

ABCO AUTOMATION, INC. ACCELERATING AUTOMATED PACKAGING AND MANUFACTURING SYSTEM DEVELOPMENT WITH SOLIDWORKS PDM PROFESSIONAL

Case Study



Using SOLIDWORKS design and product data management (PDM) solutions, ABCO has shortened its design cycles, accelerated time to market and reduced development costs, helping the factory automation systems company to support and sustain growth.

Challenge:

Increase efficiency and support growth by leveraging and mining design data, maximizing design reuse and automating development through manufacturing processes.

Solution:

Add the SOLIDWORKS PDM Professional product data management system to its SOLIDWORKS CAD implementation and leverage PDM data for use in its enterprise resource planning (ERP) system to improve the efficiency and effectiveness of the entire development through production process.

Results:

- Shortened design cycles by 35 percent
- Accelerated time to market by 25 percent
- Generated BOM information 50 to 60 percent faster
- Cut development costs by 25 percent, scrap/rework costs by 55 percent

ABCO Automation, Inc. designs and builds custom turnkey factory automation systems for manufacturers across the globe. The automation systems developer has experienced dramatic growth since its establishment in 1977, expanding its business from an initial focus on developing fast, reliable and cost-effective automated packaging solutions to also developing automated approaches to manufacturing assembly, material handling and inspection equipment.

What sets ABCO apart from competitors that provide industrial automation and fabrication services to manufacturers is the firm's ability to solve complex problems and meet tough specifications, such as filling 60 bags of liquid soap for refillable dispensers in 60 seconds, innovating robotic palletizing systems, or handling materials with special requirements, like filling bottles with motor oil. Over the company's history, its success has rested on its ability to develop high-quality automation equipment to overcome difficult challenges within tight development windows to meet increasingly shorter lead times.

ABCO's extensive engineering and project management experience—combined with support services and in-house machining and fabrication capabilities—enable the company to design, build and install automation systems that consistently exceed customer expectations. The reason why ABCO's repeat client base exceeds 90 percent is the company's proven reputation for delivering dependable, effective automation solutions that reduce costs, increase productivity and provide customers with a competitive edge.

To support business growth, ABCO tripled the size of its North Carolina development facility and implemented the SOLIDWORKS® PDM Professional product data management (PDM) system a decade ago to automate its use of SOLIDWORKS 3D design software and related development processes.

The company added SOLIDWORKS PDM to its SOLIDWORKS implementation to support ongoing growth, tighten revision controls, shorten design cycles, increase design reuse and reduce costs, including those related to scrap and rework.

ABCO implemented the SOLIDWORKS PDM Professional system after evaluating several PDM packages, including Autodesk® Vault and EDS Teamcenter®. The factory automation company chose the SOLIDWORKS PDM Professional system because the solution is fully integrated with ABCO's SOLIDWORKS CAD software, includes better administration tools and is more capable than the other packages, providing the automation systems developer with greater flexibility for automating workflows, supporting downstream functions and leveraging and mining product design data.



"Since we first implemented SOLIDWORKS PDM Professional software, we've developed several methods for pulling design data out of the PDM system and using it for other purposes [ERP] ... By leveraging our PDM and ERP systems in this manner, we are able to provide a window into the precise status of any part, assembly or project, at any time in the process."

— Michael Sveda, CAD Administrator

WINDOW INTO PRODUCT DEVELOPMENT

When ABCO first implemented the SOLIDWORKS PDM Professional system in 2010, the company quickly realized productivity gains, reducing design cycles by 30 percent, accelerating time to market by 20 percent, reducing development costs by 20 percent and cutting costs related to scrap and rework by 50 percent. Since then, ABCO has realized an additional five percent in efficiency improvements across the board by leveraging and mining PDM data to support other functions while simultaneously providing product developers and management with a window into the status of every design in development, according to CAD Administrator Michael Sveda.

