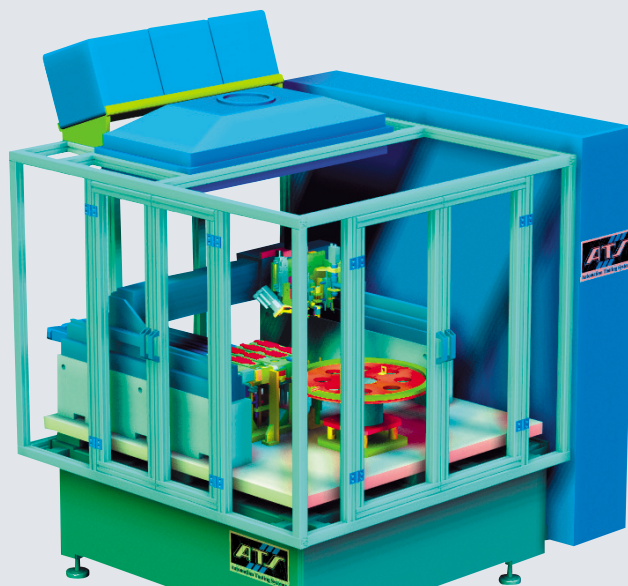


Automation Tooling Systems, Inc.

ACCELERATING AUTOMATED PALLET ASSEMBLY WITH SOLIDWORKS



A fiber optic assembly system showing full machine with guarding on left and close-up of tooling on right

- Sped the design of large, moving assemblies
- Implemented company-wide design standards
- Reduced drafting/structural errors
- Enhanced customer communications

As the leader in the design and production of automated manufacturing and test systems, ATS is committed to maintaining its top position by leveraging technology to produce innovative products that consistently meet the needs of product manufacturers. For years, ATS utilized the AutoCAD® 2D drafting system. With the emergence of 3D mechanical design software, company management recognized the need to upgrade design tools to provide the efficient, high-quality products its customers had come to expect.

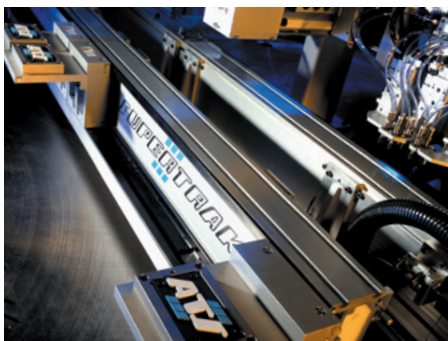
By migrating from 2D to 3D, ATS could realize efficiency and quality improvements, according to Joe Aikins, ATS mechanical design manager. “We thought we would see productivity improvements,” Aikins explains. “Instead of having to draw every component six times in 2D, we believed we could leverage the productivity gains provided by 3D solids to become more innovative in product design and expand our product offerings.”

Paul McDonnell, ATS mechanical design CAD coordinator, began an extensive evaluation of 3D CAD software in 1997. McDonnell’s evaluation involved training in the use of SolidWorks®, Pro/ENGINEER®, I-DEAS/Master Series™, and Mechanical Desktop®. “We selected SolidWorks because it was intuitive and easy to use,” McDonnell recalls. “Of all the packages, SolidWorks has the shortest learning curve. We also felt SolidWorks provided the best customer service and the best DWG import/export capability of any 3D package out there. That feature was extremely important to us because of our legacy data and the fact that 98 percent of our customers insist on DWG files.”

By selecting SolidWorks software, ATS management believed they could reap the benefits of 3D design, handle large assemblies more efficiently, and broaden the company’s product offering.

“The large assembly features in SolidWorks help us to hit the mark sooner and with less changes. SolidWorks is helping us to reduce production time and improve the quality of our products.”

Paul McDonnell, Mechanical Design
CAD Coordinator



Using SolidWorks software to develop the SuperTrak, ATS witnessed dramatic quality improvements, virtually eliminating drafting and drawing errors.

Handling large assemblies with ease

ATS leveraged SolidWorks to refine, accelerate, and document its approach to large assembly design. “We break our designs into subassemblies, which are assigned to different design teams using a single set of design standards based around SolidWorks,” Aikins notes. “For example, using SolidWorks to check for interferences and detect collisions is now a part of our design standards. That’s important because our systems, some of which have more than 5,000 parts, are very much engineered-to-order. If we can catch a problem in software, we save time and money on the production floor.”

The company not only performs interference checks on all assemblies and sub-assemblies but also leverages configurations in SolidWorks to fully explore an assembly’s behavior, McDonnell explains. “We use configurations to represent the different modes of our machines in operation, such as with a cylinder advanced or retracted, and to support various customer options. The combination of interference checking and configurations has caused our collisions and shop-floor modifications to go way down.

“Every ATS machine is like a prototype,” McDonnell stresses. “The large assembly features in SolidWorks help us to hit the mark sooner and with less changes. SolidWorks is helping us to reduce production time and improve the quality of our products.”

Innovating quality products

After implementing SolidWorks, ATS undertook the development of a revolutionary product: the SuperTrak™ high-speed pallet transport system. For years, ATS pallet transport systems operated on a cycle time of three to six seconds. ATS wanted to provide its customers with a configurable system that could operate at cycle times of less than a second. “There’s no one else in the world with a product like the SuperTrak,” Aikins says. “It’s a product that has the potential to be used by all of our existing customers in addition to expanding our market.”

Using SolidWorks to develop the SuperTrak, ATS witnessed dramatic quality improvements. “Our quality has become exceptional,” Aikins stresses. “It’s very rare to see a drafting or drawing error, which we encountered in AutoCAD. With SolidWorks, we’ve virtually eliminated them.” McDonnell adds that SolidWorks has enabled ATS to train more than a dozen designers to use SolidWorks Simulation, the analysis program integrated with SolidWorks. “With SolidWorks Simulation software, we’re minimizing the structural problems we used to deal with on the production floor,” McDonnell says.

Blueprints versus 3D animations

During the development of the SuperTrak unit, ATS used SolidWorks and PhotoWorks™ to produce animations and graphics of the system to show customers. “The animation capability in SolidWorks and PhotoWorks have been instrumental in helping us sell the product,” Aikins says. “In the past, it always came down to blueprint drawings, which are very dependent on the customer’s ability to read a blueprint. With animations, customers have a clear understanding of the end result.”



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