

# How do we transform the future of 3D design?



The Siemens answer: It's simple with Solid Edge – using synchronous technology to unlock the secrets of better design

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

**SIEMENS**

# The future of 3D design available today

Solid Edge® software is the most complete hybrid 2D/3D CAD system on the market today that uses synchronous technology. A core component in Siemens PLM Software's Velocity Series™ portfolio, Solid Edge excels at facilitating accelerated design, faster change and improved re-use of imported data.

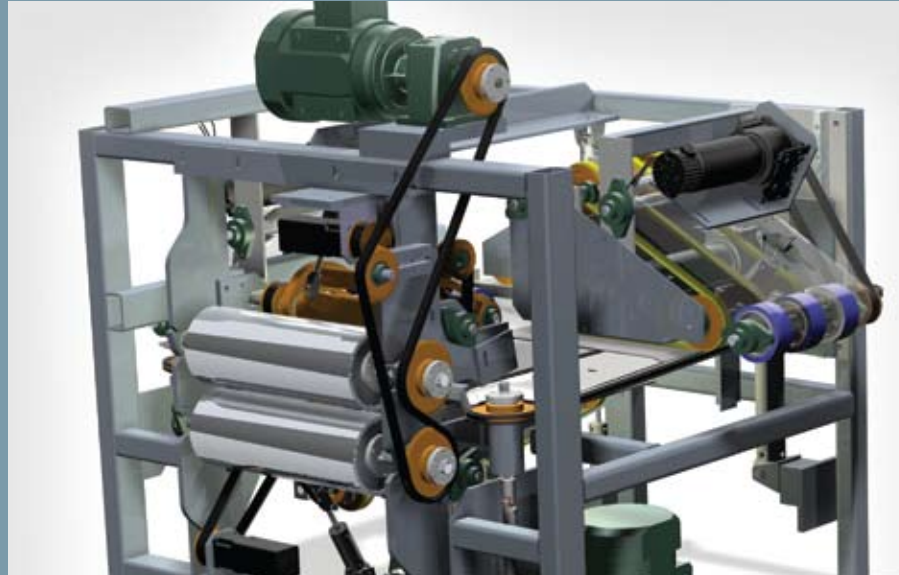
With superior part and assembly modeling, drafting, transparent data management and built-in finite element analysis, Solid Edge provides the fastest, most flexible design experience possible while easing the growing complexity of product development.

## Accelerated design for speeding time-to-market

Getting products to the market faster is key to your company's success. Solid Edge with synchronous technology helps you realize this goal by enabling your designers to create innovative parts without the need to master a large set of commands. Just as importantly, Solid Edge helps you automate your design process without requiring you to engage in extensive pre-planning.

## Faster engineering change execution for meeting customer demand

You understand your customers, their demands and how these demands influence your ability to address engineering change orders (ECOs). Now, you can leverage Solid Edge with synchronous technology to deal with these changes faster and more efficiently. Designers can rapidly make both planned and unplanned engineering changes by editing what's most important rather than what the CAD model allows. You can execute ECOs faster and be your industry's leader in satisfying customer needs.



## Improved imported 2D and 3D re-use for lowering engineering cost

Chances are you already have an existing design that's close to what you need for satisfying at least some of the requirements for your new product initiatives. With Solid Edge and synchronous technology, you can efficiently adapt existing parts for new uses. Solid Edge excels at converting 2D drawings into 3D or importing 3D models then enabling your designers to modify them to meet new needs as if they were native designs. You also can re-use more of your imported data and lower your engineering costs.

# The secrets to better design



*Inside front cover:  
A machine for the wood  
processing industry  
courtesy of Doucet  
Machineries Inc.,  
modeled and rendered  
in Solid Edge.*

*Page 3: Digital micro-  
meters courtesy of The  
L.S. Starrett Company,  
modeled and rendered  
in Solid Edge.*

## **Synchronous technology for fast/flexible modeling**

Solid Edge leverages synchronous technology to enable your company to repeatedly and systematically deliver breakthrough designs. Synchronous technology combines the speed and flexibility of explicit modeling with feature-based capabilities of parametric design. Designers can accelerate model creation without engaging in design pre-planning. They also are able to perform faster ECO edits by eliminating model regeneration, while increasing the re-use of imported 2D or 3D data. This unique technology will help you get products to market faster, service customer needs better and reduce engineering design costs.

