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Pushing Equipment to the Limits and Beyond

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A packaging manufacturer overhauled its conveyor system and reconfigured its controls to keep pace with increasing production volumes.

Recently, a packaging manufacturer in the northeastern region of the United States was experiencing growing production volumes, leading managers to conclude that the material handling equipment in the facility was due for an upgrade.

Existing conveyor systems, for example, could no longer handle the facility's volumes. However, the manufacturer had to keep production running at normal levels and could not afford to take machinery offline for modernization.

Reconfiguring Automation

The packaging company consulted Han-Tek, a supplier and integrator of automated material handling equipment. Han-Tek advised the firm to reconfigure, relocate and add conveyors to the manufacturing facility to allow it to keep up with increasing throughput requirements.

The supplier also recommended automating an existing transfer car to eliminate the need for an onboard operator. That meant the original PLC controls needed to be updated and reprogrammed to work with the conveyor system improvements. Another challenge involved automating a strapper beyond its original factory settings. One of the strappers was only capable of four different strap configurations. After reprogramming, the strapper could handle multiple configurations.

Finally, Han-Tek had to integrate new conveyors into the facility's existing system and minimize the learning curve for maintenance and operations personnel. To do this, the supplier redesigned the control systems to increase their capabilities while maintaining the look, feel and methodology of the original control systems.

“We redesigned the conveyor system to handle the greater complexity of additional high-speed production while doubling the strapping capacity of the existing system,” says Craig VanHarken, project manager at Han-Tek. “Having the entire process controlled by multiple PLCs results in quicker responses, greater consistency of throughput and less human error.”

The Modernized System

HAN-TEK, Inc., an ISO 9001:2008 registered company, customizes advanced automation technology to optimize manufacturing-assembly and product-distribution systems. Founded in 1961, HAN-TEK specializes in overhead cranes, integrated conveyors, robotics and systems automation and controls.



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Once the \$440,000 automation project was complete, the reconfigured conveyor system could move multiple stacks of corrugated packaging weighing 1,000 pounds from both existing and new machines and relocated strappers. The system can handle 60-x-60-inch loads from high-speed machines and 115-x-72-inch loads from standard machines.

The control system consists of a new, two-door enclosure with PLC control. Three new control stations were added at critical locations, allowing operators to direct the paths of loads. Existing control cabinets were modified and reprogrammed to accommodate the reconfiguration of existing conveyor sections. Thanks to reprogrammed PLC controls, the facility can produce more packaging product while maintaining efficiency and cost effectiveness.

“All extra movement, processes, over production, wait time, unnecessary transportation of product and inventory has been removed from this system,” says Patrick Tobin, business development manager at Han-Tek. And, last but not least, the conveyor system overhaul allowed the packaging manufacturer to adapt to rapidly changing throughput requirements.

Alexandra Mangione is a public relations specialist at Han-Tek Inc., a supplier and integrator of automated material handling equipment.