FOGG FILLER

Filling the need for more complex machine designs with SolidWorks

Fogg Filler relies on the SolidWorks design platform to develop the innovative and sophisticated products that drive its business growth.

When companies need to efficiently fill and cap containers with fluids as diverse as antifreeze, water, household products, pharmaceuticals, and dairy products, industry leaders turn to Fogg Filler for proven automation solutions. A leading innovator in the filling industry, Fogg Filler manufactures some of the best-performing rotary filling systems available, with speeds that can exceed 1,000 bottles per minute.

With many of the firm's machines functioning reliably for 30 years, Fogg Filler has built a reputation for quality, innovation, and dependability. The filling machinery market has dramatically changed in recent years, requiring better performance, greater complexity, and additional capabilities. To respond to increasing market demands, Fogg Filler decided to upgrade from the AutoCAD® 2D design tools it had used to a 3D design platform, according to Ben Fogg, owner of Fogg Filler.

"Succeeding in today's market requires greater flexibility and sophistication in machine design," Fogg stresses. "Roughly 20 percent of the products that we manufacture today didn't exist 10 years ago. To compete effectively, we need to be more efficient and innovative, so we can satisfy existing customer demand and capitalize on new opportunities. With a 3D parametric CAD system, we can more quickly create accurate 3D assembly models, more easily manufacture from detailed assembly drawings, and more effectively visualize new design concepts and innovations."

After evaluating Autodesk Inventor®, Pro/ENGINEER®, and SolidWorks® 3D CAD software, Fogg Filler selected SolidWorks as its standard design platform, acquiring 19 licenses—a mix of SolidWorks Professional and SolidWorks Premium software. Fogg Filler chose SolidWorks because it supports large assembly design and includes motion simulation tools. "We believed that SolidWorks represented the best available design solution," Fogg says. "It was also the most commonly used application among our manufacturing vendors."

Challenge:

Solve complex filling challenges for custom machinery through improved efficiency and innovation.

Solution:

Implement SolidWorks Professional and SolidWorks Premium 3D design and analysis software to simulate motion, stress loads, and fluid flows, and identify potential interference of components before manufacturing.

Results:

- Reduced assembly time by four weeks
- Cut prototype development time from weeks to one day
- Introduced industry innovations
- Improved filling machine performance

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Saving time, reducing prototypes

Designing with SolidWorks software, Fogg Filler engineers are no longer constrained by time-critical prototyping processes and can develop and evaluate ideas in a 3D virtual design environment. When ready to produce a prototype, they can manufacture their designs directly from the solid model. Using the company's state-of-the-art machine shop, engineers can now create prototypes in 24 hours instead of the weeks that prototyping used to take. This efficiency improvement—combined with SolidWorks tools for simulating motion, stress loads, and fluid flows—enables Fogg Filler to spend more time on innovative concepts at a much lower cost.

"We will actually take more time and develop multiple concepts for evaluation before making physical parts," explains Engineering Manager Todd Kemme. "We can conduct simulations, check for interferences, and integrate third-party components, all before making a single part. This allows us to make better decisions that will save time and money during fabrication and assembly. In the event that a change is required, we now have the ability to seamlessly modify the design and export an updated bill of materials."

Developing custom machines more efficiently

With SolidWorks, custom fabrication at Fogg Filler has become engineering-driven—based on complete documentation—rather than relying on assembly modifications. "In our business, the best measure of efficiency is the ability to create custom parts and assemblies that fit together correctly the first time," Fogg notes. "SolidWorks greatly increases the odds that we consistently achieve that goal, not just during initial assembly but also whenever we need to produce replacement parts for service."

Kemme adds that by leveraging SolidWorks to drive fabrication and assembly operations, Fogg Filler has cut four weeks from its machine assembly time. "Our machines can have as many as 15,000 parts, including up to 9,000 discrete one-offs," Kemme says. "The ability to model these parts in 3D and to make sure that we consistently assemble the machines without problems is a big plus. SolidWorks helps us to keep both our assembly and component costs down."

Innovation and sophistication drive business growth

With the increased efficiency and quality provided by SolidWorks, Fogg Filler can spend more time developing industry innovations, inventing new applications for its machines, and expanding into additional markets. For example, Fogg Filler used SolidWorks to design a Chemical Supply & Recovery System, which reclaims fluid from a customer's rinsing system, filters the fluid, and then reuses it repeatedly. The company's new line of Microb-Blasters®, which kill microorganisms using ultraviolet light technology, is currently used to sanitize bottles and caps, but also carries the potential for many different applications.

"With the forward thinking of our engineers and SolidWorks technology, we anticipate many more innovations to come," Fogg says.

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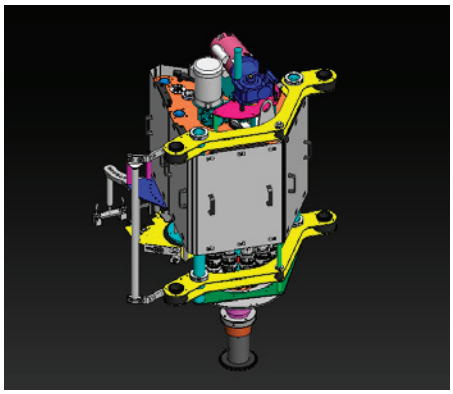
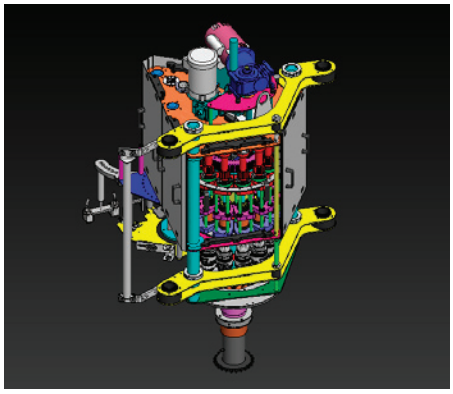
Ben Fogg
Owner





SolidWorks design visualization and motion simulation tools help Fogg Filler efficiently develop large assemblies containing thousands of parts.

You can see the difference in a FOGG®

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