

AMES TRUE TEMPER

Advancing lawn and garden tool design with SolidWorks software

Ames True Temper standardized on SolidWorks software to integrate design organizations and product lines following the merger of Ames and True Temper.



As the largest North American manufacturer of non-powered lawn and garden tools, Ames True Temper is committed to bringing innovation, creativity, and new applications to a line of products it has produced for more than two centuries. With roots running back to the founding of Ames in 1774, Ames True Temper resulted from the 1999 acquisition of True Temper by Ames, combining the two market leaders in the manufacture of long-handle tools and wheelbarrows. Today, the company produces an expanded line of lawn and garden tool products.

Before the merger, Ames had upgraded from the CADKEY® wireframe package to SolidWorks® 3D design software to develop its products. With the acquisition of True Temper, the combined company standardized on SolidWorks software as its design environment, according to John R. Grishaber, industrial/packaging engineer. "Because both companies have such long histories, there were many products and components for which CAD models did not exist," Grishaber recalls. "The first order of business after the merger was to reverse-engineer many of these products—such as shovelheads, scoop heads, and all types of handles—as well as the tooling used to produce them.

"By standardizing all our design work into a single 3D package, we could more efficiently merge product development across the expanded company and realize the efficiencies associated with having a standard, common design format," Grishaber adds. "Ames had successfully implemented SolidWorks in 1997. That experience—combined with the breadth of integrated tools available in the SolidWorks environment—made it the obvious choice."

Ames True Temper standardized on SolidWorks software, implementing 20 seats, because it is easy to use, provides advanced 3D visualization capabilities, includes mold development tools, offers access to integrated simulation software, and comes with the SolidWorks Workgroup PDM (product data management) system. The company also wanted a design package that could support its ambitious new product development goals.

Challenge:

Integrate product development across the merged company, while realizing improved design and production efficiencies and innovating new products.

Solution:

Implement the SolidWorks 3D design system to standardize components and processes by using common visualization, analysis, and simulation tools.

Results:

- Increased throughput and efficiency in new product development
- Improved production accuracy and product quality
- Enhanced tool ergonomics
- Created innovative concepts in tool design

Innovating new concepts

Since standardizing on SolidWorks, Ames True Temper has produced a string of tool innovations. The company has introduced more ergonomic polygrip handles for tools that have traditionally used wooden handles, and has developed a range of innovative concepts, including the use of stronger yet more lightweight materials, optimized shovel and scoop blade geometries, and extra-wide grips and handles for comfort.

One example is the unique two-handed VersaGrip®, which allows for multiple glove positions and a two-handed grip on specialty snow pushers, shovels, and movers. "Our R&D Department was one of the first groups to sing the praises of SolidWorks," Grishaber notes. "With 3D, you can explore new approaches and concepts without cutting metal or incurring costs, which allows you to take designs into exciting new areas. I came up with the idea for the VersaGrip over my lunch hour. It's now one of our leading differentiators."

Improving product quality

Using integrated SolidWorks design analysis, simulation, and PDM tools, Ames True Temper has improved its overall product quality. The R&D Department used SolidWorks Simulation software to address reported design issues in a plastic 30-inch leaf rake head that over time could develop cracks related to fatigue and creep. "With SolidWorks Simulation, we were able to analyze the plasticity of the material and tweak the fillet and radius sizes to address this issue and extend the life of the product."

With SolidWorks mold development tools, personnel at the company's molding facility use draft, mass properties, and wall-thickness analysis capabilities to improve the quality of injection-molded parts. By using the SolidWorks Workgroup PDM system, Ames True Temper has tightened revision control and standardized machining of its casting and production dies, reducing scrap and rework in the process.

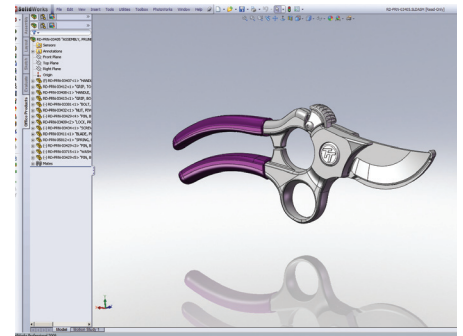
Realizing greater productivity

In addition to using SolidWorks to energize new product development, Ames True Temper is leveraging the software to improve assembly and packaging operations, as well as marketing and merchandising activities. "Our Industrial Engineering team uses SolidWorks to reconfigure our assembly and packaging cell layouts on the production floor to make them more efficient," Grishaber points out. "The new cell layouts have boosted productivity and streamlined the handling of engineering change orders, resulting in increased pieces-per-hour rates and greater throughput."

Ames True Temper also uses SolidWorks software to design tool racks and merchandise displays, and PhotoWorks™ software to create photorealistic renderings for consultations with outside design groups on conceptual design and styling.

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John R. Grishaber
Industrial/Packaging Engineer



Using SolidWorks, Ames True Temper has increased design efficiency, improved product quality, and boosted product throughput.



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