Solid Edge 2D Drafting

Providing a high-value, robust and no-cost 2D design solution

Benefits
- Save time and money with a high-value solution for 2D tasks
- Standardize on a single platform, reducing training and maintenance costs
- Share native drawings with suppliers for design review or manufacture
- Re-use 2D legacy data in 3D design
- Make easy transition from 2D AutoCAD and other 2D products
- Use CAD solution with a fast learning curve

Features
- Full suite of production-proven 2D drawing tools
- Annotation and dimensioning that complies to world standards
- Diagramming for electrical and other schematics
- Fast and easy parametric drawing layout
- An automated approach to solve free-body diagrams
- Supports viewing many 3D file formats

Summary
Solid Edge® 2D Drafting software delivers a production-proven set of capabilities for creating two-dimensional (2D) documentation. It offers excellent drawing layout, diagramming, annotation and dimensioning controls. The 2D computer-aided design (CAD) is suited to a variety of tasks: laying out and optimizing schematics, streamlining 2D drawing production and learning how to design in a 3D CAD environment.

A free software offering, Solid Edge 2D Drafting, which is part of the Xcelerator™ portfolio, the comprehensive and integrated portfolio of software and services from Siemens Digital Industries Software, demonstrates our commitment to helping companies control costs. Solid Edge 2D Drafting capitalizes on years of production-proven capabilities developed by Siemens. An excellent tool for collaborating with suppliers and customers, the software allows you to share native Solid Edge drawings free of translation requirements with your suppliers while ensuring data integrity. Software maintenance that includes automatic updates to the latest release is available to Solid Edge customers for a nominal fee.

Solid Edge 2D Drafting provides excellent translation and editing of AutoCAD file formats and can replace AutoCAD for many 2D machine design and layout applications. Solid Edge provides specific online help resources for AutoCAD users, helping them to work in a mixed environment of Autodesk and Solid Edge. This speeds their transition from Autodesk mechanical design software to Solid Edge.

No matter where you are or where you want to go, Solid Edge 2D Drafting will help you design better. This free application is available for download anywhere in the world.
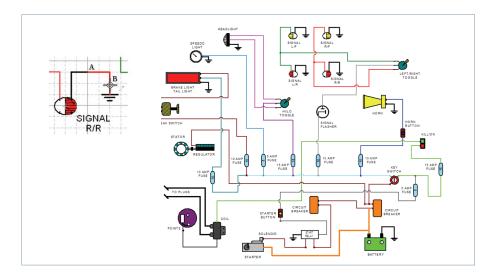
Design layout and optimization
Some design tasks are better suited for 2D design, such as machinery or plant layout development. Layouts are often the first step in outlining material routing through factories or machines. Using 2D CAD enables the user to get concepts down quickly and facilitate fast change.

Almost all designs require multiple calculations ranging from computations that determine structural rigidity to optimization of part locations. Drawing and solving 2D sketches greatly simplifies this process.

Streamlined drawing creation
Solid Edge 2D Drafting includes comprehensive dimensioning and annotating tools that enable you to quickly create fully detailed drawings in seconds. Intuitive grid tools allow you to quickly sketch your designs with precision using

solidedge.siemens.com

Solid Edge 2D Drafting

a full suite of drawing tools that enable you to create all the geometric elements you require, including circles, arcs and curves in any style or color. The software includes extensive built-in libraries yet allows you to use your existing block libraries without requiring translation.

The innovative user interface (UI) includes SmartStep, which conveniently guides you through each command step and provides easy access to all inputs, quickly increasing your productivity. A ribbon lists the most common operations on a home tab for fast command access.

Intelligent 2D parametric relationships can be applied to geometry as it is created or added later in the process. Relationships ensure the design intent is maintained. Line end connections, curve tangencies, parallel or perpendicular conditions and formula-driven dimensions are just a few of the relationships you can apply to geometry. This intelligence is maintained across multiple views so that changing a diameter in a top view will automatically change the associated lines in adjacent orthographic views.

Solid Edge 2D Drafting features drag-and-drop diagramming capabilities using industry-standard symbols, or blocks, to automate the creation of 2D diagrams, such as those commonly produced for electrical and piping and instrumentation design (P&ID) layouts, without dedicated schematic software. Blocks can support multiple occurrences of the same component and can represent alternate positions to ensure a correct bill-of-materials (BOM).

