The modular CAD/CAM/CAE system for tool & die makers
Die Making
- VISI Progress (Unfolding & strip design)
- VISI Progress (Tool design)
- VISI Blank (Blank development)
- VISI Blank (Flange unfolding)

Construction
- VISI 2D CAD
- VISI 3D Surface Modelling
- VISI 3D Solid Modelling
  Standard interfaces include:
  - STEP
  - IGES
  - VDA
  - Parasolid
  - DWG, DXF
  - Solid Works
  - Solid Edge
  - Inventor
- VISI Advanced Modelling

Interfaces
- Catia read
- Catia write
- NX read
- PTC read
- JT Open read & write
- SAT read & write
Vero have been providing world class CAD/CAM solutions since 1988. VISI Machining offers all you need to increase productivity, maximise cutting capacity and reduce delivery times. VISI creates intelligent toolpaths on the most complex 3D parts.

Dedicated high speed milling techniques and built-in smoothing algorithms create highly efficient NC code, reducing cycle times on your machine, and continuously producing high quality components.

### Mould Making
- VISI Flow
- VISI Analysis
- VISI Electrode
- VISI Mould

### Additional Modules
- VISI PDM
- VISI Viewer

### NC Programming
**Milling & Drilling:**
- VISI Machining 2.5-Axis
- VISI Machining 3-Axis
- VISI Machining 5-Axis
- VISI Compass Technology

**Erosion:**
- VISI PEPS-Wire (Wire EDM)
- VISI EDM (Sink Erosion)
VISI MODELLING

2D and 3D CAD

VISI Modelling provides a robust and powerful solid and surface modelling platform 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 or repair the most complex 3D data.

2D Construction
- Extensive construction techniques
- All geometries such as points, lines, circles, splines, profiles
- Trimming, moving, scaling, rotating and mirroring of elements
- Form and position tolerances, surface specifications
- Full dimensioning / measuring functions

3D Solid Modelling
- Dynamic Direct Modelling
- Simple generation of solids
- Feature manager
- Wall thickness analysis
- Model kinematics
- Exploded view
- Drawing creation
- Bill of materials
- Wall thickness analysis
- Model kinematics
- Exploded view
- Drawing creation
- Bill of materials

3D Surface Modelling
- Hybrid solid and surface modelling kernel
- Closure of surface set to solid model
- Comprehensive repair functions
- Creation of complex surface geometry
- Multiple surface types such as ruled, sweep, draft, drape, lofted, pipe, drive & shape, capping, fillet, parting plane, and tangential.

CAD Interfaces
For the import and export of CAD data, the following interfaces are available:
- STEP
- IGES
- VDA-FS
- PARASOLID
- DWG, DXF
- STL
- Solid Works
- Solid Edge
- Inventor

Optional:
- Catia
- JT Open
- NX
- SAT
- PTC
- JT Open
- SAT

VISI Analysis
The geometry analysis functionality and CAD for CAM tools within VISI are especially useful for effective NC programming. Important functions include:
- Model comparison for design changes
- Model curvature & min/max radii analysis
- Hole capping
- Model thickness
- Draft analysis
- Surface extension / run off face construction

Hole construction with Feature Manager & automated CAM processing

CAD for CAM functionality such as surface extension and dynamic run-off face construction

CAD for CAM functionality such as fillet radii analysis, feature removal, and complex hole capping
VISI Machining provides a practical, intuitive and simple solution for 2D programming including positional indexing. Geometry based feature recognition can select both wireframe and solid features, automatically creating reliable milling and drill cycle toolpaths.

**General Features**
- Tool, extensions and tool holder libraries
- Obstacle Management
- Full CNC kinematic simulation with material removal
- Multi-sided machining with automatic reversal of the cutting direction
- NC Report as HTML or XLS file

**Feature Recognition**
The feature recognition engine evaluates the model topology and automatically detects manufacturing features with the correct drilling cycles and milling routines applied. The following feature types are recognised:
- Drilling: centre drilling, tapping, reaming, boring, helical milling, thread milling and mill drill cycles
- Pockets: open, rectangular, circular, irregular and rounded
- Bosses: rectangular, circular, irregular and rounded
- Complex Features: multi-step pockets with taper and fillet radii

**Drilling**
- Recognition of hole and pocket features from all directions for automatic multi-face processing
- User-defined complex cycles
- Deep-hole drilling with feed-rate reduction for hole intersections
- Support for CNC canned cycles

**Milling**
- Milling with radius compensation
- 2.5D milling for complex features - extrusion, revolution or sweep
- Pocketing with multi-level nested pockets
- Automatic residual stock detection
- Spiral or zigzag face milling
- Milling by successive passes starting away from the material, gradually moving inwards

**VISI Compass Technology**
Compass Technology is an engine that uses rules based manufacturing methods to produce intelligent CAM cycles for model features. Milling data such as cutting method, tool diameter, step over / step down; and drilling parameters such as pecking method, or the need to use counterbore or pocketing cycles for larger hole diameters can all be driven by the feature topology. Simple adaptation of the compass rules to customer-specific manufacturing methods can result in significant time savings and error reduction. Deployment of proven company standards will guarantee manufacturing consistency across any job, and any operator.

