Highlights of Solid Edge® Version 15

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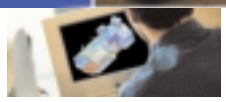
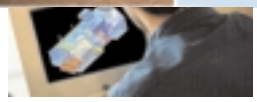
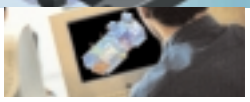






Solid Edge Version 15

Introducing the latest power-packed release from Solid Edge, delivering more insight into your designs and processes than ever before. Be the first to benefit from the CAD industry's most functional innovations, first to complete designs and first to market with an error-free product – the first to Design with Insight.

Solid Edge®
PLM Solutions

EDS

Solid Edge V15 – Design with Insight

Solid Edge is being used as the design tool of choice by thousands of organizations around the world. Ranging from individual users to installations with hundreds of seats, these organizations *Design with Insight* – relying on Solid Edge to provide practical insight into design intent throughout the organization, and reducing ECO (engineering change order) related rework by a minimum of 50 percent.

Version 15 is another power-packed release, ensuring that companies implementing Solid Edge can continue to Design with Insight: reducing cost, improving quality and decreasing time to market.

Solid Edge V15 highlights

Insight for the consumers of data

- ✔ **Insight support for Sharepoint 2**
- ✔ **Insight Connect with view and mark-up**

EDS became the first and is still the only company to recognize that design data management is an *integral* part of the design process. Our built-in Solid Edge Insight technology remains a far more elegant, productive, and cost effective solution than the traditional bolted-on product data management (PDM) approach of our competition; now becoming the first application of its kind to support Microsoft Sharepoint 2 and SQL Server for unprecedented advantages in performance, scalability, and administration. And Solid Edge Version 15 extends its lead in collaborative design management by providing view and mark up tools from within Insight Connect, establishing a robust managed environment that makes collaboration easily available to consumers of data throughout the enterprise.

Insight into design intent

- ✔ **Systems design**
- ✔ **Intelligent documentation**
- ✔ **Evolve to 3D**

Maintaining original design intent while meeting time, cost and quality constraints is a challenge faced by all product designers. With each release, Solid Edge continues to add increasingly intelligent design capabilities, providing valuable insight into original design intent via knowledge built directly into the model. This approach ensures the original intent is not lost or misinterpreted by personnel who use design data as it moves through the development process. For V15, Solid Edge expands the systems design approach established in V14 with new interactive physical analysis of mechanisms, adjustable assemblies, and assembly features that all work together to increase flexibility, preserve design intent and help eliminate even more design errors. And V15 offers new enhancements to allow manufacturers still using 2D design systems to easily evolve to 3D design and its inherently higher levels of productivity.

Industry insight

- ✔ **Consumer product design**
- ✔ **Mold design**
- ✔ **Machinery and equipment design**

Solid Edge has long been focused on providing designers with increased insight to solve the different design challenges that are unique to their industry. By delivering tools and workflows that offer specific solutions to these challenges, Solid Edge not only speeds up the design process, but also becomes easier to learn and adopt due to its industry relevance. Version 15 expands on the award winning success of Rapid Blue for shape design of consumer products; with even more shape creation and analysis capability, powerful new super features for vents and mounting bosses and new capabilities for mold design, to service tooling suppliers for the plastics oriented consumer products industry. And, building on a well-proven foundation, new and enhanced capabilities in the areas of sheet metal, motion and standard parts will appeal to the thousands of customers designing machinery and equipment with Solid Edge.

Insight for the consumers of data

Insight manages and leverages product information in a manner that is unobtrusive and transparent, giving users instant access to design information that affects their role.

"We anticipate Sharepoint 2 will greatly assist us in setting up a new series of managed design workflows within multiple areas of the company. When releasing drawings from design to manufacturing, we plan to use Sharepoint 2 to automatically trigger events that are currently accomplished manually. This will assist our company in ensuring that everyone is receiving the information that they need."

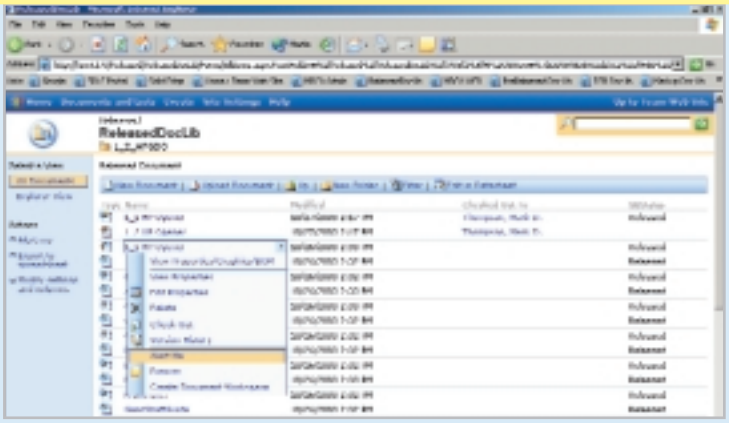
Dustin Teschke
Meikle Automation
Kitchener
Ontario, Canada

