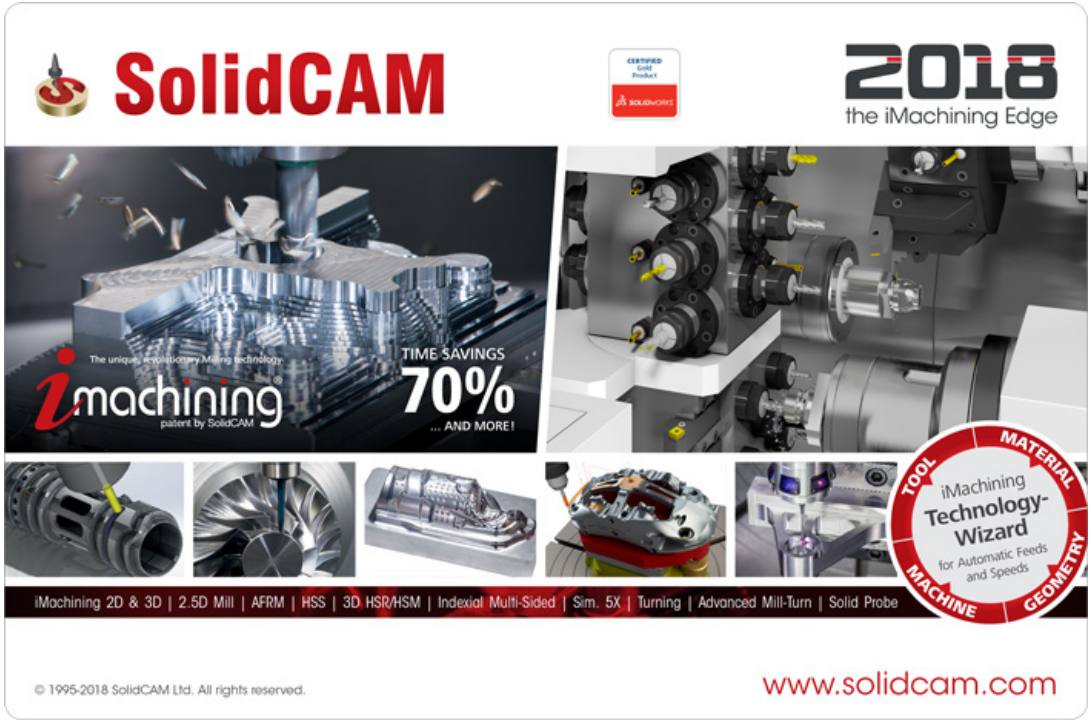
What’s New in SolidCAM 2018

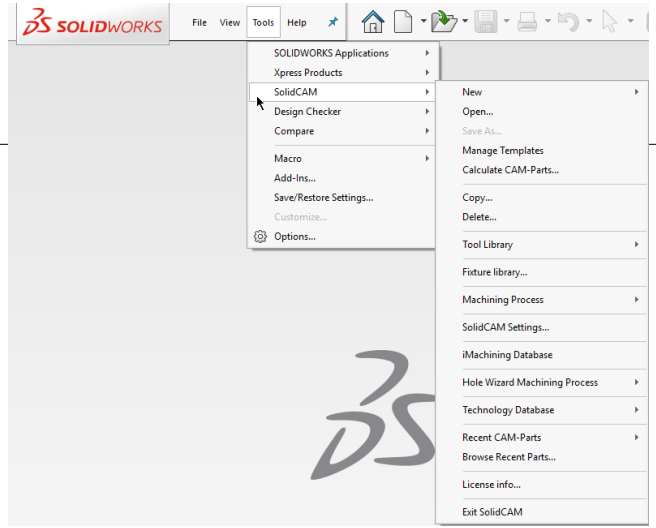


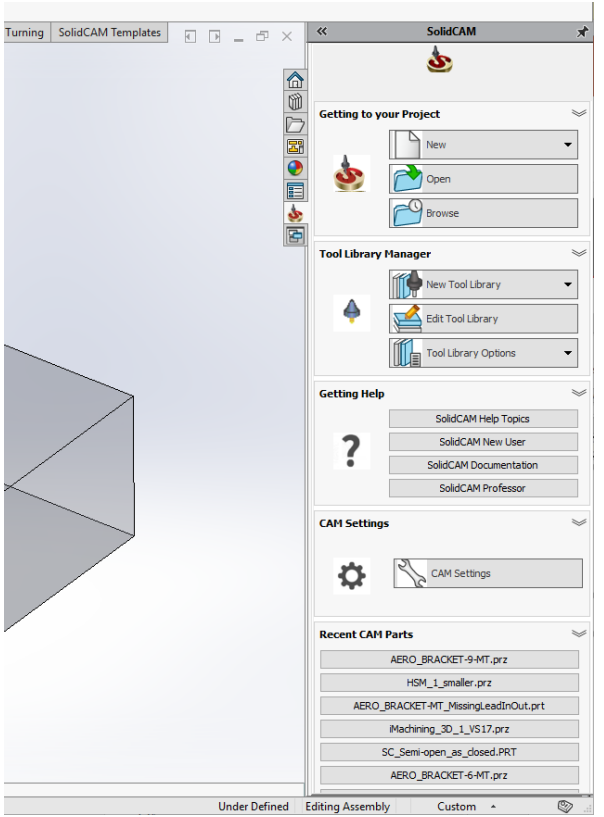
General

SolidCAM Task Pane

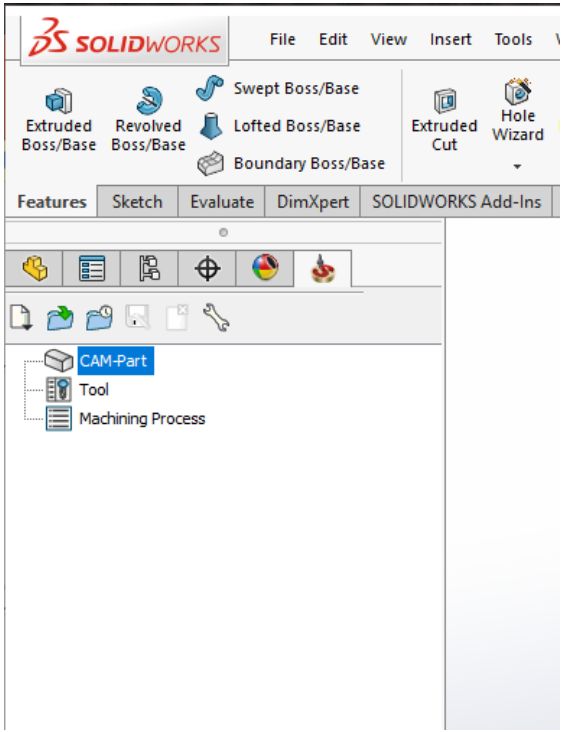
Task Pane provides an easy way to interact with SolidCAM without the need to go to Tools > SolidCAM…

- **CAM-Parts**
- **Tool Library Manager**
- **Help**
- **CAM Settings**
- **Recent CAM-Parts**

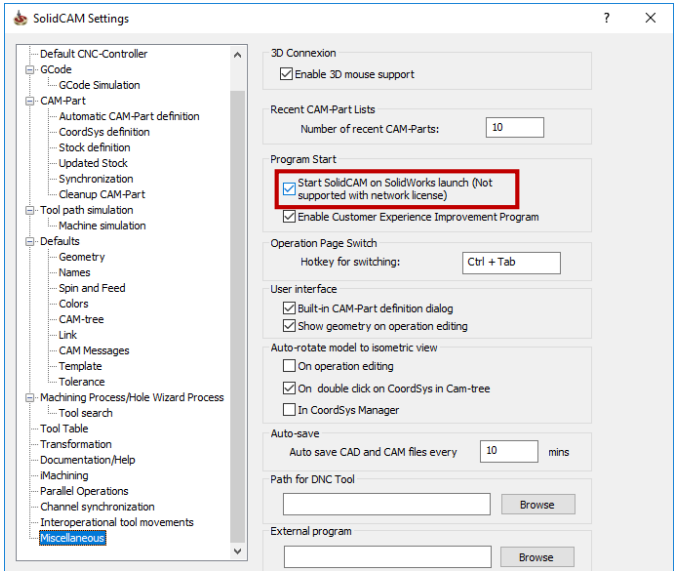




Always Show SolidCAM Manager



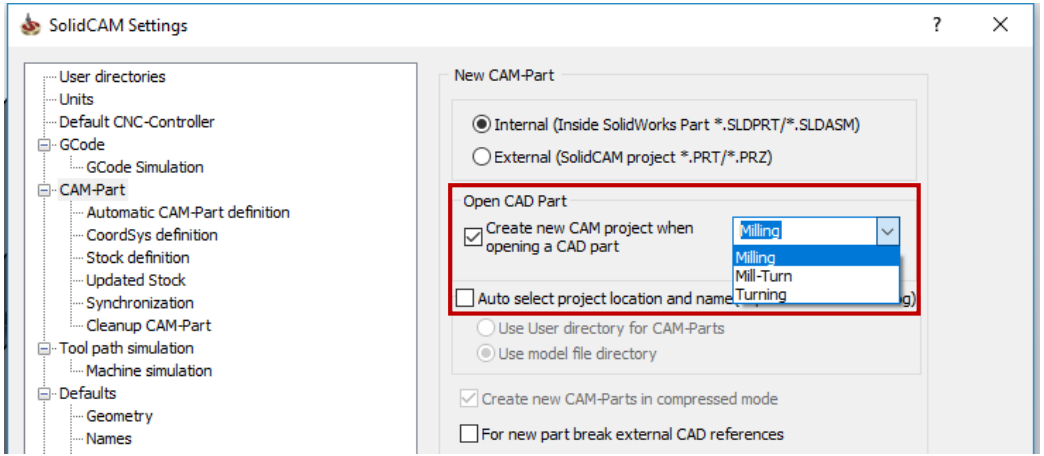
- **SolidCAM is started and CAM Manager is shown when any SolidWorks Part or Assembly is opened**
- **Can be disabled in the CAM Settings**



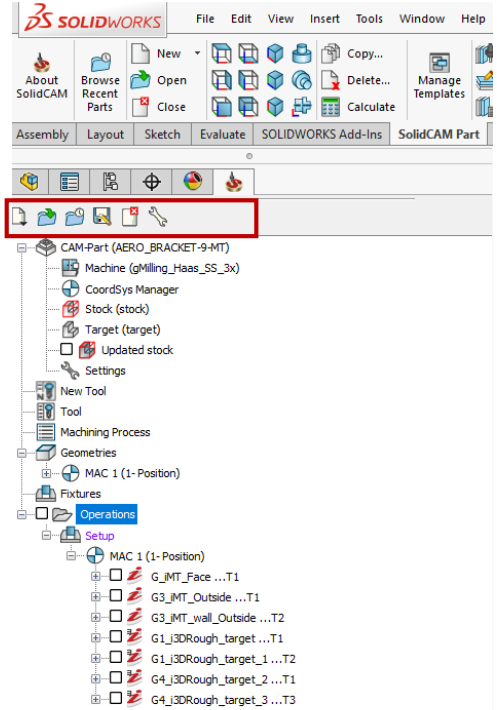
Create CAM-Part on Open of SolidWorks Part or Assembly

New CAM Setting for “auto creating” a CAM-Part when opening a SolidWorks Part or Assembly

- **Uses settings from ‘Automatic CAM-Part definition’**
- **Works for Internal and External CAM-Parts**



SolidCAM Toolbar in FeatureManager



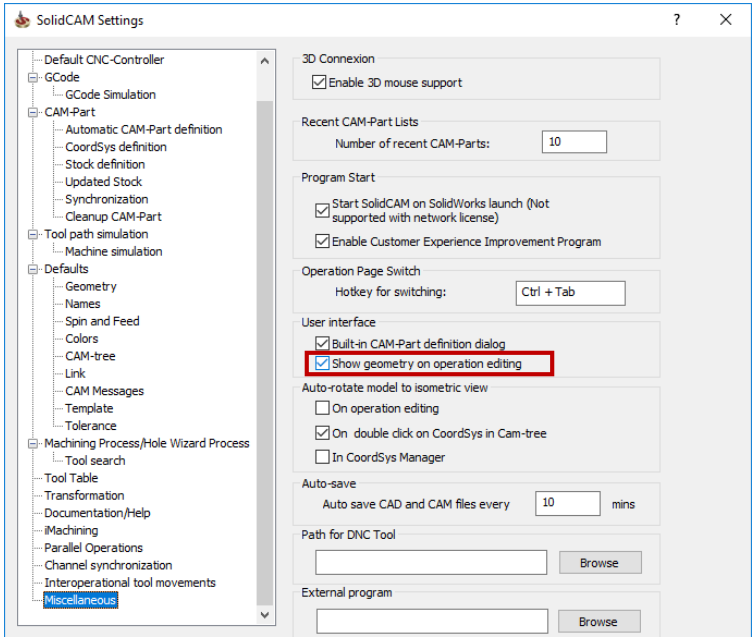
Toolbar provides quick access to the following commands:

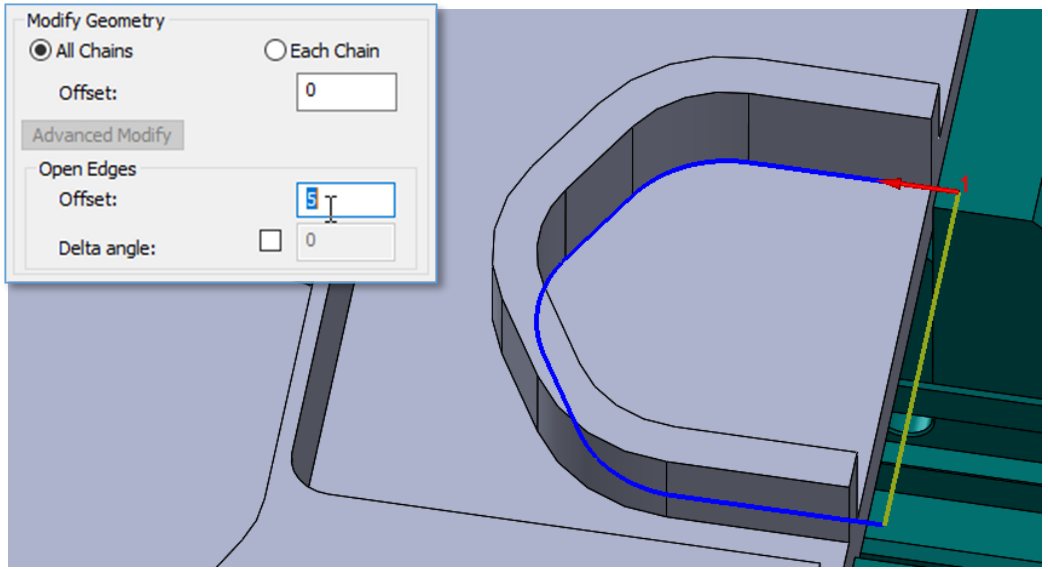
- **New CAM-Part**
- **Open**
- **Recent**
- **Save As**
- **Close**
- **CAM Settings**

New CAM Setting: Show geometry on operation editing

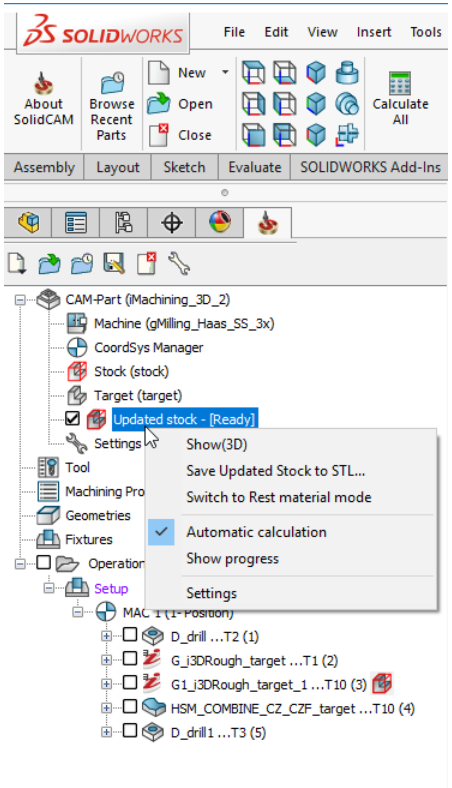
Displays Modify Geometry changes directly on solid model in SolidWorks Graphics Area

- **Replaces Geometry Preview button in Pocket & iMachining Operation dialog boxes**
- **Enables you to preview closed and open edge Offset changes in real-time**



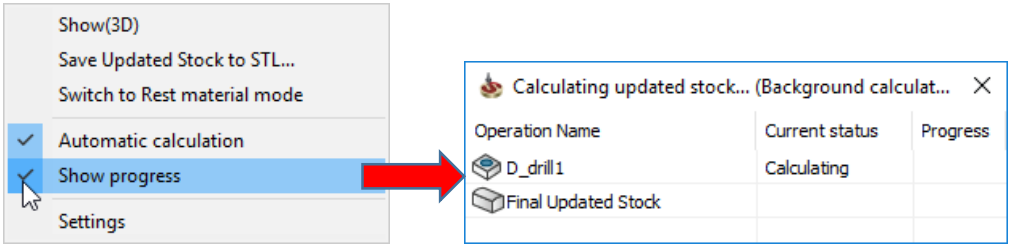


New Updated Stock Calculation Options

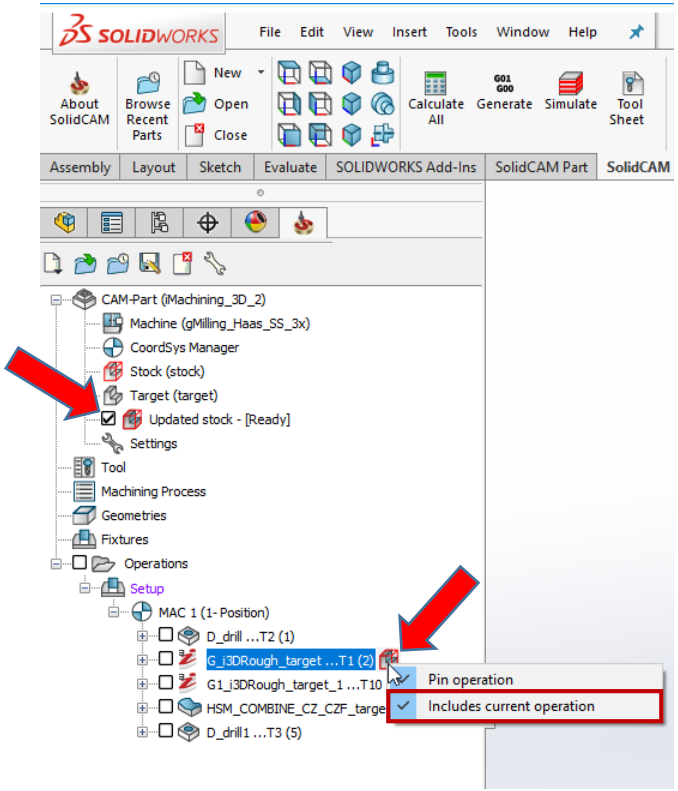


Updated stock right-click menu provides two new options:

