

CLOVER INDUSTRIES, INC.

Integrating cylinder and equipment design with SolidWorks Enterprise PDM



With SolidWorks Enterprise PDM software, Clover Industries has effectively integrated its hydraulic cylinder development with its sister companies, including pump manufacturer Oilgear and valve manufacturer Leeds Valve.

Clover Industries, Inc., specializes in the design and manufacture of single-stage and telescopic hydraulic cylinders, piston accumulators, and intensifiers for the oil and gas, military, industrial, and construction markets. The company has built a strong reputation for superior performance and sophisticated products, including the use of advanced coatings and materials.

When The Oilgear Company acquired Clover Industries in March 2010, the relationship created opportunities and challenges for the organization. In its new role as a subsidiary, the hydraulic cylinder manufacturer faced a host of challenges related to the need to work directly with Oilgear, a leading pump manufacturer, and its sister companies, such as Leeds Valve, a valve manufacturer based in the United Kingdom. Instead of developing products independently as a separate company, Clover Industries needed to collaborate closely and efficiently with its new partners.

Integrating Clover Industries' development efforts with its sister companies required an easy-to-use product data management (PDM) system. "The goal of implementing PDM was to allow each of the companies to access and use design data more effectively," explains System Administrator Bill Donat. "Our cylinders, Oilgear's pumps, and Leeds' valves all go into a rig or single piece of equipment. They need to be able to pull our drawings into their rigs, or we need to fit our cylinder design into their models. With a single PDM system, we hoped to be able to work together as if we were in the same building."

The cylinder manufacturer has used SolidWorks® Premium design software to develop its products since 2005. So it was only natural that the company evaluated SolidWorks Enterprise PDM software. "After looking around, we decided to implement what works best with SolidWorks, which is SolidWorks Enterprise PDM," recalls Senior Hydraulics Design Specialist Dave Tetzlaff. "We realized that SolidWorks CAD and PDM software work hand in hand, much in the same way that we work with our sister companies."

Challenge:

Support increased design collaboration with sister companies while shortening design cycles, minimizing production errors, and formalizing workflows at the same time.

Solution:

Implement SolidWorks Enterprise PDM software to share design data securely, simplify workflows effectively, and improve manufacturing consistently.

Results:

- Reduced design cycles by 66 percent
- Cut costs related to production errors
- Improved design collaboration with sister companies
- Standardized and simplified workflows

Clover Industries selected SolidWorks Enterprise PDM software, implementing 100 licenses systemwide, because it is easy to use, is completely integrated with SolidWorks software, and allows for multisite access to design data.

Productivity gains from estimating through production

Since implementing SolidWorks Enterprise PDM, Clover Industries has realized productivity improvements in every facet of its development process: from estimating and conceptual design through validation and production. For example, the software has allowed the company to shorten its product design cycles from six to just two weeks, a 66 percent reduction.

"The implementation of SolidWorks Enterprise PDM software helped us to quickly transition from a small, family-run company to an agile, high technology company with hundreds of users," Tetzlaff maintains. "The organization that PDM establishes has enabled us to more efficiently manage our work from start to finish, from providing estimates to managing production."

Donat adds that with SolidWorks Enterprise PDM, Clover Industries has simplified its processes. "PDM let us learn more about how we do things, including who takes what steps and in what order. This has helped us to simplify and standardize our workflows."

Working collaboratively

Clover Industries has achieved its overarching goal of collaborating more effectively with its partners via SolidWorks Enterprise PDM. The company's engineers can access the primary design data vault, which resides at Oilgear in Milwaukee, over a T1 connection by using a replicated vault at its facility in Wausau, Wisconsin. In the United Kingdom, Leeds can access the data via a dedicated VPN connection.

"Obviously, having access to each other's designs allows us to collaborate more efficiently," Donat stresses. "We no longer have to email files or fax drawings, or worry about whether someone's working with the correct revision. An added benefit is that SolidWorks Enterprise PDM lets us manage work across the organization. If the workload is high in Milwaukee and low in Leeds, they can easily shift some of the work and maximize their utilization of resources."

Improved manufacturing, fewer errors

The cylinder manufacturer also has realized manufacturing improvements since implementing SolidWorks Enterprise PDM, with fewer shop errors resulting in substantial savings.

"In the past, we experienced problems because production personnel would print off drawings and keep them in a drawer for reference instead of referring to the production packets," Tetzlaff explains. "With SolidWorks Enterprise PDM software, we've cleaned out all of the drawers and output PDF files to support production. Now, manufacturing must access the latest released revision from the vault for viewing onscreen as a PDF. We're giving them electronic access to more current and complete information, which provides for better control, results in fewer errors, and eliminates unnecessary costs."

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Dave Tetzlaff
Senior Hydraulics Design Specialist



Using SolidWorks Enterprise PDM, Clover Industries has replaced old manufacturing documents with electronic PDFs, providing production personnel with onscreen access to the most current and complete design information, which results in fewer errors and lower production costs.



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