

# : visi modelling

true hybrid modelling

VISI Modelling is the foundation of all VISI products and provides a robust and powerful solid and surface modelling system based around the industry standard Parasolid kernel. Combined with Vero's surface technology, model analysis and 2D design, VISI Modelling offers complete flexibility to construct, edit, deform or repair the most complex 3D data.

## Extensive range of CAD interfaces

VISI can work directly with Parasolid, IGES, CATIA v4 & v5, Pro-E, UG, STEP, Solid Works, Solid Edge, ACIS, DXF, DWG, STL and VDA files. The extensive range of translators ensures that users can work with data from almost any supplier. The ability to skip corrupt records during the import process provides a platform from where the most inconsistent data can be managed. Very large files can be handled with ease and companies working with complex designs will benefit from the simplicity with which their customer's CAD data can be manipulated.

## True hybrid modelling

VISI provides a dynamic structure from where it is possible to work with either solid, surface, wireframe or a combination of all three without any restrictions. Solid modelling has become a fundamental cornerstone of design but is often limited to prismatic or basic geometry. Solid modelling commands include boolean technology such as unite, subtract, extrude, revolve, sweep, cavity, intersect and hollow. Surfacing technology however provides a different set of tools and techniques for more organic, free-form geometry creation. Surface modelling

functions include ruled, lofted, drive, sweep, n-sided patch, drape, tangent, draft, revolved and piped surfaces. These modelling commands combined with advanced surface editing make it easy to heal imported geometry or construct the most complex 3D data.

## Surface repair and editing

Small gaps between surfaces on imported models can be automatically healed preventing the time consuming process of rebuilding very small surface patches. Where surfaces are corrupt or missing VISI will automatically create the edge curve geometry making it easy to rebuild new faces using the comprehensive surfacing suite. To ensure the new surfaces are within tolerance, the new and the old surfaces can be compared to check for min/max distance and curvature deviation. Closing a surface model to produce a solid body eliminates construction problems later in the design process and immediately brings the benefits of solid modelling to the user. The ability to seamlessly switch between solid and surface technology provides unlimited freedom, ensuring the user can work with difficult CAD data.

Easy to learn  
intuitive interface

Extensive CAD  
interfaces

Industry standard  
Parasolid kernel

Combined wireframe, solid &  
surface modelling

Solid, surface, wireframe &  
mesh geometry deformation

Solid & surface  
boolean operations

Surface repair  
& analysis

Edge tolerance  
manipulation

Powerful  
blending

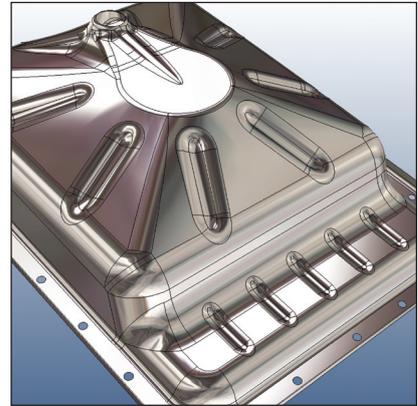
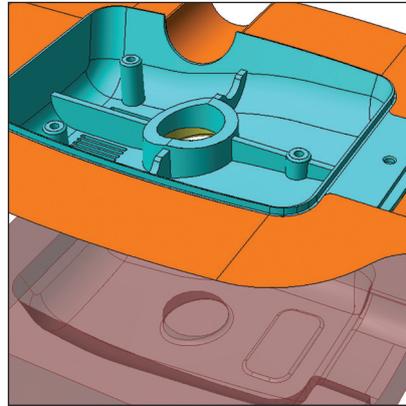
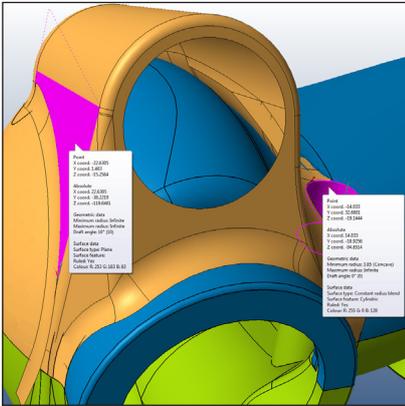
Mechanical curve  
construction

Associative tool  
detailing

Automatic B.O.M.  
creation



Keeping the model within the same product environment throughout the entire project, from design to manufacture will guarantee data consistency and significantly smooth the design process.



### Geometry deformation

Solid, surface, wireframe and mesh data can be easily adapted using a number of mechanically driven deformation tools including stretch, twist, bend and target driven deformation. These tools are ideal for product modifications, applying sheet metal over-bending and allowing designers to try different design variants without the need of additional complex modelling operations.

### Powerful blending

Constant radius, variable radius, disc, hyperbolic and elliptical blends can be constructed directly onto a solid model. Blends can be propagated along tangent edges to quickly sweep across a component. For very complex blending conditions or when working with inconsistent data, blend faces can be constructed as surfaces in an untrimmed state providing greater flexibility. Trimming is easy using either wireframe curves, edge geometry or existing faces.

### Full range of 3D curves

Create a theoretical split line curve or construct 3D curves including iso-parametric, cross section, helix, ellipse, spiral, hyperbolic and other mechanical curves. Advanced curve editing provides the ability to force tangency or periodicity, move control points, join

or extend curves. Combined curve reprocessing allows multiple command combinations to greatly simplify the process of creating high quality curves.

### Ease of use

Simple menu and icon commands with context sensitive on line help make it quick and easy to start using VISI. Dynamic rotation, zoom and pan, together with programmable function keys and mouse buttons help speed up the operation of the software. Unlimited undo and redo operations with user definable bookmarks enable the designer to move backwards and forwards throughout the design process. Multi layer and multi origin control with user definable colour pallets and line styles makes it easy to review, create and work with very complex designs. All information is stored in a single file providing easy access and reducing the burden of data management. Managing one session of the software with all the components available for editing at the same time provides much greater flexibility. Super fast rendering, texture mapping and dynamic sectioning make it easy to visualise CAD files and large assemblies.

### Automatic creation of 2D views

A complete set of 2D detailed drawings can be generated directly from the 3D model. This includes fully editable 2D and isometric section views, automatic dimensioning and hole type and position tables. Individual details can be created from any component in the assembly and displayed as a mixture of 3D rendered and 2D drawings. Any standard catalogue component will have the correct detail representation within a section view. A change in the 3D model will result in a modification to the 2D view along with any fully associative dimensions. Parts list table items and their respective balloon references can be added to the drawing using dedicated assembly management tools.

### Manufacturing modules

All the VISI applications run in one easy to use environment with knowledge based modules available for mould tool and progressive die design. Once the tool design is complete, machining of plates can be completed using feature recognition; drilled hole features and apertures are automatically selected with the correct drilling cycles and 2D milling routines applied. For 3D forms, VISI Machining will create the toolpaths directly on the model incorporating conventional, high speed and 5 axis toolpaths.

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