NCG CAM – What's New in Version 12

NCG CAM Solutions Ltd, UK officially released NCG CAM v12 on 31st January 2013. This major release includes a number of new features including generating ruled surfaces, the ability to machine selected surfaces, thread milling, tool size guide, core horizontal area passes, multi axis stock models and a VERICUT™ tool list creator.

Different XY to Z Thickness for Ball-nosed Cutters

This new feature can be used in instances where the user wants to use a ball-nosed cutter and have a negative thickness in X & Y, but not in Z, or where the negative thickness is greater than the corner radius.
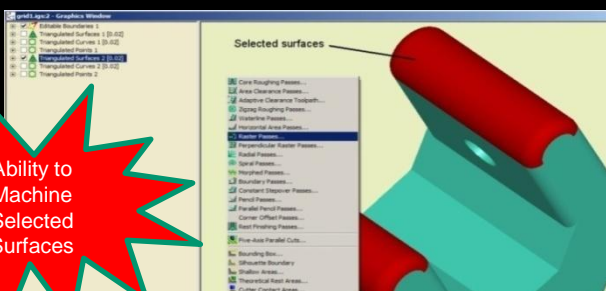
Use Double Precision Storage in Database Files

This will not be visually obvious to the user like most features, as it is how surfaces, boundaries and toolpaths are stored in the database.
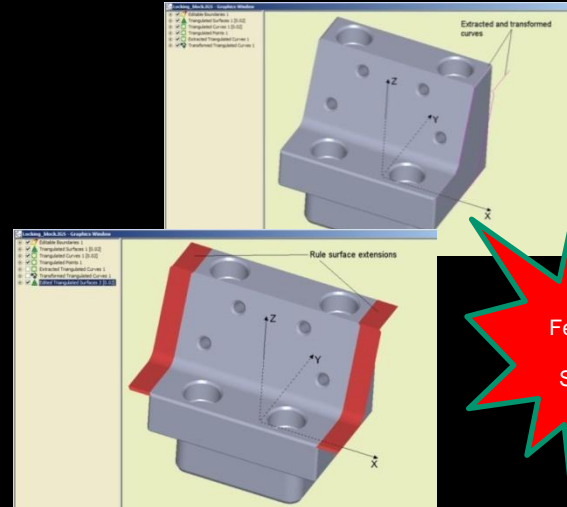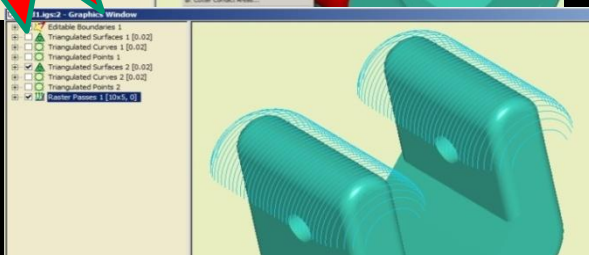
Storing data in double precision will allow for greater accuracy on larger jobs (typically those larger than 1000mm) and if working a long way from the part origin, but also on smaller part close to the origin where extremely tight tolerances (<0.001mm) are required.

Added the Ability to Machine Selected Surfaces

This new functionality will allow the user to select the individual surfaces to machine and then set the machine selected surfaces option, to machine to the surfaces very edge, without the need to create a boundary first.

Ability to Machine Selected Surfaces

New Feature for Ruled Surfaces
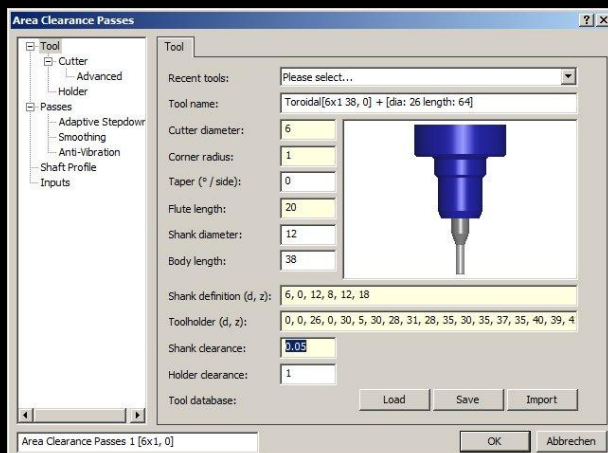
Above – Shows the ruled surfaces.

