



Release Notes

ESPRIT TNG 5.2

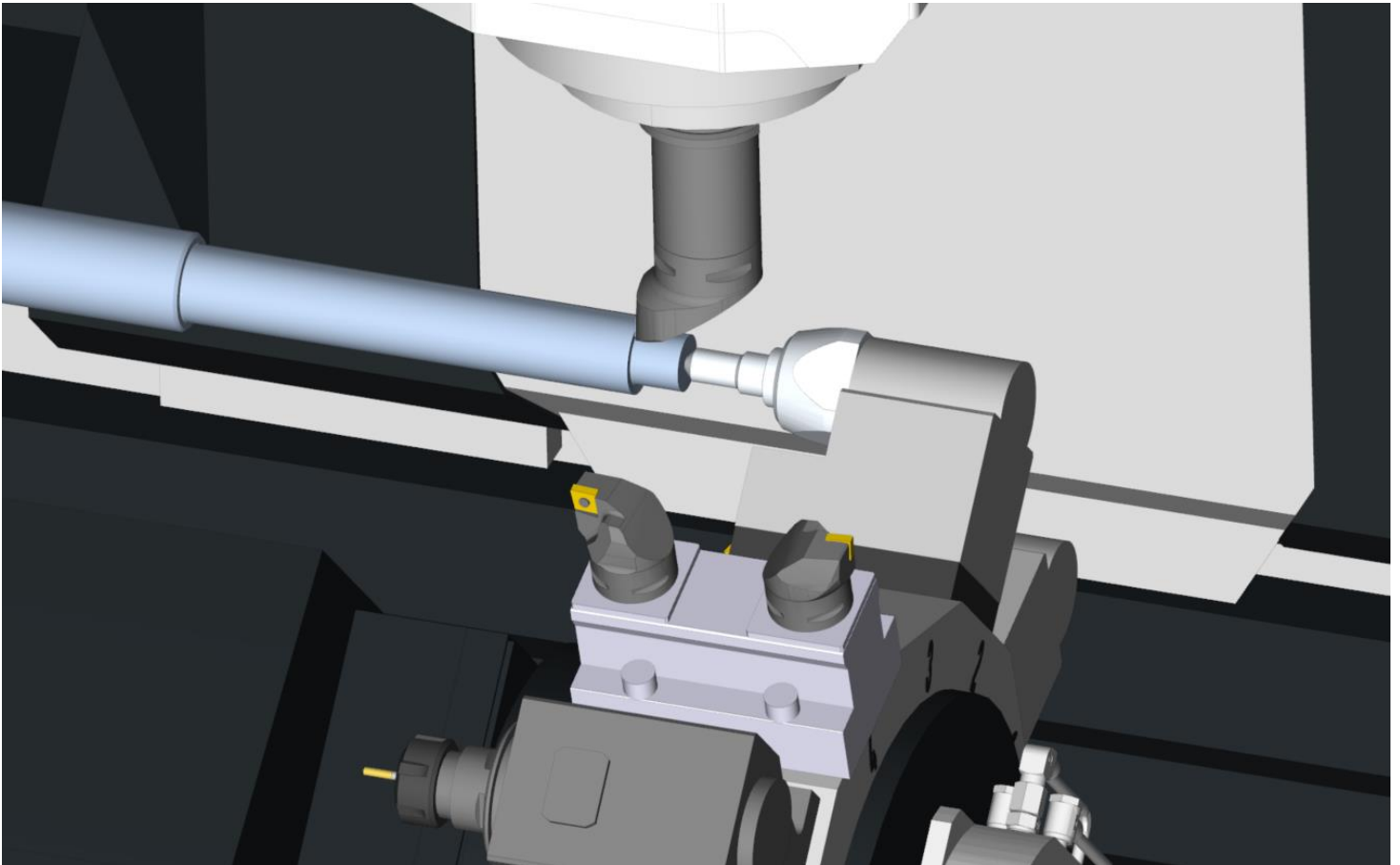
What's New ESPRIT TNG 5.2

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Turret-mounted Tailstock

ESPRIT TNG 5.2 adds native support for turret-mounted tailstock, handling the tailstock like a tool assembly and using the link engine for positioning the tailstock. It simplifies the programming and dedicated keywords simplify the post implementation.

