

# ALPHACAM

Powerful yet flexible CAD CAM software



# The complete CAM solution

## Powerful yet easy to use

ALPHACAM offers a multitude of solutions for a wide range of manufacturing applications. From simple 2D machining to complex 5-axis parts, ALPHACAM can save time programming your CNC machinery. ALPHACAM has such flexibility that we are bound to have a solution for your needs, whatever they might be.

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

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

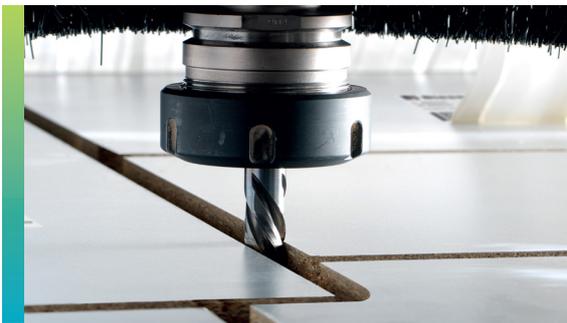
ALPHACAM also includes a robust API (Application Programming Interface) that allows companies to create custom programs to meet their specific needs.



# Take full advantage of your machinery

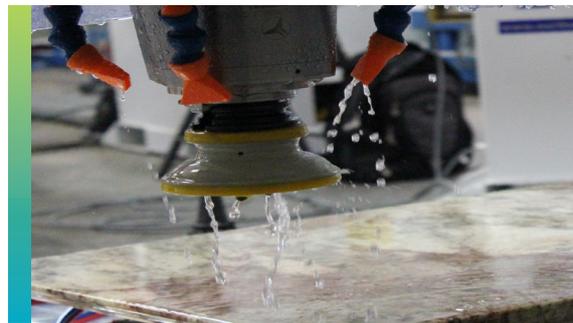
## Proven machine compatibility

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.



### Router

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 features.



### Stone

ALPHACAM has been specifically developed to address the unique challenges encountered when machining marble and stone. From CNC machining simple kitchen worktops to complex three dimensional stone carvings.



### Mill

ALPHACAM can contour, pocket, engrave and hole-drill complex parts. Functions such as 2.5D multiple depth cutting, pocketing with an unlimited number of islands and tool radius compensation can be controlled using its intuitive user interface.



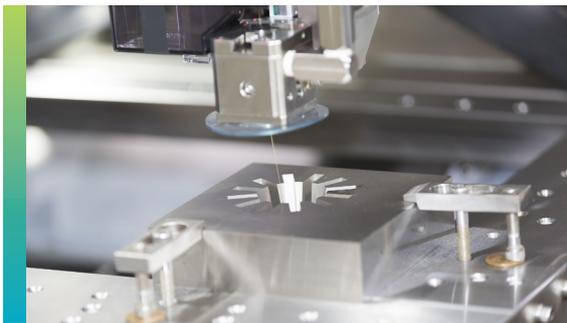
### Lathe

All standard turning operations are quick and easy to generate using ALPHACAM, with support for both linear and canned cycle NC code. Along with an extensive standard library, any shape and size tool can be created within ALPHACAM.



## Profiling

Automatic nesting of parts, for sheet optimisation, is just one of the reasons why ALPHACAM is an excellent tool when profiling using lasers, water-jet and plasma cutters. 5-Axis support for planar contouring and drilling as well as simultaneous machining for trimming are all supported by ALPHACAM.



