NCG CAM – What's New in Version 13

NCG CAM Solutions Ltd, UK officially released NCG CAM v13 on 7th February 2013. This major release includes a number of new features including helical machining, the ability to cap holes, shaft profile export, optional origins, the ability to save values in the edit transform dialogue, the ability to pick a surfaces' colour and make other surfaces the same colour, tapping with chip break, the ability to use lollipop and dovetail cutters for 5-axis surface machining, as well as many enhancements including improvements to the rest machining and waterline linking strategies.

Helical Machining

Helical machining passes are a new feature. These passes are generated from a set of horizontal slices, which cut through the surface geometry.

The profiles that are created, are then joined in a continuously descending ramp, which follows the surface data between the profiles.

Helical passes are expected to be used for semi-finishing and finishing routines. They will reduce the witness lines between Z levels pass when using waterline passes.

The load on the cutter will also be more consistent compared to waterline passes during the linking move down to the next level.

Helical Machining

Cap Holes

Circular holes in the triangulated model data can now be capped, including holes that span across different surfaces.

There are two options available with this new feature:

- Either a circular planar patch can be created at the upper limit of the hole

- Or for holes that pierce a 3D form, a patch that follows the surface edge can be generated.

Both methods use a detected holes plan and allow for either the top, the bottom or both ends of the hole to be capped.

Often a surface on a part will have holes in it (screw holes, ejector / core-pin holes). Capping the hole will allow the user to just machine over the top of them, without dropping down the hole. This will give a smooth machine motion, compared to trying to machine around the hole.
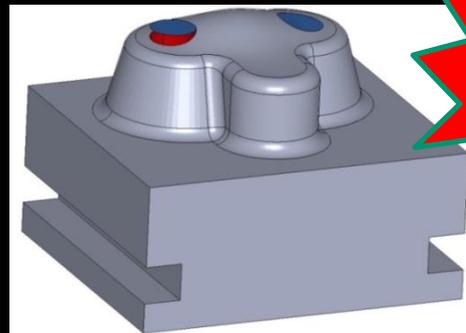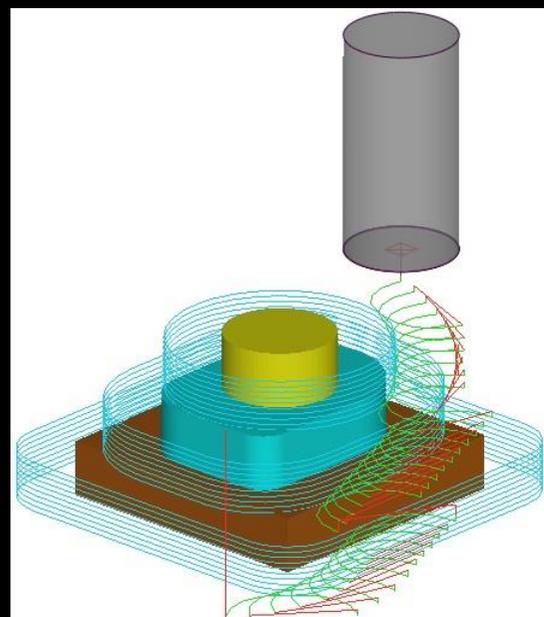

New Feature for Capping Holes
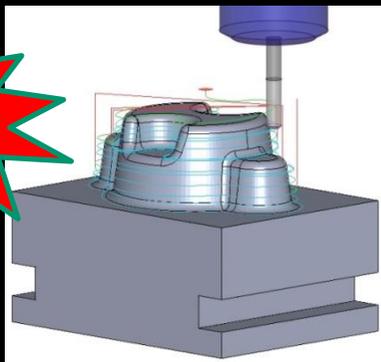
Above – *Shows the capped holes.*

Improvement to Waterline Linking Strategies

During the linking of Waterline passes using 'Simplified leads', a value to incorporate an 'Overlap' distance to the looped passes is now available.

