

GibbsCAM CAD Interoperability

In order to ensure that GibbsCAM can receive and machine part data, whatever the source, GibbsCAM supports a wide variety of popular computer-aided design (CAD) data formats for exchanging part data.

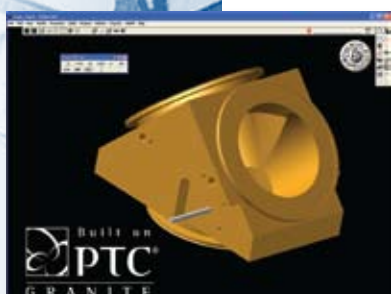
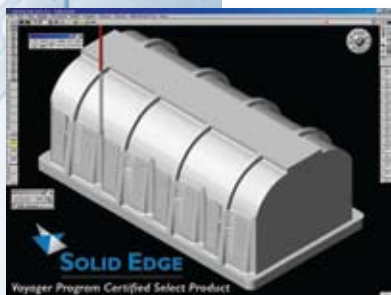
All GibbsCAM packages support *point lists*, *DXF/DWG*, and *IGES* formats. These formats represent the most commonly used formats in use in industry today allowing part data to be read in from almost any source. Coordinate measurement machines or 3D scanners are a common source of point list data. DWG and DXF are native formats of AutoCAD[®], AutoCAD Mechanical[®] and the Mechanical Desktop[®], and are also used by non-Autodesk applications. IGES (Initial Graphics Exchange Standard) has been a leading industry standard format for the exchange of engineering drawings and geometry (wireframe surface and more recently – solid models). Whether point, wireframe, surface or solid geometry is read into GibbsCAM depends on both the data format and the specific GibbsCAM configuration. Once read into GibbsCAM, problem geometry can be repaired using GibbsCAM's powerful healing technology. Surface models can be automatically stitched into solids allowing GibbsCAM's powerful solids-based technology to be applied.

Solid modeling is the standard method to represent parts for most modern CAD applications. To ensure the highest level of data exchange fidelity, Gibbs licenses the *Parasolid[®]*, *ACIS[®]* and *Granite[®]* solid modeler kernels. These three systems are the most popular, mainstream solid modeling kernels used by numerous CAD applications. Gibbs also licenses libraries to directly read *CATIA[®] V4* and *CATIA[®] V5* format files.

To ensure the ultimate level of interoperability, GibbsCAM supports reading the native formats of many popular CAD applications, such as *Autodesk Inventor[®]*, *CATIA V4*, *CATIA V5*, *Pro/ENGINEER[®]*, *Rhinoceros[®]*, *Solid Edge[®]*, and *SolidWorks[®]*. This allows GibbsCAM to directly open and machine part files from these CAD systems.

To further enhance interoperability with GibbsCAM, data transfer add-ins have been developed specifically for *AutoCAD Mechanical Desktop*, *Autodesk Inventor*, *Rhinoceros*, *Solid Edge*, and *SolidWorks*. These add-ins augment the CAD application allowing it to transfer part files from their current session directly into GibbsCAM. If GibbsCAM is not running, the add-in will start GibbsCAM. If GibbsCAM is running, it will prompt the user for the appropriate way to accept the part – create a new GibbsCAM session, replace the current part with the incoming part, or add the incoming part to the session.

In recognition for achieving a high level of interoperability, GibbsCAM is certified under the Autodesk Inventor Certified Application Program, is a Solid Edge Certified Select Product, and is a SolidWorks Certified CAM Product. GibbsCAM also supports *STEP* and *VDA-FS*, two international data exchange formats. *STEP* (*ST*andard for the *E*xchange of *P*roduct model data) is an International Standards Organization (ISO) data exchange standard used worldwide. GibbsCAM supports STEP application protocols AP203 and AP214. *VDA-FS* is the trimmed surface exchange format of the German automotive industry group (VDA).



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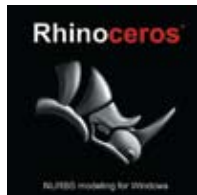
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FORMAT	REQUIRED OPTION	ENTITIES	READ/WRITE	PRODUCTS
Point Lists	All packages ¹	Points	R/W	CMM probe
STL	Solids Import	Facets	W	Stereolithography
DXF	All packages ¹	Surfaces, Solids	R/W	AutoCAD, AutoCAD Mechanical, Mechanical Desktop, DXF-capable applications
DWG™	All packages ¹	Geometry, Surfaces, Solids	R	AutoCAD, AutoCAD Mechanical, Mechanical Desktop, DXF-capable applications
IGES	All packages ¹	Geometry, Surfaces	R/W	Commonly supported by most CAD systems
VDA-FS	VDA-FS Reader	3D Geometry, Surfaces, Solids	R	
STEP AP203	Solid Exchange ²	Surfaces, Solids	R/W	CAD applications that support STEP, such as Alibre Design
STEP AP214	Solid Exchange ²	Surfaces, Solids	R/W	CAD applications that support STEP, such as Alibre Design
Parasolid	Solids Import ³	Surfaces, Solids	R/W	Rhinoceros, Solid Edge, SolidWorks, UGS NX®
ACIS	ACIS SAT Reader	Surfaces, Solids	R/W	Ashlar®, KeyCreator®, CoCreate®, ACIS-capable applications
Granite	Solid Exchange ²	Surfaces, Solids	R/W	IronCAD®, Granite-capable applications
Inventor	ACIS SAT Reader	Surfaces, Solids, Assemblies	R	Autodesk Inventor
CATIA V4	CATIA V4 Reader	3D Geometry, Surfaces, Solids	R	CATIA V4
CATIA V5	CATIA V5 Reader	3D Geometry, Surfaces, Solids	R	CATIA V5
Pro/ENGINEER	Solid Exchange ²	Surfaces, Solids, Assemblies	R	Pro/ENGINEER
		Surfaces, Solids	W	Pro/ENGINEER ATB file
Rhinoceros	Solids Import ³	Curves, Surfaces	R	Rhinoceros
Solid Edge	Solids Import ³	Surfaces, Solids, Assemblies	R	Solid Edge
SolidWorks	Solids Import ³	Surfaces, Solids, Assemblies	R	SolidWorks
Unigraphics/NX	UGS/NX Reader	Solids	R	Unigraphics/NX

Notes:

- 1) Support for DXF, DWG and IGES formats is provided with all GibbsCAM packages. Actual elements handled in the file depends on specific GibbsCAM configuration. DWG support facilitated through Autodesk's RealDWG® technology.
- 2) The Solid Exchange Built on Granite option requires at a minimum the Solids Import option.
- 3) The Solids Import option allows Parasolid data to be read into GibbsCAM, which are then machined by extracting edge geometry from the solid. The 2.5D Solids option is required to directly machine solid models.

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