"Since we first implemented SOLIDWORKS PDM Professional software, we've developed several methods for pulling design data out of the PDM system and using it for other purposes," Sveda explains. "For example, we bring data from our PDM system into our Infor CloudSuite™ Industrial [SyteLine®] enterprise resource planning [ERP] system to support associated business functions and utilize Microsoft® SQL Server Reporting Services [SSRS] to dig into PDM's

SQL database and collate that data to generate reports. By leveraging our PDM and ERP systems in this manner, we are able to provide a window into the precise status of any part, assembly or project, at any time in the process."

AUTOMATING WORKFLOWS, BOM GENERATION AND PURCHASING

With SOLIDWORKS PDM Professional, ABCO has also expanded its workflow automation into other areas, such as changing to a customer's revision scheme when it differs from ABCO's, automating the generation of bills of materials (BOMs), and making quoting and purchasing more efficient. "Automating BOM generation is an area where we've gained efficiency by mining and leveraging data," Sveda notes.

"One of my colleagues created some Microsoft Excel macros that access the raw data in SOLIDWORKS PDM Professional and use it to generate the final BOM information in a format that uploads into our ERP system cleanly and notifies our purchasing agent," Sveda points out. "In addition to realizing a 50 to 60 percent efficiency improvement in BOM generation, these data mining capabilities make it much easier and faster to order parts, saving additional time and money."

REUSING STANDARDIZED PARTS

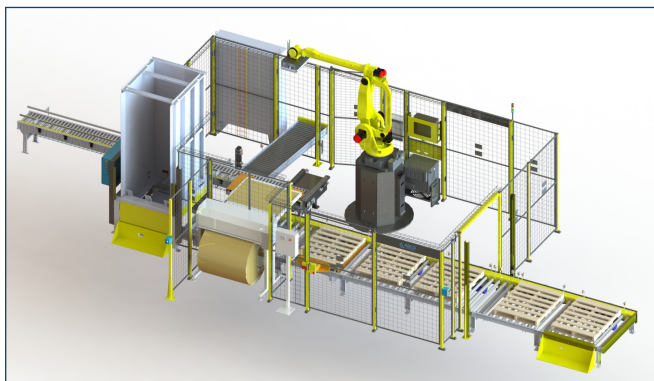
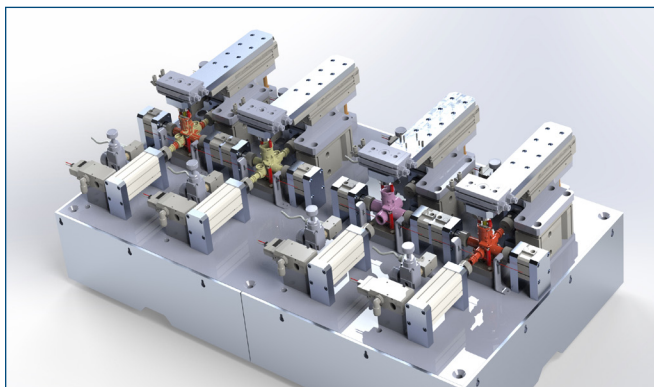
Another area where ABCO has realized productivity gains resulting from the SOLIDWORKS PDM Professional implementation is design reuse. Because every ABCO system is engineered to order, the potential for design reuse is somewhat limited. Even so, Sveda says that roughly two to five percent of the parts used on each automation system are standard parts.

"It's difficult to reuse parts when every system that we develop is a specialized, one-off solution," Sveda points out. "Nevertheless, with SOLIDWORKS PDM Professional, we've identified parts that are common to most of our systems, such as control boxes, sensor brackets and mounting brackets. We no longer waste time designing parts, and when we encounter a need that is similar to systems that we've developed in the past, we use PDM to access the old design data and use that as a springboard into a new design. In both cases, design reuse saves us time."

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With SOLIDWORKS PDM Professional software, ABCO can bring data from its PDM system into its enterprise resource planning (ERP) system, giving the company greater insight into its operations and enabling the company to automate workflows both inside and outside of engineering.

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