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NCG CAM – v20.0

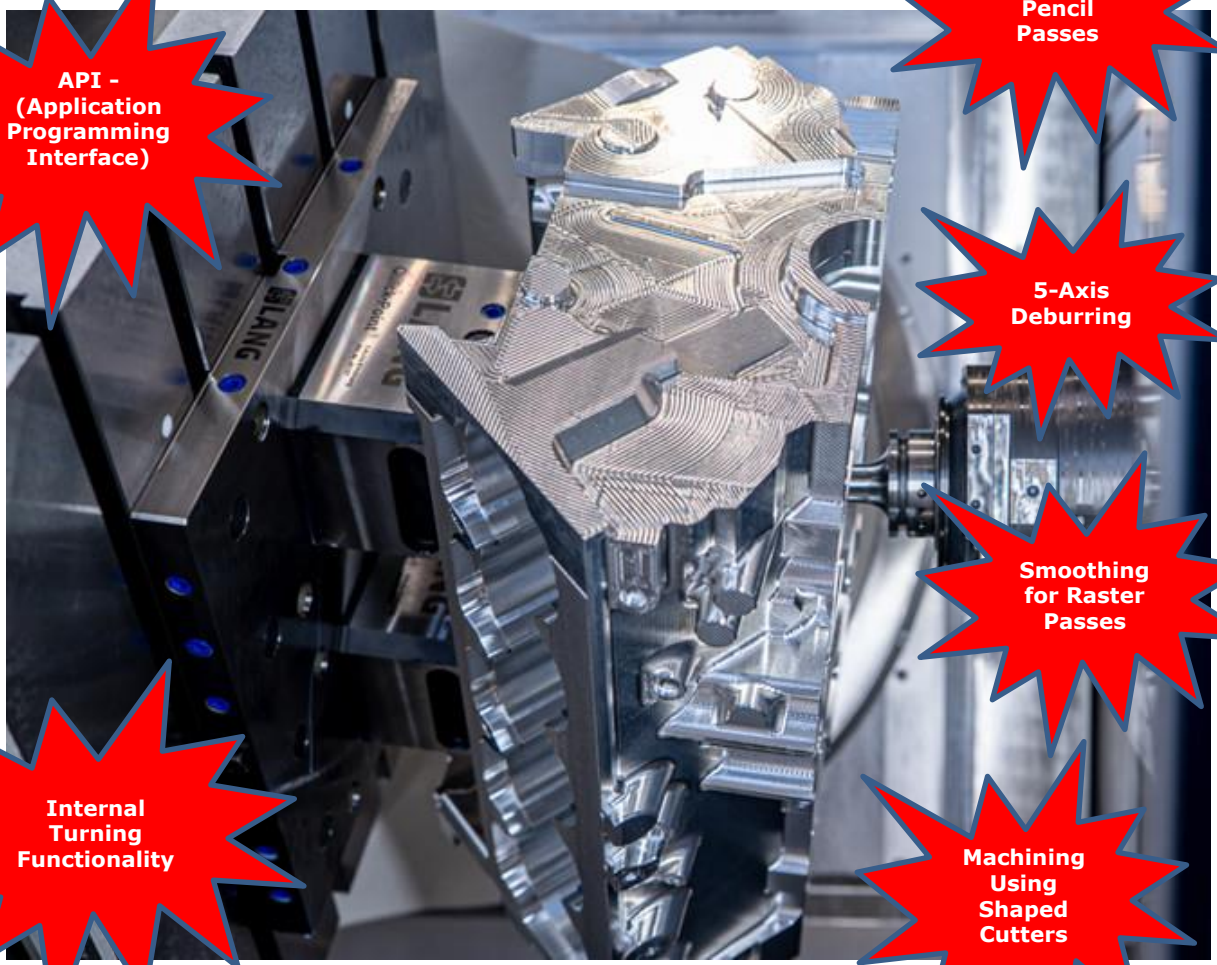

Image courtesy of Subi-Performance

New Features for NCG CAM v20.0

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2-Axis Internal Turning

Available in v20.0.00

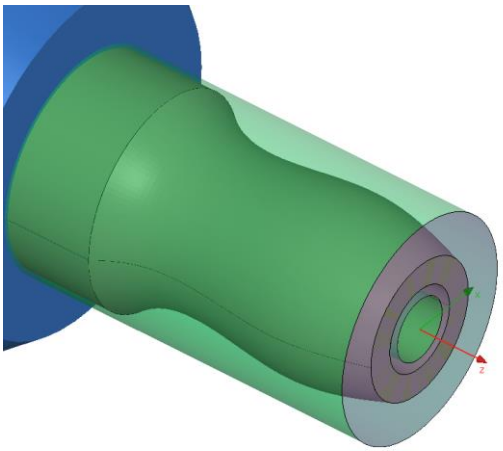
2-Axis Internal Turning has been added to the Basic module of **NCG CAM** v20.

The 2-Axis Internal Turning includes:

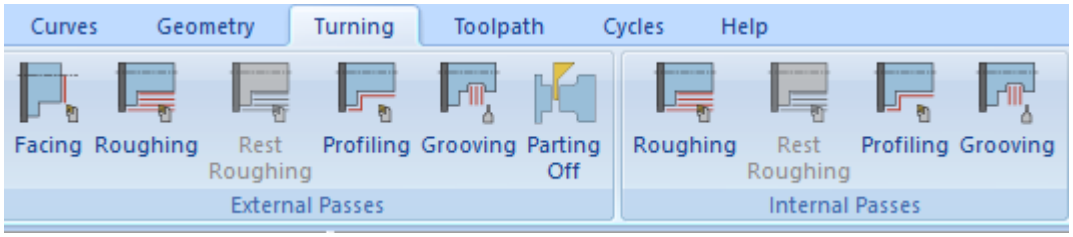
- Finish Internal Boring
- Rough Internal Turning
- Internal Grooving
- Internal Rest Roughing.

