



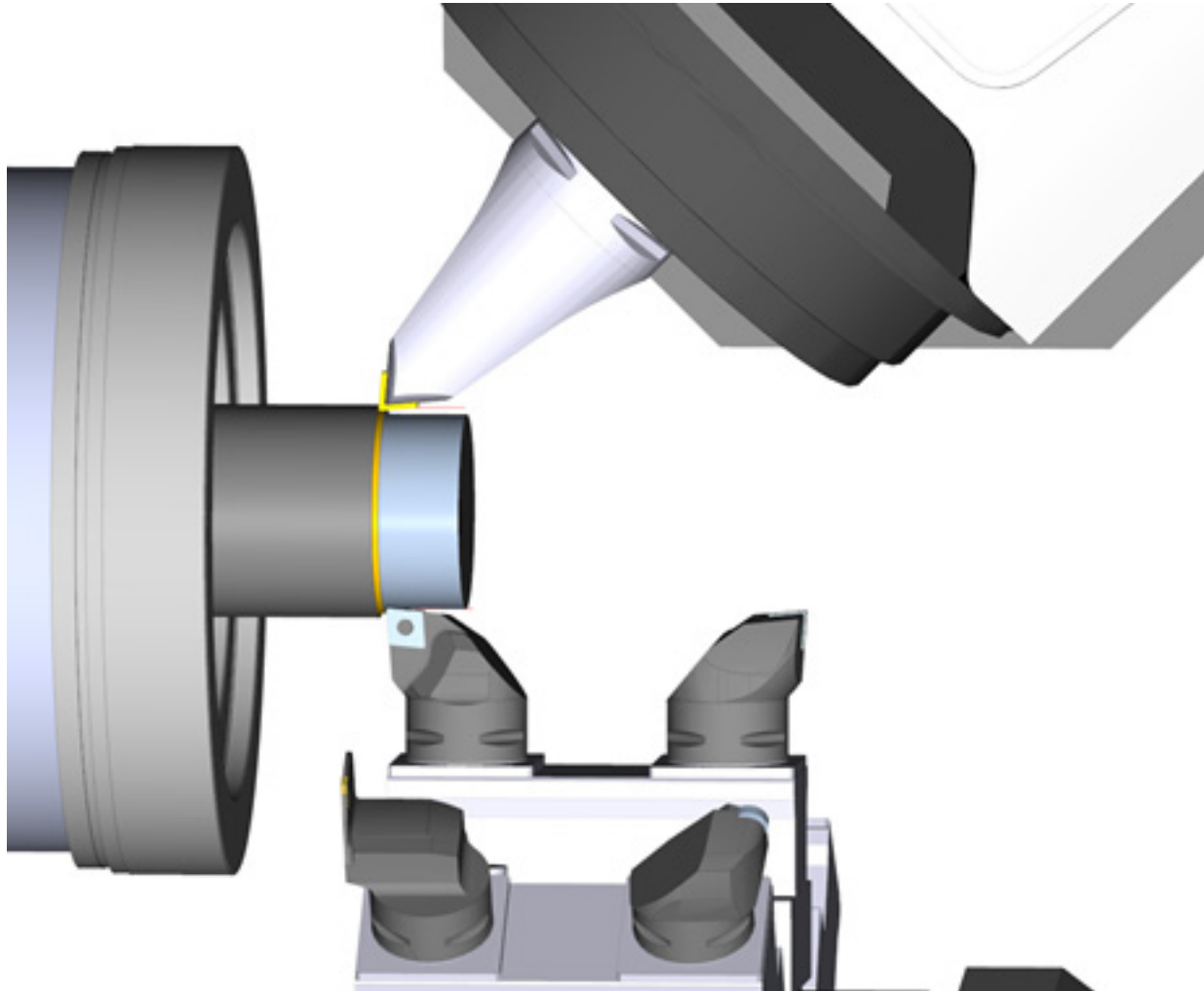
The Right Choice

What's New in ESPRIT Release 4.3

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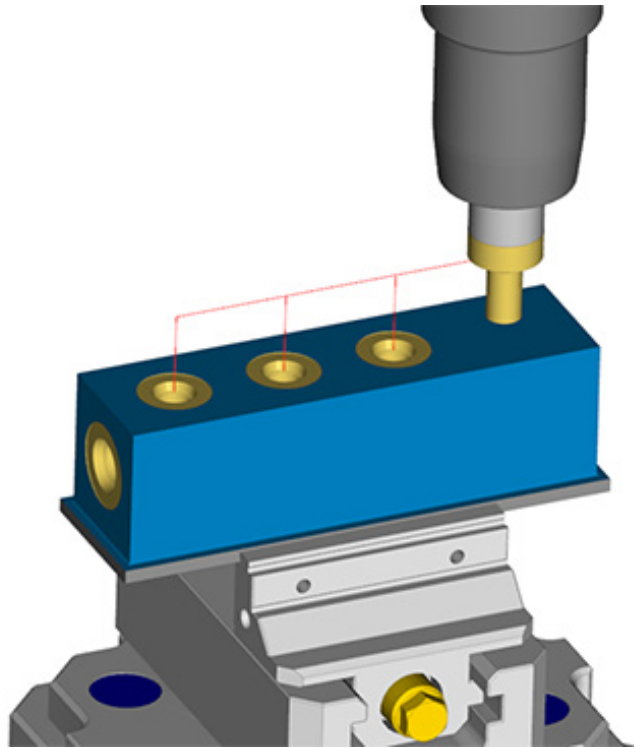
Balanced Turning



