

Autodesk®
Alias®

Design drives success.



Image courtesy of AutoHorizons
Foundation and Delineate

Autodesk®

Innovate Ahead of the Curve

Create the innovative designs consumers want faster than your competition. Autodesk® Alias® software powers your creative design process with advanced sketching, modelling and visualisation tools that help you to realise your ideas in less time.

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Unleash Creativity

Combine creativity and craftsmanship to capture inspirational ideas and forms using the powerful tools in Autodesk Alias software. By addressing the unique creative requirements of the industrial design workflow, Alias software enables designers to iterate concepts rapidly and develop inspiring, ergonomic shapes that also meet your functional requirements.

Perfect Your Designs

Style, form and function all influence a consumer's choice of products. Alias helps you to sculpt 3D models to achieve the perfect union of aesthetics and engineering. With highly advanced curve-based and direct modelling tools in a single software environment, Alias offers the tools you need to sculpt 3D models, refine winning details and create high-quality production surfaces with speed and control.

Communicate Your Vision

Tell the story of your products and help team members and customers to understand your design intent. With real-time 3D visualisation tools and reliable data exchange with engineering CAD software, Alias software helps design and engineering teams to collaborate effectively. Communicate concepts and validate Class-A surface data, so engineering teams don't need to re-create your designs. The visualisation and data exchange tools in Alias software help you to maintain design integrity throughout the product development process, so design review decisions can be made quickly and projects can progress smoothly.

Specialised Design Tools

Alias software offers a full set of industrial design capabilities to meet your requirements for:

- Concept exploration
- Design modelling
- Precision surfacing
- Reverse engineering
- Visualisation and communication
- Collaboration and interoperability



Image courtesy of Astro Studios

Concept Exploration

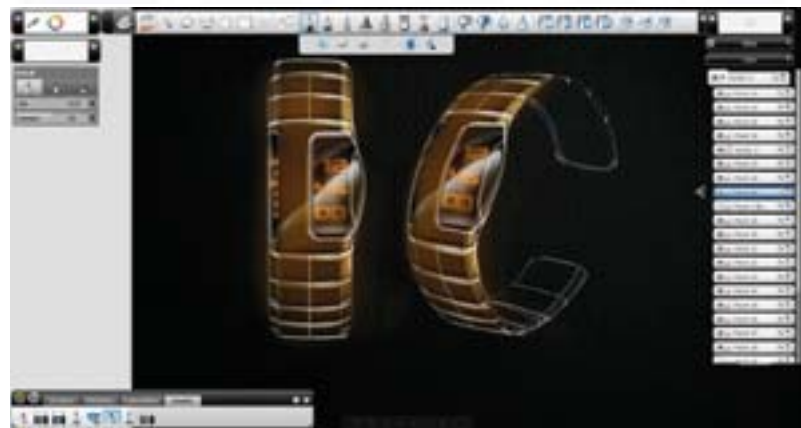
Pursue innovative, improved solutions to the challenges in your design brief. Autodesk Alias software helps you to explore alternatives, experiment with ideas and solve problems.

Complete Sketching and Illustration Toolset

Sketch, capture ideas and communicate your design process in a natural digital sketching environment. Professional-grade drawing capabilities in Autodesk Alias software provide the tools you need for concept illustration, image editing and production artwork, including pencils, markers, erasers, custom brushes, colour editing and powerful image compositing tools.

Intuitive Paint Interface

Make the transition from other 2D applications to Alias software easily and enjoy simpler, more natural painting. Alias can help to speed up your work by giving you instant access to common brush controls through a dynamic hot-spot interface that appears directly under the cursor. Hot-spots combine common key functions so you access the keyboard less often, enhancing your focus on the task at hand.



Integrated 2D/3D Environment

Create sketches at real-world scale and draw over referenced engineering CAD data to help ensure design feasibility. Take several concepts quickly from sketches to 3D without having to invest hours in resolving the details in model form. Take advantage of the flexibility of Alias software: sketch what's difficult to model and model what's difficult to sketch.