Stock Model – Revolved Stock Models can be set with both an External and Internal diameter to create a more accurate representation of Turning when using a tube or pre-drilled stock.

This allows the internal Turning operations to work correctly using the defined stock as a starting point.



Turning Menus – New menu Icons and Right Mouse menus have been added to distinguish between External and Internal Turning.



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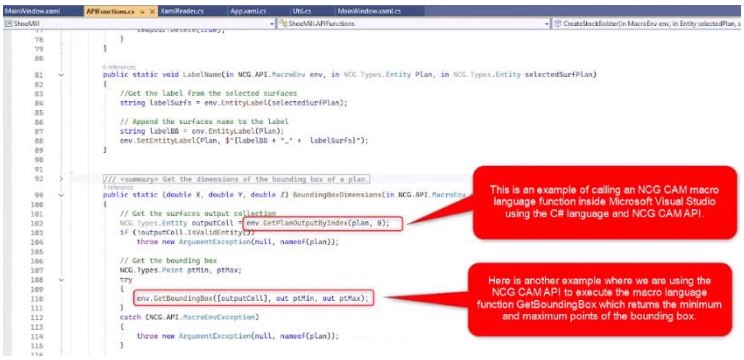
API – (Application Programming Interface)

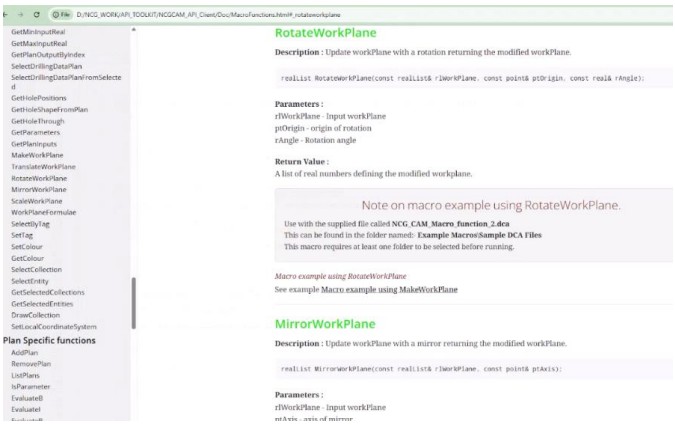
Available in v20.0.00



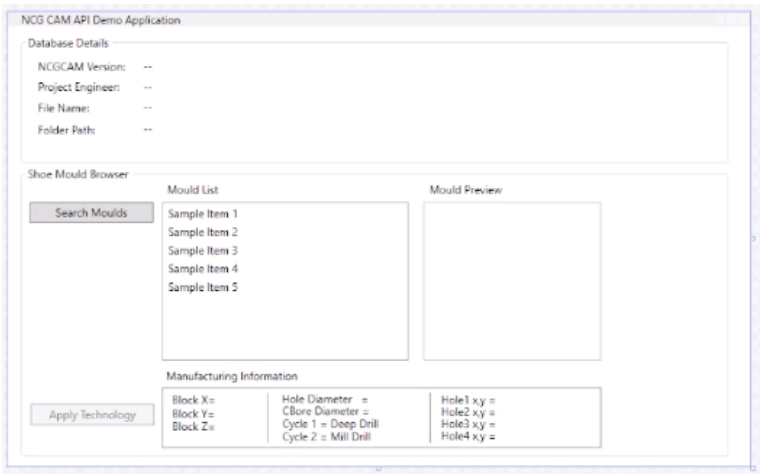
Above - C# programming language example integrating **NCG CAM** *Macro commands.*

Using a combination of C / C# / C++ programming and **NCG CAM** Macro commands, a new API allows Users to create bespoke applications of combined processes and increase productivity through the use of automation.

These can be used to create specific customer driven applications to aid Automation or streamline processes using custom designed menu systems.



Above - **NCG CAM** *Macro commands.*



Above - Sample Form or User Interface.

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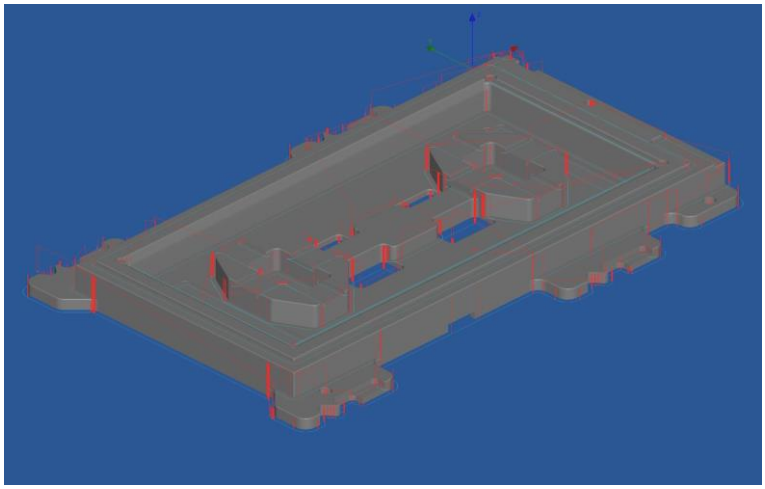
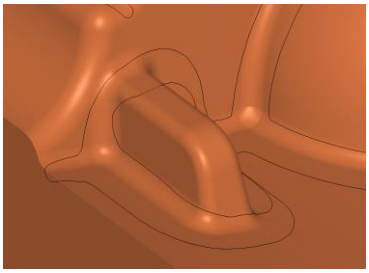
Pencil Passes: Improved Pass Calculation