## Wire

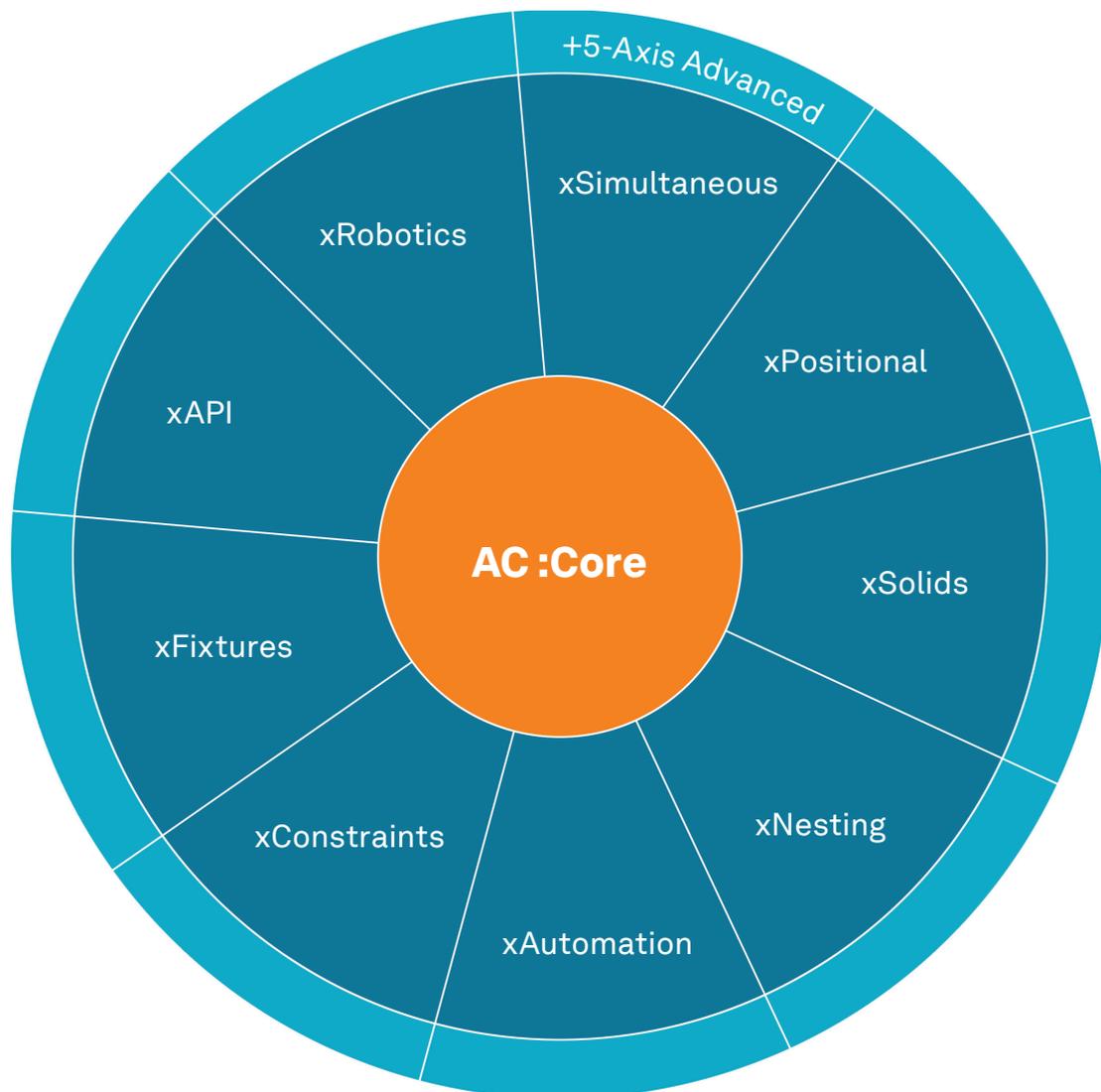
ALPHACAM is a leading CAM solution for wire eroding. 2-Axis machining with optional constant draft angle and 4-Axis shape-to-shape cutting are fully supported. Multi-level block heights can be automatically calculated if the wire angle exceeds the CNC machine's capability.

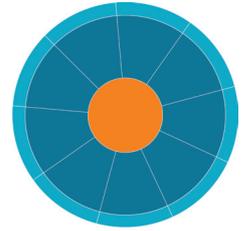
# The building blocks of a successful manufacturing business

ALPHACAM functionally is split into a series of multipliers that build on top of the Core 3-Axis Solution. This approach to the software allows you to build the CAM solution you need to meet the immediate demands of your business and eliminate the need to purchase functions that are not required to achieve significant cost savings.

Begin with ALPHACAM Core, which gives you the essential CAM functionality for a wide variety of standard 3-Axis machining applications. From there you can build highly customised solutions by adding the tools you need to fulfil your broader business needs. Dubbed “multipliers,” these tools build upon, or multiply, the power of the core software tools.

Further additions are also available to enhance the capability of certain multipliers, depending on the depth of functionality you seek.

