



CASE HISTORY

OEM/ERIE SPEEDS THE MOLD DESIGN AND CREATION PROCESS WITH SPINFIRE PRO

Better Digital Design Communications And Simple Visualization And Measurement Tools Add Up To A Competitive Advantage

Custom-injection molder OEM/Erie, Inc. adopted an Actify SpinFire Professional solution in 2002 to streamline and strengthen its design communications process with outside mold (or "tool") shops. The company, which manufactures a wide variety of interior and exterior plastic parts primarily for the automotive industry, gained other benefits as well. These include enhancing internal efficiencies when matching mold drawings to injection machines and when performing a variety of common CAD visualization and measurement tasks.

A typical injection molding project for the Erie, Pennsylvania-based company begins when one of its customers - typically DaimlerChrysler or General Motors - sends along an electronic surface or solid model in either IBM® CATIA® (DaimlerChrysler) or UGS® Unigraphics® (General Motors) format. From there OEM/Erie contracts with a tool shop to design and create the required mold, which the company adapts to its injection molding machines to produce a broad range of plastic parts: decorative trim, pillar assemblies, fascias, rocker panels, appliquéés, and more.

Welcome to Clear, Tight Digital Design Communications

"Tool shops are the experts when it comes

to building molds," says Michael McCullough, an OEM/Erie process engineer. "For example, they know how much steel a mold needs for structural integrity. But they're not experts at running parts."

OEM/Erie faces certain communications challenges when collaborating with its partner tool shops, many of whom are out of state (as are several of the company's own employees; OEM/Erie operates a support office in Madison Heights, Michigan). For example, most tool shops cannot read files output by Moldflow® software. McCullough uses Moldflow to first simulate and then analyze the tool shop's proposed mold, as well as to design the mold's feed system to the parts: the sprue, gates, and "hot" manifolds and "cold" runners that convey the molten plastic. Typically, tool shops prefer to work with DXF (2D) or IGES (3D) electronic drawings only.

Another communications challenge arises when McCullough is ready to share his design evaluation with the tool shop. "My job is to tell them how many gates and runners are needed, how thick they have to be, at what locations, that sort of thing," says McCullough. But Moldflow lacks the ability to annotate drawings with notes and questions. So the iterative design process could bog down. "I'd spend time faxing blueprints back and forth, or capturing a screen shot and handwriting a bunch of notes, and then faxing or shipping that," says McCullough.

"SpinFire does the job quickly and simply; it can calculate a volume with a single click. Why wrestle with a lot of commands I don't need when my task can be accomplished quickly and easily?"

The solution: Actify SpinFire Professional software. It's the only digital design communications solution on the market that enables OEM/Erie to import 2D and 3D files, use the 2D data with solid or surface models in Moldflow, and then output universally readable files - Actify supplies a free, downloadable viewer for those who don't have the software - that the company can mark up and share.

The ability to communicate right inside the drawings has proven invaluable, speeding up the process and minimizing the risk of errors. Once McCullough imports the tool shop drawings into SpinFire, he can add questions and comments, even arrows and pointers, before sending the drawings back. Says McCullough, "To prevent confusion, it's much better to see what you're talking about when clarifying something over the phone. And I save a lot of time and energy."

The Advantages of Simple Visualization and Measurement Tools

Of course, not every step of the custom-injection molding process requires high-end analyses. The extensive capabilities found in Moldflow, CATIA, and Unigraphics can mean extra work when, for example, you only want to change the background colors or spin, render, or take a cross-section of a model. For that, McCullough turns to SpinFire software.

Before OEM/Erie adopted SpinFire in 2002, says McCullough, he did what everybody in school and the industry tells you not to do: "I got the tool shop's blueprints, grabbed a ruler, and then measured and scaled. It's a long,

tedious, and potentially error-prone process. But it's all I had at the time." SpinFire's simple measurement tools can compute volume and surface areas and measure thickness and angles, thus ensuring McCullough never misreads a tape measure or ruler.

"Now I just pick my points - I use SpinFire's measuring tools a lot - and I know the measurement exactly," says McCullough. "SpinFire does the job quickly and simply; it can calculate a volume with a single click. Why wrestle with a lot of commands I don't need when my task can be accomplished quickly and easily?"

Similarly, SpinFire simplifies the visualization process. Files imported directly into Moldflow may lose their original colors, and their dimensions are converted into lines and points and may be combined on one layer. SpinFire, on the other hand, can access all part information and data contained in the original CAD drawing. McCullough uses SpinFire to preserve the drawing's colors and dimensions, which the software keeps on separate layers. He can even turn off dimensions if they're not needed.

The cross-section tool is perhaps McCullough's favorite time saver. "SpinFire lets me take a cross section of a 2D plane and translate that plane back and forth, in real time, to see, say, the thickness changing," says McCullough. "But the best part is, in addition to translating the plane, you can spin it very simply to see it from different points of view. And you can do all this in the free viewer as well."

OEM/Erie also uses SpinFire software to check whether a particular mold will fit on a press, matching the electronic

mold drawing with the company's dozens of injection molding machines. "With SpinFire, it's a simple matter to compare the proposed mold drawings with the machine drawings, lining up all the dimensions and all the holes," says McCullough. "I have to do that every time we prepare to use a molding machine, and doing it with SpinFire is quick and precise."

Conclusion

Actify SpinFire Professional has helped OEM/Erie shorten the mold design and creation cycle, minimize errors and rework, and reduce costs. "SpinFire gives me precision, accuracy, reliability, and error proofing," says McCullough. "If you're an engineer, you should have SpinFire on your computer. SpinFire should be everywhere."



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