Available in v20.0.00

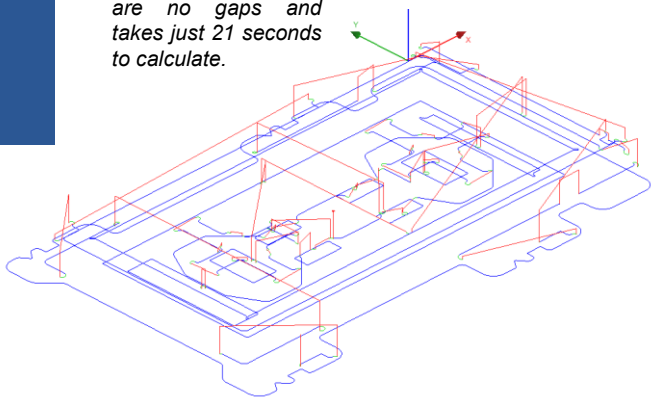
This example shows how major improvements have been made using an Endmill.



Left – In v19 there were multiple gaps leading to lift-offs and took 3 minutes to calculate.

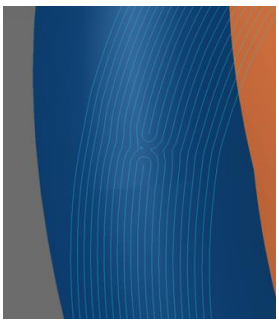


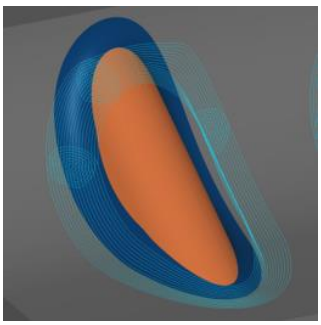
Below – In v20 there are no gaps and takes just 21 seconds to calculate.

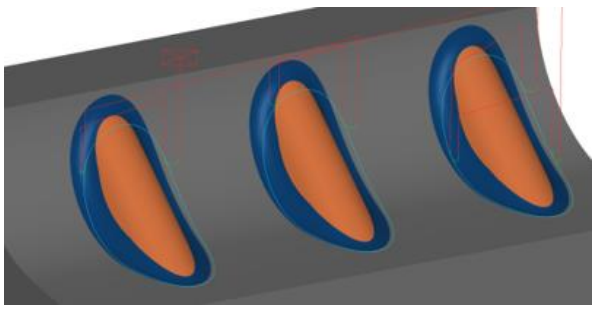


The results of the improved Pencil Passes are:

- Faster calculation times
- Better quality, smoother toolpaths without gaps or breaks:
  - Much smoother surface finish – especially good for 3D contoured mould faces
  - Smoother Theoretical Rest Boundaries
  - Improved Corner Rest Finishing
  - Less polishing needed – saving more time.

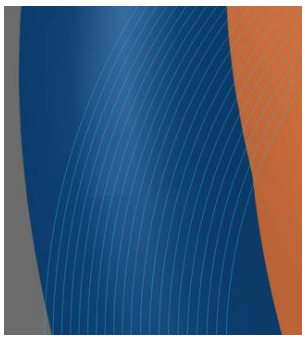


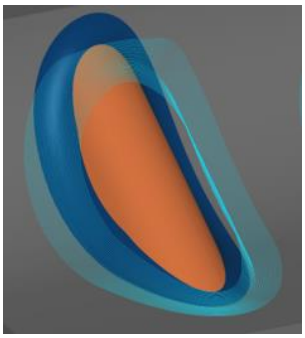


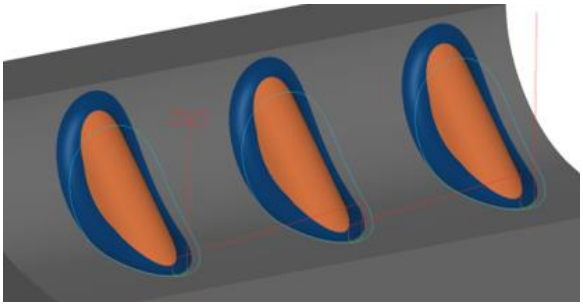


Above – v19 (Showing loops).

Below – v20.0 (Showing continuous paths with single retract moves).



