



SIEMENS

Ingenuity for life

Accelerate automotive aftermarket design with Solid Edge

INDUSTRY
INSIGHTS

Siemens PLM Software

Solution focus

Automotive aftermarket manufacturers are under pressure to improve the speed and efficiency of their product design and engineering processes so that they can deliver new designs on time and meet their customer's expectations for reliability and performance.

Solid Edge® software from Siemens PLM Software enables manufacturers to respond to major trends that are impacting the automotive aftermarket, including:

- Growing used car market worldwide
- Increase in the number of miles driven per car
- Increase in the length of time people are keeping their cars
- Increase in demand for reliable, high-quality parts

To respond to these trends and be successful in the ultra-competitive automotive aftermarket, manufacturers can improve their performance in these key process areas:

Editing imported 3D CAD data

With Solid Edge synchronous technology, importing a file from another 3D CAD system is as simple as opening it – and editing imported data is just as easy. Simply click and drag features, or add and edit dimensions on the fly and Solid Edge will automatically make intelligent updates as if a history tree existed. The unique power of synchronous technology allows you to easily collaborate with original equipment manufacturer (OEM) suppliers and partners, and treat multi-CAD data just like native files.

Seamlessly work with scanned data

Solid Edge also enables you to work seamlessly with scanned data so you can easily create your designs with OEM data, or simply modify the scanned data without having to recreate the files.



Communicate the innovative features and value of your designs to distributors and customers

Automotive aftermarket manufacturers can significantly improve how they communicate designs to distributors and potential customers both during the product development process and after product launch, conveying the innovative features and ease of use of their designs and getting valuable feedback to fine-tune the final product. Using Solid Edge makes that possible with the creation of 3D product information including prototypes created using 3D printing, photorealistic images and animations.

The Solid Edge advantage

- Meet increasing demand for aftermarket parts with shorter product development times
- Work seamlessly with scanned data so you can easily create your designs with OEM data, or simply modify the scanned data without having to recreate the files
- Edit imported 3D CAD data quickly and easily – particularly OEM data
- Accelerate design with the simplicity of direct 3D modeling combined with the flexibility and control of parametric design – made possible with synchronous technology
- Rapidly create prototypes for internal validation, customer acceptance testing and 3D printing
- Create and analyse virtual models to investigate different solutions and optimize performance – before manufacturing begins
- Use built-in data management for fast searches, and revision and release management – no database software required
- Create attractive product images and animations that communicate innovative products to potential customers



Accelerate 3D design and changes

Designers and engineers are under pressure to work faster and produce accurate 3D part models, assemblies and 2D drawings. Solid Edge provides a complete software portfolio that accelerates design and helps eliminate errors before manufacturing begins. Design changes can be implemented faster so that new consumer products can be delivered on time and on budget.

Scalable data management

Siemens PLM software provides a scalable set of data management solutions that meet the varying needs of small to large manufacturing organizations who design simple or very complex products. These solutions range from built-in data management capabilities that do not require any database software, to Teamcenter®, a popular choice for data and process management in the automotive industry. Solid Edge data management solutions enable you to share product information and collaborate with downstream functions such as manufacturing, as well as with customers, to improve quality and reduce costly errors.

Supply chain collaboration

Share your data with remote designers, or with your suppliers and customers using popular cloud-based file sharing software like Dropbox™ and Microsoft® OneDrive®. Use the industry-standard JT format to exchange 3D designs with suppliers and customers using a variety of CAD software.

Design for manufacture

Improving the design to minimize manufacturing costs and understand suitable tolerances is important for automotive aftermarket manufacturers. Siemens PLM Software helps manufacturers overcome these challenges by providing standard geometry linked with available tooling, and making design data easily accessible to manufacturing.

Designs are optimized for production and manufacturing errors are reduced.



Integrate electrical and electronic components

Many automotive aftermarket products include smart features that require electronic component housings and electrical wiring. Solid Edge helps by enabling accurate modeling of electronic components, housings, electrical wiring and connectors. You can optimize wire routings, calculate correct cable lengths and create accurate bills-of-materials (BOMs) to improve manufacturing efficiency and reduce time-to-market for new products.

Prototype, test and optimize

Design engineers often wait until a device is built to identify engineering problems. By creating 3D models of their products, engineers can investigate different solutions and refine functionality in a virtual environment. Integrated capabilities including Solid Edge Simulation facilitate motion and stress analysis, static and buckling analysis, and lightweighting. The result is significant reductions in cost and time-to-delivery as engineers solve problems before manufacturing begins.

Ensure compliance with industry and government regulations

Significant time and effort may be required for quality assurance and to demonstrate compliance with industry and government regulations. Solid Edge enables you to work efficiently by managing required documentation and automatically creating print files of designs on release to capture the exact specifications. Electronic workflows ensure a controlled and recorded development process. As a result, you have a proven audit trail, and with consistent work practices, a reduced risk of product recalls.

Key solution components

- Solid Edge design for 3D part and assembly modeling using synchronous technology accelerates product design, speeds revisions and improves the re-use of proven sub-assemblies in new designs
- Solid Edge Simulation for virtual analysis of products reduces the need to create multiple physical prototypes, lowers material and testing costs and improves reliability and safety
- Solid Edge Manufacturing for defining accurate machining processes that improve manufacturing efficiency and product quality
- Solid Edge for Data Management improves the overall efficiency of the product development process, and ensures that accurate product data, bills-of-materials and compliance documents are easily accessible

Manage design projects and engineering change

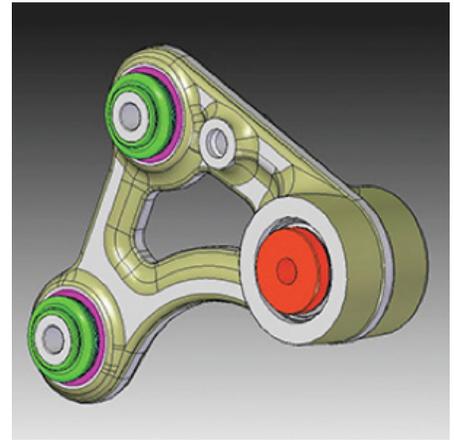
To develop new products faster, manufacturers need to retrieve the data they need quickly, optimize their resources and manage engineering changes efficiently. Solid Edge helps with built-in data management tools for instant searches on properties and where-used references, and efficient revision and release management that require just a few mouse clicks for the designer to complete the task.

Installation and service

Automotive aftermarket firms need to support their distributors for installation and ongoing service of the equipment they manufacture. Solid Edge can be used to create 3D documents that effectively communicate installation, operation and maintenance procedures. Accurate BOM management ensures that the correct spare parts can be supplied to address in-service issues.

Achieving real benefits

Manufacturing firms in the automotive aftermarket industry are achieving significant benefits using Solid Edge. Some examples from recently published case studies include:



- Improved design productivity and product quality
- Reduced design time for award-winning products
- New product introduction rate increased by 43 percent
- Product development time reduced by 50 percent
- Control material costs and optimize machine design using embedded, easy-to-use simulation tools
- Improved marketing capability with attractive images and animations

For more information on this offering and to read customer case studies, please visit www.siemens.com/solidedge



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