1. **Automatic calculation**
   - **Updated stock calculated in the background**
   - **Will not slow down tool path calculations or running simulations**
2. **Show progress**
   - **Window displays background calculation activity**

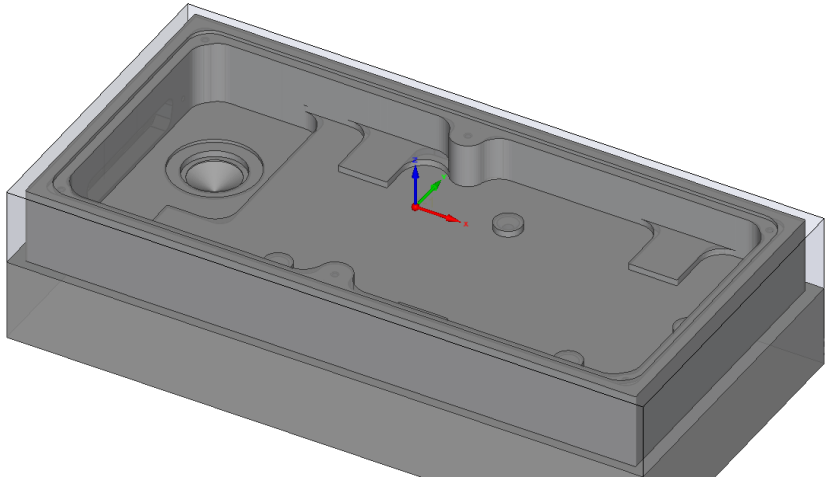


Show Current Operation in Updated Stock Visualization



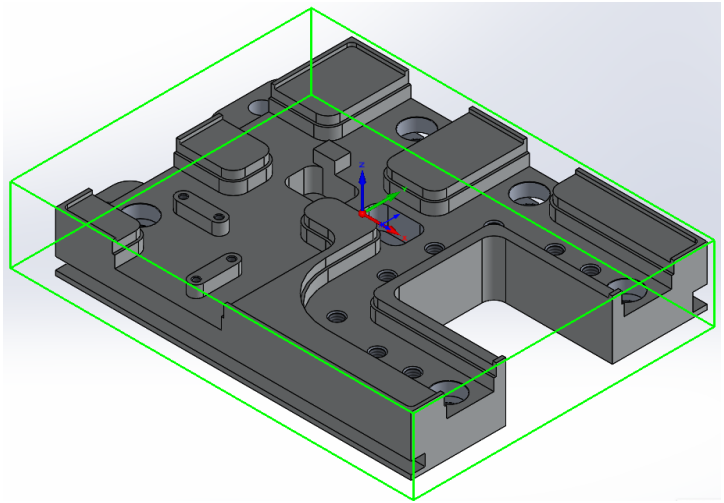
Right-click option on the Updated stock icon:

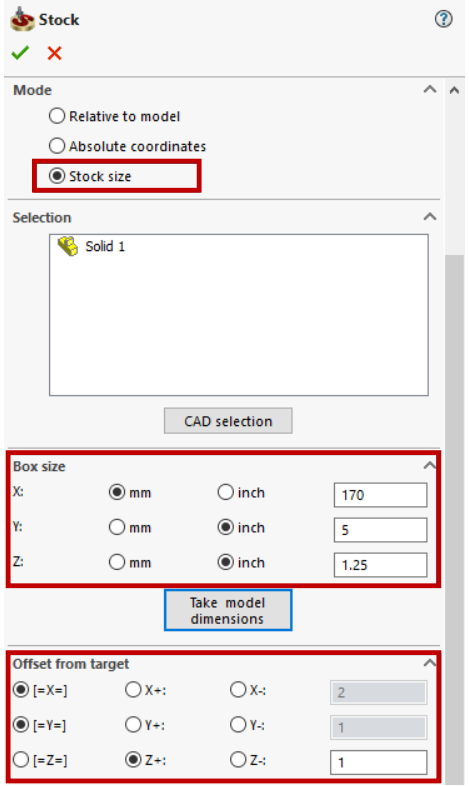
- **Enabled – Updated stock shown in Graphics Area up to and including the selected operation**
- **Disabled – Updated stock shown for all operations up to the selected one**



Actual Stock Size

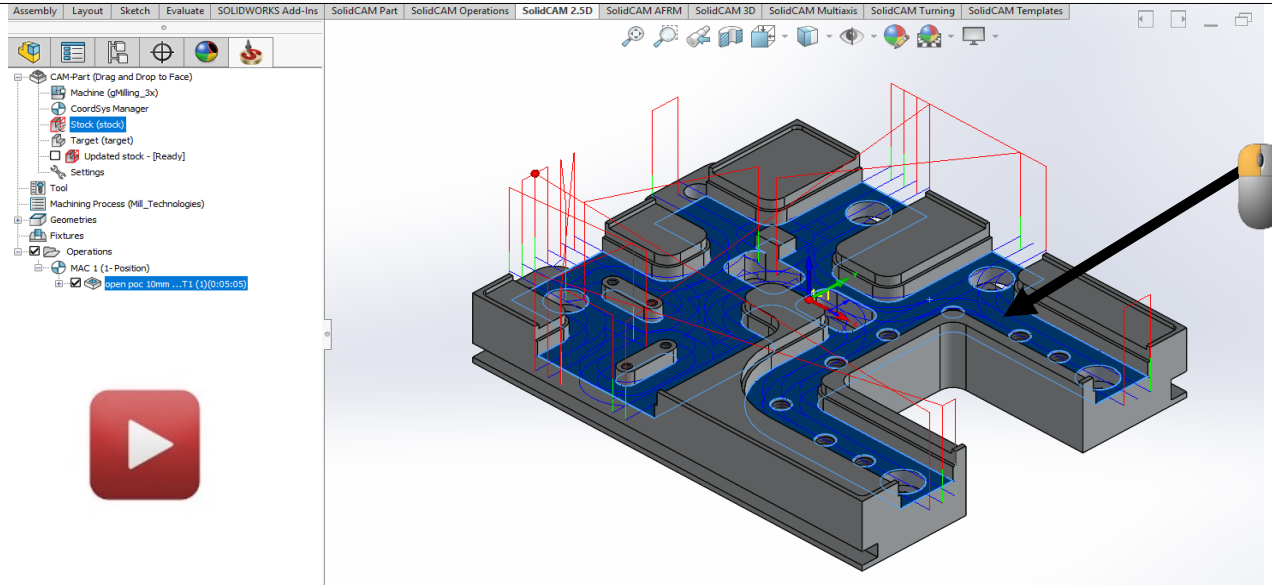
- **You can now define stock according to the actual stock size that you have in your workshop**
- **You can use Metric, Inch or combine both Metric and Inch**
- **It can be equally spaced or offset from any side**

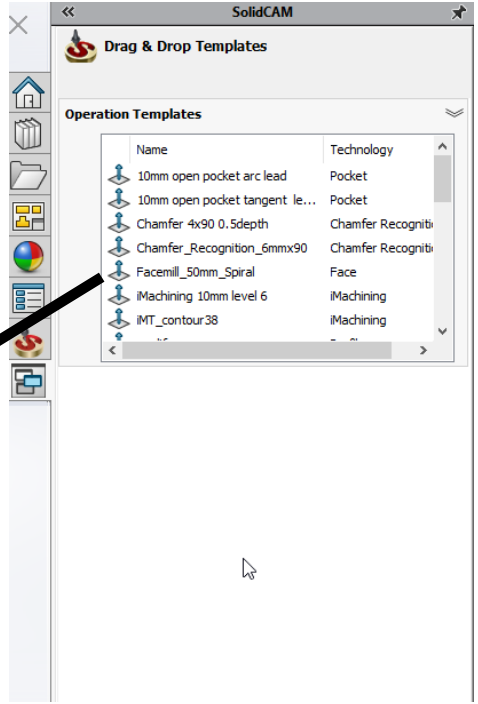




Drag and Drop Templates to Part

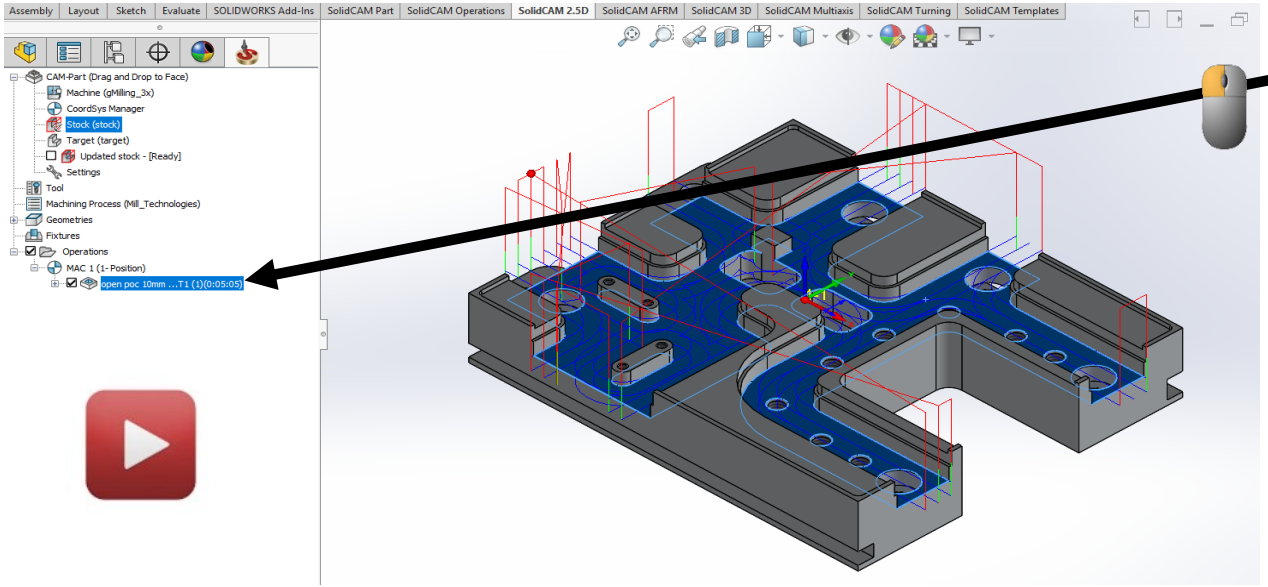
- **You can now Drag & Drop a template with your mouse from the Task Pane to a surface to create a Face Milling, iMachining 2D, iMachining 3D, Profile, Pocket, HSM or HSS operation as well as Pocket Recognition and Chamfer Recognition operations**

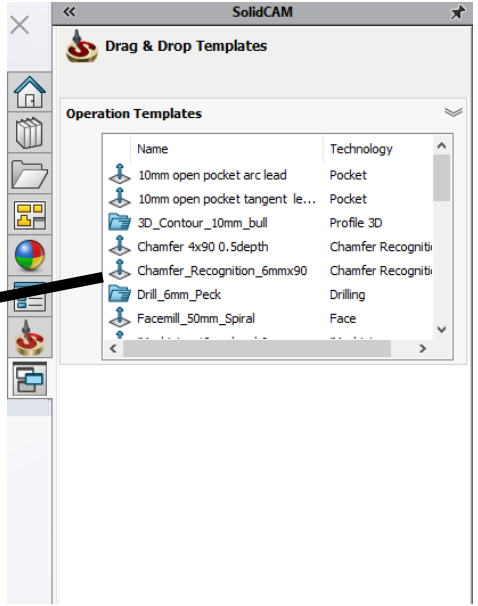




Drag and Drop Templates to SolidCAM Manager

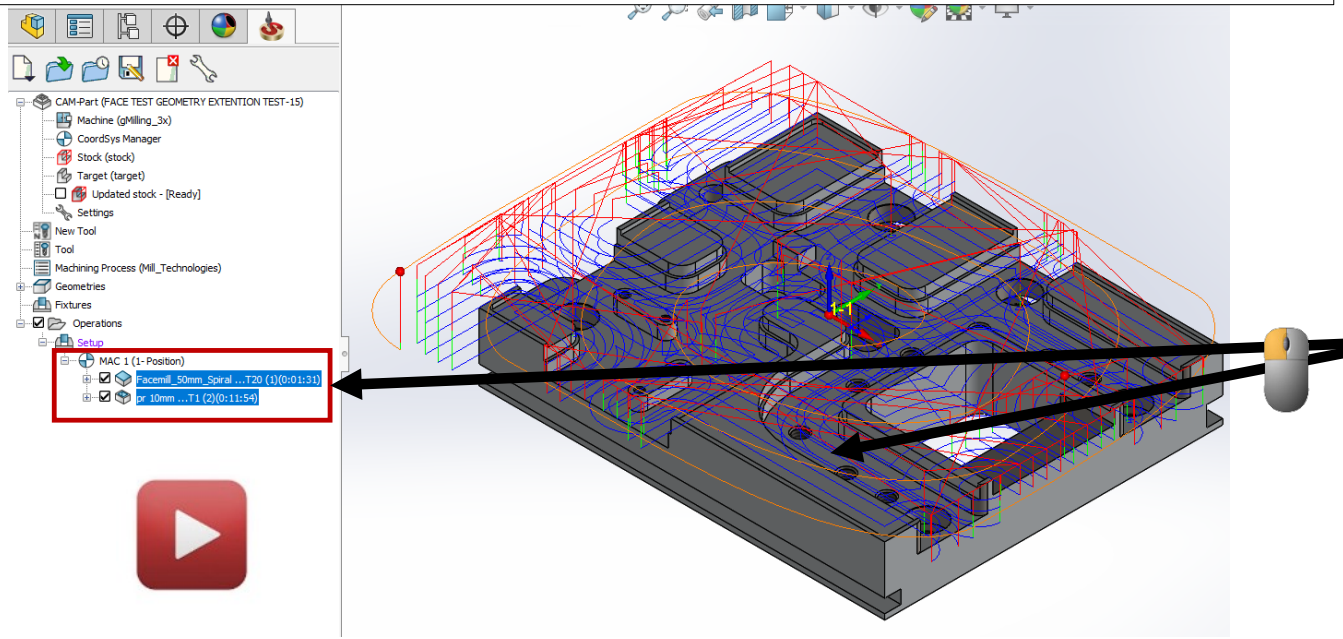
- **You can now Drag & Drop a template with your mouse from the Task Pane to the CAM Manager to quickly create an operation**

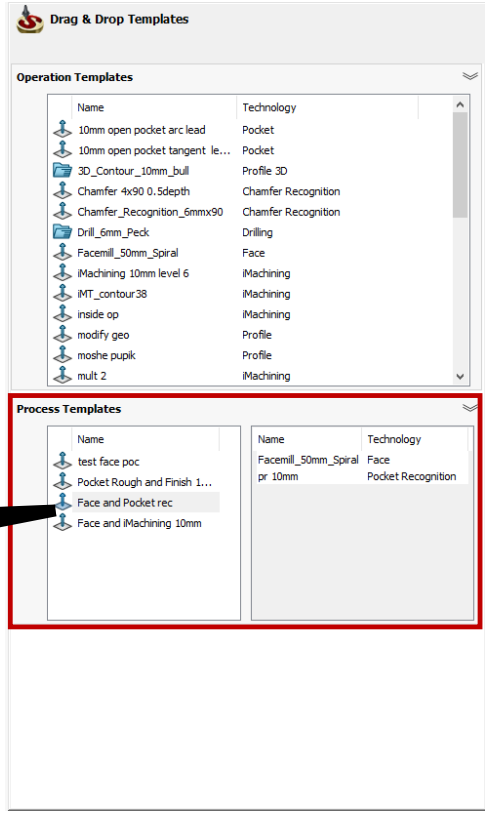




Drag and Drop Process Templates

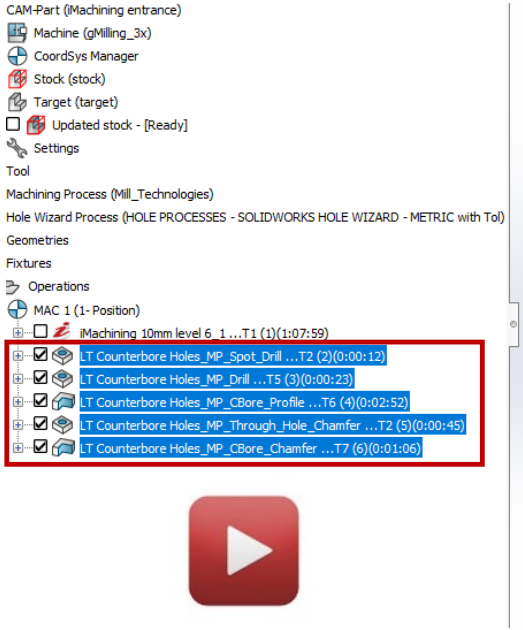
- **You can now Drag & Drop a Process Template with your mouse from the Task Pane to the part or the CAM Manager to quickly create operations**