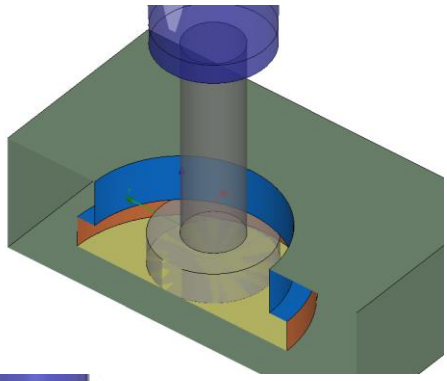


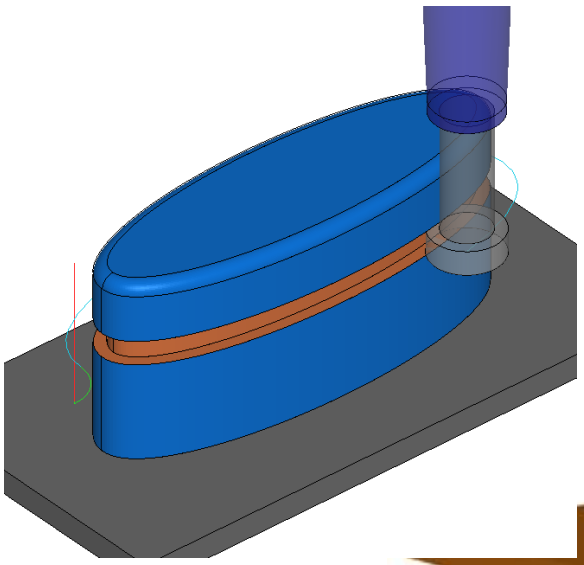


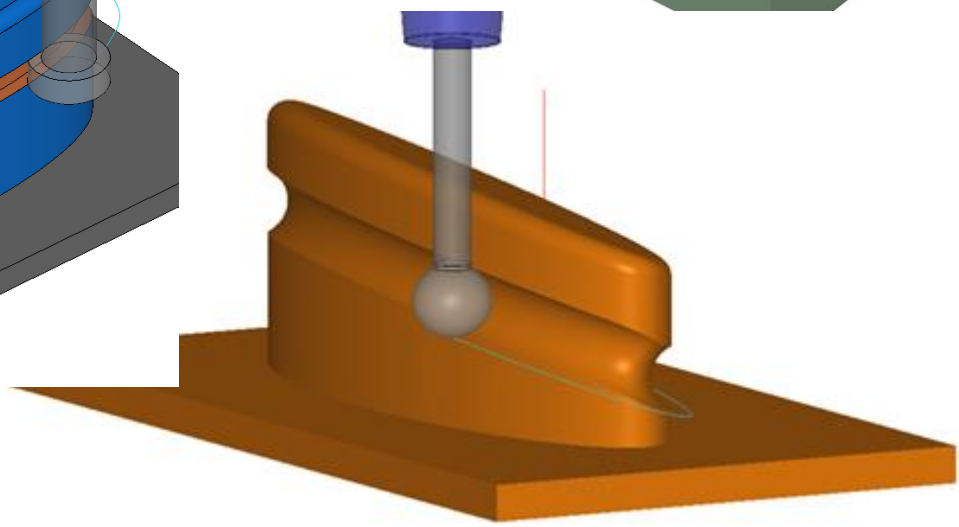
Along Curve: Using Shaped Cutters

Available in v20.0.00

3-Axis Along Curve Machining: The use of shaped cutters has been enabled for 3-Axis Along Curve Machining. The cutters now available in 3-Axis include Lollipop Cutters, T-Slot Cutters and Dovetail Cutters to create Undercut machining.

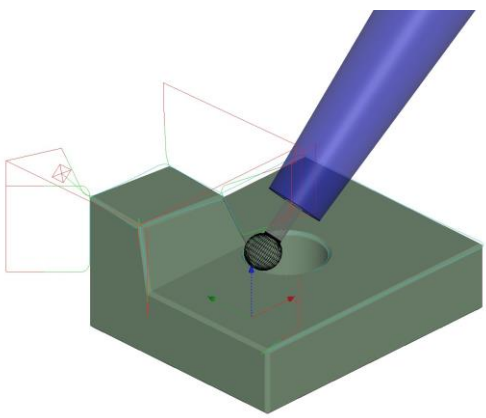






5-Axis : Deburring

Available in v20.0.00



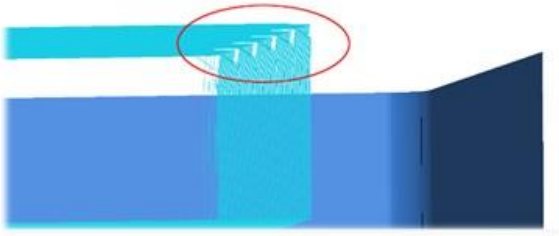
The addition of 5-Axis deburring will now be included as part of the add-on 5-Axis Module.

This will be made available in the 3-Axis module at a later date, as a cost option.

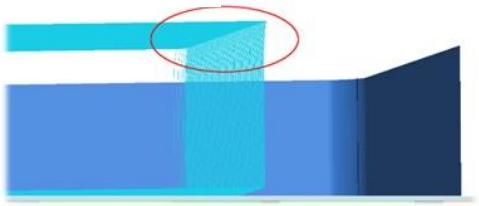
Deburring removes a sharp edge and creates a small radius in its place.

Area Clearance Passes: Improved Quality

Available in v20.0.00



Left – v19 result.



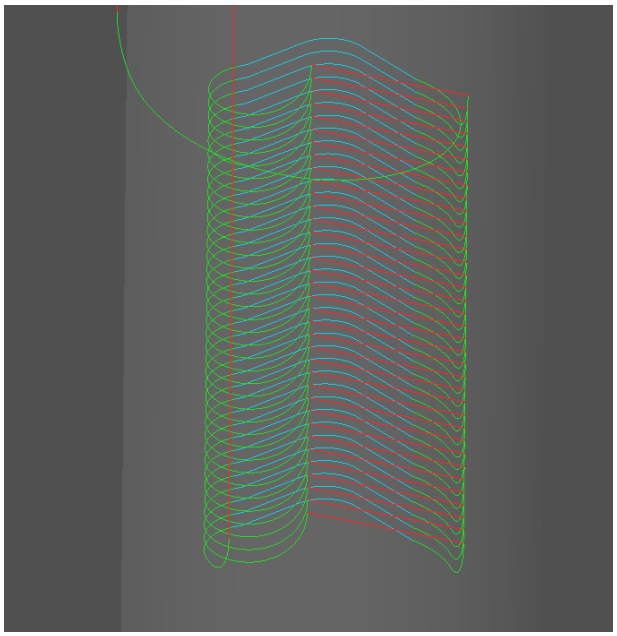
Right – v20 result.

