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PLASTIC COMPONENTS, INC.
IMPROVING SPEED AND ACCURACY OF INJECTION MOLDING WITH SOLIDWORKS PLASTICS PREMIUM

Case Study

By adding SOLIDWORKS Plastics Premium mold-filling simulation software to its SOLIDWORKS implementation, Plastic Components has minimized the number of mold iterations associated with each plastic injection-molding manufacturing job, saving time and money in the process.

DASSAULT SYSTEMES

Challenge:
Minimize the number of mold iterations associated with each plastic injection-molding manufacturing job to satisfy customer time-to-market requirements while simultaneously reducing internal costs.

Solution:
Add SOLIDWORKS Plastics Premium injection-mold simulation software to its SOLIDWORKS mechanical design installation.

Results:
- Cut weeks from back end of mold and tooling development process
- Minimized number of mold iterations
- Increased accuracy of mold-filling simulations
- Saved money spent on unnecessary mold iterations

Shipping over 20 million parts per month to customers worldwide, Plastic Components, Inc. is a world-class manufacturer of small- to medium-sized plastic injection-molded parts. Since the company was founded in 1989—with three molding presses in a 10,000-square-foot building—Plastic Components has grown dramatically. Today it operates two automated manufacturing facilities, totaling more than 75,000 square feet of production space.

According to Business Development Manager Rick Riesterer, the plastic part producer's rapid growth is partly due to its commitment to leveraging emerging technologies to meet and exceed customer expectations. "Plastic Components pushes the limits of metal-to-plastic conversion, and we want to give our customers confidence in the quality of injection-molded parts," Riesterer explains. "We search out and utilize technologies that allow us to consistently improve the quality of the parts that we produce, as well as reduce the time and money spent to make them."

This commitment to technology led the company to standardize on SOLIDWORKS® 3D design software in 2006, which the company's engineers use to assist their customers with component design. In 2016, management decided to bolster the company's mold-filling simulation capabilities to reduce mold iterations, so that the company could more quickly deliver customer parts and eliminate unnecessary costs.

"We wanted to take our mold-filling simulation capabilities to the next level to help our customers meet increasingly shorter time-to-market goals and reduce our internal costs on the back end," Riesterer notes. "So we conducted a comprehensive evaluation of the top four mold-filling simulation solutions on the market and benchmarked each solution against a part with a known issue, so we could assess the accuracy of each solution and determine how the results of each correlated to a real-life component."

After benchmarking each solution in terms of accuracy and predictability, data output, ease and consistency of use, and quality of support, Plastic Components chose SOLIDWORKS Plastics Premium mold-filling simulation software. "SOLIDWORKS Plastics Premium came out on top because in addition to its accuracy, ease of use, and integration with SOLIDWORKS modeling software, it's supported by our SOLIDWORKS reseller, GSC, who really stood out from the others. We challenged GSC to help us make SOLIDWORKS Plastics Premium dance, and their support has greatly contributed to our success using the software," Riesterer concludes.

REDUCING THE NUMBER OF "ROUND TRIPS"

With SOLIDWORKS Plastics Premium, Plastic Components has minimized mold iterations, which Riesterer refers to as "round trips," because engineers can now pinpoint injection-molding issues during simulations that, in the past, often went undetected until sampling. "A 'round trip' is what we call the process of qualifying a customer's component from sampling to mold approval," Riesterer says.

"We partner with our customers to help them validate each design concept for manufacturability, functionality, assembly, and sustainability before developing the mold," Riesterer continues. "Before we added SOLIDWORKS Plastics Premium software, we'd sometimes discover an issue on very complex components during the first mold trial that would require a second, third, or more trials. On those type components, our objective is to reduce the number of 'round trips' for two reasons: helping our customers achieve their time-to-market objectives and reducing our back-end costs. SOLIDWORKS Plastics Premium software provides the advanced capabilities—such as post-filling, cycle optimization, cooling analysis, and warp prediction—that allow us to simulate complex mold scenarios, accelerate customer time-to-market, and reduce internal launch costs."

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— Rick Riesterer, Business Development Manager

IMPROVED ACCURACY SAVES TIME AND MONEY

Minimizing mold iterations is critical for Plastic Components because of the time and cost associated with each iteration. "One 'round trip' takes about two to three weeks and costs thousands of dollars," Riesterer says. "We don't have the luxury of being able to charge extra for subsequent iterations, so it's imperative for our business that we cut costs where we can."

With the improved accuracy of integrated SOLIDWORKS Plastics Premium software, Plastic Components can identify injection-molding issues—like faulty gating schemes, poorly positioned knitlines, gas traps, or areas that won't fill properly—before making molds and tooling, saving the time and cost of additional iterations. "Accelerating time-to-market is our customers' top priority. Controlling costs is our prime concern. SOLIDWORKS Plastics Premium provides the mold-filling simulation accuracy that we need to do both. It's good for us and good for our customers," Riesterer stresses.

MINIMIZING ITERATIONS LEAVES MORE TIME FOR NEW BUSINESS, R&D

Eliminating unnecessary mold iterations is not the only benefit that Plastic Components has realized as a result of implementing SOLIDWORKS Plastics Premium software. The solution is also supporting the company's new business and R&D initiatives. "This capability is helping us land new business and better support R&D," Riesterer points out.

"A new customer asked us to vet a program for producing a mission-critical component that was utilized under pressure," Riesterer adds. "We ran a SOLIDWORKS Plastics Premium simulation on the gating scheme that they had, identified the problems they were having, and showed them how a new gating scheme would resolve the issue. That landed us the business. By enabling us to better predict the injection mold-filling process, SOLIDWORKS Plastics Premium software not only makes us more efficient but also helps drive R&D as we work to advance the state of the art in injection-molding production."

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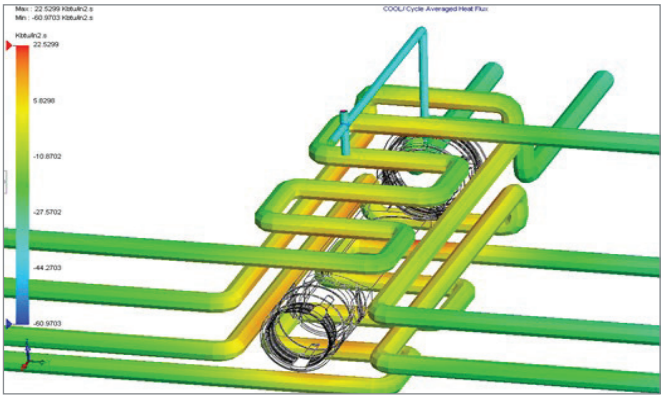

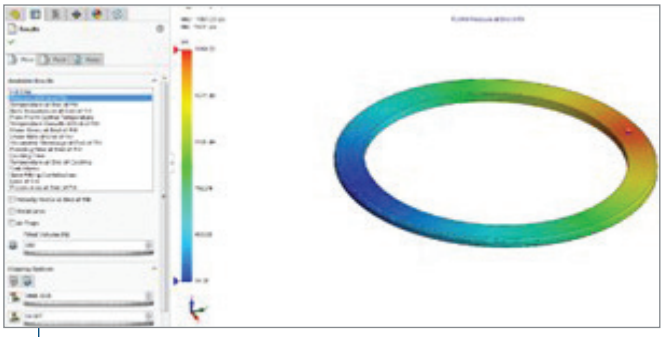

SOLIDWORKS Plastics Premium mold-filling simulation software enables Plastic Components engineers to conduct mold iterations in software instead of through prototyping, helping customers meet time-to-market requirements while simultaneously reducing internal costs.

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