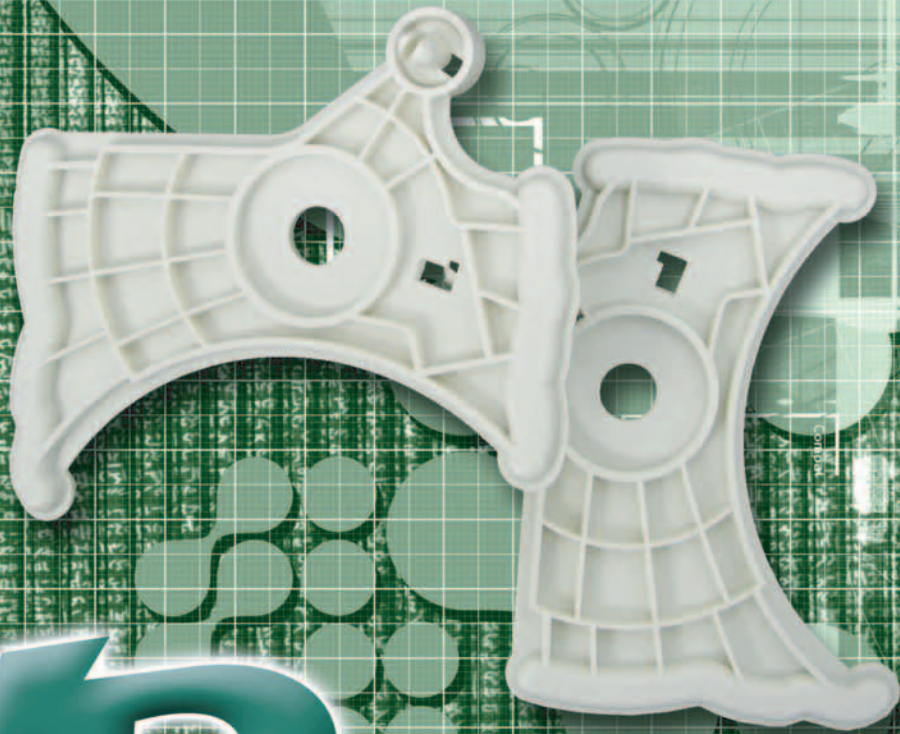


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***Viking Plastics Uses
Melt Rotation to Increase Quality
and Output in 4-cavity Automation Mold***



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Melt Rotation Increases Quality & Output for a 4-Cavity Automotive Mold

Custom Molder Achieves Success Through Special Standardization, Cutting Scrap and Runner Costs by Balancing Flow in the Molds

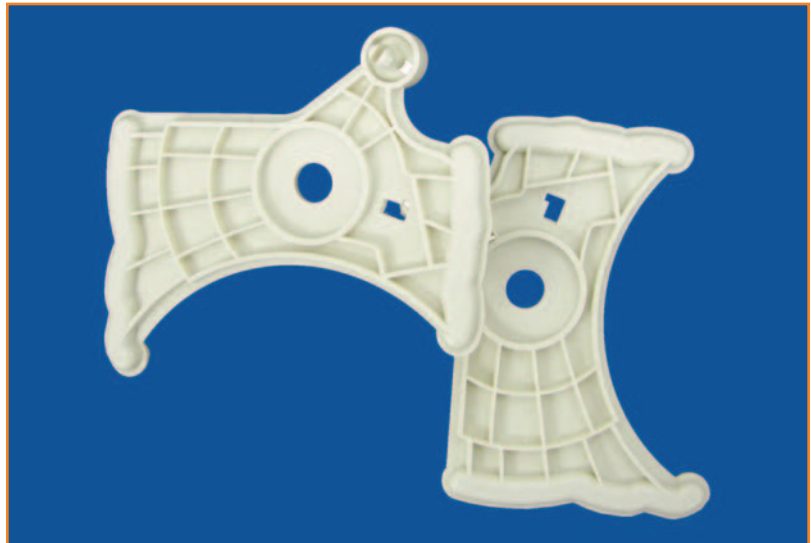
With many custom mold shops losing business to foreign competition, it is clear that thinking outside of the box is necessary to compete globally. One custom molder, Viking Plastics (Corry, PA), has decided to take a proactive approach to this dilemma by implementing several strategies, which include a revolutionary melt management technology.

According to Viking Plastics VP of Sales and Marketing Peter Kraus, the following has recently occurred at the company:

- New owners—VPI Acquisition Corporation acquired the assets of Viking Plastics in August, 2006.
- A commitment to aggressive growth through the company's capital reinvestment program.
- An ongoing equipment conversion program. To better serve the fuel and HVAC markets, Viking recently purchased a state-of-the-art, all-electric injection molding press integrated with a new high-speed picker and part diverter—the first of several planned for purchase. Expanding Viking's cellular manufacturing capacity, the equipment yields tighter tolerances and improved quality through SPC production monitoring and scientific molding with suspect-process diversion.
- New technology to supply high-quality, precision-engineered components crucial to the automotive, HVAC and industrial manufacturing sectors—most notably injection molding process enhancements via MeltFlipper® technology, produced by Erie, PA-based Beaumont Technologies (BTI) and successfully utilized at Viking (with tangible results) in a mold/program transfer from a tier-one automotive customer.

A Little Background

Viking Plastics has been providing tight-tolerance injection molding and assemblies for the automotive, industrial and HVAC industries for 35 years with the help of 85 employees. According to Viking's Senior Program Manager Marty Radock, the company maintains profiles of .05mm; also +/-0.03mm up to +/-0.08mm (depending upon the material) for general/linear characteristics on all of its work.