Improvements have been made where Z-slice passes in Area Clearance could potentially take shortcuts (truncating the corners) when the passes change conditions from 'On the Boundary' to 'On the Surface'. Previously this had resulted in extra stock being left on in some cases.

These changes improve the quality of the passes, improve machining conditions and save unnecessary wear on the cutters.

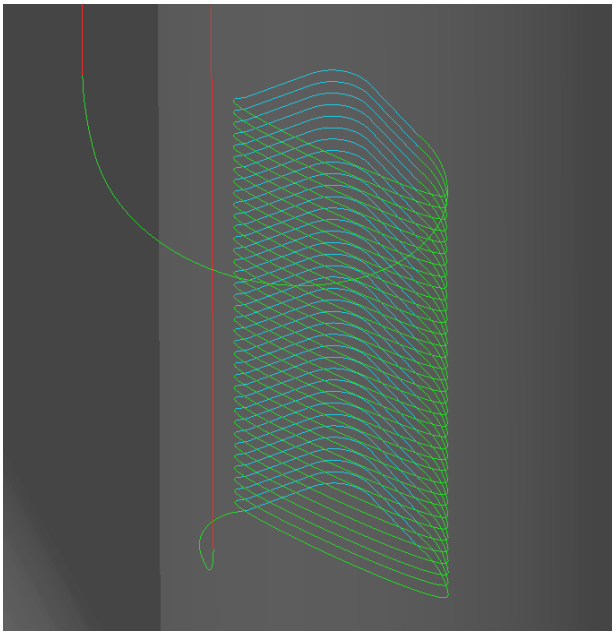
Linking Improvements: Edited Passes

Available in v20.0.00



Improvements have been made to create non-retracting linking moves for edited Area Clearance and Waterline passes.

Left – v19.0.11 results.



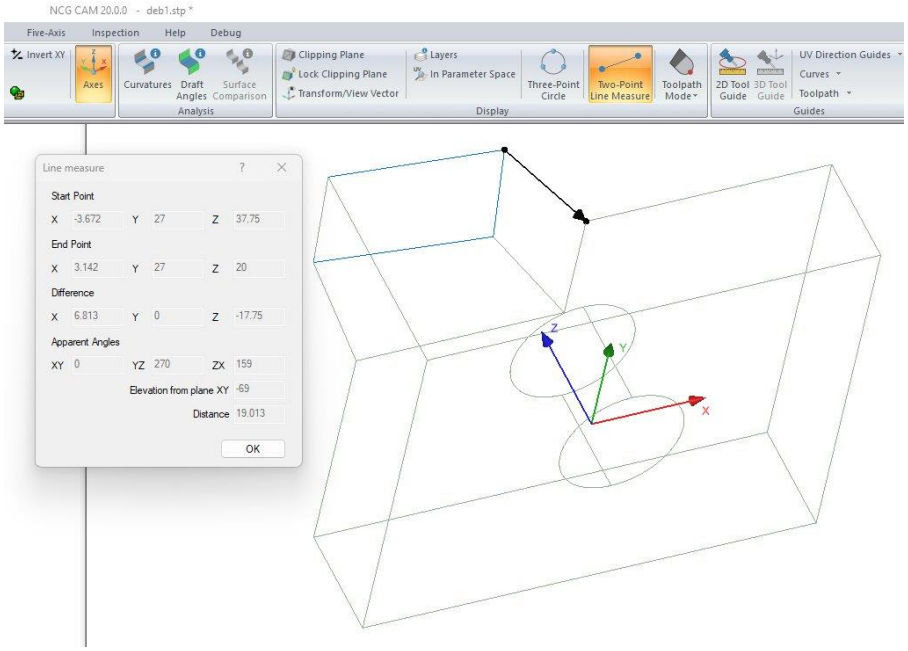
If it is not possible to fit the lead arcs, spline curves are fitted to produce a smoother transition, creating a continuous flowing toolpath.

Right – v20.0.00 results.

Measuring: Measuring a Line

Available in v20.0.00

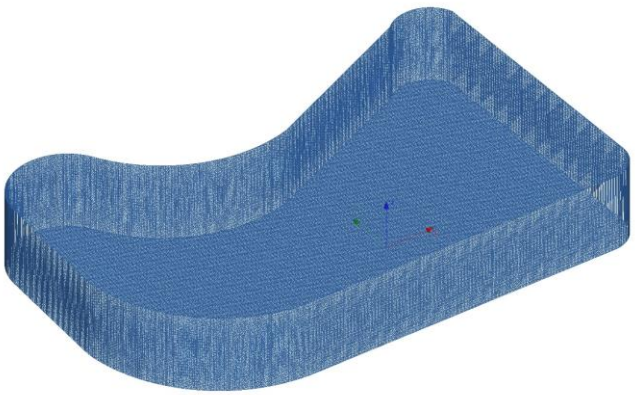
A new icon driven option will now accurately measure ‘between two clicked points’ and display the results in a dialog for greater visibility and clarity.



