



PLANTING THE SEED

PDQ Grows Its Business with a Makino Vertical Machining Center

LIKE HIS FATHER, MATTHEW WALLACE IS AN ENTREPRENEUR. But he is also a nurturer, growing two businesses south of Charlotte, North Carolina—PDQ and Accelerated Mold.

PDQ is a custom injection molding shop, specializing in the manufacture of small to medium sized molds for the automotive industry and retail markets such as electronics, sporting and household goods. Accelerated Mold is an umbrella company that manufactures the molds for the injection business, and the companies employ 16 people.

Matt's father, R.T. Wallace Jr., got Matt started in the mold making business. R.T. began his career in his 20s, and grew that business into what is now PDQ, which he founded in 1969 and where he mentors Matt.

R.T.'s ingenuity planted the seed for growth at PDQ. It has been Matt's commitment and investment in Makino technology that has really accelerated their business growth, and has now led to some additional plans for expansion.

GROWING THROUGH TECHNOLOGY

Many of PDQ's clients are starting new projects, and PDQ's strength is assisting these inventors and individuals in getting quality products to market faster. The purchase of Makino machine technology has helped them meet these tasks and further strengthen their capabilities.

Initially, PDQ purchased a Makino MAX65S vertical machining center to shorten lead times and compete with global molding sources. Many of their customers expect an average of four weeks lead-time, where it used to be six to eight weeks. PDQ wants to remain competitive so their clients keep jobs local.

Matt has found that it usually takes eight weeks for a customer to get a part from an overseas manufacturer. He finds that if he can keep his lead times within the four to six week range, the job will likely stay in the U.S., regardless of any cost differences.

"The actual cost of the tool may be a little more here than from overseas, but if you incorporate the total cost of the time—considering possibilities for rework—the domestic shops can usually keep the advantage. In addition, in the U.S. we warranty our molds and will maintain them. So if I can reduce my lead times, that—combined with the personal service and warranted post-production work—can keep PDQ competitive in today's global market," said Matt.

GAINING AN EDGE Matt has been amazed at how well his new Makino machine has already helped PDQ meet this foreign competition challenge for speed.

On their older equipment, PDQ could not deliver the higher speeds. Previously, the program feed rates when cutting contours or surfaces averaged 40 to 60 inches per minute. Now they can program 120 to 140

inches per minute, an increase of almost 300 percent. They can machine steel as fast as aluminum.

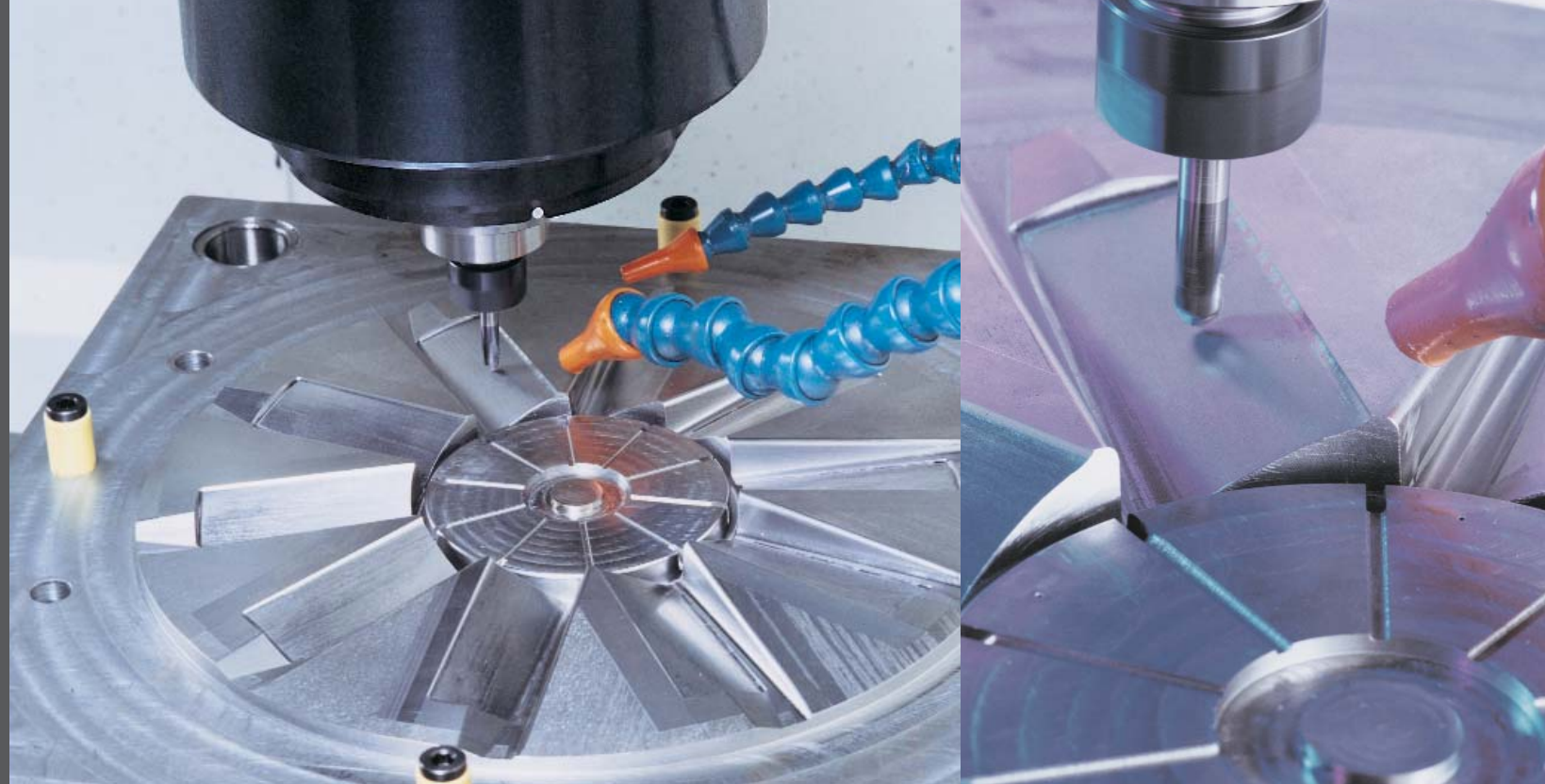
The shorter cycle times have reduced operational costs from the business, keeping them competitive. The part spends less time on the machine, and gets out the door faster. PDQ can meet their steady growth with no backlog.

