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IMM Focus: Moldmaking automation

A competitive edge

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Moldmaking is increasingly becoming less craft and more automation, turning what was once thought of as an art form into a true manufacturing process. Driven by low-wage international competition and the need to achieve precision quickly, more and more mold shops are finding that investing in automation has good payback.

An increasing number of mold shops in the U.S. are turning to automation for reduced labor costs, greater accuracy, and customer attention.

What a moldmaker hopes to gain from automation varies. For some it's a chance to reduce labor costs. For others it's a competitive enhancement or a path to more consistent quality. In the end, the goal is to boost revenue and stay in the business. Pete Manship, president of Mold Craft Inc. (Willernie, MN), credits his investment in seven CNC machining centers and a new Charmilles wire EDM with helping get the company back on track. "We suffered like everyone else [in 2002], but we exceeded 2001 sales by 40 percent," he says.

Since 1982, the company reduced its 14 Bridgeports (manual machining centers and lathes) to one. It uses Erowa automation. All the machines are equipped with tool changers, and Manship is investing in workpiece changers using advanced robotics.

Automation also means bigger investments in computers and peripheral equipment, as well as the personnel to support it. Mold Craft is adding a T1 line for high-speed computing capabilities and is upgrading all of its hardware and software. It employs five engineers—15 percent of its 36-strong workforce—to run this part of the show. Currently, Mold Craft runs Unigraphics, Cadkey, Mastercam, and SolidWorks.

A Balancing Act

The labor equation in automation is a tricky one. Given Asia's competitive advantage of low labor costs, in most cases automated equipment employed in North America is intended to displace unskilled labor. "Put in the engineering and programming up front and let the machine do all the repetitive work," says Manship.

In fact, one toolmaker felt the need to compete was so critical that he invested $400,000 in an automated mold manufacturing cell even after laying off employees last year. Robert Lozon, president of Precision Die & Machine Co. (St. Clair, MI), admits that business was way down in his market—automotive—but states with conviction, "I did it to be competitive."

The state-of-the-art cell consists of an Agie Impact II high-speed sinker EDM, a Mikron HSM 400 CNC machining center with a 30,000-rpm spindle, and a System 3R WorkMaster robot. Lozon got a taste of what the manufacturing cell can do when the installers tested a piece on the machining center. "What took us 3 hours on the old equipment took 20 minutes on the Mikron," an amazed Lozon says.

Lozon's customers are impressed with his willingness to enhance Precision Die's capabilities,

and are eager to see the equipment in operation. Precision Die celebrates its 45th anniversary this year, and Lozon is considering an open house to showcase the new cell.

Buying a high-speed system with all the bells and whistles can certainly get a potential customer's attention, but does it necessarily have to cost jobs? When Donna Koebel, president of Prestige Mold Inc. (Rancho Cucamonga, CA), began investing in automation, she hoped that it would help make the company more profitable and reduce labor costs. Yet, despite her employees' fears, she didn't lay anyone off because of automation. "They've moved into programming and engineering jobs," she explains.

Prestige spent $3 million in the last five years on high-speed technology and automation, including a cell consisting of two Charmilles EDMs with a System 3R robot between them to handle the workpieces; two Bostomatic high-speed graphite machines with another System 3R robot; and a Zeiss CMM fed by a System 3R robot.

This investment in technology has helped the company attract higher-end customers, ones who recognize the value of the technology. Prestige has also increased its throughput. "We can take on multiple short-run jobs, run 24 hours a day, seven days a week," Koebel says. "We closed for 10 days at Christmas, but the machines ran throughout that break with only a few employees coming in periodically to check on them."

A Superior Product

If there's one thing a customer likes as much as speed, it's quality, and automation provides the consistency needed for high-quality tools. Wade Clark, president of Electroform Co. (Rockford, IL), notes, "It's difficult to make people work in the same way to bring consistency to the tool."

Clark has increased sales an average of 20 percent year-over-year since 2000, and credits much of that to an investment of nearly $1.5 million in technology and automation. "All this investment was a personal goal, a desire to serve customers," he says. He recognizes that it has enabled the company to be more competitive as well.

Bottom line: State-of-the-art automation demonstrates a company's success. "Customers often perceive that all of us in the moldmaking industry are failing—that we're all closing our doors," says Clark. "The point I want to make is that no, we're not failing. Some of us are doing well. People want to do business with suppliers that are doing well, that are strong. They want results, and automation and technology is one way to give that to them."

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