NCG CAM - V13.0

Helical Machining

Shaft Profile Export

Cap Holes

Pick & Remember a Surface's Colour and Make Other Surfaces the Same Colour

Lollipop and Dovetail Cutters Permitted for 5-Axis Surface Machining

Image courtesy of :
Mariborska Livarna Maribor, d.d.o, Slovenia

New Features for NCG CAM V13

NCG CAM New Features V13– Base Module

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-level passes, 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.
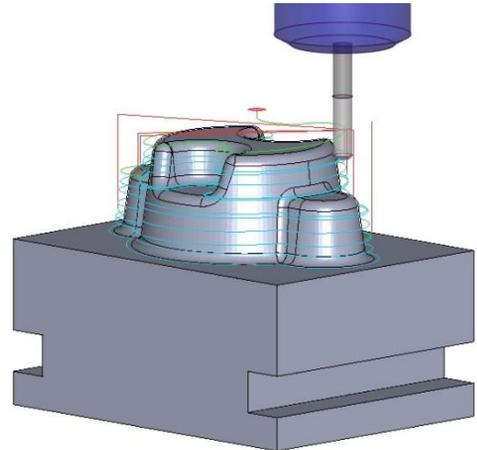
Cap Holes

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.
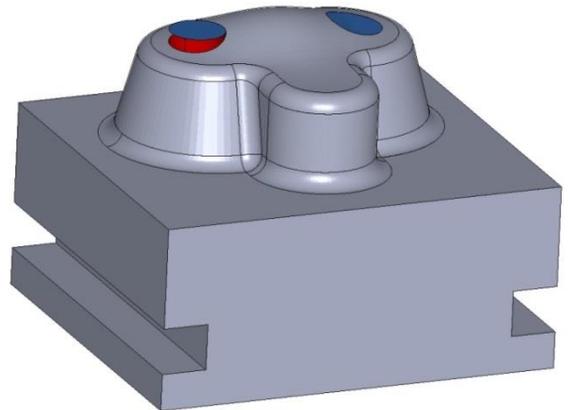
Toolbar Icon - Switch - Draw Cutter Tip / Centre

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.

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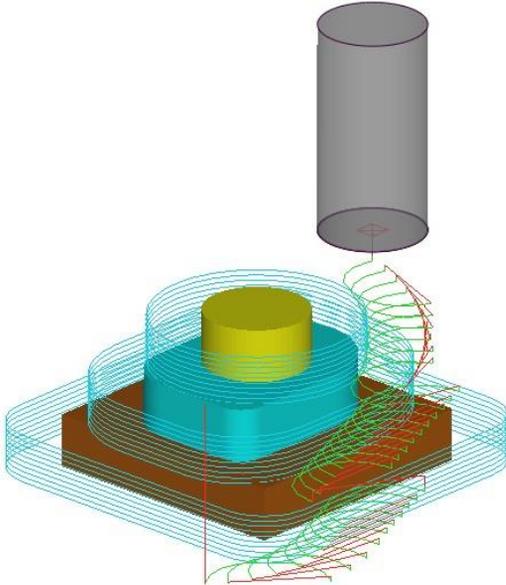
During the linking of Waterline passes using 'Simplified leads', a value to incorporate an 'Overlap' distance to the looped passes is now available.

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

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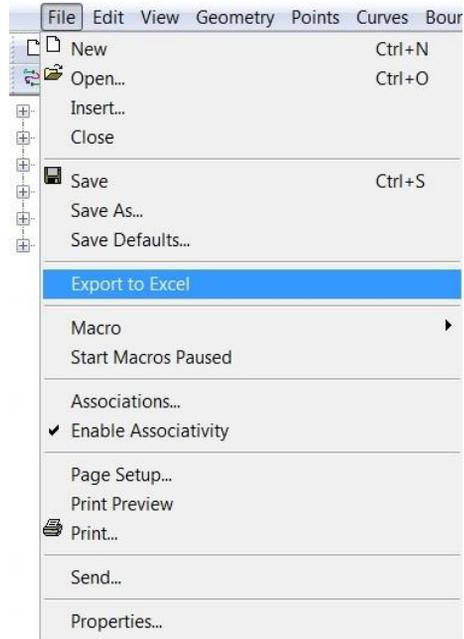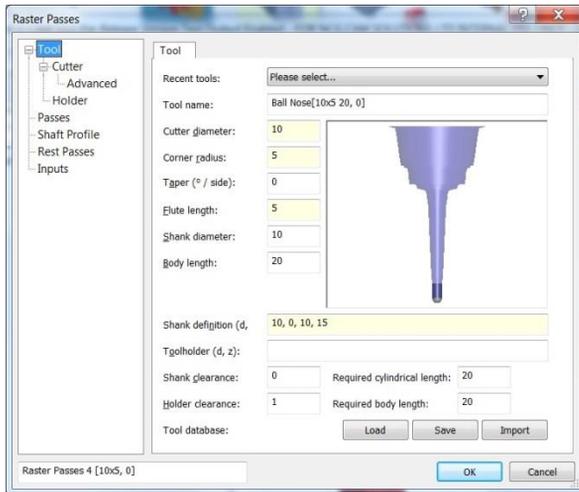
This new feature allows the results of enabling the 'Shaft Profile' to now be exported as a .csv file format.

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.

Optional Origins

This new feature allows single points to be converted to Datum Points.

These may then be passed as inputs to machining plans, when required for post-processing.

