production of cylindrical steel and aluminum cans. The new system thereby assures not only 100% quality control of cans and lids with previously unmatched precision, but also allows tracking of systematic defects.

The modular structure of the system gives the users the ability to deploy models selected according to their testing strategy and upgrade the system as needed later. This enables adjusted investments for the first time. The interior inspection of the cans is handled by the TCI module (Total Can Inspection), which reliably detects contaminations and defects as small as 0.2 mm X 0.2 mm. Three high-resolution matrix cameras with overlapping image areas provide a maximum degree of coverage for the scrutinized areas of
the can interior. Elaborate software algorithms keep the pseudo reject rate down to an extremely low level – a substantial argument, considering the total manufacturing costs of the cans.

The station NPG (Neck Plug Gauge) is responsible for testing the dimensional accuracy of the can and the flange edge with an accuracy of up to 0.02mm. A further noteworthy feature of the CanExpert system is the optical WIM station, which reads the body-maker number on the base of the can, making it possible to track systematic defects. This provides the user with important feedback for the optimization of the manufacturing processes.

All three stations can be integrated and operated at one station. The flexible user-interface is distinguished by clarity and precision. Various system layouts and live images provide the user with extensive information about the inspection. All measurement results from the individual measurement stations are assigned by the host computer. This means that it is possible to call up the overall results online, as well as, for example, statistics as a live trend. The comprehensive statistic functions and the user-graphics can be largely adapted individually to meet the customer's wishes.

Two additional test modules will shortly complement the CanExpert System. The module ESI (End/Shell Inspection) inspects the dimensional accuracy of the can lid (end), the position of the opening tab in the lid, and detects relevant defects. The module PQI (Print Quality Inspection) recognizes color faults and inspects the printed decor on the cans.

Compared to similar solutions that are on the market, the CanExpert system offers an expanded performance spectrum with a higher degree of accuracy and higher measuring resolution. The ability to
track defects makes it possible to optimize the production process, as proven with the successful implementation of the CanExpert system at one of the market leaders’ plants.

With ISRA VISION, you have a partner for all questions in the area of industrial image processing that has proven its competence in several thousand international industrial projects. Alongside their strong presence in Europe, branches in Asia and North America ensure the necessary customer proximity. The CanExpert system will be premiered at the international trade fair for metal packaging "Metpack" in Essen, Germany, from April 19th to April 23rd, 2005.

Pictures

WIM Module for Reading the Body Maker number with a speed of up to 3000 cans/minute (WIM.jpg)
TCI Module for Total Can Inspection with a speed up to 3000 cans/minute (TCI.jpg)

NPG Module for Measuring Neck Plug Diameter with an accuracy of up to 0.02mm (NPG.jpg)
Can Expert Modules for Can Inspection, Total Can Inspection, Neck Plug Gauge and Reading the Body Makers Number (Can Expert.jpg)