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Roseburg company puts robots to work

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The arm reaches out, picks up a 4-by-8 foot sheet of plywood, twirls effortlessly and stacks it nearby. It's a smooth, efficient, fast process that repeats again and again.

The worker is a robot. It's about 8 feet tall and features a strong, working arm.

There are four such robots in the plywood panel cutting system that Con-Vey Keystone of Roseburg is producing and assembling for a wood products company in the United Kingdom. The robots can be programmed to move and stack wood products.

"It's pretty unique," said Con-Vey President Dave Larecy of integrating robots with other machinery. "There are other robot integrators out there. Some companies have robots and some have conveyors (to move product along), but our niche is that we're the only one that can provide a complete solution or package."

Con-Vey Keystone is a 64-year-old company that was founded in Roseburg as Keystone Machine Works.

It merged with Con-Vey International in 1972 and became a privately held corporation with shareholders.

The company has 60 employees.

"We are all proud of these robot systems," Larecy said. "For years we've been building equipment for all over the world; we have equipment in 14 countries, but we're all excited about working with these robots. They're opening new doors for us."

The package that will soon be shipped to the United Kingdom is a \$2.5 million project, including shipping and installation.

Larecy said once the equipment is installed, "the automation will do twice as much as a six-person shift."

Ryan Champion, a project engineer at Roseburg Forest Products, said RFP has 13 robots that have been installed in its operation.

"They're valuable for their improved efficiency, for increased recovery of product (because of more precise grading through a vision system)," said Champion. "The robots don't need breaks, they don't need vacation, they just sit there and work and work and work. Basically, overall, the reason we put in robots is because we want to stay competitive in all we do."

The robots that Con-Vey is integrating into its equipment systems are actually made by Kawasaki Robotics of Wixom, Mich. Con-Vey buys the robots and then designs, builds and installs the end-of-the-arm tooling. The robots have vacuum (suction) systems for picking up wood and, when combined with a vision (camera) system, can grade wood products.

Con-Vey designs and manufactures the robot stands that need to be heavy and strong enough to handle the motion of the arm. Safety fencing and safety interlocks are also part of the package. Safety interlocks will

automatically stop the robot from working if the door in the fence is opened without first stopping the robot.

Con-Vey engineers do all the programming of the robot so it works in synch with the rest of the equipment. The package being assembled for the United Kingdom company includes the saw to cut 4- by 8-foot wood panels into smaller sizes and the conveyors to carry the product along to the final station, where it is banded for shipping.

The only human part of this process is the forklift driver who brings a unit of 4-by-8s to the robot and the forklift driver who transports the final banded product.

"It works great," said Larecy, who worked in the Con-Vey shop during his high school summers before graduating from Roseburg High School in 1984. "We've done a lot of testing and simulation with simulation software."

Con-Vey had a customer demonstration day on Jan. 13 to show off the robots and their abilities. Then on the next day high school classes and invited guests from the public toured the company shops to see the robots at work.

"The main goal of the demo day was education for our customers," said Larecy. "To show them what's available with the robots and how Con-Vey can help in the process.

"The majority of what we've done with robotic systems is in woods products, but now we're seeing requests, proposals in areas outside the woods products arena," he added.

He explained that those discussions include the packaging of bulk agricultural products, wood pellets or any other bag products or case goods. He added that using robots to cut steel and weld is also feasible.

Champion said Con-Vey is working with RFP on a proposal for an integrated robotic system to handle and place stickers in units of lumber.

"Some of these concepts are fairly complete," Larecy said. "The economy has slowed a few companies from purchasing these systems, but I expect in the next two years, come of these systems we're proposing will become actual contracts."

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