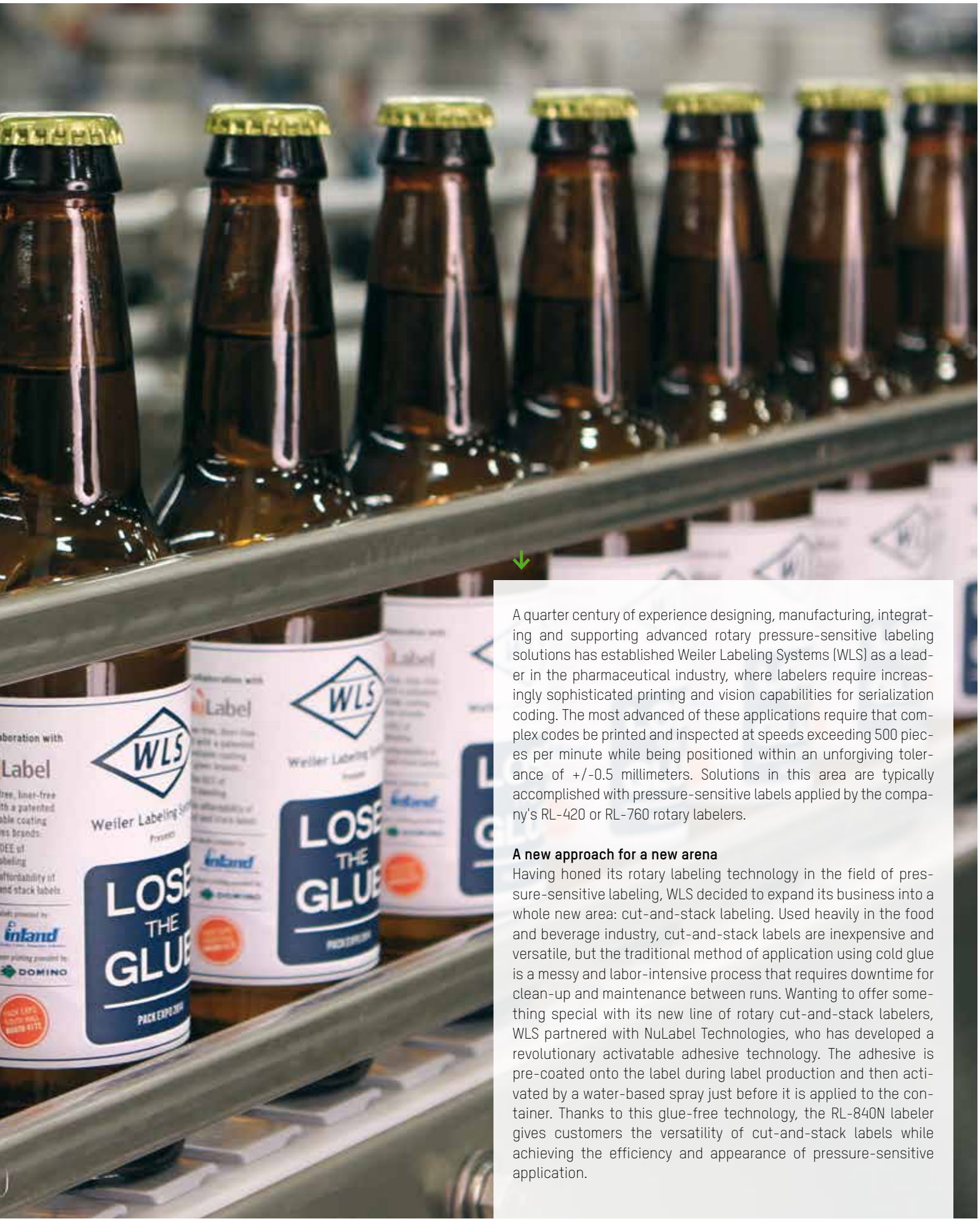
Process optimization

Revolution in rotary labeling

Weiler Labeling Systems (WLS) masters the most demanding pharmaceutical labeling requirements – blinding speed, exacting precision, advanced printing and vision systems – with its state-of-the-art rotary pressure-sensitive labelers. When it came time to expand into the cut-and-stack market, WLS wanted to avoid the drawbacks of traditional cold-glue label application. By merging its decades of rotary labeling expertise with innovative glue-free technology from NuLabel, WLS is now able