

ALPHACAM Router

An easy-to-use CAD/CAM solution for woodworking



The complete process...

ALPHACAM is the total CAD/CAM solution for the woodworking industry

From small niche joinery companies which manufacture custom and intricate products, to large, mass production players. Our systems are best-in-class and are integral to the success of thousands of companies around the globe.

ALPHACAM offers a multitude of applications for doors, windows, cabinets, stairs and panels. Anything from 2D fascia doors to countertops to complex 5-Axis stair handrails can be produced easily and quickly. ALPHACAM has such flexibility that we are bound to have a solution for your needs, whatever they might be.

ALPHACAM's ongoing program of development and enhancement ensures it not only keeps pace with the changing needs throughout the woodworking industry, but also delivers maximum return on your CAM investment.

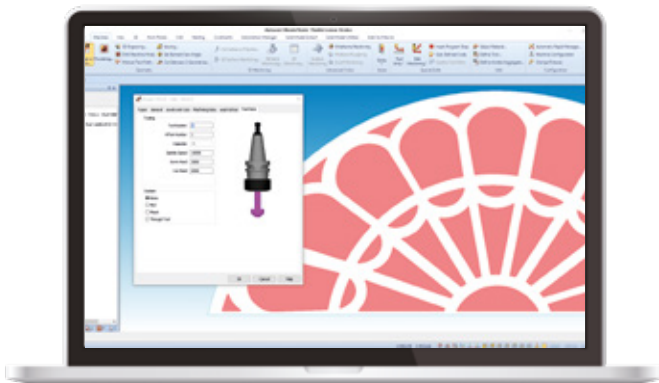
ALPHACAM also incorporates Microsoft's Visual Basic for Applications and is suited for those that can utilise ALPHACAM's add-on or custom-built applications and automation tools. Modern technology such as .NET can also be used.

Routing

Ease of use is just one of the reasons that ALPHACAM is the industry standard and system of choice for programming CNC routers. Tooling and machining techniques unique to this industry are accommodated by ALPHACAM's dedicated Router modules.

3D routing

Multiple 3D rough and finish machining strategies of surfaces, STL models and other native CAD models are available within ALPHACAM. These strategies can be applied to any work plane, allowing for 3 plus 2 machining to be programmed using ALPHACAM on machines with 4 and 5-axis rotary heads. ALPHACAM's Ultimate module is capable of 4 and 5-axis simultaneous machining of surfaces and 3D trim curves, often used for finishing chair backs.



Machine Compatibility

It is essential to maintain maximum machinery efficiency to ensure optimal production throughout. Having an optimised link between ALPHACAM and your CNC machines is a key component in attaining this efficiency. Having developed post processors for virtually every machine control in use today, ALPHACAM has the knowledge and experience to fine tune your CNC output ensuring maximum yield and quality in the shortest possible time.

ALPHACAM's powerful post-processing ability means that the advanced functionality of all CNC controllers is utilised, including plane rotation.

Extensive range of CAD interfaces

- Catia V4 & V5
- Solid Edge
- Pro/ENGINEER & PTC Creo
- Sketchup
- Autodesk Inventor
- Adobe Illustrator
- Siemens NX
- Adobe PostScript
- SolidWorks
- Spaceclaim

The extensive range of translators ensures that you can work with data from almost any supplier. 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.

Nesting

Productive. Efficient. Flexible.

Nested manufacturing is made easy using ALPHACAM's automatic nesting functionality. Parts can be selected directly from the screen or as a kit; their orientation fixed, is grain direction needs to be maintained or rotated to any angle. Nesting supports tool lead in/out, support tags for small parts, avoiding loss of table vacuum and multiple depth cuts, if an onion skin is required.

Productive

We have tools and a workflow which allow you to deliver complex nesting tasks and environments with minimal clicking.

Optimised

Our nesting engine provides best-in-class yields. Users are already reporting gains of up to 20% when compared to other solutions and older systems!