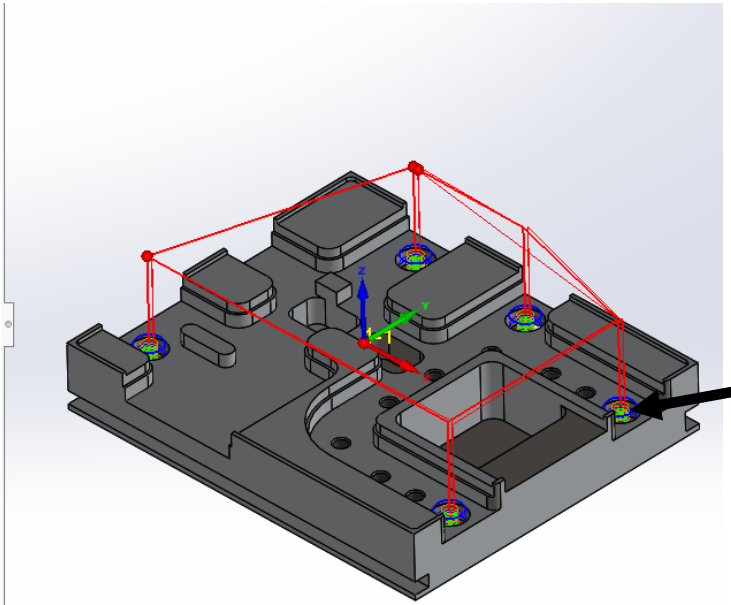


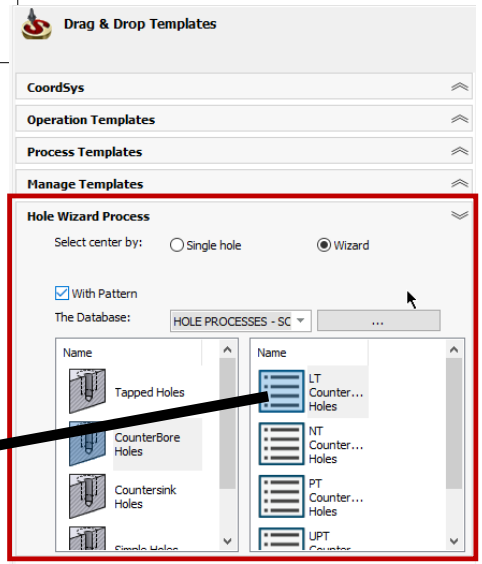


Drag and Drop Hole Wizard Process

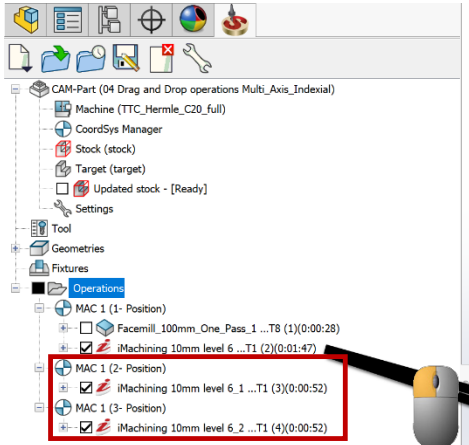
- **You can now Drag & Drop a Hole Wizard Process with your mouse from the Task Pane to the part or the CAM Manager to quickly create operations**

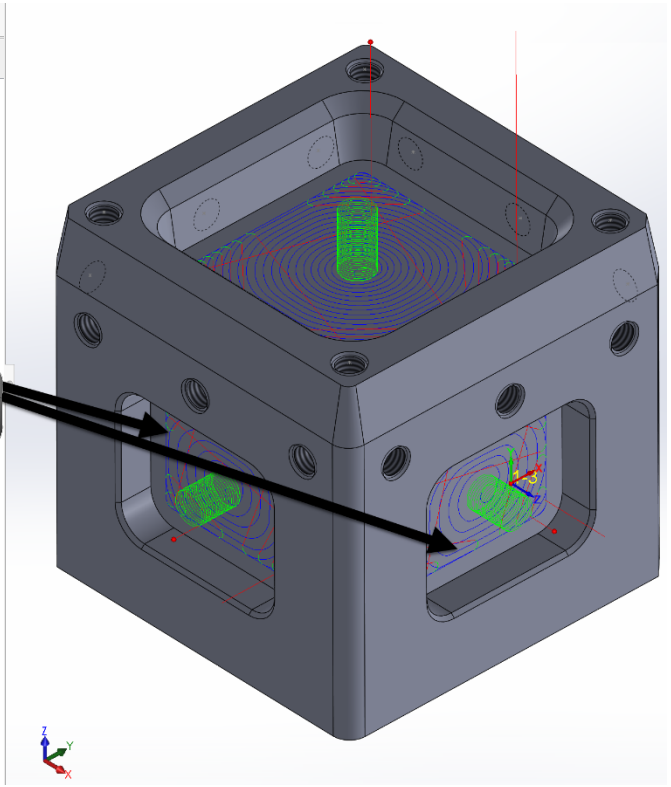






Drag and Drop Existing Operations to Part

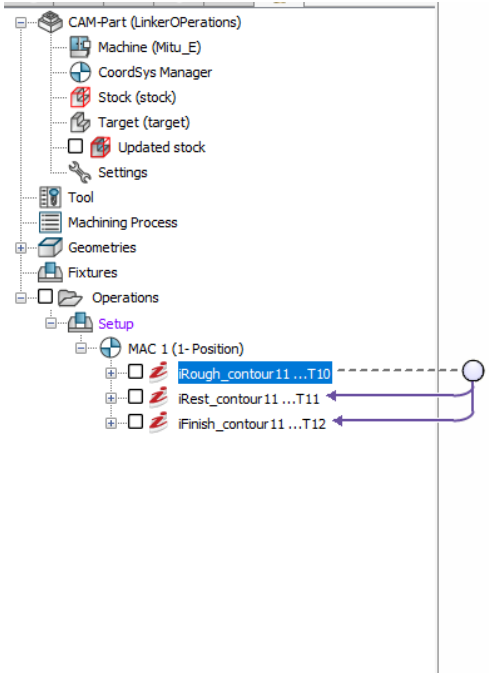


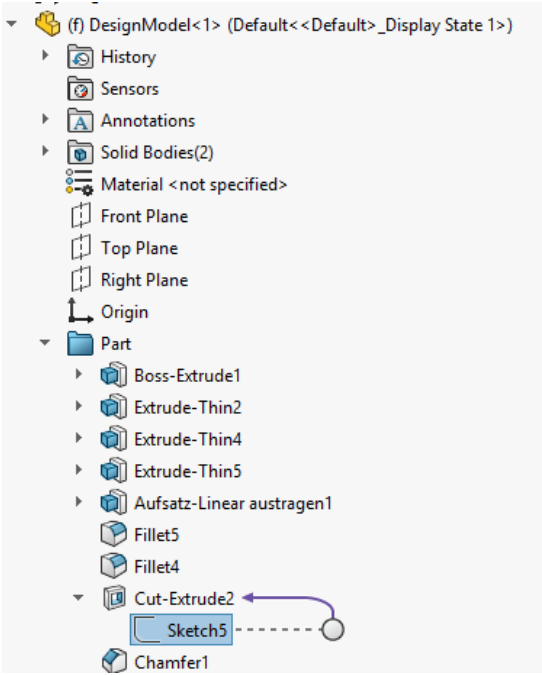


- **You can now Drag & Drop an existing operation to the part to quickly create new operations**

Show Related Operations

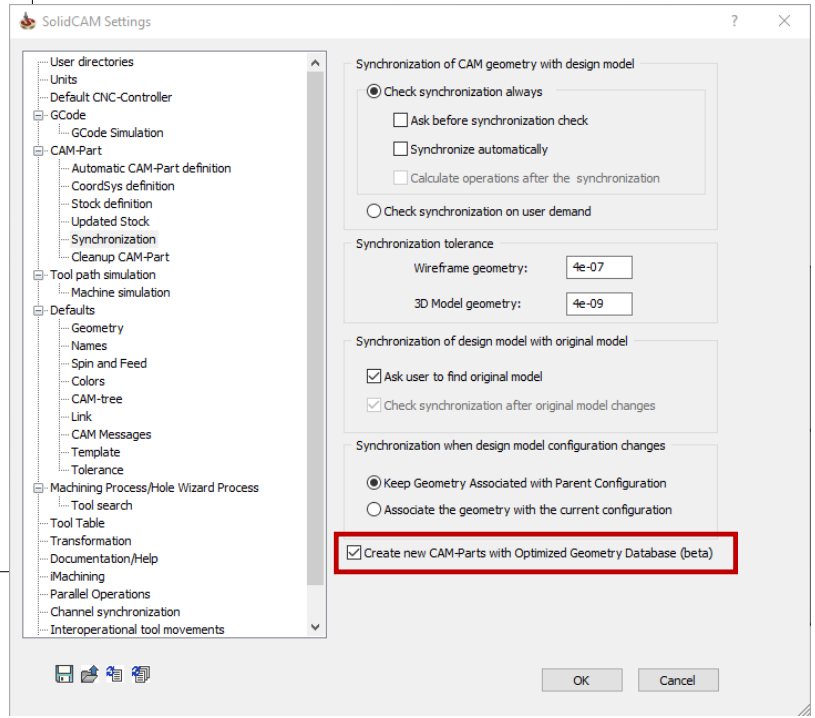
- **Easily visualize related operations (parent/child) in the same method as SolidWorks**
  - **Turn ON/OFF from 'CAM tree view' menu**





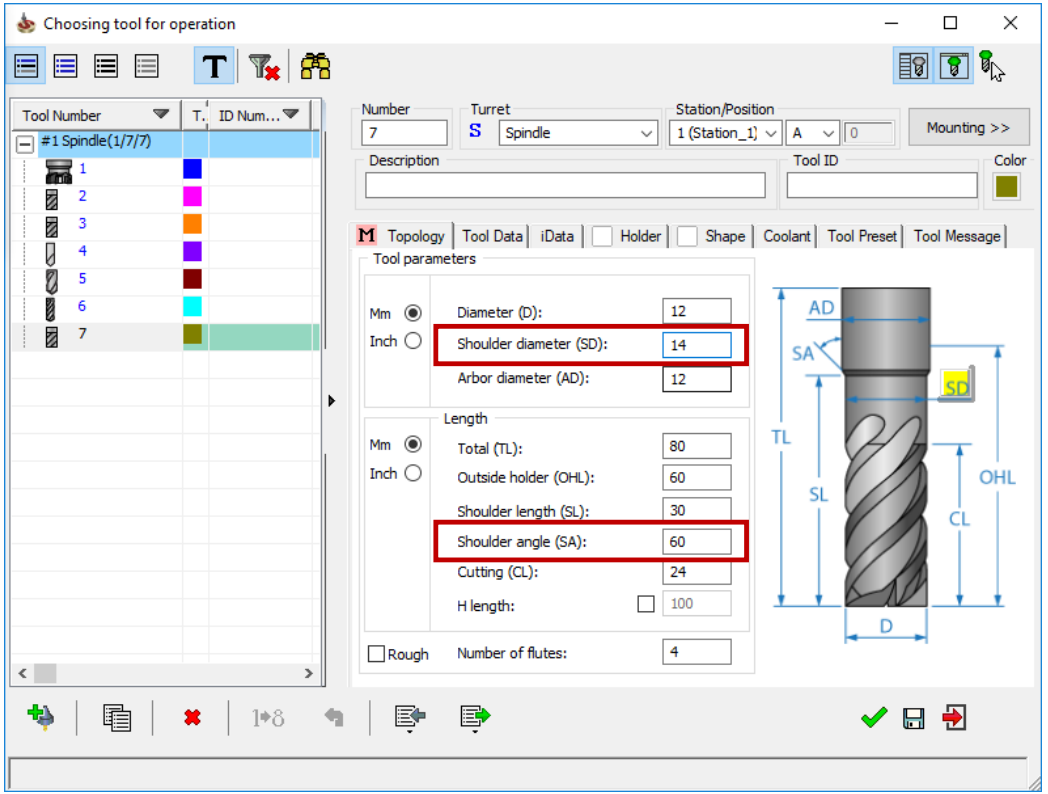
Optimized Geometry Database

- **New database for Geometry Associativity**
- **Major increase in performance…**
  - **Opening/Closing medium to large parts**
  - **Feature Recognition**
  - **Saving of CAM-Part**
  - **Finding large number of holes on faces/sketches**
  - **Building chains from faces/sketches**
  - **Using Change Model Reference**



Tool Table: Added Milling Tool Parameters

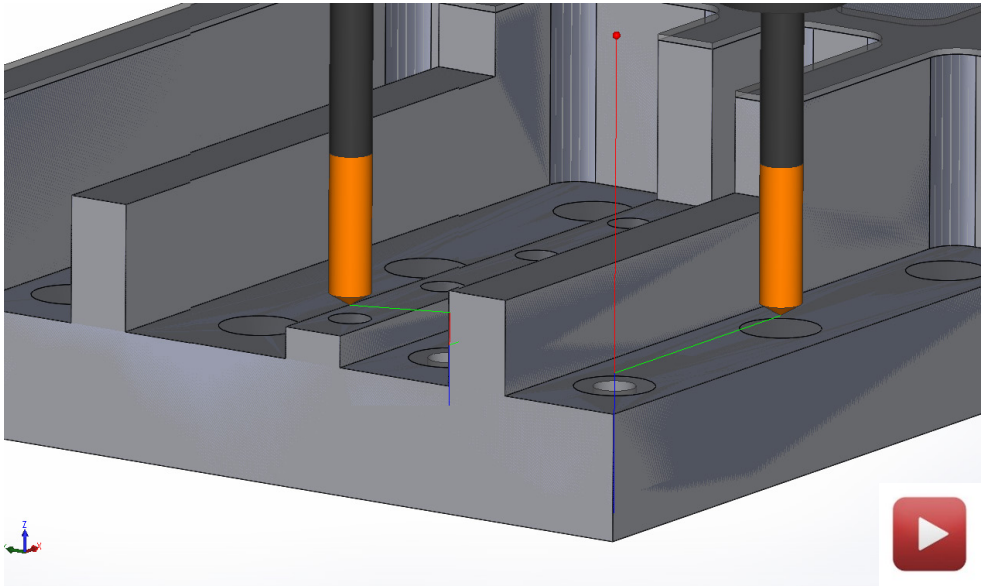
- **New Topology parameters enable you to define Shoulder diameter and Shoulder angle**
- **Available for end mills, bull nose mills and ball nose mills**

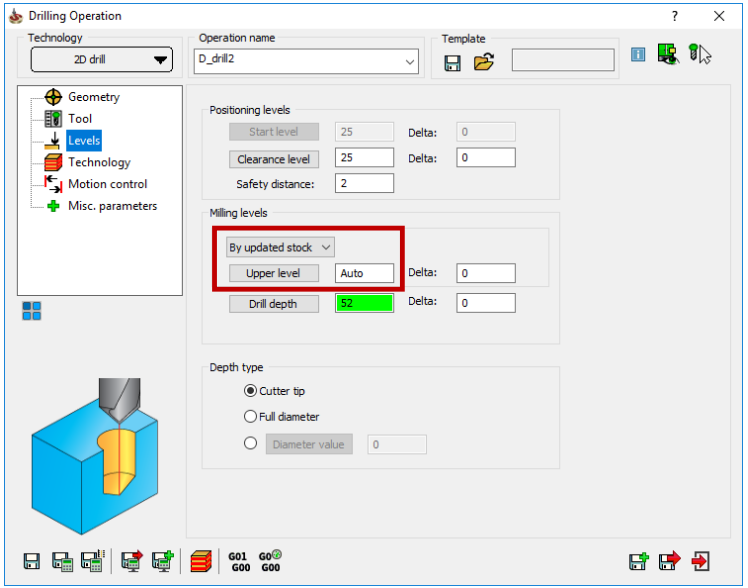


2.5D Milling

Upper Level by Updated Stock in 2D Drilling

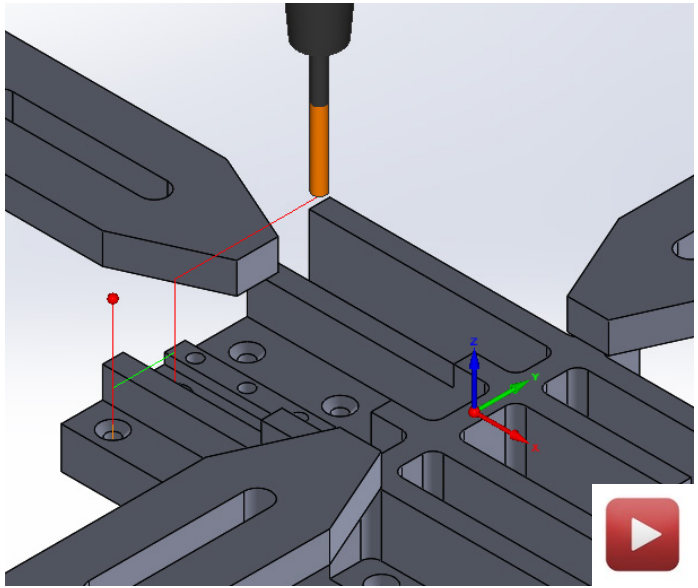
- **Upper level can now be defined according to the Updated stock**
- **Different upper levels are automatically recognized for each hole in accordance with the stock above that hole**

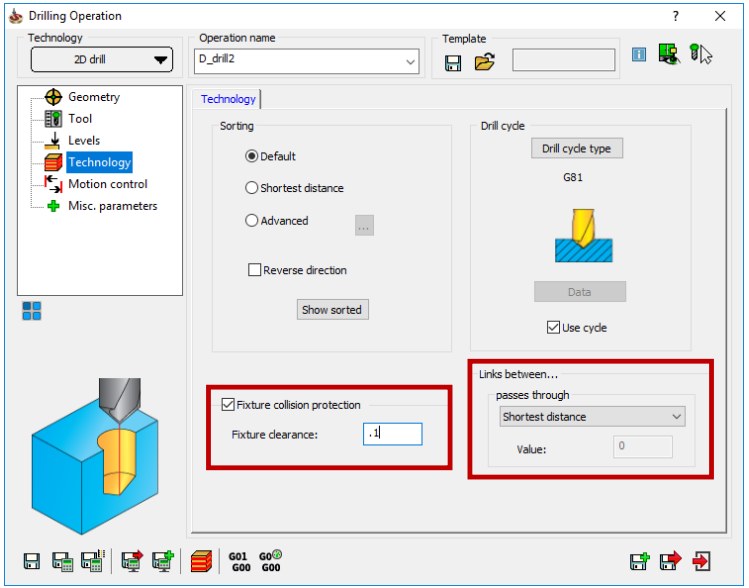




Fixture Protection and Stock Clearance Optimization in 2D Drilling

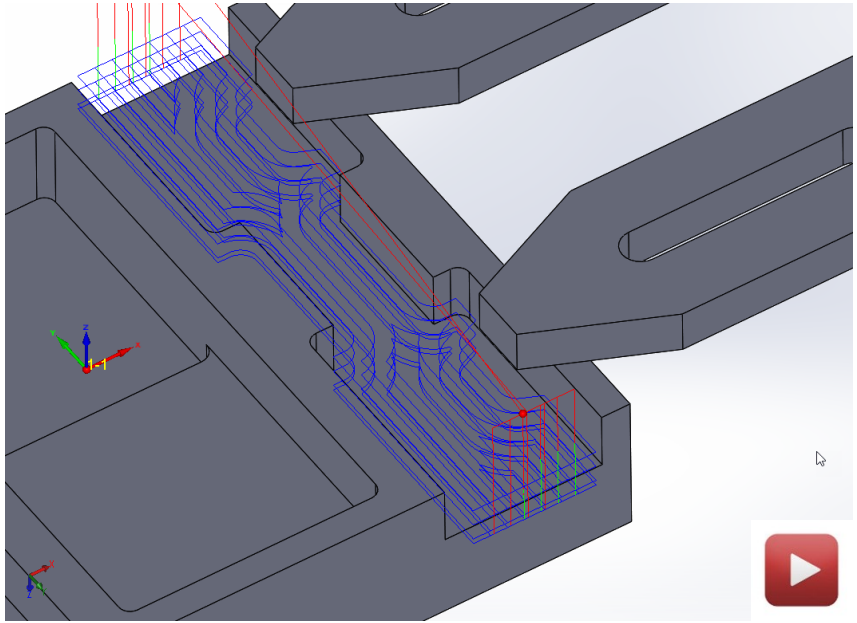
- **Fixture collision protection will allow you to work safely around defined fixtures**
- **Links through shortest distance will move the tool through the shortest distance, avoiding the Updated stock**

