

## Digital Prototyping for the Manufacturing Market

Autodesk is a world-leading supplier of engineering software, providing companies with tools to experience their ideas before they are real. By putting powerful Digital Prototyping technology within the reach of mainstream manufacturers, Autodesk is changing the way manufacturers think about their design processes and is helping them create more productive workflows. The Autodesk approach to Digital Prototyping is unique in that it is scalable, attainable, and cost-effective, which allows a broader group of manufacturers to realise the benefits with minimal disruption to existing workflows, and provides the most straightforward path to creating and maintaining a single digital model in a multidisciplinary engineering environment.

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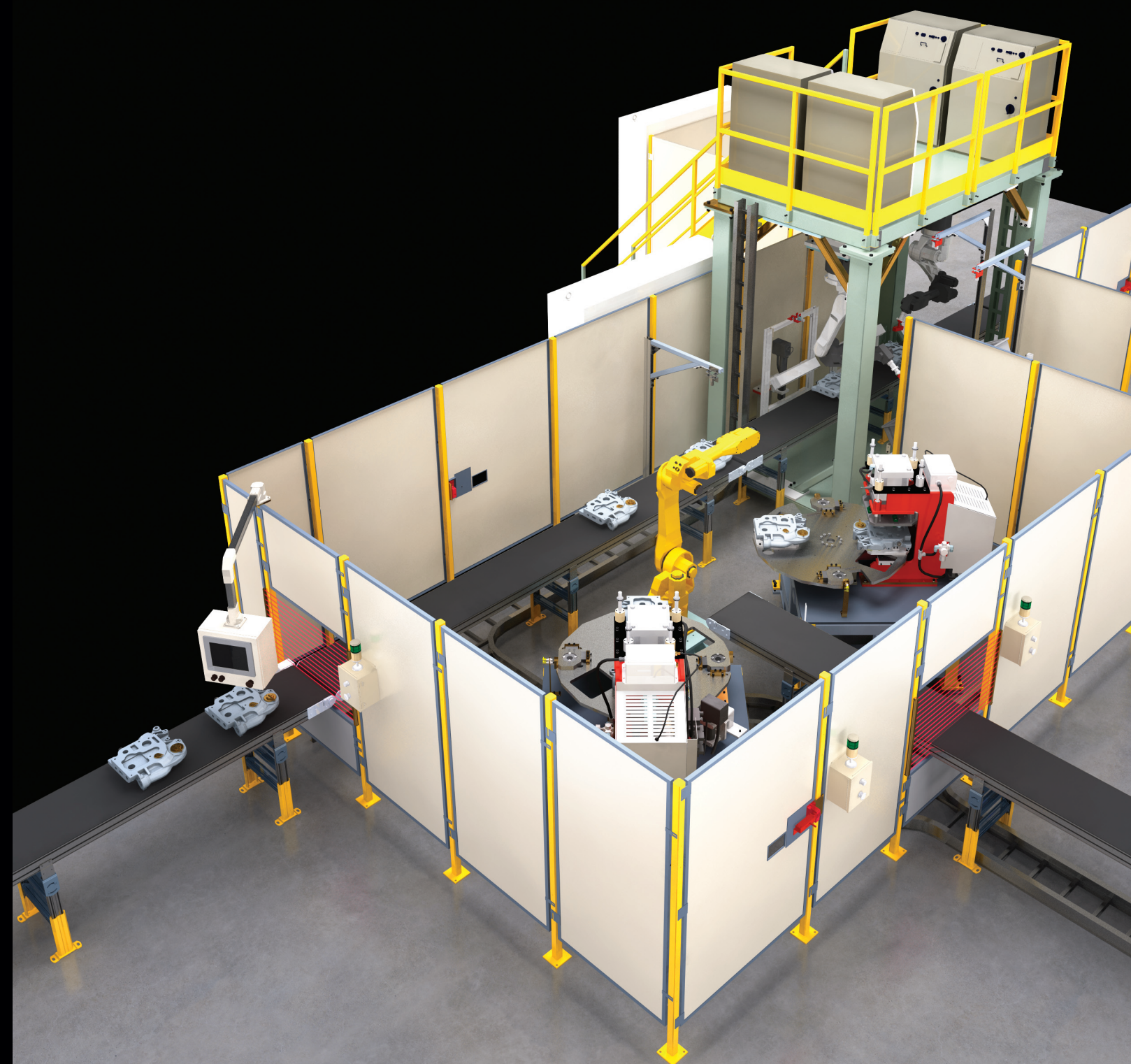
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**Autodesk®**  
Navisworks®

Experience your factory  
before it's built.





