INNOVATIVE PLASTECH, INC.

RAMPING UP THERMOFORMED PRODUCT DESIGN THROUGHPUT WITH SOLIDWORKS

Innovative Plastech leverages SOLIDWORKS® design and simulation tools to dramatically increase throughput of thermoformed packaging without the need for additional resources.

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Challenge:
Maximize thermoformed product design throughput by improving quality, streamlining processes, and leveraging surfacing tools.

Solution:
Implement SOLIDWORKS Professional design, SOLIDWORKS Premium design and analysis, and free DraftSight 2D software.

Results:
- Increased throughput by 50 percent
- Reduced scrap material exponentially
- Improved effectiveness of customer communications
- Eliminated 2D costs related to laser cutting

Many consumer product manufacturers depend on custom, thermoformed product solutions from Innovative Plastech, Inc. (IPI). The Illinois-based custom thermoformer of plastic vacuum-formed products also provides custom packaging solutions to many other industries. From customized shipping trays, form-fit clamshells, and anti-static packaging to trifolds and blister packs for hardware, electrical components, toys, food, tools, and cosmetics, IPI is a major supplier of superior thermoformed products and tooling.

IPI is committed to leveraging the latest technology to develop the tooling it uses to produce custom thermoformed products. According to Engineering Manager Denny Bahl, that commitment prompted IPI to upgrade its design platform from AutoCAD® 2D software to a 3D CAD system in 2002.

"In our industry, increasing throughput is the name of the game," Bahl stresses. "Every year, we need to take on more projects and consistently execute without adding resources. That's why the transition from 2D to 3D was so critical. In order to achieve continuous improvements we simply have to be more efficient and utilize the best development tools available."

After evaluating 3D packages, IPI chose SOLIDWORKS solutions, implementing SOLIDWORKS Professional and SOLIDWORKS Premium design software. The thermoformer selected SOLIDWORKS software because it's easy to learn and use, provides robust surface modeling and mold development tools, and integrates well with the SOLIDWORKS Gold Partner applications MasterCAM® for manufacturing and DezignWorks® for reverse engineering.

"We need to generate the basic outline of a product's shape to create packaging designs," Bahl explains. "We moved to 3D to automate our processes and reuse existing data as opposed to reinventing the wheel every time. We believed SOLIDWORKS provided the best collection of tools to support what we do."

GREATER PRODUCTIVITY BOOSTS THROUGHPUT

Since implementing SOLIDWORKS solutions, IPI has realized a 50 percent increase in development throughput while delivering highly customized form-fitting packaging to its customers. "With SOLIDWORKS, we can take a customer's part as any kind of CAD file, and if necessary, use FeatureWorks® to create a workable solid model," Bahl says. "Or, we can use the DezignWorks plug-in and a digital scanner to duplicate the physical part in SOLIDWORKS. Either way, SOLIDWORKS lets us more efficiently design custom packaging and the tooling required to produce it.

"We push more projects through our department and more product out onto retail shelves," Bahl continues. "With SOLIDWORKS, we complete designs more quickly, and then transform to MasterCAM, a SOLIDWORKS Gold Partner, to automate tooling production. SOLIDWORKS has helped us become the one-stop, fast-turnaround source for custom thermoformed products."

SURFACING AND MOLD DESIGN TOOLS INCREASE ACCURACY

Not only has the SOLIDWORKS implementation enabled IPI to boost productivity, it also has allowed the thermoformer to improve design accuracy, reducing material usage and rework. "The amount of rework and scrap has gone down exponentially," Bahl says. "That's because SOLIDWORKS surfacing, visualization, and verification tools let us fully check designs before going into production.

"From design and production to cost and customer interaction, SOLIDWORKS tools help us achieve our product development goals."

— Denny Bahl, Engineering Manager

"We can create the lofts, sweeps, and organic shapes that our customers demand," Bahl adds. "The days of the generic clamshell are gone, and custom fits are now the norm. With SOLIDWORKS, we can break our designs down into surfaces and stitch the surfaces back together to form a solid. We can check draft to make sure the plastic form will pull off the mold, check for interferences, and virtually test it out in SOLIDWORKS before making a tool."
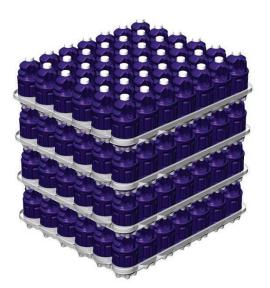
IMPROVED COMMUNICATIONS, FREE 2D

SOLIDWORKS software has also improved the effectiveness of customer communications and provided IPI with free 2D tools for specialized uses. The company uses eDrawings® files to communicate with its customers and free DraftSight® 2D software to support laser cutting and engraving operations.

"eDrawings files play a major role in communicating more effectively with tech-savvy customers," Bahl says. "For many customers, meeting their key critical dimensions is vitally important. In lieu of taking the time to attend customer meetings, we can send an eDrawings file for customer review and markup. The customers can even turn on the eDrawings measuring capability to check critical dimensions themselves and sign off on designs. This way, we can produce a tool without the time and expense of creating detailed engineering drawings.

"In the past, IPI maintained an AutoCAD license to coordinate laser cutting and engraving," he adds. "With the availability of DraftSight software, we now do that without the added expense of additional software maintenance. From design and production to cost and customer interaction, SOLIDWORKS tools help us achieve our product development goals."

The combination of SOLIDWORKS surfacing, mold design, visualization, and verification tools has enabled Innovative Plastech to boost productivity, increase throughput, and minimize scrap and rework.

Focus on Innovative Plastech, Inc.
1260 Kingsland Drive
Batavia, IL 60510 USA
Phone: +1 630-232-1808
VAR: Graphics Systems Corporation,
Oakbrook Terrace, IL, USA

For more information
www.thinkipi.com

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175 Wyman Street	10, rue Marcel Dassault	ThinkPark Tower
Waltham, Massachusetts	CS 40501	2-1-1 Osaki, Shinagawa-ku,
02451-1223	78946 Vélizy-Villacoublay Cedex	Tokyo 141-6020
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