

A Classic Success Story

(JACKSON, MI) – It's a story with all the trappings of a classic tale about a metalworking company. A young man builds a business, watches it grow, and acquires the employees and equipment he needs to attract and retain customers.

But situations start to change. Simple things that required simple setups, like putting holes in round parts for example, become demanding and time-consuming. Tolerances become tighter. Discounts start being demanded from established customers. The old way of producing parts on the old equipment would not hold in this new environment.

This is not a made-up story. Scott Brockie acquired Classic Turning in Jackson, MI, in 1991. Established in 1983, the company had eight employees when Brockie and vice president Brad Nall took over the company. It now has 63. It specializes in precision turned parts for aerospace, medical, automotive, and machinery customers, particularly end effectors and grippers for robotics customers.

"We started out as a turning company, no doubt about it," Brockie says. "Our volume was low to medium, and I never had a sales decline since 1991. We turned high-precision parts out of aluminum, stainless, titanium, and plastics, and we kept a couple Bridgeports around for making flats on a turned part, when necessary."

Brockie applied the ambition he acquired as a young man to growing Classic's business. "I worked at the local machine shop right out of high school," he relates. "I was

awed. Not only was it fun, the owner was only 28. I knew then and there that someday I wanted my own place.”

After a succession of jobs at small shops learning machining and the business of how to quote and schedule jobs, Brockie seized his opportunity to run Classic Turning in 1991. “I immediately wanted to get into more complex work,” Brockie says. “At the same time, customers were pushing cellular manufacturing in a big way. I could keep up with one mill servicing five lathes for drilling holes, but it was hard to get the scheduling down from a four- to six-week turnaround. We had to expand our equipment base.”

That expansion also meant expanding Classic’s real estate. In less than five years, it became time to add an addition onto the original building. Brockie’s equipment base grew from a couple of mills and five lathes to 42 pieces of CNC equipment, set up in a number of cells with a 60/40 ratio of turning centers to machining centers.

“Classic Turning had been a Mazak (Florence, KY) customer for turning centers since 1986,” says Brockie. “They’re easy to use, the Mazatrol conversational control is easy to program, and we can run the parts and get ‘em off.” For machining centers, Brockie preferred vertical machining centers from Haas Automation Inc. (Chatsworth, CA) for much the same reasons. “They were easy to program to put a hole in or add a hex to a round part,” he says. “We have a simple setup, and we looked for a simple, low-cost solution.”

But times change. “We picked up a potential customer where, for the first time, I couldn’t meet their target price. Try as we might, I just couldn’t get it cheap enough.”

Add to that, one of Classic’s aerospace customers wanted to move certain low-volume parts from castings to billets. “For the 10 parts they wanted, it was not effective to wait months for castings,” Brockie explains. “We started getting into hog-out work for them, and it became pretty clear they wanted us to tackle some of their all-milling parts.”

But this customer had their own machine for test parts. They could get the part done in seven minutes. Brockie couldn't get under 14. "We were pushing our Haas's for sculpting and 3D contouring," Brockie explains. "They just weren't rigid enough. We bought them to put holes in round parts, now we needed them to drive 14-minute cycle times down to seven."

Addy Machinery, (Roseville, MI), Brockie's Mazak distributor, invited him to test Mazak's new Nexus series of CNC turning and vertical machining centers. The VCN 510C vertical machining center, with 12,000-rpm maximum spindle speed driven by a 25-hp spindle motor, got the test part made to within a minute of the customer's machine, with more than enough rigidity for heavy machining work.

Memory capacity of the Mazatrol control was a big advantage, too. "Our customer had an all-machining part we called the dolphin fin. To make one took four hours on the Haas and required 13 floppy discs to run. The program was too large for the control, and to direct-feed it from our computer meant taking a chance we would lose data. The Nexus can process the whole part from a solid in under an hour, and all the part programming is downloaded directly from our CAD/CAM system."

Brockie purchased two of the Nexus VCN-510C vertical machining centers in July 2003 and two Nexus QTN-200 CNC turning centers three months later. "The future certainly holds more airframe and medical work for us, meaning we'll be doing more 3D stuff," Brockie says. "But we'll never stray far from turning, and we're very impressed with the roughing horsepower the Nexus QTN-200's can produce and the tolerances they can hold -- 0.0003" on IDs and ODs. I never would have said we could do it."

Designed for Productivity and Value

From design through production, Mazak's new Nexus series of machine tools has been conceived to maximize the customer's production, increase overall uptime,

and accelerate inventory turns. Through upgraded core components such as programmable NC tailstocks, high-speed non-lift turrets, and new, advanced built-in motors, the Nexus turning centers are designed to improve total productivity by 14 to 30% compared to previous models. The Nexus vertical machining centers achieve a 55% increase in productivity through a higher rapid traverse rate, spindle speed, and tool-changing time. A new compact control panel for the Mazatrol CNC, using conversational programming as well as optimizing cutting conditions, is designed to reduce cycle time even further.

Advanced finite-element structural analysis on the Nexus line results in considerably increased rigidity and resistance to thermal distortion, which increases quality in the resulting parts. Improved electrical circuitry and lubrication systems make the Nexus series more energy efficient, which cuts costs as well as consuming fewer natural resources. And with a 30% reduction in electrical power consumption while in standby mode, Nexus machines have higher value, technology, and productivity for a reasonable price given its size and features.

Technology is not only found in the machine tool itself, but in how it is produced. Nexus machines are the first product group from Mazak built in Florence, KY, using Mazak's Production on Demand system. The new Nexus machines have a shorter production lead time by design because modular assembly means fewer components take less time to put together. Real-time production monitoring and schedule updating, and newly installed, Mazak-produced Palletech Manufacturing Cells have reduced overall lead time for Nexus models from weeks to days.

In light of his new realities, did Brockie idle his old milling machines? "They're idling themselves," he answers. "The repair guys are here so often, it seems like every time I go to lunch, I see their van in my parking lot."

The rigidity, horsepower, and reliability of Classic's Nexus equipment also allows Brockie to charge a premium for premium services, such as 24-hour turnaround time. "We don't fear losing any work to China or anywhere else," Brockie explains. "The last thing China wants to see is a three-piece job the customer wants to see tomorrow."

30 Years of Machine Tool Innovation

In July 2004, Mazak Corp. celebrates its 30th anniversary at its Florence, KY, complex. In 1968, Mazak opened its first sales office in Long Island, NY, and moved to Greater Cincinnati in 1974. Expanding 12 times since then, the complex is now fully ISO 9001:2000 certified and includes a Lean Manufacturing Facility, National Technology Center, and Optimum Customer Support Center. Also established are Technology Centers in such major market areas as Los Angeles, Houston, Chicago, Atlanta, Hartford, and Mexico. These facilities provide complete customer support in manufacturing solutions, process applications, service, parts, and customer training. Mazak produces more than 30 innovative models of machine tools at its Florence facility. The Nexus series of CNC turning centers and vertical machining centers is the latest and most successful high-performance Mazak machine tools manufactured in the United States. For more information, visit the Mazak website at www.mazakusa.com.

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Caption: Scott Brockie (right) and operator Ryan Woolworth (left) in front of Classic Turning's new Nexus machining cell.



Caption: A sample turned and machined part.



Caption: The all-milling “dolphin fin” that went from four hours to one on the new Nexus 510C.



Caption: Classic Turning's sample case of precision turned and machined parts.

