

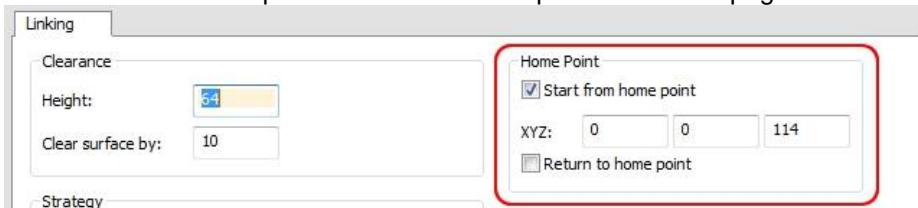
NCG CAM Solutions Ltd are pleased to release NCG CAM v15.0.02

With NCG CAM v15.0.01 having been out for more than a couple of months, there are some little enhancements and a couple of problems that were uncovered have been fixed.

Please note that NCG CAM v15.0 will not install on Window XP, or on a 32 bit operating system. Windows 7, 64 bit, Windows 8 / 8.1 64 bit and Windows 10 64 bit are all supported operating systems.

523 and 4641: User Interface: Added a feature to rotate the graphics view around a specified point by double clicking the middle mouse button, moving the mouse with the second click. A dot will be displayed on the screen to represent the point the rotation is being performed around.

966 : Five-Axis: The option to define a home-point on the link page for Five-Axis plans has been added.



The home point can be used for the start or end of the toolpath, or both.

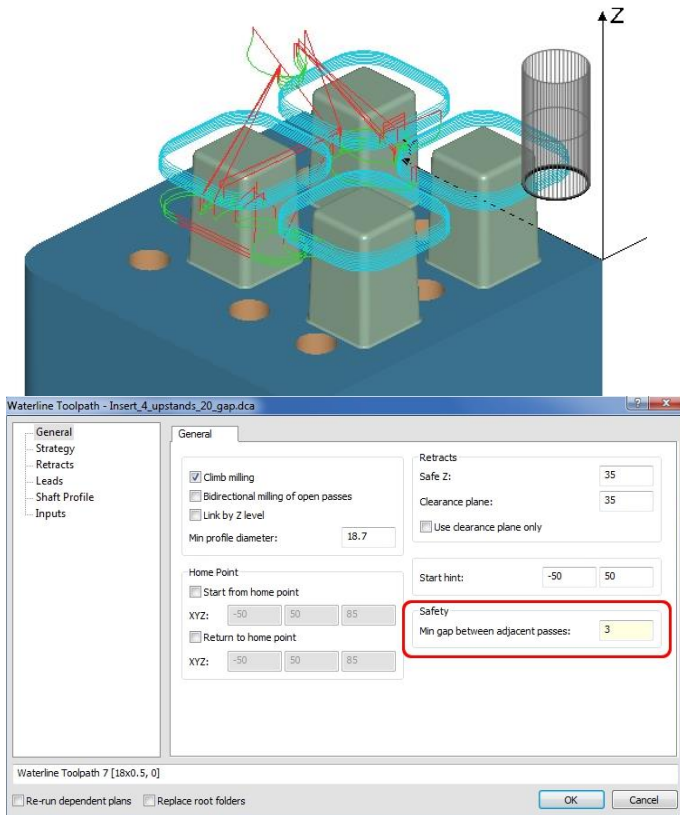
2084 : Multi-axis stock models: Tapered Endmill cutters are now supported.

3460 : User Interface: The "Reset to original" option on the cutter/holder design page was not working, this has now been fixed.

3514 : User Interface: Allow Reverse Face Orientation for UV Direction surfaces. New Meta plan option "Substitution" has been created.

3896 : Multi-axis stock models: Calculations having many fixed axis input toolpaths could be very slow. Performance has been improved for jobs where the fixed axis toolpaths have one or more common axes.

4007 : Linking: Waterline Passes: Add the concept of “Min distance between adjacent passes” (new User Interface option) to allow users to force adjacent upstands to be machined one at a time, rather than alternating between upstands. **Warning: Used incorrectly this feature may have unwanted consequence's.**



When there is a gap between a group of upstands that is only a little wider than the cutter diameter. By default, they will be linked in a by Z level like manner (even though by Z level has not been enabled).