By arcing on and off, the on-surface linking moves can be eliminated. The overlap allows for an improved blend.

Setting the standard for advanced 3D CAM software

ICHIFURUTA Casting Corporation, Nagoya, Japan use NCGCAM 5-axis Module to Machine Large Moulds

Ichifuruta Casting Corporation based in Nagoya, Japan manufacture complex wooden moulds on four large DMG MORI SEIKI milling machines, using CAM software formerly known as MSG. Their customers include a major bath tub and toilet manufacturer.

In 2011, Ichifuruta needed to move into 5-axis machining and purchased a DMG DMU 100 machine tool.

They needed to find suitable simultaneous 5-axis software that was easy to use and would allow them to be productive as soon as possible and would be capable of machining large, complex moulds.

Since implementing **NCG CAM**, Ichifuruta has seen the following results:

- ✓ **NCG CAM** is able to machine large complex parts with ease, whereas many CAM software can not handle such large part files

- ✓ Tool-paths are calculated at speed

- ✓ Even complex simultaneous 5-axis tool-paths can be created with ease, with the very user friendly user interface

- ✓ Ichifuruta are able to expand their business into other areas, with the added capabilities of 5-axis

Above and Below - Wooden mould for toilet

*"We had been using MSG for a long time, so migrating to **NCG CAM** was the best and the only CAM software "We had been using MSG for a long time, so migrating to **NCG CAM** was the best and the only CAM software for us to choose in preference to other 5-axis CAM software. So when we moved into 5-axis machining in March 2011, we decided to use **NCG CAM** 5-axis software along with a DMG DMU-100 milling machine.*

*At first it seemed to be very complex to start machining parts using 5-axis, but with the help of REVO Trading Co., Ltd and the **NCG CAM** 5-axis software, we were able to be productive within one month. We are now machining wooden moulds for bath tubs using the 5-axis.*

*During 2014, we are also looking to move into machining metal moulds using **NCG CAM**s' 5-axis software." says - Mr Furuta, President of Ichifuruta Casting Corporation, Nagoya, Japan.*

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

Toolbar Icon - Switch - Draw Cutter Tip / Centre

A Switch has been added to the Graphics toolbar.

This enhancement enables the user to switch how the passes or tool-paths are displayed, either by Cutter Tip or Cutter Centre, without the need to visit the options dialogue.

Shaft Profile Export

This new feature allows the results of enabling the 'Shaft Profile' to now be exported as a .csv file format.

Shaft Profile Export
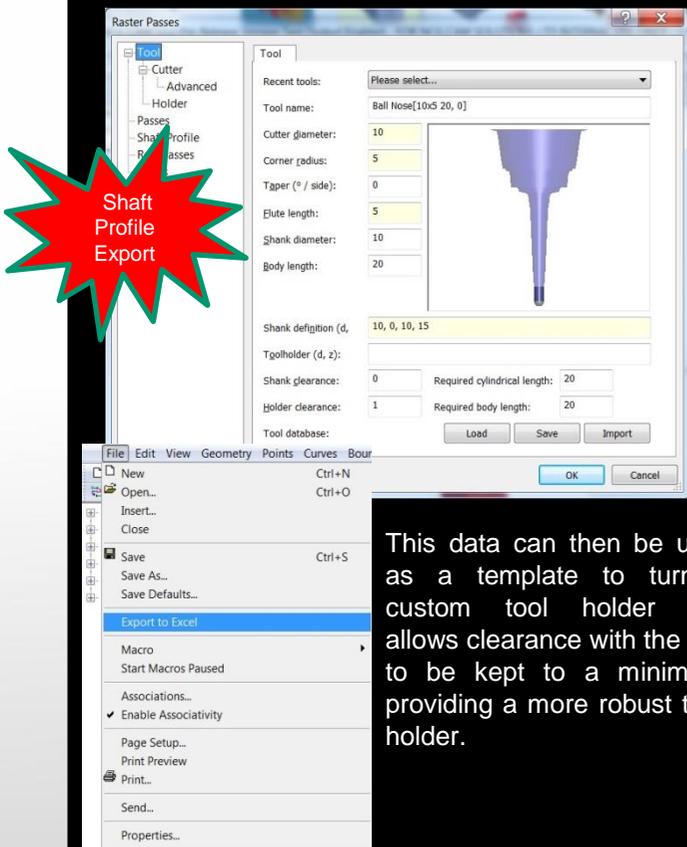
This data can then be used as a template to turn a custom tool holder that allows clearance with the part to be kept to a minimum, providing a more robust tool-holder.