Ruled Surfaces

This new feature will allow the user to generate a ruled surface between curves. This is in addition to the existing planar patch feature.

In combination with the new extract curves functionality in v11, the user can for example create surfaces to extend the edge of surfaces to machine past the real surfaces edge.

Cutter Shank Clearance

This new enhancement allows the user to define a clearance for the shank of the cutter in a similar way to the tool holder clearance.

This will make it possible to machine without having the shank rubbing on existing machining.

Tecnofat SA, Argentina Produce Large Sailing Vessels with NCG CAM

Tecnofat SA, a division of Romano Marine, in Argentina is a company dedicated to the construction of both leisure and work boats, including Cayber sailing yachts.

With 14 years of experience, Tecnofat SA has learnt that the path to successful growth is through innovation, research and development of new working techniques using a variety of materials, technology and qualified manpower; whilst always listening to their clients' needs.

✓ **NCG CAM** was a perfect match for their machine tool, allowing Tecnofat SA to improve both their productivity and milling quality.

✓ Tecnofat SA received high quality international technical support for setting up the complex post-processor for this large machine tool, with every detail carefully being checked.

Left – Machining a sailing vessel base

Above – An example of Romano Marine sailing vessels

Tecnofat SA had implemented and installed a very large 5-axis router with a Fagor 8055 control, measuring 12m x 3m x 2.5m, to allow them to meet their clients' demands to manufacture small and large sailing vessels.

Their requirements were to rapidly produce very large parts on this machine tool, manufactured to a high quality, in the shortest time possible and so decided to purchase some CAM software to help achieve this.

Tecnofat SA made a decision to purchase **NCG CAM**; since installing the software they have seen the following results.

✓ As **NCG CAM** is very user friendly, it has allowed Tecnofat SA to increase the number of employees able to use the CAM software at a lower cost. This in turn has increased the number of shifts in the machine shop therefore minimising any errors.

*"The probability of production errors is minimised to a very small percentage – practically eliminated, in fact with **NCG CAM**. The milling machine can be used with the **NCG CAM** software regardless of the experience of the machine operator."* Says Jorge Romano, CEO at Tecnofat SA.

Demonstration Version Available to Download

A demonstration version of NCG CAM software, is available to download.

The demonstration version of **NCG CAM** has unlimited usage and while there are restrictions to the machining output, it can also be used in its basic form as a _**FREE**_ .iges viewer.

http://www.ncgcam.com/demorequest.html

Also see NCG CAM in action on You Tube

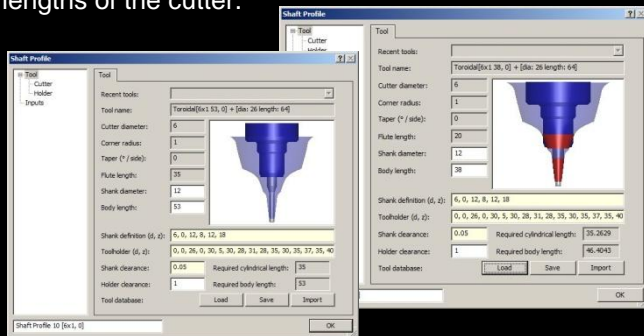http://www.youtube.com/user/NCGCAMSolutionsLtd

NCG CAM – What's New in Version 12

Shaft Profile Analysis

Defining the correct tool shape and holder will ensure the toolpaths are gouge free, but it can result in material being left on the part.
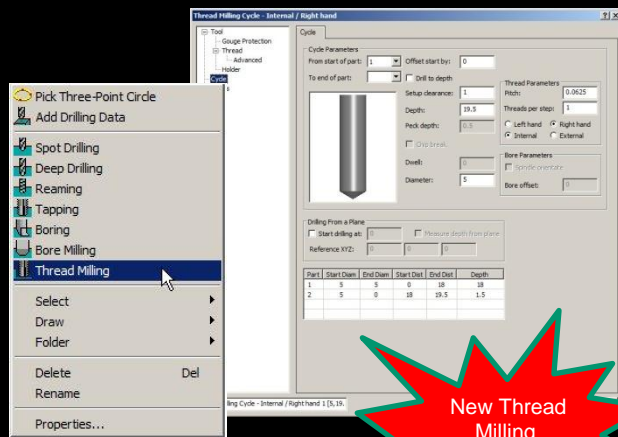
The shaft profile allows a different approach – what cutter and holder will 'fit' best. The user is able to try different cutter shanks and holder combinations after creating the toolpath. The shaft profile provides a graphical view, of the required body and cylindrical lengths of the cutter.