Moving to a 3D environment

Keep your costs low with Solid Edge 2D Drafting, but easily move to 3D CAD when more automated design is required – all on a single platform. It shouldn't matter if a design is in 2D or 3D; if it exists, you can use it. The challenge is how to best re-use a 2D design in 3D CAD. Data created in Solid Edge 2D Drafting can be used for 3D design in Solid Edge without fear of data loss or rework. You can produce superior visualizations for customer proposals, perform part-to-part interference checking for accurate preproduction designs and even use your models in downstream simulation and manufacturing applications. With a 3D model, you can generate automatic 2D drawings featuring orthogonal, section and detail views, dimension retrieval as well as automated parts lists.

Moving drawings of parts into 3D can be straightforward, but assembly layouts tend to be more complicated because they can contain envelopes, parts lists and component details. Finding a system that can leverage 2D for 3D part creation, parts lists development and assembly definition can be a challenge. Solid Edge facilitates the re-use of 2D drawings for part creation, parts lists development and assembly design.

Solid Edge 2D Drafting enables viewing of a wide variety of 3D file types, including all 3D Solid Edge file formats (part, assembly, weldment and sheet metal) plus IGES, STEP, STL, Parasolid® software and the JT™ data format.

Drawing free body diagrams

The goal seek functionality in Solid Edge provides a handy tool to simplify problem solving, such as solving free body diagrams. The goal seek feature, a built-in utility that solves one unknown parameter by adjusting another, combines a familiar free body diagram approach with a powerful 2D parametric sketch solver to compute the geometry of the diagram. Using Solid Edge enables you to compute and store the most common measurements, such as distances, angles, perimeters and areas for fast problem definition, and includes intrinsic functions for doing math and trigonometry operations needed in complex equations.
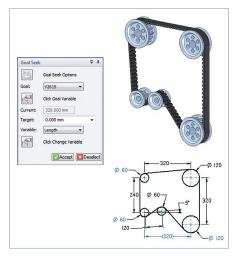
Users simply sketch the system in 2D, add some dimensions and any defining constraints and the system solves for the desired parameter – hence the term goal seek. By constraining a sketch that simulates the system's behavior and indicating both a goal value and what will float, goal seek adjusts the variable parameter until the target value matches the goal. For example, the goal seek feature can be used to determine correct beam sizes given a specific load, as well as to optimize pulley configurations given a fixed belt length. Goal

seek also can be used to drive component positions in optimized 2D sketches.

Designers can realize significant downstream benefits by using this simple but effective tool. Using goal seek eliminates the need to rearrange equations and, in many cases, removes the need to even develop equations. The results can ultimately control the size and position of 3D geometry and components, thus retaining the initial intelligence throughout the design process.

Preserve and maintain existing drawings

With Solid Edge 2D Drafting, you can continue to make full use of your existing 2D legacy data. Intuitive wizards provide robust translation of existing 2D files such as AutoCAD, while 2D drafting tools not only emulate the workflows you already know but offer additional capabilities as well. Solid Edge also provides a familiar process for generating detailed drawings from 2D layouts. Similar in concept to the model and paper space methodology in other 2D products, 2D layouts are designed on a 1:1 scale.

Multiple detail views of the layout are then created on separate drawing sheets. Each view can be scaled as required, while still maintaining correct dimensions and annotations. Any changes to the original 2D layout are automatically reflected in the detail views. These and many other

customer-driven capabilities make Solid Edge 2D Drafting a compelling application for AutoCAD 2D users looking for more value and productivity from their 2D CAD seats.

Adhering to standards

With Solid Edge, you have full control over every element of your drawings, ensuring the requirements of organizational and international standards are met. Solid Edge 2D Drafting automatically complies with a wide range of drafting standards, including the International Organization for Standardization (ISO), American National Standards Institute (ANSI), British Standards Institution (BSI), German Institute for Standardization (DIN), Japanese Industrial Standard (JIS) and Italian Organization for Standardization (UNI).

Extending value

Solid Edge is a portfolio of affordable, easy-to-deploy, maintain and use software tools that advances 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 1809 or later

• 16 gigabytes (GB) random access memory (RAM)

• 65K colors

• Screen resolution: 1920 x 1080

• 8.5 GB of disk space required to install Solid Edge

Visit www.solidedge.com/free2d to download your free software and learn more.