MaXfield, Inc.

EXPANDING EFFICIENCIES IN TANK TRAILER DEVELOPMENT WITH SOLIDWORKS PREMIUM

Integrated SolidWorks Simulation structural analysis, SolidWorks Routing piping system design, and SolidWorks Workgroup PDM provide MaXfield with a broad range of capabilities in addition to solid modeling.

- Compressed development cycles
- Minimized the frequency of design errors
- Reduced costs related to scrap and rework
- Improved management of product design data

MaXfield, Inc. is a major supplier of pressurized tank trailers for hauling a variety of liquefied gases. The company also manufactures a range of custom-fabricated products, such as piping systems, for use in the oil, gas, and energy industries. Throughout the 1990s, MaXfield engineers used AutoCAD® 2D CAD tools to design both standard and custom-fabricated products. In 2000, company management made the decision to transition to a 3D design platform, acquiring Autodesk Inventor® 3D CAD software, to address productivity demands related to a surge in activity in the Alberta oil and gas fields.

However, after attempting to use Inventor software for five years, during which time engineers continually reverted back to AutoCAD 2D software to complete their work, MaXfield decided to reevaluate its 3D CAD solution, according to Engineering Manager Daryl Bast.

“We attempted to utilize Inventor software, but never fully implemented it in our development processes,” Bast recalls. “There are many reasons why we were not successful, including a lack of support and ineffective training. We had to use a separate 3D program for piping and found ourselves going back to AutoCAD instead of moving forward with 3D. We decided to look at another 3D CAD system, one that had more comprehensive capabilities.”

After evaluating the SolidWorks® 3D CAD package against Inventor software, MaXfield transitioned to SolidWorks, implementing six seats of SolidWorks Premium software in early 2006. MaXfield chose SolidWorks because of its ease of use, superior training and support, and broad range of capabilities. The company also valued the integration of SolidWorks Simulation structural analysis, SolidWorks Routing piping system design, and SolidWorks product data management (PDM) capabilities.

“In addition to having greater confidence in our SolidWorks reseller, we saw how the breadth of capabilities – including SolidWorks Routing software, weldments, sheet metal, SmartMates, and configurations – would help us move our development process forward,” Bast notes.

SolidWorks

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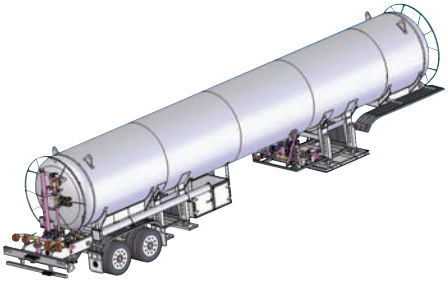
Daryl Bast, Engineering Manager



With SolidWorks software, MaXfield engineers can develop tank trailer designs with a single set of tools instead of jumping between different applications.

A single 3D platform saves time

MaXfield is using SolidWorks software to accelerate the development of its tank trailers, which account for half of the company's business and present the most demanding challenges. A tank trailer includes between 500 and 750 individual components, and each customer requests some degree of customization.

"Developing our tank trailers was really the driving force that led us into 3D because they present the more challenging engineering problems," explains Bast. "In addition to creating parts and assemblies, we also design and install our own piping. Moving to SolidWorks has made us more efficient. We can do all facets of our development on a single 3D platform, while combining the piping systems we develop via SolidWorks Routing with our SolidWorks assembly models."

Using SolidWorks collision and interference detection tools also contributes to greater efficiencies in the development of tank trailers at MaXfield, Bast says.

Easier design changes, more complete capabilities

With SolidWorks software, MaXfield engineers can develop tank trailer designs with a single set of tools instead of jumping between different applications. Because SolidWorks provides a complete set of integrated capabilities, it is easier to make design changes and resolve issues before entering production. This, in turn, leads to reduced scrap and rework costs.

"The breadth of capabilities in SolidWorks has really met our expectations of what 3D software should be able to do," Bast notes. "We use SolidWorks sheet-metal capabilities for some of the flat layouts for our roll plate, and weldments to create structural support frames. When we combine these capabilities with configurations, we can very easily create variations from standard parts and assemblies."

Integrated applications improve quality, data management

The move to SolidWorks Premium software also provided integrated SolidWorks Simulation analysis and SolidWorks Workgroup PDM solutions, both of which contribute to greater efficiencies and improved product quality.

"We use SolidWorks Simulation to run structural analyses on certain tank assemblies," Bast points out. "Combined with our SolidWorks assembly visualization tools, integrated SolidWorks Simulation analysis helps us to evaluate alternate engineered designs and then choose the best one."

With the addition of PDM software, MaXfield has integrated product data management with its Intuitive® enterprise resource planning (ERP) system. "Now that we have SolidWorks Workgroup PDM, we have implemented a part assembly library so we can always locate designs quickly. The tie-in with our ERP system enables us to use bills of materials (BOMs) associated with our design work to automate purchasing and sourcing functions," Bast says.

SolidWorks

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