Image Editing and Modification

Create design variations easily. A full suite of colour adjustment tools enables you to tweak colours and explore colour alternatives. Alias software provides deform and warp tools to alter the proportion or character of an image and modification tools to make subtle corrections or radical changes quickly and easily.

Autodesk SketchBook Designer

Autodesk® SketchBook® Designer software* provides a unique hybrid paint and vector platform that enables designers to capture design concepts quickly by sketching and painting, then edit their art easily with the precision and control of vectors. Designers can export curve data from SketchBook Designer easily into Alias software, where they can transform their concept sketches quickly into 3D product designs.

*Autodesk® SketchBook® Designer software is included with the purchase of Autodesk® Alias® Design software and Autodesk® Alias® Automotive software.

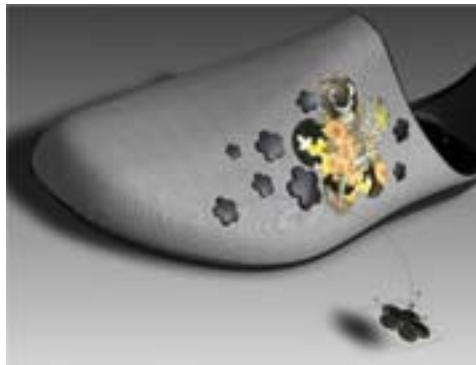
Design Modelling

Refine your 3D models through a creative, iterative process to evolve designs quickly from concept to reality.

Dynamic Shape Modelling

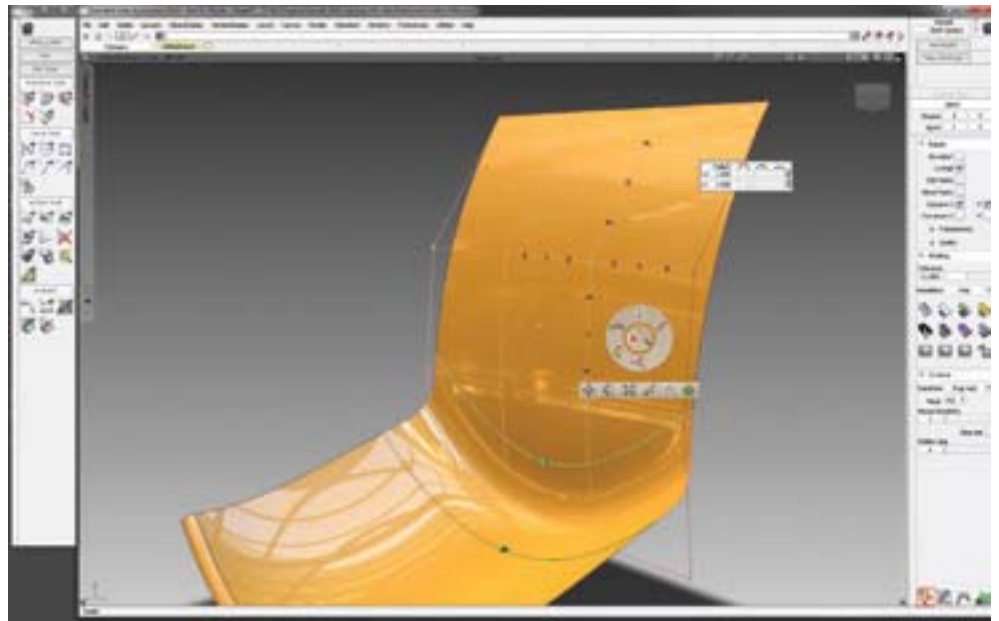
Experiment with shapes at any stage of the design process. Manipulate your model quickly, exploring variations on 3D forms without rebuilding geometry, or make real-time modifications in design reviews. Shape objects dynamically with these powerful tools:

- Lattice rig – Sculpt geometry by manipulating a customisable lattice created around an object.
- Bend – Bend geometry using a curve to control deformation.
- Twist – Twist geometry around a single-axis curve.
- Conform – Conform geometry to the shape of another surface.



