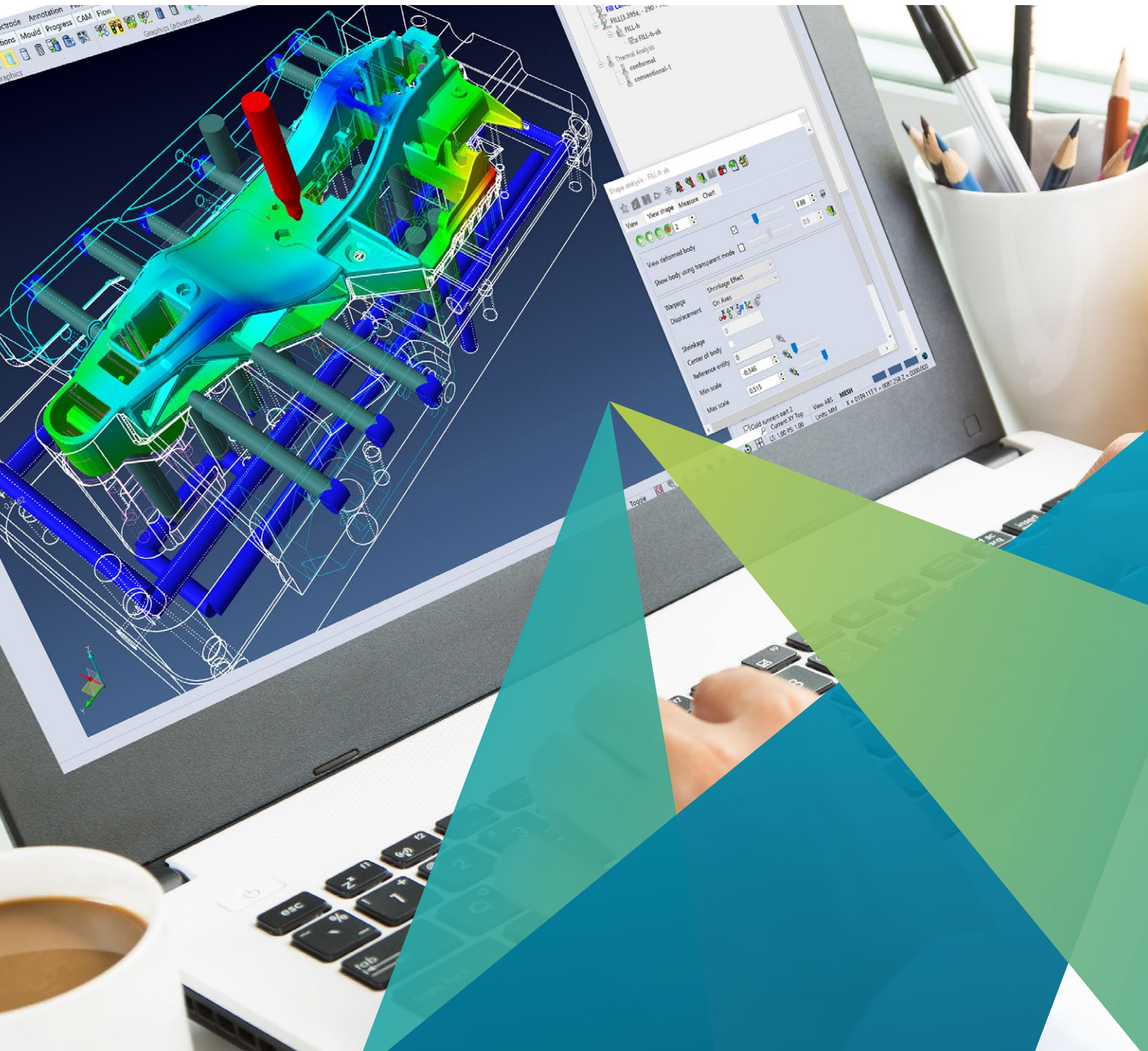
