



FastCAM[®] System v7

Feature Comparison Chart (NC – Standard - Professional)

Feature	Description and Benefit		NC	STD	PRO
PART CREATION / DRAFTING					
Fully Integrated Drawing Editor	Create and import 2D geometry in a fast and simple way. Purpose built drawing and functionality for metals trades.	No need for the separate cost in buying and learning complicated CAD software. The FastCAM Editor is very easy to learn.	✓	✓	✓
CAD/DXF Compatibility Industry format Compatibility	DXF & DSTV for structural are the most common file formats for transferring files between CAD & CAM Systems. All FastCAM systems can import DXF, DWG, DSTV (NC1), IGES and original NC Code	CAD -> NC. Fabricators are supplied job data in a variety of formats. To solve this problem, FastCAM can not only load a range of file types, it includes a suite of CAD smart tools for conversion to NC-ready code making the job input seamless and automatic.	✓	✓	✓
Bulk DXF import	Import multiple CAD drawings.	Increases job processing speed.			✓
DXF Layer Support	Layers are automatically matched to machine processes like marking, drilling etc.	Automatically interprets CAD files ready for all processing.	✓	✓	✓
PDF file import - NEW	The latest version can convert vector based PDF's to CAM files.	Massive time saver at the quotation stage.	✓	✓	✓
ESSI, EIA Language support	Support for industry standard machine file formats.	FastCAM® supports all combinations of machine and controller as well as ESSI, EIA and ISO NC languages in both inch and metric. NC output can be Absolute or Incremental.	✓	✓	✓
NC File Import	Reads and nests all NC files including PC and Unix based.	Will work with your old job files (existing NC files).	✓	✓	✓
Reverse Engineering CNC -> CAM/DXF	CNC file conversion back to geometry using a path from CNC through CAM and to DXF providing complete flexibility for any format at input or output.	Has been invaluable to users when they've lost their original drawing files!	✓	✓	✓
Manual Part Extraction from CAD files	This is where single or multiple parts are extracted from a CAD drawing (where the file is a large drawing with irrelevant data for cutting).	Saves programming time. You can also save further time by automatically adding text to parts when extracting files in this manner.	✓	✓	✓
CAD Extract and Explode	Automatically extracts all parts from DXF drawings and produces a cutting list. Includes 'auto-naming' of parts during bulk import.	Saves programming time.	✓	✓	✓

Feature	Description and Benefit		NC	STD	PRO
CAD Compress	This feature reduces entities and replaces them with true lines and arcs. CAD file sizes can often drop 80-90%. They even cut better as well!	Improves cut quality when working with customer supplied files.	✓	✓	✓
CAD Clean	Many CAD systems produce arcs as many small line movements which are unsuitable. Even tiny corner errors can confuse automatic tool path generation routines. This feature joins the lines which results in smooth cutting.	Improves cut quality when working with customer supplied files. Finds potential stoppage issues before they reach the cutting floor.	✓	✓	✓
Fix Joints	Fixes small gaps in geometry, automatically extends line ends and radii	Resolves cutting problems caused by gaps and overlaying endpoints.			
Convert Holes to Points & Points to Holes	In structural parts, often the holes are to be drilled, not cut. Conversely, often the CAD file only has datum points for burning holes. This function will convert those points to holes at the required size.	A very useful feature for drilling which is not found in CAD systems. Saves programming time.	✓	✓	✓
TOOL PATH GENERATION					
Tabbing/Stitch cutting	Allows tabs to be added on the part. Stitches can also be added to the internal and external profiles	Most commonly used to hold the part in place after it is cut. Can also be used to control distortion.		✓	✓
Move Pierce Function	Allows you to move entries/pierce points after nesting.	Programming control and flexibility. Select ideal piercing point after parts are nested		✓	✓
FastPATH™ Automatic Tool Pathing	The software automatically analyzes nests, calculates cutting direction, kerf, entries/exits, sequencing, batch processing, hole avoidance and tabs.	Can eliminate 50% of programming time on tool pathing. All paths are reduced to a single mouse click. A substantial time and consumable saver, especially on complex nests and on a large number of cutouts.		✓	✓
Line Marking Support	Line marking is frequently used for marking the reference lines for subsequent operations such as bending, welding etc. Center points for drilling are also marked on the machine itself.	The purpose of marking on the cutting machine is to reduce cycle time and improve relative dimensional accuracy of various operations.	✓	✓	✓
VERIFY AND COST JOBS					
FastPLOT™ NC Visual Simulation	Easy editing and visual, graphic verification for CAM, DXF and NC code. You can visually check NC code for collisions or general behaviour, convert NC code to DXF, kerf offset NC code, plot NC code or nests for optical or documentation.	Minimizes risk on postprocessor by allowing checks on nests. Provides cutting time & distances and gross material utilization, making it ideal for costing and estimating individual parts or complete nests. Shows exactly what will happen when cutting.	✓	✓	✓
Automatic Accurate Collision Checking - QUALITY CONTROL	Replaces visual verification with computer based checks. Determines if a cut path intersects with another cut part and whether a part is off a plate in nesting.	Especially important in big and complex nests where even with the best efforts, a small overlap can be missed in visual checking and an overlap will ruin at least two parts. A simple bumped part can			✓

		produce an expensive mistake in processing.			
Automatic Cut List creation	Automatically creates a parts list from an “EXPLODED” DXF file. The list can be modified by adding or deleting parts as desired. Note: There is also the Option to automatically open the file from within the FastNEST module after explode.	Cut list had one item for each extracted part. Part can be “auto-named” from text within the part boundary			✓