Flexible Modelling

Take advantage of a range of surface modelling techniques to construct and visualise nearly any form. Autodesk Alias software combines fast, repeatable curve-based modelling tools with the ability to sculpt 3D models directly.



3D Sculpting

Sculpt surfaces by adjusting surface control vertices. You can use curve-based tools to define a shape at its edges and direct modelling to adjust the shape at any point. With Alias you maintain complete control, helping you to achieve the exact form and surface quality you need.

Automated Modelling Tools

Autodesk Alias productivity tools significantly reduce the number of picks and clicks required in your everyday modelling workflows. Alias software includes tools for fast draft surface creation, easy edge selection and trimming, and even tools that automate multiple common tasks, such as creating fillets and flanges in a single operation or generating panel gaps automatically.

Precision Surface Modelling

Autodesk Alias software provides the Class-A surfacing tools you need to sculpt 3D models, refine winning details and create high-quality production surfaces with speed and control.

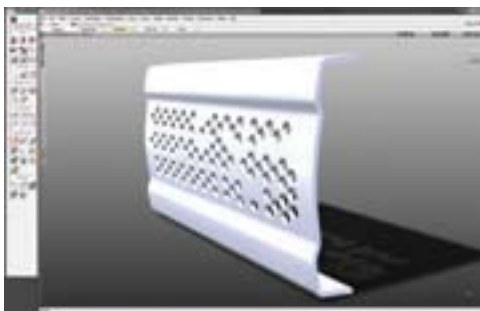
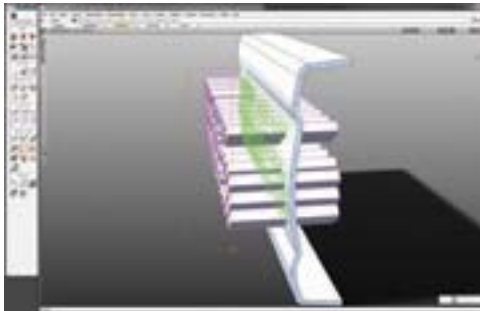
Advanced Surface Creation Tools

Advanced surface creation tools help to ensure that your surfaces maintain positional, tangent or curvature (even G3) continuity with adjacent surfaces for high-quality aesthetic results and manufacturing-ready data.



Trimmed Surface Paradigm

Trim and form edges of new surfaces precisely. Share trimmed geometry among modellers while retaining precision.



Explicit Surface Control

Maintain explicit control over surfaces, creating the lightest, highest-quality geometry. Build single-span Bézier geometry or multispans NURBS geometry and define the number of spans and the degree of your curves and surfaces.



Align Tool

Apply specific boundary conditions to your curves and surfaces quickly. The align tool provides a focused, intuitive interaction that is supported by a new maths capability that delivers optimal surface construction. Align surfaces accurately to the highest level of continuity while maintaining the surface quality you require.

Model Evaluation

Verify the quality of created surfaces, including patch boundary, curvature and radii analysis. This helps to ensure that geometry can be used by CAD programs and will meet manufacturing requirements. Get help fine-tuning your models with Alias analysis tools that provide instant numerical or graphical feedback to verify surface conditions such as curvature maps, zebra stripes and draft angles quickly.