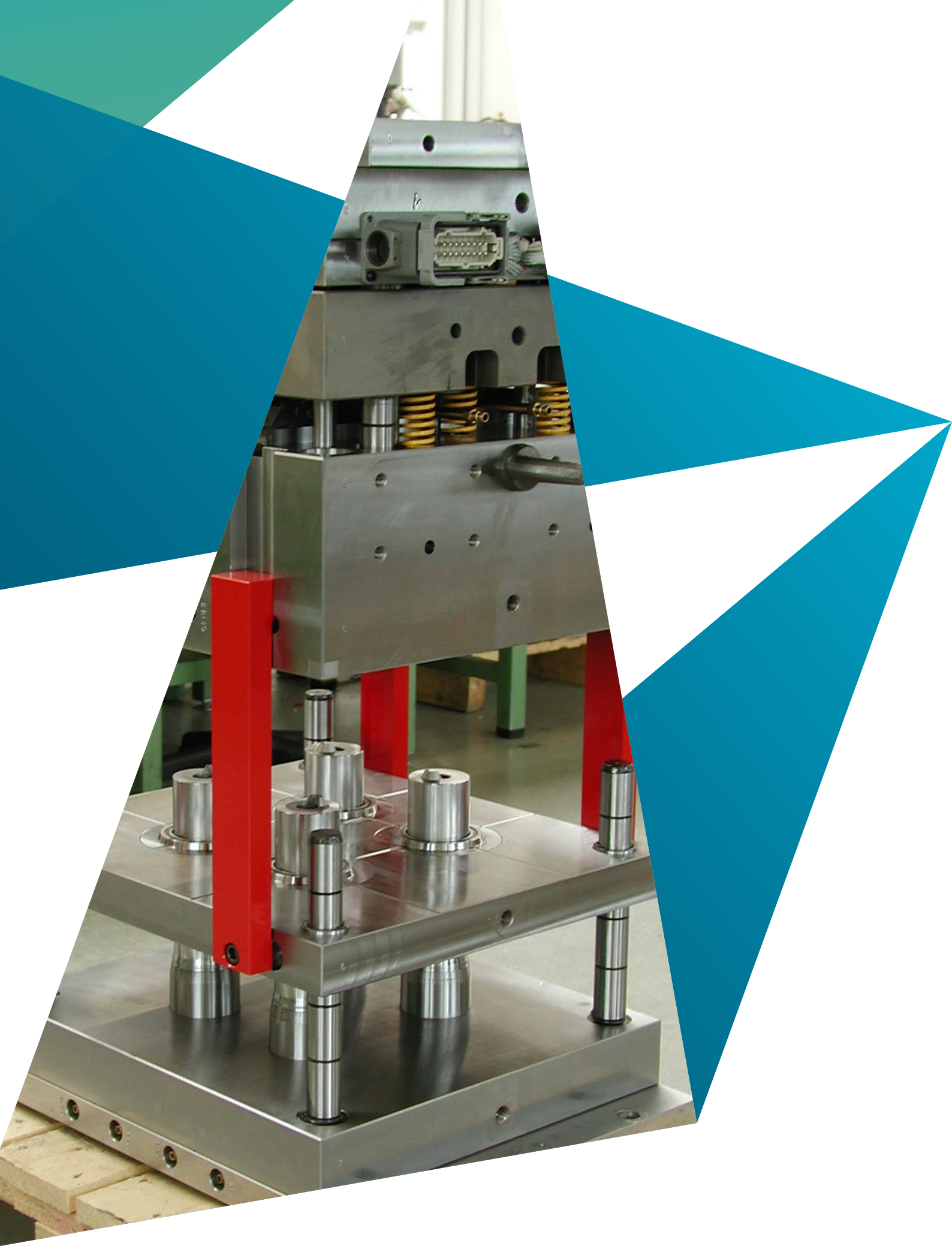