Efficient

Beyond the actual yield, we provide you with all the flexibility you will need to drive your machine tool to its highest levels of efficiency. Intelligent drilling, tool

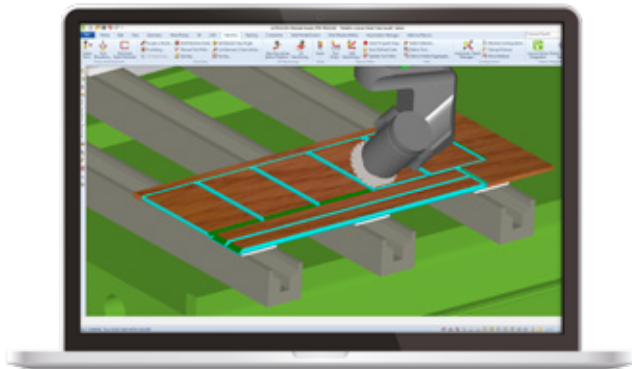
ordering, operation order by type, and more. We listen to the needs of the users and relentlessly pursue the creation of innovative tools to help you get the best results from your existing equipment.

Custom Reporting

All Nesting Jobs can create custom reports to provide you with total control and traceability of the parts. From simple labelling to a full job summary report, our Reporting Engine is the perfect companion to your nesting needs.

Intelligence

The technologies we provide you to handle difficult and small parts are also industry-leading. Never worry about a small part flying off your machine again.

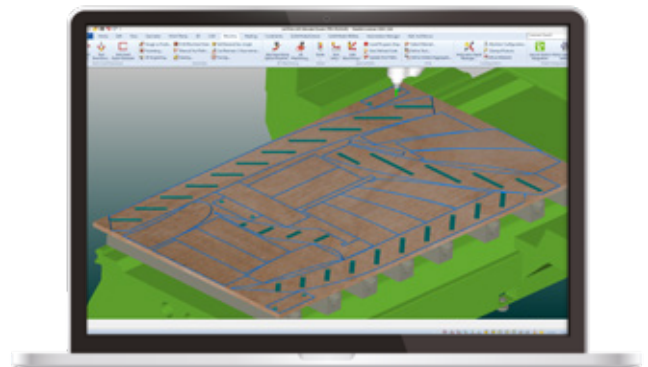


Using ALPHACAM brings substantial benefits in terms of saving time on programming and the accuracy of the toolpaths"

Leigh Hunter,
HySpeed CNC

The CNC technology together with ALPHACAM has meant we have taken massive strides forward in the production of intricate detail and reduced lead time greatly"

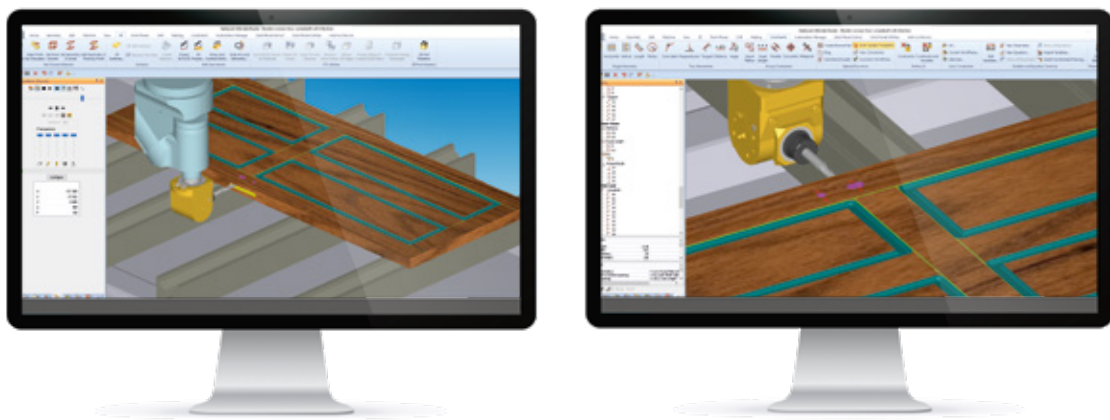
Gerard Gill,
Ashley Martin Shop Fitters



Horizontal aggregates

Horizontal aggregates for hinge reliefs and lock mortices are easy to control

Horizontal aggregates, available on nearly all CNC routers, for machining hinge reliefs and lock mortices, for example, are easy to control using ALPHACAM. Standard operations can be created and saved and inserted on to work planes when required, saving programming time.



