



News @ BRT

Beaumont Runner Technologies, Inc.

Volume II, Issue 2 • November 2002

Inside this issue:

New Option Makes MeltFlipper Easier to License	1
Hot Runner Manifold Solutions: Technology to be Licensed Directly to Suppliers	1
New Patent Granted for MeltFlipper Multi-Axis Technology	2
Read All About BRT in Modern Plastics	2
BRT in SAE Journal	2
Case Study: MeltFlipper Solves Intra-Cavity Imbalances in a 3 Plate, 4 Cavity Mold	3
Trade Show Update	3

NEW OPTION MAKES MELTFLIPPER EASIER TO LICENSE *Annual Site Contracts Offer Unlimited Use*

A new licensing option for the MeltFlipper™ technology will make it easier for you to standardize on this revolutionary melt rotation technology. In addition to per-mold licenses, we now offer annual site licenses that allow you to apply the MeltFlipper technology to an **unlimited** number of molds per year for one flat fee.

The benefits to our customers include:

- **Unlimited MeltFlipper Licenses:** Each mold does not have to be justified. The more the MeltFlipper is used, the less expensive it becomes.
- **Free MeltFlipper Designs:** No need to write a separate P.O. for design charges.
- **Variable Budget Allocation:** The cost can be allocated to capital

investment or R&D instead of an individual mold budget.

- **Shorter Mold Commissioning Time:** Implement the MeltFlipper in the early mold design stage and you eliminate the largest source of cavity-to-cavity variation seen during mold start-up.
- **Faster Time-to-Market:** Quick mold commissioning gets products to market faster.
- **Flexible Payments:** BRT is offering extended payment options to help companies through the current economic conditions.

The cost of the site license is tailored to fit each company. The site license can be quoted easily to our customers by

(Continued on page 2)

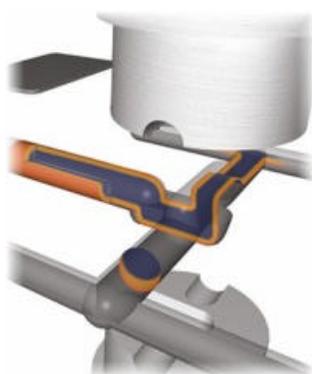
Hot Runner Manifold Solutions *Technology to be Licensed Directly to Suppliers*

BRT is responding to customer requests for MeltFlipper technology in hot runner manifolds, and will showcase its efforts at NPE 2003.

We are negotiating with various hot runner suppliers to implement and test the MeltFlipper in their hot runner

systems, and plan on developing four of the suppliers as Development Partners for the MeltFlipper technology. This means that the next generation of advanced hot runner technology and performance will soon be available.

BRT plans on licensing the technology directly to the hot runner suppliers, thereby streamlining delivery. The MeltFlipper could be designed to be included directly into a new manifold, or it could be retrofitted into an existing manifold using various insert designs.





NEW PRICING MAKES MELTFLIPPER EASIER TO LICENSE (Cont'd)

(Continued from page 1)

them filling out a simple Site License Request form (available at www.meltflipper.com). Flow analysis and complete runner design consultation also can be bundled into the license.

Site licenses purchased this year have ranged in price from \$10,500 to \$50,000. Our licensees tell us that in addition to being most cost-effective on a per-mold basis, the site license is generally allocated to an overhead budget, so each mold does not have to be justified. The technology is already paid for; they just use it as often as they can and net down the cost per mold. The site license also makes it easy to adopt the MeltFlipper in low-cavitation molds (such as 2 and 4 cavity molds) that might not have obvious cavity-to-cavity melt imbalances, but will exhibit intra-cavity imbalances

that create warping, dimensional issues, short shots, and flash.

A site license also encourages companies to adopt MeltFlipper technology at the design stage, when it is most efficient. Waiting until the mold has been built and sampled and confirmed to be unbalanced only increases frustration for you and your customers. By eliminating variation in the design stage, you save re-engineering time and mold commissioning costs, and get the product to market faster.

To discuss a site license for your company, contact a Technical Sales Engineer at 814-899-6390 or e-mail meltflipper@runnertech.net.

NEW PATENT GRANTED FOR MELTFLIPPER MULTI-AXIS TECHNOLOGY *Reestablishes Symmetry Within Melt Channel*

MAX BRT has been granted a patent for its newest technological development, a process for reestablishing symmetry of the melt stream in all planes of the runner channel.

Originally developed to solve imbalances in hot runner stack molds, Multi-Axis Technology (MAX)

in testing has proven to offer more uniform shear distribution in traditional hot or cold runner systems, extrusion, and blow molding.

The ability of MAX to solve imbalances and provide a more homogeneous melt within a cavity also solves molding issues such as core-deflection, warpage, color uniformity, and cosmetic flaws. MAX

also is being tested for its ability to increase the flow length for thin-walled molding applications. BRT continues to test this development for additional applications and will keep the industry posted on the results. For further information on this new technology, please contact a BRT representative.

Read All About BRT in *Modern Plastics*

Check your October issue of *Modern Plastics* for "Techniques Solve Melt Flow Imbalance for Even Cavity Filling" beginning on page 68. The article by Peter Mapleston discusses BRT's strategic partnerships with processing and mold making clients, along with the benefits MeltFlipper technology offers hot-runner users.

BRT in SAE Journal

"The Cause & Solution to Mold Filling Imbalances," a technical paper written by BRT staff engineers,



has been selected for inclusion in the Society of Automotive Engineers' *SAE Transactions: Journal of Materials and*

Manufacturing. The paper was judged to be one of the most outstanding technical research articles published in 2001, and will be one of 138 articles to appear in the volume.

