Burning through BUNDLES

High-volume cutting operation relies on custom equipment to manage multiple setups

BY CORINNA PETRY

Running several bandsaw machines for 100 hours a week or more teaches you that even heavy-duty equipment can get strained at continuous levels of operation. You might want to specify new machines that deliver more power, more control, more precision, more speed and higher quality.

That was the trajectory taken by Sherwyn Greenfield, Iowa facilities manager for Rosenboom. The company—which has factories in Sheldon and Spirit Lake, Iowa; Bowling Green, Ohio; and China—manufactures custom hydraulic cylinders with typical bore sizes from 1 to 12 inches, typical stroke lengths up to 24 feet and operating pressures up to 10,000 psi. In business 45 years, Rosenboom employs 900 people in the United States.

"We build cylinders for OEMs; they are all custom designed and custom built," Greenfield says. Cylinder lengths range from 6 inches to 40 feet. Applications for Rosenboom's cylinders include agricultural equipment, construction equipment and aerial trucks.

"Most of our parts are steel; there are some aluminum parts internal to the cylinders. We buy tubing and bulk shaft material. That is cut to length for the particular end product. That is where the saws come in," he says.

Rosenboom has operated numerous bandsaws from various makers over the years. More recently, the company purchased two BTM saws, switching due to the "reliability and the speed of the saw design," Greenfield says.

A trap door allows Rosenboom to cut shorter pieces and shuttle them to other work cells. It can also be used to remove scrap to a bin for recycling.

"We have several different setups. Some of the jobs are more labor intensive. With some others, speed is more important, especially for large volume. We have a class of saws dedicated to that kind of product," he says.

Woodstock, Ontario-based BTM Saws covers North America and has a particular dealer, Productivity Inc. that covers 11 states, mostly in the Midwest, says President Ian Tatham. Every couple years, Productivity hosts an open house that's similar to a tool show.

"It's huge. We had a saw there, and Sherwyn walks up and talks about makes

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and models," says Tatham. "He has five of this model, four of that. I asked him, 'How many saws do you have?' He said, 'We have 50 operating at one time.' He told me he wasn't happy with the products he had, and I told him about the features of BTM band saws."

Greenfield recalls that BTM "took us to another customer to see their saw in operation. That means a lot."

Tatham says Rosenboom purchased a smaller model first, adding, "They tried it and really liked it."

Rosenboom uses the smaller saw in an application to cut up to 8-inch-diameter tubes and 4-inch-diameter shafts. The bundle cutting feature will hold 14-inch by 14-inch bundles, Greenfield says. "That may be six tubes or it may be 25 rods."

Then, "the next project came up," says Tatham. Greenfield explains that his company won a long-term contract to cut large bundles of tubing for a customer. So the company ordered a second, larger BTM saw.

Easy adjustments

"The programming of the machine is a big benefit when switching from product to product," Greenfield says. "The controls allow you to say what you are cutting and adjusts feeds and speeds. An operator doesn't have to remember how to set it up."

The smaller saw, he says, is located in an automated work cell, which takes up about 50 by 50 feet of floor space. The saw itself has a 30-foot footprint. "We put 25-foot-long material on that table."

The larger sawing system features a 25-foot-long infeed table; the saw itself holds material of the same length; and there is a 25-foot-long outfeed table, so the entire line is 75 feet long.

"The bundle cutting saw feeds several work cells," Greenfield notes.

"Quality is one of the biggest reasons we chose BTM. Consistent squareness is critical. If the cut material is not square, we waste material. Using these saws, we can reduce scrap and increase output.

"As we went to look for an alternative saw—due to quality issues and maintenance issues we had with an old saw and the project to cut bundles—we found BTM was easy to work with and they made modifications to fit our process. The amount of control they have over the way the saw cuts is very critical for our application," says Greenfield.

Doing things differently

According to Tatham, what BTM actually sells is advanced technology. "With our equipment, we do a few things differently. We stress relieve all of our components. When welding, it adds stress, and if there is stress in the head of the saw, cutting vibration is present and affects cut time, surface finish and blade life. We put all components in a thermal oven. This eliminates all stress, allowing the components to absorb vibrations and also anneals the components, making them very durable."

Another step BTM took was to isolate the blade drive, using a high-quality gearbox, which Tatham says is crucial to extending blade life and providing a better surface finish on cut material.

"With this technology, you buy fewer blades over the life of the machine, which allows you to make more money faster."

Customization

The BTM 360 CNC is a standard machine, but the company is able to make nearly infinite modifications to satisfy cus-

tomers' requirements, such as changing infeed or outfeed parameters.

Rosenboom sought a machine with a 24-inch by 28-inch capacity, set up to cut hexagonal and square bundles, while also able to cut to length single pieces. "It's very flexible," Tatham says. The machine built for Rosenboom features a 10-degree blade cant, This spreads the cut over the cross section of the work piece, allowing the blade to cut faster and preserve blade integrity.

The unit also features two shuttles. "Most automatic bandsaws have one shuttle. Rosenboom has a 118-inch infeed shuttle and a 19-inch outfeed shuttle. If you have a 50-piece bundle and a 9-inch remnant length, that creates a lot of scrap. This machine will bring in a bundle, trim ½ inch from the front end, and a trap door opens to remove the scrap on a conveyor to a bin. The saw then cuts to length, and when it reaches the end of the bundle, the outboard shuttle will pull the bundle forward to trim another ½ inch off the back end.

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Again searching for flexibility, Rosenboom specified that it wanted to use the same equipment to cut short pieces, from below 1 inch up to 6 inches long, that would drop through the trap doors and into a bin to be taken to the next operation.

"It's a very efficient saw that is processing large amounts of steel very quickly," Tatham says. BTM can build and ship custom saws within eight to 12 weeks because most of it is already built. "All we have to do is fine-tune it to customers' specifications," says Tatham. "We install custom features and perform final assembly." Larger machines are built from the ground up. Delivery may take 15 weeks for a larger custom saw.

Another perplexing question Rosenboom's team had was about control placement—on one side of the line or the other. "So we made the control with a quick disconnect and they can move it to either side. It totally eliminated an issue of access now and in the future. It's a small thing but other saw manufacturers may not think of that." ■

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