Multi-axis machining

ALPHACAM supports routers with fully interpolating 5-axis heads

Head mounted rotary axes on CNC routers can be programmed at any orientation. Aggregates with a programmable rotary axis and manual tilt are fully supported, as well as routers with fully interpolating 5-axis heads. Safe rapid moves between planes are automatically controlled and verified using advanced solid simulation.







ALPHACAM | Advanced 5-Axis

ALPHACAM's Advanced 5-Axis additional module seamlessly integrates 4 and 5-axis simultaneous machining within its machining environment to allow a range of multi-axis cutting strategies to be applied to the most complex tooling or components

ALPHACAM's Advanced 5-axis module offers a wide range of 4 and 5-axis strategies applicable to solid and surface geometry.

ALPHACAM's Advanced 5-axis module has now made this easier to use with the operational style interface yet still have all the control required for the higher demands such as:

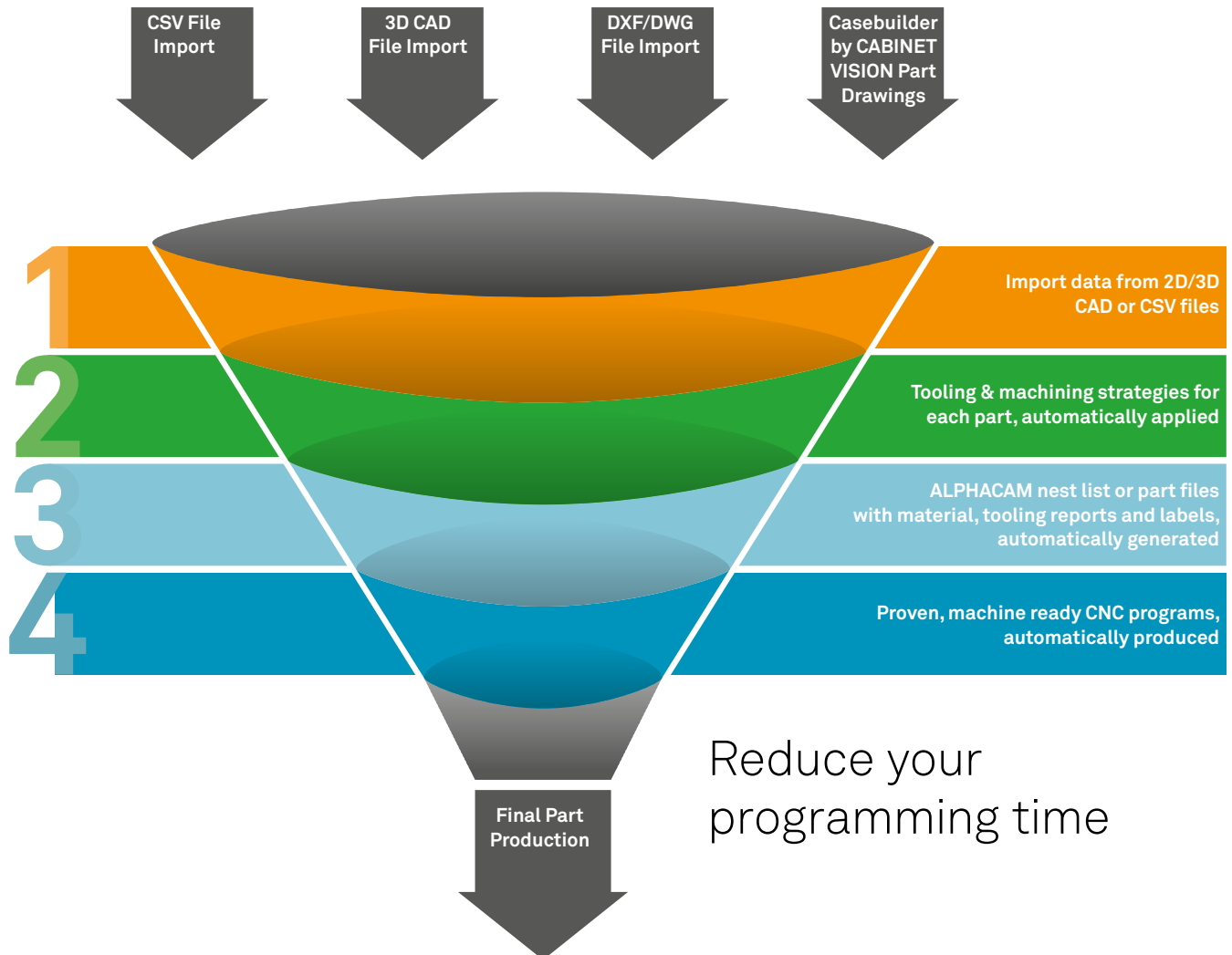
- SWARF cutting for machining of variable taper walls
- 5-Axis finishing across multiple surfaces with control over lead/lag and side tilt angles
- 5-Axis profile machining for slotting, de-flashing and trimming of sheet forms
- Full support for all common tool profiles, including lollipop cutters
- Easy-to-use machining strategies are geared to maximise productivity and quality