The shaft profile now checks a tapered shank section of the tool in addition to the holder, and shows the area where the tool could gouge.

Thread Milling

This new feature allows the user to create a thread milling cycle. The canned cycles menu and dialog has been changed slightly.
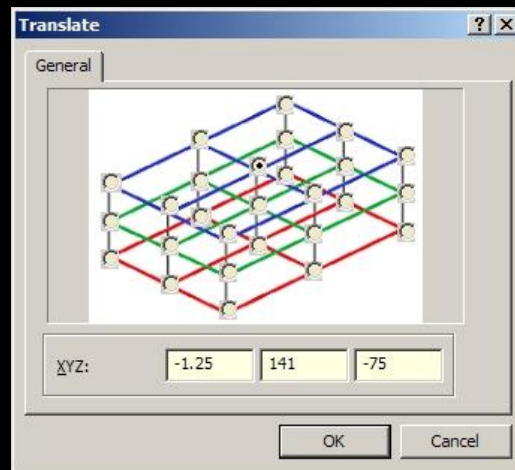

New Thread Milling Feature

Central Folder for Tape Files

This new feature allows the user to define a global folder for tape files when post-processing.

This will save some users from having to pick the folder on each job. This will benefit users who always post their NC tape files to the same folder, or machine folder.

Setting the Datum Based on the Min, Center or Max of the Surfaces
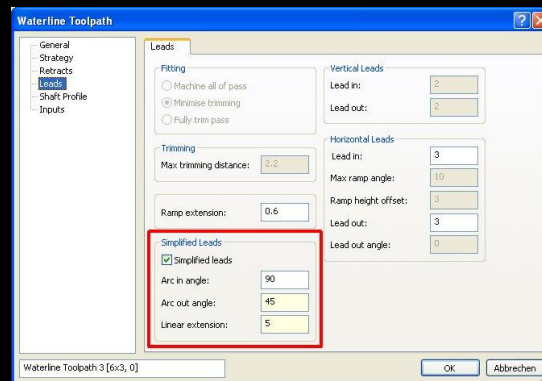
This enhancement allows the user to pick min, center or max position from graphical image rather than typing mx() cy() Mz() making it more user friendly.

Picking the required position in the image will automatically update the XYZ coordinates with the correct values to position that part of the model at X0 Y0 Z0.

Simplified Lead Moves & Elongated Leads for Waterline Passes

This enhancement provides the user with more control over the horizontal lead-in and lead-out arcs. This should be beneficial for waterline passes, where a large step-down is used, as the toolpath will not helix down the side of the job.

User Defined Text Editor

This enhancement allows the user to define their preferred text editor, which will be used when viewing a tape file.

Previously the user could only use Notepad.

The Di-Spark Group Continue to Invest in NCG CAM as they Diversify into 5-Axis Machining

Established since 1980, The Di-Spark Group supply precision machined components for industries such as aerospace, defence, medical, oil and gas, motorsport, nuclear and scientific. Specialist areas are in the manufacture of complex precision machined components and sub assemblies using advanced manufacturing technologies such as 5-axis milling, multi task mill-turn, wire erosion and spark erosion.

The Di-Spark Group was looking for a CAM system suitable for their Agie Charmilles Mikron machine tool that was robust, easy to use and was suitable for 3+2 axis machining and later on, full simultaneous 5-axis machining.

Since implementing **NCG CAM**, The Di-Spark Group has seen the following results:

- ✓ Programming bottle necks were removed by introducing **NCG CAM**
- ✓ Many 5-axis parts can easily be programmed using the 3+2
- ✓ Full simultaneous 5-axis module could be simply added to the base module of **NCG CAM** as the business grew
- ✓ Ease of use allows for even complete novices to CAM software to quickly learn to machine parts with **NCG CAM**

www.di-spark.co.uk

- ✓ As The Di-Spark Group expanded in size, it was very easy to increase the number of users able to use **NCG CAM**

"**NCG CAM** is a good CAM package for "hitting the ground running". We have very little down time due to being able to run the roughing program, while we are working on the finishing toolpaths.

Unlike some CAM packages **NCG CAM** isn't cluttered, which makes it very quick and easy to use. It is very quick and easy to edit tool paths or speeds and feeds, which also saves a lot of down time.

