

# NORTHSHORE MANUFACTURING, INC.

## Improving material-handling equipment with SolidWorks Premium



*With SolidWorks software sheet-metal and collision-detection capabilities, Northshore Manufacturing has accelerated development of its BuiltRite® brand of material handlers.*

Northshore Manufacturing, Inc., is a top manufacturer of grapples, cranes, and assorted equipment for material handling, primarily for the waste/scrap industries. The company utilized the AutoCAD® 2D design system until 2001, when Northshore management made the strategic decision to move to a 3D design environment to increase productivity. Because the company had used an Autodesk® product for many years, management decided to implement the Autodesk Inventor® 3D CAD package for product design.

After using Inventor software for three years, however, the company's product designers became dissatisfied with the quality of the support they received and concerned about obstacles they encountered in managing product files, according to Designer Roger Walsberg. "We had support issues with Inventor. Whenever I would call in with a problem, I was lucky if I received a return call," Walsberg recalls. "We also found the data management system, which is mandatory in order to use Inventor, to be complicated, difficult to use, and a waste of time. We had to do something to resolve these issues, so we decided to look for another solution."

Following an evaluation of available 3D CAD packages, Northshore designers chose the SolidWorks® Premium 3D CAD system, trying out a single seat before adding two more. They selected SolidWorks software because of its ease of use, flexible approach to data management, and integrated SolidWorks Simulation structural analysis capabilities. In addition, the company found the support provided by its SolidWorks software reseller, Symmetry Solutions, to be vastly superior.

"While we initially thought our reasons for moving away from Inventor involved data management and support, we discovered that we were also short on capabilities," Walsberg notes. "Once we started working with SolidWorks Premium, we came to realize that it is a better product."

### Results:

- Reduced design cycles by 20 percent
- Cut warranty costs by more than \$100,000
- Improved product quality through integrated analysis
- Enhanced design communications with customers

## Faster design, improved sheet-metal capabilities

Since implementing SolidWorks Premium, Northshore Manufacturing has shortened its design cycles while improving product quality. Walsberg attributes the productivity gains using SolidWorks software to its more robust sheet-metal and assembly design capabilities, the ability to import legacy AutoCAD 2D files, and integrated SolidWorks Simulation structural analysis features.

"With SolidWorks software, we are at least 20 percent faster than we were before," Walsberg explains. "The software is just easier and cleaner to use. Now I can convert a solid part into a sheetmetal part, which I was unable to do with our other CAD system, and also run collision detection on my assemblies to make sure I do not have any interferences. With SolidWorks Simulation, I can analyze assembly performance, so I can iterate on a design until I know my parts will perform as intended."

## Integrated analysis slashes warranty costs

In addition to using SolidWorks Simulation analysis with SolidWorks CAD software as a design tool, Northshore Manufacturing uses SolidWorks Simulation to resolve field issues and warranty claims more cost-effectively. For example, cracks had appeared in one of the company's older grapple head designs, and the Northshore design team needed to either develop a solution or replace the product.

"With this particular field failure, we were dealing with 10-year-old engineering and needed to determine whether we could address the problem with a field fix or would have to replace the entire unit," Walsberg recounts. "A full replacement would have required full disassembly of the machine to install the new head, a very costly proposition.

"We used SolidWorks Simulation analyses to understand the cause of the problem and validate our workaround," he adds. "We found high stresses in the area where the cracks appeared, and confirmed that we could alleviate the stress by welding another plate onto the head in the field. Instead of having to tear down the entire machine, we shipped the plates and conducted the field welds in a single day. As a result, we cut our field labor costs by more than 50 percent, and saved the company over \$100,000."

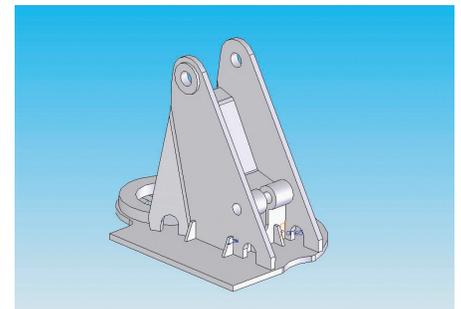
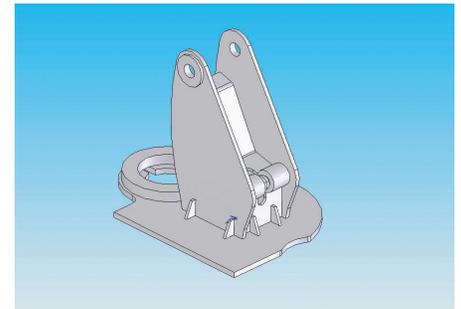
## Better customer interaction

The improved 3D visualization provided by the photorealistic rendering and animation capabilities of SolidWorks Premium makes it easier for Northshore Manufacturing to communicate and illustrate design concepts to customers, thereby shortening the sales cycle.

"With SolidWorks software, we can send images to customers that show the layout of the machinery or animated movies for proof-of-concept purposes," Walsberg says. "There was one instance when a customer wanted to see if our system could complete so many cycles in so many minutes. I emailed the customer an animation showing how it would work, resulting in an order for 25 machines."

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Roger Walsberg  
Designer



Using integrated SolidWorks Simulation analysis software, Northshore Manufacturing has slashed its warranty costs while improving the quality of its products.



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