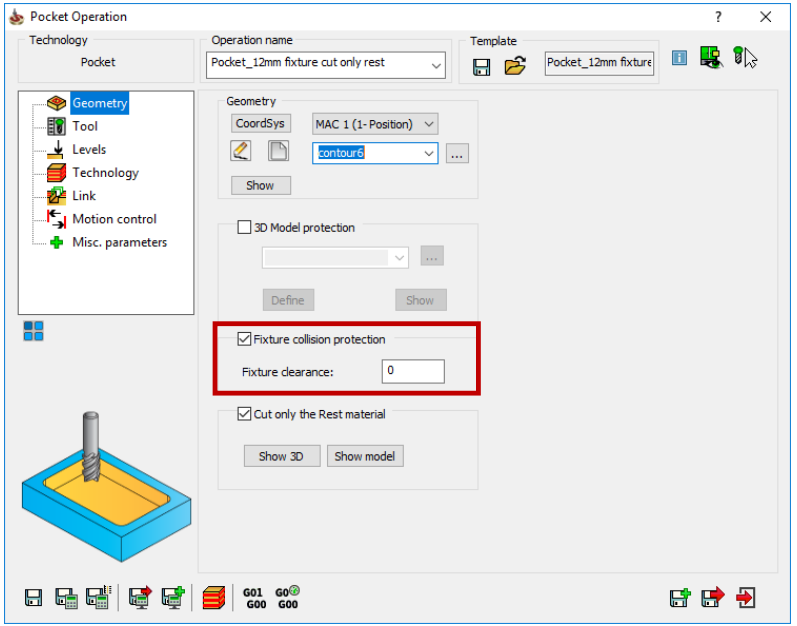




Fixture Protection in Pocket and Pocket Recognition

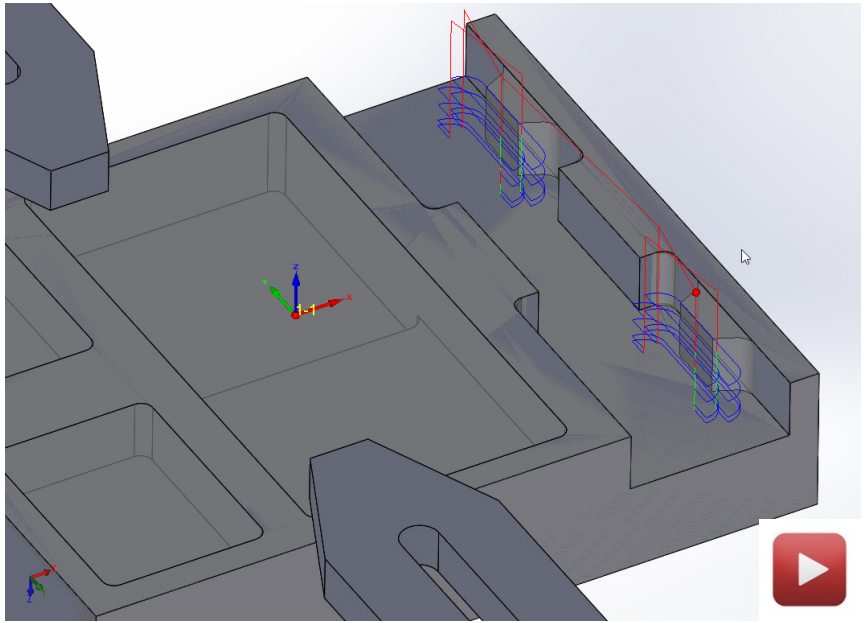
- **Fixture collision protection automatically adjusts the tool path to work around fixtures to protect them from the cutting tool**

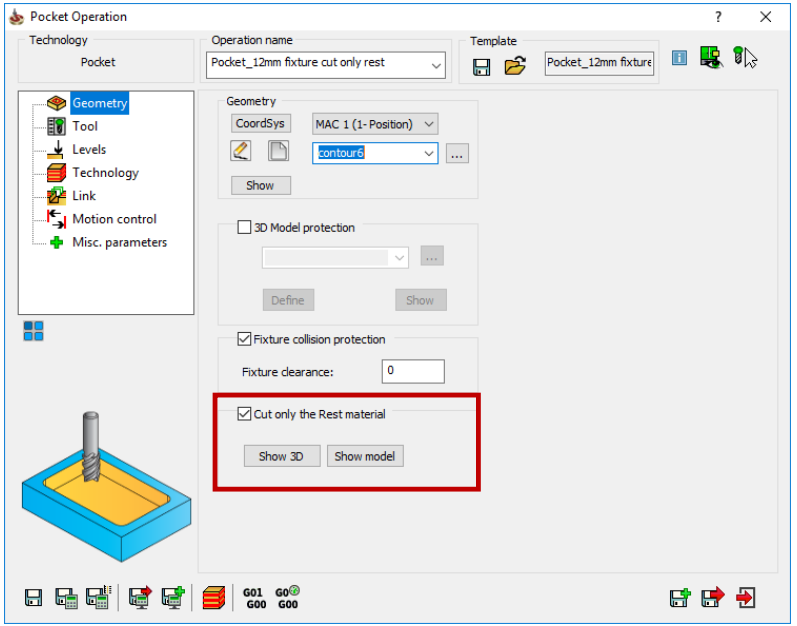




Cut only the Rest Material in Pocket and Pocket Recognition

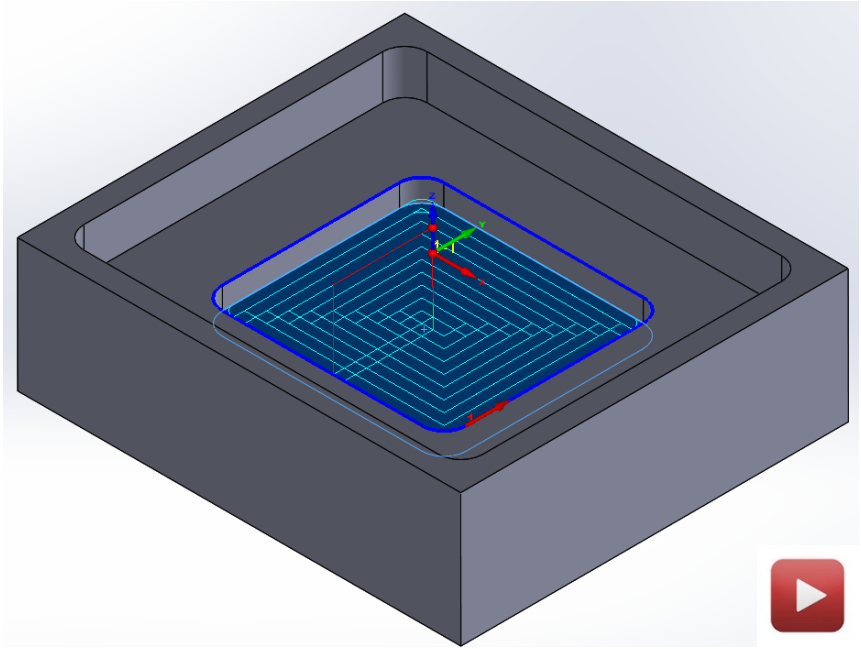
- **Cut only the Rest material uses the Updated stock from the previous operation and the current geometry to limit the cutting to only the areas where material remains**

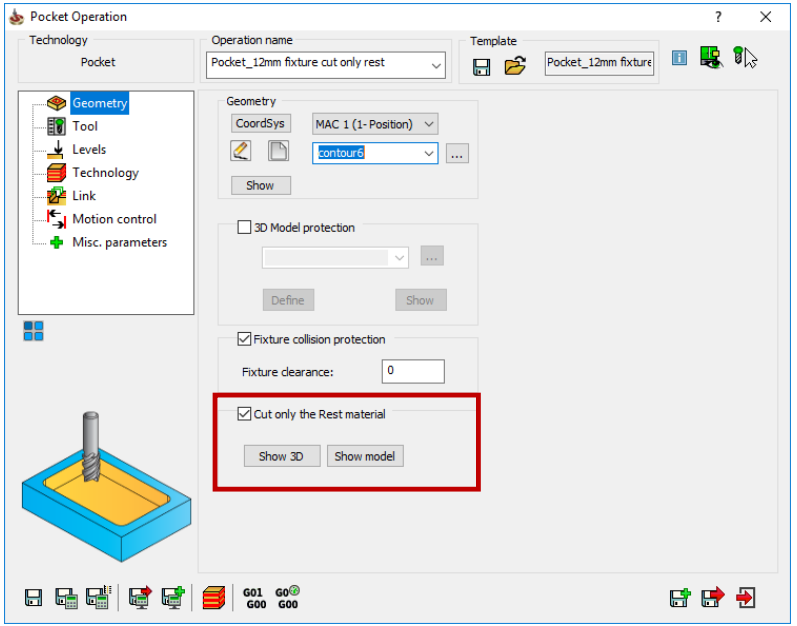




Cut Only the Rest Material in Z-level of Pocket

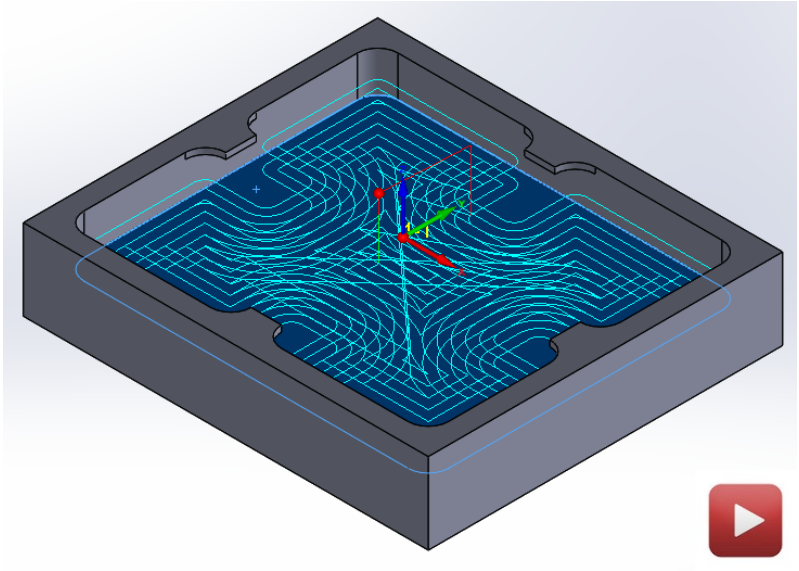
- **Cut only the Rest material uses the Updated stock from the previous operation and the current geometry to limit the upper level to only the areas where material remains**

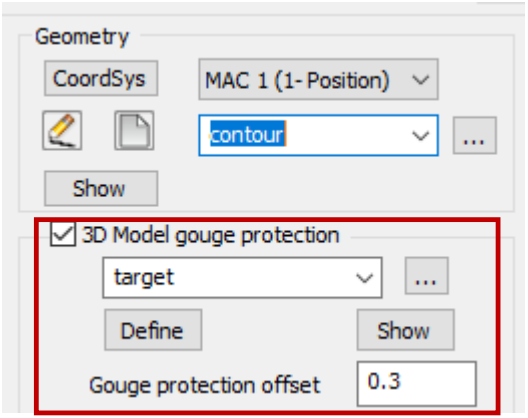




3D Model Gouge Protection in Pocket and Pocket Recognition

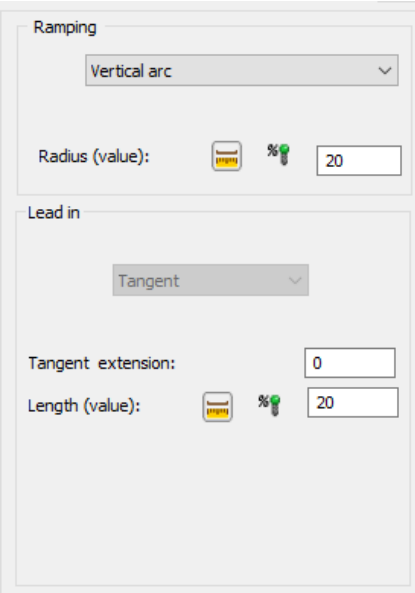
- **3D Model gouge protection uses the target solid model plus a specified offset to prevent a chain geometry from cutting into the target**
- **This is very helpful for models having undercut features**

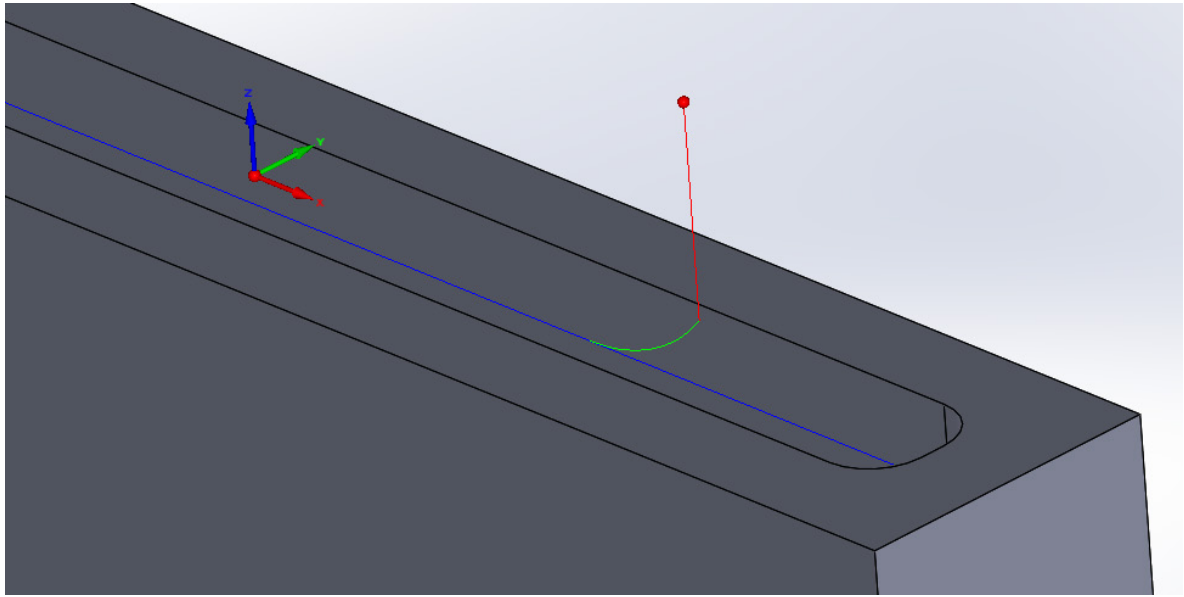




Vertical Arc Ramping for Profile Operations

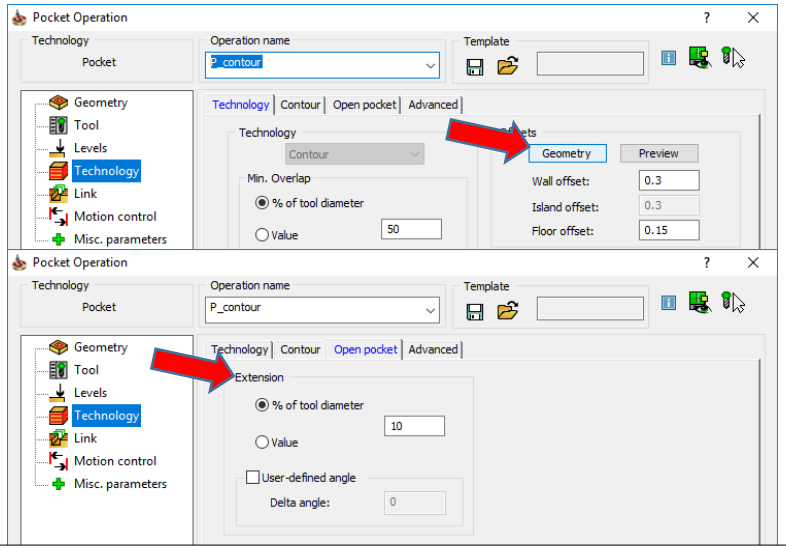
- **Vertical arc ramping gives you the option to approach a profile geometry from above**