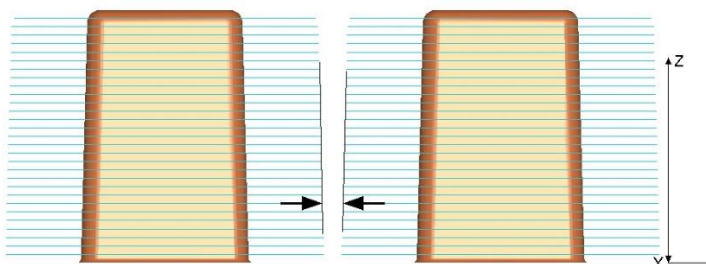
This is because NCG CAM does not know if there is or isn't solid material there, so this is the safest approach, but it does add a lot of rapid moves.

This shows a new parameter, the 'Min distance between adjacent passes', the default is the same as the cutter diameter. That gives the same result as was seen in previous versions, and gives the linking shown in the previous image.

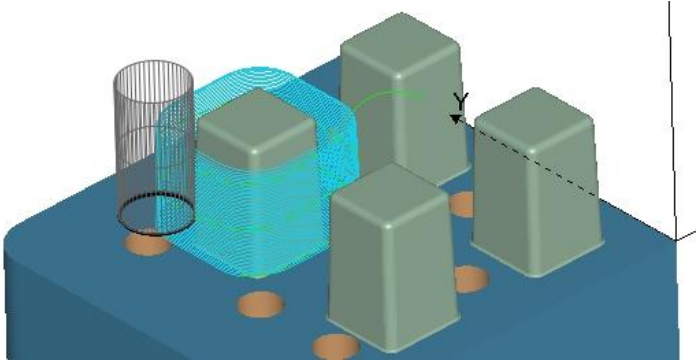


The 'Min distance between adjacent passes' can now be reduced to get a different linking order that will be more efficient in some cases.

Basically this is telling NCGCAM there is not less than a 3mm gap between the passes.



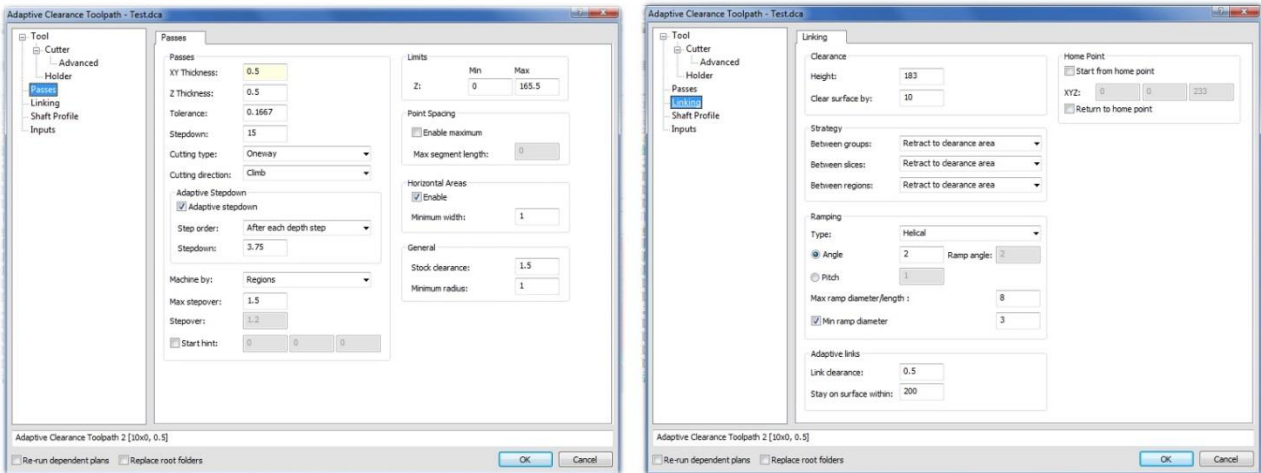
There is a minimum value for this parameter (10% of the cutters diameter) to ensure some safety to the linking order and to prevent cutting on both sides of the cutter.