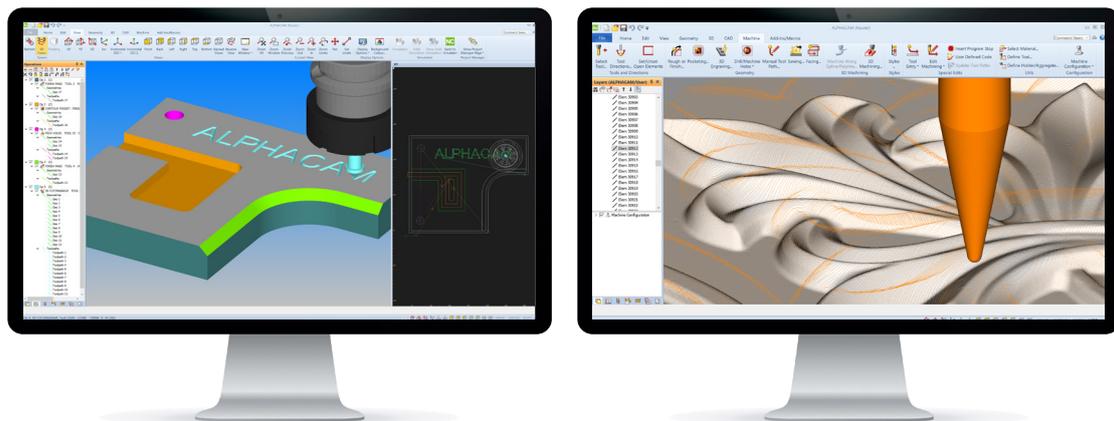




# ALPHACAM :Core

## The core functionality you need

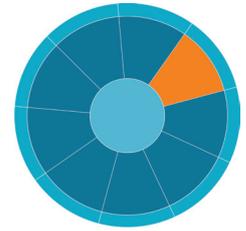
ALPHACAM :Core is the foundation for your manufacturing needs, offering a wide range of essential functionality for part programming. Core includes the ability for CAD importing, toolpath generation, simulation, report generation, and more. Start with ALPHACAM :Core for your essential requirements, and add multipliers to build the CAM solution that meets the unique needs of your business.



### Key features

- 2D - 3D machining (3-Axis)
- 3D engraving (3-Axis)
- Lathe (2.5-Axis)
- Laser / waterjet (2-Axis)
- Stone cutting custom functionality (sawing, polishing, and more)
- Wire EDM (2-Axis)
- Import CAD files
- Parametric sketching
- Thread milling
- Basic multidrill functionality
- 2D CAD creation and editing
- Utilities to handle STL mesh files
- Full machining simulation
- Common line removal for CAD repair (prepare for manufacture)
- 3D disc machining
- Standard reporting functionalities, including labels

# xPositional

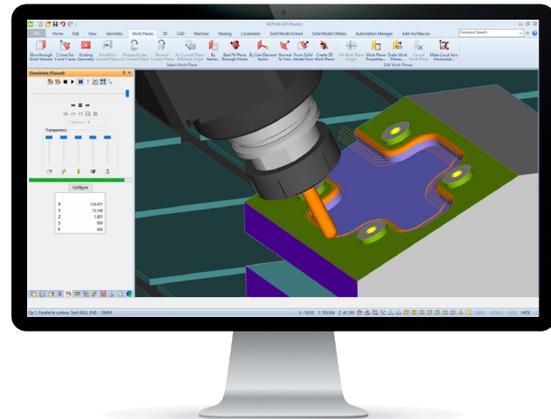


## Unlock new axes for machining your parts from any angle

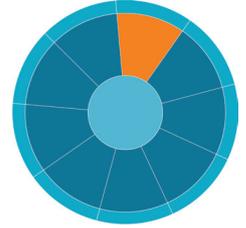
For manufacturers that have 4/5-axis machinery but don't need the complexity of simultaneous motion toolpaths, the xPositional multiplier is the perfect solution. By unlocking an additional axis, you will be able to program your machine to cut from any angle.

### Key features

- 2D machining (3+2 Axis)
- 3D machining (3+2 Axis)
- Advanced multidrill definition and functionality
- Define aggregate tooling
- Advanced machine configurations for 3+2 Axis
- Create geometries for machining utilising workplanes at any angle
- Define turrets, roughing and finishing for lathe
- Unlock C-Axis for lathe



# xSimultaneous

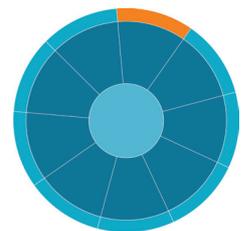
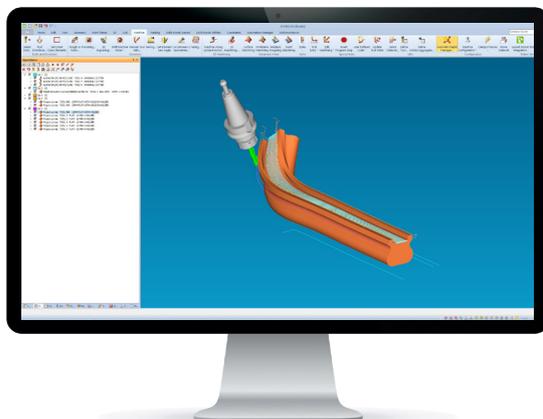
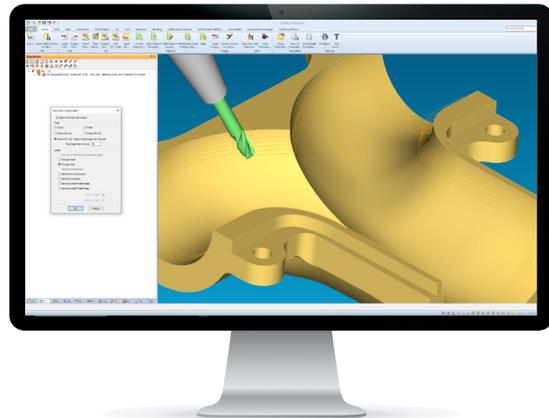


## Support for 5-axis machinery with fully interpolating heads

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 fully interpolating 5-axis heads. Safe rapid moves between planes are automatically controlled and verified using advanced solid simulation.