to offer a cleaner, more efficient cut-and-stack labeler. To meet these industry-specific requirements as well as universal demands for increased flexibility, efficiency and ease of changeover – all while remaining price-competitive with conventional solutions – WLS relies on automation technology from B&R and the deterministic synchronization of POWERLINK.

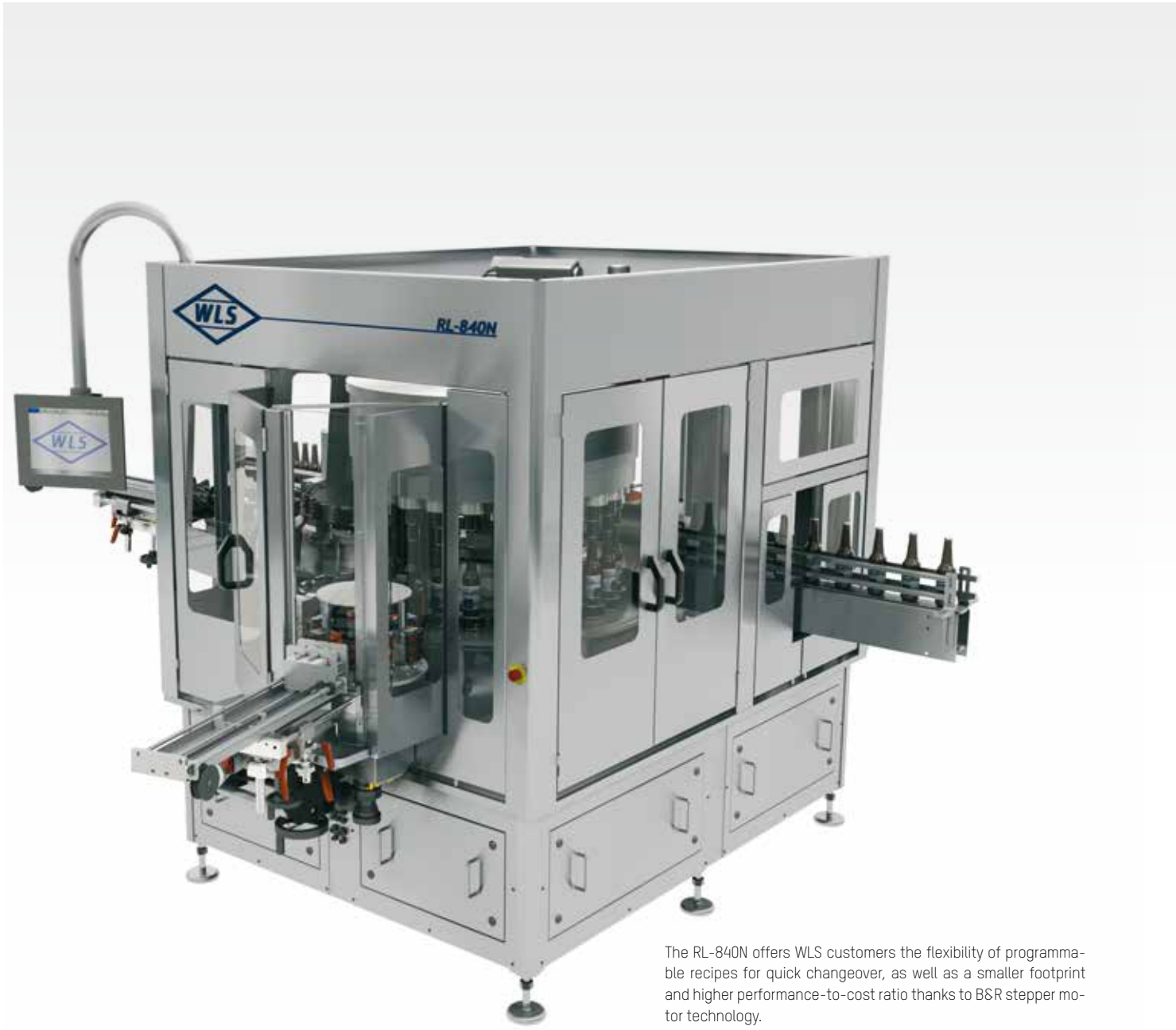
By eliminating the need for glue, WLS cut-and-stack labelers give customers the low cost of cut-and-stack labels combined with the higher efficiency of pressure-sensitive labelers.