Tool Size Guide - Tool Bar Button

A button has been added to the toolbar so that the Tool Guide can be activated more easily with a single click of the mouse.

Previously the only way to start this feature was via the 'View Menu'.

Tool Size Guide – Increment Value by Scroll Wheel

The Tool Size Guide function has been improved, allowing the diameter of the Guide Cutter to be increased or decreased via the Scroll wheel on the mouse.

The increment using the wheel alone will result in a change of (+- 0.5 unit). Hold down the Ctrl key and the increment will be (+- 1.0 unit) or if the Shift key is depressed, then the increment will be (+- 0.1 unit).

Transform Workplane Dialogue

The Workplane and Transform Workplane dialogues have been modified. With the addition of a toolbar, any selected transformations can now be reordered or deleted. Previously, only Edit and 'Clear All' options were available.

Save Values in the Edit Transform Dialogue

It is now possible to Save either a single or a combined set of transformations to re-use in another plan or even another database.

Selecting 'Save' in the transform dialogue saves the current set of transformations into a pull-down menu, the user can then accept the default name or supply a name that is more suitable.
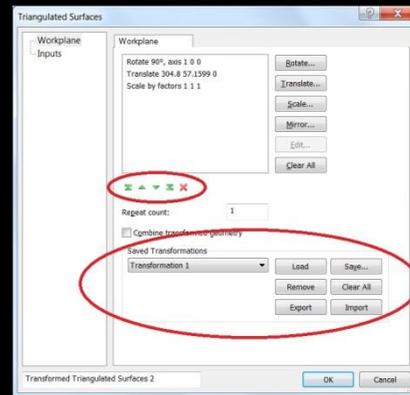
Selecting a saved transformation from the pull-down menu and then Load restores the saved transformations and adds them to the current transformations list.

NCG CAM Reduces Machining Time and Improves Surface Finish for Durga Engineering, Chennai, India

Established in 1990, Durga Engineering manufactures moulds, progressive dies for press tools and supply precision machined components for automobile industry. Their specialist areas are in the manufacture of complex moulds, press tool design and machining.

Durga Engineering were looking for a shop-floor CAM system suitable for their high speed MAKINO, that would give the result of a good surface finish, with no need for any polishing. Before making the decision to purchase **NCG CAM**, Durga Engineering had machining trials from different CAM software packages.

Since implementing **NCG CAM**, Durga has seen the following results:

- ✓ The programming process is easier and quicker for a new user to learn how to use **NCG CAM.** The cutting technology in **NCG CAM** is very useful and can save 30% in processing time for NC programmers
- ✓ Many complex parts can be machined in less time, with the end result of an excellent surface finish.
- ✓ This also then generates more revenue through additional business. The cutting technology in **NCG CAM** is very useful and can save 30% in processing time for NC programmers

Above – Mr. K. NARAYANAN, Managing Director, in front of MAKINO machine.

"*NCG CAM is the CAM software we had been looking for. Previously, we had problems with surface quality and we exceeded our estimated production time in almost in every project.*

After implementing NCG CAM, we could produce an excellent surface finish and were able to automatically update NC programming processes from any CAD format simply, saving us a huge amount of time. Parallel computing of multiple programs at a time had given us the edge to complete our work much faster.