"I have done a lot of quoting recently, and I'm not as worried about how we will complete the jobs—should we get them—as I was before. We now have the capability of meeting those needs with the technology that is in place," said Matt.

The superior tool technology with Makino has netted PDQ a 40 percent cycle time reduction on most jobs with improved quality.

MAKING THE COMPARISON Matt has also compared identical parts made on

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MAKINO S33L

Makino's S33L blends high-performance machining capabilities with an attractive pricing package to meet the needs of small and large die and mold shops.

The Makino S33L incorporates features that are appealing to technology savvy mold shops. It utilizes a 40 taper, 13,000-rpm spindle with the speeds, stiffness and rigidity required for hard cutting applications while offering high surface quality for demanding die and mold applications. Heavy cast iron construction and an axis configuration with no overhangs insure high machine rigidity, resulting in outstanding accuracy over the full range of travel. It is capable of maintaining positioning accuracies to within +/- 0.0001 inch (.003 mm) and a repeatability of +/- .00008 inch (.002 mm).

To reduce setups and maximize machine utilization, the S33L is equipped with a 20-tool magazine and automatic tool changer (ATC). The ATC has quick tool-to-tool exchange time (1.4 seconds). Linear motion guides on X-, Y- and Z-axes provide the rigidity crucial for superb surface finishes and provide rapid traverse and cutting feed rates of 945 ipm (24,000 mm/min). The table-working surface is 40 x 18 inches (1,000 x 450 mm). In addition, the axes travel area is 36 x 20 x 18 inches (900 x 500 x 450 mm).

The S33L includes Makino's patented next generation Super Geometric Intelligence (SGI.3) software and data server. SGI.3 can help reduce cycle times on complex cores and cavities by as much as 40 percent when compared to most other control technologies.

The machine's footprint is a compact 90 inches wide x 106 inches deep (2,294 x 2,690 mm) and is designed for easy maintenance access around the entire perimeter, with a comfortable work table height. High-volume chip evacuation is facilitated by a wide center trough design with rear discharge. Other features include an ergonomic swing operator control panel, fully enclosed chip and splash shield, flood coolant and an air filtration unit.

You've read the story about how PDQ is purchasing the Makino S33L to improve its business. Now visit the Makino Website (www.makino.com) to learn more "Trade's Secrets" on how to improve quality and drive costs out of your company's die/mold processes.

109

both their older machines and the Makino. While the part made on the older machine was acceptable and did meet the customer's specifications, the quality from the part machined on the Makino was twice as good. Bench work was also eliminated with Makino vertical milling.

"The difference is amazing. We have seen improvement in feed rates, cycle time and part quality. The tolerances have really impressed me," said Matt.

One job that demonstrated their capability for precision is the mold they made for a 10-blade fan used on an automotive application motor. The fan is 10-inches in diameter, with each individual blade having a working surface of 1-1/4 x 4 inches at +/- 0.0005 inch positioning accuracies. The close tolerances must be held for the fan to be properly balanced when it is molded in order to avoid vibration during its operation.

Once they put the Makino technology in house, PDQ was surprised at the doors that opened for the company. They were able to service other mold makers in the area who did not have similar capabilities. In addition, they hired manufacturers rep-

resentatives who have brought in more business due to PDQ's ability to handle detailed molds, tight tolerances, high contours and faster lead times.

"These manufacturing reps first approached us about our using them to send some of our work to China," said Matt. "Once we showed them what we were able to do with Makino's techno-

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EXPANDING AND GROWING With such success, the company hopes to further expand into other industries and markets. And, it has led PDQ toward purchasing more Makino machines. They have the S33L vertical machining center now on order, and hope to use it

to double their capacity.

Next, they would like to obtain a wire EDM machine. PDQ hopes to gain even more productivity from the additional unattended machining time, and would like to expand into building larger molds.

There is no reason to believe they will choose anything but Makino to make this transition. "Our reason for investing in the

Makino technology is simple. They are the leader in the industry. I followed Makino for many years and it's a standard everyone seems to compete with. I not only based my decision to purchase on the equipment itself, but on the technical support and knowledge of Makino and their distributor, Beckman Precision," said Matt.

"They will help us in any way possible. I'm very comfortable with our relationship and pleased with the equipment, service and technology. I don't have a doubt that it will take us where we want to go."