Now each upstand will be machined to depth before moving to the next.

**Warning:**  
Used incorrectly, this feature may have unwanted consequence's.

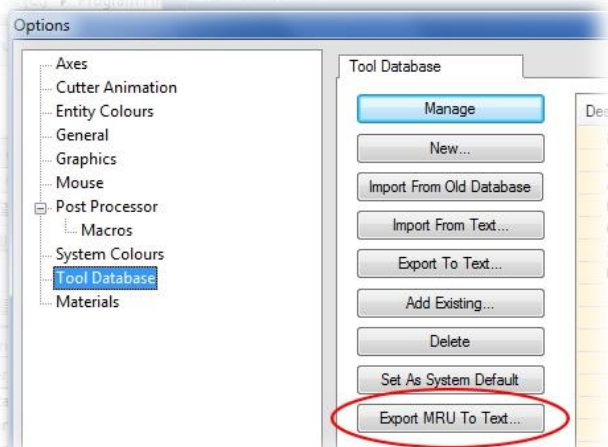
4078 : Machining: The Adaptive Clearance Toolpath plan has been updated to use completely new libraries. We will still include the old libraries for the time being so that existing dca's and macros can still run. The new libraries did require some changes to the user interface, but they are still very similar.



The cutter will now retract clear of the surface slightly for the none cutting areas of the 'loop'.

4083 : Macros: We now handle point tessellations (but not editable points) in the macros.

4389 : Tool database: Added a button "Export MRU To Text..." to the Tools > Options --> Tool Database page. This exports the most recently used cutters list to a tool database text (csv) format file.



4466 : For AC and BC rotations, a C rotation of 180 is now chosen in preference to -180. It is the same position, but the positive value looks more logical.

4483 : Database archive (dca) file permissions: NCGCAM databases that were saved to a named folder, sometimes do not have the same access rights (permissions) as the original database. This problem has been fixed.

4503 : User Interface: The cutter animation dialog was not always accepting the Ctrl+P (pause) and P (step, once pause is evoked) options to pause and resume the animation. This has now been fixed.

4509 : When saving a database for the first time, or doing a "Save As", the default directory to save in is now set to be the same as the project directory.

4519 : User Interface: Linking: The 'Home Points' and 'Start Hint' can now be selected from the User Interface with a mouse hit.

Click in the 'Start hint' field (X or Y), then click on the screen and the mouse / cursor position will be transferred to the 'Start hint'. It is the same principle for the 'Home point'.

4526 : Multi-axis stock models: Incorrect stock models could be generated for tapered ball cutters. This problem has now been fixed.

4529 : User Interface: The minimum screen height required for the Tools > Options dialog pages has been altered to allow for low resolution displays / small screen laptops.

4530 : User Interface: A new option has been added to the Tool > General page, so you can now set the default behaviour when reading an IGES file so it will always read it with the Granite interface, this enables the use of Five-Axis commands in this file.



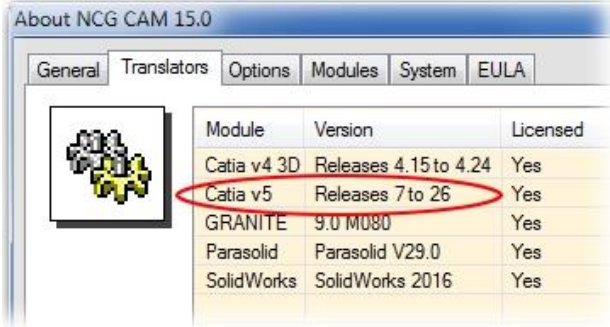
*This could be quite useful if you frequently use the simultaneous 5 axis module, and used IGES files for the parts being machined with simultaneous 5 axis.*

4543 : Linking: Horizontal Area Passes: There is no longer a difference in behaviour depending on whether there are one or two small passes in a pocket.

4545 : Five-Axis: The default 'Use tilt through' option in Five-Axis MW interface has been changed to 'Always closest two lines', this is used when using the tilt through lines option in the Five-Axis machining.

