

# Polymer Conversions, Inc.: Better Well Done, Than Well Said

By Dianna Brodine



**W**hat happens when a plastics processor embraces the challenges of a shifting market and makes a commitment to both quality and lean operations? If that processor is Polymer Conversions, Inc. of Orchard Park, New York, the result is steady customer growth, facility expansions, and the promise of a bright future.

## Early Growth

Polymer Conversions Inc. began production in 1979 with three 75-ton molding machines, seven employees, and 5,000 square feet of office and manufacturing space. The company now employs over 82 people, with more than 38,000 square feet on a 15 acre building site. What fueled the company's growth? A willingness to solve other processors' problems and adjust to customer needs.

The company's initial molding business consisted of overflow production for customers in the toy and houseware industries that produced their own plastic parts, including eyes for Fisher Price's Kermit the Frog doll. However, relying strictly on overflow molding was an uncertain business proposition and the company began to look for other opportunities.

One solution was for Polymer Conversions to expand its production output by means of take-over molds. Take-over

molds are molds manufactured by other companies, but which require rebuilding or redesign because of discrepancies from desired tolerances and inefficient production. Ben Harp, CEO of Polymer Conversions, explained the company's expansion, "During the first 24 years of Polymer's history, we grew year by year incrementally pretty much by word of mouth, with no sales team, by fulfilling our customer's expectations. An engineer would continue to use our services when he moved from one company to another. The take-over program allows us to take something that wasn't working with other molders and find a solution."

Not every processor is willing to work with take-over molds. The process to rebuild a mold is often more time consuming than starting from scratch. But because time and money already have been invested in the mold, customers are unwilling to abandon the initial work. Polymer Conversions then steps in to solve the problem. "Because of the expertise of our people, we are able to evaluate and recommend changes to the tools to help them live longer, so to speak. And part of that means we inherit other people's problems and have to come up with a solution to mold the product," explained Tom Rybicki, director of operations. Since 1980, roughly 40 percent of the molds in-house have been sent to the company by customers who are downsizing or unhappy with their supplier.

Harp acknowledges the importance of the employees at Polymer Conversions in the company's success in the take-over mold business. "We've got great people and those folks allow us to perform for customers in these situations." Harp also recognized the benefits that take-over mold business brings. "Those jobs are more secure, business-wise, because the customer has had difficulty bringing the product to market somewhere else and it's no longer about price, but about performance. It also helps us build strong relationships with customers with a layer of security and trust, because the customer has a history of failure with other places."

Largely as a result of referrals from existing customers, Polymer Conversions began a steady and controlled growth. Over the years, the company added in-house mold manufacturing and repair capabilities, which had previously been provided by third parties. The tooling department grew rapidly from an initial one-man operation with limited capabilities, to a seven-man department with the most advanced equipment available including CAD/CAM systems. Polymer Conversions added secondary services, including pad printing, hot stamping, ultrasonic welding, vibration/hot-plate/spin welding, adhesive bonding, specialty packaging, and sub-assembly. The continued growth required more space, and construction of a new facility at the current location was completed in December of 1989.

The facility was designed by Polymer Conversions from the ground up for injection molding and related services. The facility remains state-of-the-industry, with all manufacturing and office areas air-conditioned and humidity-controlled. The entire building is constructed of non-flammable materials and is set up with a sprinkler system designed specifically for a building housing a plastics operation. Building security and fire/police protection are monitored off-site, as are process water temperature and HVAC services.

Credit for the attention given to the design is given by Harp and Rybicki to Jack Bertsch, the owner of Polymer Conversions. "Jack somehow looked ahead and made decisions about the spacing between the presses and the epoxy floor that went in, even though at the time of the expansion, we weren't looking at clean applications," said Rybicki. "He understood what 'clean' meant to the industry and it gave us the opportunity to expand the business. He saw the future with robotics and automation. In the design, he kept the footprint of the machines wide enough to add automation without difficulty." For Polymer Conversions, that forethought made it an easy transition to the medical field.

### A Change in Focus

The transition to molding plastics for medical devices began in the early 1990s. Changes in the industry led Polymer Conversion to specialize in a product that wasn't likely be sent overseas. "With the increased outsourcing of plastic parts and assemblies to Asia, along with the hit the U.S. tooling market has taken because of low-cost Asian tooling, Polymer Conversions changed its focus," said Harp.

Polymer Conversions has full in-house capabilities ranging from design to finished products, providing customers with comprehensive mold and process validations. The facility has both class 100,000 (ISO class 8) and Class 10,000 (ISO class 7) clean room molding capabilities, which are necessities in the medical market.