VISI Mould Making

CAD/CAM/CAE software for mould design and manufacture





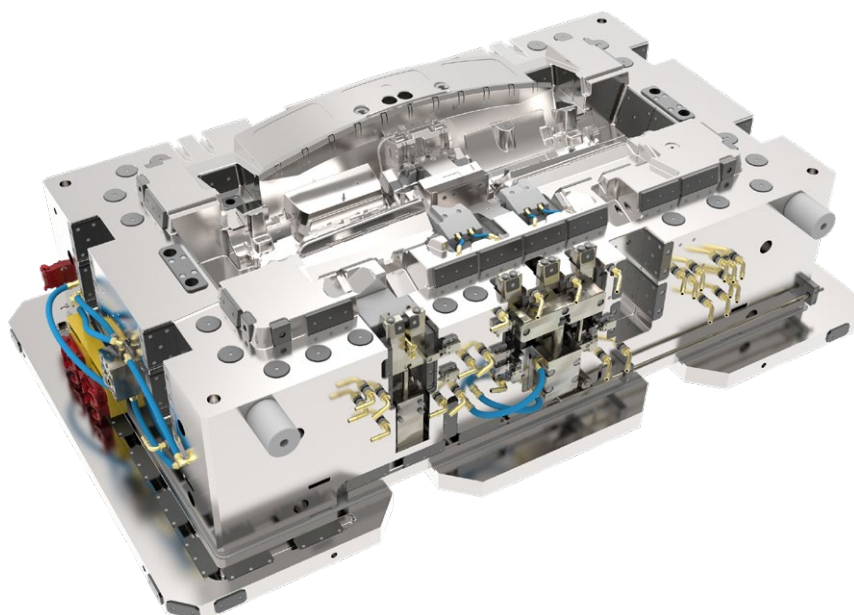
The modular software system for mould design and manufacture

The optimised end-to-end solution for tool and mould making, VISI supports all parts of the mould making process, from model analysis and plastic flow front simulation, to core and cavity separation, electrode production and 3D tool construction. This industry-specific technology makes VISI the only end-to-end CAD/CAM solution unique to the toolmaking and mould making industry.

Construction	Mould making	Extra CAD interfaces
VISI 2D CAD Core	VISI Flow	CATIA read and write
VISI 3D Surface Modelling	VISI Analysis	NX read and write
VISI 3D Solid Modelling	VISI Electrode Design	Creo read
VISI Reverse Engineering	VISI Mould Design	JTOpen read and write

Standard CAD interfaces	Die making	NC programming
STEP	VISI Part Unfolding and Strip Design	VISI 2.5 Axis Toolpath
IGES	VISI Die Tool Design	VISI 3 Axis Toolpath
VDA	VISI Blank	VISI 5 Axis Toolpath
Parasolid, ACIS	VISI Flange Unfolding	VISI Compass Automation
DWG, DXF	VISI Springback Solver	VISI Wire EDM
SolidWorks		
Solid Edge		
Inventor		

Additional modules interfaces
VISI Viewer





VISI Modelling

2D and 3D CAD

VISI Modelling provides a robust and powerful solid and surface modelling platform based around the industry standard Parasolid®. Combined with Hexagon'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

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 and shape, capping, fillet, parting plane, and tangential

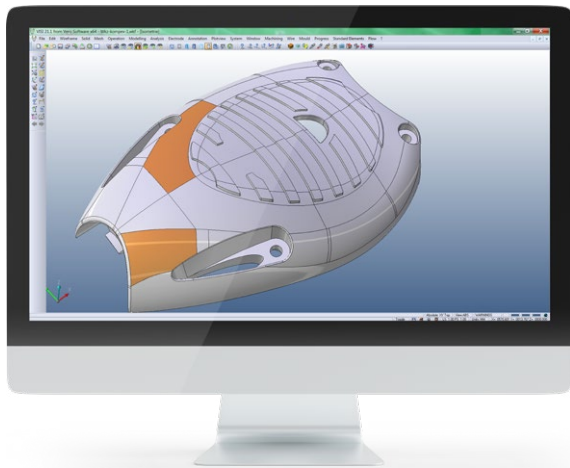
CAD interfaces

For the import and export of CAD data, the following interfaces are available:

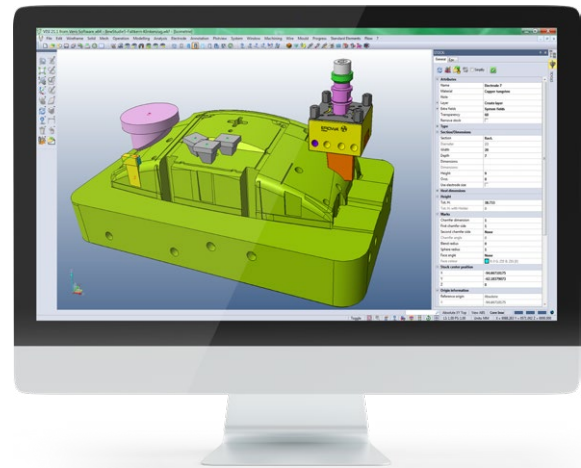
CAD Interfaces		
STEP	STL	CATIA
IGES	SolidWorks	NX
VDA	Solid Edge	Creo, PTC
Parasolid	Inventor	JTOpen
ACIS	DWG, DXF	

Morphing

Morphing is a set of tools that enable the existing model topology to be changed without compromising model integrity or curvature consistency. For example, it can be the easiest way to introduce warpage compensation into the mould tool.



Hybrid solid and surface modelling



Electrode animation with collision checking



VISI Analysis

Analysis and model validation

When working with imported data, the quality of model geometry can have a dramatic effect on the success of your project. Finding potential problems at an early stage within the project life cycle will dramatically simplify the task of the designer and return huge time and cost savings further downstream for both design and manufacture.

Component analysis

- Automatic recognition of part changes
- Draft angle visualisation
- Part thickness analysis
- Model curvature and radii checking
- Model validation and geometry cleaning
- Redundant data and sliver face detection
- Surface edge simplification

Component separation

- Automatic core and cavity separation
- Split line curve creation and manipulation
- Dynamic parting plane creation
- Animated mould opening sequence



Analysis of draft angles with colour zone representation

VISI Electrode Design

Electrode construction

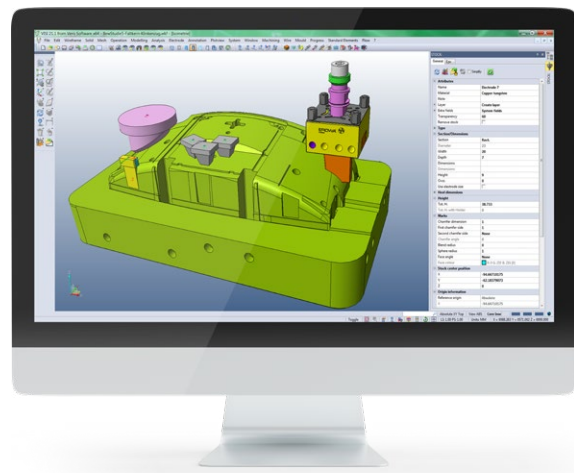
VISI Electrode Design is the end-to-end solution for the creation and management of electrodes and their holders. Comprehensive holder design, simulation and collision checking ensure that the electrode will operate right first time.

Electrode construction

- Dynamic surface extraction for erosion areas
- Linear and tangential surface extension
- Electrode holder libraries
- Automatic creation of documentation

Manufacturing

- Collision checking
- Vertical / side / inclined electrode animation
- Export of electrode data in neutral format (XML)
- HTML and EPX export



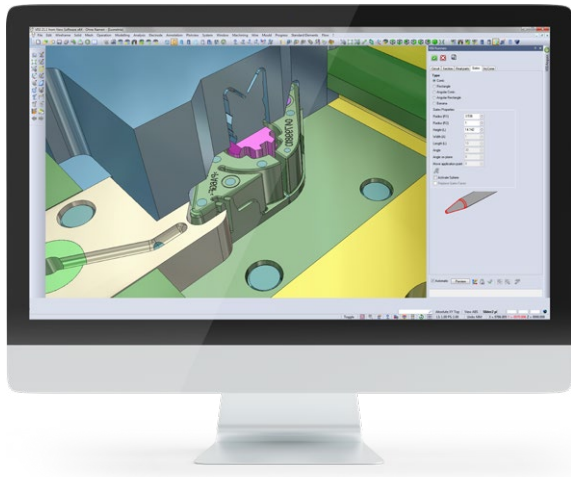
Electrode animation with collision checking



VISI Mould Design

3D tool design

VISI Mould Design provides the complete mould tool design solution based on industry specific automation that guides the user through the mould development process. 3D supplier catalogues, slide components and tool templates provide the designer with a real-time view of how component changes will affect the tool design.



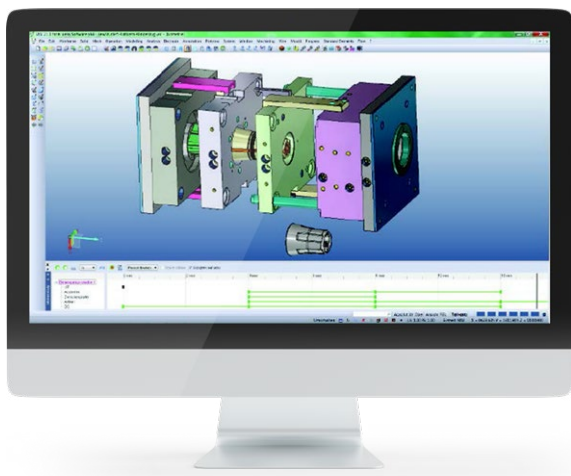
Injection gate and runner design

3D mould design:

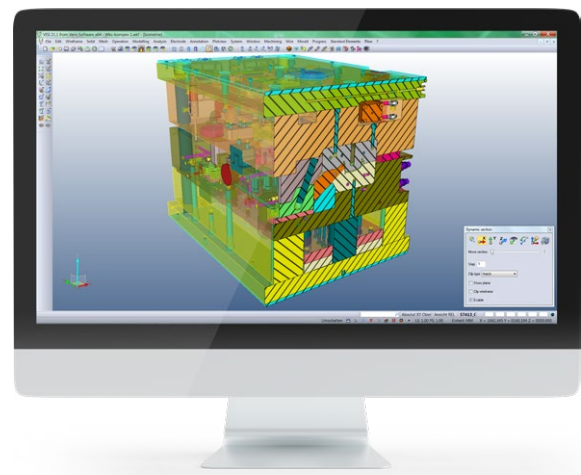
- 3D standard mould designs from leading suppliers
- User-defined tool designs
- Parametric user elements
- Automated slide creation
- Automatic creation of sprue designs
- Integrated cooling with 3D collision checking
- Automatic adaptation of the ejectors to the component shape
- Mould gate and runner wizard
- Lubrication grooves
- Parametric lock builder
- Shrinkage module with rheological material database
- Optimisation of the gate location
- Cooling channels analysis
- Automatic view creation, fixed and stepped section views, hole charts, and BOM
- Kinematic study of moulding action with physical properties and collision checking
- Automatic allocation of CAM attributes for feature processing (Compass automation)

Mould & Die Catalogues:

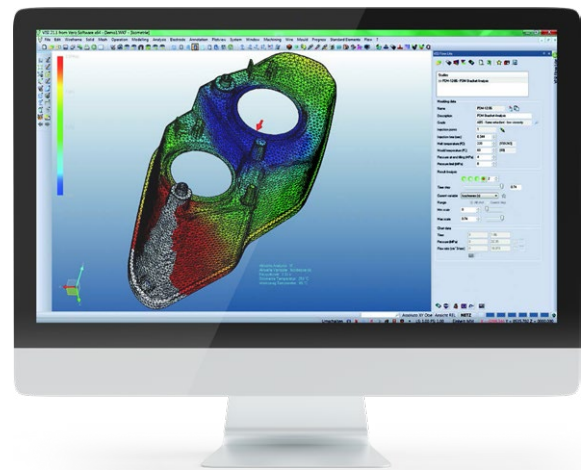
- Extensive construction techniques
- Trimming, moving, scaling, rotating and mirroring of elements
- Form and position tolerances, surface specifications
- Full dimensioning / measuring functions



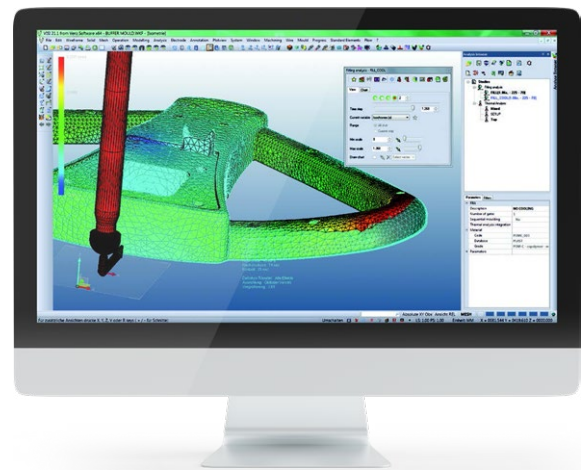
Kinematic simulation of mould tool with timeline



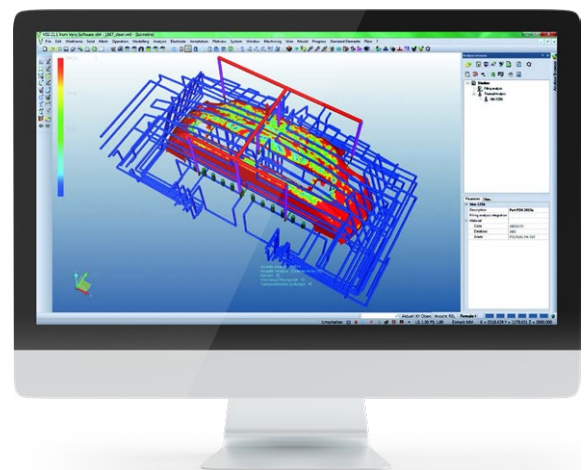
Dynamic section of a 3D mould tool



VISI Flow simulation



Shrinkage calculation using VISI Warpage



VISI Thermal analysis of the mould conditioning system

VISI Flow

Plastic flow analysis

This module simulates the filling and packing phases of the injection moulding process. This is where the initial moulding criteria and gating positions are defined in order to achieve a well-balanced filling of the cavities under optimum manufacturing conditions.

VISI Flow

The filling module can be used for the optimal configuration and balancing of the sprue situation and the analysis of any kind of feeding system. It also enables sequential injection specific to place and time.

- Optimisation of the gate location
- Pressure and temperature distribution during filling
- Optical criteria (e.g. weld lines, air pockets)
- Shear stress
- Clamping forces
- Cooling time definition and overall quality

The filling module also enables the holding pressure and cooling time to be optimised. This in turn reduces the risk of sink marks and helps control volumetric shrinkage and optimise pressure distribution within the moulded part.

- Fibre orientation and shear rate
- Packing and cooling times
- Pressure distribution during the holding phase
- Entered mass during packing with sink void prediction
- Tool closing force

VISI Warpage

Shape analysis calculates the balance of the internal tensions at the end of the cycle time. The result allows the operator to visualise and measure the final moulded shape predicted after processing the values for the filling, holding and freezing moulding phases.



VISI Thermal

This module enables the calculation of tool temperature control with due regard to the prior phases. The calculations deriving from 'solid elements' ensure that the medium's optimal temperature is recognised and set, and that the right flow quantities are available, along with the pressure required for each individual cooling cycle.

- Distribution of surface temperature on the tool
- Distribution of temperature within the component
- Optimisation of cycle time
- Conformal cooling



Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Manufacturing Intelligence division provides solutions that use data from design and engineering, production and metrology to make manufacturing smarter.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at [hexagon.com](https://www.hexagon.com) and follow us [@HexagonAB](https://twitter.com/HexagonAB).