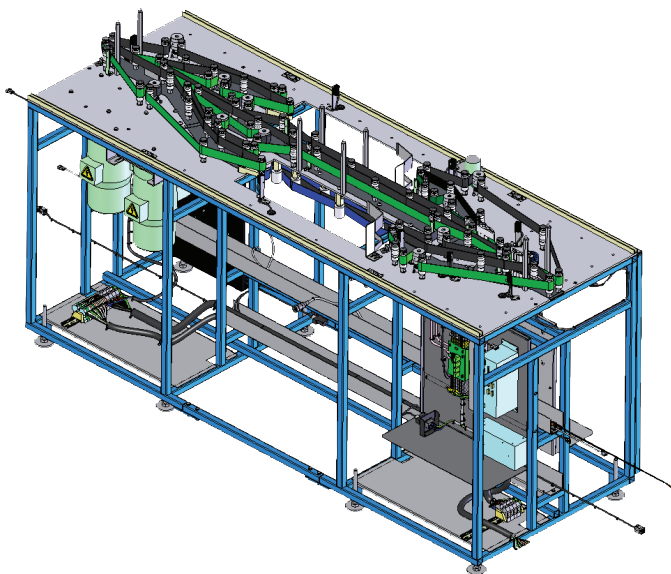


# BÖWE BELL + HOWELL

Stylizing agricultural, tree-clearing, and excavating machinery with SolidWorks software



*The interference detection capabilities of SolidWorks software have helped Böwe Bell + Howell engineers to reduce design errors and rework on the company's mail-processing machines, which require sophisticated assemblies comprising hundreds, and sometimes thousands, of moving parts.*

Böwe Bell + Howell is one of the largest automated mail-processing systems manufacturers in the world. The company's automated mail-sorting equipment, which helps mailrooms of any size route documents, can measure 14 feet wide by 285 feet long and can process up to 50,000 pieces of mail per hour. The engineers at Böwe Bell + Howell once used AutoCAD® 2D design tools to develop sorting machines, but in 2004, management decided to move to a 3D CAD system to increase design productivity and accelerate large-assembly development. Although Böwe Bell + Howell engineers believed that transitioning to Autodesk Inventor® 3D software represented a natural progression from the AutoCAD environment, they soon began to question their choice of a 3D CAD solution, according to David Schwaba, manager of hardware engineering.

"We used Inventor software for about a year and realized the product was not as mature as we had hoped," Schwaba recalls. "We experienced stability issues involving the loss of drawings and data that we could not recover."

"We use a lot of sheet metal, weldments, and fasteners to assemble our products," adds Brian Bowers, vice president of engineering. "Our former system didn't handle these features well."

Böwe Bell + Howell reevaluated its 3D solution in mid-2005 and decided to move to the SolidWorks® 3D CAD software environment. The company chose SolidWorks software, implementing eight seats of SolidWorks Professional and four seats of SolidWorks Premium, because of its ease of use and large-assembly, sheet-metal, and cable routing capabilities. Böwe Bell + Howell also values integrated SolidWorks Workgroup PDM software for managing workgroup drawings and SolidWorks Simulation for evaluating design strength and performance.

"SolidWorks software handles all our design requirements and is stable, so we don't have to worry about losing hours of work," Bowers notes. "It is easy to use and allows us to work in both 2D and 3D environments to meet our customers' design needs. In addition, we use the 3D models to create our assembly and maintenance documentation utilizing the same models. This significantly reduces our time-to-production."

## Results:

- Designed new processing systems four times faster
- Decreased rework by 70 percent
- Reduced the number of design errors substantially
- Improved design visualization, simulation, and communication

## Robust capabilities accelerate design

Since implementing SolidWorks software, Böwe Bell + Howell engineers now develop new processing systems four times faster than they did with their previous CAD solution. Schwaba says SolidWorks software has provided a more efficient solution because engineers can access a robust set of automated tools, such as sheet-metal, weldment, cable routing, and integrated analysis capabilities.

The company also takes advantage of the design configuration capabilities in SolidWorks software to customize standard product designs quickly to meet a customer's exact specifications. "Design configurations are a big help," Schwaba stresses. "We have seen dramatic improvements in time and performance."

## Improved handling of large, complex assemblies

Large-assembly design capabilities are critically important at Böwe Bell + Howell. The company's mail-processing machines require sophisticated assemblies comprising hundreds, and sometimes thousands, of individual moving parts. SolidWorks software interference detection capabilities have helped Böwe Bell + Howell engineers improve quality and eliminate design errors, reducing rework by as much as 70 percent.

"The capabilities and stability of SolidWorks software have helped us to develop large, complex assemblies in the manner we originally envisioned for 3D," Schwaba says.

To further improve assembly development, Böwe Bell + Howell plans to integrate its SolidWorks Enterprise PDM solution with its enterprise resource planning (ERP) system to connect SolidWorks software bills of materials (BOMs) to costing, billing, and other automated functions, such as the production of assembly instructions.

## Enhanced visualization, simulation, and communication tools

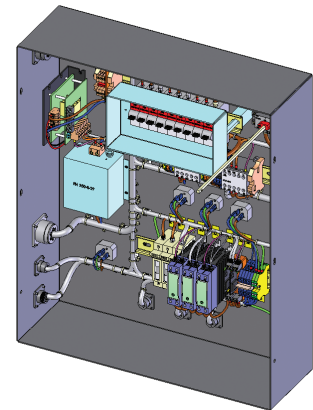
By moving to SolidWorks software, Böwe Bell + Howell has improved its capabilities for visualizing assemblies, simulating design performance, and communicating designs to its customers. In addition to using the interference detection capabilities of SolidWorks software to address potential collisions early in the design process, the company uses integrated SolidWorks Simulation software to simulate design performance and ensure that its machines will stand up to the daily rigors of processing large volumes of mail.

"We use SolidWorks Simulation not only to respond to part failures, but also to make sure we address potential problems before a product is released to manufacturing," explains Schwaba. "SolidWorks Simulation has made us very effective at running a quick check on our design data, and has helped us to optimize our designs for improved strength and performance."

Using email-enabled SolidWorks eDrawings® files, Böwe Bell + Howell can more quickly and effectively communicate design concepts to its customers than the company did in the past with traditional 2D drawings.

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David Schwaba,  
Manager of Hardware Engineering



Böwe Bell + Howell engineers utilize SolidWorks automated design tools, such as sheet-metal, weldment, cable routing, and integrated analysis capabilities, to accelerate sorting machine design.



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