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NESTING & POST NEST OPTIMIZATION					
Nest a Variety of file formats	Full shape nesting with DXF, IGES, NC, CAM, DSTV inputs. Large range of NC controls for output. Can output DXF nests.	Instant ‘one click’ Nesting for ease of use and compatibility with all the various industry file types.			✓
Array Nesting	Automatic array created for multiple parts.	Simple, automatic type of plate optimization. Select from triangular or rectangular arrays.		✓	✓
True Shape Nesting	Considers the ‘True’ Shape of the part when nesting. Irregular parts are allowed to interlock so that unlike parts can be nested together as well as nesting parts within parts. The rotations of the parts are all considered before the shapes are nested.	The nesting engine will optimize both the material usage and the sequence of cutting. Entries and exists can be moved before and after nesting. Part to part and part to plate edge can be set in nesting parameters. Parts can be set as “fillers” to optimize material.		✓	✓
Blocks Array Base Nesting	This is accomplished by “blocking” a part, originally drawn or imported and setting up “blocks copy” thereby creating an array of almost any size and composition.	This function is aimed at entry level users who want to create the most basic of same size ‘nests’.	✓	✓	✓
Interactive Nesting	A semi-automatic method of nesting parts on materials. Single profile parts can be automatically nested onto any size plate. Nest parts onto a plate, rectangular or remnant.	Allows the programmer the flexibility to jostle, rotate and move parts for easy manipulation. Controls distortion and maintains the accuracy of cut parts.		✓	✓
Interactive Part Placement	Select, click and drag and drop parts to desired placement. Flip, mirror on any axes, rotate, move.	Allows for manual part placement alignment but retains automatic setting of kerf and cutting direction.		✓	✓
Automatic Nesting	Nest into remnant or odd size plate. Full shape nesting compatible with all industry standards including DXF, IGES, NC, CAM, DSTV input and a large range of NC controls for output.	Optimizes the material usage and the sequence of cutting. Allows expert nesting in minutes with ‘One Click’ easy operation.			✓
Remnant Nesting	Nesting into previously cut plate (not just FastCAM) but virtually any source, any size, shape or weight.	Optimizes plate usage. You can link in the FastTRACK® System (sold separately) for full graphic inventory tracking of remnant stock.		✓	✓
Bump Nesting	Ensures that manually placed parts do not overlap.	Helps prevent cutting mistakes.		✓	✓
Cut Nest by Process or Part	Cut on a process by process basis (e.g. mark entire nest then drill entire nest, then cut entire nest)	OR process by part, meaning that each part will be processed (e.g. mark, drill, cut) before moving on to the next part.			✓
Part Marking - NEST	You can add Text to the screen which becomes a ‘Text Entity’.	Useful for visual part identification within a nest. (requires Marking feature on machine)	✓	✓	✓