Holding tolerances like these resulted in challenges like managing regrind and balancing runners in high cavitation, family molds.

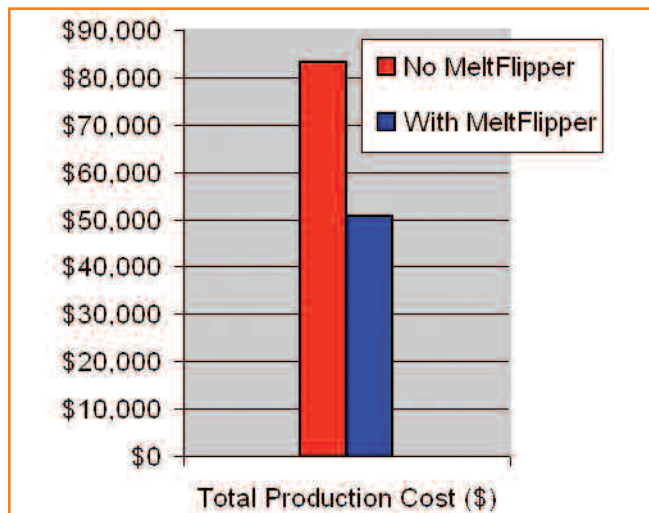
To solve these problems, Viking chose Beaumont Technologies' MeltFlipper® technology. "This technology allowed us to reduce runner size—thus reducing regrind percentage and management—and simultaneously balance the cavities," Radock explains. "This also led to reduced material management costs and improved quality. Cases include new tool builds like a resonator bracket and refurbishment of existing molds—such as a cam mode—with this technology."

How It Works

According to Radock, MeltFlipper technology “offers a root-cause solution to material flow and balance problems—providing the first true balance of pressure, temperature, viscosity and material properties throughout the entire mold.”

Radock recalls a recent job that used the technology. “We inherited a transfer job from a tier-one automotive customer involving a four-cavity mold utilized for an HVAC system,” he explains. “We got the job when, at best, three of the four cavities worked when filled with a reprocessed mineral-filled nylon; and with other quality issues, as well, our customer believed we could provide solutions. Given that many on the Viking team are graduates of the Plastics Engineering Program of Penn State Behrend (Erie), we immediately knew there was a problem with an imbalanced tool and that the solution was MeltFlipper technology.” Since incorporating the MeltFlipper the mold has run full cavitation with no quality issues being reported by the customer.

Imbalanced filling is a major challenge and source of product variations in the plastics industry—occurring in both hot and cold runner systems—by shear-



induced, non-uniform material properties within a mold’s melt delivery system, Radock continues. “In addition to uneven mold filling, these variations often lead to other problems such as extended mold commissioning times, dimensional instability, flash, sink, short shots, the need for higher injection pressures, longer cycle times and high scrap rates, among others.”

MeltFlipper technologies (offered on a licensing basis for individual molds or many programs) were

retrofitted onto existing molds at Viking. The company uses Incoe Opti-flo™ hot runners on their Nissei, DeMag and Van Dorn injection molding presses. Radock notes that success with these retrofitted molds has prompted Viking to use this technology in new programs pending with automotive customers.



Growth Realized

“This technology has enabled us to grow our business through several projects involving high cavitation molds (16 and higher),” Radock says. “Our customers find that Viking can produce more products with faster mold commissioning times, faster cycle times and less scrap. The data on the success of our use of MeltFlipper technologies shows that we are able to reduce both runner and press size, as well, as we changed molding from a Van Dorn 200-ton press to a smaller press.

According to Shawn Gross, Viking Plastics’ Manufacturing Manager, using the new technology allowed the company to eliminate shorts shots and add 20 percent to their capacity to better serve a global automotive customer. “We are quite outspoken in showing our customers the value and benefits of MeltFlipper technology, which, among many other facets of our operations, sets Viking Plastics apart and puts us in a highly competitive position,” Gross emphasizes.

Viking Plastics Plant Manager Greg Bowes sums thing up succinctly. “Viking is very accustomed to inheriting problematic tools from previous vendors and offering a variety of engineered solutions,” Bowes says. “MeltFlipper has worked well for us from the start with improved flow and mold balance, and also has con-

tributed to reductions in both material usage and scrap. In one program, scrap reduction is already estimated at 25 to 50 percent.”

Addendum

Beaumont Technologies, Inc., (BTI) headquartered in Erie, PA, offers a unique mix of products designed to optimize the efficiencies of the mold and the injection molding process. These products and services are part and process enhancing tools that help the injection molding industry become more competitive and profitable in world markets. The company's expertise lies within an in-depth understanding of polymer flow and processing technologies which enable molders and moldmakers to decrease lead-times while maintaining a high quality level of process and part control. Products include the patented MeltFlipper® melt rotation technology guaranteed to balance filling in hot and cold runner applications, the 5 Step Process™ mold commissioning software, CAE by BTI™ flow analysis services and specialized on-site training.

Conclusion / Company Contact Information

For more information on melt rotation technology licenses, sold under the trade name of MeltFlipper, or any of BTI's other products and services, contact: Marketing Department, Beaumont Technologies, Inc. 1524 East 10th Street, Erie, PA 16511. Tel:814-899-6390. Fax:814-899-7117. E-mail: info@beaumontinc.com Web Site: www.beaumontinc.com.

For more information from Viking Plastics call (814) 664-8671, E-mail: viking@vikingplastics.com or visit www.vikingplastics.com.

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2. Scrap and waste are cutting into your profits?
3. Startup is too slow, with mold debugging dragging you down?

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- A series of on site-training courses to help your staff understand how to improve the molding process, commission molds faster and know what goes on inside the mold.
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