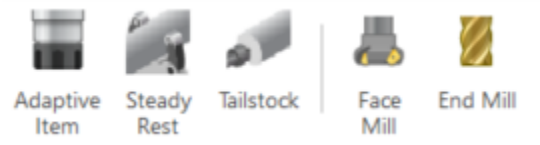


Tailstock definition

When generating tailstock GDML file, the root node of the component defines the default mounting position on the station adapter. A workpiece adapter usually at the tip of the tailstock specifies the control point for the tailstock.

Tailstock setup

Select the station to host the tailstock then right click / Add tailstock or click on add tailstock in the Tooling tab of the ribbon. Then browse to the tailstock GDML file.



Engaging a Tailstock

A tailstock must be mounted on a turret before a tailstock operation can be created.

1. On the Turning or Milling tab, in the Support group, click Tailstock.
2. Select a Tailstock Name from the list of all tailstocks defined in Machine Setup.
3. Choose the Spindle Direction and enter the Feedrate PM.
4. If the spindle will be spinning, enter the Speed RPM.
5. Set Tailstock to Engage.
6. Set Position X, Y, Z to the target point of the tailstock (target position of the tailstock control point)
Note: Contact with the workpiece needs to happen before the tip of the center reaches this point to validate the

contact.

7. Enter the Clearance, measured from Position X, Y, Z. The tailstock will rapid to this position, then feed the tailstock to Position X, Y, Z.
8. Enter the amount of Thrust. This is the amount of force/torque/pressure that the machine will monitor to validate contact between the tailstock and the workpiece. This amount needs to be reached anytime starting from the Clearance point and before reaching the Position X,Y,Z. Thrust is meant to be output in the NC code and is not simulated.
9. Click OK.

Disengaging a Tailstock

1. On the Turning or Milling tab, in the Support group, click Tailstock.
2. Select a Tailstock Name from the list of all tailstocks defined in Machine Setup.
3. Choose the Spindle Direction and enter the Feedrate PM.
4. If the spindle will be spinning, enter the Speed RPM.
5. Set Tailstock to Disengage.
6. Set Position X, Y, Z to the target point of the tailstock.
7. Enter the amount of Thrust and Dwell. Thrust and Dwell are meant to be output in the NC code and are not simulated.
8. Click OK.