Solid Edge Insight is an innovative solution that seamlessly integrates CAD, design management, and Web-based collaboration into a single tool that is easy to implement and easy to manage. Insight removes the perceived barriers to successful PDM implementation, while still providing the fundamental capabilities that companies expect in order to successfully manage design data. By leveraging proven tools provided by Microsoft, Insight manages product information in a manner that is unobtrusive and transparent in the daily CAD work routine. Sharepoint 2 is a major strategic direction for Microsoft, and makes a dramatic leap forward in terms of performance, scalability and administration and with V15, Solid Edge Insight harnesses this power. Solid Edge Version 15 also introduces unique new capabilities to its design management client, Insight Connect. Consumers of data can easily access, view and mark-up a variety of design related documents, facilitating engineering workflows and making collaboration easy, while ensuring that data remains managed and secure.

Geometry data	Microsoft Sharepoint	Solid Edge Insight
Files		
Metadata		
Attributes		
File properties		
Part properties		
Non-graphic data		
Product structure		
Assembly structure		
BOM		
Links		
Relationships		

Harnessing Microsoft technologies

Insight is ready to support Windows Server 2003, which now includes built-in Windows Sharepoint services.



Insight highlights

Support for Windows Server 2003, including Windows Sharepoint Server

- Enhanced browser access to data
- Customizable user roles and workflow
- Enhanced "alerts"
- Event triggers to build custom actions

SQL server support

- Enhanced performance and scalability
- New data types
- Attribute look up table (for part classification)
- Enhancements to administrative tools (backups, virus scanning, server usage, etc.)

Support for Windows Sharepoint Portal Server

- Multiple servers/multiple sites

Graphical display of Insight information in pathfinder

Revision manager enhancements

Warning if existing revisions are found

Add to library – dry run reports

New search interface

Solid Edge administrator

Define company default values

Supporting the latest Microsoft technologies

Microsoft information sharing and document collaboration technologies offer unprecedented advantages in performance, scalability and administration. With millions of users, Microsoft technologies are firmly established as the undisputed leader and future of data management for Microsoft-based enterprises.

The inclusion of Windows Sharepoint Services into Windows Server 2003, establishes a standardized approach to browsing, essentially making it part of every user's desktop, while Microsoft SQL provides the design management vault; secure and scalable, with outstanding performance and administrative tools for backup and recovery, virus scanning and server use. Sharepoint Portal Server supports data management over multiple servers and multiple sites.

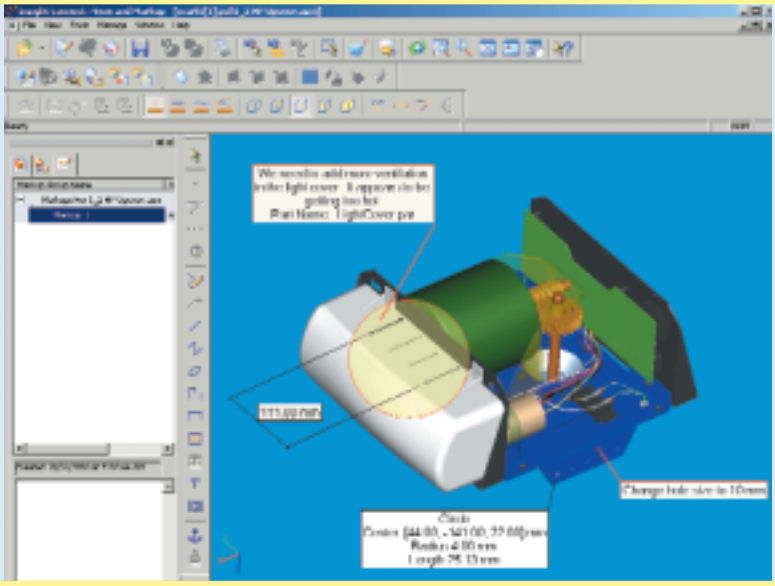
These, and many other enhancements, are part of Microsoft's strategy to provide communities for team collaboration, enabling users to work together on documents, tasks and projects. With Version 15, Solid Edge Insight is ready to support this new structure.

With Version 15, Insight users can customize the way they view product data, so they have instant access to design information that affects their role. Subscribing to relevant data will provide them with an enhanced personal alert system, letting them know whenever project documents are added, edited or deleted. Adding to this level of control, custom event triggers can be built in to document libraries so that pre-defined events will force a custom action to be carried out. These tools provide the foundation for managed design workflows, ensuring that everyone in the design process is receiving the information that they need, when they need it. With Version 15, customers can take advantage of pre-defined workflow templates delivered "out-of-the-box", or can customize their own to suit specific requirements.

By leveraging the proven tools provided by Microsoft, and adding essential control for today's 3D design processes – product structure, assembly structure, bill of material (BOM), assembly links, part relationships – Solid Edge Insight is not only the most elegant mainstream design data management solution available, but is also the safest investment for the future.

Insight Connect with view and mark-up

With Insight Connect, multiple 2D and 3D files can be interrogated using measure and mark-up commands.



