

**NCG CAM Solutions Ltd are pleased to release NCG CAM v16.0.02**

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These are mainly just little fixes and enhancements; edited passes can now be axially offset. Some of the five axis flank machining 'advanced' parameters are now accessible from the main NCGCAM user interface. If you use the shaft profile, and use it with area clearance or core roughing, you will have to 'Self validate' before you can proceed to the linking. This is because it is not stock safe, the recommended and safest approach is to recalculate the passes with the cutter / holder from the shaft profile, this will give a stock safe toolpath.

**V16.0.02**

5006 : Transform: Fixed a hang that could occur when rerunning plans that included a mirroring a toolpath.

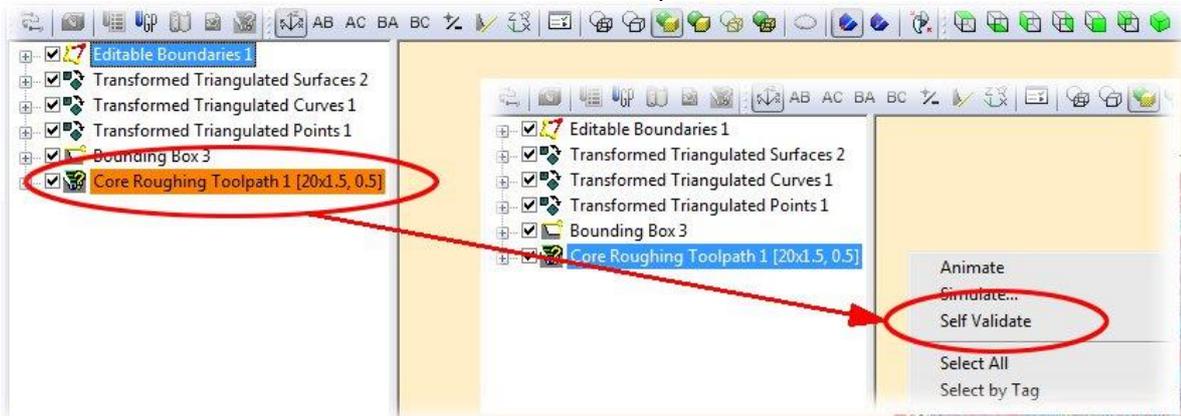
5008 : Bore Milling: Reverse Transform Linking now reverses the underlying bore milling cycle to conventional so mirrored result is still climb milling.

5237 : Five axis ModuleWorks libraries have been updated to 2017-12.

5288 : Improved the quality of raster passes by correcting choice as to whether to use smoothed triangles.

5319 : Shaft Profile Analysis: It is now possible to save changes to the tool for Roughing Toolpaths. The resultant plan is not instantly usable and is not guaranteed to be stock safe.

To check the result, users with machine simulation are encouraged to simulate the toolpath. For this the toolpath needs to be selected (optionally a prismatic or pre-existing stock model can be selected too) > mouse right > Simulate. Temporary cutting parameters will be set automatically in the background, and the surfaces from this toolpath selected for the simulation. Then once the result has been checked and considered "Self Validate" can be used to make the toolpath usable.

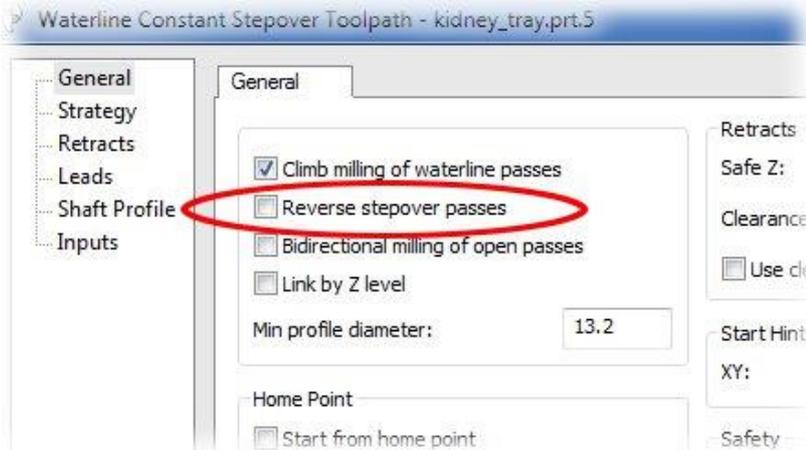


Users who do not have machine simulation can animate the toolpath prior to performing a "Self Validate", but with the animation it is harder to say if it is stock safe or not.

