BRESSLERGROUP

Commercializing an automated home towel dispenser with SolidWorks solutions

Award-winning product development firm Bresslergroup used SolidWorks design and simulation software to innovate this automated towel dispenser for the home market.

With a collective history of more than 1,500 product design projects for clients as diverse as Black & Decker, Motorola, Becton Dickinson, and Honeywell, Bresslergroup has grown to become one of the preeminent product development consulting firms in the United States. Over the past four decades, the Philadelphia-based consultancy's product development process has earned more than 125 patents and won more than 80 major product design awards.

The company's success and growth rest on its strategic approach to product development. Beginning with planning, research, and concept development, and culminating with engineering, prototyping, and production, the firm applies a rigorous yet creative approach to helping clients accelerate the development and commercialization of innovative products. An important part of Bresslergroup's process is the transition between industrial design and engineering, according to Director of Engineering David Schiff.

"When the firm used AutoCAD® 2D design tools in the early 1990s, transforming an elegant industrial design into an engineered product that clients can profitably manufacture was often time-consuming and challenging," Schiff recalls. "Bresslergroup decided to move to a 3D design environment to shorten design cycles, reduce costs, and increase innovation. We were also seeking a system that would facilitate interaction between our industrial designers and engineers, as well as support engineering analysis requirements. That system was SolidWorks software."

Bresslergroup implemented SolidWorks® Professional design, and SolidWorks Simulation Professional and SolidWorks Simulation Premium software to help it achieve productivity and innovation goals. "SolidWorks is integral to our design process at Bresslergroup," Schiff stresses. "The ease of the user interface makes it a good tool for our industrial designers to use for conceptual design and form development. Our engineers can take the SolidWorks concept models created by our industrial designers, simulate their performance, and refine the designs to meet engineering and manufacturing requirements. SolidWorks has really helped to streamline our entire process."

Challenge:

Accelerate transitions from industrial design to engineering to production while maintaining quality, improving product performance, and increasing innovation.

Solution:

Implement SolidWorks Professional design, and SolidWorks Simulation Professional and SolidWorks Simulation Premium analysis software to drive product development from industrial design through production.

Results:

- Reduced industrial design to engineering transition
- Cut prototyping iterations from development process
- Optimized designs via design-table-driven simulations
- Achieved production cost reductions

SOLIDWORKS

Faster handoffs between industrial design and engineering

The transition from industrial design concepts to engineered products is an area where Bresslergroup has realized substantial improvements. Because industrial designers use SolidWorks to create product concepts, engineers can work with their models right away, resulting in fewer iterations between the two functional groups.

"Every product that we work on is something new, which means industrial design is a critical, driving factor," Schiff notes. "And when we build proof-of-principle prototypes, it requires significant interaction between industrial designers and engineers. With SolidWorks software, the back-and-forth between industrial design and engineering takes 30 percent less time, which translates into a shorter overall development cycle and faster time-to-market for our clients.

"This approach works because the SolidWorks user interface doesn't frustrate our industrial designers," Schiff adds. "They use SolidWorks surfacing tools to create the organic, free-flowing shapes and forms that are a requirement for many consumer products. The beauty of it all is that our industrial design models now contain the engineering and manufacturing data that engineers need to turn ideas into reality."

Simulation optimizes parts, cuts prototyping iterations

Using SolidWorks Simulation Professional and SolidWorks Simulation Premium analysis software, Bresslergroup engineers not only can simulate design performance—such as analyzing high deformation in elastomeric materials—but can combine simulations with SolidWorks configuration capabilities to run optimization routines linked to SolidWorks design tables. This approach results in optimized, better-performing designs; fewer parts; production cost savings; and the possible elimination of some prototyping iterations from the firm's development process.

"Integrated analysis is a powerful tool that gives us a real leg up by saving money for both our company and our clients," Schiff points out. "The direct integration between core SolidWorks and SolidWorks Simulation is key to making design optimization runs more efficient and practical."

A reliable, automated towel dispenser for the home

SolidWorks solutions have helped Bresslergroup develop many innovative products. One recent example is an automated paper towel dispenser for the home that feeds, cuts, and dispenses any type of paper towel, regardless of thickness or texture. This recent project for CleanCut International features a gesture-based, broken-beam interface, which functions 100 percent of the time and is more reliable than the reflective sensors used in commercial towel dispensers.

"SolidWorks animation of kinematics allowed visualization of the interaction of the various parts of the assembly, such as the pinch plates that can open and close to hold and release the paper during the cut process," Schiff explains. "SolidWorks Simulation was also very helpful for evaluating stress and deflections under load prior to prototyping—most likely reducing the number of prototype build iterations required."

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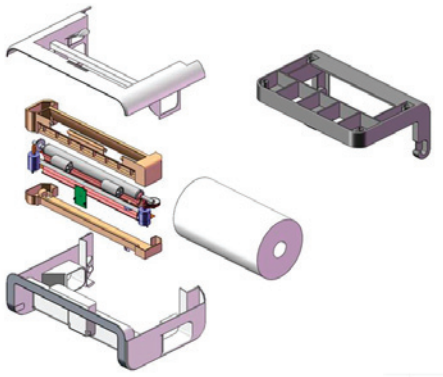
David Schiff
Director of Engineering



Because SolidWorks Simulation is CAD-integrated, Bresslergroup can use design configurations to efficiently run optimization routines, resulting in optimized, better-performing designs.

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