- CAM data read directly from VISI Mould and VISI Progress component libraries
- Automatic generation of machining programs for drilling cycles, profiling and pocketing operations
- Diameters, depths and drilling parameters read directly from the model eliminate the possibility of MDI errors
- Optimisation of the toolpath movement ensures the shortest distance for tool travel and reduces cycle times offering maximum productivity
VISI MACHINING

3 + 2-Axis Machining

VISI Machining 3D is the module for machining complex 3D solids, surfaces, and STL models. The operator can choose from a variety of features and machining strategies which include dedicated high speed milling techniques and built in smoothing algorithms to create highly efficient NC code.

General Features
- Tool, extensions and tool holder libraries
- Full CNC kinematic simulation with material removal
- Tool path limit control using angle deviation, coordinates, profiles and check-surfaces
- Dynamic incremental stock updates
- Complete collision check for tool and tool holder
- High speed optimised toolpath movements
- Fast toolpath calculation times with multi-threading processor support
- Customisable post processors
- Toolpath templates for part families
- Smooth point distribution

3D Base Strategies
- Multiple roughing techniques
- Rest material roughing
- Parallel cuts (copy milling)
- Constant Z finishing
- Helical finishing
- Rest material finishing (calculation based on a reference tool)

3D Pro Strategies
- Adaptive, trochoidal-shaped rough machining
- Deep cavity roughing strategies which support multiple tool lengths / tool extensions
- Rib machining - Combined roughing and finishing on the same Z plane for thin ribbed geometry such as electrodes
- Combined finishing strategies for steep and shallow areas
- 3D constant stepover finishing
- Residual material finishing - Calculation based on a residual stock model or reference tool diameter
- Spiral/Radial finishing
- 3D curve machining
- ISO-Machining for single or multi-surface selections. Extremely useful for fillet radii or picking out small areas without having to machine the entire component
- Pencil milling
- Flat surface machining of planar surfaces

Finishing cycle for steep and shallow areas

3D constant stepover for high quality surface finish

3D rest machining of fine details such as small fillet radii
**VISI MACHINING**

**3-Axis to 5-Axis Conversion**

All 3D toolpaths can be converted to 5-axis operations which dramatically increases the number of strategies available to cover any machining scenario. The 5-axis conversion provides intelligent collision detection and will automatically tilt away from the piece only when required. Benefits include the use of shorter, more rigid cutters, higher feed rates, and improved surface finish. Auto Tilting will put 5-axis machining into the hands of people who’ve never used it before whilst keeping cutting efficiency at a maximum.

- Extremely easy to use
- Short programming times
- High quality surface finish
- Full gouge protection with tool & tool holder

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**VISI MACHINING**

**5-Axis Simultaneous Machining**

This module is used for complex parts with deep cavities, high and steep surfaces, undercuts and small radii. Generally this would involve the use of tool extensions or longer tools which would increase the risk of deflection and provide a poor surface finish. By approaching from a different angle, the user can benefit from the use of shorter tools, increasing tool rigidity. As a result, a constant chip load and higher cutting speed can be achieved which will ultimately increase tool life and produce a high quality surface finish.

**5-Axis Machining Strategies**

- Finishing and roughing
- Constant Z (waterline)
- Parallel cuts (copy milling)
- Between two guide curves
- 5-Axis trimming
- Turbine / Impeller / blisk machining
- Intelligent toolpath editing
- Synchronisation curve support for tool movement control
- Full gouge protection with tool & tool holder
**VISI**

**Software for improved efficiency**

VISI is acknowledged as the leading CAD/CAM software solution for the Mould & Die industries. VISI offers a unique combination of fully integrated wireframe, surface and solid modelling technology, comprehensive 2D, 3D and 5-axis machining strategies with dedicated high speed routines.

Industry specific applications for plastic injection tool design including material flow analysis and progressive die design with step-by-step unfolding provide the toolmaker with unsurpassed levels of productivity.

With its comprehensive range of CAD interfaces, VISI eliminates the links between varying software suppliers and the solid-to-surface or CAD-to-CAM geometry conversions required by traditional systems.

- Industry focussed technology
- Efficient and practical solutions
- Single environment for design & manufacture

"We are very happy with VISI, as the software works in the same way as a toolmaker thinks. That makes VISI easy to learn and quick to integrate."

*Manfred Deifel, head of toolmaking at Rafi GmbH & Co. KG*

For more information, please do not hesitate to get in touch

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**VERO SOFTWARE**

**We speak your language**

Vero Software is a world leader in CAD/CAM software with a proven track record of reliable product delivery. Vero develops and distributes software for aiding the design and manufacturing processes, providing solutions for the tooling, production engineering, sheet metal, metal fabrication, stone and woodworking industries. Despite the diversity of application, these solutions have one thing in common: they all address the rising challenges of achieving manufacturing efficiencies and bring huge value to the operations where they are deployed.

The company has direct offices in the UK, Germany, Italy, France, Japan, USA, Netherlands, China, Korea, Spain and India supplying products to more than 45 countries through its wholly owned subsidiaries and global reseller network.

**Part of Hexagon**

Vero Software is part of Hexagon, a leading global provider of design, measurement and visualisation technologies that enable customers to design, measure and position objects, and process and present data.

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**Vero Software**

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