It is still recommended that in all but the simplest of examples the toolpath should be rebuilt using the new cutter as this will guarantee a gouge free solution.

5353 : Curvature Analysis: It was the case that the flat surfaces could be a mix of grey and out of range (high) colour when either "show convex" or "show concave" was not enabled. That problem has now been fixed. The flat surface now only shows the out of range (high) colour.

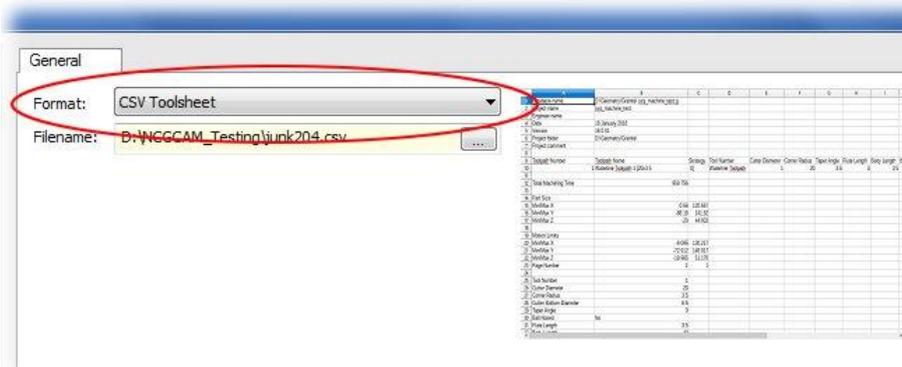
5391 : Linking: Waterline Stepmover Passes: Horizontal arcs are no longer used for the stepover passes, to allow a better vertical arc to be fitted. Also fixed the intelligent bidirectional linking. Added a separate reversal option for the stepover passes, this gives a little more control over the cutting direction if needed.



5402 : Selected Surface Waterline: The occurrence of isolated fragments of passes adjacent to vertical surfaces has been significantly reduced.

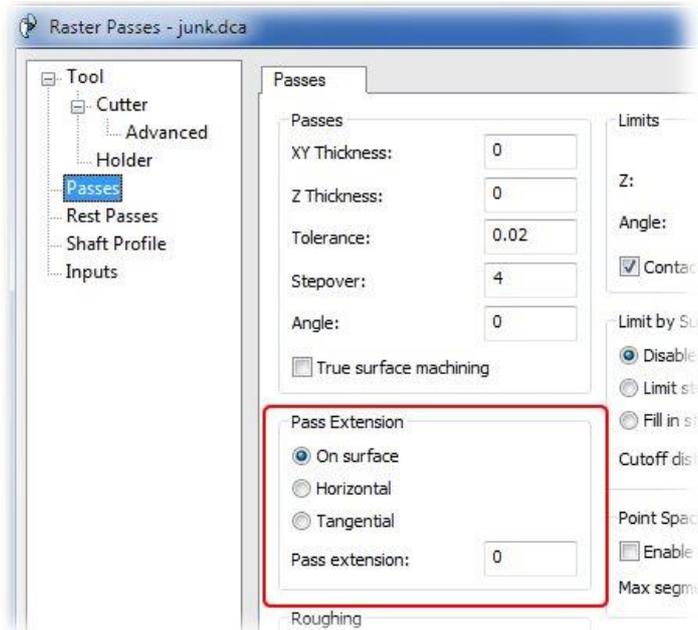
5405 : Selected Surface Waterline: A problem where the 'bottom' pass of a set of passes adjacent to a vertical surface could be missing has been fixed.

5414 : Toolsheets: A new style of toolsheet has been implemented to create a comma separated values (CSV) file, this makes it possible to import the toolsheet into other applications.



5418 : Curvature Analysis: It was the case that the default upper limit for curvatures could take a value smaller than the lower limit. This problem has now been fixed.

5447 : User Interface: The Pass extension style radio buttons are no longer greyed out when the pass extension value is zero, making it easier to set. This affects Raster Passes and Radial Passes.



5453 : User Interface: It was possible to resize the Machine Simulation dialog to make it smaller and hide the controls, this has now been fixed.

5465 : Curvatures: A slowdown in the display of curvatures for NURBS surfaces that came about at release 16.0.00 has been fixed.

5472 : Five-Axis: When using the Flank Machining "Balance" or "Balance within Allowance" options in the MW parameters were not set correctly, this has now been fixed.

5474 : Machine Simulation: The collision tolerance was not set correctly when the region settings were set to German, this has now been fixed.

5477 : Linking: Fixed a gap that could appear in a horizontal area toolpath.