Insight Connect with view and mark-up

Industry analysis has shown us that for each person that creates a design there are as many as 200 people that use the information associated with that design. Collaboration is essential to reducing ECOs, achieving time-to-market, quality and cost objectives of design organizations, but it is just as essential that collaboration take place in a managed environment. As such, manufacturing organizations are clearly finding an increased need to facilitate and manage this collaboration as seamlessly as possible. Solid Edge V15 once again extends the power of Insight for managed collaboration to users of design data, this time through Insight Connect, Solid Edge's powerful design management client for users of design data. Delivered with every copy of Solid Edge, and available as a standalone client, Insight Connect provides powerful design management functionality such as revision management, document lifecycle management, and where-used searches. For version 15, Insight Connect has been enhanced with additional file types available for viewing, and tools such as dynamic sectioning, measurement and mark-up. Never before has it been easier for teams to work together in a virtual environment, and ensure that products come together smoothly and right the first time.

Insight connect with view and mark-up highlights

Continued access to:

- Viewing
- Revision management
- Where used searches
- Lifecycle management
- Administration tools

Additional 2D and 3D file types

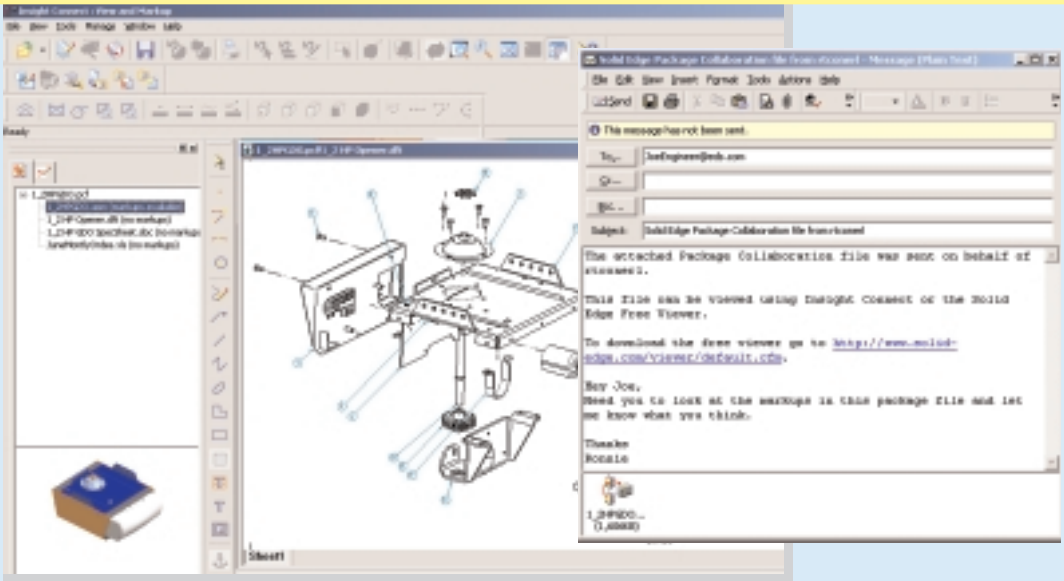
- All Solid Edge documents (.asm, .dft, .par, .psm, .pwd)
- Mark-up documents (.pcf)
- Unigraphics® NX documents (.prt)
- Parasolid® documents (.x_b, .x_t)
- JT documents (.jt)
- XML documents (.plmxml)
- MicroStation documents (.dgn)
- AutoCAD documents (.dwg)
- AutoCAD documents (.dxf)
- CGM metafile documents (.cgm)
- HP CoCreate ME 10 documents (.mi)
- STL documents (.stl)

Dynamic sectioning

Measure and mark-up

PLM Open enabled

Packaged collaboration files



Packaged collaboration files can contain multiple documents from different sources, enabling practical collaboration to take place in a secure and managed environment, even when design information is sent by e-mail.

Packaged collaboration files

Version 15 introduces a new "packaged collaboration file" (.PCF), at once solving the problem of how to share multiple documents, in a collaborative environment, while ensuring that users are never working with information that is out of date. This innovative concept allows multiple documents from different sources to be packaged into a single file that contains all the information needed for communication. Visualization data, including all required parts, assemblies, drawings, and other non-CAD documents relevant for a particular purpose, can be accessed from a pre-defined folder or sent via email to anyone needing to review the information. The files can be directly viewed using a free viewer, or teams can utilize Insight Connect's new review, measure and mark-up capabilities to add comments.

Rather than the cut-and-run approach of less sophisticated applications, the PCF file retains original links to CAD documents in the Insight database, and contains all the information required to execute and manage any changes resulting from the collaborative process. For example, a designer can send a new product for customer review and, upon receiving the PCF file back from the customer, directly find all files affected by the suggested changes, the necessary actions to revise each of those files, and automatically launch the lifecycle assistant to edit the Solid Edge design and continue the revision and approval process. Packaged collaboration files once again demonstrate how Solid Edge leads the industry in managed collaboration – recognizing that, while visual collaboration is important, it should not happen at the cost of loss of control and poor data integrity.