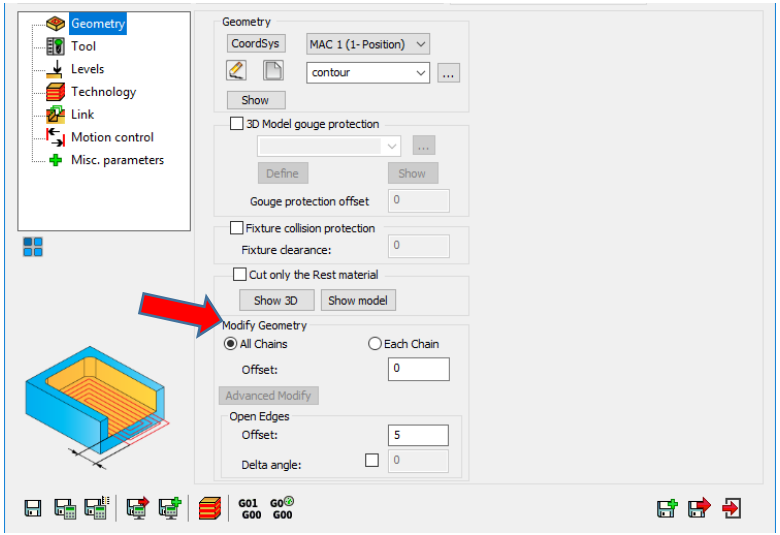


Enhanced Modify Geometry in Pocket Operations

Previous versions of SolidCAM



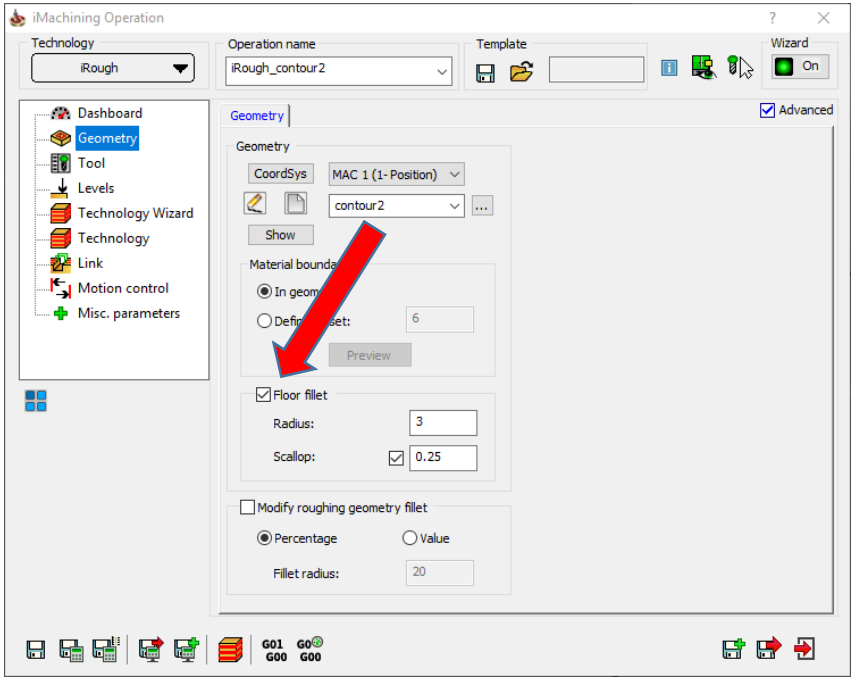
SolidCAM 2018

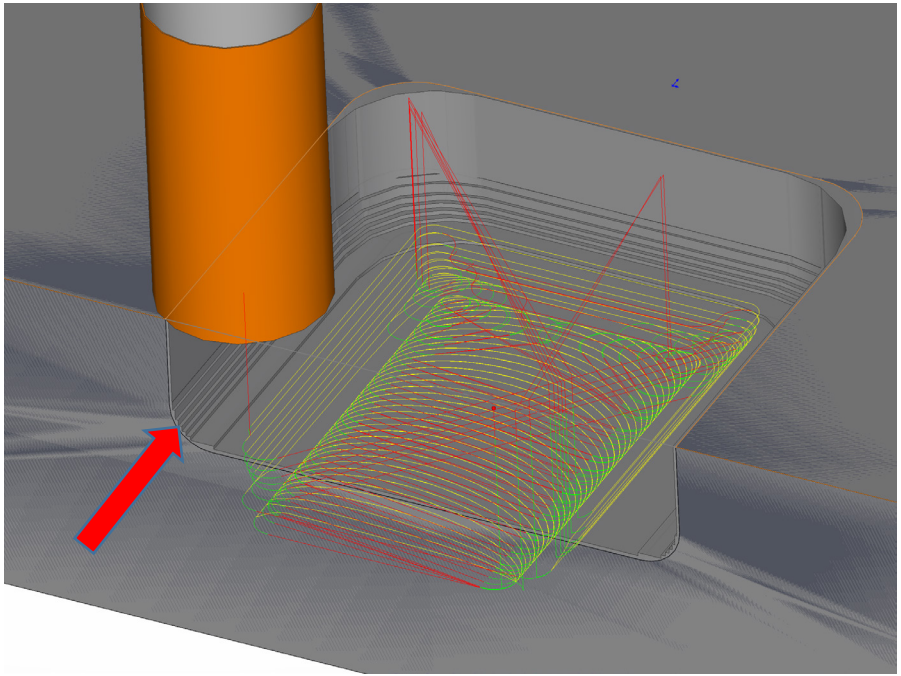


- **All Modify Geometry Offset parameters now appear on the Geometry page**
- **You can offset All Chains at once or Each Chain using Advanced Modify**
- **Open Pocket Extension parameters are replaced by Open Edges parameters**

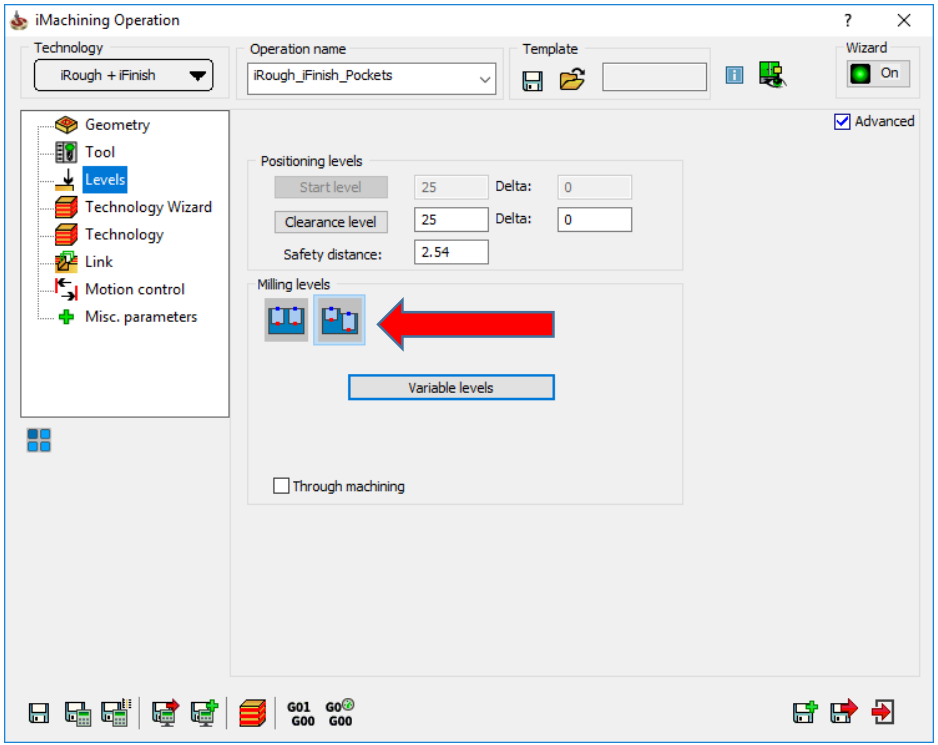
iMachining

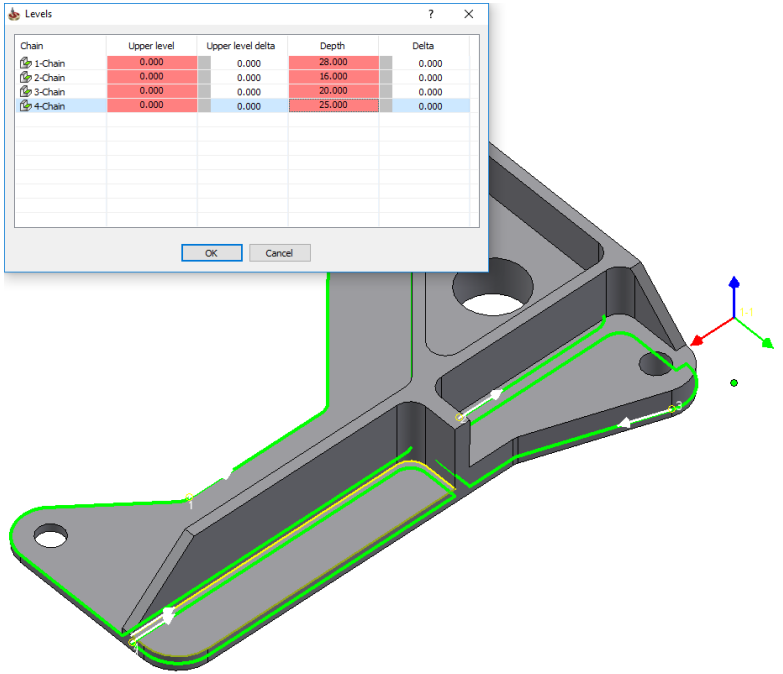
2D Floor Fillet





Variable Upper Level and Depth

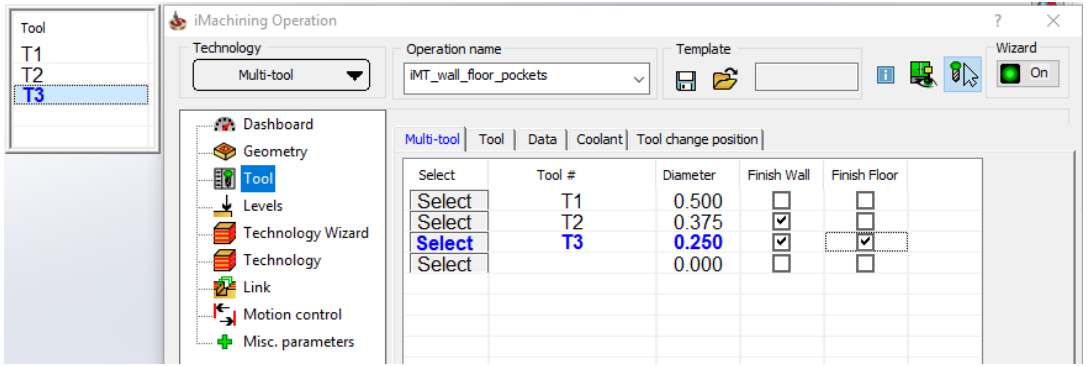




iMachining 2D Technology Type: Multi-tool

New technology type: Multi-tool

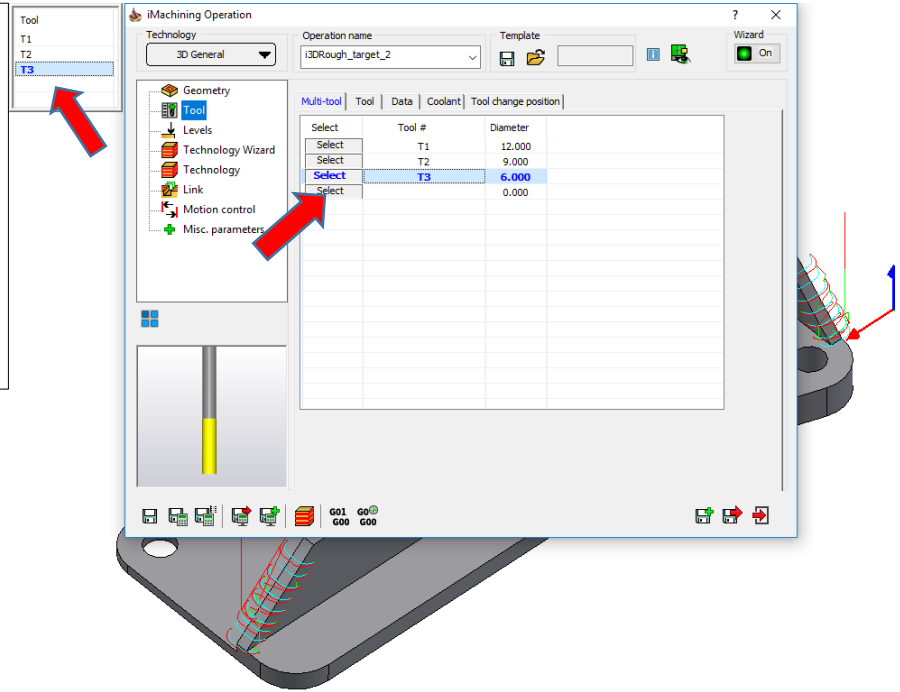
- **Geometry and Levels are synchronized between operations**
- **Rest material is tracked automatically**
- **Easily define Wall and Floor finishing, per tool**
- **Easily switch between each tool's setting by clicking on tool number in flyout window**



Multi-tool in iMachining 3D

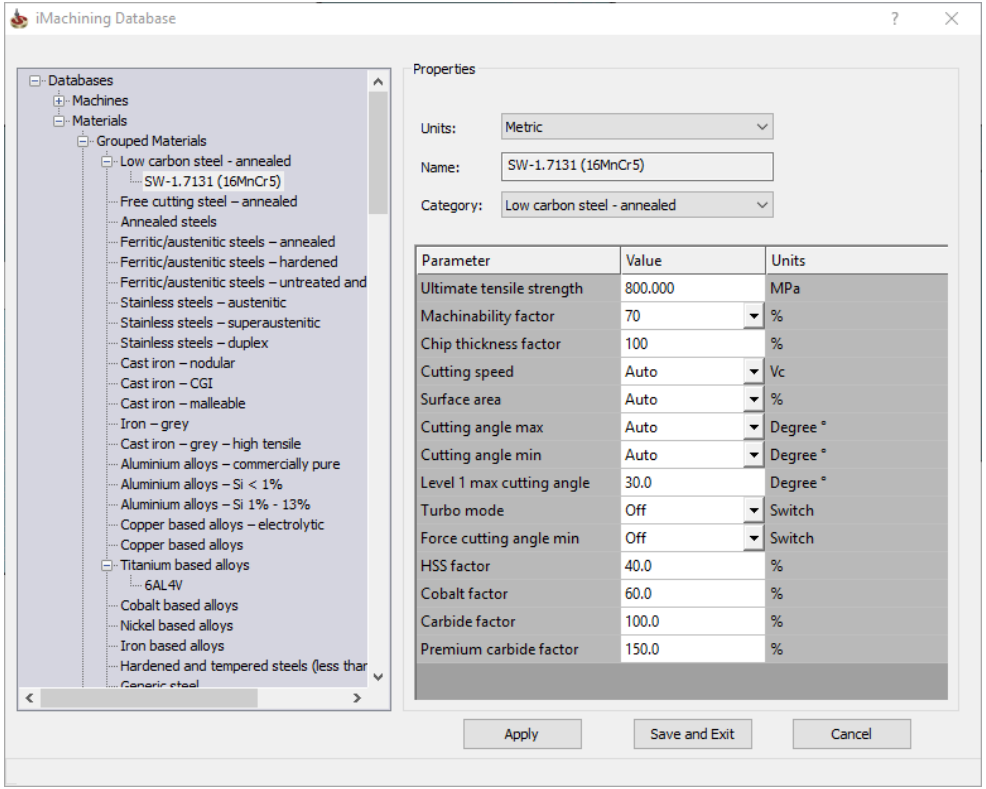
Multi-tool support for both technology types, 3D General and 3D Prismatic

- **Geometry and Levels are synchronized between operations**
- **Easily switch between each tool's setting by clicking on tool number in flyout window**



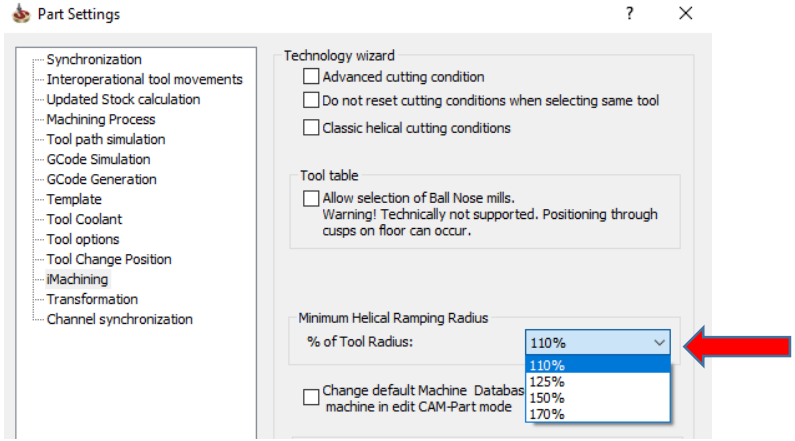
Redesigned Material Database UI with Material Groups

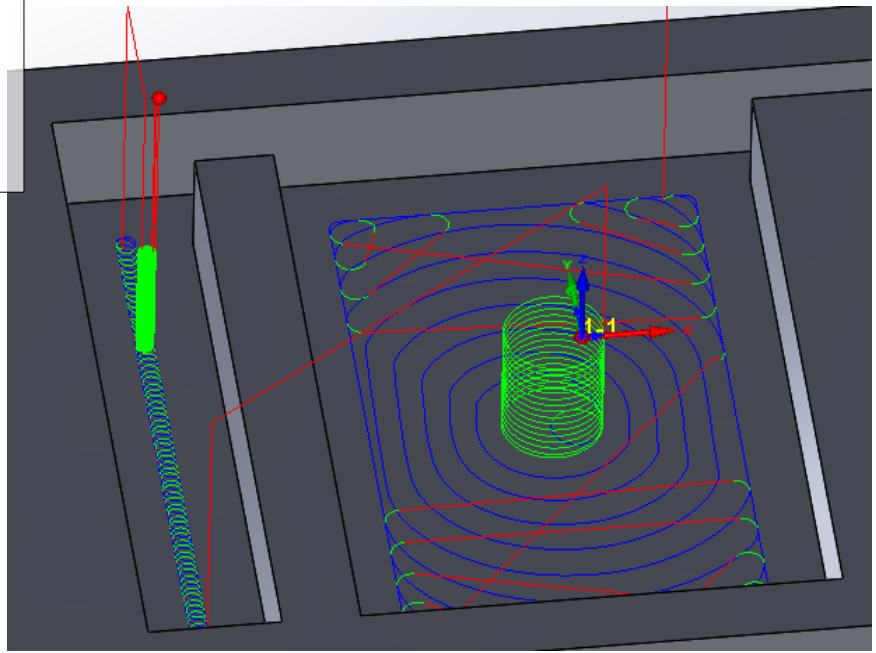
- **Tree style user interface**
- **Materials can be placed into “Categories” to provide more accurate cutting force calculations**



Selectable Size for Minimum Helical Ramping Radius

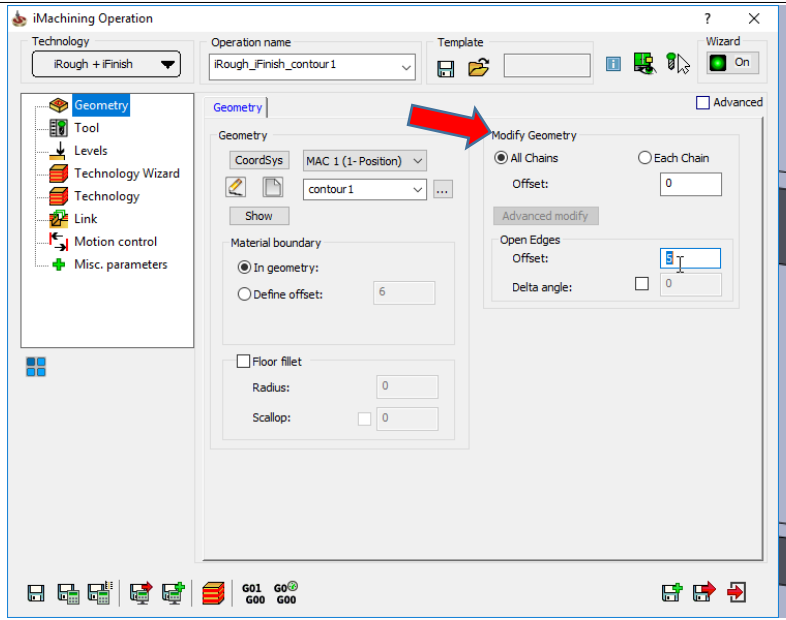
- **Radius can be changed, allowing larger tools to enter into smaller pockets**
- **Generally suited for soft material or with Through Spindle Coolant or Air Blast**
- **Can be set globally or per part**

