Quickly freeing victims from the twisted wreckage of car crashes often means the difference between life and death. Firefighters and other rescue personnel need access to advanced hydraulic-powered rescue tools and equipment—such as cutters, spreaders, and rams—to remove entrapped victims so medical professionals can treat their injuries and, in many cases, save lives. Providing rescuers with the most innovative and technologically advanced tools and equipment is the goal of Holmatro, Inc.

A global leader in developing and manufacturing high-pressure hydraulic products for the rescue, marine, and industrial equipment markets, Holmatro operates design and manufacturing facilities in the Netherlands and United States, with additional offices in China and the United Kingdom. An early adopter of 3D design technology, the company replaced its AutoCAD® 2D design tools in 1998 with a 3D CAD system, according to Product Development Engineer Ron Blaas.

“We believed that 3D was vital for demonstrating our product concepts to commercial and rescue-related customers,” Blaas recalls. “It was also important in helping us identify potential errors, visualize how parts work together, and innovate new products.”

Eric Marquess, engineering manager at Holmatro USA, says 3D was critically important in helping his group adapt designs created at headquarters for the American market. “Most of our product design is done in the Netherlands, but to manufacture for the US market, we often need to make modifications. We were involved in the initial decision on a 3D CAD platform because accelerating design changes was an important goal for our business model.”
After evaluating the Autodesk Inventor®, Pro/ENGINEER®, Solid Edge®, and SolidWorks® 3D design software packages, Holmatro chose SolidWorks 3D design software—acquiring 25 licenses at its headquarters and four licenses at its US production facility. The company chose SolidWorks software because it’s easy to learn and use, facilitates design changes and communications, and produces 3D design visuals and photorealistic renderings.

**Innovating breakthrough technology**

Since implementing SolidWorks software in 1998, Holmatro has undergone a period of growth and innovative product development. The introduction of its Core Technology™ revolutionized the hydraulic tools market, and boosted the company’s market position.

Traditional hydraulic-powered systems utilize two lines—one that’s high pressure and the other that’s low pressure—to convey hydraulic fluid to the tool. Holmatro developed a system whereby the high-pressure line runs inside the low-pressure hose. Not only does this reduce the number of lines and the potential for leaks, but it also improves safety by using the low-pressure hose to insulate the high-pressure line. The addition of a coaxial disconnect valve, which allows tools to be switched out without cutting hydraulic pressure, further cemented Holmatro’s leadership position.

“SolidWorks software played an important role in the development of our Core Technology, helping us to showcase the design concept and secure support,” Blaas stresses. “Our Core Technology really sets us apart in the marketplace. Thanks to SolidWorks software, we were able to develop it quickly and cost-effectively.”

**Adapting designs for the US market**

The implementation of SolidWorks software is also paying dividends at Holmatro USA, where designs created at headquarters are adjusted and refined for the American market. Because SolidWorks software facilitates design changes, the US operation is able to quickly modify, test, and manufacture the company’s product line to meet specific market requirements.

“With SolidWorks software, we can easily adapt a single design to work with 30 different products,” Marquess stresses. “It used to take us three times as long to prepare a design for manufacturing. The software makes us more efficient and allows us to collaborate more effectively with our colleagues in the Netherlands.”

**Streamlined prototyping and testing**

In addition to facilitating design changes, SolidWorks software is helping Holmatro USA achieve additional time and cost savings by streamlining prototyping and testing processes. Many Holmatro products undergo testing by Underwriters Laboratories, Inc. (UL), which provides product safety certification. Using SolidWorks software, Holmatro USA has reduced design preparation time for UL testing by 25 percent and cut prototype iterations by 33 percent.

“It’s easy to make design changes and samples with SolidWorks software,” Marquess explains. “The improved design visualization helps us to investigate how a change will impact the product. This helps us improve quality and better prepare for testing, while saving time and money.”

Holmatro used SolidWorks software to develop its innovative Core hydraulic technology, which revolutionized the hydraulic tools market.