4 and 5-axis simultaneous machining offer key advantages over conventional indexed 3-axis machining:

- Improved surface finish and extended tool life are achieved by orienting the tool to maintain optimum tool-to-part contact at all times
- Improved access to undercuts and deep pockets - through tilting the tool or component allows shorter series tooling to be employed, eliminating the need for secondary setups
- Reduced fixturing, as the cutter can be presented to the component at any required angle

ALPHACAM | Automation Manager+

Automate with ALPHACAM, communicate your engineering data directly from your CAD software to your CNC machinery



Using a conventional CAM system each file would have to be processed individually by inserting the file, extracting the features, applying tool directions and toolpaths, saving the file and NC code, and then generating the required reports. ALPHACAM can do this repetitive, labour intensive work automatically.

Automation Manager allows 2D and 3D CAD files, along with solid models from third party suppliers, to be batch processed, from file preparation right through to applying toolpaths, with NC code being generated automatically. In addition, the file creates a full report structure, along with part labels and bar coding.

ALPHACAM | Casebuilder by CABINET VISION

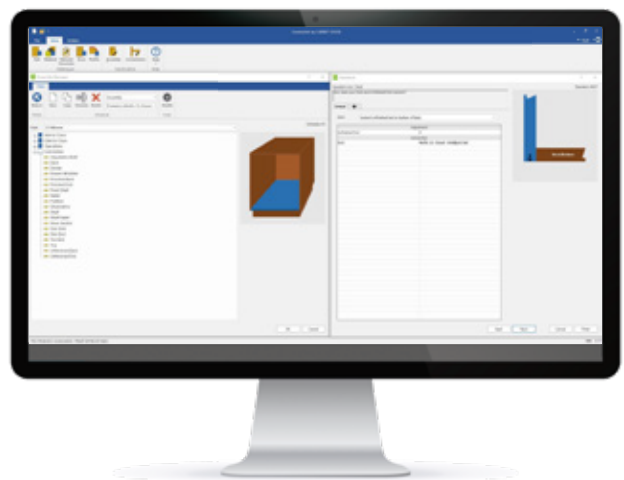
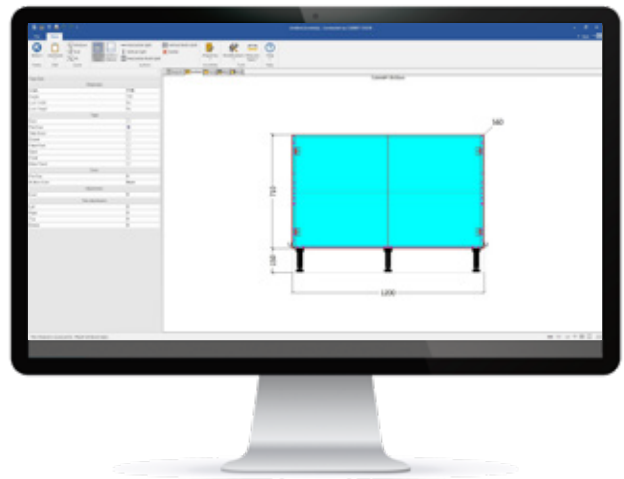
Simple yet powerful software for cabinets and casegoods

Casebuilder by CABINET VISION, is an easy-to-use Order Entry manufacturing software solution that allows you to manufacture all your kitchen cabinet and/or commercial cabinet jobs. With minimal set-up, you will quickly be designing and sectioning cabinets and outputting ARD files directly to ALPHACAM for output to your CNC Router. Casebuilder allows you to configure your cabinets individually including quantity and positions of doors, drawers, shelves and roll-outs, then automatically generates the ALPHACAM drawing files for all of the parts in the job.