4546 : User Interface: Removed the '?' from the colour dialog accessed from the various custom colour buttons as this led nowhere.

4549 : Updated support for CatiaV5 R2016 (R26).

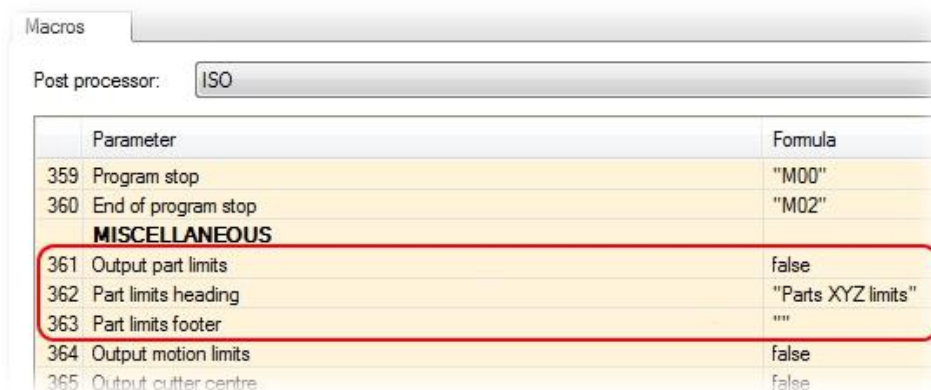


4557 : Shaft Profile: Fixed an update problem with cutting parameters plan. Now when a cutting parameters plan is rerun the information from shaft profile analysis is refreshed. This prevents stale information from a previous shaft profile analysis operation being associated with a different toolpath. Note: tool information entered into the shaft profile analysis dialogue is not stored in the database. For each new session the Shaft Profile Analysis must be run on a toolpath, before creating a new cutting parameters plan to be associated with it.

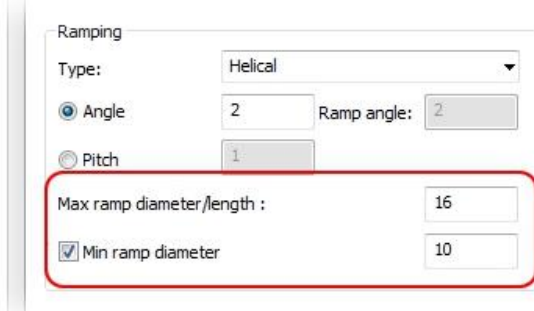
4559 : User Interface: New function "Internally Trim Surfaces". Creates a new trim surface for each internal trimming boundary of a surface. It works much like "Externally Trim Surfaces" and at first glance will look the same.

If you have a surface with 2 holes, and use Externally Trim surfaces, it will create a single surface with the holes missing. Take the same surface, and use Internally Trim Surfaces, this will result in 3 surfaces, the original surface with 2 holes, plus 2 surfaces to cap the holes.

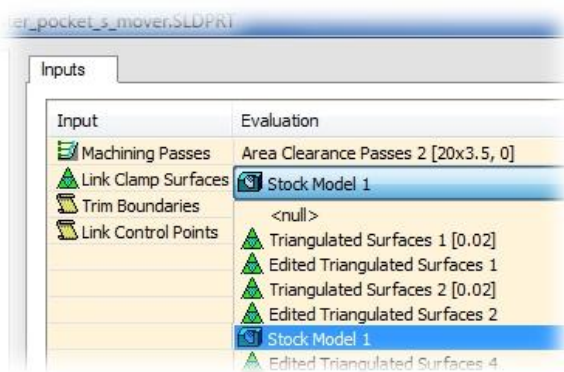
4565 : Post processor: ISO: Added the option to output the parts XYZ limits as a comment in the NC file. In the Miscellaneous section there is the option: "Output part limits" This is false by default so not to affect exiting post processors. There is also a "Part limits heading" which is a comment that can be output before the parts limits (by default this will output: Parts XYZ limits), and a "Part limits footer" which can be used to output a comment after the parts limits.



4574 : User Interface: Five-Axis Roughing Linking : The Ramp parameters are now defined as a true distance instead of a percentage of the tool diameter, in keeping with existing dialogs.