"Although the company services customers in the industrial and automotive markets, investments have been made to service the medical markets and medical device assemblies. New employees include Sigma 6 Black Belt engineers and engineers with medical and regulatory backgrounds. Other investments include automation, which allows the company to redeploy employees to areas where they can add value to the products while reducing the total cost of ownership to the customers," explained Harp.

The company is producing devices for blood analysis, transfusion pumps, drug delivery systems, diagnostics, and oxygen generation systems. "We do a lot of medical product

► page 12



development, bringing our technical expertise to the table to help bring products to market,” said Harp.

Keeping up with technology is a must. “The average injection molding machine age is under 7 years,” says Harp. “We continue to optimize accuracy and energy use by replacing hydraulic molding machines with electric machines.”

### A Commitment to Quality and Precision

In 1993, Polymer Conversion had implemented “Total Quality Management” (TQM) training, recognizing this need as a requirement for successful ISO certification. ISO 9001 certification was formally achieved in February 1997 and QS 9000 certification in June 1998. “In the early days, it was the cornerstone to becoming a process-focused organization, where we all operated on the same page, in a systematic manner,” said Harp. “There is no finger pointing. We have standard operating procedures that are unquestionably the authority figure in our day-to-day organization. Today, I believe that it would be impossible to run an organization that is based on self-managed work teams focusing on medical customers without the ISO standards directing the company.”

The company continues to add certification standards. “We are in the process of implementing the ISO 13485 standard,” said Harp. “The ISO 13485 standard is compliant with the processes as outlined by the FDA for the manufacture of medical devices.”

While certification standards were implemented, Rybicki and Director of Quality Systems Jim Genzel saw a need to ‘lean out’ the process. “We quickly discovered after going to several seminars locally that lean manufacturing wasn’t something we were going to be able to take on and manage ourselves,” said Rybicki. Polymer Conversions obtained a grant from the New York State Department of Labor to help defer the cost to implement lean manufacturing and contracted with Insyte. “We invested the same amount of money as the grant and contracted with Insyte for 14 months,” said Rybicki. “They helped us with cell layout, set-up time reduction, waste reduction, and more.”



The lean manufacturing implementation process was completed in November of 2005 and the results have been impressive. Rybicki was quick to relay the statistics. “We have seen significant reduction in lead time. We’ve avoided several capital expenditures, providing a cost savings in excess of \$500,000. We were able to gain 35 percent more business without adding employees or losing employees. We had a 68 percent increase in warehouse space with very insignificant costs to do such. We were getting ready to blow the walls out to add to the warehouse when our maintenance manager, Ken Cook, came up with an idea that allowed us to save space.”

In 2006, Polymer Conversions received Insyte Consulting’s New York Lean Manufacturer of the Year award.

Maintaining high quality standards wouldn’t be possible without teaching those standards to employees. “We’ve made it part of our global training, requiring all employees to take Lean 101 class. By ‘global training’, I mean the company policy and culture, drug testings, and other orientation requirements. Lean is that important,” emphasizes Harp. An internal training program called Training Tuesdays is held weekly and is supplemented with vendor support and seminars. A partnership with Penn State Behrend also has been crucial. “They have one of the better plastics

schools in the country,” says Harp, “and we’ve had a few employees come from there. They have a consortium made up of processors like ourselves who support that program, which in turns drives new technologies.”

Polymer Conversions takes its commitment to education to its customers as well. As part of the arrangement with Penn State, Polymer Conversions has access to the university’s academic curriculum. In late 2006, the company sent a group of employees and customers to Penn State to learn jointly about new processing technologies. In addition, Polymer Conversions hosts basic injection molding seminars. “We bring key customers here and explain to them exactly what is involved in the process – from part design to machines – how you make a part,” says Rybicki. “It’s a full two days and we use every bit of those two days.”

Harp laughingly acknowledged, “It’s one of those things that probably helps our competitors out.”

### Conclusion

The growth of Polymer Conversions shows no signs of slowing down. The company is in the process of doubling its manufacturing capabilities with the addition of a stand-alone clean room manufacturing area and additional warehousing. Although the facilities and technology play an important part in the company’s success, Rybicki knows there’s more to it. “One thing we don’t want Polymer Conversions to ever lose sight of is the people. We have a unique group here that truly cares about the product that we’re making. I’ve never seen anything like it, quite frankly. Some of these devices are life-saving devices and the employees take pride in everything that goes out the door.”

That pride in a job done right is reinforced each time an employee walks into the molding area. Above the door is a sign which says, ‘GUT GEMACHT IST BESSER ALS GUT GESAGT’. Translated from German, it means ‘Better well done, than well said.’ ■



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