We took three months to evaluate different CAM software packages that were available but we made the decision to purchase NCG CAM on the same day as seeing the live machining result." Says - Mr K. Narayanan, Managing Director – Durga Engineers, India.

Modern Moulds and Tools Ltd Reduces Machining Time by 60% using NCG CAM's High Speed Machining Routines

Founded in 1987, Modern Moulds & Tools Ltd are a specialist tool maker for the plastics industry. Modern Moulds use specific tooling and machinery knowledge and experience, to support the first steps of design, through to the moulding process.

Website: www.btigroup.co.uk/ Modern-Moulds-and-Tools-Ltd

Modern Moulds were looking for CAM software for their Bridgeport machining centres with DEPO-FHT tooling, that would meet their requirement for high speed machining.

- ✓ Able to complete in 6 hours machining that previously would have taken 15 hours – reducing machining time by 60%

- ✓ Can now rough out core and cavity details to within 0.2mm, before vacuum hardening
- ✓ Increased accuracy and HSM routines, allow complex electrodes to be split into smaller and simpler elements
- ✓ Individual electrodes are easier to manufacture, errors are reduced, saving time and materials

"*We currently have 5 seats of NCG CAM, some of which are sited on the shop floor next to the machining centres and some that are linked to SolidWorks.*

Due to its very "user friendly" software, we have been able to train most of our 10 toolmakers, enabling greater flexibility and less dependency on a few key people. Due to very competitive prices and shorter deliveries we have to be able to run "lights out" programmes.

NCG CAM allows us to do this, due to the confidence we have in the system and its very powerful and efficient machining strategies." says John Horspool, Works Director, Modern Moulds and Tools Ltd.

NCG CAM – What's New in Version 13

Improved Automation - Boundary Independent

A check box has been added to the "Save Macro" dialog allowing Boundary independent macros to be created. This works in a similar way to Surface independent macro creation.

While aimed at the more advanced use of the macros, it makes it easier to change the boundary being used while running a macro.

## Improved Automation - Pause - Re-run Dependent Plans in Macro

It is now possible to edit plans from within the process manager dialogue when running a macro or re-running dependent plans. If a plan has been paused and then modified, it is marked in the tree view with a different colour. Once the macro or plan has been run and concluded, the colours are reset. This is aimed at the more advanced use of the macros and it also makes them more versatile.

With this option it is possible to pause all operations as the macro starts, then modify several different parameters pages before running the macro.

A button has been added to the file menu, this will allow an option to pause a macro when starting it.

