MELTFLIPPER®

News @ BTI

Beaumont Technologies, Inc.

Volume V, Issue 2 • April 2005

Inside this issue:

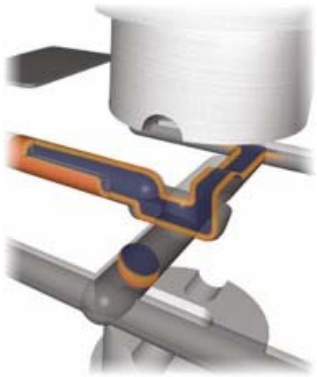
STATESIDE SUCCESS: 1
Wadal Plastics Uses Technology to Keep Customer From Taking Business Overseas

CHEAPER BY THE DOZEN: 2
Customers Find Site Licenses Offer Unlimited Potential for Cost Savings

BOOK REVIEW: 3
"Runner and Gating Design Handbook – Tools for Successful Injection Molding"

New Version of 5 Step Process Software Available 3

Upcoming Events 4



Stateside Success

Wadal Plastics Uses Technology to Keep Customer From Taking Business Overseas

When a customer says, "Either cut your pricing or we'll be forced to move our custom molding program overseas," most would consider this an ultimatum tantamount to meaning, "We're going with a low-wage country and your operation is not getting the contract."

When Wadal Plastics, Inc. of Medford, Wis., received this rebuff, as is common to North America-based custom injection molders, they did not take the news lying down. Instead of "rolling over" and seeing the business travel offshore, Wadal turned to Beaumont Technologies, Inc. for innovative technology solutions to help make them globally competitive. And, in doing so, this successful custom molder trimmed their pricing so they were able to compete with the Pacific Rim nations.

Figure 1

The existing program involved molding two 72-gram individual parts – a snap-together top and bottom switching box – in two separate 4-cavity molds (Figure 1). Adding to the challenge were the complex shapes of the two parts and the nature of the materials Wadal was running, a 33% glass fiber-filled polypropylene.

Wadal's new concept was to combine the existing A&B side inserts from both 4-cavity molds into a single family mold. The cost target was now achievable, but the inherent part quality risks when using a family mold remained a major concern.

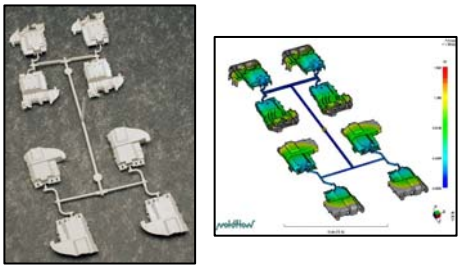


Figure 2

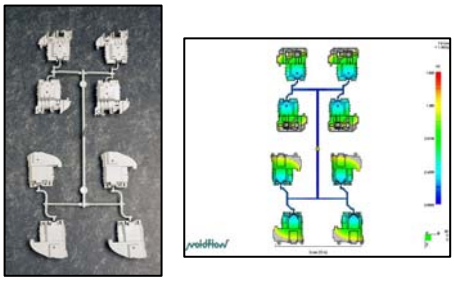


Figure 3

"The first step," said Robert J. (Bob) Lange, president and CEO of Wadal, "was having BTI take an in-depth look at our concept for combining the two 4-cavity molds into a single 4+4 family mold. After their careful analysis, they recommended that the conversion could be done successfully, provided the new runner system was designed for success right from the start."

Lange continued, "We chose to outsource the entire process to BTI and take advantage of their expertise to perform the filling analysis, and optimize the runner system, which included incorporating MeltFlipper technology to achieve what the software predicted." (Figures 2 and 3).

(Continued on page 2)

CHEAPER BY THE DOZEN

Customers Find Site Licenses Offer Unlimited Potential for Cost Savings

Our customers here and abroad are telling us that BTI's melt rotation technology licenses are like potato chips – they don't want to limit themselves to just one.