4581 : User Interface: Plan Inputs: Allow link clamp surface to be switched between tessellations and stock models on the plan inputs page.

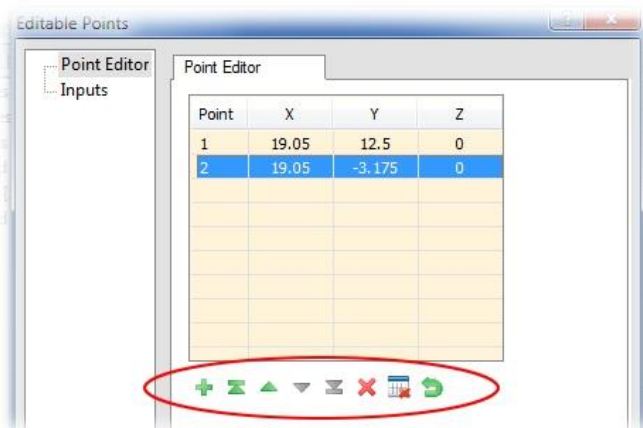


4584 : Multi-axis stock models: Tapered toroidal, Lollipop, T-slot, and Dovetail cutters are now supported. Also fixes tickets: 2083, 2821 and 4465.

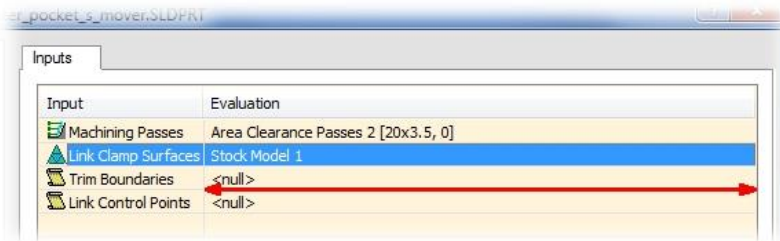
4586 : Raster passes: Improved the surface smoothing when no toolholder has been defined.

4591 : User Interface: The Point Editor dialog now has a toolbar of buttons as opposed to separate buttons.

4595 : User Interface: Points Editor - It is now possible to move points up and down the list using new toolbar buttons.



4598 : User Interface: Fixed a problem with the sizing of the input page boxes, where the evaluation column overflowed on selection.



4600 : User Interface: Tessellation Analysis dialogue now works modelessly so tessellations plans can be compared.

4604 : User Interface: When using the Point editor if you edit a point position, the reset option would not return the points to their original values, this has now been fixed.

4606 : User Interface: Fixed a problem which prevented the drilling gouge warning dialogue from being displayed when using rerun dependent plans.

4616 : Curves: We now preserve a stored the associated rotation when doing a transformation, providing the transformation does not require the curve to be linearised.

4623 : Multi-axis stock models: In flat regions of the stock model, fewer triangles are now generated. This results in a 30% reduction on average

4627 : Machining Simulation: The machine definition files were not being copied to the ProgramData area prior to running the simulator this has now been fixed.

4629 : Machine Simulation: The correct keymap file was not being used for simulation this has now been fixed.

4631 : Post processor: Heidenhain: Added options to support a new tool probing cycle. Added the following options:

Use a fixed spindle speed when probing: False by default, but if set true, the fixed spindle speed will be used while measuring the tool length.

Fixed spindle speed for probing: This is the spindle RPM that is use if "Use a fixed spindle speed when probing" is set: true.

Use a different probing cycle at toolpath end: Set false by default, but if set true a different cycle can be used at the end of the toolpath, and which will use the following post processor options / entries:

Probing cycle at end of toolpath: The cycle to use.

Probing at toolpath end: Measuring direction: The Q-number and value.

Probing at toolpath end: Radial offset: The Q-number and value.

Probing at toolpath end: Length compensation: The Q-number and value.