5486 : Post processor: Heidenhain: When the feedrates are output as Q-values, the ability to have a

comment after the feedrate when the "FN0: Q3 = 895;" is declared in the NC file, has been added.

Added the following to the Heidenhain post processor options:

"Feedrate Q-DEFs list Rapid comment",  
"Feedrate Q-DEFs list Ramp down comment",  
"Feedrate Q-DEFs list Cutting comment",  
"Feedrate Q-DEFs list Ramp up comment".

By default, these are empty, so not to affect existing posts, but would allow: "FN0: Q3 = 895; Ramp down" to be output in the NC file.

Post processor: Heidenhain DMG 80P

Parameter	Formula
241 Cutting feedrate	"Q2"
242 Ramp up feedrate	"Q3"
243 Output feedrate Q-DEFs before the TOOLCALL	false
244 Feedrate Q-DEFs list Rapid comment	""
245 Feedrate Q-DEFs list Ramp down comment	""
246 Feedrate Q-DEFs list Cutting comment	""
247 Feedrate Q-DEFs list Ramp up comment	""
248 Non-Modal feedrates	false

**TOOL CHANGE SETTINGS**

5488 : User Interface: Improved the warning message when tool library cannot be deleted.

5492 : Added an option to the Tool page to save the tool as a VRML file. With a VRML viewer, the item can be dynamically rotated, and zoomed in on.

5494 : Import: Updated the Parasolid reader to v30.1

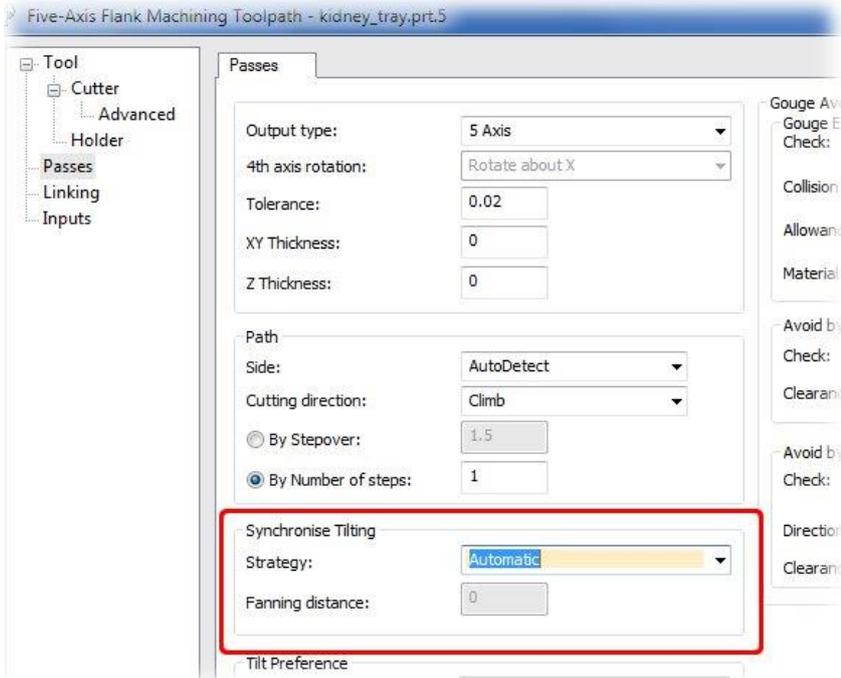
About NCG CAM 16.0

Module	Version	Licensed
Catia v4 3D	Releases 4.15 to 4.24	Yes
Catia v5	Releases 7 to 27	Yes
GRANITE	10.0 F000	Yes
Parasolid	Parasolid V30.1	Yes
SolidWorks	SolidWorks 2018	Yes

