

A cutting DECISION

With growing demand, company turns to innovative mechanical presses to increase production

With 35 stamping presses on the floor ranging from 35 tons to 600 tons, Fisher Barton South Carolina Inc., Fountain Inn, S.C., is in a unique position to handle nearly any type of stamping for parts ranging from 0.5 in. to 30 in. and sometimes larger.

With this stamping flexibility and the company's focus on reducing costs, Fisher Barton South Carolina was experiencing dramatic growth. But this also caused concerns when it couldn't keep up with demand for stamping lawn-mower blades, one of its major products.

Fisher Barton South Carolina is one of a family of five companies, three of which produce precision stampings. Started in 1973 by Richard Wilkey in Wisconsin, the company originally produced lawn-mower blades and then added precision stampings. Now these companies are the largest OEM suppliers of lawn-mower blades in the world, says Greg Andress, Fisher Barton South Carolina president. The company also offers engineering and design capabilities from product concept to completion and in-house toolmaking.

Fisher Barton South Carolina primarily does progressive and in-line stamping. The lawn-mower blades it produces range from 0.122 in. to 0.312 in. in steel thickness. These blades are made from a boron-based, heat-treatable steel.

"Each company of our group does something metals related, but each is a little bit different," says Andress. "Our plant here in South Carolina is not only a lawn-mower-blade manufacturer, but we also do contract metal stamping, welded assemblies and heat-treated stampings in a 93,800-sq.-ft. facility."

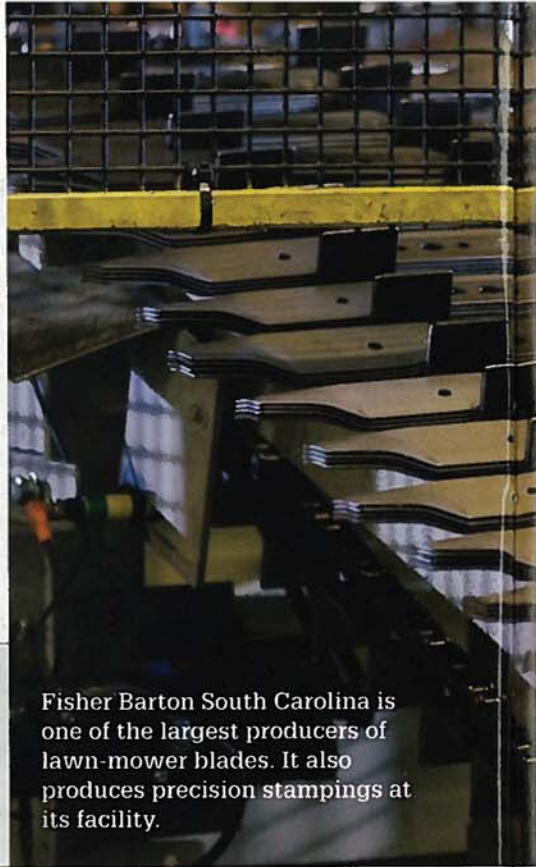
Although the company does some automotive work, it's only a small percentage of its production.

Fisher Barton South Carolina will build prototype parts, although it would rather do high-volume production, Andress says. An average lot size varies from 5,000 to millions of pieces annually.

"We've also run lot sizes of only five pieces. It's not what we like to do, and we do it in a specialized cell, but we will take on the work," notes Andress.

Two other areas the company has invested in heavily are lean manufacturing and in-die sensor technology. Fisher Barton South Carolina even has advanced training courses in sensor technology to better understand how it works, the proper selection and precision implementation.

"With our lean-manufacturing techniques, as well as using sensors for our stamping dies, we have dramatically increased our press production," says Andress. "For instance, we've taken some jobs that might be running at 30 to 40 strokes per



Fisher Barton South Carolina is one of the largest producers of lawn-mower blades. It also produces precision stampings at its facility.



minute to well over 100 by just using sensors in the tooling."

Sensors allowed the company to reduce labor and increase equipment output and part quality, and lean manufacturing helped it accomplish rapid die changeover for high part turnover and low press idle times.

Growth demands change

As the largest stamper for lawn-mower blades and with a growing business, Fisher Barton South Carolina had to make some changes, says Andress. "We knew we had to add capacity, and at the same time,



we've been driving labor costs out of our manufacturing process," he says. "We've been doing this through automation and using innovative ideas for equipment we build internally. For instance, instead of putting stamped parts into a bin, we use more of a straight-through process for finishing them that saves costs."

The company needed a new stamping press because it required more capacity, and it was looking for a better way to produce stampings. Fisher Barton South Carolina wanted to automate the stamping process to reduce cost, remain competitive and lead the market with economical pricing, says Andress. With this in mind, he started shopping for new presses.

