Case Study: Custom Electromechanical Solutions

Bringing a Flour Mill Into the 21st Century

Identifying Problems with the Customer's Existing Hydraulic System

Our Motion Repair & Services team was recently asked to review a hydraulic system design for a long-time Canadian flour mill customer. This hydraulic system was responsible for driving the screw conveyors that meter different flour types from storage silos into the customer's batch mixtures.

This dated system utilized lockable manual flow control adjustments to set motor speeds and determine mixture ratios. To make these adjustments, an operator had to climb onto a catwalk above the machinery throughout the day and manually adjust each valve for each batch they produced. While this is a historically effective approach, this dated design allowed a wide margin for error, as it had poor readability when making such adjustments. This system also required diligent maintenance to keep flour from entering the system's oil, which would often cause problems for the customer.

Upon hearing how frustrated the customer was with their existing hydraulic system, our team made a recommendation. Rather than repairing and replacing parts within the customer's existing system, we recommended that the customer allow our team to create a custom electromechanical solution to replace their hydraulic system.

Converting Hydraulics to an Electromechanical Solution

Our Motion Repair & Services team supplied this customer with an electromechanical drive package, installing and retrofitting the solution. This electromechanical system was designed to provide the customer with variable frequency drive (VFD) control for each of their 18 augers. It also provided the customer with a programmable logic controller (PLC) and a touch-screen for a simplified operator interface and the utilization of batch recipes. The control panel included an air-purged, explosion-proof enclosure to comply with area classification.

Overall, the customer is very pleased with their electromechanical system. Now, rather than climbing on a catwalk to manually adjust flow control, operators can set up automated premixes by pressing a button. The customer has also increased their loadout capacities and speeds by 28% while improving overall reliability, efficiency, and automation.

"Our shop really stepped up and did a great job on the creation and installation of the solution," said Ian Miller, Motion Service Shop Manager. "This is the type of customer we work closely with and who comes to us for their daily needs. We're currently evaluating automated lubrication systems for some of their other mills to be installed in the near future."

Contact Motion Repair & Services Today

Whether you need hydraulic or electromechanical solutions for your operations, our Motion Repair & Services team is ready to assist. Head to our website to learn more about our capabilities today.