### Key features

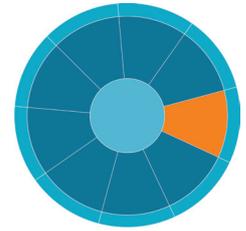
- Create fully simultaneous 4 and 5-Axis toolpaths
- 4 and 5 Axis toolpath optimiser
- Machine configuration support for 4 and 5 Axis machines
- Orientate tool perpendicular to profile for aggregates
- 5 Axis toolpath smoothing
- Convert 3+2 toolpaths to 5-Axis toolpaths
- Cylindrical parallel and profiling



### +5-Axis Advanced

ALPHACAM's 5-Axis Advanced 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.

# xSolids



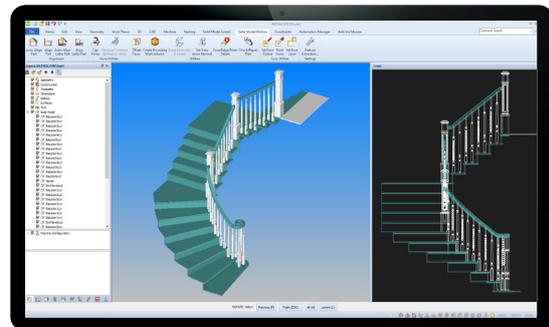
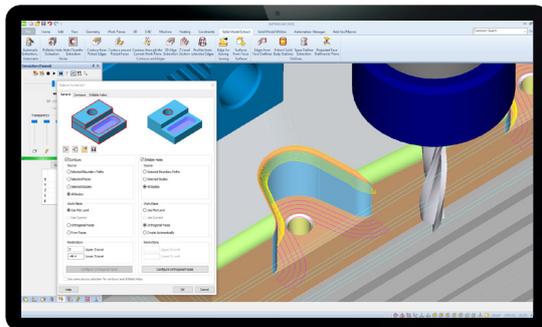
## Process your solid models and assemblies and prepare for manufacture

If you are working with solid models, xSolids provides the tools you need to import, prepare, and process your files for manufacture. xSolids handles nearly all types of solid models and assemblies, and gives you the ability to automatically recognize features, extract geometries, and apply toolpaths.

### Extensive range of CAD translators

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.

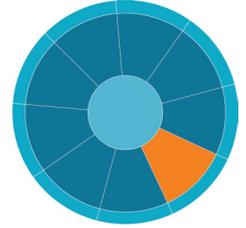
- Catia V4 & V5
- Siemens NX
- Adobe Illustrator
- Pro/ENGINEER & PTC Creo
- SolidWorks Solid Edge
- Adobe PostScript
- Autodesk Inventor
- Sketchup
- Spaceclaim



### Key features

- Import solid models
- Import solid Assemblies
- Import multibody parts
- Automatically save solid bodies to individual files
- Define solid tooling including holders, aggregates, and turrets
- Apply toolpaths directly to solid models or solid face selection
- Automatic feature recognition
- Geometry extraction for applying toolpaths
- Advanced querying for identifying predefined features
- Export solid CAD models

# xNesting



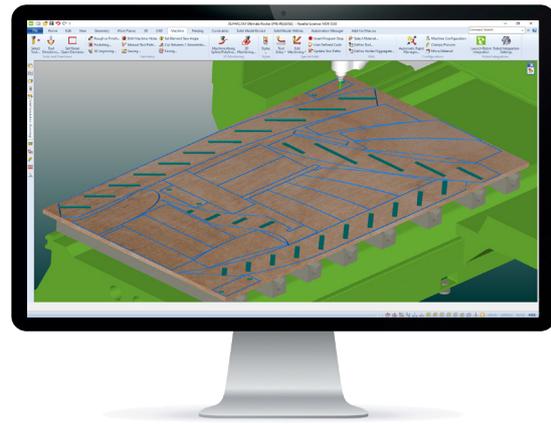
## Minimise waste by getting the most parts per sheet of material

Nested manufacturing is made easy using ALPHACAM's xNesting multiplier. Parts can be selected directly from the screen or as a kit; their orientation fixed, if 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.

ALPHACAM's industry leading nesting technology is productive, optimised, and efficient, and includes robust reporting for part traceability.

