

Melt Management Magazine

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Scrap by 33% and
Improves Quality in its
Irrigation Products***

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MAXIJET, INC. REDUCES SCRAP BY 33% AND IMPROVES QUALITY IN ITS IRRIGATION PRODUCTS

Better Line of Irrigation Products Achieved Though Advanced Molding Technologies

At first glance, injection molding low water flow volume, micro spray irrigation products for the citrus growers industry and retailers like Lowe's, Ace Hardware and True Value might not seem to be too challenging. Even molding products that are offered with as many as 8 different spray patterns for each product, most molders might not view this as overly difficult.

But think again!

When the precision requirements of the spray pattern are considered and the molds and the molding process have to produce 8 different part styles, each with up to 8 different nozzle configurations (which are molded in 8 unique colors for each product size and type), the problems, molding complexities and costs begin to mount. These product and color variations in a multi-cavity mold present some obvious and some not-so-obvious challenges.

At Maxijet, Inc., one of the world's most renowned molders of low water volume irrigation products, parts molding previously required a unique process set-up for each configuration to avoid common molding problems. These included recurring problems with flash, sinks and shorts.

Due to previous problems, certain cavities sometimes had to be blocked in order to complete the production run and get parts to the customer on time. These process variations and quality issues required a fair amount of process babysitting, and the regular scrap and blocked cavities reduced operational efficiencies.

These involved constant adjustments and "tweaking." Thus they sought ways to overcome these challenges.

Now, thanks to recent advances in injection molding process technology, Maxijet, Inc., has put this molding challenge to rest. And, note sources at Maxijet, a

new MeltFlipper® melt rotation process enhancement system from Beaumont Technologies, has enabled them to produce better and more consistent products, plus saved them money as well. The company confirmed reductions in scrap by as much as 33%. Added to this are savings realized from reduced maintenance and downtime.



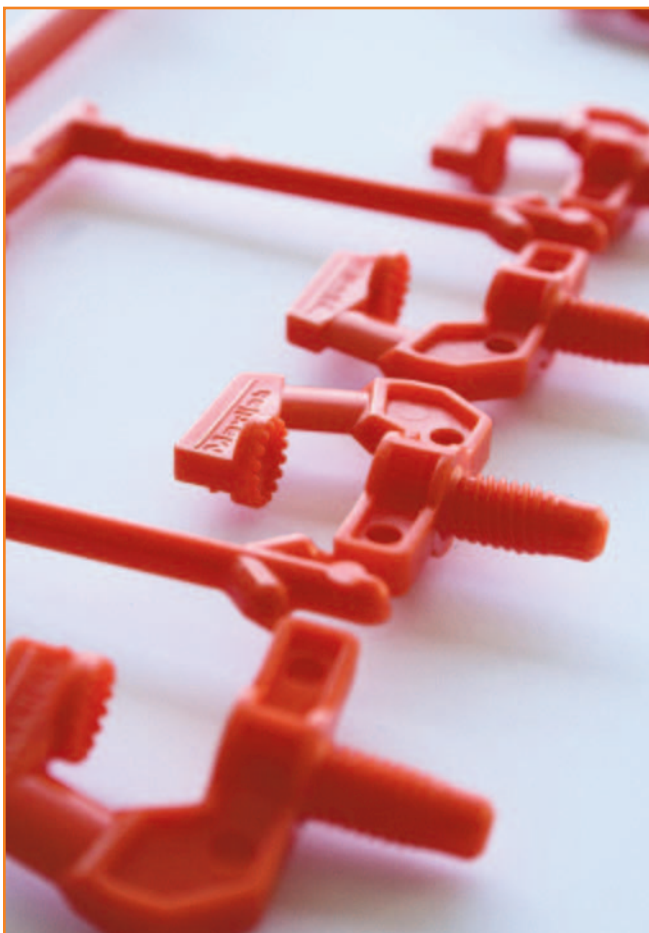
Tim Wert, the Tool Room Supervisor at Maxijet, notes that cost savings due to increased cavity utilization, reduced setup and molding times, not to mention the increase in quality molded parts, are significant. Based on molding millions of parts, the Return On Investment (ROI) was only a few short months, with an actual 25% ROI. He does note that the Maxijet agricultural system parts cost very little, so for another firm using MeltFlipper technology and molding larger and pricier parts, the ROI could be achieved considerably faster, earning them a far greater return. It is also important, he adds, that this return comes every year that the mold is in production.