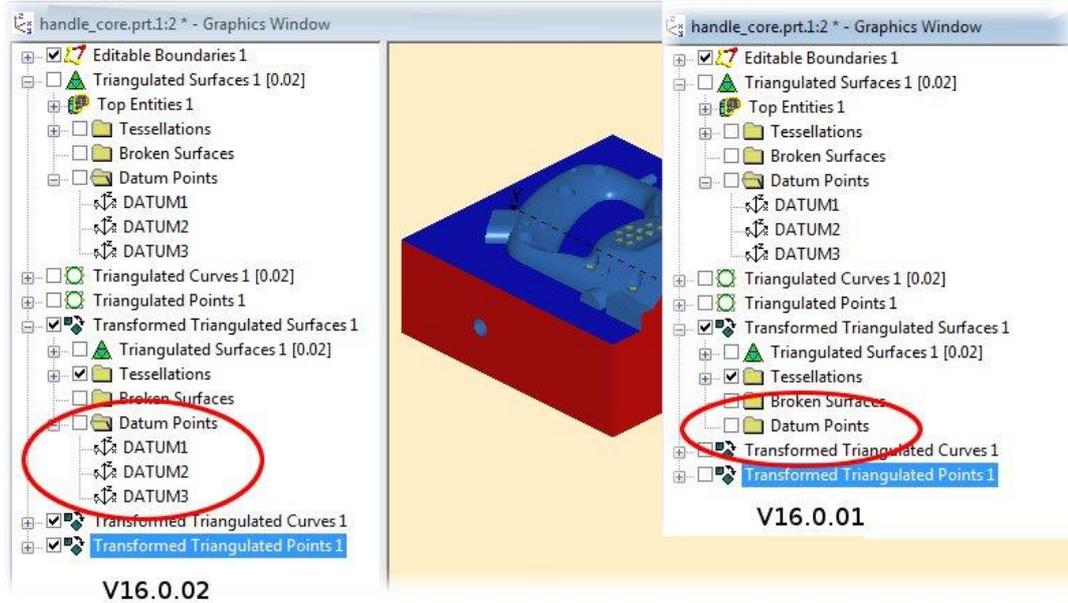
5495 : Raster Passes: Fixed a problem with Horizontal and Tangential extension options, which left the extensions when the passes were to be trimmed away.

5498 : Five-Axis Flank Machining: Added the advanced tilting options to the standard dialog, enabling tilt

through lines (curves).

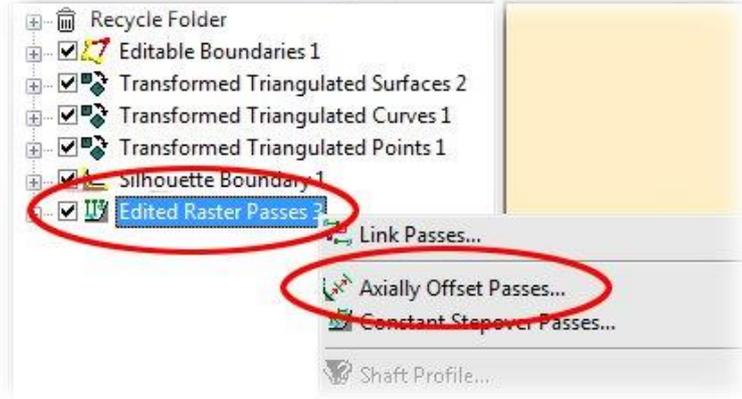


5501 : When surfaces, curves, or points are transformed the resulting folder now contains the transformed Datum points as well.



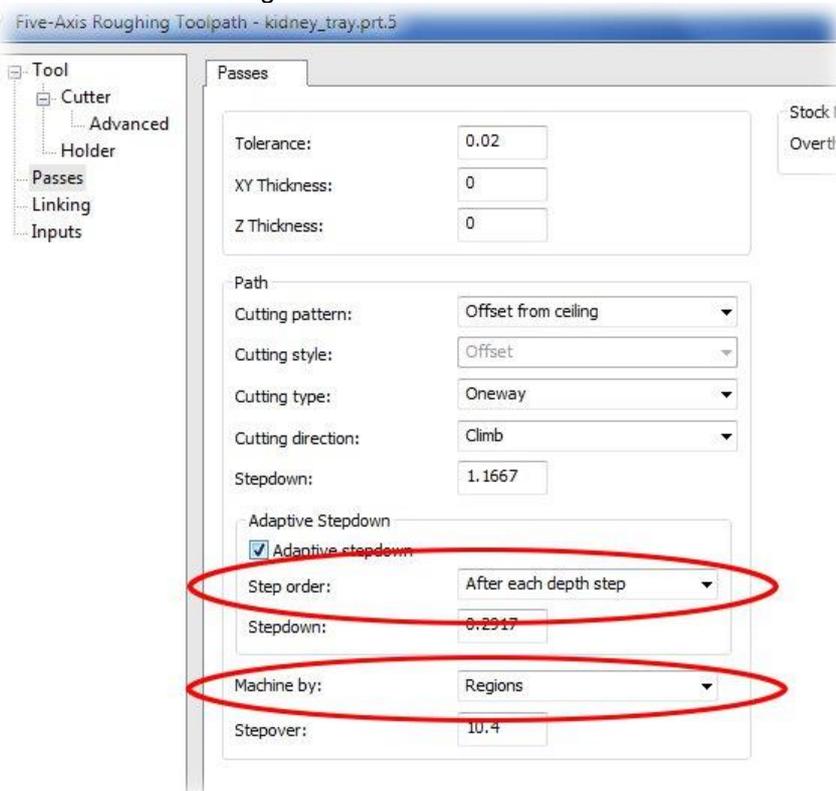
5502 : Axial Offset: We now allow edited passes to be axial offset, this includes Core Horizontal Area Passes. The axially offset passes retain any editing due to gouge protection in the original passes.