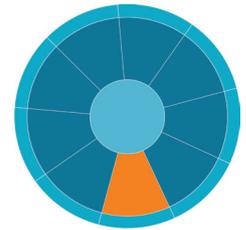
### Key features

- Bridge nesting for minimising lead in, lead out (time saving)
- Common cut removal
- Reverse side nesting
- Manual nesting for more control
- Offcut management (save offcut to sheet database)
- Suppressed drawing of duplicate sheets (quantities rather than repetition)
- Minimise tool changes

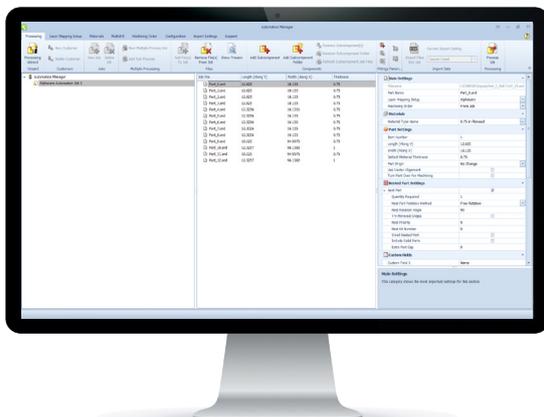
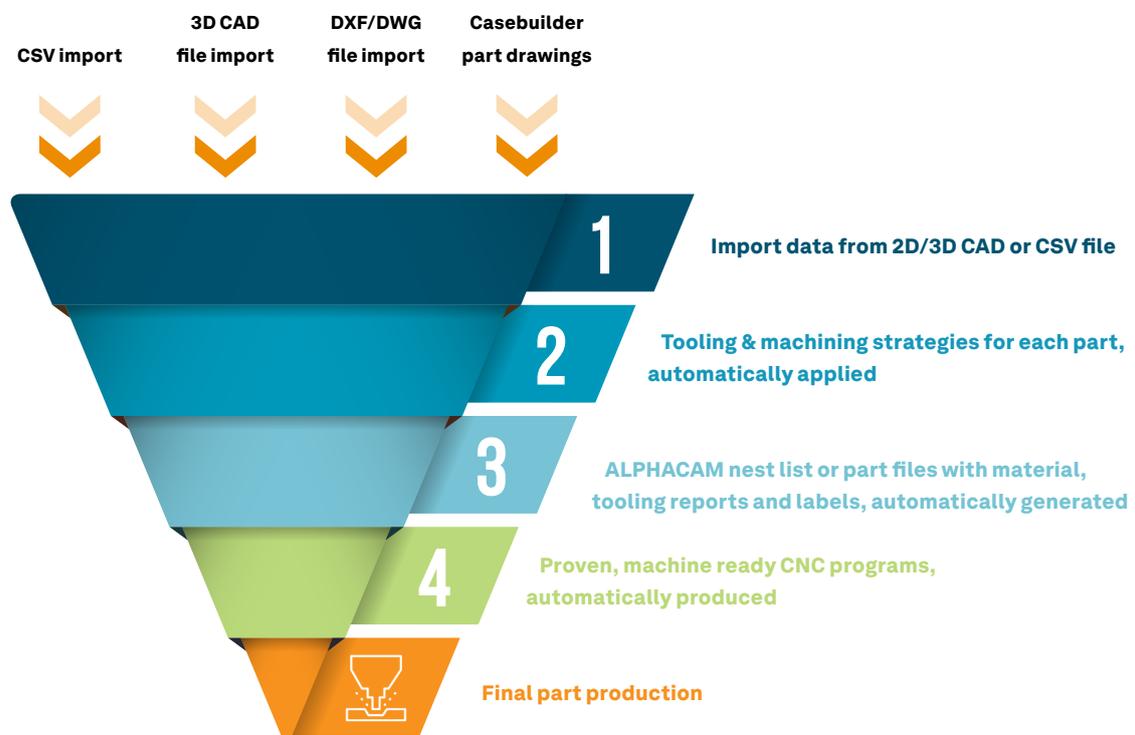


# xAutomation

Reduce programming time with smart tools to automate repetitive processes



With xAutomation, 2D and 3D CAD files, along with solid models from third party software, can be batch processed - from file preparation right through to applying toolpaths with NC code being generated automatically. In addition, the files create a full report structure, along with labels and bar coding. Using xAutomation can save an end user days and weeks, potentially even months of programming time in a year.

