Geomagic® Freeform®
Geomagic® Freeform® PLUS

Modeling Without Limitations for Manufacturing

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Geomagic Freeform is a multi-purpose design platform for creating complex, sculptural, production-ready 3D models for 3D printing, or mold and die manufacturing.

Design the Impossible

Geomagic Freeform picks up where your traditional CAD system stops. Now you can design like never before – sculpting beautiful, detailed forms – and still be able to work within established engineering design workflows. With Freeform you're not constrained by anything except your imagination.

Manufacture Directly From Your Designs

Geomagic Freeform Plus' specialized features allow you to identify and fix potential manufacturing issues early in the design process. You can retain artistic control while avoiding production surprises and costly mistakes. Freeform models go smoothly into your 3D printing, or mold and die manufacturing workflow.

Reduce Reliance on Multiple CAD and Design Tools

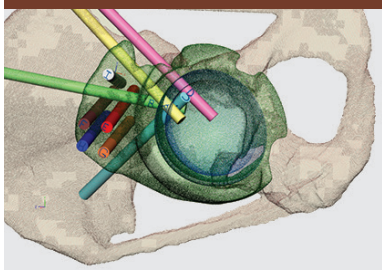
Geomagic Freeform is unique in its ability to handle voxels, polygons, subdivision and NURBS solids and surfaces in one design environment. This allows you to use the right representation for the right job, giving you more choices and enabling incredibly fast, flexible workflows. Freeform's robust file import and export formats allow you to easily combine sculpted designs with traditional CAD models.

Marry Mechanical Design with Freeform Design

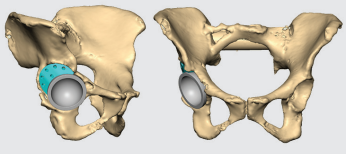
You can take advantage of both CAD and Freeform design with Geomagic Designer Packages, which combine Geomagic Design, a full-featured mechanical CAD software, with Geomagic Freeform. Design complete assemblies, perform motion simulation, generate beautiful renderings, and output complete engineering drawings.

Industries

Patient Specific Surgical Planning for Medical Implants, Orthotics and Prosthetics

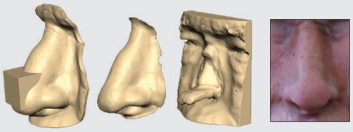


Surgical Planning



Medical Implants

Orthotics



Prosthetics

Craniomaxillofaical

Used by the World's Leading Companies in Toys, Consumer Products, Jewelry, Home Decor and More.

Consumer Product

Coins

Home Deco

Jewelry

Toys

Collectibles

Figurines

Touch-Enabled 3D Sculpting for Manufacturing

Model for Manufacturing

Geomagic Freeform provides the tools you need to create manufacturable designs and mold inserts, such as draft analysis, fixing tools, no-fail shelling, thickness analysis, and complex parting surface development. When your designs are complete, Freeform delivers watertight models that are ready for 3D printing, CNC machining, molding and other production workflows.

Powerful and Flexible Tools

Use voxel modeling to sculpt, detail and deform virtual clay models into any form you desire. Or use the power of SubD and NURBS modeling to create more constructed, smooth forms. Or mix and match between voxels, SubD, polygons and NURBS as desired. Add instant, custom 3D textures for a perfect finish, and output to 3D printing or another CAD/CAM system.

Design at Your Fingertips, Literally

For faster model creation with ultimate freedom of expression, Freeform uses the Geomagic Touch family of haptic devices. With force feedback to deliver a real touch sensation, and true six-degree-of-freedom input, you use the natural hand movements you are already familiar with. This more intuitive way of interacting with your 3D models gives you a dramatically reduced learning curve. Freeform gives you all the speed and sensation of hand sculpting with the benefits of a digital workflow.

Design within a 3D Workflow

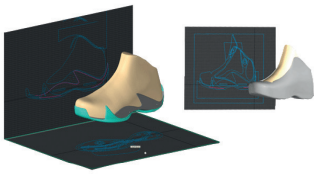
Robust interoperability tools handle import and export of neutral 3D file formats (STL, OBJ, PLY, VRML); IGES curves; and Parasolid, IGES and STEP solids. With this kind of freedom, it's easy to seamlessly exchange and integrate 3D design data from various sources.

Workflows

Sample Concept Model Workflow

Import Design Sketches › **Build** › **Detail** › **Presentation**

- Free hand drawing
- Vector artwork



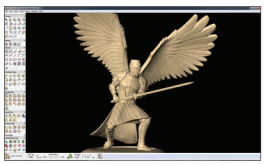
- Start from a blank screen or build on imported reference models
- Reference imported design sketches

- Add real geometry textures
- Add complex features and details

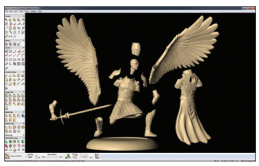
- Photo-realistic renderings for digital reviews and brochures
- Send to 3D print for physical reviews

Create Production Ready Models

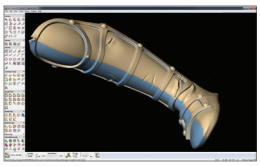
Initial Sculpt › **Engineer the Assembly** › **Dynamic Draft Analysis** › **Mold Insert Design** › **Manufactured Part**



- Start with the initial sculpt made in Freeform
- Or start with an imported file

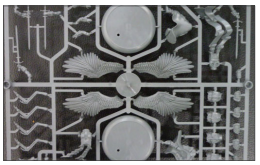


- Define simple and complex cutting surfaces
- Add assembly geometry
- Shelling that never fails



- Tools to assess best mold directions
- Real time analyses as you model
- Tools to automatically fix undercuts

- Define complex split lines
- Develop complex parting surfaces
- Pass fully surfaced, mixed-mode or fully polygonal data to machining



- Create physical parts from digital models with unbelievable detail and complexity

Geomagic Freeform Version Comparison

Functionality	Freeform®	Freeform® PLUS
Voxel Based Modeling	●	●
Manual/Pattern Piece	●	●
Pattern/Emboss Bitmap Along Curves	●	●
Mesh modeling tool set	●	●
Sub D Modeling and Texturing	●	●
Conversion of SubD to NURBS for watertight solids		●
NURBS Solids/Surfaces Features		●
Object List Functionality	●	●
Evaluate and Analyze Features	●	●
Fix Draft/Draft Selection; Split Joint Design		●
3D Import NURBS - IGES, PARASOLID, STEP		●
3D Import Polygons - STL, OBJ, PLY, ZCP	●	●
2D Import Formats - AI, PDF, DXF, JPG, BMP, PSD	●	●

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About 3D Systems

3D Systems is a leading provider of 3D content-to-print solutions including 3D printers, print materials and on-demand custom parts services for professionals and consumers alike. The company also provides CAD, reverse engineering and inspection software tools and consumer 3D printers, apps and services. Its expertly integrated solutions replace and complement traditional methods and reduce the time and cost of designing new products by printing real parts directly from digital input. These solutions are used to rapidly design, create, communicate, prototype or produce real parts, empowering customers to create and make with confidence.