We make some very complex shapes and NCG CAM has a very good selection of toolpaths to manufacture them. " says Glenn Ardern, CAD/CAM Engineer, The Di-Spark Group.

Ease of Use Allows Designers at DeGross Design & Innovation to Become CAM Operators Using NCG CAM

DeGross Design & Innovation is a design studio based in London. DeGross Design & Innovation look for ways to recycle and reuse products when they reach the end of their life cycle.

www.degross.co.uk

DeGross Design & Innovation were looking for a way to speed up the design process from the conceptual stage to final prototype creation and small volume fabrication of consumed products and furniture. They decided to invest in a Datron M8 machining centre with a seat of **NCG CAM** software to use alongside their SolidWorks CAD software that they were already using.

Some of the benefits DeGross Design & Innovation has seen since introducing **NCG CAM** are:

- ✓ **NCG CAM** is easy to use – At DeGross Design & Innovation the operators are product designers not machinists!
- ✓ Machining operation was reduced by 50%
- ✓ The cam operator can now make instant changes and also review how the part will look like when finalised.
- ✓ Creating prototypes for a presentation or an exhibition from concept to reality are now completed in just 2 days!!

DeGross Design & Innovation is now able to take any concept through a crafty process and create prototypes in low volume fabrication. This fabrication service consists of the use of a 3D digital CNC machine – Datron M8 and a 3D powerful cam system – **NCG CAM**.

"**NCG CAM** provided my business with the advantage of being capable of creating products in a short lead time. **NCG CAM** is very simple to use that's why all our designers are also now the CAM operators." says Alon Alex Gross - MA CP Design(Gold), Creative Director, DeGross Design & Innovation.
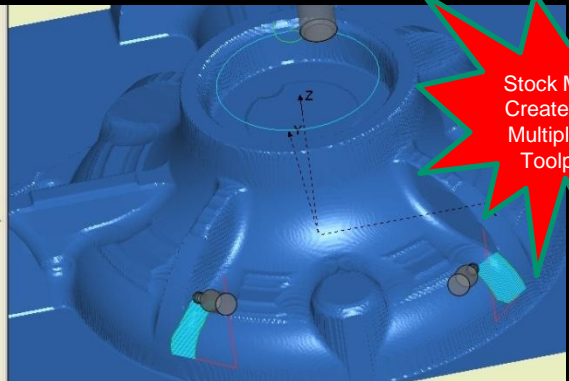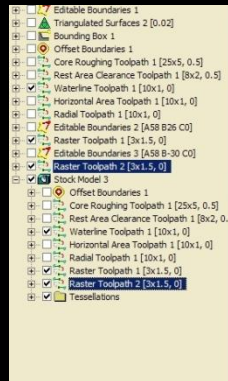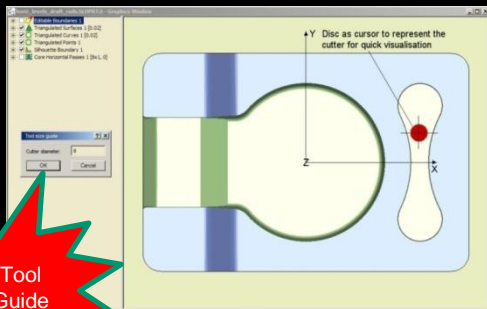
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Tool Size Guide

This new feature allows the user to define a circle or a disk the size of the cutter, that will move with the cursor when looking down the tool axis.

New Tool Size Guide

Above – Tool size guide

This should allow the user to determine where a particular cutter diameter can get, without having to create the passes or do a lot of measuring. It can also help when creating boundaries with mouse hits for a particular cutter size.

Core Horizontal Area Passes

This new feature will allow users to machine horizontal areas plunging off the job and then milling in from the side. In certain materials, such as Inconel (a nickel-chromium-based superalloy) and many other steels after heat treatment, machining in from the side will give far better tool life.

Core Roughing Horizontal Areas

Above – Core horizontal area passes

Stock Models Created from Multiple Axis Toolpaths

Users are now able to make a single stock model from toolpaths with multiple tool axis, (not just single tool axis), which will enable the user to visualise what the user has or has not machined with a combination of 3+2 and / or 5-axis toolpaths.

The same stock model could also be used for rest roughing after a number of machining operations with different tool axes or to edit other toolpaths too.