Macros

Post processor: Heidenhain 3+2 BC eVolution 50

Parameter	Formula
<b>TOOL SETTING PROBE</b>	
247 Output tool setting probe	false
248 Stop the spindle before probing	true
249 Warm the spindle up before probing	false
250 Spindle must be running while probing	false
251 Use a fixed spindle speed when probing	false
252 Fixed spindle speed for probing	1000
253 Use new probing format	false
254 Probe at start of toolpath	true
278 Text after dwell, after tool probing	
279 Use a different probing cycle at toolpath end	false
280 Probing cycle at end of toolpath	"TCH PROBE 596"
281 Probing at toolpath end: Measuring direction	" Q386 = 1"
282 Probing at toolpath end: Radial offset	" Q357 = 0"
283 Probing at toolpath end: Length compensation	" Q359 = 0"
284 Duplicate the toolchange after probing	false
<b>SPINDLE SETTINGS</b>	
266 Probe tool radius cycle	"TCH PROBE 482 TOOL_RADIUS"

4632 : Tool Database: There was problem with the tool database when no default catalogue is selected, it could cause unpredictable results when loading and then reloading an item from the tool database, this has now been fixed.

4646 : User Interface: The column spacing on the Point Editor dialog has been fixed to remove unused white space on the right.

4648 : The copying of the MRU file from an old version to the new location was not working properly. This has been fixed.

4649 : User Interface: When a point was created with the MidPoint plan the tessellation created had no label (which is actually the X,Y,Z coordinates for the point), this has now been fixed.

4650 : Five-Axis & Adaptive Roughing: The default tolerance is now altered when a thickness is applied, this is now consistent with Area Clearance.

4651 : Ensured that the path to the temporary files folder is always terminated by a '\', even if this is not displayed in the options dialog.

4652 : UV Passes: Fixed problems on surfaces with very small UV parameter ranges.



4653 : We now locate the machine tool definitions for the running program and all installed versions and copy any files found there that are not already in program data, giving preference to later releases.

4654 : Toolsheets: Creating a toolsheet from a Five-Axis toolpath was not working when a GPOST post processor is used, this has now been fixed.

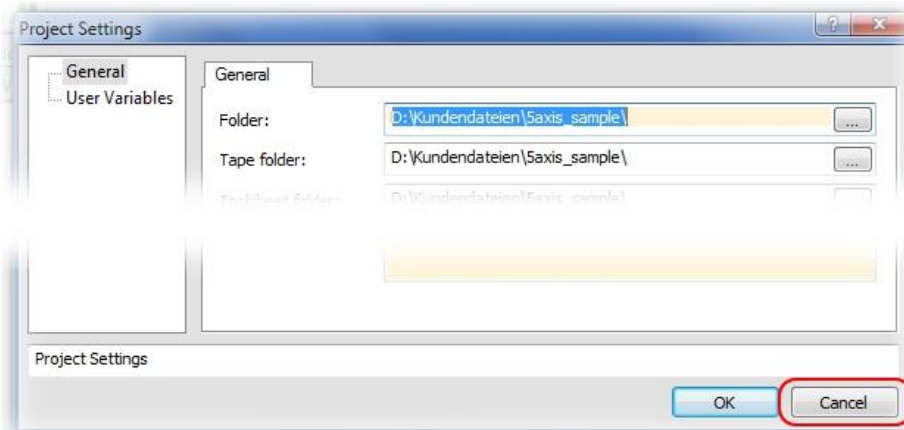
4657 : VRML: Failed to do a Write with Prismatic Stock Models, this has now been fixed. Also there was no support for Five-Axis toolpaths this has been added.

4663 : User Interface: If you were running a simulation and you closed the window frame of the part for which the simulation was running, then NCGCAM would crash when the simulator was halted. This has now been fixed.

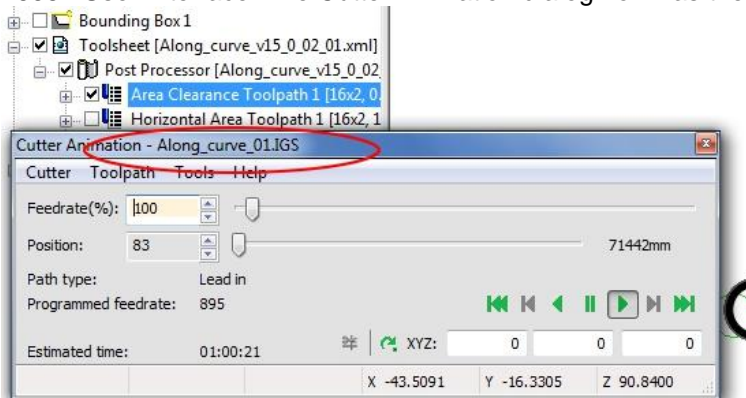
4664 : Multi-axis stock models: The performance of multi-axis stock model calculations has been improved in the order of 4%.