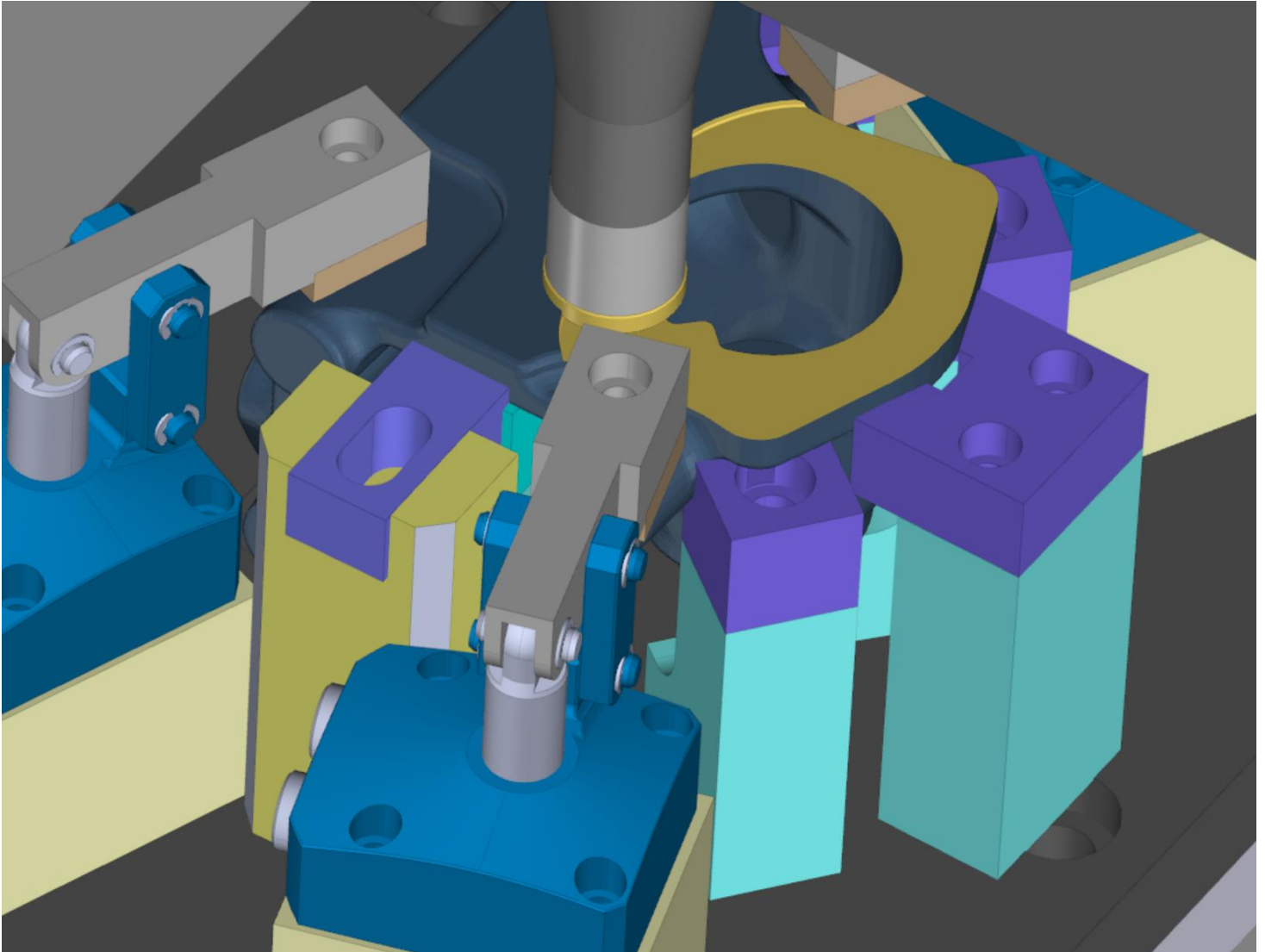
Tailstock approach and retract

When using a tailstock mounted on a turret, the system first moves the turret to its default tool change location and indexes the turret to the station that carries the tailstock. You can change the tool change location from the program by right clicking on the station change associated to the tailstock.

Approach movement to the clearance position and retract movement away from the clearance position are both managed automatically by the link engine following the same strategies as used for approach and retract of a turret-mounted tool.

Fixture Avoidance

First introduced as a preview in 5.1, fixture avoidance is now available with Facing, Pocketing, Contouring cycles and with 3-axis FreeForm cycles. Toolpath is modified to stay away from fixtures by a specified clearance distance.



The following milling cycles support fixture avoidance:

- Facing cycle
- Pocketing
- Contouring
- FreeForm Z-Level Roughing
- FreeForm Z-Level Finishing
- FreeForm Radial Finishing
- FreeForm Spiral Finishing
- FreeForm Concentric Finishing
- FreeForm Floor Finishing
- FreeForm Global Finishing
- FreeForm Parametric Finishing
- FreeForm 3D Contouring

Note: Any 5-axis options and strategies are incompatible with fixture avoidance.

