Vision Systems Success

Background

A label printing company contacted us seeking our expertise for an issue with their label printing process. Food labels from one product to another can be extremely similar, for example a jar of mild salsa may look identical to a jar or spicy salsa with the exception of a few words.

The issue the company faced was that in the high speed die cutting and winding processes operators could easily mistake one label for another and accidentally create a single roll of labels containing multi types of labels. This problem would be magnified if their end user, the food producer, was to jar say 50,000 jars of mild salsa and 20,000 of those jars were labeled spicy salsa. This would result in a pretty costly and spicy mess! The company needed a solution.

The company had several requirements for their label inspection system. It had to be able to read and verify labels at speeds of up to 60 feet per minute. The inspection system also needed to be able to stop and alert operators upon detection of a mismatched or incorrect label. The system needed to be able to recognize potentially 100's of specific similar label types that it could verify when running.

The system also needed to include a graphical user interface to allow operators local setup and monitoring of the system. This needed to be easy to use, fast, and provide and store images of bad labels if they were detected. This display needed to easily allow the operators to select from any of the labels which may be run on the system.

Solution

Diamond Technologies was able to design a vision system that combined a 2.3 megapixel Datalogic camera and an MX vision processor coupled with an Advanced Illumination backlit flat diffused light. Diamond Technologies also built an industrial rated enclosure and provided a simple to use graphical front end that operators could easily understand when winding in different label types.

Datalogic 2.3 Megapixel Camera

This graphical front end allowed operators to select different labels from a premade library. It displays the different label types for inspection, as well as monitors, starts, and stops the inspection process.

Advanced Illumination Backlight

The vision system identifies label differences, quickly detecting minor variations when compared to the set label the operator selected in startup.   The system was so efficient that even though it was only specified to work up till 60ft per minute it worked well up to 100ft per minute.

The vision system was installed into the customers facility onto an existing rewinding machine and connected to a dual relay output to control the starting and stopping of the rewinding machine. This allowed the vision system to stop the rewinding process if an incorrect label was found as well as alert operators via an industrial stack light.

Diamond Technologies not only installed the system but additionally provided configuration training so the operators are comfortable with use of the system and so the companies engineering staff can enhance the system as new labels are introduced.   From conceptualization, design, installation, and training, Diamond Technologies provides it all.

Diamond
Technologies
Getting data where it needs to be.