4666 : Rest finishing: A fix has been made to eliminate gouges that could sometimes occur on bosses enclosed within other stock material, but that stock has a gap in it.

4667 : User Interface: There is now a cancel button on the Project Settings dialog when editing during a session.



4668 : User Interface: The Cutter Animation dialog now has the active toolpath name in the dialogs title bar.



4669 : Post Processor: If a Five-Axis toolpath plan has been created with the 3-Axis option enabled it is now possible to post process the toolpath with the standard macro post processors.

4671 : User Interface: The Dialog to create a boundary from text is now modeless.

4672 : Failed plans now keep their marking / high-lighting when the database is saved and then loaded again later on.

4682 : User Interface: Cutter Animation was allowing the Split toolpath option to be available for Drilling Cycle Toolpaths when it should not have been, this has now been fixed.

4683 : Boundary Editing: There were occasions when trying to edit a boundary it would disappear from the screen and you could not edit it, this has now been fixed.

4684 : Rest finishing: A problem where using off-surface spiral connections could lead to a gouge has been fixed.

4694 : Toolsheets: The toolsheet for a Five-Axis Roughing toolpath was not correct as it had 0.0 for the Step Down which is wrong, this has now been fixed.

4696 : Stock Models: When creating a stock model from Split Toolpaths or Sister Tooling gave an incorrect warning message regarding unlinked passes, this has now been fixed.

4701 : Post processor: ISO: Added an option to the allow the passes tolerance and the thickness (stock) of those passes, this is mainly for a Roders machine. If the thickness for XY is different to the Z thickness, use the smaller of the two, if the XY or Z thickness are negative, 0 will be used for the stock. Added the following parameters to the ISO post processor:

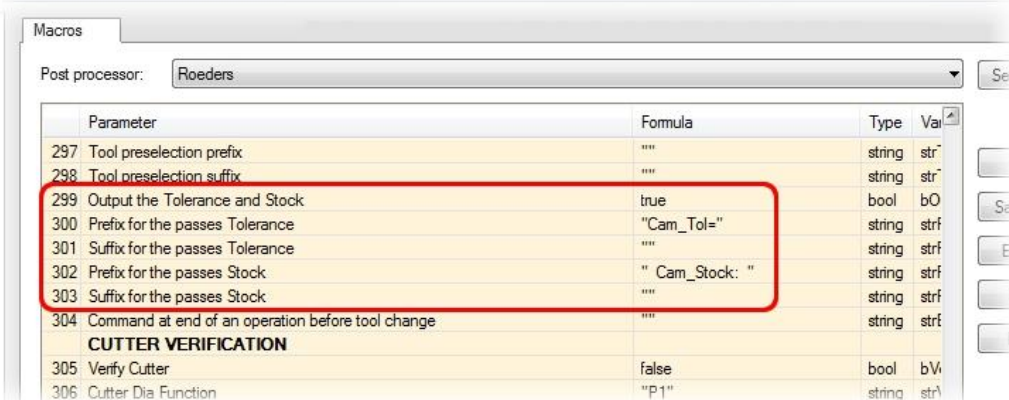
Output the Tolerance and Stock: Set false by default, if set true the following parameters will be output, in a single block, with the Tolerance and Stock values.

Prefix for the passes Tolerance: The prefix for the tolerance value.

Suffix for the passes Tolerance: The suffix to the tolerance value.

Prefix for the passes Stock: The prefix for the stock value.

Suffix for the passes Stock: The suffix to the stock value.