Casebuilder by CABINET VISION was designed with the small to mid-sized residential or commercial cabinet shop in mind.

Key Features

- Order entry
- Custom cabinet catalogue
- Face frame, frame overlay, frameless, and 32mm construction styles
- Define cabinet construction
- Define drawer box construction
- Define roll out construction
- Define 5 piece and slab doors
- Assembly sheets
- Section drawers
- Relate to part wizard (basic object intelligence)
- Basic part shaping
- Batch export ARD to ALPHACAM



ALPHACAM | Designer

ALPHACAM | Designer fills the gap between CAD and CAM. From model design to part repair & modification, ALPHACAM | Designer is the ultimate CAD solution for taking geometry through to manufacture

Direct modelling

Direct modelling frees the user from the constraints of a traditional modelling system. Rather than modifying a lengthy series of parameters to make a design change, direct modelling allows the user to push, pull and drag the geometry to obtain their desired shape. These changes can be completely freeform or driven by numeric increments and measurements taken from existing geometry.

Knowledge of how the original model was constructed is no longer necessary and design changes are not constrained to the original methods of creation. Direct modelling gives the user complete freedom of construction whether creating a new component or modifying an existing design created in any of the myriad of CAD formats that ALPHACAM | Designer supports.

Ease of use

Simple menu and icon commands with context sensitive online help make it quick and easy to start using ALPHACAM | Designer. 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. Lightning fast rendering, transparency control and dynamic sectioning make it easy to visualise CAD files and large assemblies.

Model healing

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 ALPHACAM | Designer will automatically create the edge curve geometry making it easy to rebuild new faces using the comprehensive surfacing suite. Automation makes the time-consuming process of model clean-up much faster and simpler.

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 you.

The ability to seamlessly switch between solid and surface technology provides unlimited freedom, ensuring you can work with difficult CAD data.

Feature suppression

Frequently the incoming CAD data includes geometric features that are either unnecessary for CAM, or will not be created by the machining process itself. While this was important for the CAD design and will ultimately reside in the final component, such features often impede the job of the CAM programmer.

With ALPHACAM | Designer, removing these markings and even saving them for later operations is just a mouse click away.

Model simplification

Along with suppressing certain features of the model not used for machining, you may wish to simplify the geometry during various stages of the machining process. Removing portions of the model, such as intersecting features, makes the machining process faster and provides better results. The ability to modify the model without being held to the constraints of a previous construction method or feature tree is incredibly powerful.

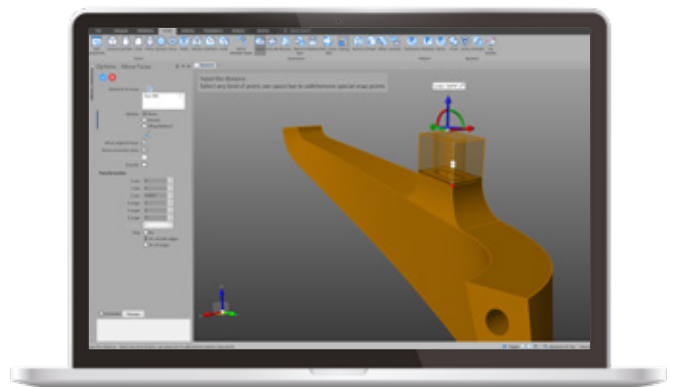
Creating model variations for each stage of the machining process becomes simple and your machining results become both fast and of higher quality.

Powerful sketching

ALPHACAM | Designer's sketch capabilities allows for the creation of two-dimensional shapes using free form input. While you can rely upon the traditional methods of coordinate-based input, free form sketching intelligently interacts with surrounding geometry. This ability to intuitively create implied constraints with other geometry expedites the sketch creation process while maintaining the maximum flexibility for future changes.