Packaged collaboration file highlights

Multiple documents in one package

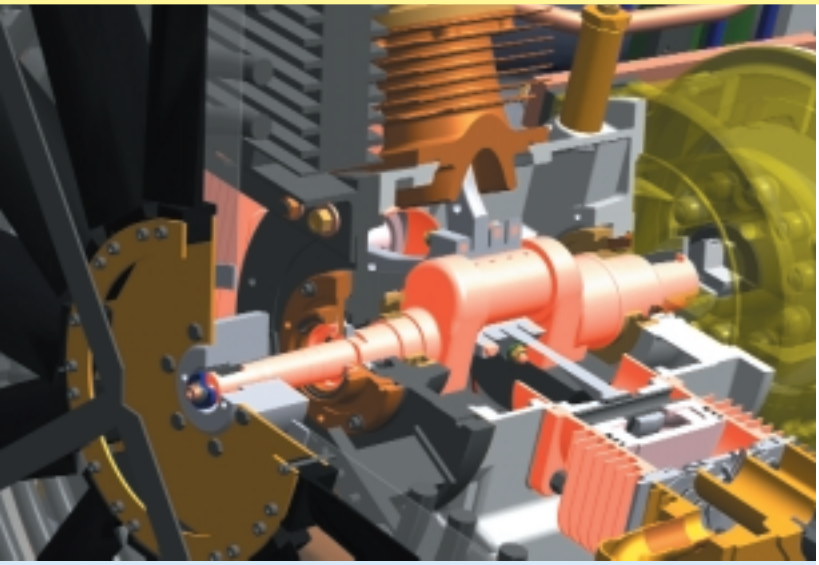
- 3D model data
- 2D drawing data
- Mark-up data
- Microsoft Office documents
- Adobe pdf
- Images

Files can be viewed with the free Solid Edge viewer and/or interrogated and marked up with Insight Connect.

"New viewing and mark-up capabilities in Solid Edge Insight will help us manage our growth and the related need for more design collaboration across multiple locations and changing organizations."

Dustin Teschke
Meikle Automation
Kitchener
Ontario, Canada

Systems design



Systems design means more intelligent decisions by capturing and maintaining design intent – beyond fit and into function and physically realistic behavior, while Insight manages the whole process.

Systems design highlights

Interactive physical analysis of assembly mechanisms

Adjustable assemblies

Assembly features/assembly driven part features

Peer-to-peer include

Relationship dimensions

Family of assemblies enhancements

Properties on a per member basis

- Place/edit part enhancements

Option for no separate window

Synch all relationships from ribbon bar

- Enhanced tool tips when placing parts
- Flip axial align
- Inferred planes from coordinate systems
- New parallel relationship
- New match coordinate systems relationship
- Inactive show/hide
- Entire assembly pathfinder while in-place activated
- Support for user templates
- Zoom to selection
- Re-order components with relationships
- Allow save while in-place activated into parts

The creation of virtual assemblies is at the center of almost all 3D design processes. However, where traditional assembly design focuses primarily on how parts fit together, Systems Design places additional emphasis on the function of a product and how components interact, thereby giving designers the power to advance beyond fit, to create intelligent, functionally (as well as physically) realistic models that emulate real-world situations. In virtual systems design, a group of interacting parts and sub-assemblies is modeled as a "whole," with sufficient information to describe how components relate to each other and how they need to perform to meet design criteria. Critical relationships are captured and re-used, material is automatically added or removed from related components to ensure correct placement, moving parts maintain their pre-defined paths and loads, while sensors monitor critical distances and other variables that affect desired performance.

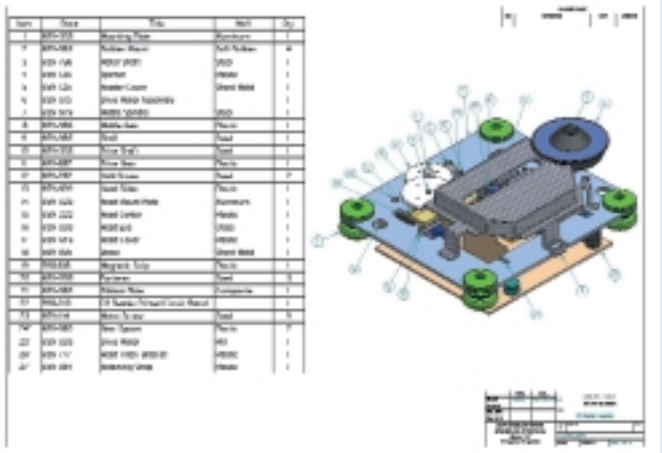
A thoughtful progression of essential components for systems design began with sensors in Version 10, with subsequent releases advancing this powerful concept. Version 14 introduced systems libraries, a unique approach that allows users to define, store and reuse cohesive sets of parts, features and constraints as a single functional system. Version 15 extends these already impressive capabilities with new adjustable assemblies that allow adaptable placement of the same sub-assembly to accommodate varying position and new motion analysis tools that automatically simulate mechanisms under the influence of forces, further reducing the need for physical prototypes. These tools, combined with an impressive new array of relationship controls, features and the ability to capture and reuse this design intent as a part of the "systems library" makes Solid Edge a leader in the area of systems design.

