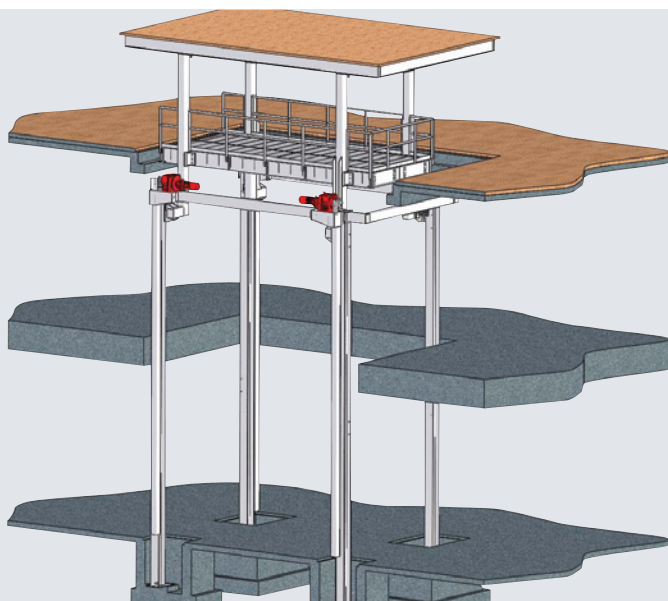


PFlow Industries, Inc.

AUTOMATING VERTICAL LIFT DEVELOPMENT WITH SOLIDWORKS



The implementation of SolidWorks 3D CAD software and the DriveWorks KBE application at PFlow Industries established the foundation for a completely integrated design automation system.

- Cut time required to make design changes by 50 percent
- Substantially reduced number of errors released to manufacturing
- Enhanced capacity to innovate and react quickly to new ideas
- Established foundation for an engineer-to-order automation system

PFlow Industries, Inc. is the leading manufacturer of vertical lifting systems and equipment, engineering its systems to satisfy the unique vertical lifting requirements of each customer. As an engineer-to-order company, PFlow Industries strives to find ways to reuse existing designs and automate the development of new systems, according to Mark Webster, vice president of engineering.

“We have long had a vision of using CAD technology as the foundation for driving design automation – first into manufacturing and then into other business processes,” Webster explains. “In the past, we used AutoCAD® 2D design tools in combination with a product configurator and our own proprietary software to achieve some level of drawing automation. However, we continued to evaluate 3D CAD technology to determine if we could automate the engineer-to-order process more fully. Our goal was to use order information to establish design parameters that could leverage existing CAD model data and design configurations to generate a complete new design automatically.”

The company continued to evaluate 3D CAD packages – Autodesk Inventor®, Mechanical Desktop®, Pro/ENGINEER®, and Solid Edge® software – until it discovered SolidWorks® 3D CAD software. “When we saw the SolidWorks demos, we thought, ‘Finally, a package that is easy to learn and intuitive with great potential to drive our engineer-to-order system,’” Webster recalls.

PFlow Industries selected SolidWorks software, installing eight seats, because of its ease of use, configuration capabilities, ease in making design changes, and its position in the industry, as well as its integration with product data management (PDM) and knowledge-based engineering (KBE) applications. “To us, SolidWorks seemed to be the lead runner – the complete package that would provide the highest levels of support and ongoing development,” adds Webster.

“Instead of working with a series of disconnected applications, we are on the path toward a completely integrated design automation and ERP system based on SolidWorks.”

Mark Webster,
Vice President of Engineering



Using SolidWorks software, PFlow Industries has saved time on system development, reduced design errors, and increased innovation.

CAD-driven, multiphase implementation

After choosing SolidWorks 3D CAD software as the foundation of its design automation system, PFlow Industries decided to implement the system in three phases. The initial phase involved 100 percent usage of SolidWorks software for designing all new systems. Phase two required the implementation of DBWorks software for product data and drawing management and for integration with PFlow Industries' Epicore Manage 2000 ERP system. Finally, phase three called for the full implementation of DriveWorks® KBE software to automate system design creation using SolidWorks models and configurations.

“Instead of working with a series of disconnected applications, we are on the path toward a completely integrated design automation and ERP system based on SolidWorks,” Webster stresses. “Our goal is to automate all of the processes that need to take place after an order is entered in the system, while maintaining the flexibility to make necessary changes quickly and easily. We are using SolidWorks in combination with DBWorks and DriveWorks to automate roughly 80 percent of all the design work we do. Initially, the system will be able to output all documentation required for manufacturing from the original order. We anticipate increased efficiency and automation in other business processes as well.”

Simplifying changes, enhancing designs

Since implementing SolidWorks software, PFlow Industries not only has saved time on system development, but also has reduced design errors and increased innovation. As a result, the manufacturer has realized the flexibility and agility needed to explore new concepts and improve quality, while still meeting its customers' delivery schedules.

“The biggest advantage associated with the greater efficiency we have achieved with SolidWorks is being able to react quickly to changes,” Webster notes. “Making a design change is at least 50 percent faster with SolidWorks, and the enhanced visualization in 3D allows us to identify more interferences. This allows us to go through more design iterations in the time available, resulting in a better end product. With SolidWorks, we have substantially reduced the number of errors released to manufacturing. Since making a change is easier, we are more likely to initiate a redesign and react to new ideas as they emerge, resulting in better designs.”

Driving design automation via configurations

Because the company's products are engineered-to-order – each system is individually designed to meet a unique set of customer variables – SolidWorks design configuration capabilities are critical to helping PFlow Industries achieve its design automation goals. By building a range of part-and-assembly configurations in design tables in SolidWorks, the manufacturer can use DriveWorks to generate the appropriate lift system design to meet a specific order.

“SolidWorks configurations were the key to automating the creation of manufacturing documentation directly from a sales order entry,” Webster points out. “We use DriveWorks as our front end, but SolidWorks configurations are the engine that makes the system go.”



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