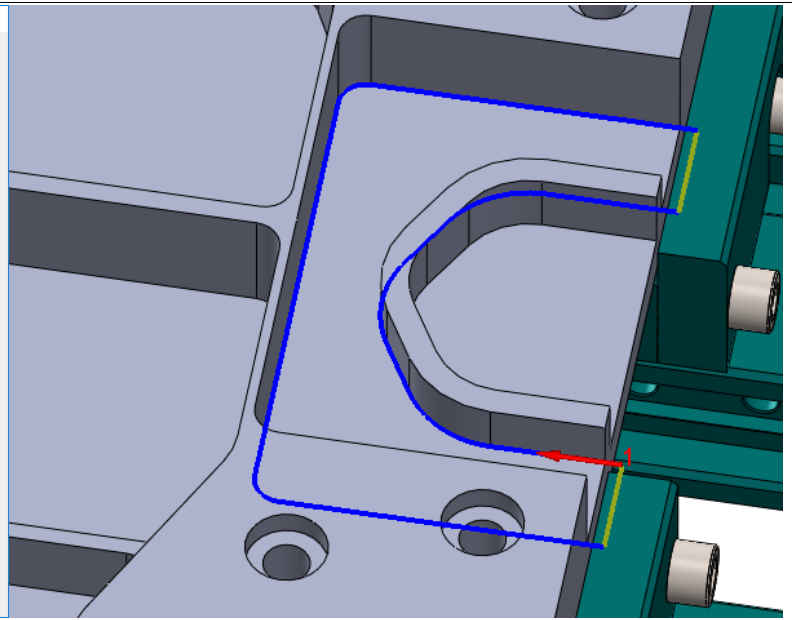




Enhanced Modify Geometry

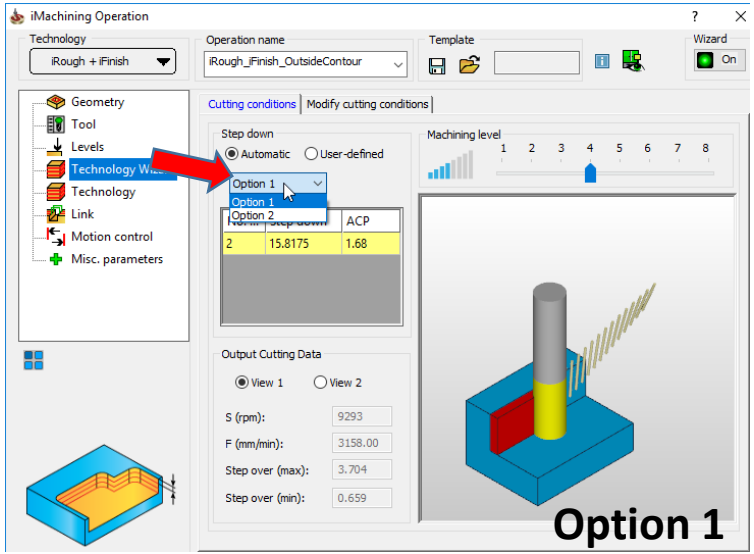
- **Modify Geometry Offset parameters now appear on the Geometry page**
- **You can offset All Chains at once or Each Chain using Advanced Modify**
- **Now supports open edge offsetting (like in Pocket operations)**

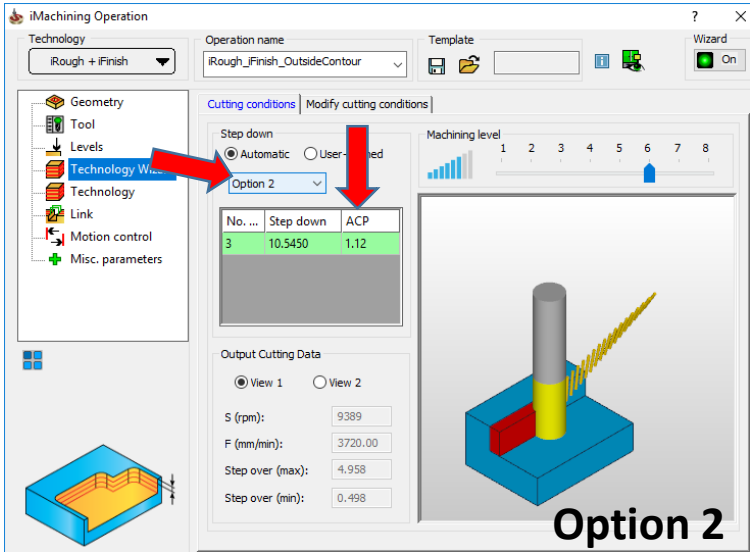




Option to Merge ACPs

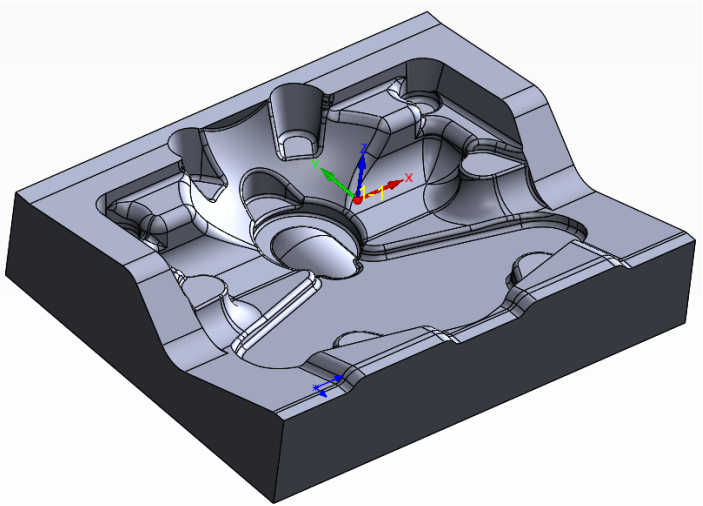
- **Wizard now provides two options when automatically calculating Step down:**
  - **Option 1 – Typical calculation (same as previous SolidCAM versions)**
  - **Option 2 – In cases of 2 or more Step downs, you can merge ACPs**
- **Could give you more favorable overall cutting results**

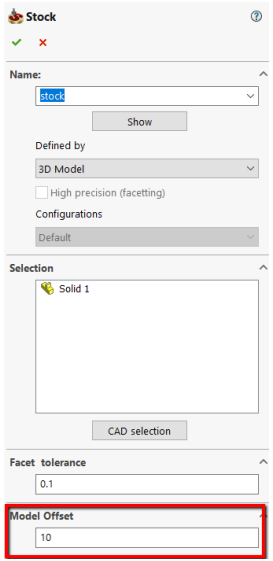


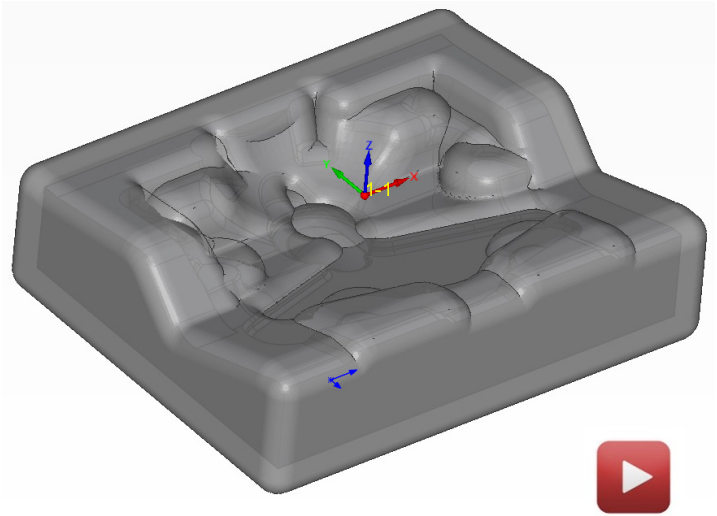


HSR/HSM

New Stock Option – Offset of Model







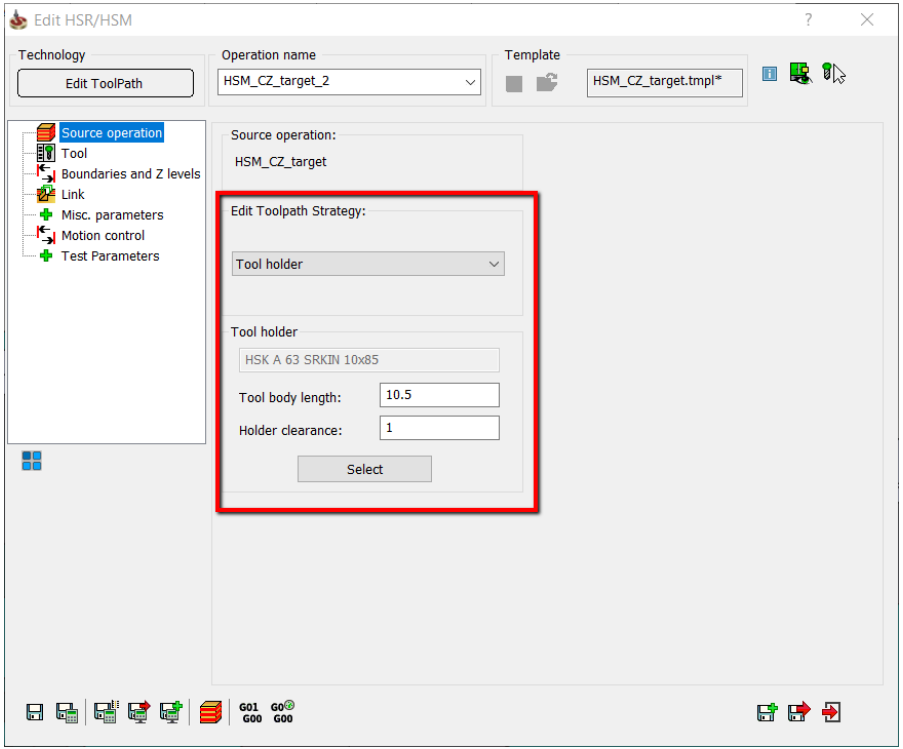
Stock can now be defined as an offset of a given model

- **Useful for machining Sheet Metal Dies, Casting Patterns, etc…**

HSM – Edit by Tool Holder

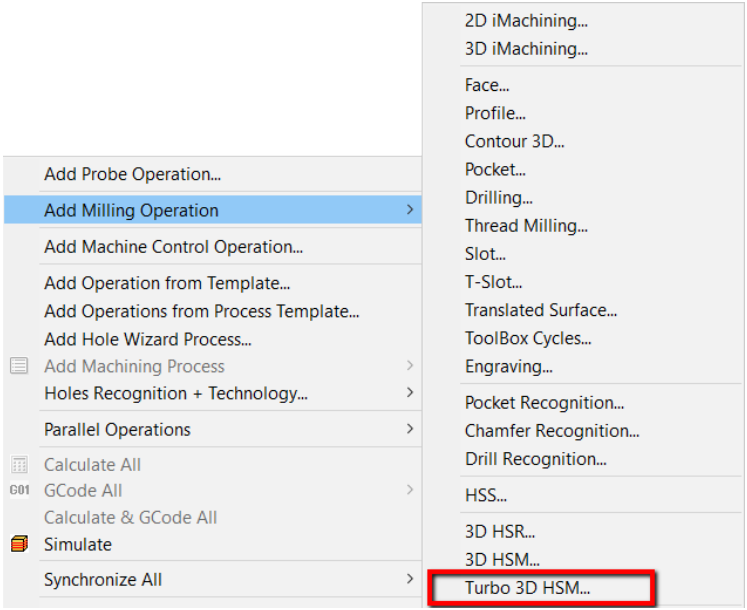
HSM tool paths can now be edited using tool holder

- **Allows the user to use the same tool, with different outside holder lengths, to machine deep parts optimally**

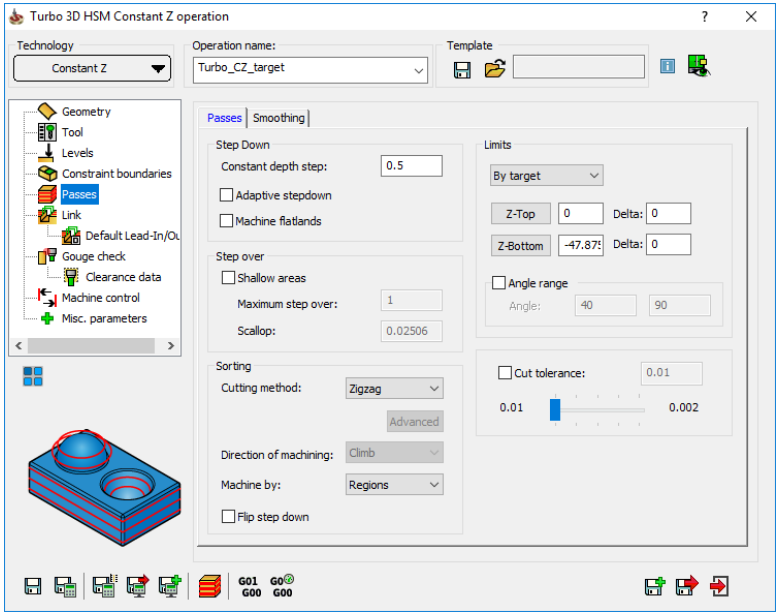


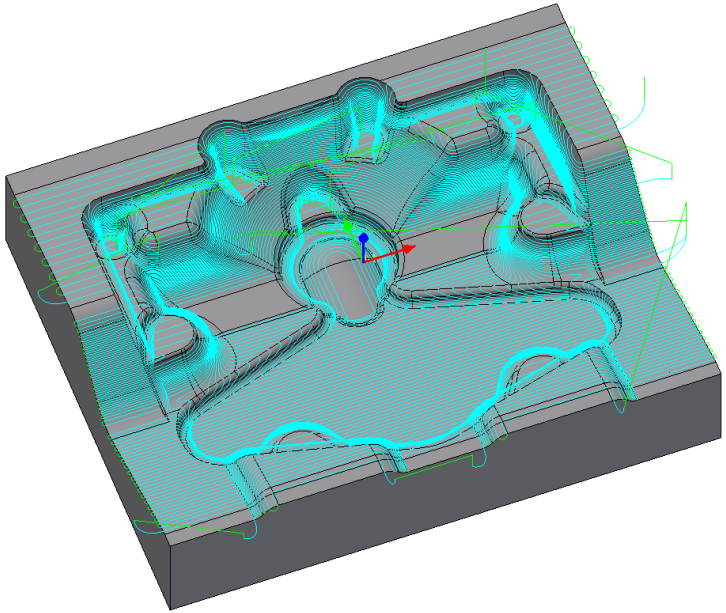
Turbo 3D HSM Operation

- **New 3-Axis calculation engine**
- **Extremely fast tool path calculations**
- **Lightning fast recalculation of tool path**
- **True 64-bit architecture fully utilizes all cores for the tool path calculation**
- **Minimum definition of parameters – Easy to use**
- **Constant Z , Linear Machining & Constant Step Over tool paths available**
- **Full gouge checking that includes the holder**



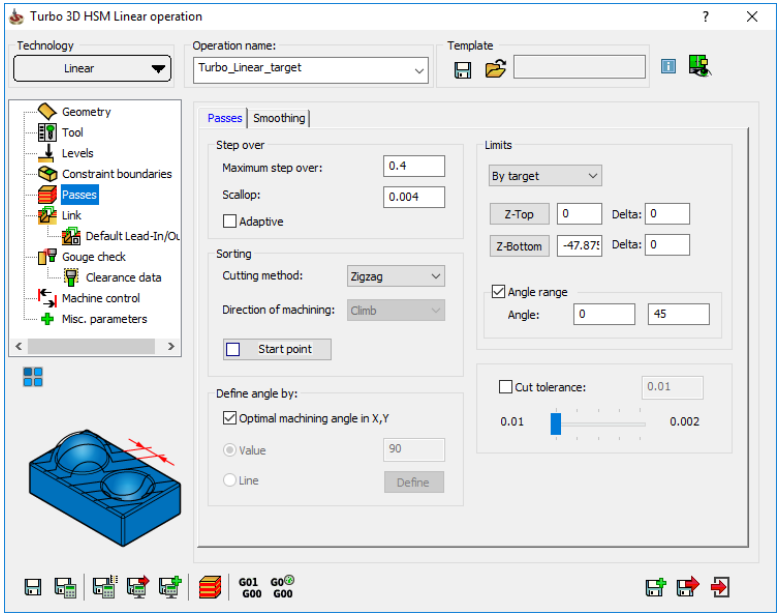
Turbo 3D HSM – Constant Z Machining

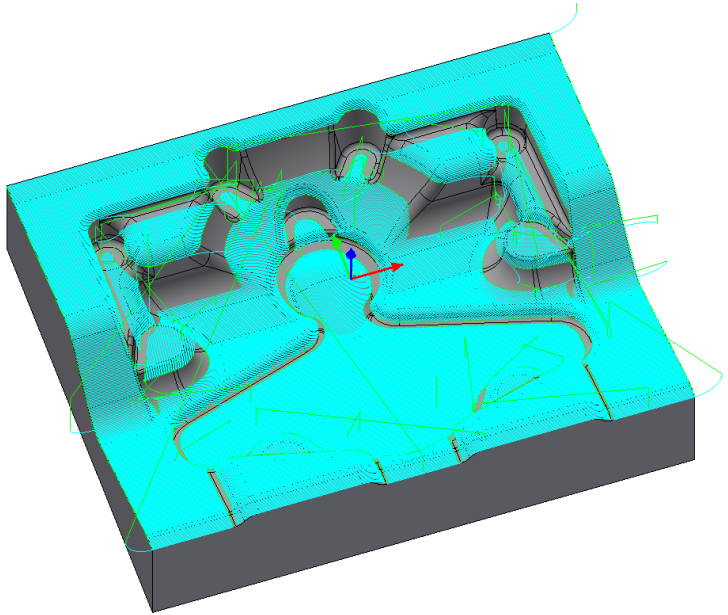




- **Constant Z tool path calculation with adaptive step down and flat area detection**
- **Zigzag, One way and Spiral strategies are available**