"Solid Edge is very adaptive, understanding how our systems function. With Version 15 we can now reduce costly engineering change orders by 70 percent compared with our previous 2D design software."

Emmanuel Nicolas
Rapido
Mayenne, France

Intelligent productive drafting

Shaded views provide very effective and professional communication aids for technical documents, presentations and reviews.



Intelligent, productive drafting

Although the benefits of designing in 3D are readily accepted, 2D drawings continue to be the most common deliverable for documenting the final design, and consequently represent a significant part of the design timeline. Solid Edge continues to lead the market in drawing creation productivity, through a focus on the four key components that affect the time required to progress from design to print, namely layout, computation, annotation and revision. First, 2D drawings begin with the layout of views that best allow downstream users to interpret the design. Many companies have standards for creating drawings, or common assemblies that require similar drawings to be made of each unique configuration. Using Quicksheet templates in Solid Edge V15, users can eliminate repetitive tasks by pre-defining a drawing layout, and creating new drawings by simply dragging a different assembly into the template. All views then recompute to create the new drawing, including any derived views such as sections or detail view, as well as parts lists and auto-balloons.

Year after year, the assemblies that Solid Edge users are able to create increase in size and complexity, meaning their related drawings are doing the same. V15 continues with enhancements to Solid Edge's drawing view architecture that have improved compute performance over the past few releases, with a net result that users have enjoyed a decrease in drawing view update time of up to 90 percent. Creating multiple views of a model, and annotating those views, is where the bulk of 2D documentation work is spent. Working with feedback from our users, Solid Edge continues to add extended view types and intelligent annotation tools that meet the requirements of many global standards, and ensure fast and complete drawing production. With V15, users can add shaded views to drawing sheets, for use in supporting documents such as technical publications. And, in a continued effort to give users full control over the layout of 2D drawings, detail views in V15 can be generated from user-defined envelopes. Finally, as designs evolve and change, so too must any associated documentation. Unique Solid Edge tools persistently monitor the 3D model, and automatically highlight and tag views and dimensions that are no longer up to date relative to the model, including information on why they are out of date and what needs to be done to fix the problem.

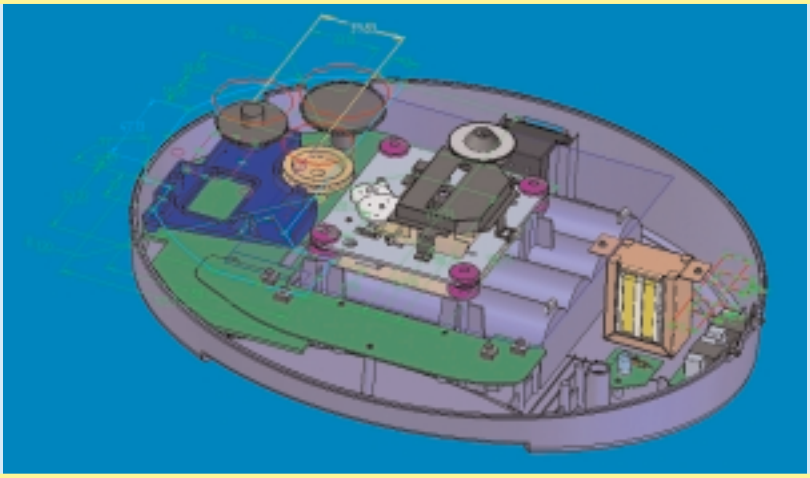
This leads to faster and more accurate revisions, without the need for detailed and lengthy manual checks. Whether documenting a 3D assembly, starting a 2D drawing from scratch, or using existing legacy data, Solid Edge offers superior 2D documentation capabilities that simply crush the time from design to print.

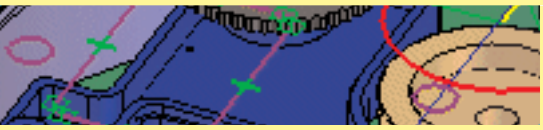
Intelligent, productive drafting highlights

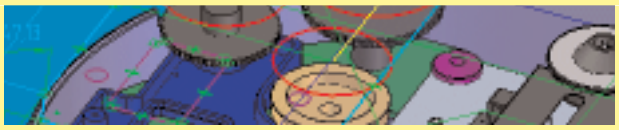
- Drawing view performance enhancements
- Shaded drawing vews
- User defined detail envelopes
- Quicksheet templates
- Automatic drawing view creation
- Show reference planes and sketches
- Control VHL tolerance
- 3D angular dimensions
- Coordinate dimensions to intersection
- Improved tangent dimensions
- Color control in parts list
- Sheet property in hole table
- Callout for bend angle and bend radius
- User-defined hatch styles

Evolve to 3D

Solid Edge's unique 2D/3D hybrid approach to design means that companies can continue to work with their legacy 2D drawings, adding 3D data only when they are ready.







Evolve to 3D

Many customers have upgraded to Solid Edge from 2D solutions, and their feedback has been invaluable in the development of practical tools and workflows to smoothly evolve to the productive world of 3D solids modeling. Solid Edge has been especially focused on providing a unique, simple approach that provides the means to get all of the benefits of 3D CAD by leveraging productive 2D activities, thought processes and designs, without creating unnecessary confusion within an organization. Solid Edge is already well proven in its ability to translate, open, and edit 2D legacy data, and new translation enhancements in V15 continue to advance these strengths.