Reverse Engineering

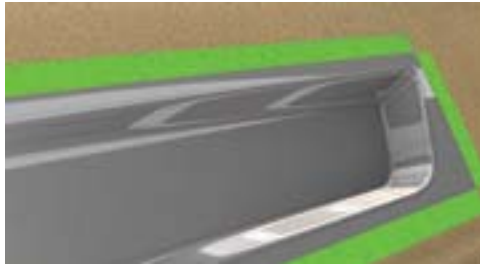
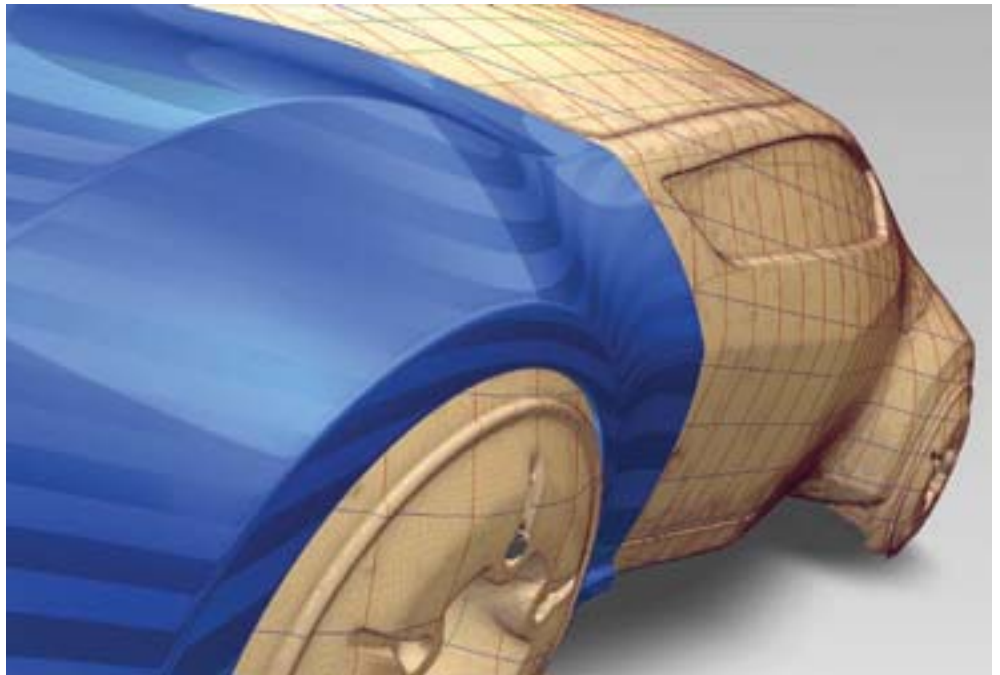
Move easily between the analogue and digital worlds. Autodesk Alias software enables you to incorporate changes to a physical model into your digital model.

Scan Data Workflows

Import and configure data from 3D scanners to visualise and reverse engineer consumer product or vehicle models. Alias helps you to simplify and remove data with tools for cutting, smoothing, automatic hole filling and reducing mesh. The software can handle large models with millions of polygons, so you can extract and evaluate shape and form.

Hybrid Modelling

Integrate NURBS data into scan data. Alias allows you to evaluate and refine the resulting hybrid model without resurfacing an entire model, helping to save time and effort.

