clearview

case studies

Food & Beverage | Label Inspection

During the process of End of Line packaging, sometimes mistakes are made which result in issues such as mislabelling and misprints. In the worst case scenarios, these mislabelled or misprinted products make their way on to retailer's shelves, which can result in product recalls, and/or hefty fines, both of which are costly both financially and time wise. To ensure that these mistakes do not occur, Machine Vision is an essential tool for anyone operating in the food and beverage packaging industry.

Clearview has developed a label inspection system that will detect and flag a number a range of defects in configurable regions. We can also verify the correct or incorrect presence/position of Flash labels and other promotional stickers from a library that is configurable by the user. Label placement and alignment can be verified. The system will also validate data matrix codes, barcodes, date codes, weights and other data fields.

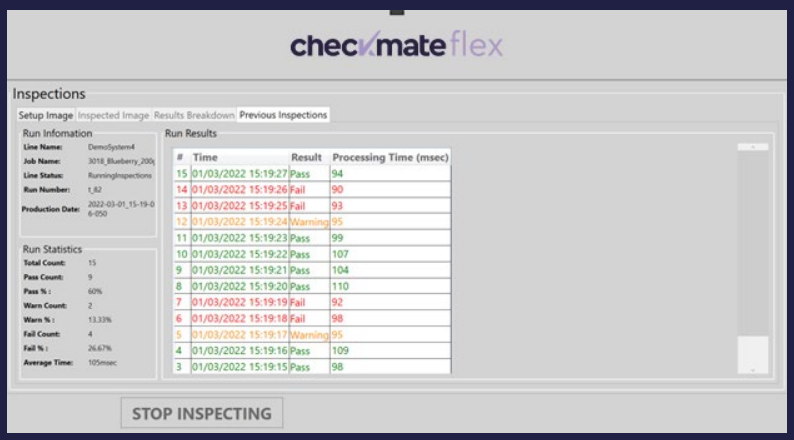

Figure 1: Image of the inspection system working in real time

The Vision System is integrated into the production line. As a pack moves into the camera's field of view (FOV), this triggers the system to capture an image of the pack. Our system uses a Line Scan camera, which is particularly useful in an application such as this as it allows the system to easily accommodate various sizes of packages. A rotary encoder also allows the system to automatically compensate for varying conveyor speeds. This is essential for any single production line which processes multiple packs.

The system can support multiple cameras, typically one or two, ensuring that both the top and bottom labels can be verified.

The system's Graphical User Interface (GUI) is particularly intuitive and easy to use. Users can write their own recipes (jobs) using a wizard based approach, making it easy to select different job variables and then later edit these variables on an existing set up. Many variables can be implemented, allowing for the users changing needs. Supported variables include items such as date, price, bar code and label placement, with many more also available. Jobs can then be loaded locally via rugged industrial touchscreens, or the system can be configured to communicate with existing systems and load jobs automatically.

Signals are then sent to a PLC (programmable logic computer) to indicate either a 'pass' or a 'fail'. Defective goods are then sent to the reject bin by way of the PLC.

Figure 2: The wizard - based software makes it easy to alter and add job variables

All images, including information on when the images were taken, are stored in a database which can be reviewed by the user. This allows for traceability, and the source of any problems can be identified and verified.

The system can run at exceptionally high speeds of around 300 packs per minute, based on 10 job variables. Inspecting more than 10 job variables is possible.

All this leads to a production line that runs more smoothly and more efficiently, with a minimal risk of defects.