## **Better transition and re-use from 2D or 3D**

Above and beyond Solid Edge's ability to improve design re-use, it also simplifies the process that your designers use as they move between 2D and 3D. 2D part drawings can be used to recreate existing designs in 3D that automatically inherit 2D manufacturing dimensions. In addition, assembly drawings can be used to drive the fit and position of a complete product. Synchronous technology enables 3D models from other systems to be edited as though they are native Solid Edge designs. You can expect the move to Solid Edge to be quicker and require less training time and expense.

## **Complete digital prototyping**

Solid Edge provides a design environment that you can use for complete physical prototyping. You can build entire 3D digital prototypes and optimize your designs before production. You can design assemblies with machined, cast or stylized components and leverage process-specific applications to simplify frame, piping, tube, wiring, weldment, and mold tooling design. You can use digital prototyping to

show how your products will operate and appear in real life through exploded views, photo-realistic renderings and animations. Solid Edge provides all of the tools to meet your digital prototyping needs. With more accurate digital prototypes, you can achieve higher levels of product quality and generate accurate product costs.

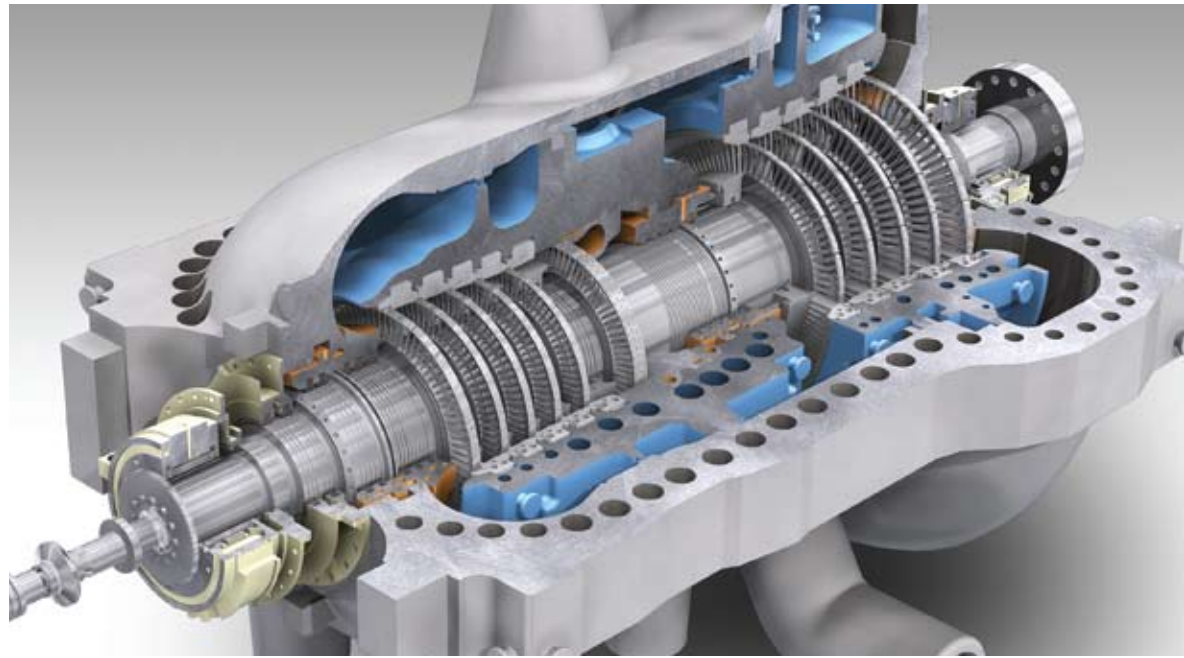
## **Advanced sheet metal design**

Solid Edge is widely acknowledged as the industry leader in sheet metal design. You can use Solid Edge to model straight brake, rolled or transition type components complete with flanges, holes, relief and corner options. You can validate designs for manufacturing and create/send flat patterns directly to production in DXF files. You can also document folding operations on associated drawings and get products with sheet metal parts to market faster with Solid Edge.

