

Adhesive system ends jam

Nordson's PatternJet leads to improvements in Penta bottled water labels

The makers of Penta bottled water market, Bio-Hydration Research Lab Inc., Carlsbad, Calif., turned to Nordson to solve a manufacturing problem. The company's existing wheel pot label adhesive system used excess glue that resulted in labels peeling off bottles and jamming the magazine. Adhesive issues also caused Bio-Hydration to change its clear label, meant to emphasize the product's purity, to purple to cover excess adhesive stringing on the bottle. In addition, the company faced efficiency issues, inconsistent adhesive temperature and volume, as well as maintenance and downtime issues.

"Wheel pot technology is at least 30 years old, and it's made primarily for canning operations," said Michael Holloway, Bio-Hydration's vice president of production, in a statement. "No one else is even offering technology for labelers."

As a solution, Bio-Hydration

chose Nordson's PatternJet labeling system to replace the hot-melt adhesive carousel wheel pot system. Nordson's machine uses a hot-melt applicator to deliver adhesive to its PatternJet guns at the pick up and lap areas. The non-contact PatternJet pick-up gun then sprays

spirals to the container before applying the label. After the container picks up the label from the magazine, a second PatternJet gun at the label stack applies a strip of adhesive to the cross seam, sealing the label end.

Two precision PatternJet guns, a



VersaBlue 12-liter adhesive melter with dual-gear pump, snuff-back SpeedCoat actuators, 45-degree Saturn filters and quick-disconnect RTD and heater cord sets were installed in the company's facilities. Bio-Hydration saw numerous improvements once the new system was installed.

Excessive adhesive is now limited because the PatternJet pick-up gun uses Controlled Fiberization Summit nozzles to accurately spray spiral adhesive patterns to the bottle. The snuff-back action of the gun modules creates precise cutoff, which minimizes stringing and is small in diameter so it can be easily hidden under the label.

Nordson melter's reservoir tank maintains optimum temperature for label application and allows for stage heating that can reduce temperature variances and the risk of degradation. Contamination is minimized because hot melt does not circulate through the PatternJet

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system, which can improve label adhesion and bottle aesthetics.

Nordson's system also uses independent drive motors to deliver precise metering to both the pick-up and lap guns. This provides consistency in adhesive application, volume and pace at variable line speeds. Its precision placement minimizes overspray, which reduces downtime and waste.

"We have seen a huge reduction in adhesive consumption," Holloway said. "I have calculated the difference and our savings just in usage alone are more than 70 percent. We also had a lot of waste being spilled onto the machine that I didn't even account for in my measurement, which would add another 10 to 15 percent in adhesive savings."

The company also has seen a reduction in bottle rejects, or drinkers, which can be caused by application of multiple labels, labels applied at an angle and missing labels. Holloway says there used to be 60 to 100 rejected cases of Penta per day due to misapplied labels. The number is virtually nonexistent with the new Nordson system, he says.



Downtime for product changeover decreased as well. "One of the best things for maintenance has been the ease of changeovers," Holloway explained. "With the old system we had to move the wheel pots on both the leading and trailing edge to adjust for the different bottle sizes. We'd also adjust the label basket as well, which could take upward of two hours to finish. Now the whole process takes less than 20 minutes and the push of a few buttons."

Changeovers are made easy because Nordson's PatternJet system includes a pattern controller with capacity to store up to 99 programs. Individual label sizes can be stored in their own program that tracks the pressure and timing parameters needed for the particular label. The system's storage capacity allows for expansion of label and bottle size, which is important for an expanding company such as Bio-Hydration.

After the installation of the Nordson system, the maker of Penta bottled water has seen 85 percent adhesive savings, 20 percent increase in efficiency and a dramatic decrease in waste.

"The old glue system was the bottleneck of our line," Holloway says. "With the installation of our Nordson system, we are free to concentrate on improving other areas of our line. Our days are much shorter now because we have improved efficiency from 70 percent to around 90 percent." — *Nordson Adhesives Division, 11475 Lakefield Drive, Duluth, Ga. 30097; 800/683-2314; nordson.com.*