Working with 2D data

ALPHACAM | Designer supports the import of DXF and DWG files allowing the user to transform existing 2D data into a 3D model by simply reusing the imported profiles from the original data. Imported data automatically creates sketch profile regions making the transformation from 2D to 3D easier than ever.



Geometry for machining

ALPHACAM | Designer provides a host of geometry creation techniques that are critical to the machinist for model preparation. Hole capping is a great example of the simple and easy to use features of ALPHACAM | Designer that help to ensure that surface machining provides the best possible results. This feature can be used to cap anything from a simple drilled hole to a complex open cavity with just a few clicks of the mouse. An extensive range of curve creation routines vastly improves boundary creation and simple but powerful surface creation techniques provide the machinist with more power than ever before.

ALPHACAM | Art

ALPHACAM Art combines Vectric's Aspire artistic design software with the market leading ALPHACAM manufacturing software

ALPHACAM Art is a full featured, easy to use solution allowing for fast creation of 3D relief models. It features efficient tool path creation and the generation of reliable, machine-ready CNC code. ALPHACAM Art is the easiest way to go from a 2D drawing or sketch to high quality 3D low relief and CNC toolpaths.

ALPHACAM Art is 3D relief modelling and machining software for CNC routing and engraving projects such as carving decorative ornate panels and doors, swept flourishes, custom millwork, architectural mouldings, dimensional signage, bespoke company logos, jewellery pieces, custom gifts and awards.

ALPHACAM Art's unique 3D component construction tools make it easy to work with existing 3D models and to design your own 3D shapes.

With ALPHACAM Art, you can quickly and easily convert 2D sketches, photographs, drawings and graphic designs into unique high-quality 3D carvings.

Design to CNC

Designing and machining 3D projects such as fantastic signs, beautiful custom furniture or decorative carvings with ALPHACAM Art couldn't be easier.

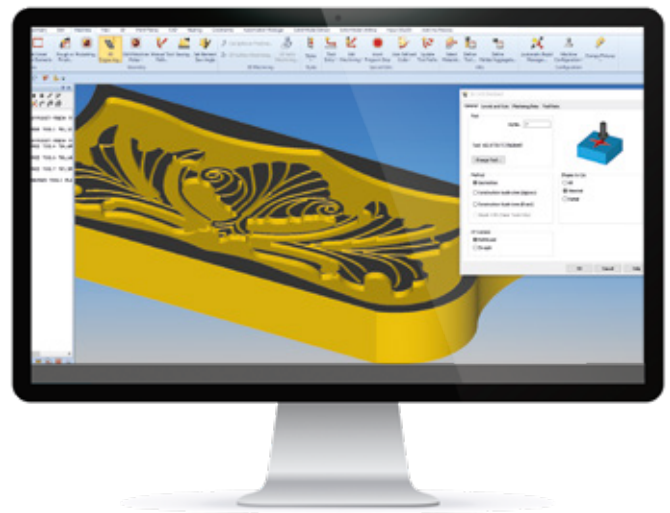
Simply create your 2D design using vector drawing tools or import designs from other drawing packages and then build 3D shape for your design with the powerful modelling tools. When you are happy with the 3D model create the toolpaths for your CNC machine using ALPHACAM and turn your design into reality.

Whether it's high-volume production runs, bespoke decorative pieces or simple cutting parts for friends and family on a home-built CNC machine, ALPHACAM Art includes the tools needed to get the job done easily and quickly.

Projects can be drawn directly, imported from graphical drawing packages such as Corel Draw or AutoCAD and from scanned image files and photographs such as jpg and bitmap files. Designs from standard clipart libraries such as Vector Art can also be directly loaded and machined.

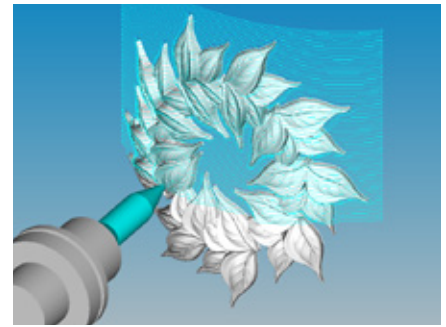
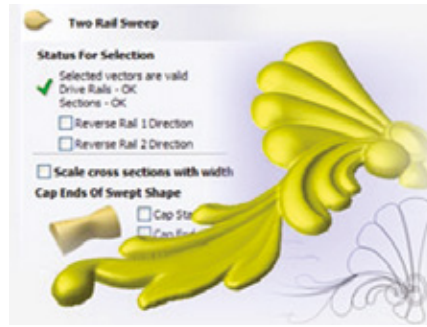
ALPHACAM Art includes standard drawing and layout tools for converting images into machinable geometry, adding borders, scaling, sizing and positioning.

