

Automotive and transportation

Knott

Brake systems manufacturer uses Solid Edge to thrive in a dynamic market

Product

Solid Edge

Business challenges

Price sensitivity
Pressure to innovate
New EU regulations

Keys to success

Stability and reliability of Solid Edge
Re-use of components
Many export options for design data
Built-in wire harness design functionality
Excellent support from the sales partner

Results

Faster modeling of Bowden cable assemblies
Automatic sheet metal unfolding
Secure data transfer with customers
Fast creation of technical documentation



The wire harness module of Solid Edge lets designers lay Bowden cables like experts.

Built-in functionality for wire harness design streamlines the modeling of brake cable assemblies

Brake manufacturer saw advantages of 3D

Knott GmbH has successfully specialized in the development and production of braking systems for motor vehicles as well as all facets of technology for vehicle trailers. With its headquarters in Bavaria and 15 additional locations in Europe and the United States, Knott employs a workforce of approximately 1,350. The company produces nearly 2,000 different models of band, drum, disc and multi-disc brakes, which are adapted to customers' specific requirements. In addition, axles, towing

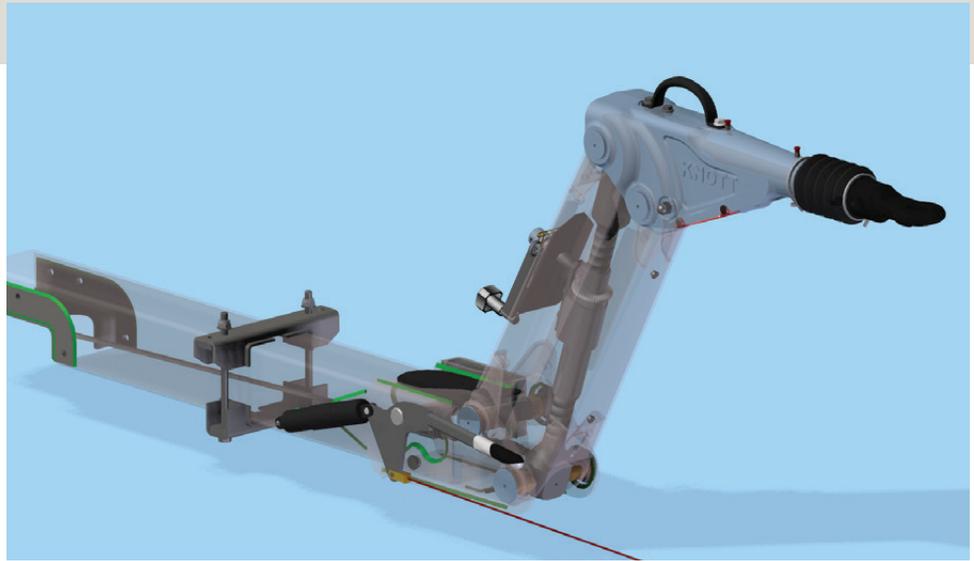
and breakaway systems have helped the corporation grow into one of the world's largest contractors for trailer technology.

Since the 1990s, the design department at Knott has recognized the advantages of 3D technology, and its goal has been to use a 3D computer-aided design (CAD) system to more efficiently design brakes and trailer components. In 1998, research led the company to PBU CAD-Systeme GmbH, the newly established partner of product lifecycle management (PLM) specialist Siemens PLM Software. PBU CAD-Systeme had started marketing Solid Edge® software from Siemens PLM Software.

"The PBU team, led by Bernd Krucker, made a very professional impression with

“... given the choice, we would pick Solid Edge every time.”

Josef Strasser
Development Engineer
Knott



The design of a breakaway system is clearly visualized.

their consulting and support,” recalls Josef Strasser, a long-time development engineer at Knott. That’s why Knott chose the innovative, midrange system that utilizes Windows® software. “The user-friendly and affordable Solid Edge has all the functions we need, without burdening us with superficial features,” says Strasser.

Today, approximately 100 employees from all Knott corporate divisions use Solid Edge. Of those, approximately 50 are designers involved in the comprehensive product program. PBU CAD-Systeme continues to provide the company with consulting, training and support services.

A worthwhile investment

At first, the switch to 3D technology required some extra consideration because the components had to be modeled as complete 3D objects before they could be output to drawings. However, that initial effort is now paying off significantly. For example, according to Strasser, one especially great advantage of Solid Edge is that designers can create technical documentation and instructions very quickly. The visualization options prove to be extremely useful in the customer-specific development of components and modules. Knott uses the 3D design models to make convincing presentations of proposed solutions.

“I’m excited about the user-friendliness and reliability of Solid Edge. When I come to the office on Monday morning, I can be absolutely certain that everything is running smoothly.”

Josef Strasser
Development Engineer
Knott

Strasser praises the different data export options of Solid Edge. Publication of 2D drawings as PDF files or 3D models in STEP format is quick and easy. This lets the design team transmit complete 3D data of entire modules to clients, such as an axle chassis, that clients can use for further design. If they don't want to provide all the details of the 3D data, Solid Edge accommodates with user-friendly functions. In a short period of time, designers can reduce CAD models to their lightweight geometry so that the recipient of the data can only see the visible parts of a module.

