



NEW MARKET OPPORTUNITY IS CLEAR

By Jackie Schultz

Folding carton converters can expand their product mix with Nordson's new clear box manufacturing system, which installs easily onto folder-glueers and maximizes equipment utilization.

Capitalizing on its years of experience with folding carton manufacturing and moisture-cure reactive adhesives, Nordson Corp., Duluth, Georgia, has developed a clear box adhesive application solution. It can be easily incorporated into a converter's production line for clean, transparent side seams and autolock bottoms.

While a clear box gluing system was previously available from the company, the recent Print show in Chicago marked the introduction of the clear box system using the PURBlue 4 slug melter, making it better suited to a larger number of folding carton manufacturers who only need small volumes of polyurethane (PUR) adhesive.

"The initial clear box system was developed at the request of folding carton manufacturers looking for a more clean, accurate ribbon of adhesive for the side seam. This accuracy was desired primarily to make a more aesthetically pleasing box as all flaws are painfully obvious on clear packaging," says Linda Ray, Nordson Market Development Manager, Paper & Paperboard Converting. "The PURBlue 4 version was also in response to customer requests. Many manufacturers are intimidated by the prospect of buying a pail or drum of PUR adhesive when they use small volumes on an intermittent basis so PURBlue 4 meets both peace of mind and fiscal needs."

The polyurethane (PUR) adhesive dispensing system, typically consisting of a PURBlue™ 4 slug melter and EP 11 application head, installs easily on existing folder-glueers as well as new equipment.

Sniff back technology delivers precise adhesive cutoff with minimum squeeze out.

Precision is Critical

As clear box side seams and autolock bottoms are highly visible, the size and quality of adhesive application is critical.

"The clear box solution provides clean cutoff for a precise adhesive pattern even in intermittent applications," Ray says. "And, precise dispensing means adhesive volume and pattern are reliable and consistent, allowing optimal adhesive use for reducing seam visibility while maintaining a high bond quality."

The PURBlue 4 slug melter makes even low-volume PUR use practical and cost-efficient. As part of a closed system, the melters protect the PUR from premature curing in part by using "melt-on-demand" to process only the adhesive immediately needed while preserving the integrity of the PUR adhesive slug. This reduces thermal stress and protects adhesive bonding characteristics.

Higher volume clear box production could use a DuraPail® bulk melter to process PUR from 5-gallon/20-liter pails, which is also part of a closed, "melt-on-demand" system.

A full range of equipment designed to apply PUR adhesives on PE, PP or PVC offers converters the flexibility and ability to meet specific manufacturing requirements, according to Ray. Nordson offers a range of contact or non-contact dispensing guns to meet the needs of lock bottom and side seam adhesive application.

"The dispensing guns deliver clean cutoff for a precise adhesive dot or bead, and an attractive finished box," she says. "The patented sniff back feature of Nordson's slot nozzle technology provides a nearly invisible adhesive bead and good seal with virtually no squeeze out."

Choices of contact or non-contact and pneumatic or electric guns provide a variety of patterns, including ribbon, beads or dots.



In addition, a variety of melters are available to accommodate PUR whether packaged in drums, pails or slugs. The melters regulate temperatures to maintain optimum adhesive control and integrity, and as part of a closed adhesive application system they help reduce maintenance and improve quality.

A single melter can support one, two or three gun configurations.

Easy Installation

Complete adhesive dispensing systems include the melter, applicators/guns and other components that can be

installed on existing or new folder-glueers.

Guns for side seam can be positioned to replace existing cold glue wheels, and the PUR adhesive guns used for the crash lock bottom take the place of the cold glue guns.

"With this system a standard folder-glueer can produce clear boxes, replacing the more difficult process and additional equipment needed for manufacturing traditional folding cartons with windows," Ray says.

Converters have the option of tying in the system to their existing folder-glueer controls, however, Nordson offers an optional pattern control with multi-program memory and touch screens if additional production flexibility is needed.

An entire installation would take about three or four hours to have a clear box PUR dispensing system operational. Nordson also offers a service and support network to help converters specify, set up and maintain their equipment.

Once the system is installed, switching between paperboard and clear plastic cartons is only slightly longer than switching between two different sized or patterned paperboard cartons. For both a converter would need to program (or recall a program from memory) an adhesive pattern and adjust feeds and guides for a different box size.

"Switching between two paperboard blanks or between paperboard and clear

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CLEAR BOX MANUFACTURING

plastic usually requires repositioning the gun relative to the carton flap. You would definitely have to reposition the guns going between paperboard and clear substrates since clear box uses entirely different guns for side seam," Ray explains. "And, while you are making program and gun position changes that you'd do for any makeready process, for clear box you would need to turn on the melter to allow it time to reach melt temperature, but those could be happening simultaneously.

"While it isn't as easy as flipping a switch, it is only a moderately longer process than if you were just doing changeover between two paperboard boxes," she adds.

A Growth Market

Plastic boxes is a growth market for folding carton converters for a variety of reasons, according to Nordson. This growth represents both new and expansion into traditional clear box applications. The

markets that have embraced clear box packaging include cosmetics, personal care, pharmaceuticals and sporting goods.

"In cosmetics and toiletries, it is often secondary packaging to a decorative bottle or tube, so a clear box provides visibility to the primary packaging," Ray says. "For smaller objects, including toiletries, cosmetics and sporting goods, such as golf gloves, it is a security measure as it is instantly visible if somebody has removed the product from the packaging, something you can't see with a paperboard carton, unless it has a window, which has its own production challenges. For pharmaceuticals, the visibility provides the security of showing evidence of tampering."



Clear Candy Carton

In terms of barriers to entry, from a manufacturing standpoint, there is a learning curve related to the use of the plastic substrates. And much like paperboard substrates, different plastics have different uses, needs and considerations. Also from a manufacturing standpoint is the use of PUR adhesives, which have a stigma of being "difficult" to work with as opposed to just being different to work with, according to Ray.

"It is a simple matter of educating people on the proper use and maintenance of PURs. This Nordson system helps ease the cost of entry from a manufacturing standpoint as you don't need to purchase an entirely new line but can install on existing folder-glueers," she says, adding, "With PURBlue 4 melters you don't have to commit to a large inventory of PUR while you are building business in clear box. Slugs as small as 1 kg can be purchased as needed, but you can move to more cost-effective sizes, up to 4 kg, as needed."