Drawings that may take many hours of editing in other packages can very often be machined in minutes using ALPHACAM Art.



Key design features

- 2D drawing and layout tools
- Import 3D clipart & mesh models
- Build 3D shapes from vector outlines
- Interactive sculpting & blending
- 3D surface textures from images
- 3D component manager
- Seamless integration to manufacturing environment



3D Modelling

- Split a 3D model into independent components for editing, using a simple open or closed vector to define the split line
- New component creation and management from within the modelling tools form
- Two rail sweep options to sweep between nodes and fill centre
- Consolidate multiple components into a single component using the new Bake command
- Increased speed, efficiency and surface quality in 3D sculpting
- Automatically create vector boundary from a component
- Trim one component against another
- Import / Export 16-bit greyscale images as components for higher quality laser machine output, file exchange with 3rd party paint tools and satellite imagery

3D Shapes from Vector Outlines

Instantly add 3D shape to closed vector shapes with options for working with Curved, Angular and Flat Planes. Add, Subtract or Merge regions to quickly build 3D shapes.

Convert a 3D region into a component that can be independently modified - moved, rotated, scaled, stretched, tilted and faded at any time. Create realistic 3D shapes using the interactive Tilt and Fade tools that make it very easy to experiment with shape and angle combinations while constructing a project, with the results being instantly updated in the 3D view.

3D design preview instantly updates the model while experimenting with different shapes, heights, tilts, fades and combination modes. Showing clearly what the result will look like without having to guess and make iterative changes.

Interactive Sculpting & Blending

Powerful 3D Sculpting tools provide total flexibility when modifying designs. Models can be manipulated like a piece of virtual clay to smooth out edges and discontinuities, as well as to add extra detail, all helping to create that authentic 'hand carved' look for your models.

Interactively modify 3D designs using the sculpting tools with control over brush size and strength, plus options to, Smooth, Smudge Deposit, Remove, Erase with options to raise, lower or blend the changes.

Who should use ALPHACAM Art?

- Wood carvers
- Sign makers
- Furniture manufacturers
- Cabinet makers
- Solid surface fabricators
- Engravers
- Model makers
- Jewellers
- Architectural model makers
- Schools, colleges & universities
- 3D sculptors and artists





Software and Support

The ALPHACAM team has a support network of engineers who understand your business through experience. We will guide you through the modules and recommend the most appropriate combination of software, training and services that suits your needs

Software that grows with you

ALPHACAM Essential

The ideal entry level product for basic 2D CNC work.

ALPHACAM Standard

The perfect product for shops and subcontractors.

ALPHACAM Advanced

Targeted at the manufacturer who works with complex, free-form patterns and tools.

ALPHACAM Ultimate

Adds support for full 4/5-axis simultaneous machining for high specification joinery and furniture manufacturers.

Support plan

The financial cost of unplanned downtime can be expensive and lead to additional costs to your business. We understand it's essential to maximise productivity, which is why our support plans are specifically designed with your success in mind.

Support portal

A highly efficient tool for contacting our experienced and knowledgeable Technical Support Team. It shows the status of current and previous cases and gives access to a comprehensive knowledge base.

eSupport

Enables our Technical Support Team to view detailed information via email relating to your queries, for a rapid and accurate response.

Telephone support

Provides direct telephone contact to the Technical Support Team, for resolution of more involved issues.

Web rescue

A direct PC to PC service allowing our Technical Support Team to resolve your issues directly.

Software updates

Receive annual software updates giving you the latest functionality and ensuring maximum productivity and efficiency.



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

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

Hexagon's Manufacturing Intelligence division provides solutions that utilise data from design and engineering, production and metrology to make manufacturing smarter. For more information, visit hexagonmi.com.

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