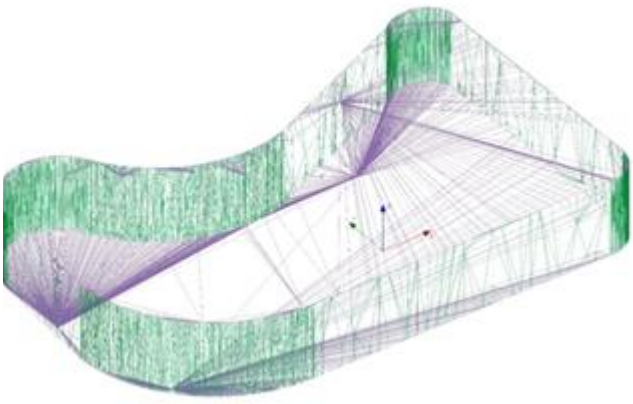
Prismatic Stock Models – Less Triangles

Available in v20.0.00

Changes in the way Prismatic Stock Models are created in v20 will produce fewer triangles to create accurate and sharp edges. This will lead to smaller database sizes and faster access through the graphics in rotational moves.



Above - Prismatic Stock Model in v19 = 500,000 triangles.



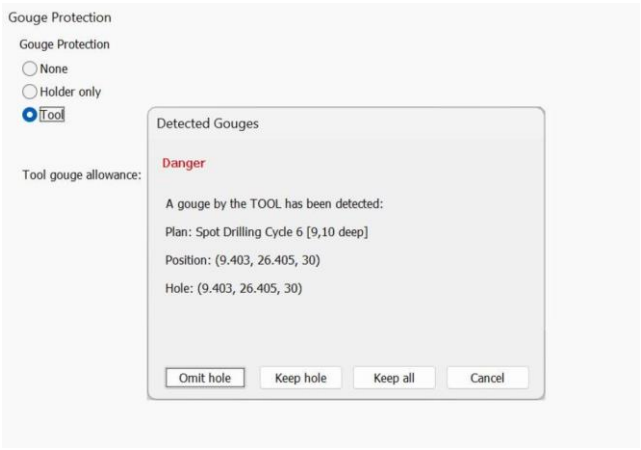
Above - Prismatic Stock Model in v20 = 6,000 triangles.

Drilling: Enhanced Gouge Protection

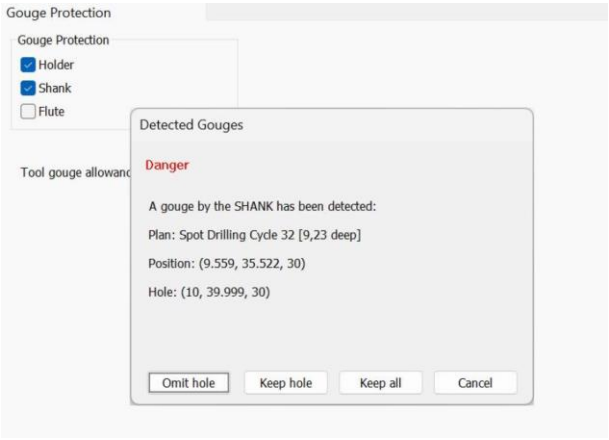
Available in v20.0.00

Changes in v20 now allow the distinction between the elements that make up a drill for Gouge protection.

Previous versions only allowed the picking of the whole tool or the holder, now the Shank, Flute and Holder are all individually protected.



Above - v19 dialog.



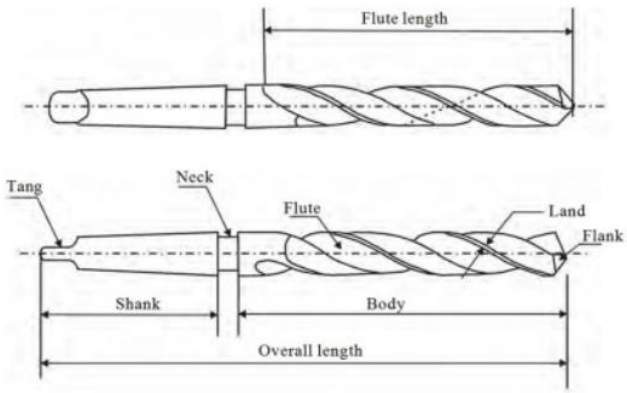
Above - v20 dialog.

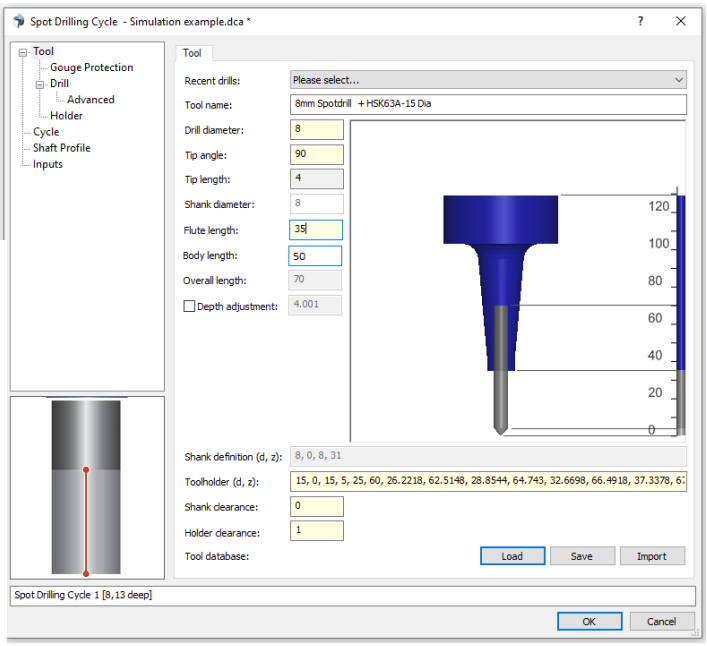
Drilling: Flute Length Definition

Available in v20.0.00

Flute lengths on Drill definition are now definable.