More and more BTI customers are choosing our site license option. Rather than license MeltFlipper in each mold individually, they are buying blanket licenses that make it cost effective for them to standardize melt rotation on both high- and low-cavitation molds during the mold design stage rather than waiting for problems to pop up. No more imbalanced molds, and no more expensive, time-consuming steel tweaking at the 11th hour of a deadline in an attempt to create balanced filling and part to part dimensional stability. Customers that design for Six Sigma using MeltFlipper are injecting their business with increased quality and profits.

Because the site license offers substantial savings over single licenses it is easy to recognize the cost benefit. But wait, there's more:

- Unlimited Licenses: You can use MeltFlipper in all your new molds and retrofit existing molds. Also, now each mold does not have to be justified. The more the MeltFlipper is used, the less expensive it becomes and the more benefits your company will experience.
- Free MeltFlipper Designs: No need to write separate P.O.s for a negotiated number of design services.
- Variable Budget Allocation: Now you have a set cost that can be allocated into a capital or R&D budget rather than an individual tooling budget so the technology does not have to be justified prior to using it – we are giving you the incentive with unlimited licensing.
- Shorter Mold Commissioning Time: By implementing the MeltFlipper in the mold design stage, you will eliminate the largest source of variation that creates problems and delays during initial mold sampling.
- Time-to-Market: Faster mold commissioning gets the products out to market faster.
- Flexible payment terms: We offer extended payment options to help companies through the current economic conditions.

Interested in learning how to blanket your operation with increased productivity in every mold, at every stage of molding? ***Contact BTI today.***

Stateside Success: *Wadal Plastics* *(cont'd from page 1)*

MeltFlipper technology and CAE allowed Wadal to successfully design the melt delivery system to balance the material properties throughout the entire 4+4 family mold. The result was faster cycle times, better fill balancing to achieve higher quality parts while eliminating problems such as flash, short shots, dimensional variations and core shift, among others. Higher mold efficiencies enabled Wadal to achieve lower per part pricing, and pass the savings along to customers that needed these reductions to stay competitive.

Regarding the pricing issues, Lange reports they were able to satisfy this customer and attract new customers (as applicable) by offering numerous benefits, among them:

- An 18% cost reduction was achieved for the base.
- A 24% cost reduction was achieved for the cover.
- The ROI for the total project was 10 months, which included the licensing of BTI products, CAE services, and the cost to build the new mold.
- Part quality improved in the 8-cavity family mold from what was previously achievable in independent 4-cavity molds.
- Faster mold commissioning times for quicker "art-to-part" turnaround times, owing to the ability to balance molds expeditiously.

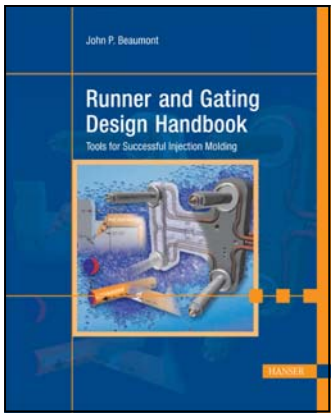
"The moral of this experience," concludes Wadal's Bob Lange, "is North American processors can be competitive, not only closing in on what was once deemed preferential pricing, but also providing a substantial amount of value-added due to superior industrial technology being implemented into our processes."

BOOK REVIEW

"Runner and Gating Design Handbook – Tools for Successful Injection Molding"

By John P. Beaumont
Published by Hanser Gardner

"In the opinion of many Plastics Experts, the design of the runner and gates is one of the most important yet often neglected and least understood features in successful injection molding of plastic parts. Traditionally, both part and tooling designers have avoided addressing the issue of sizing and properly balancing the runners and mold makers have followed their own intuition and relied on the past experience. Today, more than ever before, molders must recognize the fact that the only way to achieve the quality goals such as Six Sigma is to develop a clear understanding of the molding principles and mainly the melt delivery system and its effect on molded parts.



