

## Global upgrade to 3D

Choosing Solid Edge as the corporate standard supports a commitment to customer satisfaction

### MODINE MANUFACTURING COMPANY

#### Siemens PLM Software

[www.siemens.com/solidedge](http://www.siemens.com/solidedge)

#### ► Business challenges

Continue 90-year tradition of innovation

Ensure customer satisfaction through rapid development of new products

Improve collaboration throughout the enterprise

#### ► Keys to success

Adopting Solid Edge® software as the corporate standard for CAD

Leveraging Solid Edge models for downstream applications such as FEA, CFD, CAM and marketing

Using 3D models for earlier, better design reviews

Developing proprietary programs to streamline time-consuming tasks

#### ► Results

Development of new products is faster; variations of existing designs take half as long

Sheet metal design time cut from 1 hour to 15 minutes per part

Drafting productivity increased more than 50 percent, translating into major resource and cost savings

Thousands of dollars saved annually on photography

60 hour design task reduced to 8 hours

#### Five wind tunnels on three continents

Founded in 1916, Modine Manufacturing Co. specializes in thermal management systems and components, bringing highly engineered heating and cooling technology and solutions to diversified global markets. Modine products are used in light, medium and heavy-duty vehicles, HVAC (heating, ventilating, air conditioning) equipment, industrial equipment, refrigeration systems, fuel cells and electronics. The company has more than 8,200 employees at 34 facilities in 15 countries worldwide.

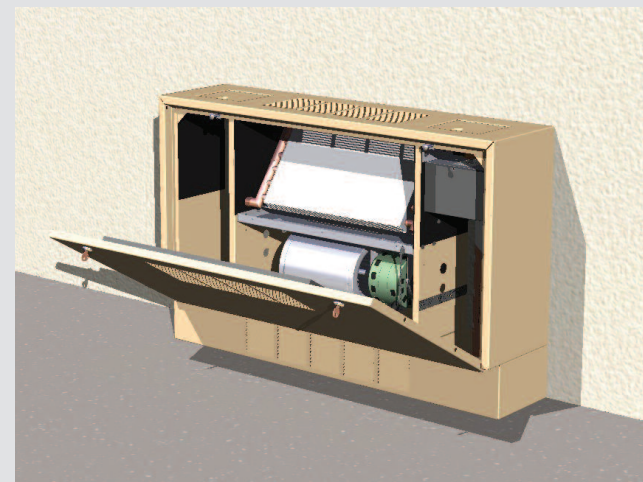
Heat transfer challenges grow more complex and sophisticated by the day. Modine's track record of innovation (more than 2,200 patents in 90 years) is key to the company's success.

Today, the company must balance its commitment to innovation with the time pressure it experiences as a supplier to automakers and other OEMs. One strategy for doing this was an upgrade from 2D CAD to Solid Edge, which is now the corporate standard for CAD. "We have just about every CAD system there is because customers require that of us," says John Binzak, senior systems project leader at Modine. "But when there is no mandate from a customer (concerning the CAD system to be used), we use Solid Edge."

#### 83 licenses and growing

The decision to upgrade to 3D CAD came several years ago. At the time, the company evaluated a number of programs but eventually narrowed the field to SolidWorks and Solid Edge. "Solid Edge was similar to a high-end system like Pro/Engineer without the high price. For our purposes, there isn't anything Solid Edge can't do," explains Colette Van Beek, engineering supervisor in the company's HVAC & R group. "And Solid Edge had some nicer features and capabilities compared to Solid Works." Some of those features included better sheet metal and drafting environments and integrated file management, according to Jeff Eggert, design engineering supervisor in Manufacturing Engineering Services, who was also on the selection committee for the new CAD system.

Solid Edge is being used in different ways throughout the organization. The HVAC & R group uses it to design commercial products – the innovative solutions to customers' heat transfer problems. Manufacturing Engineering Services uses it to design the unique equipment and tooling the



# SIEMENS

**Solutions/Services**

Solid Edge  
www.siemens.com/solidedge

**Client's primary business**

Modine specializes in thermal management components, bringing heating and cooling technology to diversified markets, including truck, automotive, heavy-duty industrial, HVAC, and electronics cooling.  
www.modine.com

**Client location**

Racine, Wisconsin  
United States

***"For our purposes, there isn't anything Solid Edge can't do."***

Colette Van Beek  
Engineering Supervisor  
Modine Manufacturing Co.

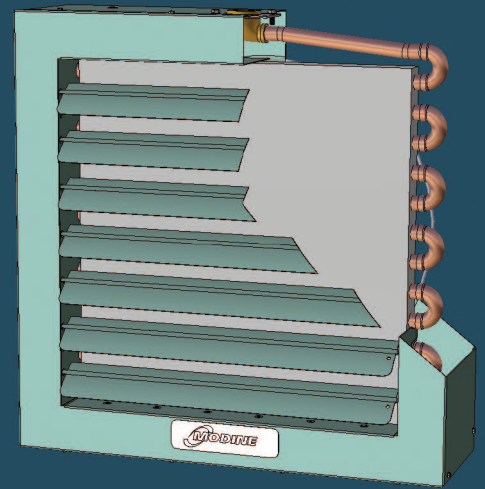
company needs in-house to manufacture its products. And when Modine buys other companies, it converts them to Solid Edge as well. In all, there are 83 licenses of Solid Edge in use around the globe and that number continues to grow.

**Broad and beneficial uses**

Designers and drafters use Solid Edge to create models of components, assemblies and complete systems. Because their products involve a great deal of sheet metal, Solid Edge has made a big impact here. It now takes about 15 minutes to design a typical sheet metal part, including the production of a drawing and a flat pattern. This process took one hour in the past, so this represents a huge efficiency gain. Another advantage is the use of 3D models by people who previously didn't use or have access to CAD data. For example, managers use the free Solid Edge Viewer to gain a better understanding of project status. Customer service personnel use the Viewer as well. Also, Solid Edge models are now used in design reviews instead of drawings. "This promotes understanding and questions early on, rather than waiting until the end of the design process," says Van Beek. Downstream, Solid Edge models are used in applications such as finite element analysis (FEA) and computational fluid dynamics (CFD) analysis. They are also used in marketing, replacing the photographs that used to be used in company literature and saving Modine thousands of dollars each year in photography costs.

Modine achieves significant time savings through the use of Solid Edge. Overall development time is down, for both new products and variations on existing designs. "With new designs, quality is better and things fit together better so when we get to the shop floor, we save time in assembly," says Eggert. "First unit assembly is about 10 percent faster now that we've gone to Solid Edge. On later versions of a design, we can see as much as a 50 percent reduction in design time." The company is currently developing a proprietary program that will take numerical output from an in-house design program and automatically create the resultant geometry in Solid Edge. This is expected to reduce the time needed to design a tool from 60 hours to eight hours. "This will be a huge savings," says Binzak. "And we expect to do more of this as well." When it comes to the creation of production drawings, drafters work so much faster with Solid Edge that in one group, the drafting staff increased productivity more than 50 percent, translating into major resource and cost savings.

The time savings and quality improvements that Modine has gained since installing Solid Edge are helping the company accomplish its mission of customer satisfaction. "Our number one priority is to focus on the needs and requirements of our customers," says the Modine web site, www.modine.com. "We have the resources, the staff and the environment to make customer satisfaction flourish." Solid Edge has become an important part of that environment.

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