PACKAGING WORLD

Software links printers company-wide

Jelly Belly Candy Company has increased factory automation and reduced the costs of pre-printed packaging through good use of package-coding software.

Jelly Belly Candy Company makes 50 official flavors of Jelly Belly jelly beans, producing 1,680 beans per second between its headquarters facility in Fairfield, CA, and its plant in North Chicago, IL. In addition, the company offers more than 100 gourmet candies, including not only jells and gummies but also chocolate-covered, sugar-free, and seasonal confections. To manage the packaging of all these products for distribution, flexible factory automation is essential.

FOLDING CARTONS. Small-character ink-jet printers deliver high-quality coding on folding cartons of Jelly Belly products.

Jelly Belly's production line includes variable-data printing systems that enable the company to easily change the information being coded on primary and secondary packaging for each product it produces. The systems also allow Jelly Belly to purchase plain corrugated boxes and film instead of storing a wide variety of pre-printed materials. Jelly Belly relies on thermal-transfer overprinters, large-character marking systems, and small-character ink-jet printers from **Videojet Technologies** (www.videojet.com), all of which are networked by package coding management (PCM) software to streamline message management.

Jelly Belly's niche is the ability to produce and package both large and small batches of candy, and the company's various offerings mean that some confections are produced in large quantities, while others require smaller batches or seasonal production. Many of these products are bagged in flexible-film packages, and each product package requires unique information specific to that particular product, such as expiration date, ingredient list, nutrition information, product weight, and logo. Initially, Jelly Belly accomplished this customization by using hot stamp printers with titanium plates.

"There was a lot of overhead cost involved in purchasing and maintaining the plates," says Jim Schneider, plant engineer for Jelly Belly. "Every time we made a change to a product's packaging, we had to order new plates and cut them to fit on our machines. There was a long lead time to get the new plates, and then we had to store all the plates on racks within our plant."

This drove Jelly Belly to begin looking at new technologies to ease the film-printing process by shortening lead times, making changes simpler, and allowing Jelly Belly to continue printing all the information it required at high production line speeds. It also sought a solution to reduce costs and increase flexibility associated with variable-data printing. For example, Jelly Belly wanted to be able to accommodate customer requests for custom printing. To accomplish these tasks, Jelly Belly installed 18 Videojet DataFlex® thermal-transfer overprinters that today are used in its facilities in Fairfield, North Chicago, and Thailand.

The DataFlex printers provide Jelly Belly the flexibility it needs to create images and messages for coding on both the front and back sides of bags. The printers can run up to three shifts per day, six days per week to keep up with Jelly Belly's packaging demand, which includes

QUICK SCAN. **Line operators scan a bar code on a project ticket and the right coding information is automatically retrieved from the central database (above). Variable data, like the best-before date seen at right, or custom printing requested by customers can be easily handled with the thermal-transfer printers running at Jelly Belly.**

printing an average of 85 bags/min. Plus, the clutch-less ribbon drive system within the DataFlex automatically ensures efficient use of printer ribbon and reliable operation.

Five staff members are trained to create messages and maintain the central database for the PCM software, ensuring coding accuracy. Then, line operators need only to scan a bar code on a project ticket, and the DataFlex printer automatically accesses the database for code information related to that project. This eliminates the need for operators to manually set up coding information, reducing the possibility of mistakes or inconsistency from one production line to another.

Boxes, too

While many of Jelly Belly's products are packaged in bags, boxes are used for other candies, including higher-end chocolates. Jelly Belly requires the codes to be clear and readable on all its products, but the code quality is especially important on higher end products to help maintain the high-end brand integrity, so the ink must dry quickly to avoid smearing.

For high-quality coding on boxes, Jelly Belly uses Videojet Excel® small character ink jet printing systems. The company has four Excel printers among its plants, and these printers are also networked with the Videojet PCM software to ensure quick and accurate set up.

Once products are packaged in bags or boxes, they are placed within corrugated cases for palletizing and shipping. The corrugated cases are printed with two bar codes: a case code and a lot code to enable traceability. Human-readable information also is printed on the cases to reference the contents of the box. This information can include the product name, weight, and ingredient statement. When packaging products like a variety pack of jelly beans, for example, the ingredient statement can be very long due to the number of ingredients required to create all the available flavors. The large-character marking system used to code the cases must offer a print area large enough to accommodate longer ingredient statements. For its case coding applications, Jelly Belly uses Videojet® 2300 series printheads and controllers. Jelly Belly chose the direct ink-jet case coders from Videojet because they provide consistently high-quality printing at one-tenth the price of labeling. The large character systems also are networked with the Videojet PCM software.

"It is critical that we are able to network the printers," Schneider says. "We use CLARiSOFT® PCM software from Videojet to maintain a central library and database of all our messages. All our plants access this single source of information via Videojet CLARiNET® network software at each plant. With the number of product items and ingredient lists we have, it is important that any updates to packaging information are uniform across all three facilities."

Having all the printers networked streamlines Jelly Belly's coding processes, which is especially important because its production lines are integrated along every step of the coding and packaging process. After products are placed in their primary packaging, they are put into corrugated cases. Before the cases leave the production line, the bar codes are printed on them and the cases continue down a conveyor to the palletizing area. The bar codes are then scanned, which tells the printers in the palletizing area to print additional information on the boxes, including the human-readable data. Further down the line, the bar codes are scanned again so a robotic arm can sort the boxes to place them onto pallets, which are then shipped to the warehouse. With all this integration, every piece of equipment must run accurately, or Jelly Belly faces the possibility of shutting down the entire line.

"It is extremely efficient for us to have all our products transported down a single conveyor to the palletizing area," Schneider says. "However, this also means the products have to be sorted at the end of the line to be placed on the correct pallet for shipping. If our machines can't read the bar codes, they cannot sort the cases correctly. We run about 70 boxes per minute, so it is important that every piece of equipment on the secondary packaging and palletizing line can keep up."

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Jelly Belly has found all three types of coding equipment from Videojet extremely reliable in both uptime and print quality. In addition, the printers integrate well into Jelly Belly's packaging processes, helping the company to maintain the productivity levels that have made it a leader in the confectionary industry for more than 100 years. *—Pat Reynolds*