This also fixes tickets 4420, 3676, 3269, and 4348



5509 : Multi-Axis Roughing: The "Check with machining surfaces" ModuleWorks option is now set to true by default to enable gouge checking of the holder.

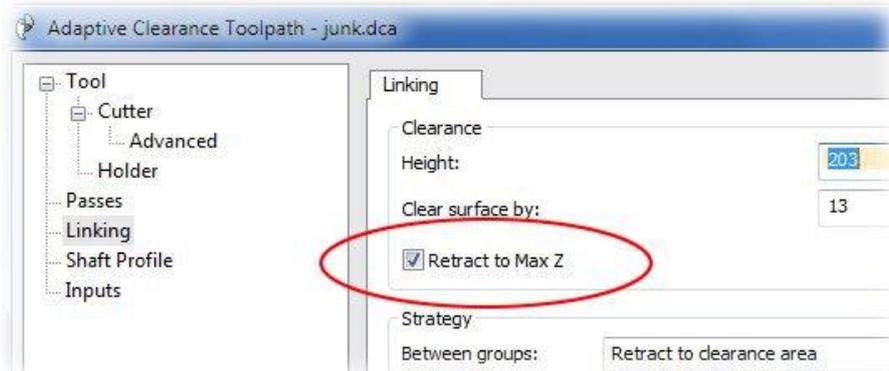
5513 : Multi-Axis Roughing: The "Intermediate Step Order" and "Machine by" filter options have been added to the NCGCAM Dialog.



5516 : Adaptive Clearance Toolpath: Offset surfaces were not being handled correctly, this has now been fixed.

5518 : Selected Surface Waterline: A problem has been fixed that could give rise to gaps in toolpaths adjacent to non-vertical surfaces. Also fixes ticket 5403

5520 : Adaptive Clearance: A new option to retract to Max Z at start and end of toolpath has been added. Updated defaults.



5522 : User Interface: There were occasions when the overall length parameter was not editable when it should be, this has now been fixed.

5523 : Waterline Stepmover Passes: Fix exceptions that could occur due to NULL toolpaths and fragments.

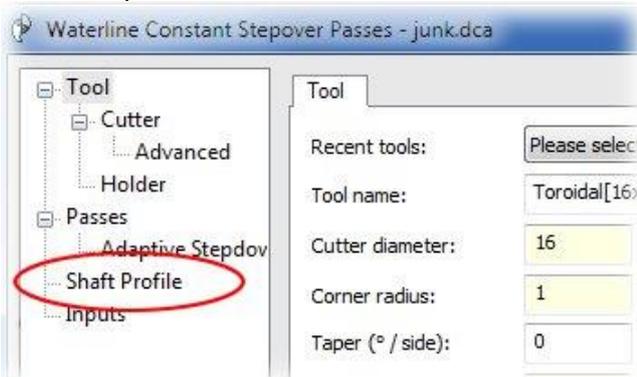
5526 : Rest Machining: There are cases where the plan will fail when the stock model supplied was created by modifying the inputs on the plan input page this has now been fixed.

5527 : Five-Axis Flank Machining: The Check surfaces were not being set correctly for the DeGouge option, this has now been fixed.

5535 : Five-Axis Flank Machining: The default gouge avoidance strategy has been changed to: 'Avoid by Retract'.

5546 : Reduced the size of tree view tags from 14px diameter to 12px diameter to make them look better.

5551 : Waterline Stepmover Passes: The shaft profile page has been added to the dialog, so to be consistent with other passes.



5567 : User Interface : The overall length, on the tool/cutter pages will now be updated to the modified body length if it is shorter than the new body length.

5568 : Linking: Fixed a hang in the linking of edited waterline constant stepmover passes.

Documentation: Updated the French, German, Japanese R-techno, Japanese TMJ, Portuguese, Turkish, Portuguese Brazilian translations.



**Release notes for:**  
**NCG CAM v16.0.02**  
Date: 3/4/2018

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