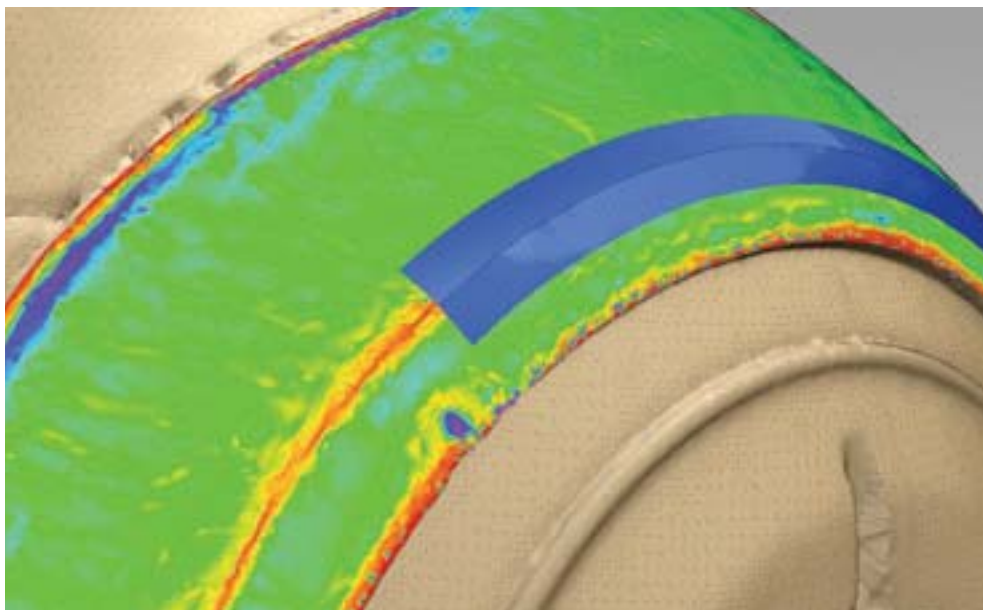


Feature Extraction

Spend less time creating and updating surface models. This specialised tool enables you to extract feature information quickly from scan data.

Surface Reconstruction

Automate the multi-step process of filling holes in scan data. Alias software recognises exterior curvature through user-defined sections by generating a mesh patch.



Visualisation and Communication

Express the emotional character of your design and communicate your design intent to customers and team members.

Real-Time Visualisation

Autodesk Alias software reduces the need for time-consuming renderings by providing immediate visual feedback. Save high-resolution images of any modelling window instantly without running a full software rendering. Use shading models to increase realism and to evaluate surfaces and design forms. The software supports material colour, texture, glow, incandescence, bump and displacement.



Photorealistic Renderings

Using near-photorealistic rendering capabilities in Alias software, you can create images for print, video, animations or interactive presentations. Alias raycast and ray-trace renderers incorporate ambient occlusion calculations (soft shadows) and high dynamic range imaging (HDRI) support for added realism.



Image courtesy of Daniel Simon, Cosmic Motors

Annotation Tools

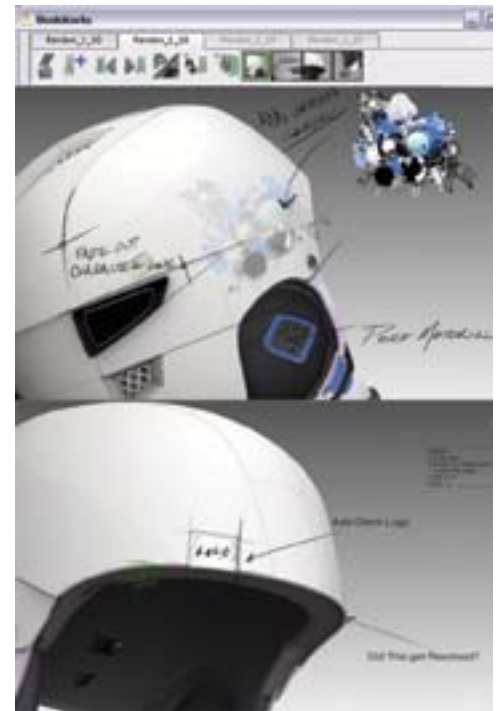
Evaluate and review designs with ease. Take advantage of your entire screen space, working with only the necessary interface aspects. Alias software provides a full set of annotation tools, including bookmarks, full-screen capabilities and pencils and markers.

Reference Data Workflow

The Reference Manager gives teams the ability to review massive amounts of 3D geometry and interact directly with detailed digital models while maintaining interactive performance. Take advantage of fast loading speed and alternative shading – such as diagnostic shading, transparency and visual cross sections – to generate and compare multiple design variations for engineering and design reviews.