Also fundamental to Solid Edge is a unique 2D/3D hybrid approach to design that provides the ability to create assembly layouts (as well as parts) using familiar 2D concepts, adding 3D as the design progresses, mixing and matching 2D and 3D representations of parts, and adding 3D detail when required. To further build on this approach, Solid Edge V15 allows dynamic editing of assembly sketches from within the assembly window. Users can simply drag 2D sketch geometry, and all 2D and 3D geometry, as well as assembly relationships are automatically resolved and updated.

Evolve to 3D highlights

- Dynamic edit of assembly sketches
- Distributed Layouts (Copy Sketch)
- Import/export AutoCAD dimensions as dimensions
- Import AutoCAD polyline widths

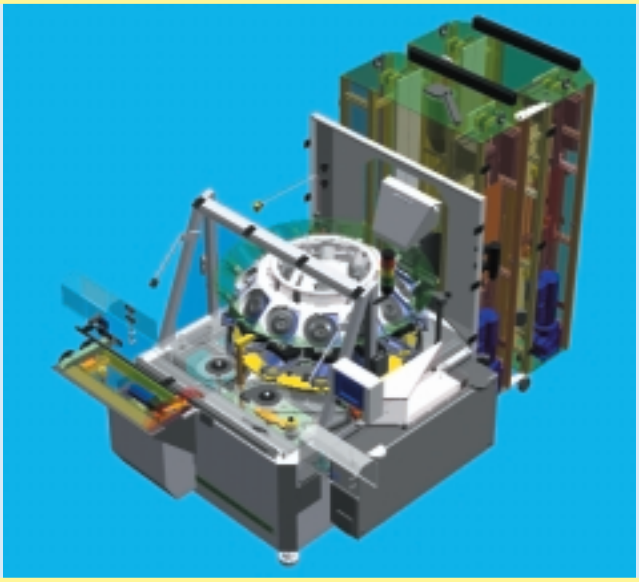
"We moved thousands of legacy drawings into Solid Edge's standalone drafting environment years ago. We could, but we don't have to move them all into 3D because we can simply make changes directly to a drawing to deliver needed modifications. The pure 2D capabilities in Solid Edge save us a lot of time and effort."

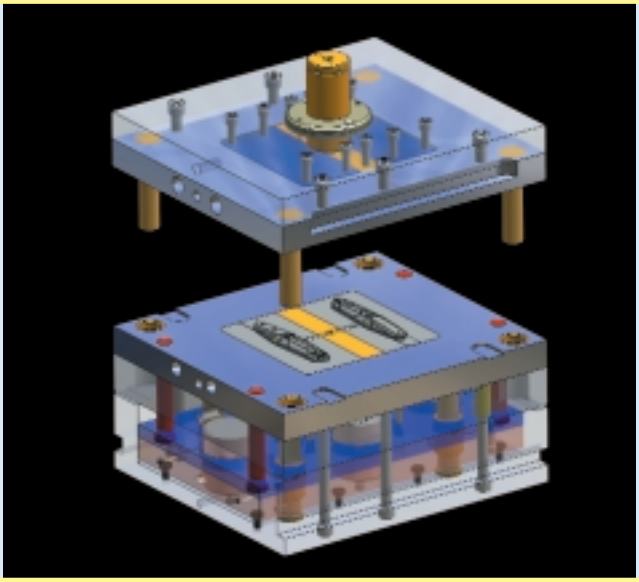
Fritz Holzner
Brueckner Maschinenbau GmbH
Siegsdorf, Germany

"New drafting capabilities in Solid Edge Version 15 allow our designers to simply drag parts or assemblies into standardized drawing view templates, greatly improving our ability to communicate design intent quickly and clearly."

Chris Oesterle
CADD Support
Liebert Corp.
Columbus, Ohio
USA

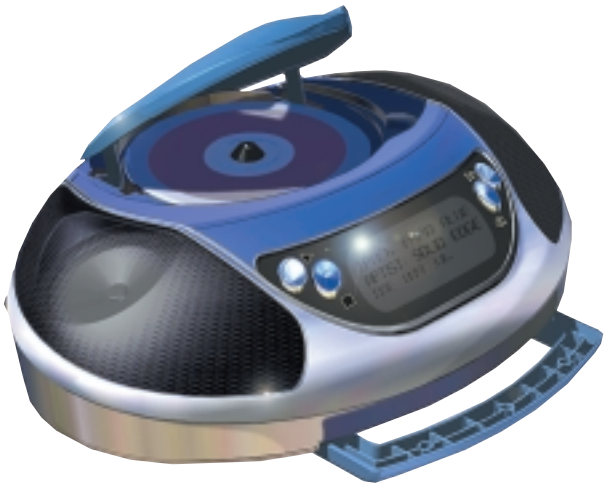
Industry insight





Different manufacturing industries face their own unique design challenges, and it is neither acceptable nor practical for a CAD system to deliver a generic collection of tools and expect users to adapt them to their own needs. Solid Edge recognized this from the start, and has long been focused on providing tools and workflows that offer specific solutions to these challenges. Engineers and designers in a broad range of industries benefit from tailored commands and structured workflows that help them design much more quickly and accurately than their general-purpose alternatives.

