

# SIEMENS

*Ingenuity for life*

Automotive and transportation

## Hyundai Motor Company

Solid models help optimize assembly line design

### Product

Solid Edge

### Business initiatives

Production efficiency

### Business challenges

Shrink design cycle for assembly lines

Reduce cycle time at each production stage

### Keys to success

Easy-to-use solid modeling

Efficient 2D drafting

Integrated data management

Standardized virtual processes

### Results

20 percent design time reduction versus 2D system

Reduced design time and costs

Increased quality

Fewer repetitive tasks

Optimal process for training new employees

### Solid Edge reduces the time and cost needed to design car body assembly lines

#### World-leading automaker

With its vision of "Innovation for Humanity," the leading Korean automobile maker, Hyundai Motor Company, has worked hard to enhance quality and significantly increase its brand value. The company has received praise from leading international organizations and has been selected as a Top 100 brand for two consecutive years. The company has positioned itself as a global automobile maker.

Hyundai Motor Company invests five percent of its sales in R&D to increase competitiveness, achieve quality and create products and technology ability that will satisfy customers. As a result, in April 2004, its Sonata, a medium-sized passenger car, ranked first in a JD Power survey of

initial car quality. In brand ranking, the company placed seventh, overtaking Toyota, Mercedes Benz and BMW, while it ranked second together with Honda in company rankings. These metrics, along with the company's success among consumers, illustrate a level of quality and technology that are recognized all over the world.

#### Designing the car body line

Hyundai Motor Company's automation design team uses the Solid Edge® design solution from Siemens PLM Software for designing car body assembly lines. Engineers use Solid Edge as the 3D design software for modeling work cells, assembly lines and 3D plant layouts. The company chose Solid Edge for its ease of use in solid modeling as well as the efficiency of its 2D drafting performance and integrated data management.



## Solutions/Services

Solid Edge  
[www.siemens.com/solidedge](http://www.siemens.com/solidedge)

## Customer's primary business

Hyundai Motor Company is South Korea's largest and the world's fifth-largest auto-maker.  
[worldwide.hyundai.com](http://worldwide.hyundai.com)

## Customer location

Seoul  
Korea

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Hyundai continuously incorporates new Solid Edge functionality as it becomes available, such as large assembly modeling and interference checking, for example. The latest version of Solid Edge facilitates the rapid creation of drawings, adds a preview function in all file management areas and delivers complete compatibility with other geometric data (AutoCAD, JT™, NX™, etc). It also brings enhanced file and drawing search functionality, multi-material property information management and machinery elements to the parts library.

Hyundai has used Solid Edge to standardize many design tasks. This work has been done in stages, starting with parts, then moving to purchased parts, cells and finally to production lines. The company has also used Solid Edge to verify robot tasks as well as for OLTP calibration and equipment standardization.

### Faster development, lower costs

Using Solid Edge models, Hyundai Motor Company is able to pre-verify fabrication and manufacturing operations during the design stage. This makes it possible to enhance the quality of the designs, to minimize repetitive tasks and ultimately to increase product quality and reduce the development cycle.



"By using Solid Edge to implement 3D CAD with design management, we have been able to effectively reduce design time and costs," says Jung Hyun Seok, Assistant Manager, Automation Design Team, Hyundai Motor Company. "In addition to solid modeling, we use analysis and simulation to optimize each production stage."

Another benefit of Solid Edge has been the ability to create an optimized process for training new employees. In the future, Hyundai Motor Company's automation design team plans to implement finite element analysis and is also considering implementing product lifecycle management (PLM).

*"By using Solid Edge to implement 3D CAD with design management, we have been able to effectively reduce design time and costs."*

Jung Hyun Seok  
Assistant Manager,  
Automation Design Team  
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