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The Benefits of Offering Integrated Ink-Jet Controllers in Packaging Machinery

From one end of the production line to the other, manufacturers rely on marking systems to print logos, barcodes, expiration dates, and a wide variety of other identifying marks and graphics on products and packaging. Such identification systems are essential to reduce errors and track products throughout the supply chain.

OEMs and machine integrators can help customers improve overall quality control and accuracy by incorporating ink-jet marking into machine design. This concept is still relatively new to the industry. Only recently have manufacturers begun to integrate RFID readers, vision systems, and barcode scanners into their equipment in place of standalone identification systems. Printers are one of the last components left in the packaging line to be incorporated into the main system. As a result, machine builders that offer turnkey systems with marking integrated into the process are at a competitive advantage.

Reducing Errors

The enormous amount of data already stored in production equipment will, at some point, need to be marked in various forms on the product packaging. This may require frequent code changes, which can pose a challenge to manufacturers: Complex codes must be entered into multiple printing devices manually, thereby increasing the likelihood of introducing errors. For example, a pharmaceutical company must mark blister packs, the cartons containing the blister packs, and the cases that contain the cartons. This process presents three opportunities for someone to manually enter information that is already available through the production line's automated system.

For high-speed equipment, such as form-fill-seal machinery, integrating ink-jet controllers into the machine provides the end user with a flexible means of performing quick changeovers. OEMs can tout the benefits of higher throughput rates and less downtime to customers. Integrated systems are also easier to operate. The user merely selects the product to be marked and the machine does the rest, labeling the product at every required stage.

Improved Communications

Production data is converted into identification data from a variety of sources, such as PLC feeds, conveyor control systems, or wide area networks between multiple sites. The machine must be able to interpret and output data and position information intelligently, regardless of the machine's protocol. This offers increased value to the customer because

the data is sent directly from the production control system to the labels that will appear on the products and packaging, thereby reducing human intervention.

In addition to reducing errors, integrated ink-jet controllers offer valuable feedback, such as how many products have passed a particular stage of the packaging process and whether or not these products have been successfully marked. The increase in production data and the ability to analyze such data allows customers access to a more detailed report of the production process, giving them the opportunity to quickly and easily pinpoint any problems that might occur.

The integrated controller is also invisible to the customer. This is extremely important to manufacturers that want a single human-machine interface panel to control every aspect of the machine. The user merely enters or changes identification information on the system's main touch screen, as opposed to entering it on a separate device or screen.

More and more companies are demanding equipment that is easy to use and maintain and that will help them reduce errors. OEMs and integrators that can offer value-added options to address these issues will go a long way toward differentiating themselves in the marketplace. Individually programmed printers can introduce errors that aren't caught until someone at the end of the line notices that codes weren't changed when the product was. Some marking and coding mistakes aren't caught until it's too late. In high-liability industries, such as medical device or automotive companies, such errors can result in more than lost business.