

BY LAUREN DUENSING

Bob, a friendly material-handling robot offered by **Bardons & Oliver**, makes unloading easier

Get a
handle
on it



Picking up heavy cut parts all day can be extremely exhausting, even for the strongest human being. Fortunately, today we have technology that can make the job easier and safer—robotics.

Bardons & Oliver Inc., Solon, Ohio, manufactures CNC turning and cut-off systems used in a variety of industries, including automotive, hydraulic cylinder manufacturing and OCTG to machine and cut off large-diameter tubing or bar stock. The company has more than 100 years of machine manufacturing experience and innovation. It employs a fully trained staff of 120 skilled employees, including mechanical and electrical engineers, assembly technicians and machinists, each with an average of 15 years' experience.

To boost its product range, the company is now offering an automated robot for the unloading process on its CNC machines. "We call it Bob," says Jim Dalton, vice president of Bardons & Oliver. For those not on a first-name basis with Bob, the robot's official name is the M-900iA. No matter what it's called, the heavy lifter streamlines material handling processes. After a part is cut off and discharged, a lifting mechanism positions the part so the robot arm can unload it. The robot uses a strong magnet to lift parts and can be programmed to tilt the part to dump any coolant prior to stacking. The robot can then stack the part in a bundle frame or move it to the next operation. With the ability to swing 180 degrees, it can serve two or more machines by reaching back and forth.

Current application

The company currently has one cus-

tomers using the system, which includes two CNC lathes that machine and cut off hydraulic cylinder tubes. "These are steel tubes that range in size from about 1½ inches to about 8½ inches OD and can be up to 72 inches long," says Dalton. "The tubes start out as one 30-foot tube, which is then machined into 72-inch lengths. This tube is pretty heavy, so the robot picks it up off the machine exit and deposits it into what we call a bundling buck, which stacks the tube in a pattern that allows it to be banded." Once the buck is full, the robot alerts the operator of its status so that it can be taken away and an empty buck put in its place.

Although the robot is connected to two machines in the current installation, Dalton notes that it could probably be hooked up to more, depending on the customer's needs. Right now it "goes from one machine to the next and unloads both," he says.

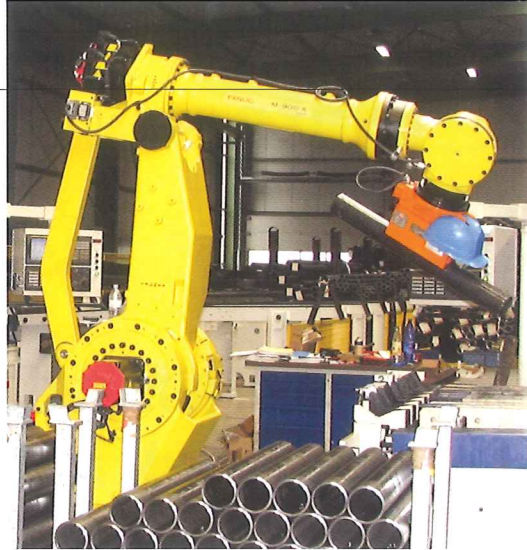
No more sore muscles

Dalton thinks the biggest benefit the robot offers is the elimination of operator fatigue. "Normally, these parts were removed from the machine area by hand or with some type of manual crane system," he notes. "This type of handling subjects the parts to damage along with operator fatigue and safety issues."

"The robot easily handles the heavy tube," he notes. This increases the efficiency of the unloading process and makes the company more streamlined by allowing it to use its manpower elsewhere.

In addition, there is very little operator training. "Fanuc provides the software to teach the robot what to do," says Dalton. "So we program it to go to a certain position, pick up the tube, bring it over and put it in the bundle. It counts the tubes and makes rows, and when it gets to the top, it knows that it's full."

The robot is an optional addition to



Bardons & Oliver's CNC machines. It can be retrofit to a customer's existing system, and its flexibility allows it to be integrated smoothly into a current setup. "The customer's material can be DOM steel tubing, seamless tubing and cast iron or steel bar stock," says Dalton. "The robot allows the parts to be picked up, drained of coolant, if necessary, and neatly stacked in a bundle buck for shipment or moved to the next operation sequence."

In this way, the robot can be somewhat customized to an individual customer's needs. "We have a customer now that is looking to turn the tube vertically and put it on a paint line. So as a paint line conveyor goes by, the robot will pick up the tube and stick it on a post, if you will," says Dalton. "The post is connected to the conveyor and will carry the tube through the paint line."

As for the work environment, Bob's not picky. Give a robot a task, no matter how strenuous for a human, and within no time, both employers and employees will enjoy the benefits. ■

Bardons & Oliver, Solon, Ohio, 440/498-5800, fax: 440/498-2001, www.bardonsoliver.com, e-mail: information@bardonsoliver.com.

Reprinted from Modern Metals® July 2007 Copyright Trend Publishing Inc.