Solid Edge has long been known for its work in machinery and equipment design and more recently in consumer products design with the introduction of "Rapid Blue" shape creation technology. Now with Solid Edge V15, companies that support the production of plastic parts for these and other industries with injection molding can also benefit from the Solid Edge industry-focused approach through the introduction of powerful new functionality for mold design and tooling.



Mold design

With sophisticated features, developed specifically to ease the design of complex shapes prevalent in consumer products, Solid Edge is already being used by many companies in this and similar industries. V15 extends these capabilities with new functionality for mold design. Draft face analysis enables users to graphically analyze a model to ensure that it will be ejected from the mold, while the new parting surfaces command can be used for generation of associative mold cores and cavities. Combined with Solid Edge's excellent surface import, clean up and healing capabilities, and best in class documentation, Solid Edge customers now enjoy a complete solution for mold tooling design.

Mold design highlights

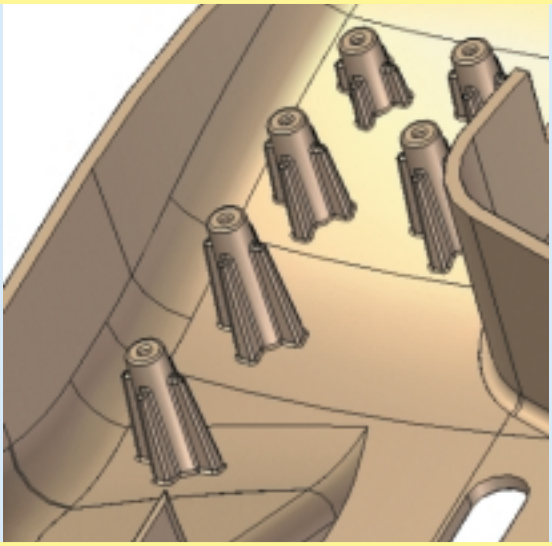
Draft face analysis

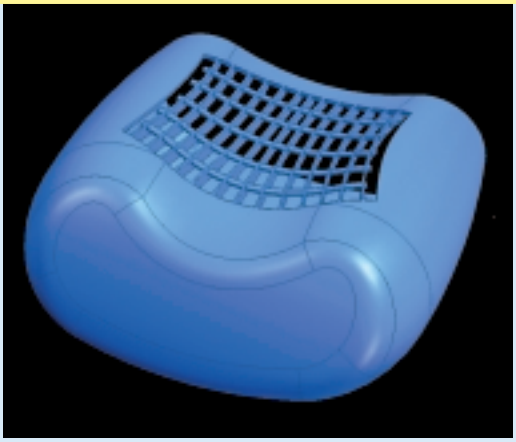
Parting edge creation

Parting surface creation

Consumer products design

"Super features" create a complete, multi-operation mounting boss or cooling vent with a single click, including process operations such as rounds and draft.





Consumer product design

Solid Edge offers a superior, aesthetic engineering solution for designers of consumer products with exclusive tools to optimize form, fit, and function. Solid Edge's Rapid Blue shape creation technology drives fast-track design iteration by providing flexibility in styling without concern for history, and enabling users to iterate design alternatives faster than ever before. V15 continues to develop Solid Edge's powerful shape modeling functionality, with enhancements to surface trimming, patterning and curve creation. Solid Edge's automated workflows have already proven to increase productivity and manufacturing accuracy for common features such as Web networks, lips and grooves, and V15 adds to an already impressive list of these process-specific features with new "super features." Cooling vents are common to consumer goods and traditionally very difficult to model but, with V15, can be created with a single command, complete with definitions for ribs, spars, and depth, rounds and draft angles. And the new "boss" command creates mounting bosses, with options for stiffening ribs, mounting holes, rounds and draft angles. Pro/E users wanting to upgrade to Solid Edge will be pleased to see the V15 migration wizard, offering a fast method for bulk translation of assemblies, parts, and drawings from Pro/Engineer to Solid Edge and/or Insight.