# You Can All Get Along

More reliably aggregate, review, and optimise your 3D factory models from multiple formats.

### Facing these issues?

- Difficulty in aggregating data from multiple CAD vendors.
- No easy way to visualise large factory models without access to native CAD systems.
- Requirements to check for factory model interferences before construction or for production line reconfiguration projects.
- Desire to give all stakeholders access to the complete factory layout model for collaboration.

See why Autodesk Navisworks is the right product for large scale factory model data aggregation, visualisation and optimisation.

Autodesk® Navisworks® software for manufacturing, part of the Autodesk® solution for Digital Prototyping, helps you and your extended teams experience more reliable data aggregation, visualisation and collaboration on your most complex projects. Using Autodesk Navisworks software, you can combine together large assemblies consisting of machinery, tooling, layout and facilities data from multiple CAD vendors and create a single, lightweight 3D digital model of your factory. By combining high-quality information created by 3D design applications such as Autodesk® Inventor® software with geometry and data from other CAD software, Autodesk Navisworks software products help enable a real-time, whole-project view for more effective large-scale visualisation and optimisation.

Creating factory designs and production line layouts often involves bringing together product, machine, tooling, fixture, layout and facilities data from different design systems. Combining these large volumes of 3D data is extremely challenging due to various file formats and the sheer file size. Further, the ability to share and communicate the factory design to all stakeholders is inherently limited. In addition, project members often do not have access to the native CAD systems in which the design data was originally created or the knowledge to even work with this data.



Production Line

# Help Reduce Factory Commissioning Time

Autodesk Navisworks software for manufacturing provides companies with a comprehensive set of tools for large-scale visualisation and optimisation, multi-CAD data aggregation of factory models, and team collaboration.

### Multi-CAD Data Aggregation

The aggregation of 3D data from different CAD systems brings together design, manufacturing, factory and supplier data into a single digital model, allowing all stakeholders to use the 3D model to check the design, minimising the need to maintain or have access to different CAD systems. Navisworks is compatible with all major native design & laser scan file formats so data from various sources can be combined together to create a single digital model for review, regardless of size.

### Large-scale Visualisation

Navisworks software for manufacturing allows for the interactive visualisation and smooth real-time walk-through and fly-through of factory models so you can explore even the largest and most complex 3D models. You can visualise products, tooling, fixtures, machines and plant layouts to help discover potential issues before a factory is built or during production line reconfiguration projects. In addition, you can review design performance, as well as help to streamline workflows and reduce waste.

### 3D Digital Review and Interference Checking

Autodesk Navisworks software for manufacturing provides a comprehensive set of 3D digital review tools to help you experience your factory models, including:

- The ability to make detailed measurements of distance, area, and angles.
- Detailed inspection tools for cross sections and section planes.
- 4D simulation that links model geometry to project times and dates for playback of installation or demolition sequences on the factory floor.
- The ability to better simulate the movement of material and machinery handling equipment.

Navisworks software for manufacturing also allows you to check for interferences in a single digital factory model to help you detect potential issues such as space constraints and equipment collisions earlier in the design process to help save time and reduce costs.

### Team Collaboration

Autodesk® Navisworks® Freedom is a free\* viewer that can be used for both Autodesk Navisworks NWD and 3D DWF™ file formats. These highly-compressed lightweight file formats are easily shared with suppliers and partners, giving all stakeholders access to the complete factory model, allowing more reliable information to be more quickly communicated, helping to accelerate design and review cycles so projects can be delivered more on time and on budget.

### Digital Prototyping

Navisworks is part of the Autodesk solution for Digital Prototyping, which connects conceptual design, engineering and manufacturing teams through the use of a single digital model. This single digital model simulates the complete product and gives manufacturers the ability to better design, simulate and visualise their products. This unique approach to the product development process helps companies to reduce their reliance on physical prototypes and bring products to market ahead of the competition.

### Autodesk Navisworks Family of Products

The Autodesk Navisworks family of products helps you build more efficient factories. The product family includes Autodesk® Navisworks® Review, Autodesk® Navisworks® Simulate, Autodesk® Navisworks® Manage and Autodesk® Navisworks® Freedom, which is a free\* viewer for Autodesk Navisworks NWD native files and 3D DWF™ file formats.

### Product Comparison Chart

	Autodesk® Navisworks® Review	Autodesk® Navisworks® Simulate	Autodesk® Navisworks® Manage
Large Assembly Visualisation	•	•	•
Multi-CAD 3D data aggregation	•	•	•
Publishing compressed NWD files	•	•	•
4D Simulation		•	•
Object Animator & Scripter		•	•
Photo Realistic Renderings		•	•
Interference Checking			•