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Drying up moisture difficulties

Brewer installs high-speed blowers and air knives to cut capping and labeling problems.

Lion Brewery, Wilkes-Barre, PA, was encountering some problems with excess moisture on the bottling lines. When its malt beverages exited the pasteurizing tunnel and were conveyed to the labeling station, soapy water was sprayed onto the conveyor belts for lubrication. But the soapy water also was coating the bottles and causing problems with label application. Some of the labels were positioned askew or displaying an unsightly bubbling effect. The wet environment also was creating moisture pockets under the bottle crowns, which sometimes led to discoloration around the crowns.

Lion's head of maintenance Ken Houston notes, "In recent years, our line speeds have doubled. We were producing 300 bottles per minute, and now we're up to 600 to 700 per minute." Lion's production rate increases have made the drying challenge even greater. Four lines of tightly packed 7-, 12-, 16-, and 24-oz bottles each are engineered to run at 700 bpm with **Harland** (www.harlandamerica.com) labelers. And there were repeated labeler shutdowns to resolve crooked and bubbled label difficulties.

Of the four bottling lines, three were using air comb-type air nozzles and compressed air to blast off bottle moisture, with little effect. Houston notes, "The problem with wet bottles had been going on for some time. We tried air nozzles, vortex nozzles. Some worked a bit better than others, but nothing solved it. We use about 200 cubic feet per minute total of compressed air for all the lines at our facility. But even with 50 horsepower of compressed air, we don't have enough air to dry bottles effectively at our new higher line speeds."

Better air volume

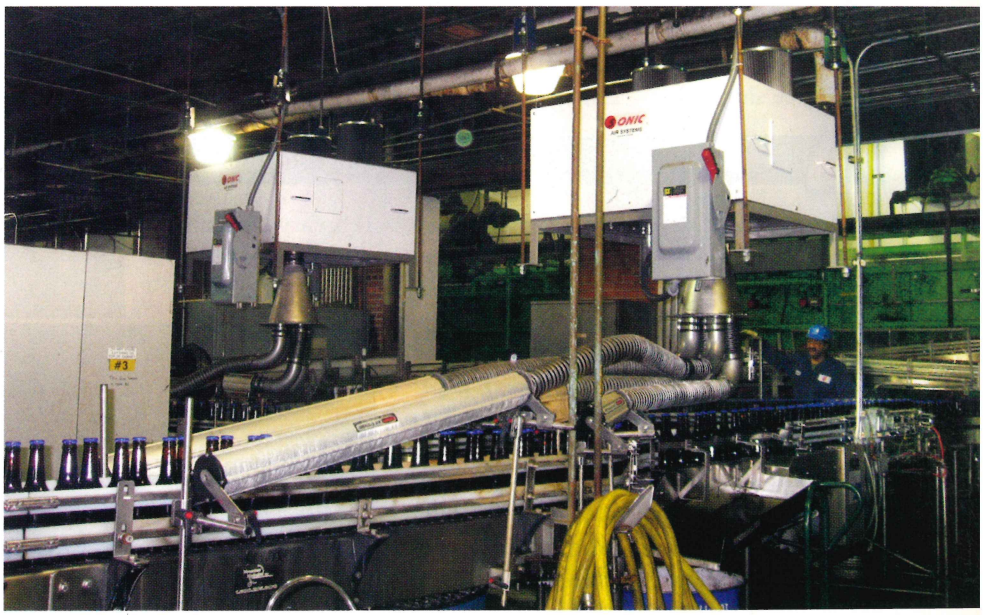
As part of the brewer's ongoing investment in adopting new technologies, Houston contacted Chris Pasquali at manufacturers' representative agency **Technical Products and Services, Inc.** (www.fluidproducts.com) to discuss possible solutions to the moisture problem.

After reviewing the situation, Pasquali concluded, "The Sonic Air system on line four was the best-performing system they had. I find the Sonic systems out-perform compressed air systems because of the volume and dryness of the air they deliver. We can output much more volume for an equivalent cost than we can with compressed air. More volume equates to being able to handle faster line speeds and larger areas. And the special air knife design helps maintain the exit-air velocity for 'knife-like' precision application of the air onto the target."

But Lion had purchased its single Sonic system before local Sonic representation was established, and the orientation of the air knives was not ideal. Pasquali said, "By suggesting some minor orientation changes and a more efficient method of getting air from the blower to the knives (less flex hose), the performance increased enough to satisfy their requirements. Factoring in operating and maintenance costs, the Sonic system can hasten payback time, particularly with the increasing costs of electricity."

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Consequently, Lion decided to install three more complete blower/knife systems from **Sonic Air Systems** (www.sonicairsystms.com) for the remaining bottling lines. Each system uses a 20-HP motor, two 42-in-long side air knives, and two 6-in crown air knives. Lion placed these systems in an atypical position—above the line. "We hang the blowers above because real estate is extremely important to us," explains Houston.



UP IN THE AIR. Lion Brewery suspends the blowers above each of its four bottling lines to conserve floor space.

In addition, Lion installed optional acoustical enclosures to address noise concerns, keeping sound levels under 80 decibels at a distance of one meter (3.3 ft).

Houston sums up, "While Sonic equipment saves us maintenance on the air systems for sure, our choice was labeling-quality-related. The bottles are a lot drier than with compressed air." —*Judy Rice*