Built-in Environments and Lighting

Tell the story of your product design in context with real-time, interactive 3D product visualisations. Render shading based on an omnidirectional light source, take advantage of ambient occlusion and soft shading or use HDRI as the light source for more realistic images for evaluating, presenting and marketing designs. Autodesk Alias software features geometric environments with built-in HDRI lighting and reflections, making it easier than ever to create stunning product visualisations in realistic settings.



Collaboration and Interoperability

Share Class-A surface data and collaborate effectively so that engineering teams don't need to re-create your designs.

Autodesk Interoperability

Collaborate more easily with designers and engineers using other Autodesk® applications, such as AutoCAD® software, using the DWG™ data format. The bidirectional interoperability between Alias and Autodesk® Inventor® software enables Alias users to read Inventor data directly, while Inventor users are able to read native Alias .wire files, including surface, shell, solid and curve data, directly. Autodesk® 3ds Max® Design users can now import .wire files natively into 3ds Max Design as Bodies objects, preserving object names, hierarchies, layers and material names.



DWF File Format

Create DWF™ files from Alias data with a single click. The DWF format protects the integrity of a design so you can publish, render and print even the most complex digital models precisely.

Model Verification

Bridge concept design and manufacturing with improved sharing of your design data. Autodesk® Inventor® Fusion software*** expands the capabilities of Alias for validating, repairing and making models CAD-ready for engineering. Inventor Fusion helps to make it easier to test geometry created in Alias software to predict and diagnose problems when transferring to CAD systems such as Autodesk Inventor, SolidWorks and Pro/ENGINEER.

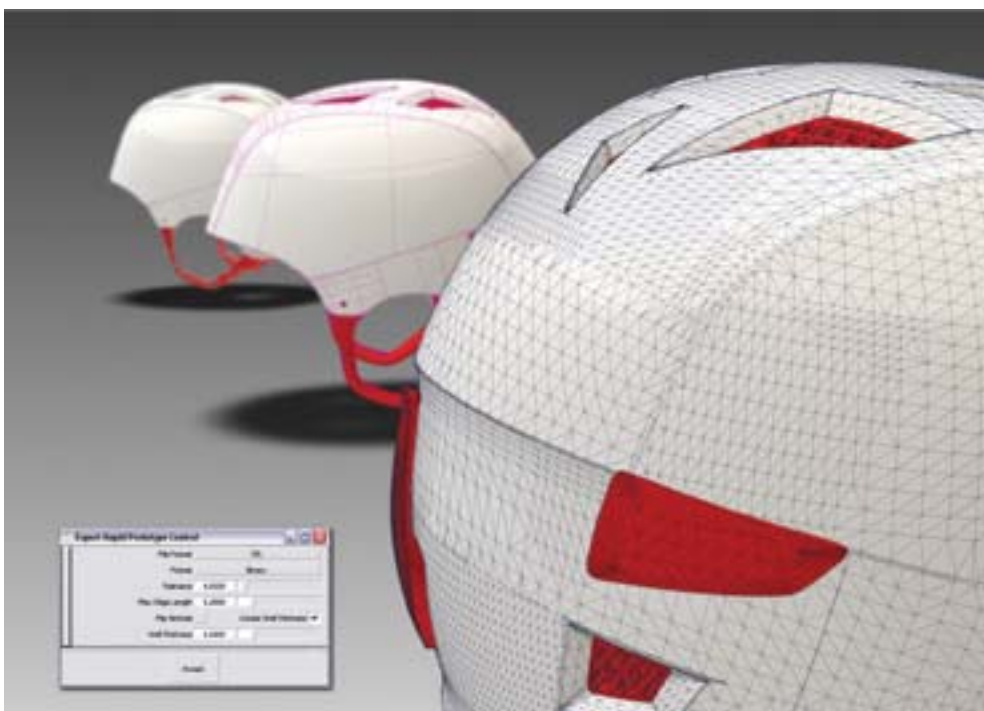


Rapid Prototyping

Build physical prototypes more efficiently from digital models. With rapid prototyping, you can develop and refine designs before committing to production. Print in 3D using STL output for stereo-lithography and export data to computer numerical control (CNC) machines. Alias software supports 3D printing in colour with ZPR file format (Windows® only).