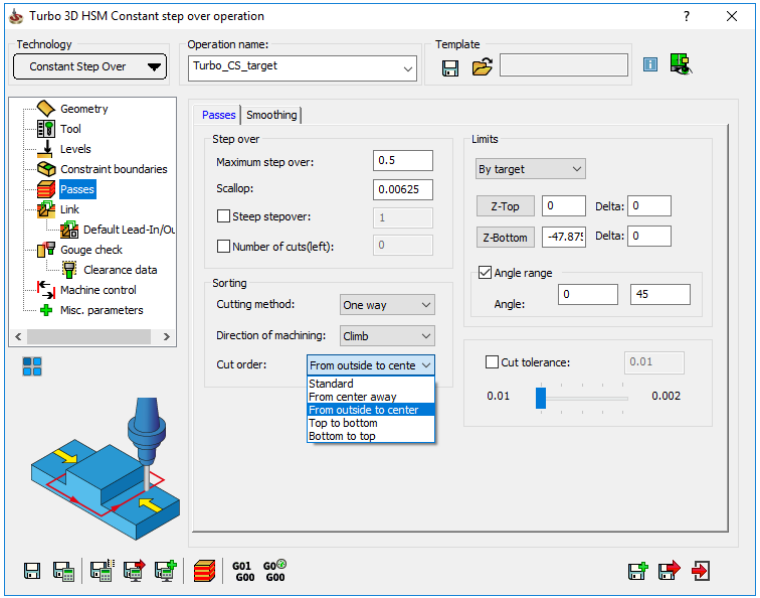
Turbo 3D HSM – Linear Machining

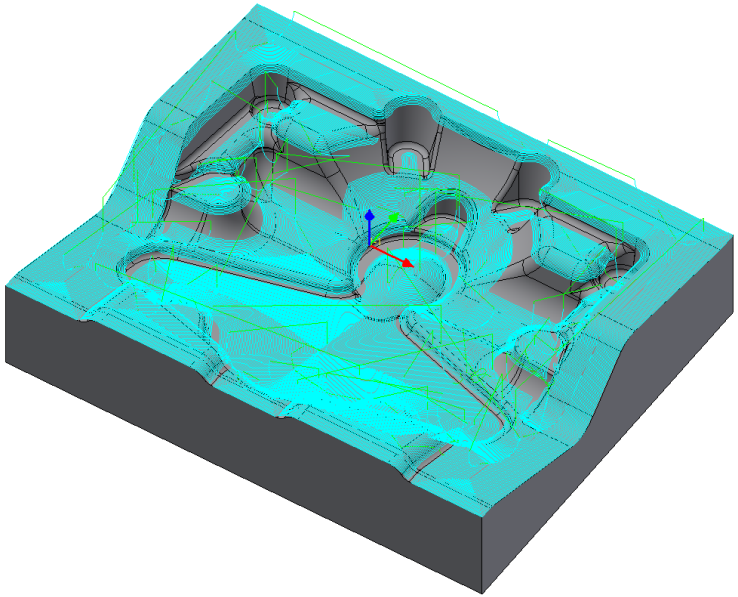




- **Linear machining (Parallel cuts) with Constant Step Over, Scallop, Adaptive Stepover**
- **Automatic optimal angle of machining in XY-plane, based on part geometry**

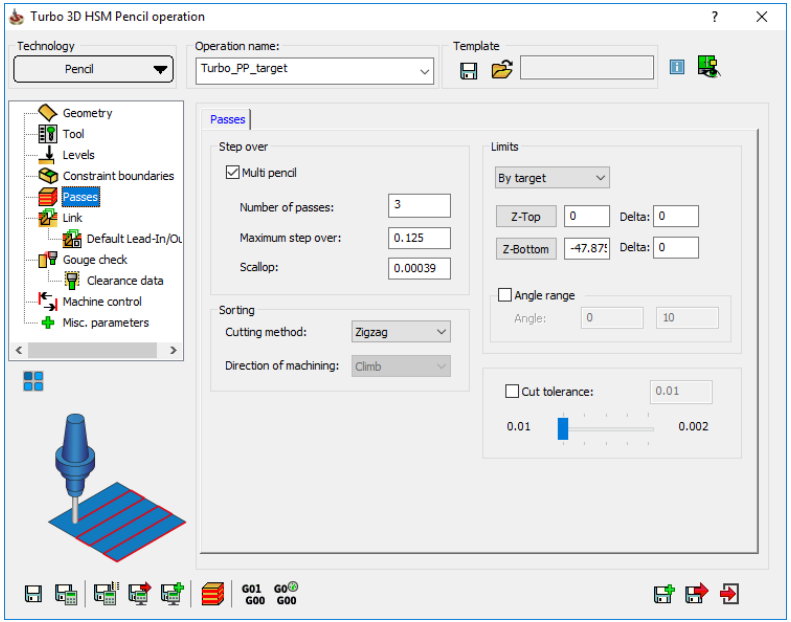
Turbo 3D HSM – Constant Step Over Machining

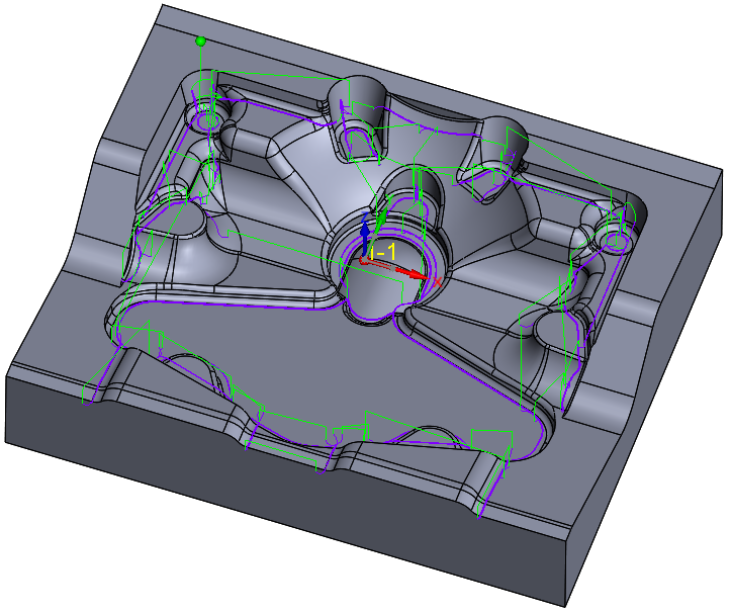




- **Constant Step Over machining with Step over / Scallop based calculation**
- **5 Cut order options available**
- **Automatic Leads & Links**

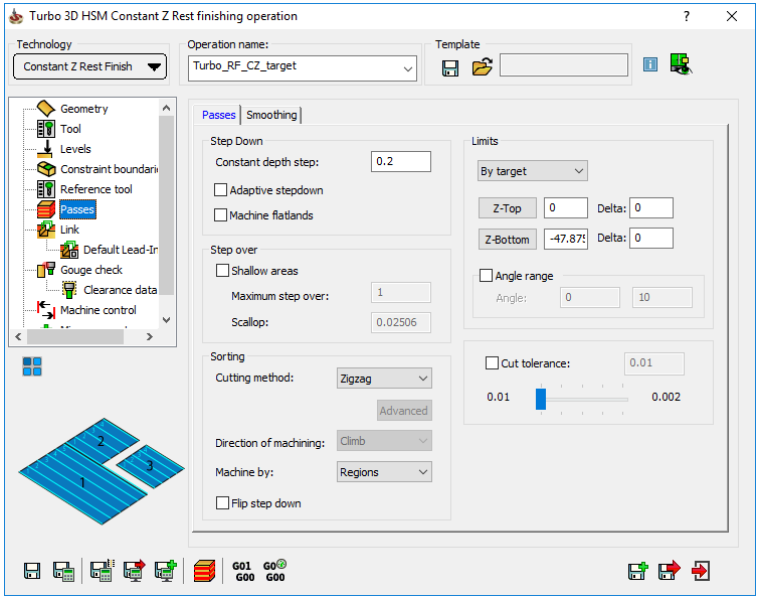
Turbo 3D HSM – Pencil Milling

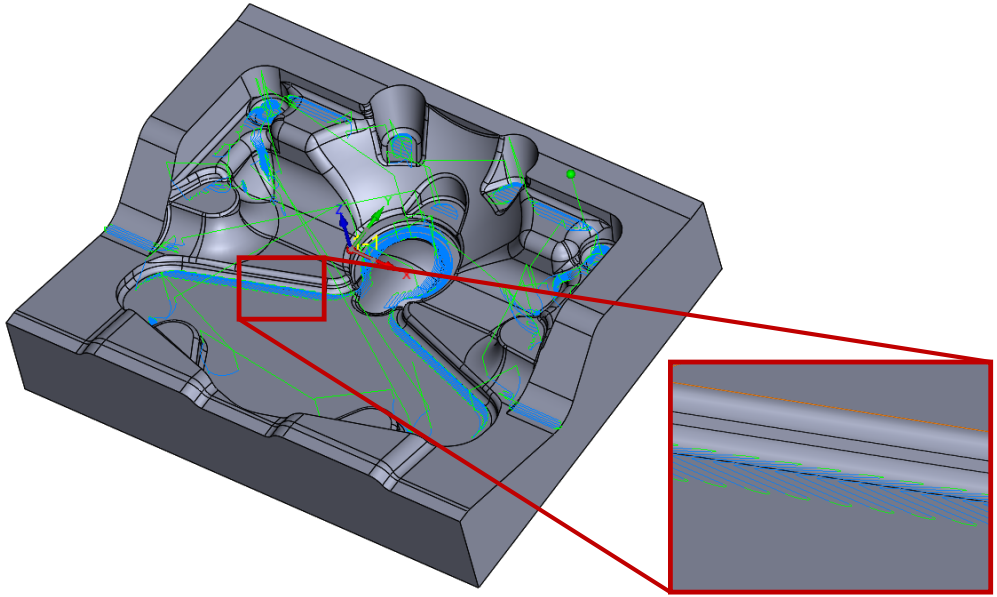




- **Pencil milling offers effective tool path generation for finishing of corners**
- **Option to perform multiple passes is possible**

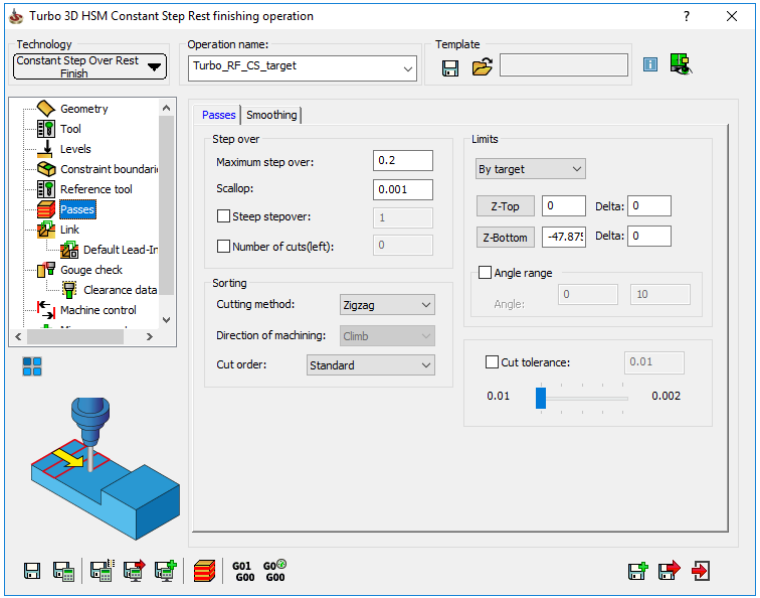
Turbo 3D HSM – Constant Z Rest Finish

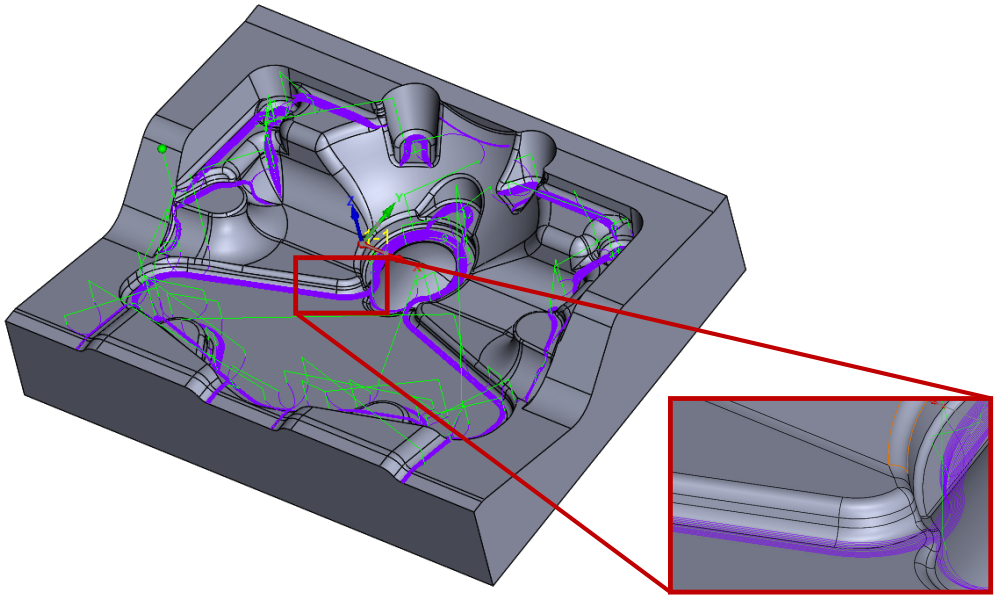




- **Finish corners in succession with a Constant Z style tool path**
- **Tool path is calculated using any given combination of cutting tool (Ball/Bull/Flat)**

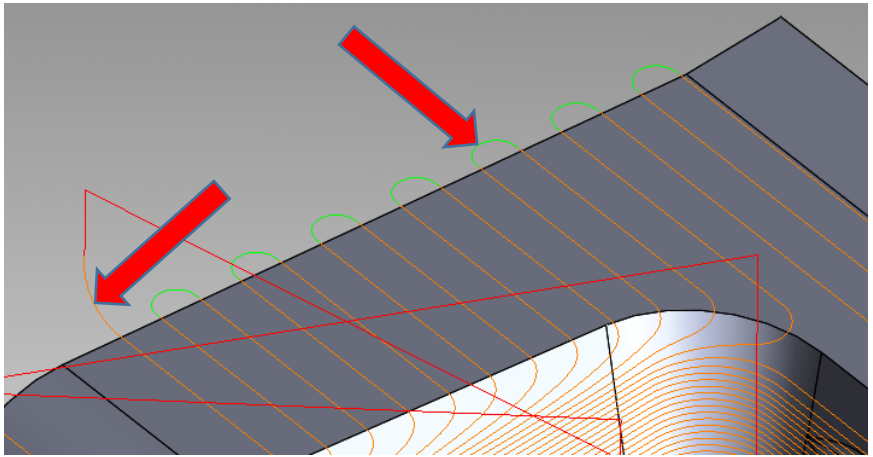
Turbo 3D HSM – Constant Step Over Rest Finish

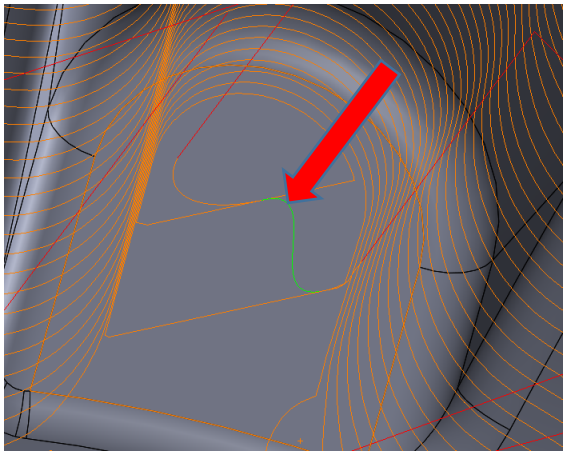


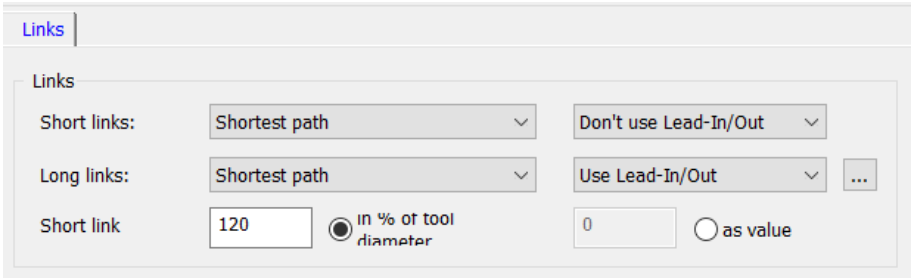


- **Finish corners in succession with a Constant Step Over style tool path**
- **Tool path is calculated using any given combination of cutting tool (Ball/Bull/Flat)**