Parameter	Formula	Type	Val
297 Tool preselection prefix	""	string	str
298 Tool preselection suffix	""	string	str
299 Output the Tolerance and Stock	true	bool	bo
300 Prefix for the passes Tolerance	"Cam_Tol="	string	strf
301 Suffix for the passes Tolerance	""	string	strf
302 Prefix for the passes Stock	" Cam_Stock: "	string	strf
303 Suffix for the passes Stock	""	string	strf
304 Command at end of an operation before tool change	""	string	strf
<b>CUTTER VERIFICATION</b>			
305 Verify Cutter	false	bool	bV
306 Cutter Dia Function	"P1"	string	strf

They are output at the start of each toolpath.

4702 : Machine Simulation: There were occasions when the triangulated surface being displayed in the simulation were the wrong ones, this has now been fixed.

4703 : User Interface: If the Cutter Animation is paused using the Ctrl+P option the Split Toolpath toolbar button was not being enabled, this has now been fixed. Also fixes ticket 4503 Part 2.

4705 : Machine Simulation: The EnableCCWithWorkpieceWhenVerifierEnabled=1 parameter has been added to the default machsim.ini file.

**This only affects you if you have five axis and machine simulation, and have installed v14.0.01**

You will need to update the machsim.ini file manually, just in case you have modified it, we do not overwrite it.

By default the machsim.ini will be in: C:\ProgramData\NCGCAM Solutions\MachineToolDefinitions

Open that file in a text editor like: Notepad

Find: EnableCCWithWorkpieceWhenVerifierEnabled

You will see it says: = 0

Change the 0 to be 1

Save the file

*If you use the five axis and machine simulation, and are unsure about this edit, please contact your reseller before editing the file.*

4711 : User Interface: The Tool holder was being animated in the wrong colour when in Wire Frame mode, this has now been fixed.

4712 : Linking: Fixed a problem which caused rest roughing passes to link out of order.

4719 : Drilling: We now check hole centre for gouging when Bore or Internal Thread Milling.

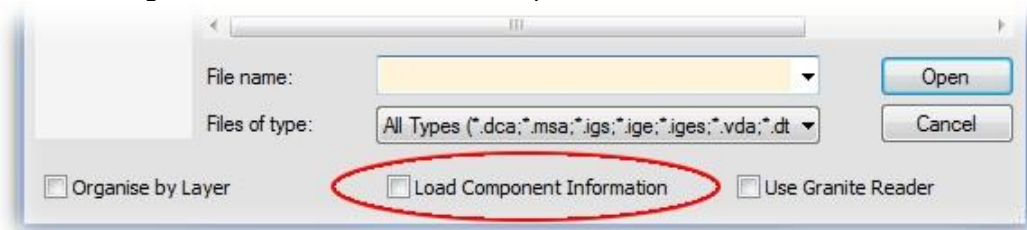
4721 : Tool Database: There were occasions when empty tool holders and duplicate cutters and tool holders could be output to the exported tool database text file, this has now been fixed.

4724 : User Interface: The cutter animation dialog was ignoring number-keypad hits in the feedrate box, this has now been fixed.

4730 : Fixed exception that could occur when editing to tool holder.

4731 : User Interface: The Parallel Pencil Passes & Corner Offset plans were not removing the intermediate Pencil Passes plan from the root tree view, this has now been fixed.

4739 : User Interface: File Open: Changed the option 'Ignore Component Information' to 'Load Component Information' in the File Open dialog. The default is now to ignore the component information allowing for faster loading time of Catia and STEP files. Updated the documentation to match the new settings.



4743 : UV Passes: Fixed a problem which could cause UV passes to get caught in an endless loop

4753 : Machining simulation: A problem has been fixed where the default simulation post-processor did not match the post-processor of a post-processed toolpath input. Also fixes ticket 4611.

4757 : Machine Simulation: There was a problem when creating a machine simulation presentation on Windows 10 PC, this has now been fixed.

4758 : Machine Simulation: There were examples when using a stepped cutter that the simulation would fail, this has now been fixed.



**Release notes for:  
NCG CAM v15.0.02**  
Date: 07/11/2016

4759 : Five-Axis : T-Slot cutter were not having the thickness applied correctly to the flute length this has now been fixed.

Documentation: Updated, including the tutorial and the What's New for 15.0.02

Updated the Japanese, French, German, Portuguese, and Spanish translation.

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