

Faster Company

DONNELLY CUSTOM MANUFACTURING SPECIALIZES IN SHORT-RUN INJECTION MOLDING.

Given the speed with which they have to reconfigure their machines, it's no wonder that Ron Kirscht compares his employees to "NASCAR pit crews." The president of Donnelly Custom Manufacturing, an Alexandria-based manufacturer that specializes in the short-run molding of injection-molded thermoplastic parts, Kirscht says that even a half-hour delay on a part run can end any chance of making a profit. Quick changeovers between part molds are critical.

"In short run, the difference between profit and loss on a part is like a close play at first on a double play," says Kirscht, making use of another sports simile. "There's not much difference between out and safe."

The privately held company seems to be making those close plays. Founded in 1984 by CEO Stan Donnelly to focus on short-run precision molding, the company has 220 employees and had \$22 million in sales last year. Donnelly believed that the short-run market was underserved—it's easier to perform longer runs profitably. As his company grows and long-run part making continues to shift to overseas producers, his intuition seems to have been correct.

In the plastic injection-molding industry, a short run is measured not by the number of parts produced in a run, but by the time it takes to make them. A short run is anything of 24-hour duration or less. That can mean batches as small as 50 parts and as large as 150,000. (One mold might make as few as one or as many as 64 parts each



Company President Ron Kirscht oversees a "NASCAR pit crew" operation that meets a growing demand for just-in-time plastic parts.

time it's filled with plastic.) An average run at Donnelly is 10 hours; some are as short as an hour. According to Kirscht, the typical plastic-parts manufacturer has 150 active part molds, uses 35 different plastic materials, and has annual sales of \$100,000 per mold. By contrast, Donnelly has 2,600 molds, uses 600 materials, and averages less than \$10,000 in sales per mold per year.

The company's focus on short-run has helped insulate it from the peaks

and valleys that the injection-molding industry experiences during economic booms and slumps. The company and the short-run industry are both seeing more demand because of a greater degree of product customization and more just-in-time delivery. As clients keep inventories low and add more features to their products, what once were "medium" runs are now "broken up" into shorter runs. Donnelly's customers include Ohio-based Diebold (ATM components), Minneapolis-based

Graco (fluid pumps), and St. Louis Park-based LockerMate (gear for schoolkids' lockers).

To make the complex processes of short-run production work, Donnelly measures 25 elements for every mold-build project. At daily morning meetings in the company's "manufacturing war room," cross-functional teams cover key measurements (use of materials and time from the previous day, particularly any waste), set that day's activities, and forecast and attack any potential roadblocks. "We don't measure to punish," Kirscht says, "We do it to show we're improving. And if you don't measure, you can start cutting corners [in order to lower production costs]."

To make sure that it gets reliable molds, the company's engineering service group gets involved with the client early in the design process. "To

grow sales, we must launch 250 to 300 molds a year," Kirscht says. "You burn up a lot of money if a mold doesn't work well from the start."

Other keys to profitability are preventive maintenance on the injection-molding machines and proper materials handling. Machines are scheduled for maintenance on an almost clockwork-like basis. Plastics are kept uncontaminated and properly dried so that the machines aren't kept waiting. To make sure the whole process all comes together, Donnelly does ongoing training in manufacturing techniques to ensure (among other things) that mold changeovers are performed, in Kirscht's words, "like a symphonic exercise."

Injection molding makes up about 75 percent of Donnelly's business. The company also handles packaging, mechanical assembly, part decoration

(painting, stamping, et cetera), machining, part and tool design, and project management. It can help manage a client's parts inventory, freight, order fulfillment, and other tasks.

While Kirscht sees no one else focusing on short-run business nationally, he does note that the demand for customized parts on a just-in-time basis may change that. "Even if we can't spot our competition, we still know we have to compete with who we were a month ago and continuously improve to stay profitable, because we can't increase prices," Kirscht says. "The last time we passed along a price increase was 1994."

In such a competitive environment, there will probably never be a time when Donnelly Custom Manufacturing can slow down. ■

—Jim Bohan

Best Under-the-Radar Industry, 1

Plastic Molding

Medical technology, big-box retailing, financial services, high technology, and food processing are the local industries that are acknowledged as core strengths of the Minnesota economy. Rightly so. But there are other industries where the state has an edge and they deserve a touch of the limelight.



One is the decidedly unsexy business of plastic molding. Minnesota has several fast-growing innovators in this field. There's Eden Prairie-based Stratasys, which manufactures rapid plastic-prototyping machines. Another is Protomold in Maple Plain, whose Rapid Injection Molding process can turn a design into parts in just three days. Alexandria-based Donnelly Custom Manufacturing specializes in short-run injection-molding orders, which other firms see as unprofitable.