Page 4: HIP turbine  
courtesy of POMIT Co.,  
LTD, Korea. Modeled and  
rendered in Solid Edge.

Page 5: Centrifugal  
machines for the biodiesel  
industry, courtesy of  
Atlantica Separadores.  
Modeled and rendered in  
Solid Edge.

Page 5: Gas stove design,  
courtesy of Esmaltec,  
Brazil. Modeled and  
rendered in Solid Edge.



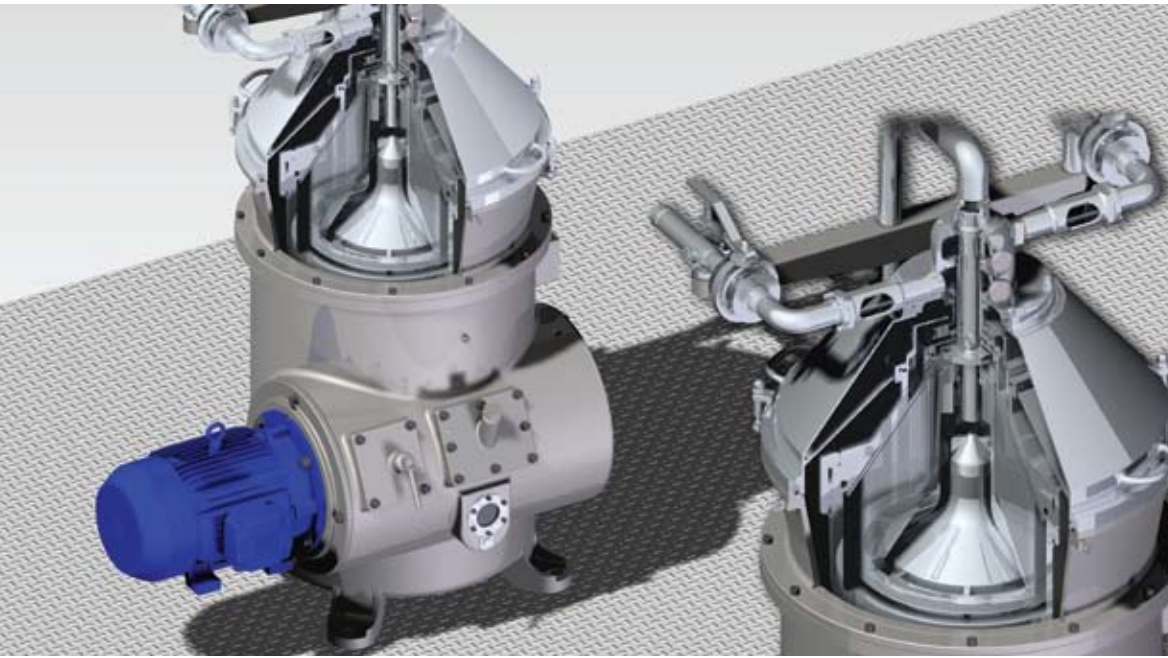
## The secrets to better design

### Optimized for massive assemblies

Efficient display management tools, such as configurations and design zones, help you focus on relevant parts and tasks; this is ideal for concurrent design. Modelling performance receives a significant boost from an inactive lightweight mode that frees memory of unused data. Support for 64-bit computers lets you open and work with your largest designs faster and more efficiently. Solid Edge helps you create and manage all of your assemblies, including designs that range in complexity from 1 to more than 100,000 parts.

### Production-proven 2D drafting

High quality products begin with high quality drawings and Solid Edge is the industry's best choice for creating accurate, high quality 2D drawings from 3D models. You can automatically create a wide variety of views including standard, auxiliary, section, detail, broken and isometric views. Detailing is fast since Solid Edge supports dimension retrieval while enabling you to automatically generate parts lists with balloons. Drawings are always kept up to date, alerting you to any change. Solid Edge provides industry-standard symbols to speed up the creation of layouts and schematics. Accurate drawings that are automatically kept up to date help keep your production lines running smoothly.