Clearance Override

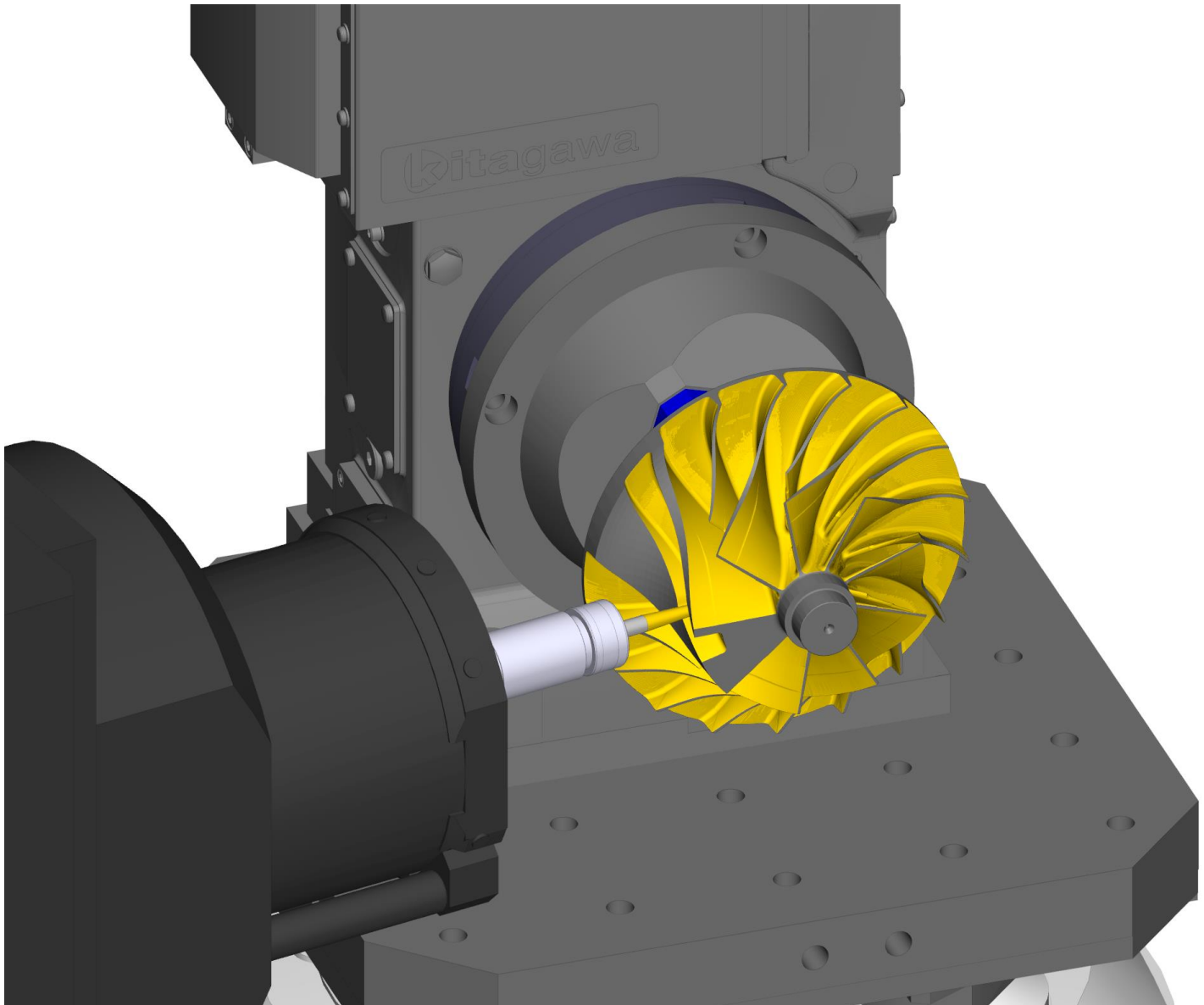
The fixture avoidance keeps the tool away by a clearance distance from the fixture. By default, the clearance value is the maximum fixture clearance of the fixtures of the setup.

Set Clearance Override to specify a custom clearance for the cycle.

Setup Change Improvements

For ESPRIT TNG 5.2, Setup Change is still a Preview and needs to be turned on in File / Options / Preview. Setup change expands its scope and capabilities with:

