



SIEMENS
Ingenuity for life

Solid Edge 3D design

Today's hottest 3D design built on next-generation technologies

Benefits

- Easy to use for rapid realization of value
- Next-generation design tools that enable disruptive innovation
- Decades of core 3D CAD development for any design challenge
- Accelerates and optimizes product design for reduced costs
- Visualizes and validates product designs in 3D for improved product quality
- Integrated with a portfolio of development applications for design through manufacturing

Summary

The cornerstone of the Siemens Solid Edge® portfolio, Solid Edge mechanical design software is a market-leading 3D computer-aided design (CAD) application that enables the future of product development with capabilities such as generative design, reverse engineering and design for additive manufacturing. These next-generation techniques are seamlessly integrated with traditional methods thanks to Convergent Modeling™ and accelerated by industry-unique synchronous technology. The decades-strong part, assembly and drawing design environment integrates seamlessly with a portfolio of affordable, easy-to-use software tools that address all aspects of the product development process, enabling you to go from 3D mechanical design to electrical design, simulation, manufacturing, and more, assisted with integrated data management along the way.

Next-generation design

Solid Edge incorporates next-generation design methods seamlessly into your development workflow, enabling you to disrupt your field.

Synchronous technology allows you to rapidly create new concept designs, easily respond to change requests, edit imported 3D CAD data as if it were

native data, make simultaneous updates to parts within an assembly and more. It combines the speed and simplicity of direct modeling with the flexibility and control of history-based design, simultaneously, in a unified design environment.

Generative design accelerates creation of lighter components perfectly suited for immediate manufacture via today's additive processes (3D printing) or restrained to more traditional manufacturing methods. Designing lighter, stronger parts can help you decrease manufacturing cost, improve in-field performance and increase customer satisfaction.

Reverse engineering enables digitally scanned bodies to be incorporated into your design workflow, either directly as mesh triangles (facets), or as traditional solids and surfaces. Use of scanned data is made possible through assisted reverse modeling, including intuitive mesh cleanup tools to remove errors that may have resulted from the import process.

Convergent Modeling enables you to work with faceted data in the same way you would typically use traditional boundary representation (b-rep) data. Mesh bodies are seamlessly integrated into the normal model editing process, allowing you to get the final design needed for the task at hand – no more waiting for tedious, inaccurate conversions from triangular mesh to b-rep.

Augmented reality (AR) allows you to validate your digital design in a physical environment. Using AR technology via a

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smart phone or tablet, you can review designs in their intended settings, showcasing products in a compelling way even before they are built. AR experiences can be securely shared in the cloud using the Solid Edge Portal. Furthermore, other third-party augmented, virtual and mixed reality (AR/VR/MR) experiences can be accessed via export of the OBJ neutral interchange file format.

Core 3D CAD

3D design enables faster time to market while reducing engineering costs. Solid Edge 3D design is distinguished by its ability to provide superior part and assembly modeling, flexible drafting, best-in-class sheet metal capabilities, and industry-leading visualization. These attributes enable Solid Edge to deliver a fast and flexible design experience while easing the challenges inherent in product development.

3D part modeling

Solid Edge enables fast and flexible modeling for almost any component, including automated tools for common engineering parts such as gears, cams, springs and beams, surface modeling capabilities for complex stylized shapes, and a dedicated feature set for the design of plastic parts. Stylus sketching enables you to freely sketch on your tablet as Solid Edge converts your rough sketch into perfect shapes. Solid Edge also solves complex fit and positioning by automating engineering calculations to achieve a specific design goal with Goal Seek.

Sheet metal design

Solid Edge provides the industry's best-in-class sheet metal design system, with support for the entire design-through-fabrication process. With capabilities to handle complex sheet metal design challenges including manufacturability, Solid Edge streamlines the entire product development process, from CAD design through flat pattern and drawing development.

Drawing and drafting

Solid Edge streamlines the creation of drawings from 3D models, providing graphical alerts when drawing views are out of date and a built-in tool that alerts you to design changes. Solid Edge also optimizes for speed and performance and automatically complies with the mechanical drafting standard you select.

Assembly modeling and management

Solid Edge helps you quickly create and manage even the largest assemblies, from conceptual layout to an exact representation of all components. A complete digital mockup allows for more accurate design and analysis, from interference detection to in-context modeling. And, as your design grows, Solid Edge automatically activates its high-performance mode for large assemblies, delivering significant performance gains.

Visualization

Solid Edge 3D visualization, with rendering capabilities powered by best-in-class KeyShot® technology, provides photorealistic images and animations to bring your models to life. Explode your assemblies, spotlight your scenes, incorporate scattering medium such as fog and smoke, and leverage the latest appearances such as foam and multi-layer optics. You can also showcase the internal workings of designs with rendered cutaways.

Costing

Solid Edge helps you keep your product on track and within budget with capabilities that assist engineers in designing for cost, including support for sheet metal. You can compare designs by cost and accelerate sales quotes.