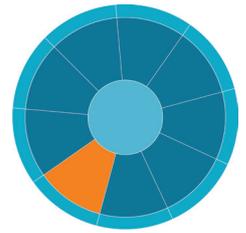


## Key features

- Solid assembly processing (combined with xSolids)
- CSV import
- Tool ordering
- Reusable machining styles
- 2D and 3D CAD processing
- Parametric part processing
- Offcut and waste management
- Multiple machine output
- Ability to run custom macros
- Connect to SQL databases including CV material database
- Cabinet door manufacturing (CDM)

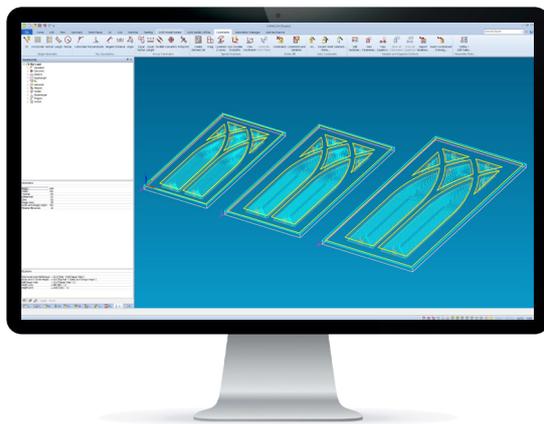


# xConstraints



Intelligent handling of smart parts that automatically update based on your rules

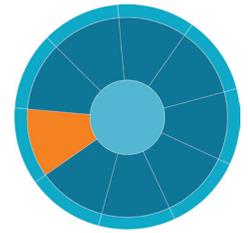
Parametric part programming can save you hours of time and eliminate errors by creating rules for how certain part attributes are affected when other attributes change. xConstraints gives you the full set of tools and commands to take full advantage of constraints, allowing you to program smart parts with ease.



## Key features

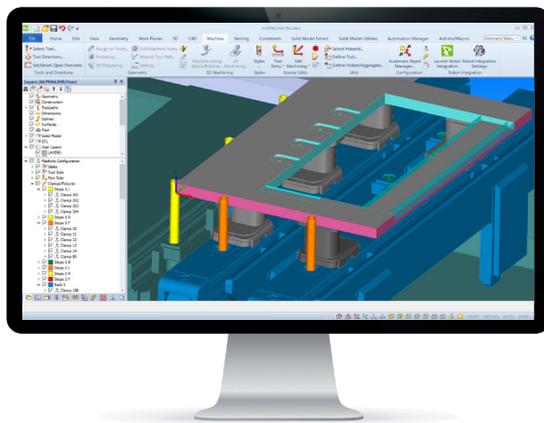
- Auto constrain drawings
- Constrained workplanes, wireframe geometry
- Parametric rules
- Parametric variables
- Automatic updating of toolpaths
- Change the size and configuration of a drawing based on user defined rules, variables, and equations

# xFixtures



## Full control of the design, placement, and simulation of your clamps and fixtures

If you need to control the placement, position, and movement of your machinery's fixtures and clamps within your CAM system, xFixtures is the multiplier for you. Add fixtures to your drawings with drag and drop ease, utilise robust simulation to visualise the placement and motion of your fixtures and materials, or take advantage of features for automatic pod and rail positioning. xFixtures puts you in control.

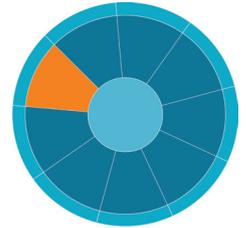


### Key features

- Automatic positioning for pods and rails
- Easy definition of clamps and fixtures in drawings
- Move clamps and fixtures
- Move material
- Pop up and down clamps and stops
- Simulate clamps and stops
- Ability to quickly drag and drop fixtures into drawing from a library



# xAPI



## Extend the power of ALPHACAM to meet your unique needs

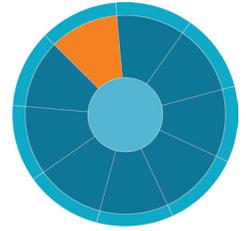
ALPHACAM's xAPI multiplier allows you to tap into our powerful CAM engine utilising standard programming languages to extend and customise the way the software functions. Whether you are looking to create applications that streamline your manufacturing operations, or developing unique programs for custom manufacturing applications, xAPI allows you to take full advantage of the power of ALPHACAM.

### Key features

- Powerful and extensive API
- Utilize any .NET language
- VBA editor included
- VBA post editing
- Ability to create a VBA project
- Ability to create add-ins to extend the functionality of ALPHACAM