This allows the User to control the usable drilling depth.

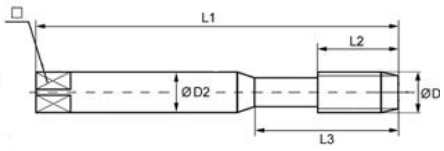


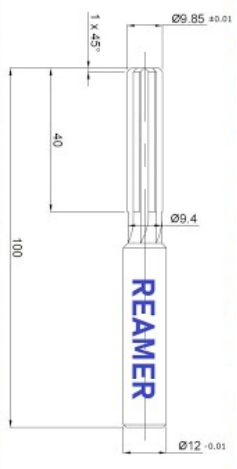


Drilling: Enhanced Tool Shape Definition

Available in v20.0.00

Enhanced definition of the shapes and forms of Drills / Taps / Reamers, etc, are now provided. This gives more accurate gouge protection when creating drilling toolpaths.

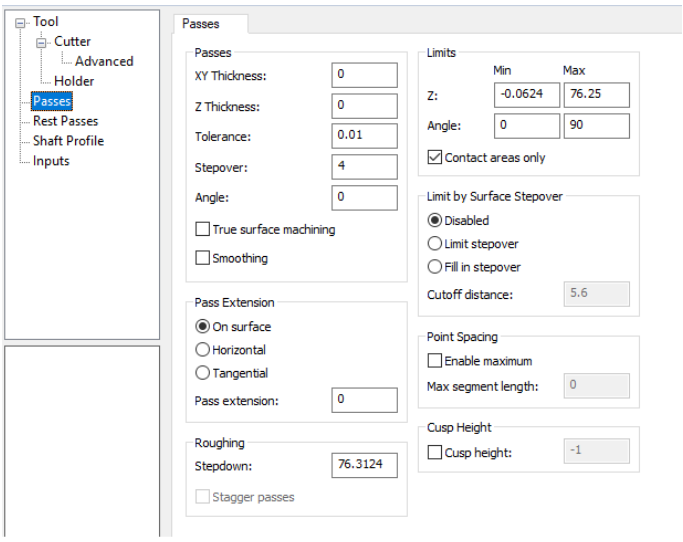


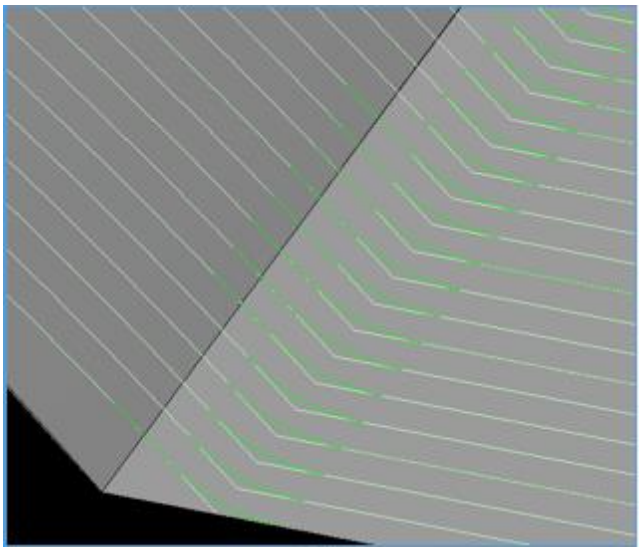


3-Axis Machining : Raster Pass Smoothing

Available in v20.0.00

The development of Smoothing for Raster Passes to provide corner rounding or fillets to assist in smooth continuous tool motion is available for v20 onwards.

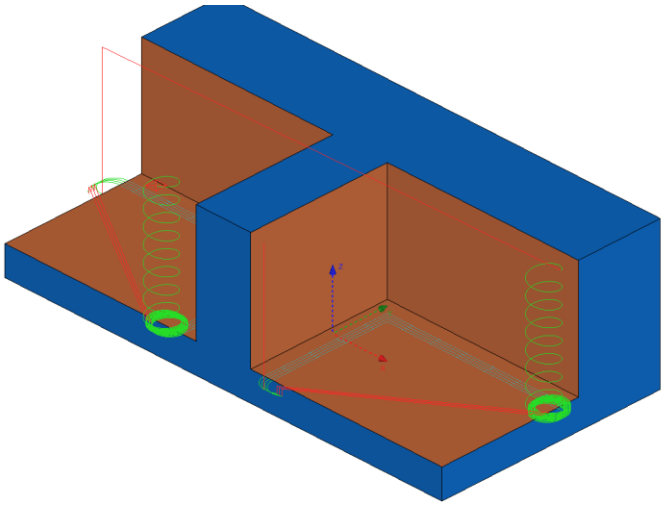




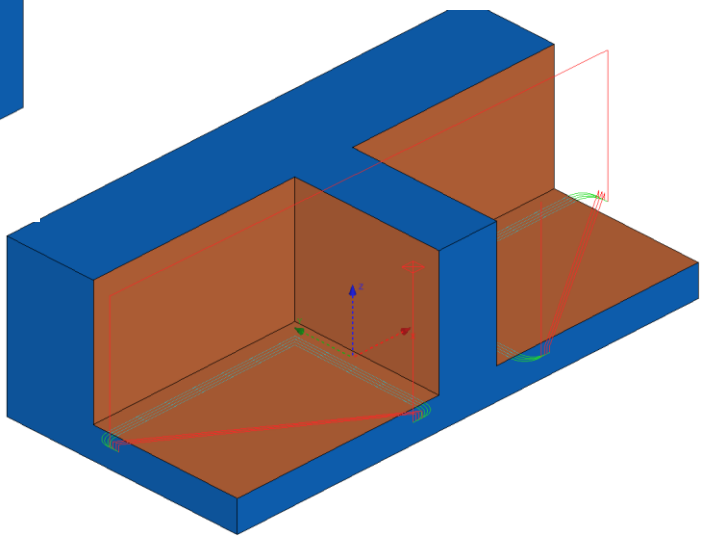
Linking: Simplified Leads for Waterline Offset Toolpaths