Consumer product design highlights

Super features

- Vent command
- Boss command

Enhanced trim for surfaces and extensions

Pattern along curves

Enhanced extruded feature extents

Enhanced text profile creation

Pattern curves, surfaces and sketches

User points in keypoint curve

Curvature shading

Locate spline edges

Split face command

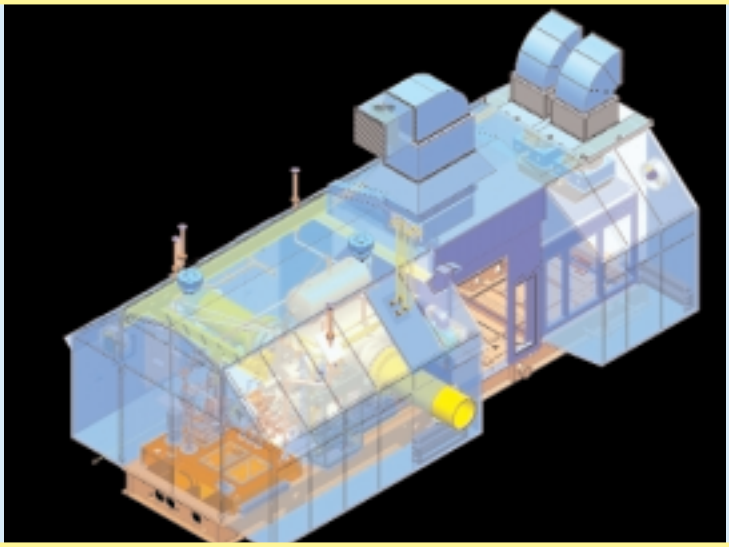
Continuous profile constraint

Dual tangent hold lines

Pro/E bulk part migration

Machinery and equipment design

New functionality in the areas of sheet metal, motion and standard parts will appeal to the thousands of customers designing machinery and equipment with Solid Edge.



Machinery and equipment design

Since its initial release, Solid Edge has been the technical leader in machinery and equipment design – delivering extremely practical, process-specific functionality to solve real world problems. Unique capabilities allow for the creation and manipulation of massive assemblies that are common in the industry, and powerful workflows, engineering calculations and analysis tools allow Solid Edge users to create machinery designs that are both accurate and intelligent. Physical prototyping is virtually eliminated, and built-in data and revision management tools facilitate the reduction of costly errors, scrap and rework, while engineering knowledge captured in these designs is easily re-used for faster and more accurate changes and revisions. Along with the previously described new systems design and documentation capabilities, V15 adds further customer-requested enhancements to its industry-leading sheet metal environment that will prove tremendously useful for machinery designers. And V15 includes a new part library application with a sample complement of fasteners, bearings and other components, plus powerful searching capabilities and the ability for users to add their own parts to the library. A more extensive library of parts is optionally available.

Machinery and equipment design highlights

Standard parts application
- Library management
- User defined parts
- Sample parts
- Comprehensive optional library
  - Pins
  - Fasteners
  - Structural steel members
  - Bearings

Flexible display configurations

Enhanced selection filters

Automatic capture fit

XpresRoute
- Angular dimension
- Transfer tubes/associativity

Sheet metal enhancements
- Close corner enhancements
- Flat pattern cleanup
- Enhanced save as flat wizard
- Mid-surface command + API
- User defined attributes to flat pattern

Summary

Solid Edge V15 is another in a long line of power-packed releases, adding well thought out functionality and significant new features to help customers Design with Insight.

V15 continues to expand Solid Edge Insight's strengths and expertise in managed collaboration, dramatically reducing the time to make and communicate design change requests by involving more people earlier and throughout the process, including input from other departments and suppliers.

With V15, increasingly intelligent design capabilities help customers rapidly create and evaluate large numbers of design alternatives; optimizing form, fit, and function, while maintaining design intent and manufacturability of complete systems throughout the design process.

And V15 builds on Solid Edge's proven track record of solving the unique challenges that different manufacturing industries face, introducing a new application for designers of mold tooling and adding to already impressive capabilities for designers of machinery, equipment, and consumer products.

With these customer and industry-driven enhancements, Solid Edge V15 delivers designers in a broad range of industries more insight into their designs and processes than ever before. They will be first to benefit from the CAD industry's most functional innovations, first to complete their designs, first to market with an error-free product, the first to Design with Insight.

"Version after version of Solid Edge addresses our growing needs to work on large assemblies, often containing more than 20,000 complex parts and features. Functionality added in every release, including V15, allows us to accomplish many very important tasks, such as customizing a new equally large machine without major redesign effort."

Fritz Holzner
CAD Administrator
Brueckner Maschinenbau GmbH
Siegsdorf, Germany

"Early this year we selected Solid Edge because we felt very comfortable with the openness of its organization to customer needs. Testing V15, we already are seeing the inclusion of features we requested for designing automation equipment."

Dustin Teschke
Meikle Automation
Kitchener
Ontario, Canada

About EDS

EDS, the premier global outsourcing services company, delivers superior returns to clients through its cost-effective, high-value services model. EDS' core portfolio comprises information-technology and business process outsourcing services, as well as information-technology transformation services. EDS' two complementary, subsidiary businesses are A.T. Kearney, one of the world's leading high-value management consultancies, and PLM Solutions, a leader in product data management, collaboration and product design software. With 2002 revenue of $21.5 billion, EDS is ranked 80th on the Fortune 500. The company's stock is traded on the New York (NYSE: EDS) and London stock exchanges. Learn more at **eds.com**.

About product lifecycle management solutions

EDS is the market leader in product lifecycle management (PLM), providing solutions to the global 1000. Product lifecycle management enables all the people who participate in a manufacturer's product lifecycle to work in concert to develop, deliver and support best-in-class products. As the only single-source provider of PLM software and services, EDS can transform the product lifecycle process into true competitive advantage, delivering leadership improvements in product innovation, quality, time-to-market and end-customer value. Learn more at **eds.com/plm**.

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