

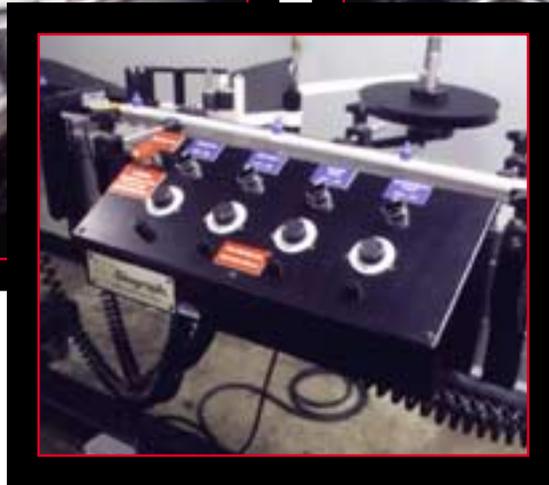
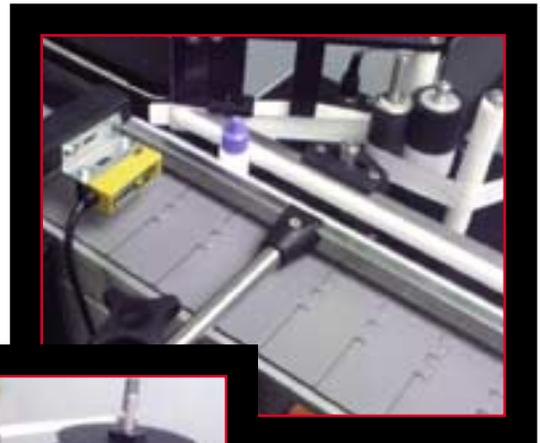
- Products: Diagraph LA/110
- Industry: Pharmaceutical

All Smiles

Custom labeling solution allows dental products manufacturer to reduce processing time by more than 50%



The plastic bottles move in a counter-clockwise direction, bringing the bottles to the beginning of the conveyor.



The bottles move single file on the conveyor to the Diagraph Model 110 Label Applicator which applies a hi-gloss label on each one.

Heraeus Kulzer's Dental Products Division manufactures and sells to dental distributors worldwide, into such countries as Canada, United States, Mexico, South America, Western Europe, Russia, and Japan. Nearly 500 different product codes for ultrasonic cleaning solution, stainless steel dental instruments, wax impression products, and gypsum impression products are produced at the company's South Bend, Indiana facility. This particular plant also repackages products from other Heraeus Kulzer locations including its Dormaegen, Germany facility, which produces Gluma® Desensitizer.

"Gluma® Desensitizer is applied to the prepared restoration of the tooth prior to the application of a dental bond," notes Brent Stiles, Technical Production Supervisor at the South Bend location. "The Desensitizer desensitizes the tooth by blocking fluid flow in the dentin tubules."

This liquid product is shipped from Germany in small

individual plastic bottles to the South Bend where it is then labeled and packaged in a small carton with an MSDS (Material Safety Data Sheet). Each small plastic bottle of Gluma® Desensitizer is identified with a primary label completely wrapped around it. Heraeus Kulzer was applying the label by hand, which proved to be very time consuming. A solution was sought to improve productivity and reduce labor time.

Just over a year ago, a custom labeling solution from Diagraph Corp. (with a Mississauga Ont., Canadian office) was installed at Heraeus Kulzer's Indiana plant. The system was not an "off-the-shelf unit", but rather specifically designed and built for Heraeus Kulzer. It is a complete solution which includes material handling conveying and product identification labeling equipment in one solid package.

At the beginning of the labeling process is a rotary

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descrambler table which measures 24" in diameter. The line operator empties up to a thousand plastic bottles of the Gluma®

Desensitizer onto this circular table, which moves in a counter-clockwise direction, bringing the bottles to the beginning of the conveyor.

At the point where the conveyor begins, is a 5" spacing wheel, turning in the same direction as the descrambler. This wheel is responsible for providing the spacing between the bottles, as they enter the table-top rex-chain conveyor. The conveyor measures 8' long and 4-1/2" wide.

Once formed in a single file, the bottles proceed on the conveyor to the Model 110 Label Applicator which applies to each bottle a 3/4" x 3" three-color primary Hi-Gloss label with lot number and expiration date. (The custom labels, also manufactured by Diagraph, are imprinted with a Zebra thermal transfer printer, then rewound and loaded onto the Model 110 prior to labeling).

As the label is applied, a variable speed wrap station spins the bottle to ensure complete adhesion of the label onto the surface. Only one side of the wrap station has a motorized belt, with the other side having a stationary dead plate which forces the product to spin, and the label to be firmly applied. As the bottles exit the wrap station, they are at the end of the conveyor and the line operator is ready to package them into small individually marked boxes.

With the implementation of the new Diagraph labeling system, productivity has greatly improved. Previously, one person was hand labeling the bottles, and now, that same person is all that's required to run the label applicator system. "It reduced the processing time of a



batch of 500 units from two and a half days to one day," according to Stiles. Processing time includes labeling the bottles, prepping the cartons, and placing the inserts into each box.

For easy portability, the Model 110 Label Applicator is mounted to the conveyor frame, which allows the operator to move the entire system quite easily if need be. Since the applicator is mounted to the conveyor, there is a minimal amount of vertical adjustment (1/4" to 1/2"), so the design of the system had to be exact. The adjustable guide rails play an important role in

this situation, as they keep consistent presentation to the applicator, guaranteeing no bottle vibration. In designing the system, Diagraph only had 1/16" placement tolerance to deal with, and due to the bottle being only 2" tall, accuracy was key.

The control panel was built to be multi-functional. The speed of each component (the descrambler, spacing wheel, conveyor, and wrap station) can be individually controlled. These components regulate the spacing between each vial, and how fast the product is labeled. The unit is equipped to handle line speeds up to 84' per minute. At most, Heraeus Kulzer plans to max out at 68' per minute.

Down the road, Heraeus Kulzer may add larger bottle sizes which need to be labeled. The system was designed with this in mind. It can label up to a 4" diameter bottle on-line. (The current bottle is .81" in diameter). As Heraeus Kulzer's needs change, this automated labeling solution will be able to adapt with them.‡

by Bill Myers

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