# xRobotics

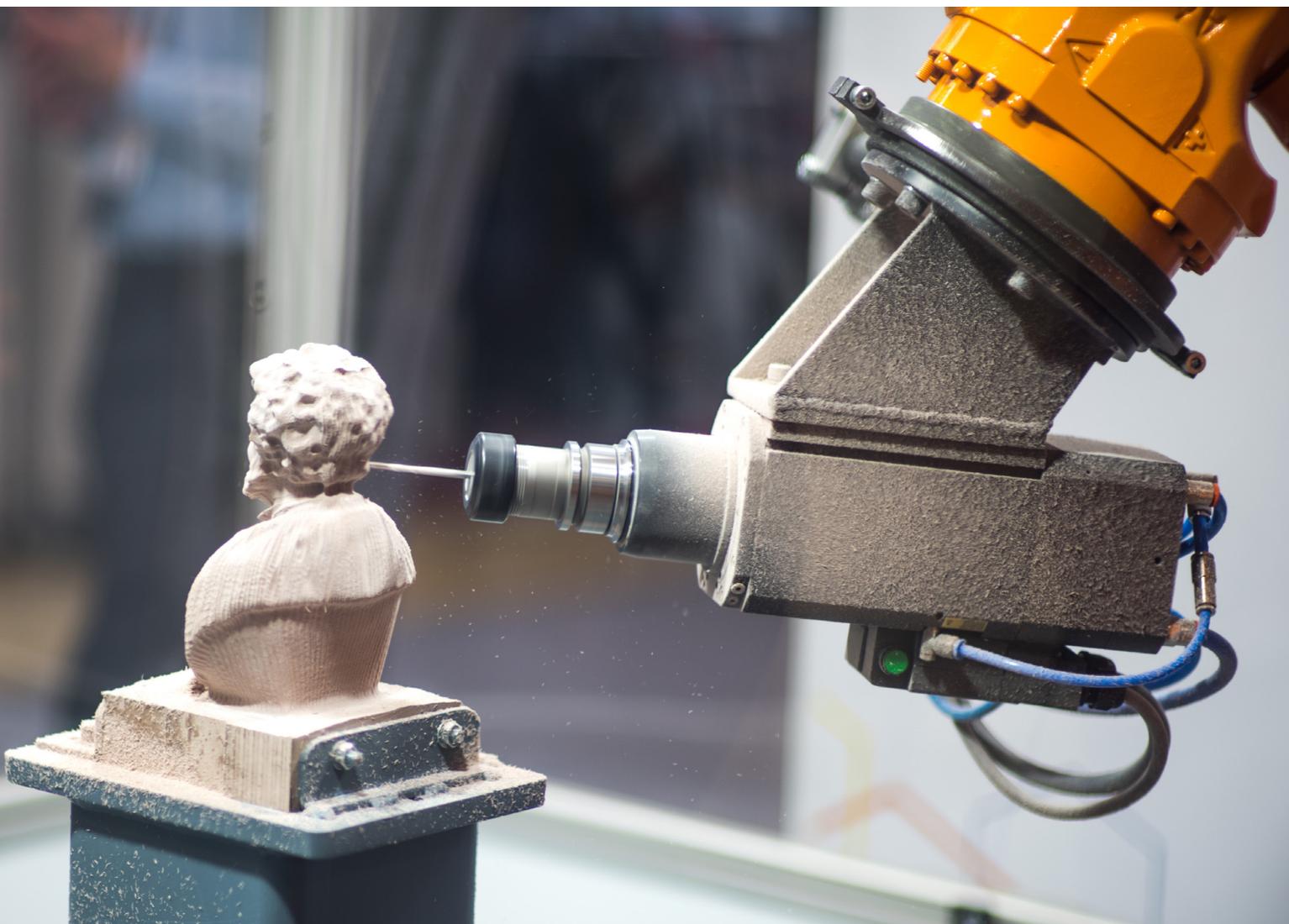


## Output all the information your 3rd party robotics post processor needs

If you are needing to output your part programs to be handled by robotics applications, xRobotics is the multiplier for you. We've taken the guess work out of what information needs to be output to be best handled by your 3rd party robotics post processor. From tooling, toolpath, and 3D CAD data, xRobotics can help streamline the ability to work with robotic motion cutting tools.

### Key features

- APT output (vector movement) for compatibility with 3rd party robotic post processors
- Output tooling
- Output 3D CAD for tooling
- Output toolpath
- Support for RoboDK

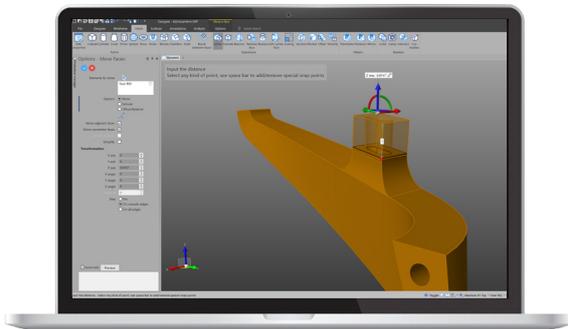


# DESIGNER

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

DESIGNER is purpose-built for smarter manufacturing, providing a variety of solid, surface, sheet metal modelling capabilities, creation of 2D drawings, electrode design, design automation through macros and scripting, and a link to Hexagon CAM software and reverse engineering functionalities.

DESIGNER liberates users from the constraints of previous methods of creation to give users complete creative freedom. DESIGNER offers a wide range of features and capabilities to help users optimise products more efficiently.