A quarter century of experience designing, manufacturing, integrating and supporting advanced rotary pressure-sensitive labeling solutions has established Weiler Labeling Systems (WLS) as a leader in the pharmaceutical industry, where labelers require increasingly sophisticated printing and vision capabilities for serialization coding. The most advanced of these applications require that complex codes be printed and inspected at speeds exceeding 500 pieces per minute while being positioned within an unforgiving tolerance of +/-0.5 millimeters. Solutions in this area are typically accomplished with pressure-sensitive labels applied by the company's RL-420 or RL-760 rotary labelers.

A new approach for a new arena

Having honed its rotary labeling technology in the field of pressure-sensitive labeling, WLS decided to expand its business into a whole new area: cut-and-stack labeling. Used heavily in the food and beverage industry, cut-and-stack labels are inexpensive and versatile, but the traditional method of application using cold glue is a messy and labor-intensive process that requires downtime for clean-up and maintenance between runs. Wanting to offer something special with its new line of rotary cut-and-stack labelers, WLS partnered with NuLabel Technologies, who has developed a revolutionary activatable adhesive technology. The adhesive is pre-coated onto the label during label production and then activated by a water-based spray just before it is applied to the container. Thanks to this glue-free technology, the RL-840N labeler gives customers the versatility of cut-and-stack labels while achieving the efficiency and appearance of pressure-sensitive application.



The RL-840N offers WLS customers the flexibility of programmable recipes for quick changeover, as well as a smaller footprint and higher performance-to-cost ratio thanks to B&R stepper motor technology.

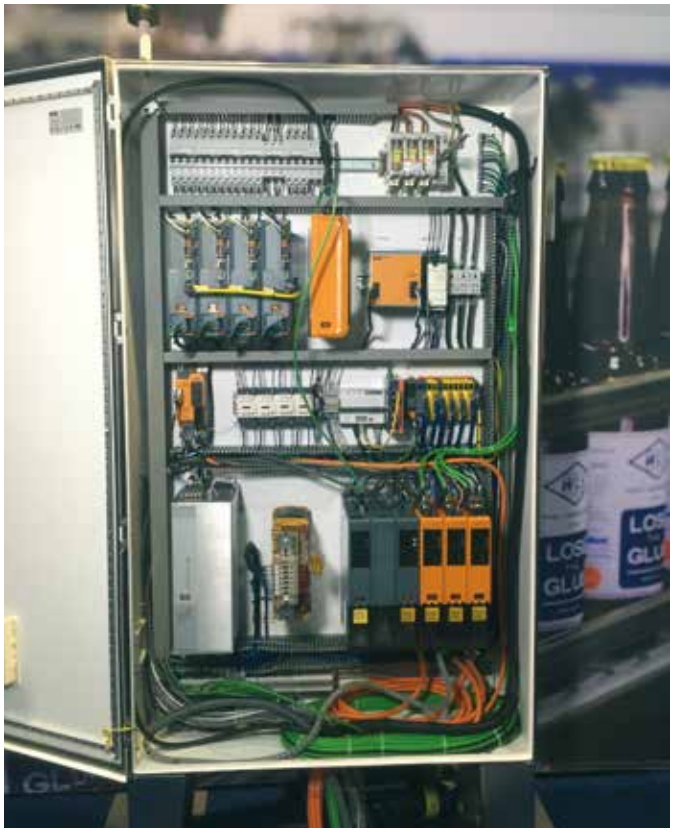
Centralized machine control, distributed I/O and motion

