Geomagic Freeform®

Geomagic® Freeform Plus™

Precise. Organic. Engineered.

OR3D
Digitise Dimension Design

3D SYSTEMS®
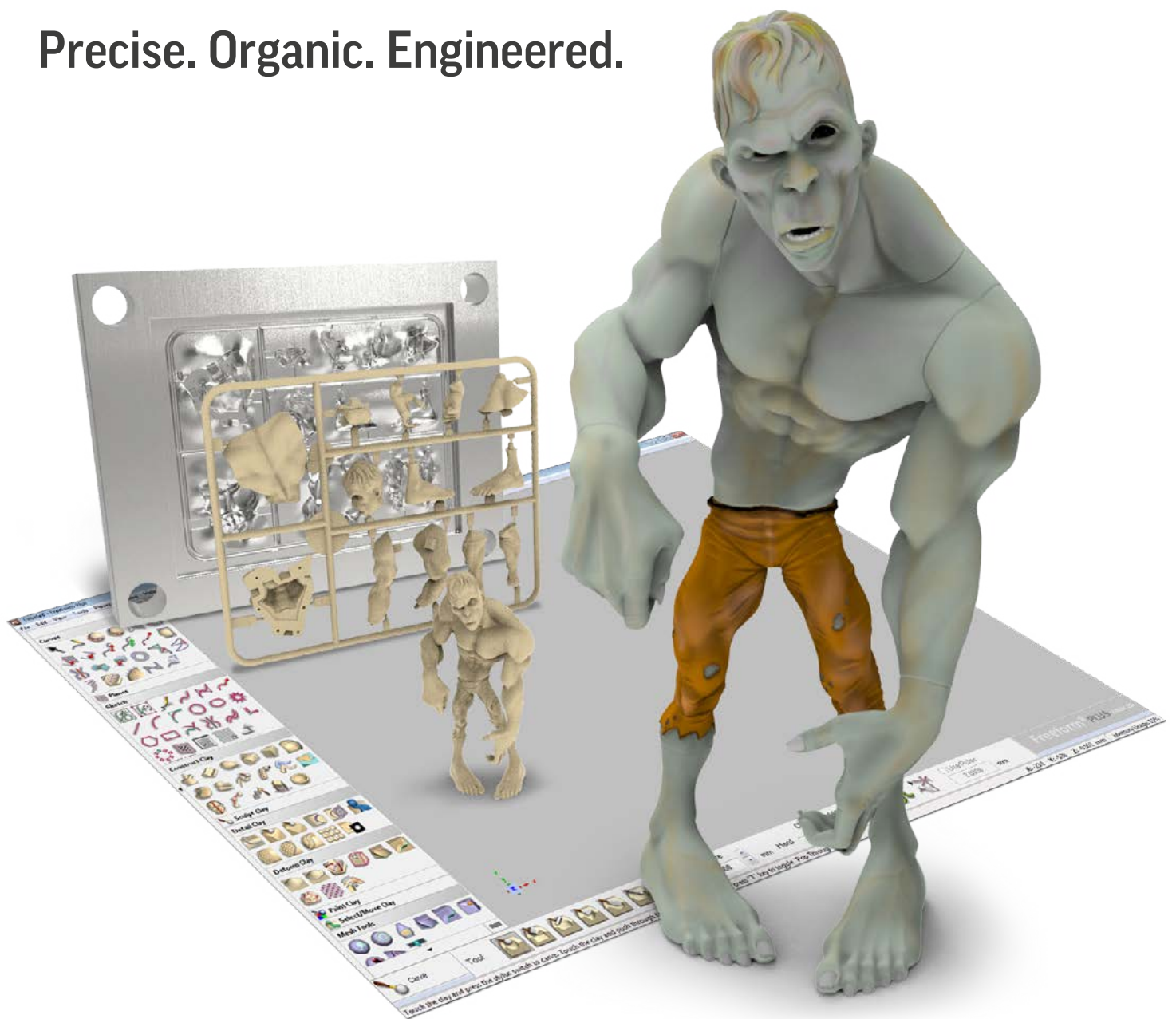
Geomagic Freeform®

Geomagic® Freeform Plus™

Geomagic Freeform® and **Freeform Plus**™ enable you to solve complex design and manufacturing challenges. The industry's most comprehensive organic 3D engineering tools combine touch-based sculpting, surfacing, design intent modeling, 3D Scan processing, CAD interoperability and mold making. Get the sensation of clay modeling with the benefits of digital design.