Plate Marking	FastCAM converts text into simple lines and arcs to make use of marking tools. We also support printer heads that use their own format and accept a string only as input from the NC file.	Converts text to machine movements for part marking.			✓
Gas Axe Skeleton Breakup	FastCAM Gas Axe will selectively apply post cuts to any nests	For safety and handling. Skeleton can be removed in small sections rather than trying to lift off entire remnants in one place.		Manual	Auto
Feature	Description and Benefit		NC	STD	PRO
PIERCE REDUCTION & SPEED CUTTING					
Bridging of Parts- Traditional	A simple positive bridge is where parts are connected together linked by two parallel cuts (bridge). Bridges allow continuous cutting and are traditional in many shipbuilding applications.	Much faster cutting. Parts are left joined, but this can be an advantage in some circumstances. These include making assemblies, moving the parts as a group and minimizing part movement (appropriate for lighter materials or thinner materials).			✓
Bridging – Overcut or Negative	Continuous cutting with the immediate separation of parts that has the advantages of bridging but cuts out the bridge on the return.	Delivers a speed increase on many nests and result in a reduction in piercing making it a feature of interest to a wide range of users. Overcut bridges remove material completely resulting in a smoother better quality finish at the bridge.			✓
Bridging – Skip	Here you have additional piercing and the parts are held together by a bridge but the bridge is not cut. A simple gap bridge forms much the same function for lighter materials where the resultant tabs can be broken manually. In this case, additional pierces are required rather than fewer. (This function is aimed at aluminium routers but can be used in any instance where the programmer does not want the bridge to be cut).	This can be used for routing aluminium, as it prevents vibration but does involve piercing on the edge, which is fine for routing. You actually do much more piercing and save nothing on cutting, so it is a device mainly to prevent vibration and movement.			✓
Bridging – Skip with Entries	As with Skip Bridging, but pierces are away from the part edge.	As for Skip Bridging.			✓
Manual Bridging	Apply a simple bridge to a manual array in the FastCAM drawing editor.	As for Traditional Bridging.	✓	✓	✓
Common Cutting – Pairs	Common cut pairs is used most often in shipbuilding as it is common to encounter left and right hand pairs.	Can reduce the cutting and halve the piercing by joining two identical parts along a common straight boundary.			✓
Common Cutting – Nests	Compared with traditional nesting of separate parts each with their own external entry and exit, Common Cut Nest gives you the ability to set the part spacing to exactly the cut width before nesting. Achieves 'zero gap' common cutting by cutting entire nests using a start on (part) edge approach. In many nests this will usually eliminate piercing time and halve cutting time.	Speeds cutting time and reduces pierces. For rectilinear parts such as nests of rectangles, the saving in piercing can be 5x. The saving in cutting can be 2x, yielding gains of 10x in total processing speed. Intelligent strong/weak analysis logic is built into the software to minimize part movement however there is the potential for slightly damaged parts so part quality is a consideration.			✓
Chain Cutting and Stitch Cutting	Option to move from one cut to another (instead of using RAPID). Implements automatic chain cutting for some parts.	Speeds cutting time and reduces pierces.			✓

Multiple Strip Cutting & Multi Pass Cutting	Supports varying multi torch cutting and a fixed number of torches. Multi pass Nesting for a variable number of torches. The software looks for opportunities to use multiple passes. EG Pass 1 using three torches then pass 2 using 4 torches	Multi torch cutting for nests with different arrays of parts sometimes allows for economies where you get maximum cutting efficiency using different combinations of multiple torches. IE number and spacing. Works best with Automatic torch spacing feature on machine but also works with manual spacing.			✓
Feature	Description and Benefit		NC	STD	PRO
OUTPUT					
Multiple file formats	FastCAM® can read or convert CAM, DXF, IGES, ESSI, Word Address, (EIA) files and Unix NC code files. FastCAM can save into CAM, DXF and IGES formats.	Industry Compatibility. Even specialized applications like automated tube cutting machines can be driven.	✓	✓	✓
Support for Popular cutting equipment Integrated Post-Processors	Well constructed postprocessors are very important. FastCAM offers support for single or multi-torch, oxy and plasma cutting, Hi Def Plasma, Laser, Water-Jet plus Oxy and Plasma Beveling. Note: Based on our published list of 'out of the box' postprocessors on our web site. FastCAM Laser is separate.	FastCAM has integrated postprocessors that take the generic nesting data and convert it to CNC program instructions that each specific machine will understand. As an internal or integrated function to the CAM system the code is highly efficient so that you can get the best out of your machine.	✓	✓	✓
Process Support	All secondary processes like marking are supported. Multiple primary process are also supported including Oxy-Fuel, Plasma even bevel cutting.	Extract the best value out of your machine by combining two or even three fabricating technologies.	✓	✓	✓
Multiple Posts	FastCAM comes with approximately 50 posts to choose from. Our service department will configure/setup additional posts for a modest fee. Cost varies.	If you replace or add another type of cutting machine you don't need to change your programming system! FastCAM can 'drive' multiple combinations of cutting machines and controllers. Eliminates the need to train staff on multiple systems.	✓	✓	✓
Varying multi torch cutting	Varying multi torch cutting as opposed to a fixed number of torches in a single pass at a fixed spacing remnants in one piece.	For users who want multiple passes over the same nest to maximize cutting efficiency.			✓
PC based Kerf Compensation	Kerf compensation can be calculated automatically on your PC.	Speeds older controllers with very slow kerf computation.		✓	✓
Incremental and Absolute NC Output	OuputsPC based NC file format. FastCAM will operate in Incremental or Absolute format (the default is Incremental).	The ability to change to absolute is of benefit with some older controllers.	✓	✓	✓

FastCAM is available as a system in 3 different editions to suit your needs and budget: NC, Standard and Professional

The FastCAM product was first shipped in 1976 and was originally developed because CAD systems were over complicated for workshop personnel. Even now, many current MIS solutions are complex, slow and inadequate, particularly for heavy plate shapes. The people who operate and service the machinery need to be able to use the system with absolute ease. FastCAM's unique integrated multiple postprocessors, NC verification and NC code nesting still set it apart from other CAM and CAD/CAM systems and the new generation of FastCAM software is used by thousands around the world. Today the product line has been expanded to include dozens of trademarked products encompassing many industries and distribution points and FastCAM is used in many different environments including shipbuilding, mining, construction, heavy fabrication, wind towers, signcutting and service centers.