Below– Stock models created from multiple axis toolpaths

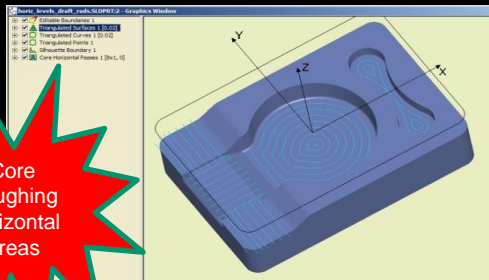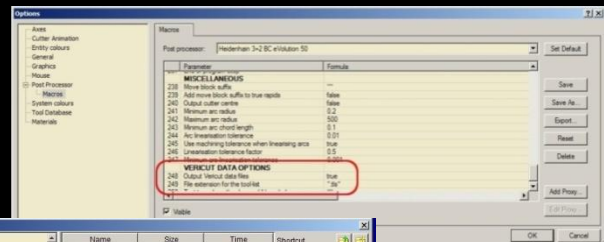*Stock Models Created from Multiple Axis Toolpaths*

VERICUT Tool List Creator

A new feature has been added in the **NCG CAM** post-processors, for users that use VERICUT™ to double check their NC Tape Files for potential problems where a tilted axis could cause a collision between machine parts.

It is now possible to set an option in the post processor options that will create a tool list (*.tls) for the post processed operations.

Once VERICUT™ is started that file can be loaded, defining the cutter and tool holder based on what was defined for the toolpath in **NCG CAM**.

About NCG CAM Standalone 3D HSM CAM Software

NCG CAM HSM CAM software is a stand-alone CAM system that integrates with existing CAD and CAM systems, including Pro/ENGINEER and SolidWorks.

NCG CAM boasts many innovative features. It is suitable for all types of forms, creating an optimised, smooth cutter motion for HSM machining, while helping to extend tool life, minimising wear on the machine tool and producing parts with excellent surface finish.

NCG CAM has a very user-friendly interface, with a typical learning curve of just 1 day required to machine a live job. It is perfect for the high-speed machining of moulds, dies, prototypes and precision surface machining.

SOFTWARE FEATURES:

✓ Very user friendly interface – making it suitable for even occasional users
✓ **NCG CAM** offers many advanced 3D machining routines, rest roughing & 3 + 2 capabilities for all toolpaths, simultaneous 5-axis add-on module available
✓ Fast and efficient roughing strategies, including core roughing
✓ Advanced drilling routines – includes automatic hole detection and / or user defined holes
✓ All machining routines are fully gouge protected for both the cutter and the tool holder

KEY BENEFITS:

✓ Stand alone CAM software that is compatible with *ANY* other CAD package
✓ Extremely easy to use with just 1 day training required to machine a live job Ideal for shop-floor programming
✓ All post-processors are written in-house
✓ Powerful 3D machining
✓ Toolpaths are optimised for HSM machining
   o Increased efficiency
   o Reduced wear on machine
   o Extended tooling life

Saves time and money !!

About NCG CAM Solutions Ltd

Established in Cambridge, UK, **NCG CAM Solutions Ltd** provides CAM software solutions, offering all the tools needed to manufacture prototypes, models, moulds, dies, patterns and finished products. Our specialist area is 3D HSM CAM with our product **NCG CAM**.

All of our staff have a wealth of CAM experience, having worked in the CADCAM and engineering industry for many, many years. This includes our support team, who have actually worked on the shop-floor using CAM software on live jobs, so are able to provide an excellent back up and support service.

Since establishing in June 2009, NCG CAM Solutions Ltd have a rapidly growing global reseller base, with resellers for NCG CAM in UK, Germany, Spain, Benelux, Slovenia, Slovakia, Hungary, Czech Republic, Romania, Bulgaria, Serbia, Croatia, Poland, Norway, Turkey, Egypt, Middle East, India, Ukraine, Russia, China, Taiwan, Japan, South Korea, Thailand, Vietnam, Australia, Mexico, Brazil, Chile, Argentina, Colombia, South Africa, Canada and across USA.

To contact a reseller, for more product information, or to download a demonstration version of **NCG CAM** visit the company's website www.ncgcam.com .

Alternatively contact Estelle Dunsmuir for more information – estelle@ncgcam.com or call +44 (0)1223 863911 / +44 (0)1353 699840.

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