TRI-PHASE AUTOMATION

Engineering Excellence

SUCCESS STORY

Zipper Winder Machine Retrofit for Improved Efficiency

THE COMPANY

This company is a leading manufacturer of zippers for sealable plastic bags, supplying high-quality zipper materials to various industries. They operate approximately 60 winding machines used to package the zipper material onto spools. With decades of expertise, the company is known for its innovation and commitment to quality, constantly looking for ways to improve operational efficiency and maintain high standards in their manufacturing processes. In pursuit of modernizing their equipment, they sought a solution to enhance the performance and adaptability of their aging machines.

OVERVIEW

Tri-Phase and i-Tech were selected to modernize the company's outdated zipper winding machines. These machines, originally built at different times, resulted in various physical configurations that posed challenges for a standardized solution. The project aimed to upgrade the obsolete motors and controls, create a universal enclosure design, and reprogram the machines to meet modern industry standards. The goal was to enhance performance, improve efficiency, and extend the lifespan of the equipment while ensuring that the solution could be easily adapted to the existing machines' diverse configurations.

CHALLENGE

The key challenge was the diversity in the physical configurations of the 60 winding machines. Since the machines had been built at different times, each one had unique mounting situations. This made it difficult to design a standardized solution that would fit all of the machines without needing significant modifications. Additionally, the retrofit needed to be completed while maintaining mechanical compatibility with the existing equipment and upstream machinery.

SOLUTION

To address the challenges of varying machine configurations and modernize the equipment, Tri-Phase and i-Tech collaborated closely to design a comprehensive solution. The goal was to replace obsolete motors and controls while maintaining compatibility across all 60 winding machines. The solution focused on flexibility, ease of installation, and modern programming to ensure seamless operation and enhanced performance.

Universal Panel Design:

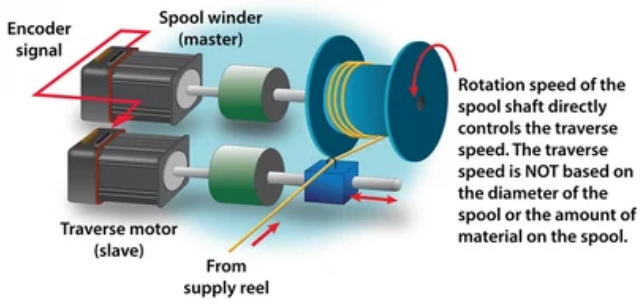
The design team developed a flexible, universal panel that could be easily adapted to fit different mounting configurations, allowing for efficient installation across all machines.

Modernized Motors and Controls:

Old, outdated motors and control systems were replaced with modern, reliable equipment to improve machine performance and reduce maintenance costs.

Custom Wiring and Cutout Instructions:

Detailed wiring and cutout instructions were provided to the customer to assist with the installation, ensuring that each machine could be retrofitted with minimal effort and maximum flexibility.



RESULTS & OUTCOMES

The retrofit solution not only addressed the challenges of varying machine configurations, but it also brought measurable improvements to both operational efficiency and the longevity of the equipment. Through modernized controls, flexible design elements, and streamlined installation processes, the company has seen significant improvements in its production capabilities and machine uptime.

INCREASED OPERATIONAL EFFICIENCY

Replacing obsolete motors and controls improved machine performance, reducing cycle time and boosting throughput. The updated, intuitive UI eliminated the need for paper charts, streamlining calibration and further enhancing efficiency.

REDUCED DOWNTIME

The new, more reliable motors and modern controls reduced machine breakdowns, minimizing costly downtime and increasing productivity.

ENHANCED INSTALLATION FLEXIBILITY

Automation significantly reduced operator complexity and added intuitive controls, shortening operator training times and simplifying each part's setup.

EXTENDED EQUIPMENT LIFESPAN

The modernized components ensured longer machine lifespans, minimizing future upgrades and reducing maintenance needs.

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