Standard part library

Standardizing on components helps optimize inventory and improve manufacturing workflow. Solid Edge provides a powerful parts management system that allows you to define, store, select and position commonly used parts – like fasteners, bearings, structural steel

members, pipes and fittings – quickly and efficiently, enabling rapid and precise completion of 3D assemblies. Pre-populated standards-based libraries are available ready-to-use, enabling designers to concentrate on creative design.

Data re-use

Solid Edge simplifies data migration of 3D models and 2D drawings from other industry software, with dedicated migrators for Solidworks®, Creo® Elements/Direct, Creo (previously Pro/Engineer) and Inventor®. These migrators maintain rich model information and associated drawings during the migration process. Alternatively, all popular formats can be re-used as needed, including Industry Foundation Classes (IFC) for Building Information Modeling (BIM) and AutoCAD®.

Flexible licensing model

A modular and scalable CAD application, Solid Edge is available in four different tiers, ranging from basic design and drafting capabilities to a premium version that includes capabilities for designing more advanced embedded systems. All tiers are available as a perpetual (permanent) license or by subscription (monthly or annual), with maintenance, support, and cloud-based licensing options – the choice is yours.

Trusted technology

The engine behind Solid Edge is Parasolid® software, the most widely used computer-aided geometric modeling kernel in the industry. Parasolid, a Siemens technology, delivers 100 percent 3D model compatibility between product development applications. By enabling the creation and modification of digital 3D models, Solid Edge delivers on the Siemens commitment to provide digital transformation capabilities to its users. Digital transformation allows even the smallest organizations to leverage technology to level the playing field with large enterprises.

Key feature/function	Solid Edge Design and Drafting	Solid Edge Foundation	Solid Edge Classic	Solid Edge Premium
Cloud enabled	✓	✓	✓	✓
2D drafting	✓	✓	✓	✓
2D data re-use (all popular formats)	✓	✓	✓	✓
3D data re-use (all popular formats)	✓	✓	✓	✓
3D part design	Basic	✓	✓	✓
3D assembly design	Basic	✓	✓	✓
Automated 2D drawings	✓	✓	✓	✓
Synchronous technology (intelligent direct modeling)	✓	✓	✓	✓
Design automation	✓	✓	✓	✓
Sheet metal design		✓	✓	✓
Frame and weldment design		✓	✓	✓
Surface modeling		✓	✓	✓
Plastic part design		✓	✓	✓
Jig and fixture design		✓	✓	✓
Conceptual assembly layout		✓	✓	✓
Standard parts library	✓	✓	✓	✓
Standard parts library extension - machinery			✓	✓
Visualization - animation	✓	✓	✓	✓
Visualization - photorealistic rendering	Basic	Basic	✓	✓
Visualization - augmented reality (AR) and export to third party AR/VR/MR			✓	✓
Design for cost			✓	✓
Reverse engineering (3D scan processing)			✓	✓
Generative design			✓	✓
Cam, gear, pulley and shaft design			✓	✓
Spring design			✓	✓
Beam and column design			✓	✓
Electrical routing design				✓
Piping and tubing design				✓
Simple motion simulation	Basic	✓	✓	✓
Motion simulation				✓
Structural simulation (linear static)		Basic	Basic	✓
Simulation optimization				✓

Key feature/function	Solid Edge Design and Drafting	Solid Edge Foundation	Solid Edge Classic	Solid Edge Premium
Additive manufacturing (3D printing) preparation	✓	✓	✓	✓
Additive manufacturing (3D printing) service	✓	✓	✓	✓
Data management	✓	✓	✓	✓
Cloud-based collaboration (view, comment, secure share)	✓	✓	✓	✓
Viewing tools (free mobile apps, free desktop viewer mode)	✓	✓	✓	✓
IFC import and export for BIM	✓	✓	✓	✓
Mesh data re-use (Convergent Modeling)	✓	✓	✓	✓
SolidWorks data migration		✓	✓	✓
Inventor data migration		✓	✓	✓
Pro/Engineer and Creo data migration		✓	✓	✓
Creo Elements direct migration		✓	✓	✓

Use the table to guide you in choosing your package of applications. Then visit www.siemens.com/plm/buy-solid-edge to start your subscription today.

Extending value

Solid Edge is a portfolio of affordable, easy to deploy, maintain and use software tools that advance all aspects of the product development process – mechanical and electrical design, simulation, manufacturing, technical documentation, data management and cloud-based collaboration. For information on other applications in the portfolio, visit solidedge.siemens.com.

Minimum system configuration

- Windows 10 Enterprise or Professional (64-bit only) version 1709 or later
- 8 GB RAM
- 65K colors
- Screen resolution: 1920 x 1080
- 6.5 GB of disk space required to install Solid Edge

Siemens Digital Industries Software
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