Design With A Different Approach

Break through the limitations of traditional CAD design and bring your visions to reality. Geomagic Freeform offers a comprehensive design and sculpting toolset allowing you to sculpt, detail and deform virtual clay models into any form you desire. Geomagic Freeform Plus takes these toolsets into advanced manufacturing design including automatic conversion of digital clay and polygons to NURBS surfaces, mold and die design, shelling, draft analysis, parting line and surface creation tools for complex organic shapes.

Design Anything with Built-in Precision

Geomagic Freeform picks up where traditional CAD software stops. This hybrid modeling system has the flexibility and benefits of many different modeling paradigms incorporating Surfaces, Solids, Mesh, SubD, and Clay. Make smooth surfaces and razor sharp edges with SubD, model precisely defined CAD shapes with NURBS and Solids or deform and emboss shapes with Clay.

Perfectly Realistic Renderings

Amaze and delight your clients or colleagues with high definition KeyShot for 3D Systems for fast and beautiful renderings of your designs. A wide range of preset materials, lights and cameras let you create stunning renderings. For highly customized renderings, KeyShot includes tools to create high-resolution images, custom materials and sophisticated lighting.
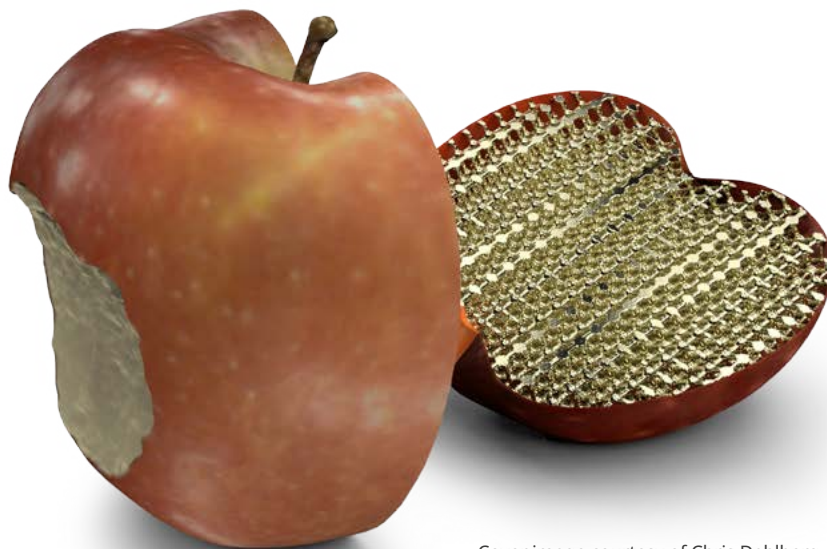
Add Organic Design to Traditional CAD

Geomagic Freeform is purpose-built to get your design into production, including its robust interoperability tools to handle import and export of 3D file formats including STL, OBJ, PLY, IGES, STEP and other neutral formats. Freeform Plus supports additional CAD formats. Combine CAD files with sculpted features to create accurate organic solids that are defined by explicit dimensions.

Add Structure to your Design

Geomagic Freeform's comprehensive StructureFX™ toolset delivers the freedom to select existing patterns or create custom complex, internal and external lattice structures for lightweight and beautiful designs. Advanced tools create functional cages for applications such as custom medical implants. These tools work alongside the advanced 3D print analysis tools for perfect and successful 3D printing of your designs.

Cover image courtesy of Chris Dahlberg, www.lonehorsemen.com
Apple scan courtesy of Artec, www.artec3d.com

Precise. Organic. Engineered.

Quickly Import and Repair 3D Data

Easily import STL, CAD, scan and other 3D data from any source and instantly use them in your designs. Quickly repair faulty and low-grade 3D data into smooth workable models. Employ sculpting and embossing tools to form texture layers into real, physical geometry that can be immediately 3D printed, used in traditional manufacturing or easily exported in a wide range of formats for downstream workflows.

