

AUTOMATIC HANDLING INTERNATIONAL, INC.

IMPROVING ENGINEER-TO-ORDER PRODUCTION WITH SOLIDWORKS SOLUTIONS



By moving from 2D tools to SOLIDWORKS 3D design, simulation, and product data management solutions, Automatic Handling International not only realized design accuracy and efficiency improvements during the development of its custom handling and packaging systems, resulting in time and cost savings, the company also achieved a paperless model-based definition (MBD) approach to manufacturing, providing additional production savings.

Challenge:

Automate product development and manufacturing workflows to increase efficiency, improve communication, eliminate reliance on paper drawings, and improve quality.

Solution:

Implement SOLIDWORKS Professional design software, SOLIDWORKS Premium design and analysis software, SOLIDWORKS Enterprise PDM product data management software, and SOLIDWORKS Composer technical communication software solutions.

Results:

- Cut manufacturing release times by 80 percent
- Replaced paper drawings with digital 3D models for production
- Empowered machinists and fabricators as part of Development Team
- Eliminated printing, paper, and administrative costs

Automatic Handling International, Inc. is a worldwide manufacturer of custom handling and packaging systems, serving leading companies in the pulp and paper, tissue and towel, nonwovens, fiberglass, agriculture, stone, and steel industries. With a mission of continuous internal and external improvement, Automatic Handling helps its customers improve efficiency while reducing costs by integrating the latest technology with proven machine designs.

The company brings the same focus on efficiencies and cost reductions to its own machine development, manufacturing, and assembly operations. In 2002, Automatic Handling transitioned from AutoCAD® 2D development tools to the SOLIDWORKS® Professional 3D design platform. According to Media Group Manager Nathan Pienta, Automatic Handling upgraded from 2D to 3D to improve design accuracy and efficiency, choosing SOLIDWORKS for its ease of use, large-assembly capabilities, and extended suite of integrated solutions.

Automatic Handling then implemented SOLIDWORKS Premium design and analysis software to take advantage of integrated finite element analysis (FEA) tools, SOLIDWORKS Enterprise PDM (EPDM) product data management software to automate workflows and revision controls, and SOLIDWORKS Composer™ technical communication software to accelerate the development and improve the quality of machine assembly and usage documentation.

While the company realized time and cost savings by moving from 2D to 3D, the ability to access the open SOLIDWORKS Application Programming Interface (API) enabled Automatic Handling to further automate workflows and processes, achieving natural synergies and resulting in a completely paperless, more efficient, model-based definition (MBD) approach to production. "Using the SOLIDWORKS API, we've leveraged EPDM to combine SOLIDWORKS eDrawings® files with manufacturing and production information instructions through computer terminals in the shop—completely eliminating paper drawings, travelers, etc.

"We're an engineered-to-order business with over a dozen mechanical engineers, all working on overlapping projects," Pienta continues. "The structure and control provided by SOLIDWORKS EPDM workflows enable us to work more accurately and productively, using virtual documents to develop, manufacture, and assemble machines, instead of pushing paper."



"With the [SOLIDWORKS] API, we were able to give EPDM data cards their own workflows

for releasing designs to manufacturing—all linked through references. We put the manufacturing due dates, type of process, routing, and even paint color in EPDM. When Engineering releases a design to Manufacturing, the system automatically and instantaneously creates the eDrawings, purchase orders, and work orders that drive production and assembly."

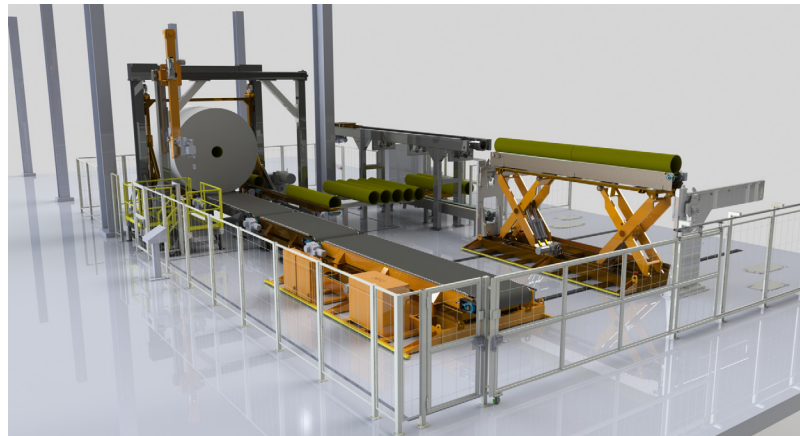
— Phil Morris, Mechanical Engineer



GOING PAPERLESS

Automatic Handling eliminated paper drawings by using the open SOLIDWORKS API. “With the API, we were able to give EPDM data cards their own workflows for releasing designs to manufacturing—all linked through references,” explains Mechanical Engineer Phil Morris. “We put the manufacturing due dates, type of process, routing, and even paint color in EPDM. When engineering releases a design to manufacturing, the system automatically and instantaneously creates the eDrawings, purchase orders, and work orders that drive production and assembly.”

“In the past, an engineer could spend a day or two just printing off engineering drawings,” Pienta notes. “Now, the release process is instantaneous, and production personnel receive the information that they need via 30 computers with 50-inch monitors on the shop floor. The process is not only faster and more accurate, leading to improved quality, but also eliminates printing, paper, and administrative costs.”



Automatic Handling International relies on SOLIDWORKS Premium finite element analysis (FEA) and SOLIDWORKS Composer technical communication tools to support its all-digital approach to development, manufacturing, and documentation, enabling engineers to leverage the SOLIDWORKS CAD model to easily validate and optimize design performance, and quickly create illustrations and renderings to automate the production of assembly and user documentation.

TAKING ADVANTAGE OF FEA AND TECHNICAL COMMUNICATION

The company also takes advantage of SOLIDWORKS Premium finite element analysis (FEA) and SOLIDWORKS Composer technical communication tools to support its all-digital approach to development, manufacturing, and documentation. With these solutions, Automatic Handling engineers can leverage the SOLIDWORKS CAD model to easily validate and optimize design performance, and quickly create illustrations and renderings to automate the production of assembly and user documentation.

“We use SOLIDWORKS Premium software to perform linear static stress and deflection analyses to ensure that we have a good safety factor,” says Lead Mechanical Engineer Manager David Rizo. “With SOLIDWORKS Composer, our Media Group is able to rapidly create renderings and illustrations without needing to know how to use SOLIDWORKS CAD software.”

AUTOMATING STEEL ORDERS

By integrating SOLIDWORKS EPDM with its enterprise resource planning (ERP) system, Automatic Handling has extended digital automation to related business processes, such as ordering steel for fabricating machine components. “When a project is released for manufacturing, the system automatically places an order for steel via FTP, complete with eDrawings files with all the pertinent details,” Morris explains. “The automation that we’ve been able to achieve with SOLIDWORKS has cut manufacturing release time by over 80 percent.”

“Using technology to improve the bottom line is a driving principle of Automatic Handling, as is empowering our machinists and fabricators to become part of the development process,” Pienta adds. “Whether it involves leveraging the SOLIDWORKS API to support a completely digital approach to production, or using webcams, microphones, and speakers to facilitate communication between development and production personnel via videoconferencing, our goal is to find ways to work smarter and more efficiently. Our decision to standardize on SOLIDWORKS is helping us achieve that objective.”

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