Turbo 3D HSM Links

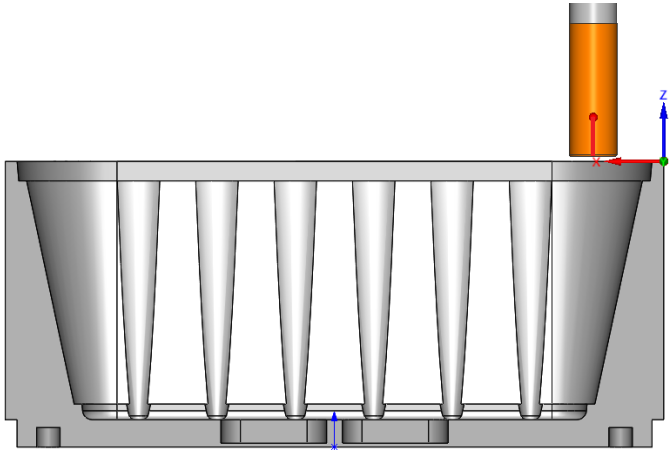




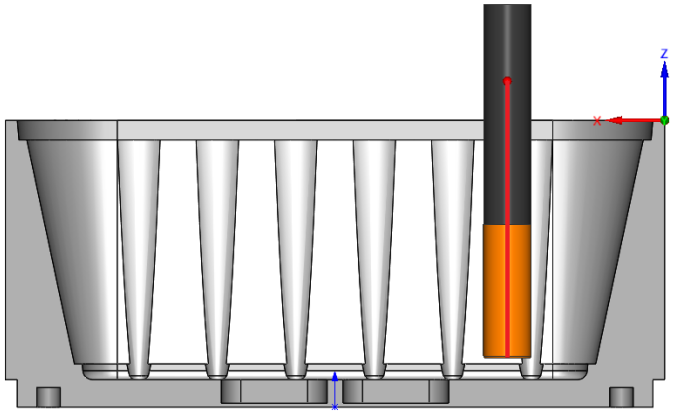


Automatic Leads & Links

Turbo 3D HSM Step Order



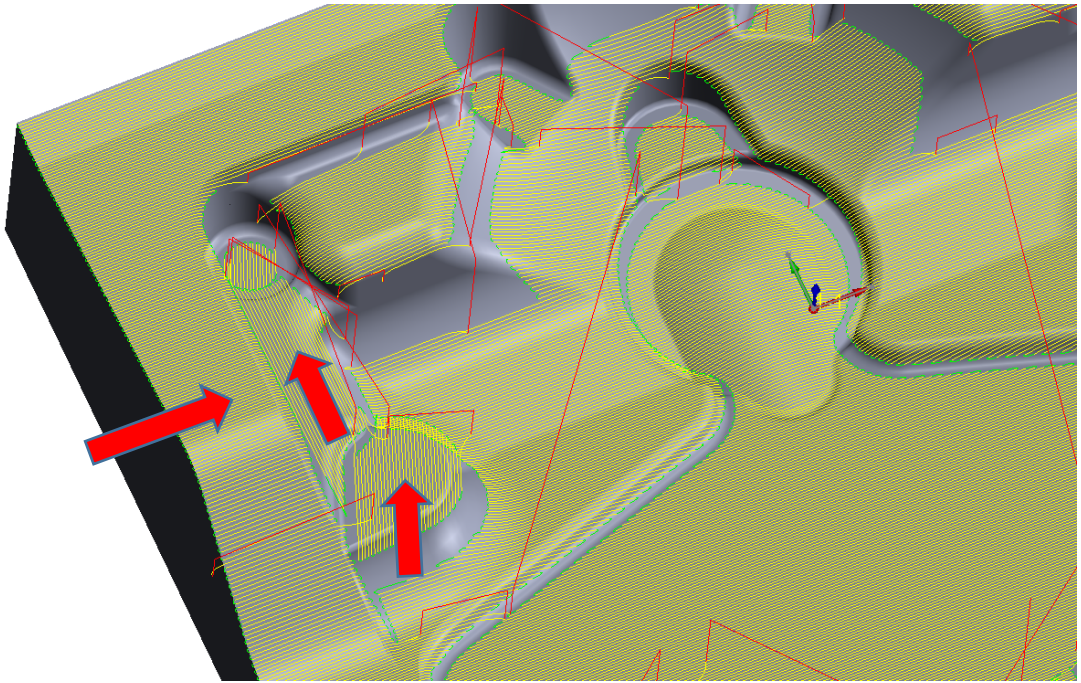
Direction of: Climb
Machine by: Regions
☐ Flip step down



Direction of: Climb
Machine by: Regions
☑ Flip step down

Tool path can be generated from Top to Bottom or Bottom to Top

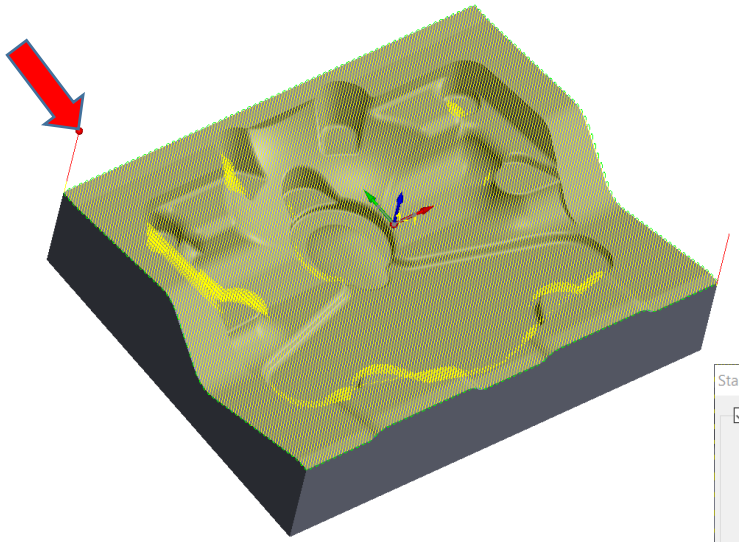
Turbo 3D HSM Optimization

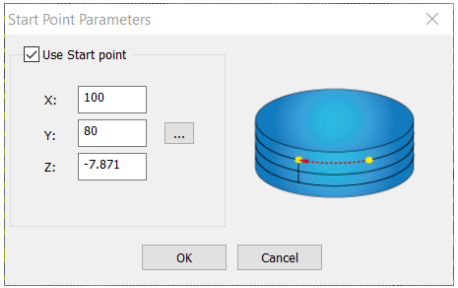


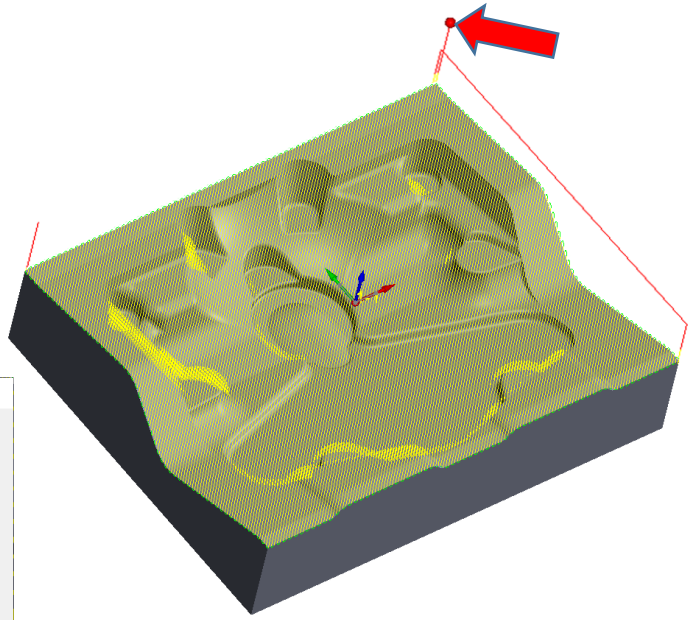
Automatic optimal angle of machining in XY-plane

- **Reduces machining time by limiting the acceleration & deceleration pattern**

Turbo 3D HSM Start Points

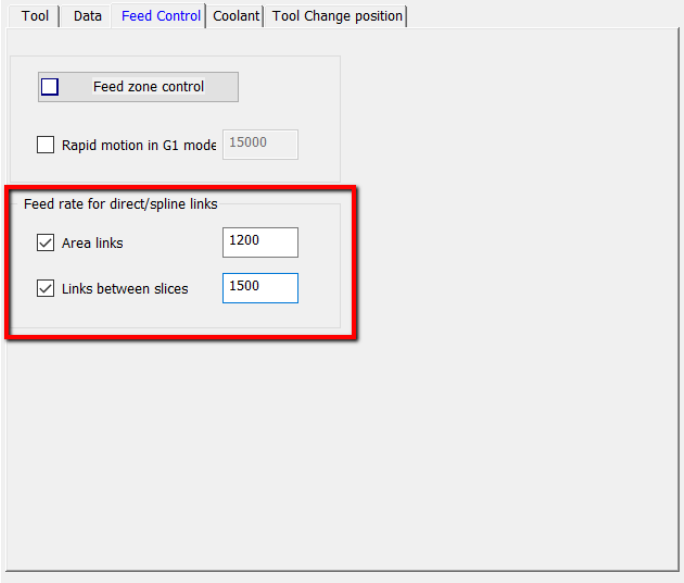


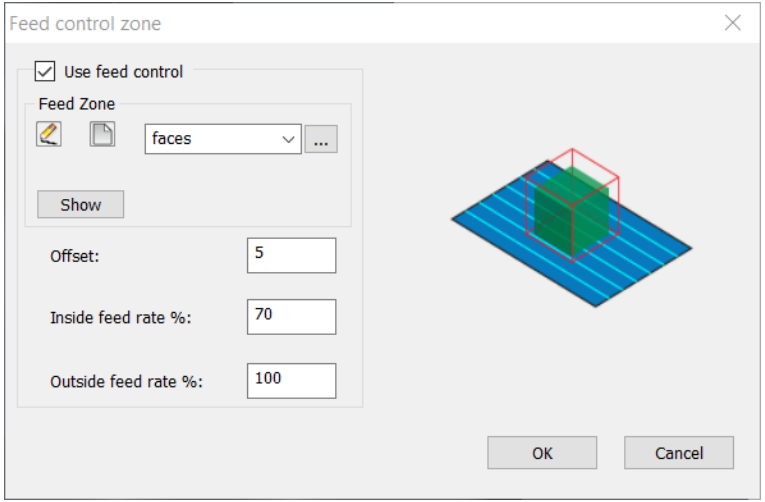




User can change the start point of the tool path by picking a vertex or a predefined point from which the tool should start machining

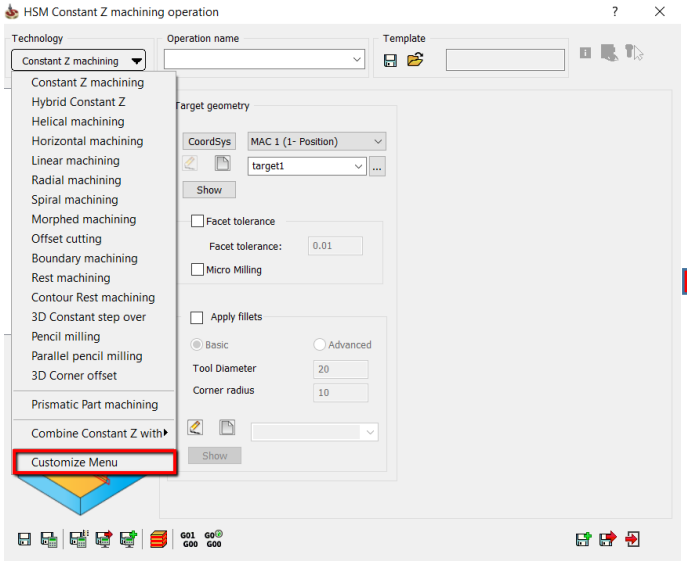
Turbo 3D HSM Feed Control

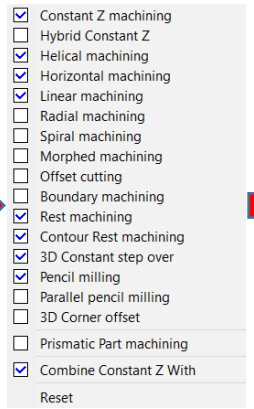


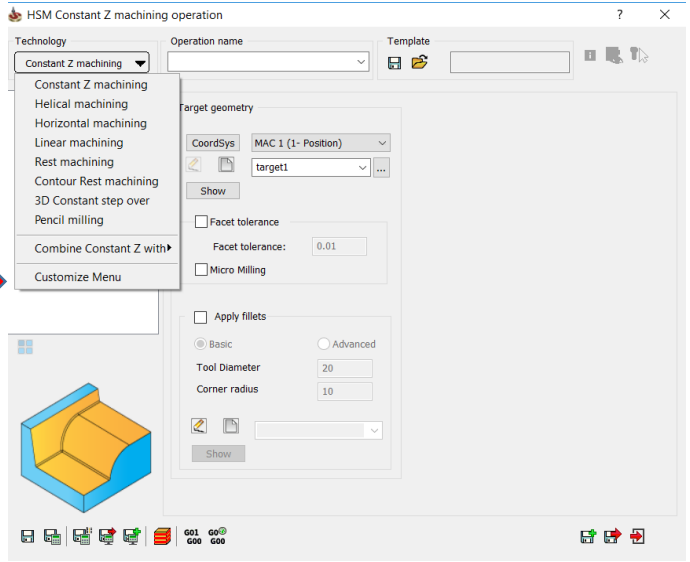


- **Feed rate definition for leads & links**
- **Feed control zone for controlling feed rates in user-defined areas**

HSR/HSM – Customize Menu







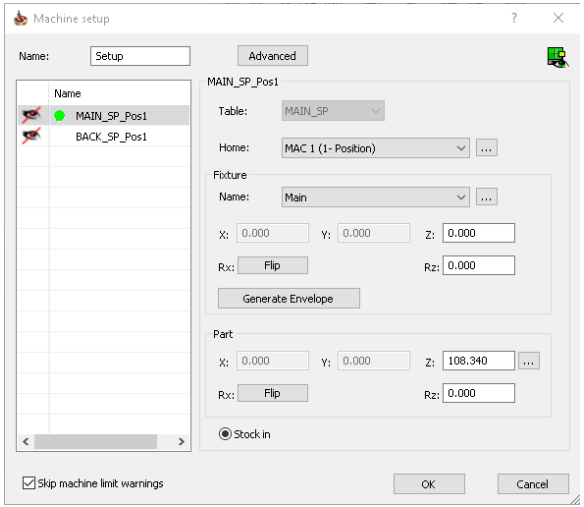
- **Choose to see the most common operations in HSR & HSM**
- **Allows user to customize and simplify the GUI**

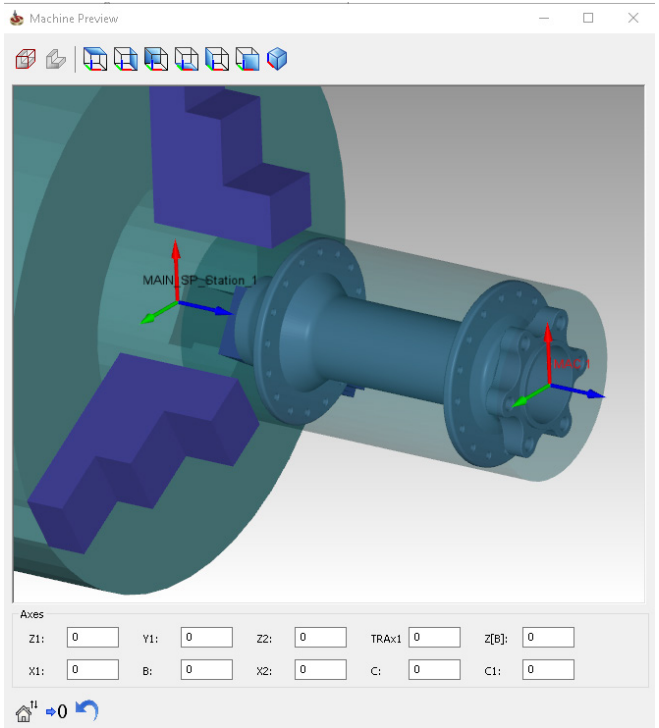
Mill-Turn

New Machine Setup Definition

New machine setup definition options:

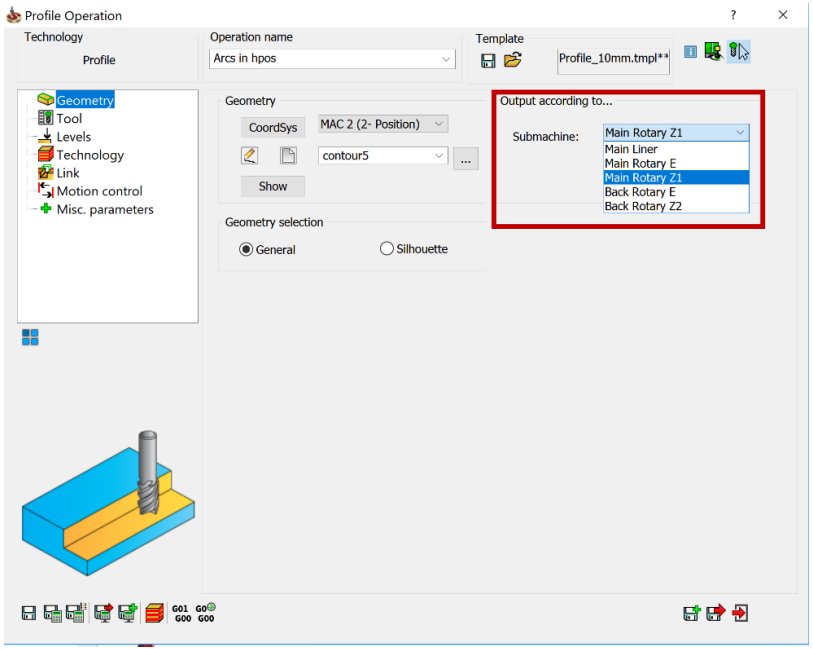
- **Part position relative to Fixture**
- **Fixture position relative to Table**



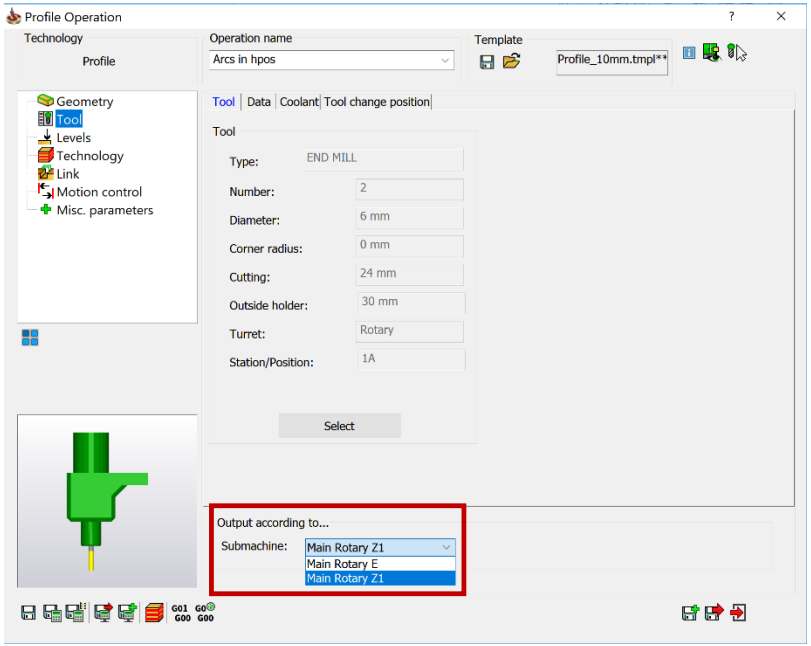


Skip Submachine Selection

Previous versions of SolidCAM



SolidCAM 2018



Skip Submachine selection for known Turret-Table combinations