Mastering a dynamic market

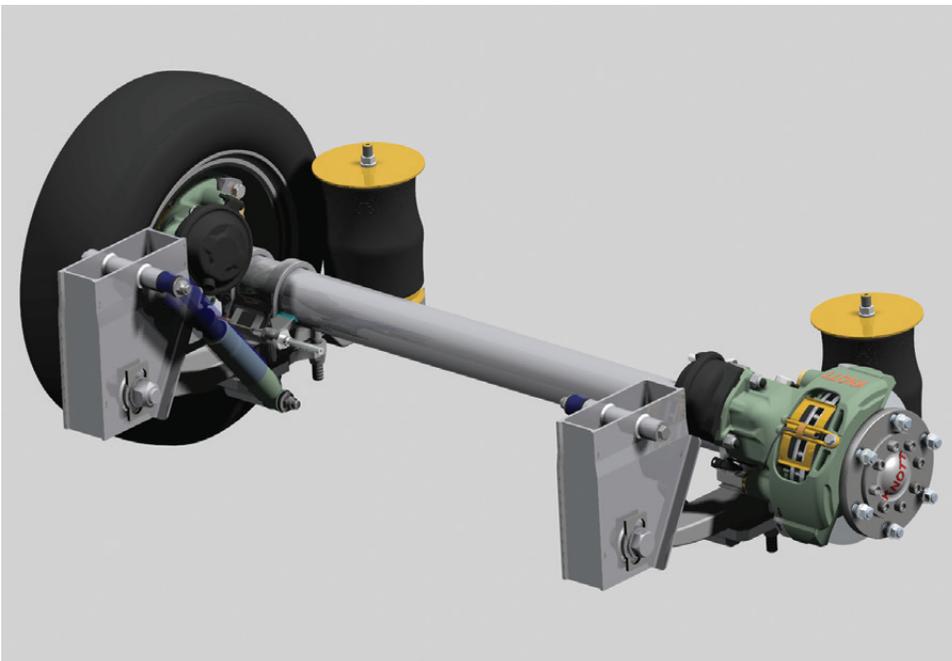
The automotive industry is among the most demanding and poses numerous challenges for Knott. For example, the sector for braking systems and trailer parts is very price-sensitive. Manufacturers are under intense pressure to innovate. Due to new European Union (EU) regulations, the safety-relevant parts of braking and trailer technology are subject to numerous approval procedures.

Knott addresses these challenges in the design division with the modular organization of components. Designers are endeavoring to re-use components and to use identical parts. However, there is still no software program being used for component classification. "We're still very old-fashioned in this regard," Strasser admits. For products containing as many as 1,000 individual parts, large assembly tools within Solid Edge are proving to be especially helpful.

Strasser is enthusiastic about the tools in Solid Edge for wire harness design. These tools were designed for the efficient laying of cables and cable harnesses, and save engineers a great deal of work with their functions for the automatic creation of cable harnesses. At Knott, engineers use the wire harness functionality for the installation of Bowden cable assemblies in trailer systems. "The wire harness functions facilitate this process tremendously," notes Strasser. "It's almost like a dream."

"The automatic sheet metal unfolding functionality of Solid Edge works smoothly and reliably from start to production."

Josef Strasser
Development Engineer
Knott



The model of an axle assembly with brakes illustrates Knott's expertise.

Solutions/Services

Solid Edge

www.siemens.com/solidedge

Customer's primary business

Knott GmbH develops, designs and produces components for braking systems and trailers such as axle assemblies, chassis, drawbars and breakaway systems.

www.knott.de

Customer location

Eggstätt
Germany

Partner

PBU CAD-Systeme GmbH
www.pbu-cad.de

Using Solid Edge, the publication of 2D drawings as PDF files or 3D models in STEP format is quick and easy.

The sheet metal processing capabilities of Solid Edge enable users to handle many work processes automatically, which were done manually before. "The automatic sheet metal unfolding functionality of Solid Edge works smoothly and reliably from start to production," Strasser says.

Another advantage of Solid Edge, which benefits Knott in terms of productivity, is the software's ease-of-use. At Knott, as a rule, interns spend two days on the integrated tutorial. After that, they are already able to complete simple design tasks on their own. For Strasser, one of the most important features of the CAD system is its reliability and stability. "I'm excited about the user-friendliness and reliability of Solid Edge. When I come to the office on Monday morning, I can be absolutely certain that everything is running smoothly," he says. Strasser points out that in spite of large modules and numerous users, the software is exceptionally reliable.

A reliable partner for reliable software

In 1998, PBU CAD-Systeme assisted Knott in the implementation of Solid Edge and

has been on-hand ever since with help and advice. The business relationship is characterized by mutual trust and friendly, professional collaboration. Strasser notes that the company feels a small, directly accessible, localized support team is a real advantage.

PBU supported Knott during the initial deployment and learning stages with dedication, and always helped in finding solutions. Today, PBU provides assistance primarily in the transition to new versions of Solid Edge.

Knott's future plans include the integration of Solid Edge with a new product data management (PDM) solution and the company's existing enterprise resource planning (ERP) system. Based on prior experience and smart decision-making with PBU, Strasser says, "I am certain that we will implement the best solution together." He adds, "By the same token, given the choice, we would pick Solid Edge every time."

"The PBU team, led by Bernd Krucker, made a very professional impression with their consulting and support."

Josef Strasser
Development Engineer
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