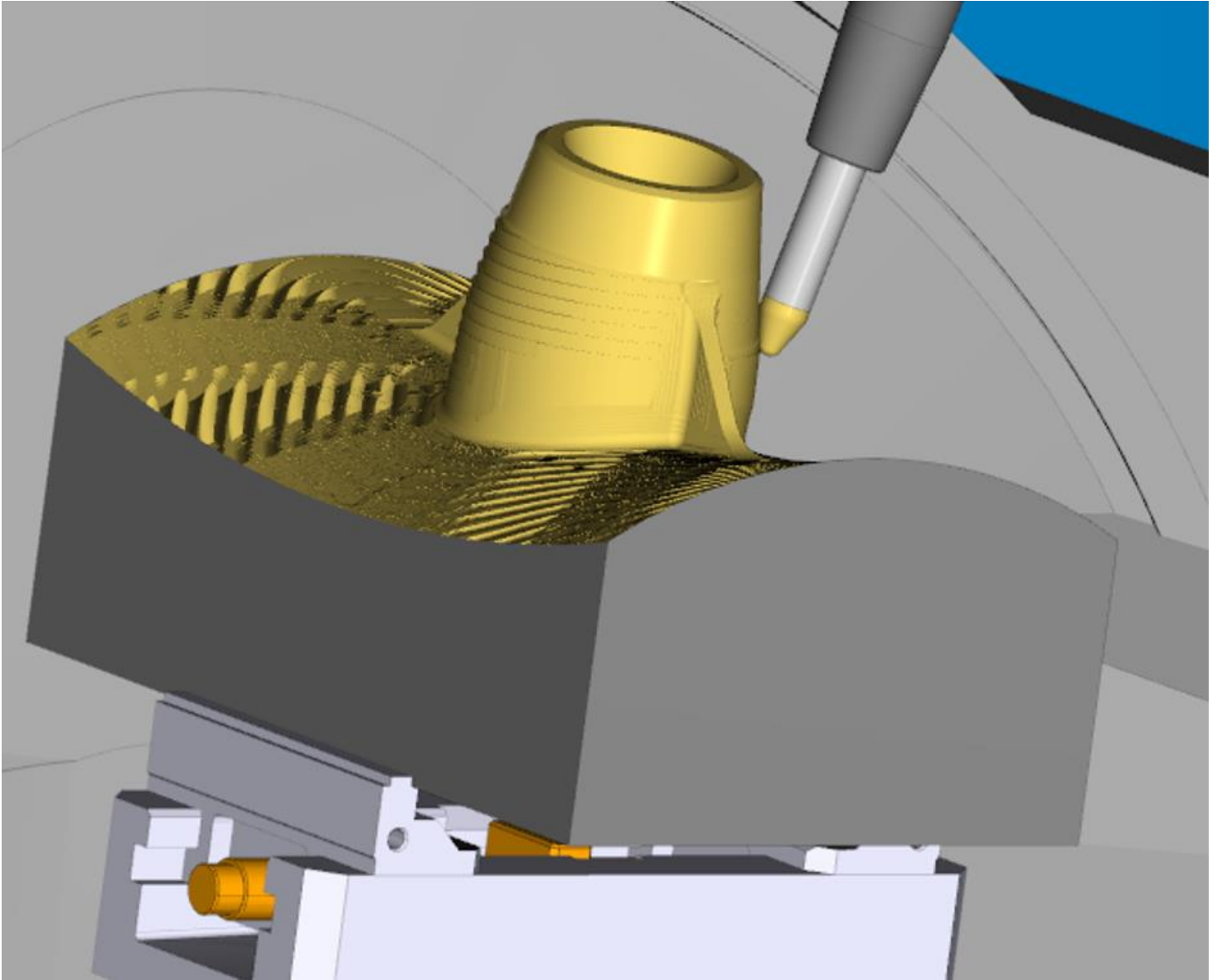
- Program Info per setup: The program information moves from the Home tab of the ribbon to the Machine Setup tab. Edit the machine setup or the setup change to set program number and program information associated to the edited setup.
- Split NC program per setup: A simple method to generate a NC file per setup is to use Split NC command in the Home tab (behind the command NC code).
- It is now possible to mount/unmount rotary tables, tailstock, steady rest in a new setup.
- It is now possible to use setup changes with machine with multiple tables or spindles.
- When outputting a report, the report generator separates the program per setup.



5-Axis Circle Segment Finishing

Replacing the 5-Axis Plane Finishing cycle, the new 5-Axis Circle Segment Finishing applies to a group of surfaces with single or double curvature.

This cycle is ideal for use with circle segment tooling. The Circle Segment Finishing creates parallel cut passes perpendicular to a user-defined increment direction. The cycle automatically positions the tool axis to optimize cut pass coverage on the faces grouping(s) and to avoid collisions between the tool assembly and the model.



5-Axis Corner Sharpening

Within the 5-axis contouring cycle, a new option allows for tracing sharp concave corners with a tapered tool. This option is very beneficial for engraving or for cutting the edge of a rotary tool for converting paper.