3

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 selecting 'Load' restores the saved transformations and adds them to the current transformations list.
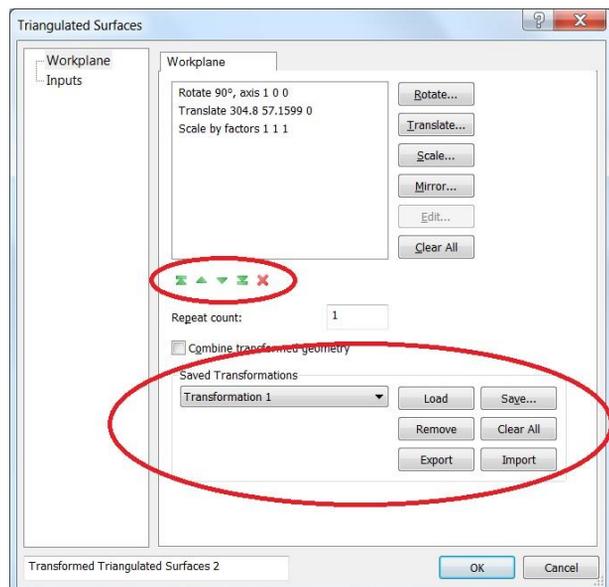
Improved Automation - Boundary Independent

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.
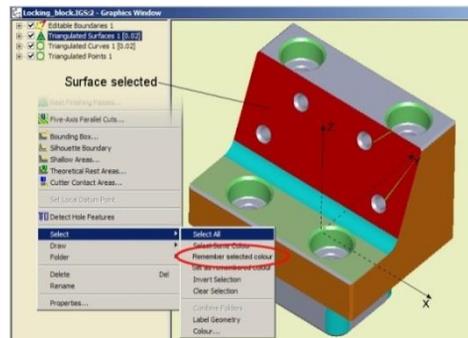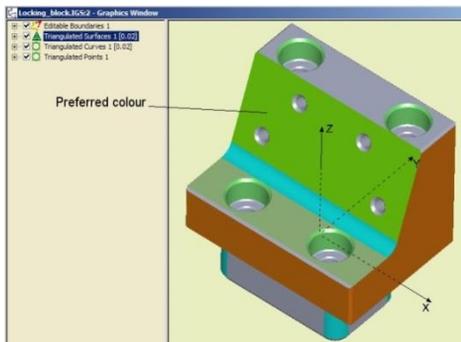
This makes it easier for the user to change the colour of numerous different surfaces to be the same as an existing colour.

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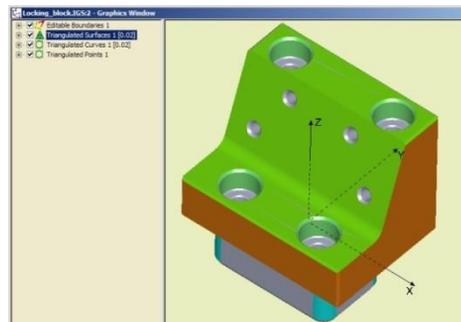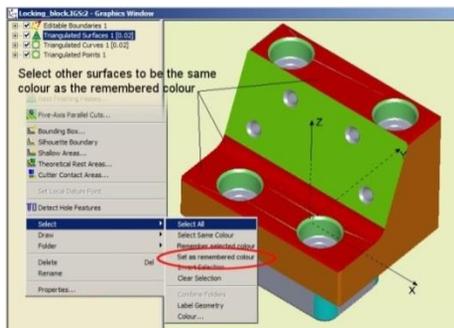
Tapping with Chip Break

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'.

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.

NCG CAM New Features V13– 5-Axis Add-on Module

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.
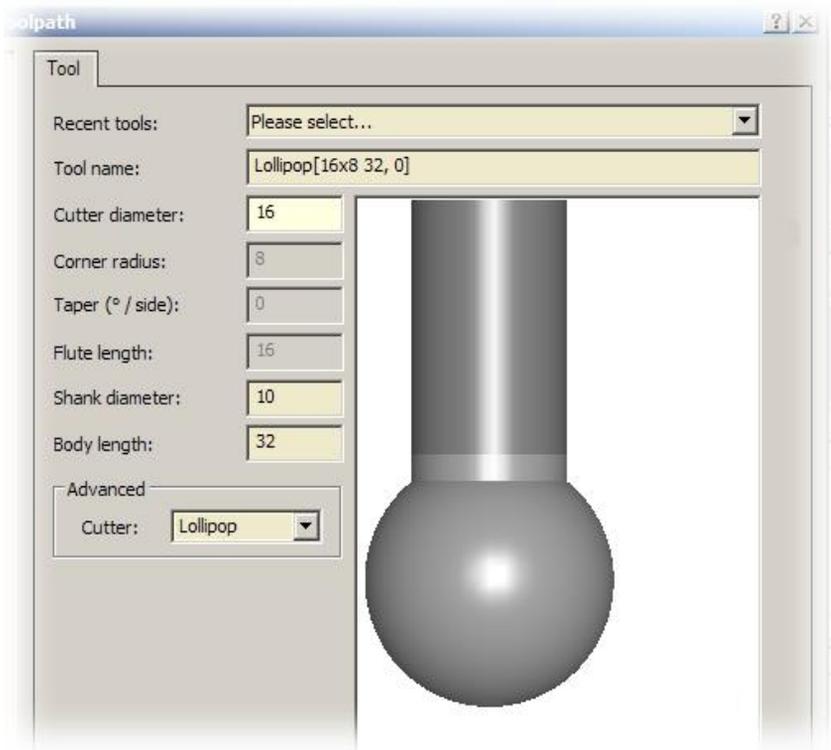
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