Manufacture Directly from Your Designs

Geomagic Freeform Plus allows you to identify and remedy potential manufacturing issues early in the design process so you can retain artistic control while avoiding production surprises and costly oversights. Confidently 3D print your designs with pre-printing analysis tools to ensure the part prints right the first time. You can also use Freeform data to quickly 3D print casting patterns for fast, accurate creation of investment casts. Powerful voxel technology exports water-tight models requiring no additional costly model repair software.

Easily Communicate in 3D

The stand-alone Freeform Viewer will display clay models from Geomagic Sculpt and Geomagic Freeform. Simple visualization, zoom, rotate, pan, measure and cutaway tools allow others to see a model without having to be proficient in the software.

Capture to Freeform

Capture physical objects in 3D directly inside Freeform using the Geomagic Capture® 3D Scanner - the most powerful, integrated, industrial-grade 3D scanner and software system. Bring the real world into the digital world, and leverage existing shapes and designs in your own. Add complex design elements and build creative models around scanned components.

Use 3D Tools for 3D Tasks

For the ultimate in expressive freedom and faster modeling, Geomagic Freeform products work exclusively with the included 3D Systems Touch haptic devices to deliver the physical sensation of sculpting in a virtual environment. This more intuitive way of interacting with your 3D design reduces learning curves, speeds design and allows you to deliver top-notch 3D data.

Freeform Industries

Academic & Education	Confectionery	Fine Arts & Sculpture	Packaging
Automotive & Motorcycle	Consumer Products	Footwear	Personal Products
Ceramics	Dental	Home Décor & Housewares	Sporting Goods
Characters & Creatures	Engraving, Relief & Flatware	Jewelry, Coins, Medals	Tooling
Collectibles & Giftware	Film & Video	Medical	Toys & Promotional

Geomagic Sculpt and Freeform Feature Comparison

Geomagic organic 3D engineering systems transform the way designs are brought to life and meet the spectrum of design needs. Geomagic Sculpt offers simple but fast organic design to 3D print. Geomagic Freeform provides the precision, tools and interoperability required for manufacturing product design and Freeform Plus includes advanced mold making capabilities.

FEATURE	SCULPT	FREEFORM	FREEFORM PLUS
Voxel-based modeling	●	●	●
Mesh conversion and boolean support	●	●	●
Mesh modeling and editing toolset		●	●
SubD surfacing, modeling	●	●	●
SubD surface texturing		●	●
StructureFX - LayerFX, CageFX, ShapeFX	●	●	●
StructureFX - LatticeFX		●	●
Bend and twist tools		●	●
Cage and lattice deform		●	●
Advanced masking and selection tools		●	●
Piece alignment and registration tools		●	●
Full HD color rendering with KeyShot for 3D Systems	●	●	●
Manual patterning of pieces onto surfaces or in free-space	●	●	●
Automatic surfacing of clay or polygon models as NURBS surfaces	●	●	●
Conversion of SubD to NURBS			●
Emboss a bitmap along curves	●	●	●
CAD solids and surface tools			●
Complex draft analysis			●
Complex draft correction			●
Automated mold parting line function			●
Mold parting surface extrusion from parting line curves			●
3D import of NURBS formats as mesh or clay	●	●	●
3D import of NURBS formats as NURBS			●
3D import of polygon formats (.stl, .obj, .ply, .xml, .zpr)	●	●	●
3D import of CAD neutral formats (.igs, .iges, .stp, .step)	●	●	●
3D import of CAD native formats (.x_b, .x_t, .sldprt)			●
2D import of graphics formats (import image to plane)	●	●	●
3D export of polygon and 3D print formats	●	●	●
Direct Geomagic Capture scanning	●	●	●
Batch and background reduce and export			●
3D printability analysis	●	●	●
Integration with 3DSprint	●	●	●
Wrap for Freeform			●
Independent clay file viewer	●	●	●

About OR3D

OR3D is a premier partner with 3DSystems, providing CAD, reverse engineering and inspection software tools through the range of Geomagic products. As the UK's main accredited training partner to 3D Systems, we supply and provide training for Geomagic Design X, Geomagic Control X, Geomagic Freeform and Geomagic Wrap.

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3D SYSTEMS

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