Pick a Surfaces' Colour and   Make Other Surfaces the Same Colour

The ability to pick a surface and remember its colour attribute has been added. This new feature now allows it to be possible to select other surfaces and apply the remembered colour to them.
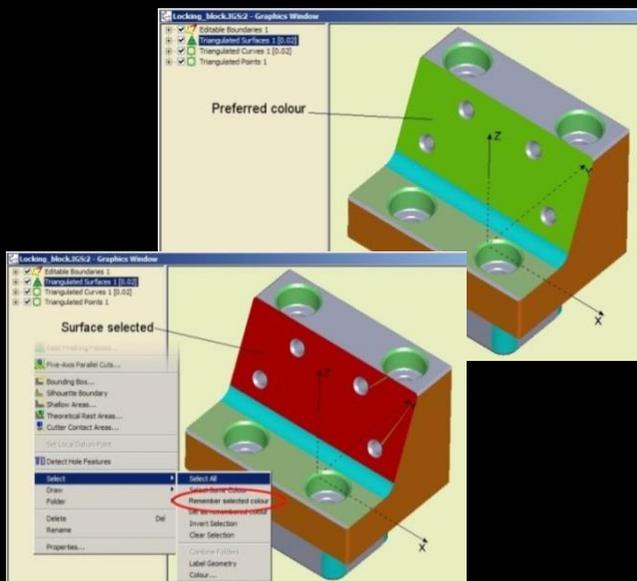
The same stock model could also be used for rest roughing after a number of machining operations with different tool axes or to edit other tool-paths too.
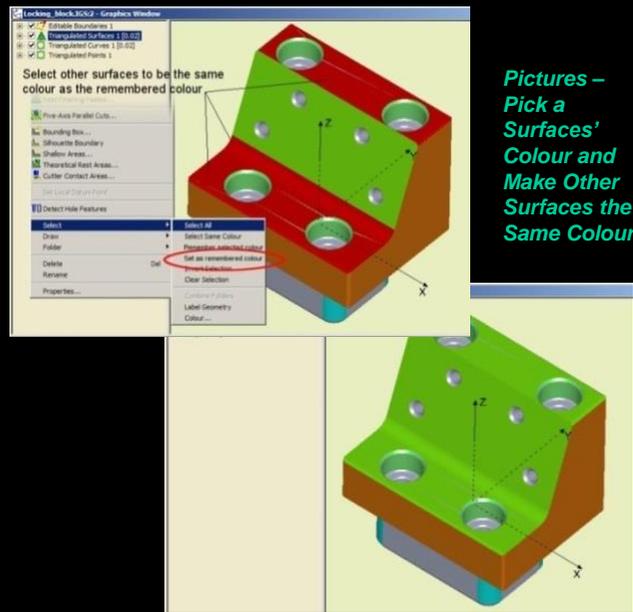
Pictures – Pick a Surfaces' Colour and Make Other Surfaces the Same Colour

Rest Finishing Improvements

Significant improvements have been made to the smoothness of the rest finishing passes, particularly where there is a more obtuse connection angle between surfaces.

Lollipop and Dovetail Cutters permitted for 5-Axis Surface Machining

5-axis machining operations are now able to use Lollipop and Dovetail cutters. Both of these cutter types, will allow the machining of undercut surfaces.

Lollipop and Dovetail Cutters Permitted for 5-Axis Surface Machining
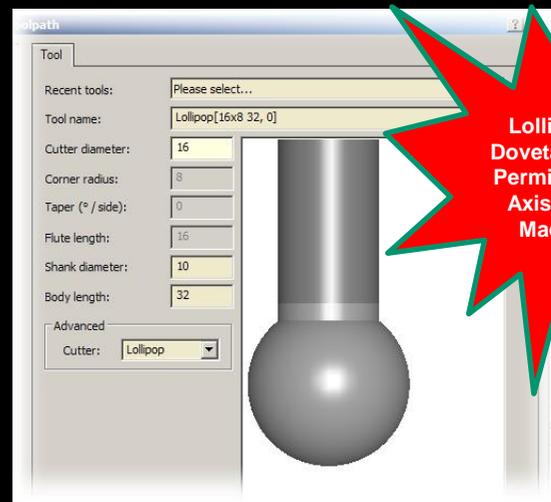
Tapping with Chip Break

This new enhancement will allow users with suitable machine tool controllers that support this feature (Heidenhain Cycle 209 and others) to implement a 'Chip Break' within the 'Tapping Cycle'.

About NCG CAM Standalone 3D HSM CAM Software

NCG CAM is a stand-alone CAM system offering an easy to use HSM CAM solution that integrates with existing CAD and CAM systems, including SmartForm Design, SpaceClaim, 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, 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
    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 has a rapidly growing global reseller base, with resellers for NCG CAM in UK, Germany, Spain, Netherlands, Slovenia, Slovakia, Hungary, Czech Republic, Romania, Bulgaria, Serbia, Croatia, Norway, Turkey, India, Ukraine, Russia, China, Taiwan, Hong Kong, Japan, South Korea, Thailand, Vietnam, Australia, Mexico, Brazil, South Africa 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 236408 / +44 (0)1353 699840.