### **Integrated design analysis**

Simulating product operation involves more than just performing finite element analysis (FEA). Designers need the right tools for creating parts using standard engineering rules and a way to solve fit and position problems before design. Solid Edge includes smart commands that let you design standard components, such as shafts, beams and cams, using built-in engineering rules. Solid Edge also lets you simplify and solve complex fit and position using familiar free-body diagrams through its Goal Seeking capabilities. Once optimized, interferences and motion can be analyzed, ensuring products work before production begins.

Solid Edge includes built-in FEA simulation solutions that help you analyze parts and assemblies. Model simplification can be used to speed results, and synchronous technology helps you refine designs faster. For advanced simulation needs, Siemens

PLM Software's Femap® software is ideal for enabling the multi-discipline engineer or analyst to solve a complete system. These scalable simulation tools will help you reduce the time and cost needed to build and test expensive physical prototypes.

### **Collaboration across the supply chain**

Solid Edge offers a full suite of tools that let designers author, edit, distribute and explore design alternatives. You can use XpresReview to create compact design review packages including requirements documents, spreadsheets, 2D and 3D models. Using the industry standard JT™ viewing format, review packages containing Solid Edge data are kept small and can be easily e-mailed to customers or suppliers. Designers can use this tool to review and redline these materials. In addition, you can use Solid Edge synchronous technology to rapidly and flexibly iterate multiple design ideas. Solid Edge provides a variety of tools to enable your supply chain to share and exchange design alternatives.

Page 6: Rotary compressor courtesy of the Ariel Corporation. Modeled and rendered in Solid Edge.

Page 7: Machine parts courtesy of Ferguson Bearegard, USA. Modeled and rendered in Solid Edge.



## The secrets to better design

### Transparent design and data management

One of the most important aspects of any design process is the ability to manage data across the entire product development cycle. Solid Edge offers transparent and integrated data management capabilities to suit every customer. Using Microsoft SharePoint, Solid Edge Insight™ provides searching, vaulting and basic workflow management functionality. Alternatively, Solid Edge users can employ Teamcenter® Express software, a preconfigured, easy-to-deploy and easy-to-use product data management solution for managing data and facilitating collaboration across multiple departments, sites and design systems. In addition, Teamcenter itself is available for companies that require a complete PLM solution that can be customized to meet any need. With this scalable data management offering, you now have the power to manage data that can grow with your business.

### PLM with the Velocity Series

Solid Edge is a key component in Siemens PLM Software Velocity Series™. To help customers achieve maximum productivity, this portfolio offers a comprehensive family of modular, yet integrated solutions that leverage the industry's best practices to provide significant breakthroughs in ease-of-use and solution deployment. The Velocity Series portfolio includes:

- *Solid Edge* – an advanced 3D design suite that simplifies product development while facilitating unprecedented productivity
- *Femap* – a high performance simulation system that significantly reduces physical testing while speeding time to market
- *CAM Express* – a flexible NC programming solution that improves machining productivity
- *Teamcenter Express* – an easy to implement collaborative data management system that drives faster project completion



## Extending the experience

### Continuing our relationship

Siemens PLMS Software understands that your goal is to design great products. This is why offer several alternatives that enable you to get the most out of your Solid Edge investment. Maintenance contracts provide customers with automatic updates to new Solid Edge software releases. They are filled with exciting new enhancements, as well as periodic maintenance packs that include incremental improvements.

Customers can also access news groups that facilitate collaboration by enabling participants to exchange ideas and share their experiences with other Solid Edge users. We also work with users groups that sponsor events where users have the opportunity to meet with each other in person. We encourage your participation in these venues.

### Summarizing Solid Edge's value

When it comes to 3D design, Solid Edge is your best choice for accelerating design, getting products to market quicker, speeding ECO execution and maximizing your re-use of imported 2D and 3D data. Solid Edge is distinguished by its ability to provide superior part and assembly modeling, drafting, transparent data management and built-in finite element analysis. These attributes enable Solid Edge to deliver the fastest, most flexible design experience possible while easing the challenges inherent in performing product development in today's complex global economy.

## About Siemens PLM Software

Siemens PLM Software, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services with nearly 6.7 million licensed seats and 63,000 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products. For more information on Siemens PLM Software products and services, visit [www.siemens.com/plm](http://www.siemens.com/plm).

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