Reliable Data Exchange

Exchange digital design data with engineering teams using fast, high-quality CAD translators for industry-standard data formats such as DXF™, IGES and STEP. You can also integrate Alias software into your development pipeline with Autodesk® DirectConnect data translators, offering bidirectional sharing with CAD software packages such as CATIA®, UG® NX**, Pro/ENGINEER®, PTC Granite®, JT and SolidWorks® software.



**Autodesk® DirectConnect data translators for UG® NX sold separately.

***Autodesk® Inventor® Fusion software is included with the purchase of Autodesk® Alias® Design and Autodesk® Alias® Automotive software.

Autodesk Alias Product Line

The Autodesk Alias product line, part of the Autodesk solution for Digital Prototyping, powers your creative design process with advanced sketching, modelling and visualisation tools that help you to create innovative designs faster than the competition. The product family includes Autodesk® Alias® Design, Autodesk® Alias® Automotive and Autodesk® Alias® Surface software.

Autodesk Alias Design

Autodesk Alias Design is 3D product design software for industrial designers who control the entire creative process, from ideation to the final surfaces that are passed to engineering. Designers can create production-quality geometry and share it easily with engineering CAD applications, enabling collaborative product development.

Autodesk Alias Surface

Autodesk Alias Surface software offers a full set of dynamic 3D modelling capabilities that enables virtual modellers to evolve concept models into high-quality production surfaces for consumer product design and Class-A surfaces for automotive design and styling. Alias Surface software enables designers to handle large amounts of scan data efficiently and create such high-quality surfaces that engineering teams don't need to re-create them.

Autodesk Alias Automotive

Autodesk Alias Automotive is an industry-leading application for automotive design and styling. Chosen by leading automotive styling studios throughout the world, Alias Automotive software provides a comprehensive set of modelling, visualisation and analysis tools for the entire car design process, from concept sketches through to Class-A surfacing. With an advanced workflow, the software helps automotive companies to produce design iterations quickly, reduce rework and bring cars to market faster.

	Alias Design	Alias Surface	Alias Automotive
Capabilities			
Concept Exploration			
Complete Sketching and Illustration Toolset	•		•
Intuitive Paint User Interface	•		•
Integrated 2D/3D Environment	•		•
Autodesk® SketchBook® Designer	•		•
Design Modelling			
Dynamic Shape Modelling	•	•	•
Flexible Modelling	•	•	•
3D Sculpting	•	•	•
Automated Modelling Tools	•	•	•
Precision Surface Modelling			
Advanced Surface Creation Tools		•	•
Explicit Surface Control		•	•
Trimmed Surface Paradigm		•	•
Align Tool		•	•
Surface Evaluation		•	•
Reverse Engineering			
Scan Data Workflows		•	•
Feature Extraction		•	•
Hybrid Modelling		•	•
Surface Reconstruction		•	•
Visualisation and Communication			
Real-Time Visuals	•	•	•
Built-in Environments and Lighting	•	•	•
Photorealistic Renderings	•	•	•
Annotation Tools	•		•
Reference Data Workflow	•	•	•
Collaboration and Interoperability			
Autodesk Interoperability	•	•	•
Reliable Data Exchange	•	•	•
DWF™ File Format	•	•	•
Rapid Prototyping	•	•	•
Autodesk® Inventor® Fusion	•		•

Digital Prototyping for the Manufacturing Market

Autodesk is a world-leading supplier of engineering software, providing companies with tools to design, visualise and simulate their ideas. 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 to 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 multi-disciplinary engineering environment.

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