According to Maxijet, a company owned by the Thayer family, a fifth generation of Florida citrus

growers, the development of a micro-spray jet technology to more efficiently enable growers to water their newly planted citrus trees has had extremely positive effects on the industry – and now consumers.

Their products have become the standard of quality in low volume irrigation. The patented design of the Maxijet brand of nozzles increases a product's yield, saves water and applies water directly to the tree roots. Watering, coupled with 'fertigation' by injecting liquid fertilizer through the jets, and in the winter months by providing frost protection by increasing the dew point during freezing temperatures, have made a difference worldwide.

Wert recalls, "Seeing our products go from the idea stage, through development and the molding of the finished product was a most gratifying experience. However, our ability to mold 100% quality products on a consistent basis easily created a major hurdle, at least temporarily. That's when the low-cost licensed technology called MeltFlipper® system from Beaumont Technologies, Inc. turned out to be a great investment, which ended up paying for itself in just a few short months," he adds.



It Might Not Have Happened Without Advanced Molding Technologies

From the very start when Maxijet started running this mold with the multi-configured, multi-part nozzle and multi-colored offerings, the tool room supervisor remembers, "The process needed constant tweaking to try to eliminate short shots or flash within the spray pattern of the various parts produced from this multi-cavity mold. Any irregularities within the spray pattern feature would affect how the water should spray."

But, to the dismay of those at Maxijet charged with troubleshooting the molding process, changes made to the mold (often involved blocking the flow to certain cavities) to improve the quality problems in one cavity would sometimes cause another cavity to develop a quality issue.

Thus, Maxijet had to develop a different process setup for every spray pattern which resulted in longer mold setup times. Fortunately, reflects Tim from their Florida headquarters, they anticipated these molding complexities and from the outset had been looking into rheological control technologies to help optimize the process and part quality. The solution came about as a result of Wert attending one of the free molding seminars offered by Beaumont Technologies, Inc. (Erie, PA) that explains the fundamental sources of mold filling variations and the technology driven to solve the root cause of those variations.

ROI Makes Investment Prudent

The patented MeltFlipper product, which is licensed to users for a single mold, a bundle of molds, or on an annual site license basis, offers a multi-dimensional approach to material flow properties that provides a true balance of pressure, temperature, viscosity and material properties throughout the entire mold.

Beaumont Technologies provided data to Maxijet that showed how the guaranteed MeltFlipper technology had overcome similar issues with all types of resins, including the acetal resin used in Maxijet's nozzles.

The overwhelming success of their first experience with MeltFlipper technology now has the firm pursuing the addition of the technology to 3 additional tools experiencing similar issues. The primary goal for all Maxijet products is cavity uniformity because the spray pattern is critical and all the parts from the various product sizes and corresponding colors must fit together precisely

within the final assembly. The tool room supervisor reports that cost savings because of reduced setup and molding times, not to mention the increase in quality-molded parts, continues to be significant.

Company officials at Maxijet credit their implementation of advanced molding technologies, including MeltFlipper technologies, as a means for them to improve the quality of the product offered to their customers.

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 the process control technologies for injection molding, 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.

More information on low water volume irrigation products may be obtained from: Maxijet, Inc., P.O. Box 1849, 8400 Lask Trask Road, Dundee, FL 33838-4704. Tel: 863-439-3667. Web: www.maxijet.com. E-mail: sales@maxijet.com

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Profits/Business/Your Competitive Edge Slipping Away?

Is it because:

1. You aren't maximizing your molding capabilities?
2. Scrap and waste are cutting into your profits?
3. Startup is too slow, with mold debugging dragging you down?

Maybe it's time to get back to the basics.... using BTI's Technologies and Training Seminars

- 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.
- Proven technologies that are guaranteed to help you go from art to part more quickly, and mold higher quality parts at the same time.

BTI...Industry's Source for Mold and Process Optimization Technologies and Training



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