Visit SAE online at www.sae.org/servlets/index.



CASE STUDY

MeltFlipper Solves Intra-Cavity Imbalances in a 3 Plate, 4 Cavity Mold

Company: Wilco Molding Inc.
Maryland Heights, Missouri

Wilco Molding, Inc. experienced difficulty molding a timing ring for an ‘automatic fire suppression sprinkler flow switch assembly.’ The part was being manufactured for Missouri-based Potter Electric Signal Co.

The 1 ½inch diameter timing ring was molded from LNP DF1006 30 percent glass-filled polycarbonate in a four-cavity mold with three gates per part (see Figure 1, the runner system and full part). During molding, the area of the parts closest to the sprue would fill out first within the part (see Figures 1 and 2). When Wilco would fill the remaining portions of the cavities, these areas would overpack and distort the timing ring’s spokes. The rings then would not lay flat in the mating seal component, thus making all four parts and the assembly unusable.

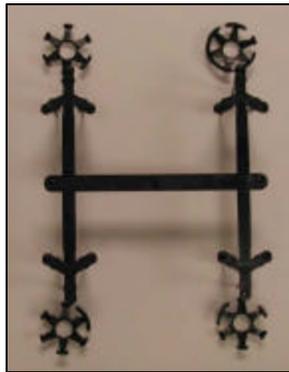


Figure 1

Mike Van Duine, Wilco’s General Polymer’s technical service representative, suggested that Wilco investigate use of the MeltFlipper technology to create even filling within the mold. “General Polymers partnered with BRT around this technology,” says Van Duine. “Our goal is to

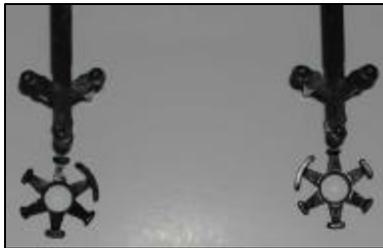


Figure 2

TRADE SHOW UPDATE



Look for BRT in **exhibit booth #11224** at NPE 2003, to be held **June 23-27** at McCormick Place, Chicago, Ill. BRT staff will demonstrate how

MeltFlipper technology balances melt flow in hot runner manifolds.

present the MeltFlipper to our customer base when shear induced imbalance is creating problems for them. Most of the industry will try to balance with gate and runner sizing. This will only work at one shear rate/injection speed and does not take into account melt flow variation within raw materials.”

“In Wilco’s case, I suggested that they try the MeltFlipper on their toughest application involving shear imbalance, which was the timing ring. The owners were skeptical, but agreed to try it because of the 100% money-back guarantee.”

“We sent the prints to Beaumont Runner Technologies, and they designed the MeltFlipper which we then incorporated in our in-house tooling shop (see Figure 3),” says Kim Williams, Wilco general manager. “We were probably getting 30% scrap on the parts we were running prior to installing the MeltFlipper.”

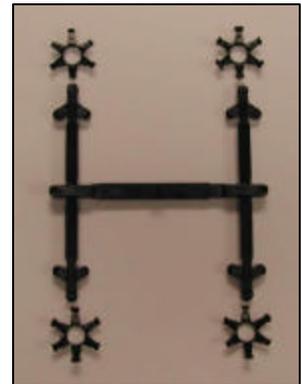


Figure 3

Figure 4A and 4B contrasts the filling pattern within the parts prior to and after the installation of the MeltFlipper technology.

“With the MeltFlipper installed, we now have 100% good parts with a flat mating surface, regardless of the pack pressure used in the process. We will definitely use the MeltFlipper again.”



Figure 4A

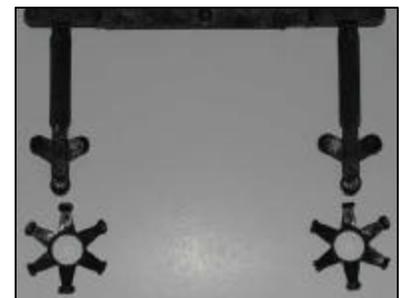


Figure 4B

Van Duine says “Wilco is quite pleased that they are finally able to make parts that meet the OEM’s standards.”



5091 Station Road
Erie, PA 16563-1702

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 Runner Technologies, Inc. is the exclusive licensor of the MeltFlipper™ technology developed by John Beaumont, an associate professor of plastics engineering technology at Penn State Erie. The company is dedicated to revolutionizing melt delivery systems and design practices for both hot and cold runners in the plastics industry. With further R&D and an in-depth understanding of plastic flow characteristics, BRT continues to grow and has now expanded its capabilities and services beyond the development of MeltFlipper technologies. The BRT staff offers full engineering support to MeltFlipper licensees in the various plastics industries.

The **MeltFlipper technologies** are patented approaches to melt-management and melt-rotation within a melt delivery system. The technologies reposition the shear-induced variations in hot **or** cold runner systems to create uniform filling and material properties in all cavities of a multi-cavity tool. By repositioning the melt to provide for natural symmetry, the MeltFlipper technology eliminates variations in temperature, viscosity, and other material properties to and within the inner and outer mold cavities. In addition to creating identical filling in high cavitation molds, the MeltFlipper technologies offer improved Cpk, reduced part scrap and costs, and a wider processing window. The MeltFlipper technology is a low risk investment due to its 100% customer satisfaction **GUARANTEE** to solve the problems associated with filling imbalances.