DASSAULT SYSTEMES

SOLIDWORKS

VERMEER CORPORATION

STREAMLINING MACHINERY AND EQUIPMENT DEVELOPMENT WITH SOLIDWORKS SOLUTIONS

Vermeer relies on SOLIDWORKS design, simulation, product data management, and technical communication solutions to streamline the development of its machinery and equipment products.

Vermeer

Challenge:
Accelerate machinery development by streamlining and integrating design, manufacturing, purchasing, and documentation processes to expand product offerings and support increased throughput.

Solution:
Implement integrated SOLIDWORKS design, SOLIDWORKS Premium design and analysis, SOLIDWORKS Enterprise PDM product data management, and SOLIDWORKS Composer technical communication solutions.

Results:
- Automated development workflows
- Increased development and production throughput
- Shortened and formalized engineering change process
- Improved quality of products and documentation

Founded in 1948 by Gary Vermeer, a farmer with a passion for innovation, Vermeer Corporation has become a global leader in the manufacture of machinery and equipment for the agricultural, forestry, excavating, mining, and drilling industries.

The company's success stems from the Vermeer guiding philosophy: find a need, then fill it by designing and manufacturing products that are built to last. That approach led to the invention of the first large round hay baler in 1971, which revolutionized hay harvesting, and the development of an extensive line of products, ranging from balers, rakes, tedders, and mower/conditioner systems; to grinders, brush chippers, stump cutters, and tree spades; to horizontal directional drilling systems, Terrain Leveler® SEMs, mini skid steers, and utility and track trenchers.

To build the best possible products, Vermeer utilizes advanced design and engineering tools. The company was an early adopter of 3D CAD, migrating from AutoCAD® 2D software to the integrated SOLIDWORKS® 3D design platform in 1998. Since then, Vermeer has implemented additional solutions from Dassault Systèmes SOLIDWORKS Corporation to further streamline development.

"At Vermeer, we are continually developing new equipment and machinery designs and expanding our products lines," explains Greg Johnson, senior applications specialist. "To accomplish our goals, we need to consistently become more and more efficient, which is why we've added SOLIDWORKS simulation, product data management (PDM), and technical communication tools."

Vermeer implemented 300 licenses of SOLIDWORKS Enterprise PDM (EPDM) software in 2008 to improve design communication and automate development. The equipment manufacturer added 10 licenses of SOLIDWORKS Premium software to its 140-license SOLIDWORKS installation to incorporate integrated analysis tools early in its design cycles. Most recently, Vermeer acquired SOLIDWORKS Composer™ software to facilitate the creation of product documentation.

ACCELERATING DEVELOPMENT WITH EPDM

Since implementing the SOLIDWORKS EPDM system, Vermeer has increased its development and production throughput with formalized, automated workflows, while simultaneously improving product quality by incorporating SOLIDWORKS Premium analysis tools to perform design-level simulations. The equipment manufacturer has achieved additional system automation using the SOLIDWORKS Application Programming Interface (API).

"We are constantly using SOLIDWORKS, EPDM, and the API to their furthest extents to tie the tools together, automate workflow processes, and work better with SOLIDWORKS," Johnson stresses. "For example, we've leveraged the API to customize how we do design reviews and design checking. The system pulls an eDrawings® file of each design, and our design checkers extensively use the markup capabilities to provide feedback. The API is very useful for making our already stable SOLIDWORKS workflow implementation even more automated."

"We are getting more and more efficient, and our development and production throughput have grown since we implemented [SOLIDWORKS] EPDM. Our machines involve very large assemblies—some in the 10,000-part range—so finding ways to automate processes is important."

— Greg Johnson, Senior Applications Specialist

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BETTER ENGINEERING CHANGE MANAGEMENT

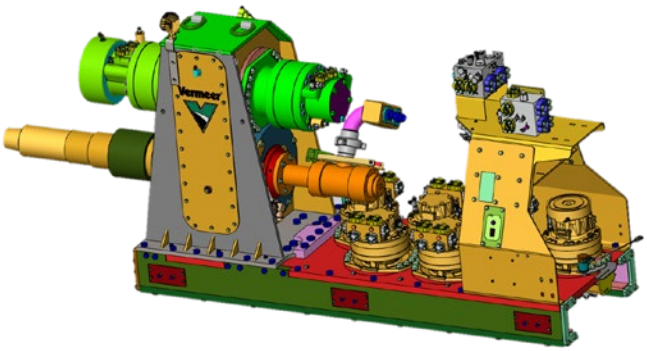
A specific process for which SOLIDWORKS EPDM pays dividends at Vermeer is automation of the company's engineering change (ECN) process. ECN management has become fully automated, tightly controlled, and virtually fail-safe because of SOLIDWORKS EPDM.

"Our ECN process is quite complex with a different series of tasks for various personnel," Johnson notes. "All these things have to be done before an engineering change is made, with several checks and balances built into the process. With EPDM, the entire process is controlled by the system, which guarantees all steps are followed and no steps are missed. The system even walks each user through the steps for which he or she is responsible. Automating this process has accelerated and improved ECN management."

LEVERAGING DESIGN DATA ACROSS ENTERPRISE

In addition to automating design and engineering functions, the SOLIDWORKS EPDM system at Vermeer benefits other related functions, including Manufacturing, Purchasing, and Technical Writing Groups. Personnel in these areas use SOLIDWORKS EPDM contributor licenses to access and leverage design data—for production referencing, quoting, and documentation/illustration development. With SOLIDWORKS Composer software, the Technical Writing Group can more quickly and easily transform SOLIDWORKS design models into 3D renderings and exploded-view illustrations.

"Anyone who needs a drawing can use EPDM to get it," Johnson points out. "Manufacturing personnel can print drawings on the shop floor, Purchasing can get drawings for quotes, and Technical Writing can obtain models for manipulation in SOLIDWORKS Composer without having design edit access. We're just getting started with Composer, but it's really starting to build steam. We anticipate dramatic improvements to our user, service, and parts manuals in the coming years."



With SOLIDWORKS Composer software, the Vermeer Technical Writing Group can more efficiently create renderings and illustrations for use in product documentation.

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