

PRENT CORPORATION

ADVANCING THERMOFORM PACKAGING SYSTEM DEVELOPMENT WITH SOLIDWORKS SOLUTIONS



Prent Corporation moved to the SOLIDWORKS design environment from Unigraphics design software to streamline development of its custom, plastic thermoform packaging and related systems for the medical device, electronics, and consumer products industries.

Challenge:

Streamline and automate design and manufacturing processes to save time, improve accuracy, and increase global collaboration in support of business growth.

Solution:

Implement SOLIDWORKS Standard, SOLIDWORKS Professional, and SOLIDWORKS Premium mechanical design software, SOLIDWORKS Electrical 3D design software, SOLIDWORKS Simulation Professional and SOLIDWORKS Simulation Premium analysis software, and SOLIDWORKS PDM Professional product data management software solutions.

Benefits:

- Shortened lead-times to as little as two weeks
- Doubled throughput to support similar jump in global sales
- Tightened revision controls
- Improved design accuracy and product quality

Prent Corporation is the world's leading manufacturer of custom, plastic thermoform packaging and related systems for the medical device, electronics, and consumer products industries. For 50 years, Prent has pioneered thermoforming processes, including numerous innovations that have helped advance industry standards. The company—with facilities in Arizona, China, Costa Rica, Denmark, Malaysia, Puerto Rico, Singapore, and Wisconsin—has won 15 WorldStar Packaging Awards for custom thermoformed packages for the medical device industry; more than any other medical or pharmaceutical company in the world.

With many Fortune 100 companies as customers, Prent is committed to leveraging the latest technologies to better serve its customers. This is why the thermoform packaging manufacturer decided, in 2006, to reevaluate the Unigraphics® 3D CAD/CAM software it used against other 3D platforms, according to Chief Information Officer Steve Zimmerman.

"We looked at other 3D systems to determine if there was a better solution for supporting the global nature of our company," Zimmerman recalls. "We wanted to streamline our development processes to save time, improve accuracy, and increase global collaboration in response to growing demand for our packaging solutions worldwide."

After evaluating Solid Edge®, Pro/ENGINEER®, and SOLIDWORKS® design software, Prent chose to standardize on the SOLIDWORKS design and manufacturing environment. The company implemented SOLIDWORKS Standard, SOLIDWORKS Professional, and SOLIDWORKS Premium mechanical design software, SOLIDWORKS Simulation Professional and SOLIDWORKS Simulation Premium analysis software, and SOLIDWORKS Gold Partner CAMWorks™ machining software. The company has since added SOLIDWORKS Electrical 3D design software and the SOLIDWORKS PDM Professional product data management system.

"We found the SOLIDWORKS environment to be a better solution for several reasons," Zimmerman explains. "SOLIDWORKS is easier to use—in fact, a lot of engineers right out of college know how to use it, which reduces training requirements—is better for integrating with our customers and partners, and provides the integrated design, analysis, and PDM tools that we need at the best price."

TIGHTENING REVISION CONTROLS, AUTOMATING WORKFLOWS

The SOLIDWORKS PDM implementation enabled Prent to automate its workflows—both in product development and manufacturing and assembly—and tighten revision controls, resulting in shorter development times, less scrap and rework, and the elimination of errors related to using the wrong revision. "On the production side, the implementation of the SOLIDWORKS PDM system has resulted in a largely paperless system, leading to greater automation and fewer questions because we can easily access the latest, most accurate design data," says Manufacturing Engineer Curt Nyhus. "If we do have questions, we can quickly and easily search the vault for the information we need."

Prent's product development group also uses SOLIDWORKS PDM to formalize its design processes, maximize design reuse, and improve global collaboration. "The biggest benefit of the SOLIDWORKS PDM implementation is that we now have one version of the truth," notes Senior Designer Jesse Winker. "SOLIDWORKS PDM allows us to automatically replicate our vault to other design offices and manufacturing facilities around the world, which ensures that we are using the same data, rules, and workflows across the company."

SIMULATION TOOLS IMPROVE QUALITY

Prent engineers also leverage SOLIDWORKS Simulation capabilities to validate and optimize design performance, leading to additional quality improvements. "How we use SOLIDWORKS Simulation Professional and SOLIDWORKS Simulation Premium software varies on a case-by-case basis," Nyhus says.



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— Steve Zimmerman, Chief Information Officer

“Thermoforming is a highly nonlinear process and is difficult to predict accurately via simulation,” Nyhus continues. “From a machinery standpoint, some of our presses must sustain 60-ton loads, and we need to make sure that we don’t break anything. SOLIDWORKS Simulation studies help us to analyze our systems to eliminate any weak points in our structures. Some systems may require motion simulation studies, and we need to conduct SOLIDWORKS Motion simulations on toggle mechanisms to pick the appropriate size servomotors as well as the correct gear reducers. These tools help us put material where it’s needed, so we can maintain the reliable performance and quality systems for which we are known.”

FASTER DESIGN SUPPORTS INCREASED THROUGHPUT

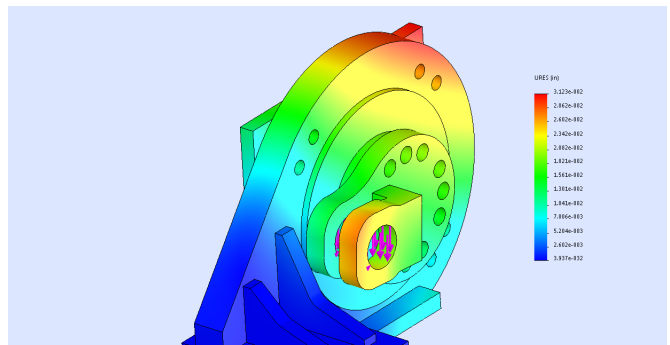
Since implementing SOLIDWORKS PDM in manufacturing in 2014 and product development in 2015, Prent has streamlined its entire design and manufacturing operation, shortening lead-times to as little as two weeks while simultaneously doubling throughput to support a similar jump in sales. “Now that we’ve settled in with the SOLIDWORKS PDM system, we’re maximizing resource utilization on a global scale,” Zimmerman says.

“The SOLIDWORKS 3D design environment—and particularly, the SOLIDWORKS PDM system—is helping us to do more work with the same number of people,” Zimmerman adds. “We now design systems more efficiently, collaborate more effectively, and deliver consistently high levels of quality across the organization.”

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With the efficiencies provided by SOLIDWORKS design, simulation, and product data management solutions, Prent has increased throughput while simultaneously improving quality.

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