An issue the company had with mechanical presses was the stopping and starting of its traditional clutch-brake systems, which was a disaster for the clutch and brake, says Andress. Fisher Barton South Carolina needed press technology that eliminated this drive system.

"Once we narrowed down the type of press we needed, we started looking at the various types of equipment available," says Andress. "We also wanted to stay with one particular press supplier for the commonality of their parts for maintenance and the operators' equipment knowledge."

"We knew that the technology existed in the marketplace for a wet-clutch-style me-

chanical press, and we knew that this was the right way for us to go for at least our blade-manufacturing side of the business. Therefore, going with this type of press was a big driving motivation for us to minimize the downtime and the associated equipment repairs and maintenance. This led us to look for the most robust stamping press that would last us years and years."

One of the few companies that offers a wet-clutch style of mechanical OBI press is Aida-America Corp., Dayton, Ohio.

Fisher Barton South Carolina purchased its presses in two phases.

"The first Aida 220-metric-ton press [we] bought was first used at our facility in Wisconsin, and then we moved it here to South Carolina when we started expanding our capacity and decided to put the new wet-clutch style of stamping press into our plan," says Andress. "At this point, we actually looked again to resource the companies that we could be dealing with for this type of stamping press for additional presses. But we came back to the same decision that our facility in Wisconsin did to stay with Aida. Therefore, we ended up buying four more presses for our South Carolina facility and one more for our Wisconsin facility."

Each press is in a manufacturing cell that might consist of two presses and other automated equipment. With a two-press cell, the presses work in conjunction with one another during production.

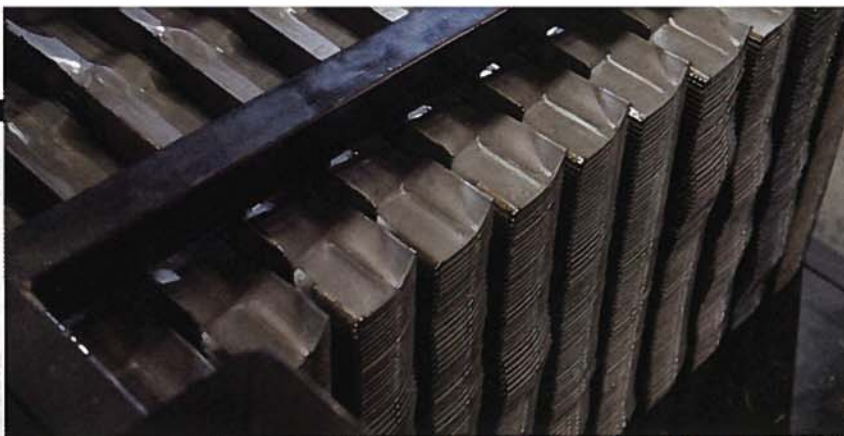
"These presses are all identical with some having the capability to run progressive-style tooling for blanking operations, while other ones are used in a transfer mode for forming," says Andress. "On a generic standard blade, it can be done in a three-station progressive die. We do have some nonstandard blades that are larger and more complicated, which could entail a seven- or eight-station progressive die."

Making lawn-mower blades involves blanking them, milling for the cutting edge, forming them for shape, heat-treating, straightening and balancing. Fisher Barton South Carolina then paints

Stamping

and packages them depending on whether they are for an OEM or a retail sale.

"The presses are doing a good job for us. However, there were some options for the controls that we should've bought originally that would've helped the presses be even more productive," Andress says. "We are pushing the limits for what



Fisher Barton South Carolina uses Aida's 200-metric-ton NC1 single-point, gap-frame NC Series presses to produce lawn-mower blades.

the machines can do for us, but this just means we need to add program features to the controls. But they have been great presses as far as being maintenance-free. We've been very happy with their performance."

A better press

Andress chose Aida's 200-metric-ton NC1 single-point, gap-frame NC Series presses that use a welded steel frame, cast-iron slide and oversized cast-steel bolsters. This construction allows the presses to deliver dramatically reduced angular frame deflection, ensuring longer die life and higher part quality.

A feature important to Andress is a wet clutch that these presses offer as a standard feature. It resists heat buildup, which helps optimize performance and maximize longevity. This style of clutch can provide up to four times the single-trip cycles per minute, according to Aida.

Aida also offers a hydraulic overload-protection system that provides fast response time, an adjustable trip level and an unstick switch that quickly frees a slide that may be stuck on the bottom. This helps minimize downtime. The presses use a six-point slide-guide system that minimizes longitudinal and transverse movement for more precise stampings. **FFJ**

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