Available in v20.0.00

Simplified Leads: The use of Simplified Leads from Waterline Toolpaths has been added to Waterline Offset Toolpaths. This minimises the lead in spiral moves to create a more efficient toolpath, saving time removing unwanted spiral entry moves.



Above – Previous results from v19.

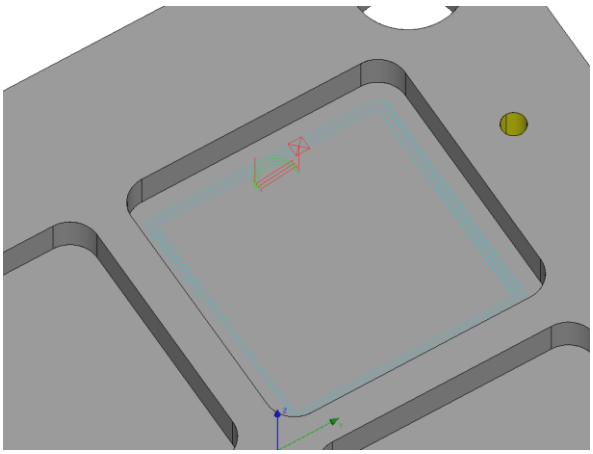


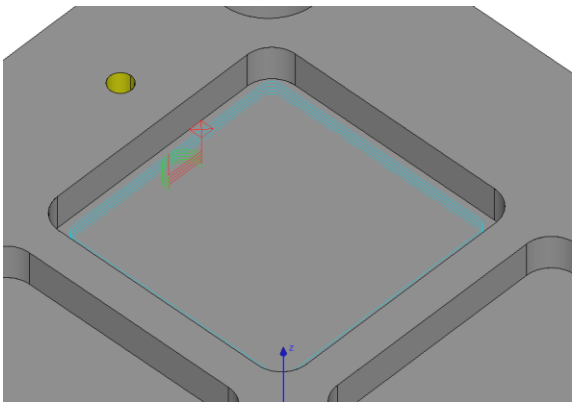
Right – Improved results from v20.

Along Curve: Machining Enhancement

Available in v20.0.00

Offset Axial & Multi Passes: Rather than just creating a single pass and then having to use a separate Axial Offset command to create smaller step downs, this option is now included in a new Along Curve machining option.





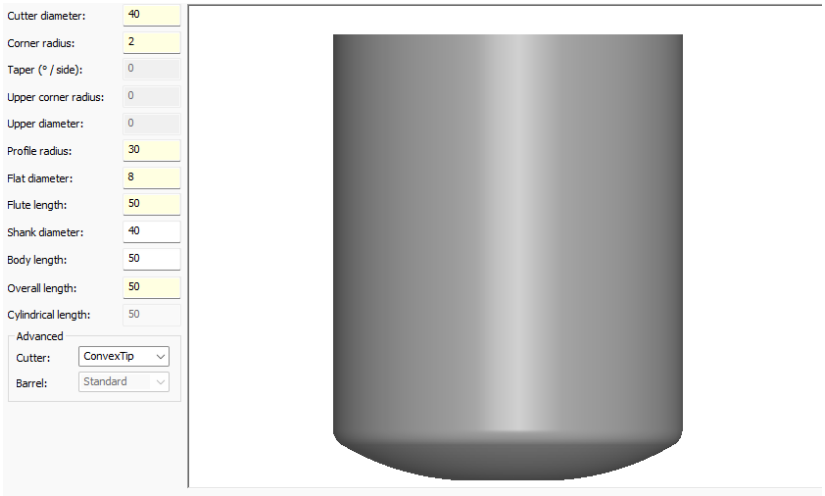
Also included in this new option is Multi-Passes, which allows the removal of material in smaller amounts from the side until the finished size is reached.

Convex Tip Cutters: New Tool Type

Available in v20.0.00

A Convex Tip or High-Feed Roughing tool has been added to the options for certain types of cutting operations.

Adaptive Clearance Roughing and 5-Axis operations can utilise this option.



The Tool is defined in the same manner as other cutters with the additional parameters and the 'Advanced' selection box.

General Changes

Available in v20.0.00

Datakit Libraries:

The latest version of the Datakit libraries which contains the translators for Parasolid and NX has been upgraded to their latest version 2025.2

This keeps the translators at the same level as the current software ensuring compatibility.

NCG CAM Solutions Ltd.

Available in v20.0.00

Powerful, Reliable & Affordable
Advanced 3D 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, Think3, NX, Catia, Ansys SpaceClaim, CREO, 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.

✓ 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 and a simultaneous 5-Axis add-on module is 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
  - Increased efficiency
  - Reduced wear on machine
  - Extended tooling life

✓ **Perpetual Licensing (This will NOT change)**

Saves time and money !!

Local Reseller Contact Details:

NCG CAM Solutions Ltd.

SCAN ME

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