The recently published *Runner and Gating Design Handbook: Tools for Successful Injection Molding* by John P. Beaumont is an outstanding contribution to the plastics industry and provides a valuable resource for proper design and troubleshooting techniques for both hot and cold runner systems. The handbook is intended to provide the reader a better understanding of the rheological properties of polymer melt and melt delivery system. Also explained is the shear induced melt variations, key differences between hot and cold runner molds, gating locations and molding problems related to gates and runners. The author has done an excellent job of simplifying the somewhat difficult to understand subject of rheological characteristics of plastics.

Two full chapters are devoted for the purpose of explaining the sources of mold filling imbalances and how to manage shear-induced melt variations for successful molding. Contributions from industry experts such as John Bozzelli and Brad Johnson compliment all the hard work and effort put in by the author throughout the book.

Overall, *Runner and Gating Design Handbook* is an excellent technical reference manual, written in easy-to-understand and easy-to-read format, with numerous colorful illustrations, photographs and charts. The book is a must for all designers, tool makers, and molders and will prove extremely valuable to anyone wishing to further enhance the plastics engineering knowledge."

Reviewed by Vishu Shah, author, educator, president of Consultek, and managing partner of CPC Plastics, technical and management consulting firms for the plastics industry. He is a graduate of UMASS Lowell Plastics Engineering program.

NEW VERSION OF 5 STEP PROCESS SOFTWARE AVAILABLE

BTI is proud to release Version 1.12 of the 5 Step Process™ mold filling diagnostic software. Recent expansion into global markets was the main driving force behind the updated version. The following is a brief summary of the enhancements/corrections:

General Update:

- BTI has updated the program with our new company address (2103 East 33rd Street, Erie, PA 16510-2529) and new 5 Step Process logo.

Snapshot Features:

- Added the option to either "Save" or "E-mail" the results file. The previous version only had the ability to open an e-mail program from which the file could be saved. This created problems for users with installations on computers where there was no e-mail program installed.

Program Corrections:

- Due to international interest in the 5 Step Process software analysis, BTI uncovered a problem with Microsoft database functionality that did not allow for some U.S.-written code to be transferred into other languages. BTI redesigned this functionality so that international installations will no longer be problematic.

Beaumont Technologies, Inc.

2103 East 33rd Street
Erie, PA 16510-2529

Phone: 814-899-6390
Fax: 814-899-7117
Email: meltflipper@runnertech.net

Revolutionizing Runner Designs for Injection Molding

WE'RE ON THE WEB:
WWW.MELTFLIPPER.COM

Beaumont Technologies, Inc. *(BTI), the exclusive licensor of MeltFlipper® melt rotation technologies, is the plastics industry's source for mold and process optimization products and services. MeltFlipper technologies are 100% GUARANTEED to solve your problematic filling imbalances to ultimately achieve reduced scrap rates, faster cycle times, quicker time to market, and increased process efficiencies.*

BTI is dedicated to take the plastics industry to the "next level" through an understanding that part quality and process stability start within the melt delivery system. BTI's advanced design practices for hot and cold runners have increased the quality and productivity of manufacturing companies worldwide. Because of our commitment to continuous R&D and quick response to industry needs, BTI has expanded its capabilities and services beyond the development of MeltFlipper technologies.

*Our core products (**MeltFlipper®**, **5 Step Process™**, **and CAE by BTI™**) are successfully being used to help produce parts to Six Sigma quality standards in a vast array of industry segments. Contact BTI today and give us the opportunity to help your company become more profitable through our mold and process optimization tools - with **NO NEW CAPITAL EQUIPMENT REQUIRED!***

Please visit www.meltflipper.com for more information.

TRADE SHOW UPDATE

BTI participated in the NPE lottery and was selected to receive 600 feet of exhibit space to display our product offerings in Chicago. Look for us in Booth #11224 at McCormick Place East, June 19-23, 2006..

You can also catch our "road show" at:

MoldMaking Expo 2005

Donald Stephens Convention Center, Rosemont, Ill.
Date: April 19-21, 2005
Booth #: 416
Presentation: April 20, 3 p.m., "Preventative Maintenance for Your Mold Design"

Plastics Encounter Southeast

Charlotte Convention Center, Charlotte, N.C.
Date: October 18-20, 2005
Booth #: 620