How Floor Robots Increase Safety and Reduce Workloads

With the Industry 4.0 grant, this Michigan manufacturer was able to implement floor robots

In partnership with the Manufacturing Growth Alliance, the Economic Growth Institute at the University of Michigan (EGI) first conducted in-depth analysis by visiting Lyons Industries. There, it was discovered that Lyons Industries currently relies on workers to package, label and transport 50lb packaged product from the end of the manufacturing line to the appropriate location on the shipping floor. The process is currently highly reliant on a strong individual who needs to label and carry the 50lb part every 60 seconds. Furthermore, Lyons Industries was in need of an easy-to-use, worker independent material transportation system.

After evaluating multiple solutions, EGI and Lyons Industries determined floor robots would be the best long-term solution. These robots are key to reducing the human workload and improving the safety of the human operator. Additionally, floor robots can integrate with the existing production software and coordinate with a fully automated storage rack.

The total project expense was projected to be over $600,000 over multiple years. MGA provided a grant of $10,000 to help Lyons Industries fund their project, and the manufacturing company implemented their first floor robot in 2022. This grant is a successful first step for Lyons Industries to reach their goal of automating a transport system that alleviates the need for individuals to carry a heavy load, and has inspired them to continue expanding this project well into the future.

In the 1960s, Lance Lyons’ father and grandfather started Lyons Industries in Dowagiac, Michigan and produced plumbing vents for the mobile home industry. Today, Lyons Industries has expanded its products, and the family-owned manufacturing company produces over 1,000 bathtubs and showers every day.

Lyons Industries began exploring automation in 2013. It took over five years to complete their first automation project, and it revealed the potential of automation in the manufacturing industry.

“The workforce is shrinking and it was very important to make our jobs easier and easier on our people,” Lance said. “We need to figure out a way to burn fewer calories; we burn too many calories. This work is too hard.”

Geared with this mindset, when Lance heard about the Michigan Economic Development Corporation's Industry 4.0 program in 2021, he was excited for the opportunity. The program aims to help small manufacturers prepare for Industry 4.0 — the convergence of digital and physical technologies, including artificial intelligence, 3D printing, robotics, augmented and virtual reality.