Both the RL-420/760 pressure-sensitive labelers and the RL-840N cut-and-stack labelers are extremely motor-intensive machines that demand incredible speed and accuracy as well as real-time deterministic communication. To achieve this, WLS turned to automation technology from B&R. B&R's solution combines centralized machine control with distributed I/O and motion control that all communicate over POWERLINK. This decentralization allows WLS to use much smaller electrical enclosures compared to their existing PLC-driven labelers. The RL-840N features 12 to 24 stepper platforms on its turret, as well as a number of servo motors that drive the feed screw, the turret and the machine's cut-and-stack modules. "B&R's stepper motors offer similar functionality to servo motors, while being both smaller and lower priced," explains Philippe Maraval, vice president of sales and marketing. "As a result, we're able to offer our customers pricing comparable to a traditional mechanical cam machine with the flexibility of a servo machine."

Microsecond accuracy with POWERLINK

To match the performance of a mechanical cam machine, all of the servo and stepper motors must be synchronized with microsecond accuracy. The same high precision is also required for in-line vision and printing equipment. POWERLINK vastly improved communication times and trigger accuracy as well as product tracking, helping to solve many of the challenges associated with high-speed coding and labeling. The ability to integrate third-party de-

"The incredible level of synchronization was made possible by POWERLINK technology's microsecond communication, which allows the motors to talk efficiently and reliably – even through the slip-ring on the turret. POWERLINK also allows us to achieve the results we need with high-speed inline vision inspection and printing." **Ted Geiselman, President, WLS**



The RL-840N from WLS utilizes B&R control technology distributed throughout the machine – including ACOPOSmicro servo drives, ACOPOSmicro stepper drives, X20 and X67 I/O modules – to deliver a scalable and cost-competitive solution.

Driven by a B&R servo motor, the cut-and-stack module on the RL-840N labeling machine picks up labels, activates their adhesive and places them onto the containers.

vices over POWERLINK also reduced the amount of wiring required to incorporate them into the machine control system.

Safe and secure

An Automation PC 910 and Automation Panel 900 multi-touch display were selected to provide the machine's computing and HMI performance. This approach allows WLS to control access to machine functions based on each user's login credentials. Users can be restricted to any combination of basic operations and advanced maintenance functions or granted full administrator capabilities. B&R's integrated safety technology further reduced the amount of wiring compared to earlier WLS labelers while providing fully programmable safety reactions with multiple machine configuration options. In addition, the modular PC and HMI integration provides extreme flexibility for scaling the processing performance and accommodating future machine updates.

Smaller footprint, competitive performance

WLS labelers are typically integrated into packaging lines prior to final packing. The RL-420/760 and RL 840N offer WLS customers the flexibility to use programmable recipes for quick changeovers and help achieve a smaller footprint with a higher performance-to-cost ratio thanks to the cost-effectiveness of B&R's stepper motors.

"The flexible and expandable hardware topology built on POWERLINK communication allows us to implement a distributed control architecture tailored to our exact machine specifications," notes WLS president Ted Geiselman. "This reduces the overall size of the electrical enclosure and improves performance."

WLS currently relies on B&R hardware and software for its pressure-sensitive and cut-and-stack rotary labelers. "In the future, we will be expanding our B&R offering, starting with our in-line labeler and our topserter, and then continuing with other platforms over time," concludes Geiselman. ←

A video of the RL-840N in action can be found on B&R's YouTube channel: