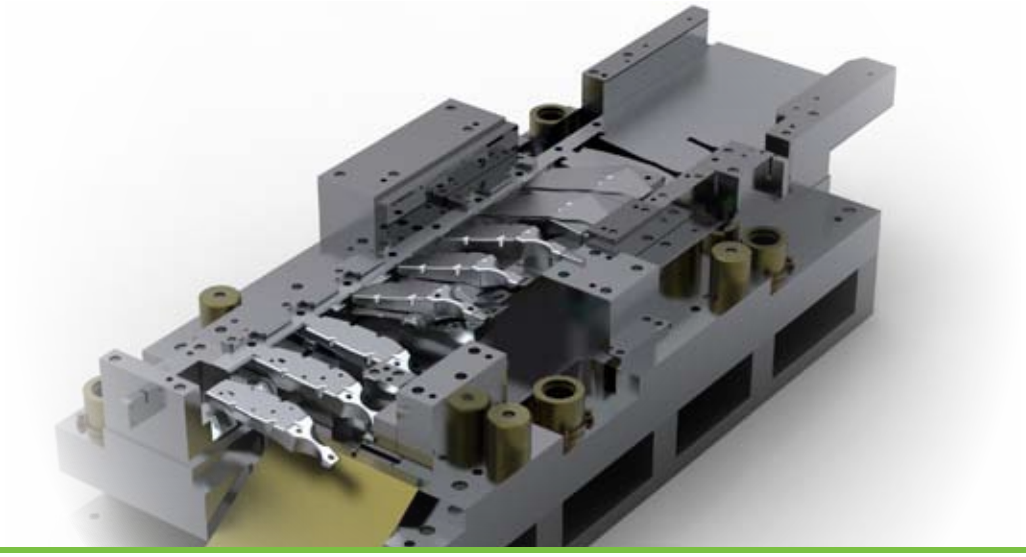
: sheet metal solutions

Dedicated tools for the design and manufacture of
progressive & stamping dies



CAM SOLUTIONS

vero Software

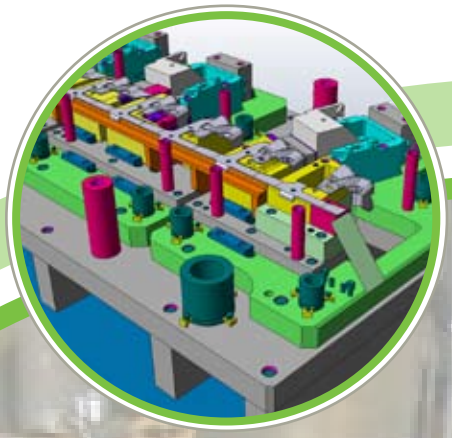
: the complete process...

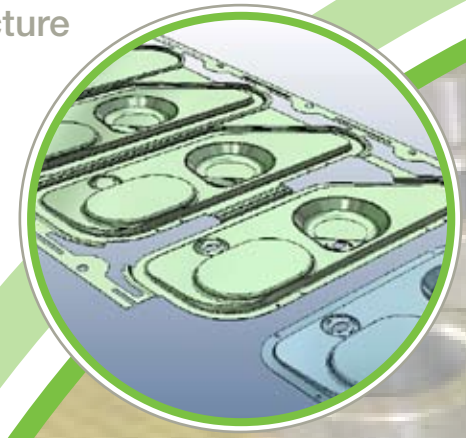
making progress

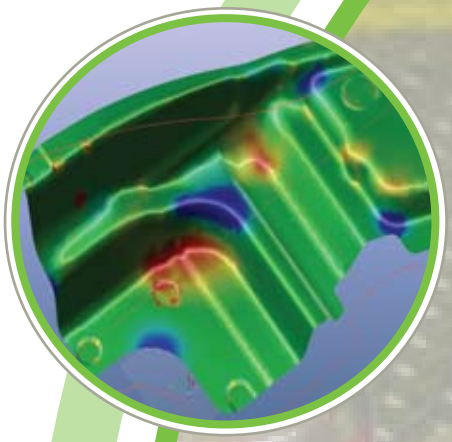
Survival and competing in a global market may depend on a single competitive advantage or highly skilled knowledge built over many years.

Vero provide both, combining unique and dedicated applications for die design and manufacture with a knowledgeable development team striving to keep Vero at the leading edge of technology.

From the administration office to the shop floor, the VISI suite of software is unique in that it covers all aspects of the sheet metal stamping process - from model analysis and quoting, part unfolding and blank development through to 3D die design, manufacture and multi-axis laser trimming.







Based on the industry standard Parasolid kernel, flexible solid and surface technology tools combine with intelligent geometry healing tools to provide the ideal platform for managing the most complex data. The extensive range of data translators ensures that engineers can work with data from almost any supplier. Very large files can be handled with ease and users working with complex designs will benefit from the simplicity with which their customer's CAD data can be manipulated.

Working within an integrated system, the jump from 2D to 3D die design is often recognised as the step to help reduce errors, streamline the design process and ultimately increase your competitiveness and profitability.

Deep drawing, linear and non-linear unfolding and flange development are all managed with a hybrid algorithm based on a combination of analytic and FEM solvers. This unique technology combination allows the user to predict the stamping conditions and define every step of the development process.

In-depth process studies can be performed on multiple different scenarios returning valuable information to the designer such as dynamic nesting, material wastage, material weight and the relevant shearing forces required at each stage.

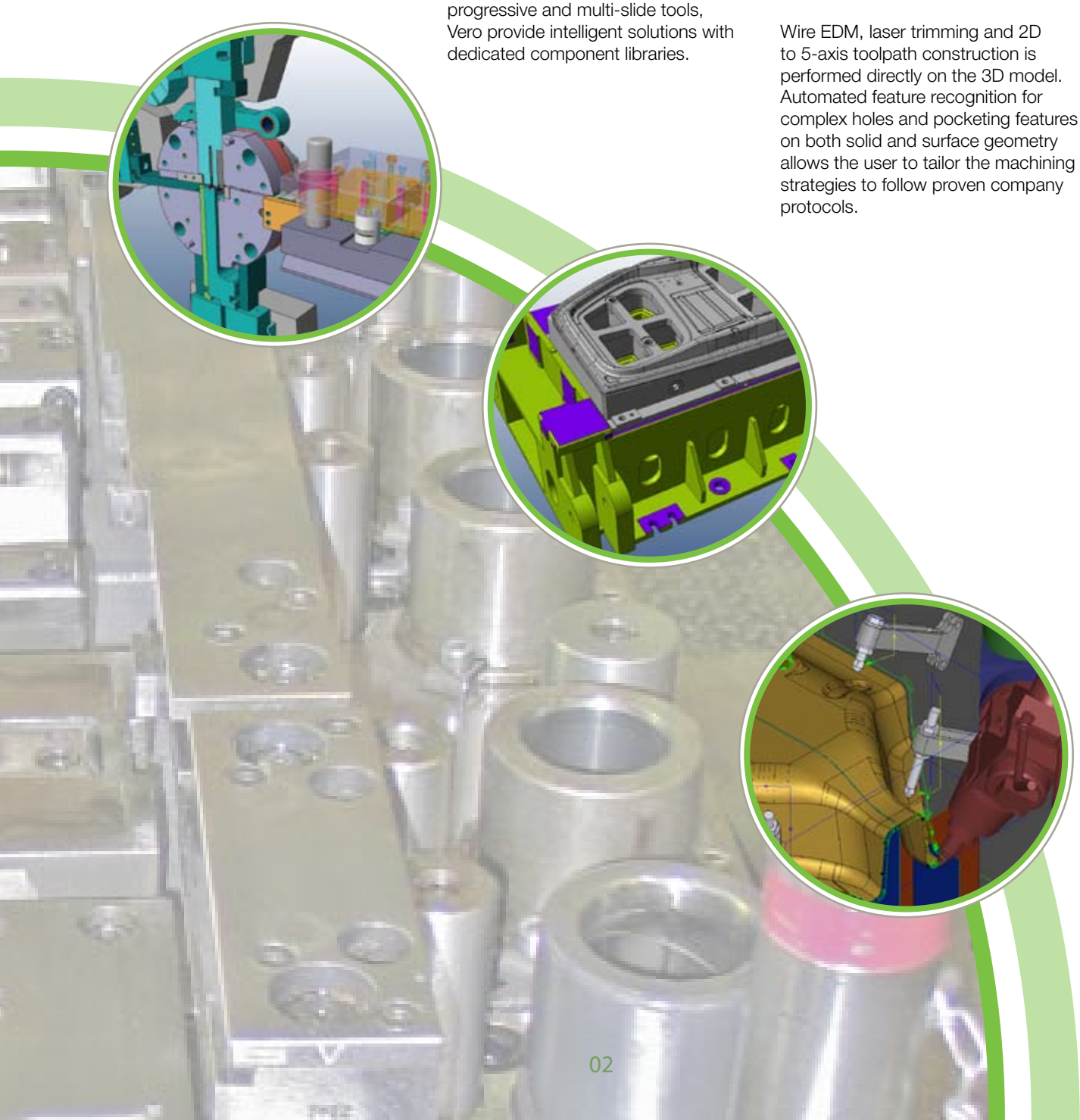
Part complexity, part size, number of parts and pressing speed all influence the type of tooling required. From 'one-step' press tooling through to transfer, progressive and multi-slide tools, Vero provide intelligent solutions with dedicated component libraries.

For 'one-step' tooling, the designer can confidently predict the forming impact on thickness distribution returning valuable knowledge regarding part formability. Accurate blank development allows the designer to quickly provide reliable quotes.

Multi-slide tooling is an extension of VISI progress and has been developed to aid the design and synchronisation of cams used during the bending process.

Automated tool design is achieved through a simple question and answer process. The user is prompted for all the relevant settings and the software generates the complete tool assembly including the die plates, pillars & bushes, springs, screws and pins.

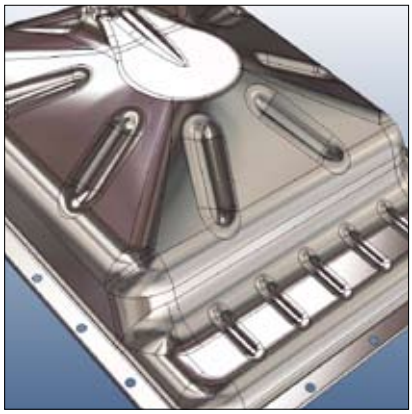
Wire EDM, laser trimming and 2D to 5-axis toolpath construction is performed directly on the 3D model. Automated feature recognition for complex holes and pocketing features on both solid and surface geometry allows the user to tailor the machining strategies to follow proven company protocols.

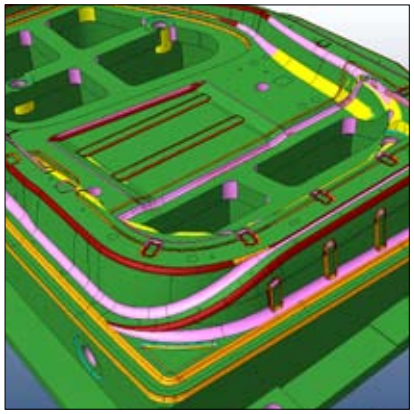


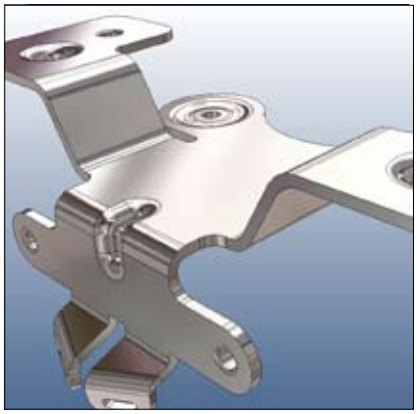
: knowledge driven

automating the design process using applications based on extensive research & experience

Ever shortening lead times and the increase in global competition have had a dramatic impact on the die making industry.







VISI Modelling is the foundation for all of the design tools. Using the industry standard Parasolid kernel, true hybrid solid and surface modelling provides a dynamic structure from where it is possible to work with either solid, surface, wireframe technologies (or a combination of all three) without restrictions.

Solid modelling has become the fundamental cornerstone of design but is often restricted to prismatic or basic geometry. Solid modelling commands include boolean technology such as unite, subtract, extrude, revolve, sweep, cavity, intersect and hollow.

Surfacing technology 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 tools make it easy to heal imported geometry or construct the most complex 3D data.

An extensive range of data translators including Parasolid, Catia, UG, Pro-Engineer, Step, Acis, Iges, Solid Works, Solid Edge, Vda, Stl and DXF/DWG ensure 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 even 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.

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 functionality to the user. The ability to seamlessly switch between solid and surface technology provides unlimited freedom.

Model Analysis

VISI Analysis offers a suite of dedicated tools for the analysis, validation and preparation of model geometry. When working with imported data, the quality of the model is an important consideration and can have a dramatic effect on the project success.

Finding potential problems at an early stage within the project life cycle will greatly simplify the task of the designer and generate huge time and cost savings further downstream for both tool design & manufacture.

Technology benefits include :

- Model Comparison Analysis
- Model Curvature Analysis
- Draft Angle Analysis
- Model Thickness Analysis
- Edge Smoothing - Simplification
- Complex Bend Relief
- Redundant Body Detection
- Small & Sliver Face Detection
- Seed Face Selection
- Invalid Body Repair
- Body Memory Diagnostics
- Solid Interference Checking
- Data Tipping Charts

: developing automation

formability analysis > process study > 3D tooling

An intelligent mix of automated and user-driven tools combine formability analysis, process studies and strip design which act as the guideline for tool construction. Helping simplify the decision making process will reduce the potential for error and greatly improve manufacturing productivity.

The prediction of an accurate blank development, including the relevant material requirements and the correct pressing conditions provide a clear understanding of the job complexity. With just a few clicks, VISI Blank is able to calculate the development area and report the stamping force and distribution map of the geometry thinning.

VISI Blank is designed for estimators, engineers, sheet metal product designers and tool and die makers to optimise the development of sheet metal components and provide valuable analysis of material behaviour during the stamping process.

For the estimator - A quick blank development can be achieved in minutes, highlighting potential manufacturing problems, determine material costs and help streamline the production process.

For the designer - VISI Blank helps determine areas of a component design which may need to be modified to provide lower manufacturing costs.

For the toolmaker - VISI Blank is an invaluable tool for identifying areas of a component that will require to be drawn as opposed to multiple forming operations.

For a more detailed analysis, VISI Progress provides further technology for quoting such as nesting, strip study and the automatic calculation of trimming punches.

Process definition

A single sheet metal component may contain a number of different stamping operations including coining, deep drawing, linear and non-linear unfolding and shearing. VISI Progress manages all scenarios using a hybrid algorithm based on a powerful combination of both analytic and FEM solvers.

Partial blank development onto 3D geometry using binders and the automatic development for ‘cylindrical drawing’ eliminate hours of manual calculations and dramatically reduce the possibility of error.

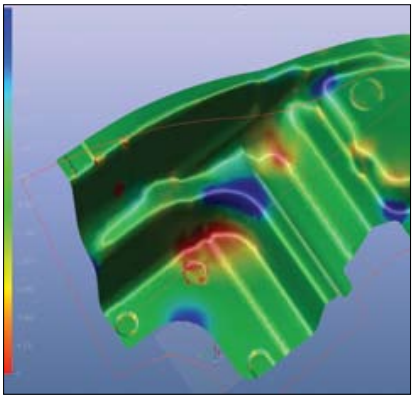
Strip Creation

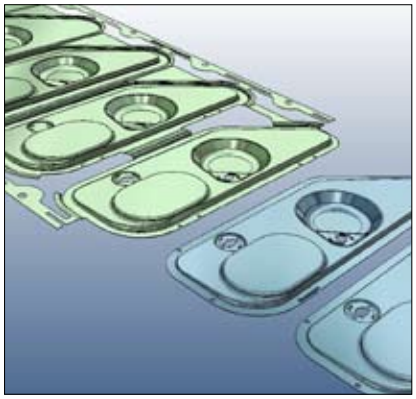
Starting with the developed blank, it is possible to quickly formulate a 3D strip layout. Automatic blank alignment, rotation and optimisation help plan a more efficient strip. Punch design becomes more effective with the use of the automatic 2D strip plan, which also provides a familiar working environment for designers used to working in 2D.

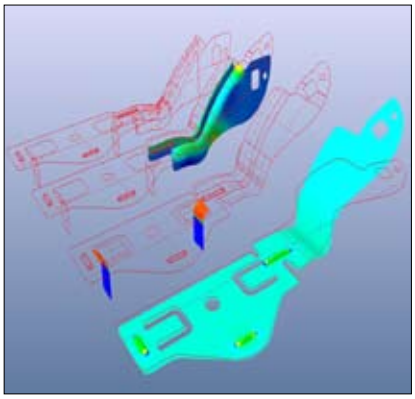
A variety of automatic and semi-automatic tools assist in the creation of trimming punches, that once created can be dynamically moved to different stations on the strip using a simple drag & drop concept.

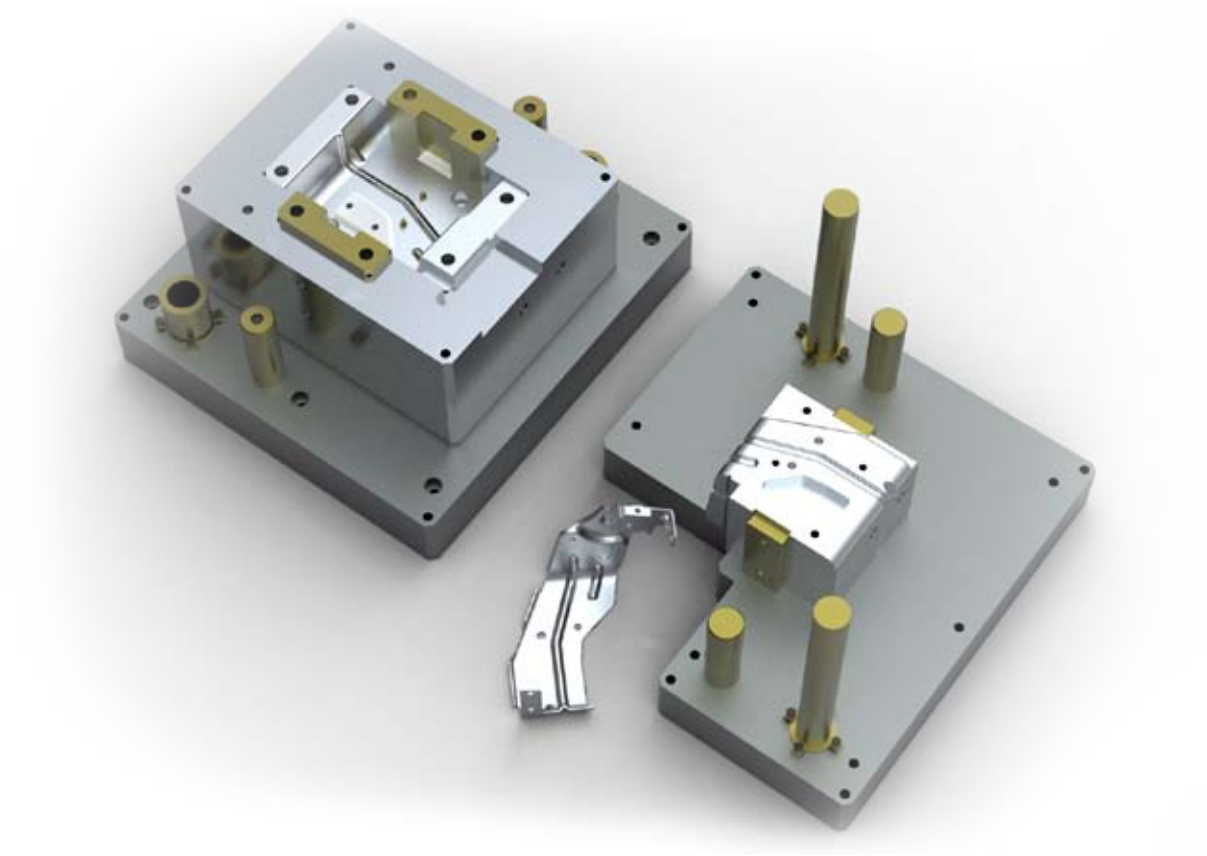
Placement of 3D forming stages into the strip is a seamless process and one that can be easily updated to accommodate a reduction or increase in the number of stages. At any point it is possible to edit all the strip parameters including strip width and pitch for essential modification when required.

3D shearing and forming simulation can be visualised at any point to validate the performance of the strip design.









Multi-Slides

Progressive die tooling is a popular process for producing sheet metal parts although it is not the only technology in this field. The fundamental concept of 'one tool produces all' is not always an advantage and in some cases a 'transfer tool' process provides a better solution. However, a combination of these two technologies can provide the 'best of both worlds'. Multi-Slides is an example of this combination where the progressive die tool remains in control of the cutting and drawing operations, whilst the bending cycle is performed by special multi-slide tooling.

Starting from the unfolding steps, every finger can be designed using a series of quick 2D sketches. These sketches are used to obtain the number of movements, stroke value and the orientation of each finger. This information is then used as input data to compile a computation table. On completion of the computation table, a kinematic simulation of the entire cycle can be performed.

This enables the designer to check the synchronisation level, possible interferences among moving parts and the optimisation level by checking the value of the unused angular sector.

At any point during the design cycle, it is possible to obtain the operation diagram which is especially useful for tool review or analysis. Geometrical construction of each required cam is an automatic process and the resulting forms can be output as a 2D profile or a 3D solid, each with their own relevant annotation. The final cam form is constructed from tangent arcs / segments (no spline curves) and ready for wire EDM or milling operations.

3D Tool Design

The tool assembly allows the designer to quickly construct a solid based layout of the required die set plates along with the relevant pillar and bush combinations. Each assembly can be stored as a tooling template and subsequently applied to another strip layout, automatically adapting the tool to the dimensions of the new strip design.

VISI Progress supports standard component libraries from all leading suppliers including Misumi, Futaba, AW Precision, Fibro, Strack, Danly, Rabourdin, Mandelli, Sideco, Intercom, Bordignon, Dadco, Dayton, Din, Kaller, Lamina, Lempco, MDL, Pedrotti Special Spring, Superior, Tipco, Uni, Victoria and others.

Each component has a full list of editable parameters enabling essential adjustments to suit individual tooling requirements and come with manufacturing data attributes and a full parts list itinerary.

Automatic punch extrusion ensures all clearances are correctly designated in each plate throughout the tool assembly. Clearance parameters related to each plate type can be effectively managed by the use of templates that can be applied to any punch at any time. Parameter driven construction of punch heels, support stems and punch holders assist the rapid design and manufacture of non standard punch shapes.

A complete set of 2D detailed drawings can be generated directly from the solid tool assembly. This includes fully editable 2D and isometric section views, automatic plate dimensioning and hole-type position tables.

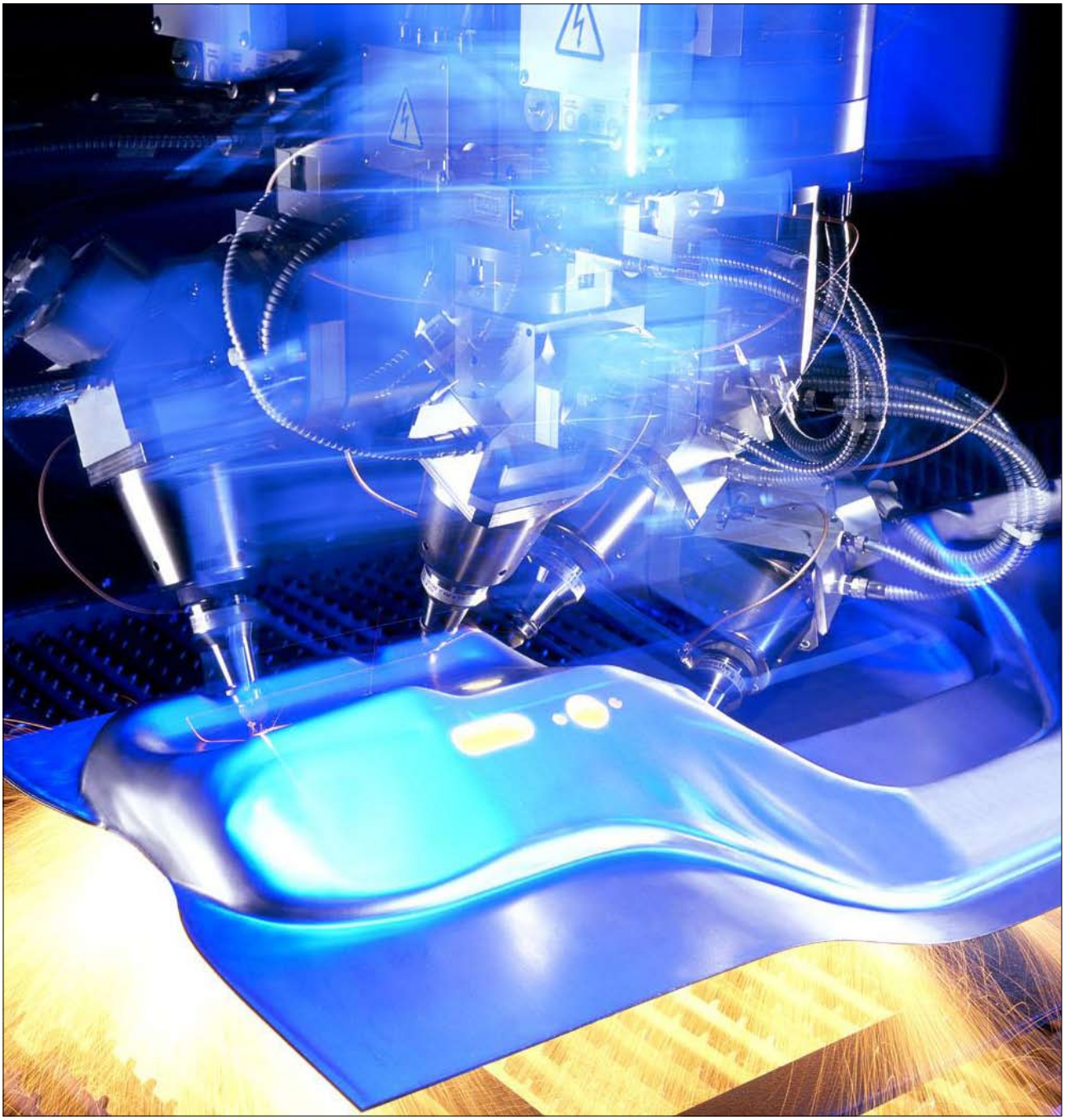
Any change to the solid model will result in a modification to the 2D view along with any fully associative dimensions.

Automatic milling and drilling cycles are produced directly from the 3D model using advanced feature recognition from 'Compass Technology'.

: design > manufacture

intelligent toolpath creation

VISI creates accurate and reliable toolpaths on the most complex geometry. Intelligent toolpaths will reduce cycle times on your machine, improve productivity and continuously produce high quality components.



: laser technology

multi-axis laser trimming

The ability to apply laser cutting to a sheet metal component after it has been formed has implications for a variety of applications. Multi-axis laser cutting can replace many drilling, milling and cutting operations resulting in reduced costs and improved precision.

The implementation of multi-axis simultaneous laser cutting machinery is becoming increasingly common among manufacturing organisations around the globe. These complex and versatile machine tools, long established for use in the aerospace and automotive engineering sectors, are becoming standard equipment for many small to medium size tool rooms. Availability of quality, affordable CAM software to program these machine tools has certainly contributed towards this rise in popularity.

Laser cutting has many advantages over conventional mechanical cutting. For example, the trimmed edges have a very good finish; as a result no grinding is necessary. There is no wear on a laser as there would be on a conventional 'contact' tool and the heat generated is focused in a very narrow region around the cut; as a result, thermally induced warping is minimised.

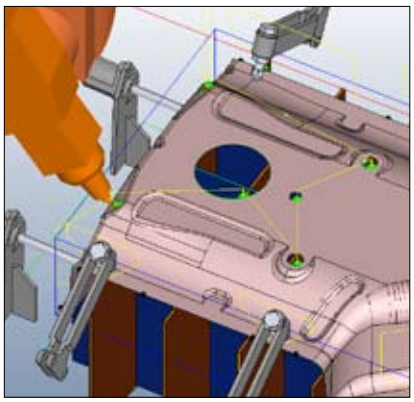
Laser machinery accommodating multiple cutting axes demand a high level of accuracy in laser path not to mention the ability to avoid collisions between the head, parts and fixtures.

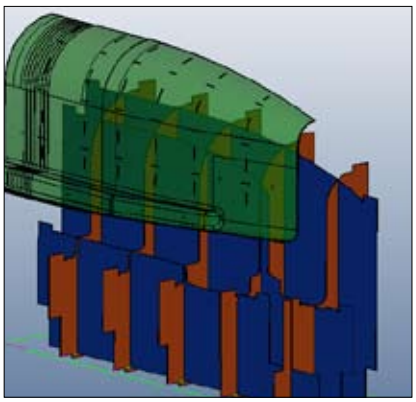
Generating a complex yet safe, multi-axis laser path is made easy for the user. The software can be used either automatically or interactively. Feature-finding tools quickly identify areas to be machined to which the user can apply appropriate cutting technologies.

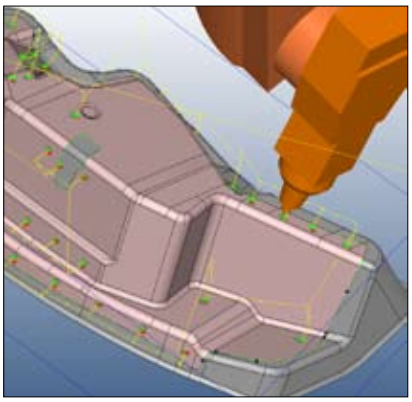
Cutting operations can generally be divided into two areas: inner and outer trims. Outer trims are the external forms of the part whilst inner trims represent the internal cut-outs and other features to be machined. User interaction is available for all toolpath types to allow for manual creation and refinement providing a great amount of control over how each inner or outer trim is handled; for example, creating micro-joints to hold the material in place until processing is finished becomes quick and uncomplicated. The toolpath can also be edited in terms of how the cutting nozzle is angled towards it or how it handles jigs and fixture features. Options include 'surface normal,' fixed angle, and 'follow face.' On any trim, at any position the user can introduce 'change points' where changes in orientation or in technology can be applied.

Once the tool path is constructed, accurate simulation is available for the movement of the laser head, machine bed and any defined fixtures – all of which are checked for collisions between them. Instant feedback is provided about whether or not a specific move is possible - either in terms of machine head movement limits or accessibility. Any collisions that are detected are highlighted both on the model and via on-screen messages. The trim-path parameters can be edited directly or, in the event of a collision, automatically corrected at any time; ensuring that your tool path is both safe and using the optimum strategy to reduce processing time.

The single most important product of any CAM system for any CAM operation is code to run the machine tool. This must be generated to a high standard and be technically accurate. Vero's Multi-axis laser has a comprehensive range of proven post processor solutions for the majority of multi-axis laser machines in use today.

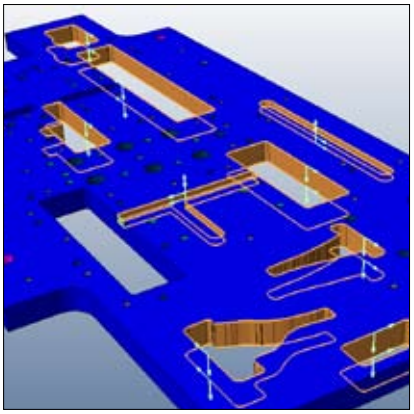


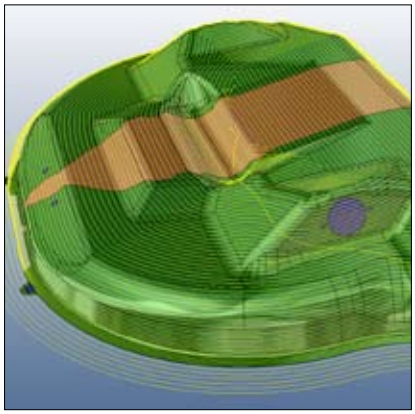


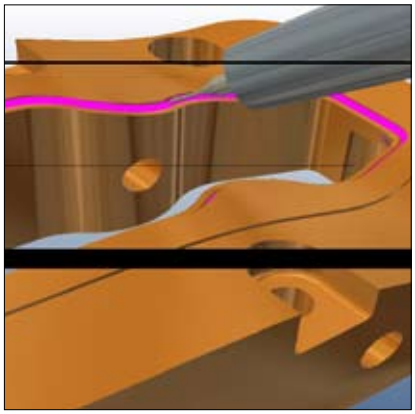


: 2D, 3D & 5 Axis

toolpath generation directly from the 3D model







Vero have been providing world class CAD/CAM solutions since 1988 and VISI Machining offers all you need to increase productivity, maximise cutting capacity and reduce delivery times.

Remove any data conversion issues by seamlessly transferring the geometrical data from the tool design directly to the cam environment.

Using VISI Machining it is possible to machine directly from the 3D model or from 2D construction data. A combination of intelligent toolpath automation, user-defined cycle templates and powerful editing tools ensure the operator is always in control.

A highly graphical interface guides the user through machining parameters, cutting conditions and holders for selected tooling providing a practical and intuitive CAM solution.

Automatic feature recognition detects complex holes and pocket features directly from the solid model. Extraction of diameters and depths from the model makes it easy to enter drilling parameters and eliminate the possibility of MDI errors.

For every library component added to the tool design, CAM feature data is applied to the model ready for feature recognition. If any inclined features are detected, a new datum is created for each setup and automatically filtered against the physical machine limits.

If a non standard feature is found, it is possible to force the system to use a particular machining process or existing cycle; providing an open and configurable system for automatic plate manufacture.

Cutter radius compensation capability provides practical CNC code for use on the shop floor. When the cutter cannot machine tight internal radii, the system will automatically create residual stock geometry (defined by the previous tool) and enable re-machining with a smaller diameter tool.

The system will automatically avoid user defined clamps and fixtures during machining operations. Obstacle management ensures collision avoidance, and helps to reduce the cycle time on the machine by eliminating unnecessary Z retract moves. Optimisation of the toolpath ensures the shortest distance for tool travel and reduces cycle times offering maximum productivity.

Intelligent 3D toolpaths can be created for the most complex parts with toolpaths tailored towards high speed machining and designed to minimise the number of retracts, maintain a constant tool load, minimise any sudden direction change and automatically smooth the CNC code.

The underlying technology makes it easy to successfully program high speed machine tools using VISI.

Adaptive clearance toolpaths allow the tool to rough the part in a unique way - by roughing out from bottom to top. The principle behind this method is to machine large steps using the full flute length of the tool with a small stepover and then machine the intermediate levels back up the part. The tool remains on the part as much as possible and the toolpath automatically switches to a trochoidal type motion when necessary. This ensures there are never any full width cuts guaranteeing a constant tool load. Tool wear is spread evenly across the cutting surfaces and the centre of force is half-way up the tool, reducing deflection and the potential for vibration.

Using adaptive toolpaths, the cycle automatically adjusts for efficient and safe machining; improving cutting conditions and allowing higher machining speeds to be maintained.

The result is savings of up to 40% in actual cutting time for roughing operations.

High-speed finishing requires the same fundamentals as high-speed roughing - consistent tool loading, lighter cuts, minimising any sudden direction changes, optimising NC code and reducing stress on the machine tool. Many of the strategies can improve the productivity of older CNC's with dramatically reduced air cutting time and both roughing and finishing toolpaths with smoothing arcs help maintain a continuous machine tool motion.

Finish machining strategies are largely defined by the geometrical shape. Traditional toolpaths such as ISO-machining, Raster, Waterline, Radial, Spiral, Offset and Curve machining are supported by intelligent combination routines that automatically adapt the toolpath to suit the geometrical form. Combined strategies allows steep areas to be machined using a Z waterline method and shallow areas to be machined using 3D constant stepover. This strategy operates as a one stop finishing routine including a helical option which creates a single continuous toolpath for steep areas with no lift off - eliminating witness lines and greatly improving surface finish.

Small features on a part will usually require rest machining with a smaller tool to completely finish the detail. Rest machining will reliably detect areas left by previous tools, so that they can be re-machined. For very fine details, this process can be repeated as many times as required making it possible to successfully machine with very small cutters. The toolpath can work from the outside to the centre or from the centre to the outside providing a smooth and flowing toolpath and minimising the number of retract movements which helps to eliminate shock loading on the tool and keep feedrates as high as possible.

All toolpaths are gouge checked against neighbouring surfaces to eliminate the possibility of a tool collision. In addition, small smoothing radii are automatically added to internal corners, stopping the tool from dwelling in internal corners which can cause the tool to pull into the job creating an unexpected gouge, which would not be detected by toolpath verification.

To maximise the deployment of the software, VISI uses multi-threading technology to allow multiple operations to be calculated at the same time and batch processing to allow jobs to be queued for unattended calculation, out of normal working hours. To further speed up the preparation of programs, individual operations can be post processed separately so that machining can start on roughing operations while finishing operations are still being calculated.

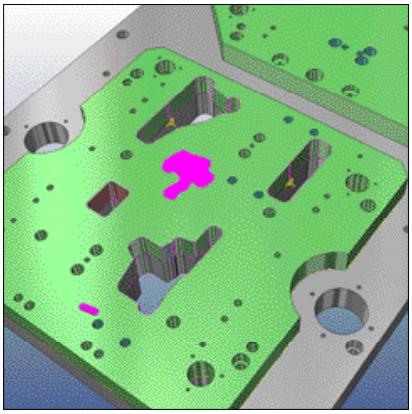
Many complex stamping dies contain deep drawn areas and small radii which need to be machined with small diameter tooling. Generally this would involve the use of tool extensions or longer tools, which would increase the risk of deflection and provide a poor surface finish. By approaching this from a different angle, the head can be lowered and the collision detection will automatically tilt the tool and holder away from the work piece. The major advantage of this strategy is the use of shorter tools which will increase tool rigidity, reducing vibration and deflection. As a result, a constant chip load and higher cutting speed can be achieved which will ultimately increase tool life and produce a higher quality surface finish. In more shallow areas, larger bull nose cutters can be used with a small lag angle. The major advantage of this approach is a lower number of toolpath passes which also reduces machining time and improves surface finish.

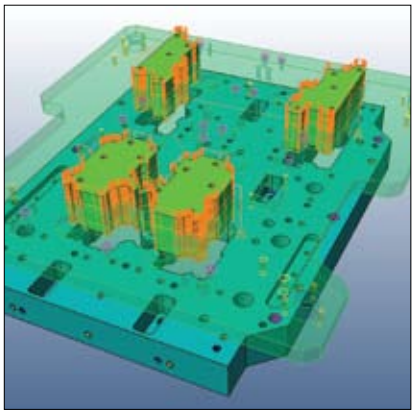
An extensive library of post processors is available to suit most machine tools and all post processors are fully configurable to suit individual requirements.

Configurable set-up sheets are automatically generated as either HTML or XLS files; including information regarding datum position, tooling, cycle times and the entire cutting envelope limits.

: wire edm

a cut above the rest





Wire EDM technology is an integral application for the manufacture of stamping and progressive tools. Trimming punches, complex apertures and plate holes are commonly machined using this technology.

Vero provide an intuitive environment for the comprehensive programming of all wire EDM machine tools - supporting an extensive list of wire EDM machines from leading machine tool manufacturers; including JOB and Script for Agie, CMD and CT Expert for Charmilles, Brother, Fanuc, Hitachi, Makino, Ona, Sodick, Seibu and Mitsubishi. The advanced postprocessors aren't just limited to the use of generic G and M codes; special posts are easily configured to suit different machine models and configurations.

Wire EDM is extremely accurate and enables the machine to cut internal corners with very small corner radii based on the wire diameter and spark gap. It becomes easy to cut square apertures without the need of splitting the die or producing accurate pin holes in a plate after heat treatment.

Strategies for all types of EDM machining are supported including 2-axis, 2-axis with taper and full 4 axis machining with geometry synchronisation.

Support for unmanned or overnight machining is possible by leaving the slugs attached while all of the preliminary cuts are taken. Numerous strategies are available to cut the part; for instance, taking all of the rough cuts before finishing, in which case all rough cuts are taken while leaving the tags attached, then the tags are removed, and finally the trim cuts are taken. Alternatively, take the rough and finish cuts while leaving the tag in place and then removing the tag and skimming this area.

With apertures that decrease in size, slug management is more complex. Complete 'no-core' pocket destruction cycles and full 3D simulation guarantee valid slug removal. Additional support for cam and gear profile generation is delivered to DIN/ISO and AGMA standards.

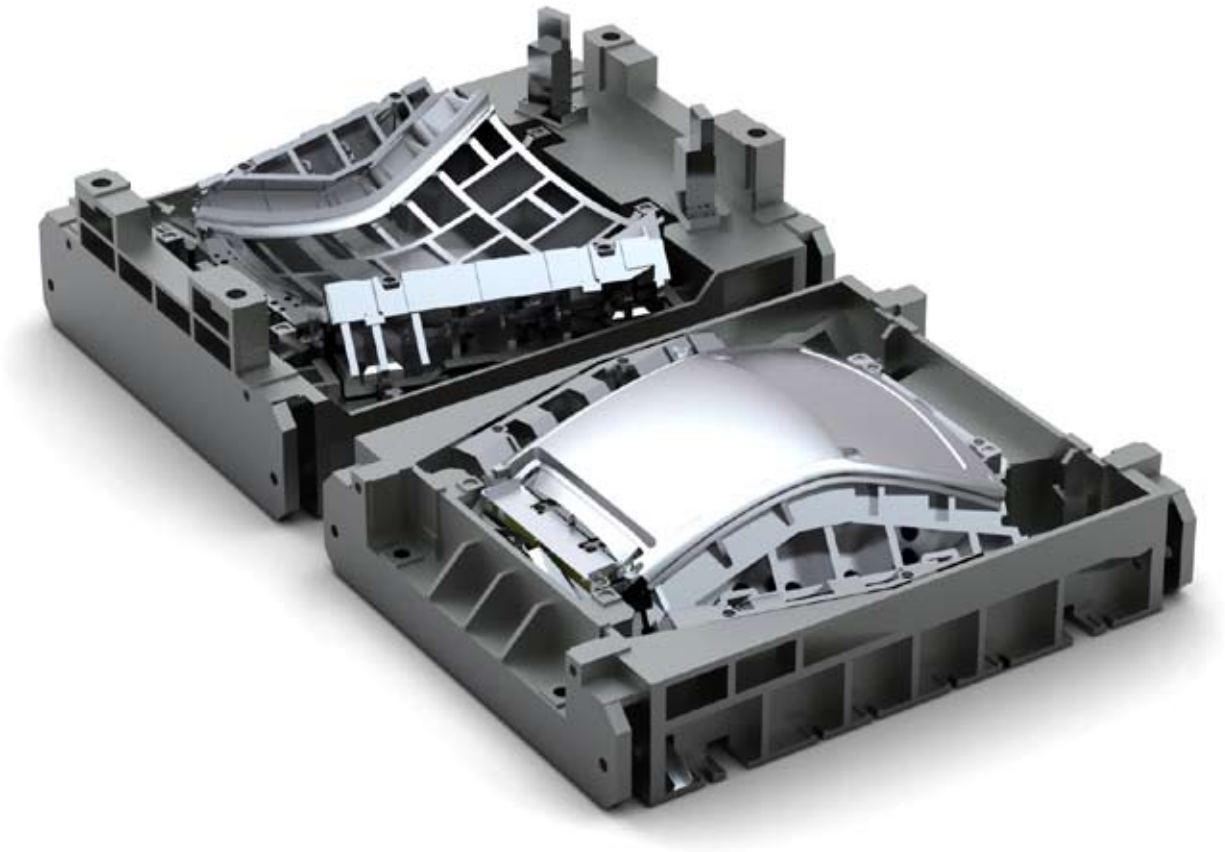
The completed wire path can be simulated using rendered solid model graphics, including fixtures and target parts. Any collisions that are detected are highlighted both on the model and via on-screen messages. As slugs become detached by cuts, the simulation advises the programmer that this is the case and graphically removes the part, emulating the exact cutting process on the machine tool.

Toolpath verification tests whether the completed part is removable from the component and also provides the capability of part comparison. By comparing the target model and cut part, any potential rest material or gouge issues are automatically highlighted.

By using the complete solution from Vero, not only will programming time be minimised, but also the cut-path will be far more efficient, saving further time on the machine tool. Add in the comprehensive simulation and proofing tools and you have a system that not only streamlines day-to-day production, but also reduces costly errors and eradicates the need for dry-runs, giving you an important competitive advantage.

: automotive stamping

SMIRT - designed explicitly for the die stamping industry



Born through encouragement from the automotive industry to provide a software solution to address the issues of building stamping dies, Vero's products provide an environment in which those involved in the design, installation and use of large scale stamping dies can manage the development and manufacture of these incredibly complex tools.

Stamping dies are incredibly complex assemblies, containing a large number of parts that typically follow a traditional workflow, particularly when you're dealing with dies for body in white parts.

Each die house will generally have its own 3D design system for the design of stamping dies. The SMIRT products are not meant to replace these, but act as a mechanism through which everyone involved in the process (from concept to installation and maintenance) can access that data.

SMIRT provides a common environment, specifically tuned for the die industry that allows users to interact with live 3D data for inspection, process planning, costing, manufacture and critically, during the development process, review.

SMIRT lets die makers, pattern makers, machinists, foremen and other users extract the information they need to build a die directly from a solid model without the need to generate plots or drawings - a true paperless environment.

In a traditional stamping die there are two basic subsystems, the upper and the lower die, as well as ancillary assemblies and mechanisms. SMIRT can extract this structure information directly from the CAD assembly, then use attribute or metadata mapping to extract the die-specific information. All of the SMIRT products use a common stock list as the central repository for all of the metadata attached to the 3D model sets.

At this pre-production stage, SMIRT makes it possible to have die data available throughout an organisation so that true concurrent engineering can be made possible by people having up-to-date information in a consistent, usable format. Typically, at this stage in the workflow things are fluid, but are likely to change, so the ability to provide 'live' feedback is essential.

SMIRT includes an array of mark-up and redlining tools, which allow anyone with the appropriate permissions to highlight revisions. These are stored in small, easily transportable datasets, called display files and help make project collaboration in a paperless environment very effective.

When the die gets to the completion stage, the final SMIRT dataset is created and all those involved in the process can inspect and review it for completeness. Once the design is signed off, SMIRT DieBuild, is used to plan out a step-by-step 'road map' for the build process – which for these types of dies, can be very complex.

At the same time, the finalised data can be used by purchasing for material ordering and on the shop floor to start production. The major benefit is that everyone is using a common dataset and application, whether that's to pull off dimensions or volume calculations, create a list of outsourced components or review the die building process.

Tooling manufacture

Once the die moves toward manufacture, SMIRT is used to create tool paths for planar faces and hole drilling. Automated feature recognition makes it possible to extract complex holes assemblies with drilling methods automatically applied from a user defined data base. Collision checking (tool, tool-holder and head against the work piece) is performed while creating the tool path on every cutting or rapid movement. If a collision is detected, an alert flag is displayed and the interference is highlighted to allow the user make the necessary changes

A simple 'drag & drop' concept is used to generate milling methods to machine pockets, slots, hole diameters or entire surfaces. Editing tools can be used to set the step-down height, strategy, define plunge milling parameters, break and erase tool paths. The machinist can move the cutter "free-hand" over the surface or choose advanced constraints to better control the milling operation. Special constraints can be activated to follow vertical walls, execute planar profile milling, set the tool path overlap and control the tool motion direction.

If an angled face is selected, no additional work is required as indexing heads are managed and the correct milling plane is automatically validated against the machine constraints and set accordingly.

SMIRT can be used either on a workstation on the shop floor or even reside on the machine controller, helping to reduce any potential error involved with manual data input.

Die building

All operations are completely integrated and provide the shop floor with a graphical outline of the complete die build process - this allows all personnel to build the die following a tested and proven road map. Any variations in the build process are quickly identified and brought to everyone's attention.

Once the build is complete, the information is readily available for a thorough review providing valuable data to improve the building process for subsequent builds.

Task completion check off updates real time project information stored on the server allowing managers to see the current status of all work currently running throughout the shop.

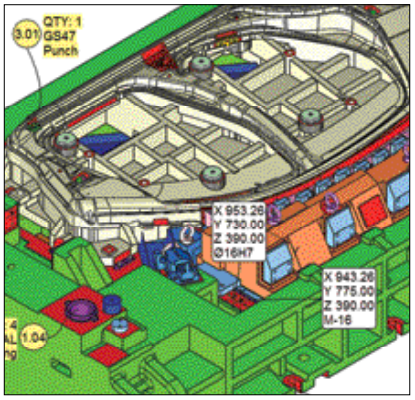
Die costing

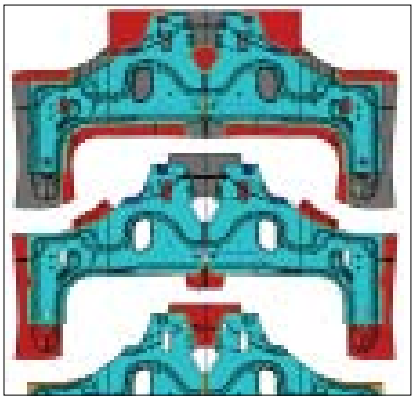
Produce accurate 'cost to build' estimates for a single die or a complete line of dies using input/output methods that links CAD data with formulas, standard components, castings, and rate structures.

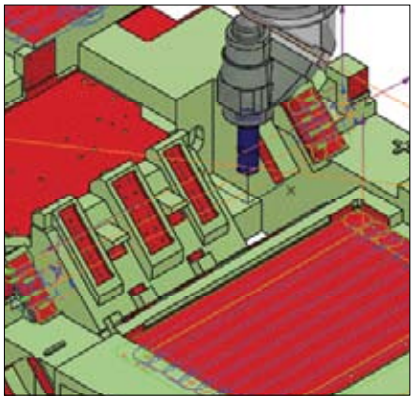
Simply import your part or product data from an assortment of CAD supported formats and immediately perform feasibility studies by using the tools provided. Identify and quickly estimate 2D, 3D, & profile machining cost estimates based upon actual profile and machine surfaces (MFA) for accurate and consistent quotes.

By taking a common software platform and covering the process from design, through manufacture, assembly and into installation, the system offers those within this industry real advantages.

SMIRT is highly tuned for the stamping die industry and the benefits that could be derived from its adoption are self evident.







: global presence

a network of over 70 partners in 40 countries

The VISI suite of CAD/CAM software is written and developed by Vero Software; part of Vero Software Plc, a UK based public company launched on the London AIM Stock Exchange in 1998

Vero Software Plc comprises of ten companies in England, Italy, the United States, Japan, China, Canada and France.

The company creates, owns and distributes software for aiding the design and manufacturing process in specific sectors of the industry. The specific sectors include the design and manufacture of plastic injection moulds, sheet metal stamping dies, progressive dies and others.

The company firmly believes that step gains in productivity can be made by building as much knowledge of specific design and machining processes within it's software as possible. This philosophy of productivity through specialisation has led to new applications in the design of mould tools and progressive dies.

Since 1988 Vero have been providing innovative and specialised solutions for the engineering industry through a network of over seventy partners in more than forty countries.

VISI is used by the world's most advanced toolmakers, as well as leading aerospace, automotive, packaging and medical companies to give a clear competitive advantage in today's tough business environment. Continual software development is core to the philosophy at Vero; we have an extensive development team striving constantly to keep VISI at the leading edge of software capability.

Vero works in partnership with its customers – for the long term. Understanding the demands of their business and providing practical and innovative solutions. We listen to our customers' requirements and build answers into the software to meet their expectations now and for the future.

With thousands of licenses of VISI in use world wide, and double digit growth year on year, Vero Software is one of the world's leading CAD/CAM developers.

VISI has modules for specific applications. Choose the ones to suit your individual business, yet have the room for growth. Better still, all the modules are totally integrated and work in just one environment with one easy to learn interface.

Service & Support

Vero has a support network of engineers who understand your business through experience.

VISI is a comprehensive suite of software in one environment with one interface. Invite our engineers to look at your business to see how VISI can improve your productivity, quality and performance.

The company now has more than 6,000 users registered for its annual maintenance services and supplies products to more than 40 countries through its wholly owned subsidiaries and competence centres.

We will guide you through the modules and recommend the most appropriate combination of software, training and services that suits your needs.

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