## Key features

- Ease of use
- Direct modeling
- Model healing
- Feature suppression
- Model simplification
- Power sketching
- Working with 2D data
- Geometry for machining

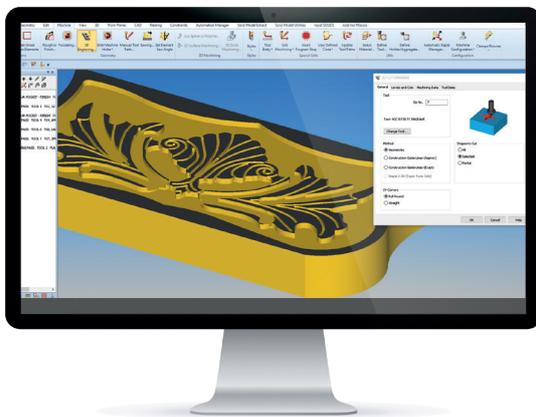
# ALPHACAM | Art

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.

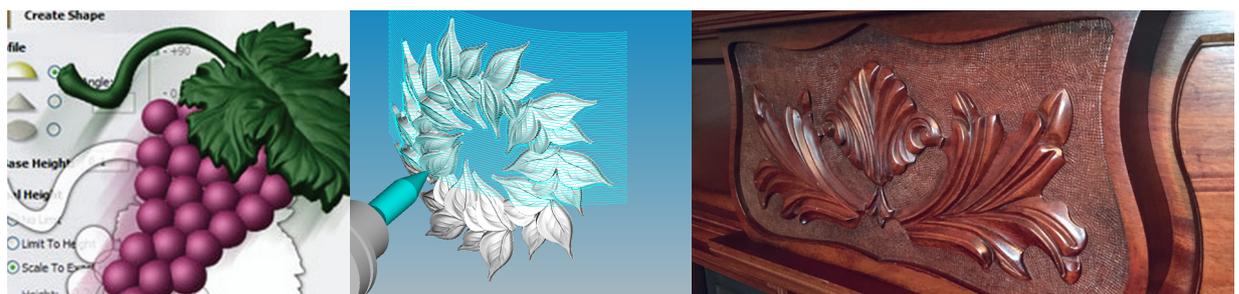
ALPHACAM Art is 3D relief modelling and machining software for CNC routing and engraving projects such as carving decorative ornate panels and doors, swept flourishes, custom millwork, architectural mouldings, dimensional signage, bespoke company logos, jewelry pieces, custom gifts and awards.

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.



## Key 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
- Design to CNC
- Interactive sculpting and blending

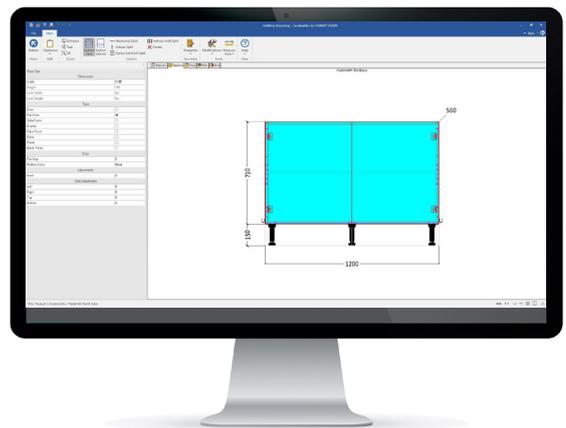
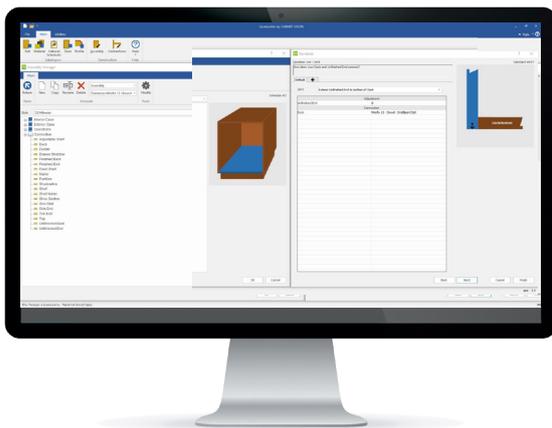


# ALPHACAM | Casebuilder by CABINET VISION

## 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 generate 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

# SMA features to help you stay ahead



## 24 hour eSupport

The fastest and easiest way to get questions answered and connect with other users.

- Personalised member home page
- Technician monitored forums
- Download software updates
- Frequently asked questions
- Download select custom reports
- Ask a tech via email\*



## Self service customer portal

A unique portal where you can log cases, download latest updates and documentation.



## New versions

Enjoy continual improvements and enhancements between releases.



## Telephone support

Certified ALPHACAM technicians are on hand to troubleshoot your software problems.



## Priority queue

Peace of mind knowing your calls will be answered as soon as possible.



## Online time

1 on 1 time over the internet personalised to fit your specific needs.

\* Requires a support case



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](https://hexagonmi.com).

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