

Freedom for the “Little Coward”

With an assortment of over 20 schnapps and liqueurs, Waldemar Behn GmbH is one of the most important spirits producers in Germany. Their best known product is probably "Little Coward," a naturally flavoured fig liquor which quickly became a cult drink after its market launch in 1992. The name in German (Kleiner Feigling) is a pun based on the similarity of the words "fig" and "coward". As part of modernizing one of the end-of-line packaging machines, two ProBlue Liberty tankless hot melt application systems from American adhesive technology specialist Nordson were installed.

The family business, founded in 1892 and located in Eckernförde since then, is known for its unique brands. That includes brands with a North German tradition and origin such as "Küstennebel" (Coastal Fog), "Leuchtf Feuer" (Beacon), "Wattenläufer" (Beachcomber) and "Friesengeist" (Frisian Spirits). They are marketed not only in the local Schleswig-Holstein region, but all throughout Germany as well. The company is also internationally successful with "Dooley's Original Toffee Cream Liqueur" and the "Danzka Vodka" brand, which they acquired in 2013.

About 70 to 80 million units are produced annually in five bottling plants. The bottles range in content from 0.02 to 3 liters. Because the miniature versions account for an especially considerable portion of sales, two of the three packaging systems are used for the smaller containers. The carton gluing system on one of these end-of-line machines was completely replaced at the beginning of this year. The unit that had previously been used was placed in operation in 1998 and urgently needed to be replaced because of its age.

The packaging machine is a cartoning machine made by Smurfit Kappa Herzberger and designed as a side packer. It is installed perpendicularly and works in two sections in terms of shaping and closing the cartons. In the first step the longitudinal edge is glued lengthways onto the flat



The packaging machine – shown with the hood open for better visualisation – with a full view of the two new ProBlue Liberty hotmelt application systems mounted at chest height.

blanks and the cardboard containers are erected. After the cartons are loaded by pushing the bottles in horizontally, the side tabs of the boxes are folded shut and closed on both sides. The showboxes are punched and corrugated so that after a perforation has been torn open they function as shelf-ready trays.

The machine has a capacity of up to 42 cartons per minute and is able to process a total of seven carton formats from 195 x 45 x 75 mm to 195 x 130 x 138 mm (L x W x H). Only 0.02-liter bottles and "hip flasks" with a volume of 0.1 liter are processed on this line, in different package sizes. The minis are typically placed on retail shelves in packs of 10, 20 or 30.

Efficient use of energy and materials

For the upgrade, Behn decided to purchase the innovative ProBlue Liberty hot melt application system from Nordson, which was introduced to the market at Interpack 2014. It resembles the proven ProBlue Fulfill series in appearance, but offers interesting optimization features in terms of technical capabilities and closes the gap in performance with its "big brother" the Freedom system. Based on the processing throughput of the packaging machine, two configurations were installed simultaneously, for initial and end gluing of showboxes.



The longitudinal edge is glued by a fully insulated pneumatic MiniBlue II Slim Line applicator.

The most significant feature of the new technology is the absence of a conventional tank system. The core of the system is the melt section, which functions essentially like an instantaneous water heater. The reservoir has a reduced volume and only the amount of adhesive actually needed is kept at processing temperature. This considerably reduces energy requirements as well as hot melt consumption while significantly increasing machine availability and work safety.

The ProBlue Liberty series includes models 7 and 14, the first of which is in use in Eckernförde. As indicated by its type designation, the device has a melting capacity of 7 kg per hour. An integrated sensor monitors the fill level and reports when adhesive is required. The granulate is supplied automatically from a 240-liter storage container. A special feature of this generously dimensioned container is the multi-feeder function, which can be used to supply up to four ProBlue Liberty units simultaneously. The two systems are each connected with the container by a hose 9 and 15 m long respectively in the Behn plant.

Another critical factor for savings in energy costs is the shorter heating up and flow-through times that result from melting only what is actually required. Marco Luckner, technical director of Waldemar Behn GmbH, emphasises that they have been able to minimize intervals from 90 to 30 minutes. With the system running in two-shift operation at most, practical experience in the first six months definitely indicates noticeable energy savings, although concrete figures are not available yet. Nordson Deutschland GmbH, with headquarters in Erkrath, also offers its customers free energy measurements.

Two dispensing gun variants

The trays are reshaped by gluing the longitudinal edge with a bead of adhesive about 18 to 20 cm long, depending on the carton format. A

pneumatic dispensing applicator, MiniBlue II slim line, is used for this. The applicator, often referred to as the "non-stop sprinter," works with a minimum switching time of 2 ms and achieves a service life of more than 100 million cycles. With its full plastic insulation, optimized ball-and-seat module and Saturn precision nozzles, the unit also makes its contribution to energy efficiency.

After the boxes are erected and the bottles have been pushed in horizontally, hot melt glue strips from 5 to 20 mm long are applied to the packaging for end gluing. Multi-module MiniBlue II dispensing guns of the low profile series close the four side tabs on both sides. Two applicators on each side, offset slightly higher, are arranged next to each other with two modules each. The heads are ideally suited for machines in which the gluing section offers only a little room. Up to four modules can be connected.

Enclosed system

A fundamental advantage of the ProBlue Liberty system is its enclosed nature, which eliminates dirt, dust and other accumulations. Marco Luckner emphasizes that there have been significantly fewer problems with cracking and clogged nozzles since the system was placed in operation. He believes this is due to the high-quality hot melt the system is using. The technical director also had a positive appraisal in terms of consumption: "Based on initial assessments, we believe glue consumption has been reduced by about 20%."

In this special case, the type of hot melt used is Technomelt Supra 100 from Henkel. Generally, however, all standard commercial hot melts in granulate form are suitable for the system. Another important aspect in this connection is increased work safety. Because hot melt is now supplied automatically instead of manually, the risk of burn injuries – unavoidable with conventional tank devices – is completely



The end gluing of showboxes is performed on both sides using two multi-module MiniBlue II dispensing guns.



With the multifeeder option, hot melt is supplied to both ProBlue Liberty systems simultaneously from the large-volume 240-litre storage container.

eliminated. Overfilling and spilling of the adhesive are also eliminated.

Problem-free conversion

In his summarizing assessment, Marco Luckner, an experienced specialist who has been with the company since 1992, gives top marks to the new hot melt application system: "We are very satisfied with Nordson, both in terms of technology and support. All the components, right down to the supply and connecting hoses, were fitted with no problems at all and the system works absolutely

reliably. Operation is also easy and transparent."

Marco Luckner thus confirms the compatibility of the ProBlue Liberty series with all hoses and applicators of the proven Blue series. Changing from older configurations to the new system does not involve any problems and it is even possible to downgrade device capacities due to the tankless melting process that heats only what is actually required. For example, a ProBlue 10-tank device can be replaced by a Liberty 7 model.

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