Balanced turning lets you easily program synchronized cuts using two tools on opposite sides of the turning axis. Balanced turning reduces cycle time with simultaneous operations, and reduces part deflection during heavy cuts by supporting the workpiece at both sides. Choose between two balanced turning cycle types:

- Simultaneous
 - Both tools cut simultaneously at the same depth and Z position
 - Allows deeper cuts at increased feedrates
- Trailing Tool
 - One tool trails behind the other at a specified distance
 - Allows simultaneous cuts at different depths; e.g., simultaneous semifinish and finish passes

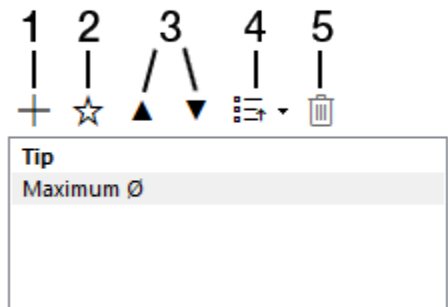
Milling Tool Control Points



Milling tool control points let you specify a preset or custom control point for each machining cycle. Each milling tool type has one or more predefined control points, and you can specify custom control points along the tool's centerline by distance from the tool tip along the tool axis.

Set up control points in the General tab during tool setup:

Control Point List with menu controls: [1] Add a control point, [2] Set as default, [3] Move up/down, [4] Renumber control point registers, [5] Delete control point.



Collinear Axis

Collinear axis support is available for mills with a collinear axis bridge (Z) and ram/quill (W) and for turning centers with sub spindle positioning (Z, B). Collinear axis support includes work offset setup, tool change position, and collinear solutions within machining operations.

When the machine has an available collinear axis, you can set its work offset in machine setup. When you enter values to adjust the collinear axis work offset, the axis moves to the specified position. Values entered for a collinear solution are incremental from this position.

The screenshot shows a 'Setup' dialog box with the following fields and values:

WorkOffset	
Name	WorkOffset1
Offset Type	Custom
Primary Number	54
Secondary Number	0
Position	
X Machine, Part Shift	0.0000
Y Machine, Part Shift	-1800.0000
Z Machine, Part Shift	-380.0000
W Machine	0.0000

The 'W Machine' row is highlighted with a blue border.

Improved Coolant Control



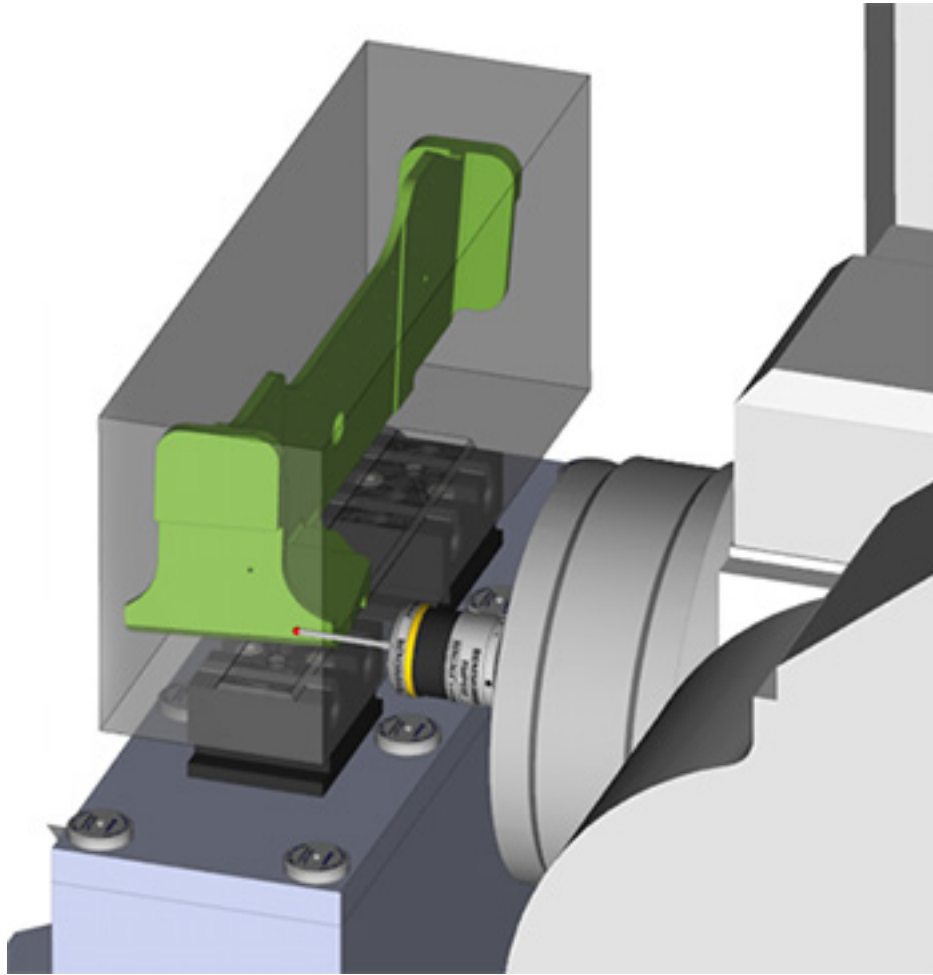
New coolant settings in ESPRIT let you specify coolant by operation as well as per tool, with support for 17 coolant types (including custom coolant) and pressure settings, for coolant control that matches your machine's capabilities. New post keywords and logic round out the package, improving coolant command output in NC code.

Find the new coolant settings in the General tab for supported operations.

Note: Coolant settings are available in ESPRIT only when the machine *.mprj is set up in Machine Tool Builder to support them.

Note: The post processor must also be updated to support the new coolant settings.

New Probing Cycles

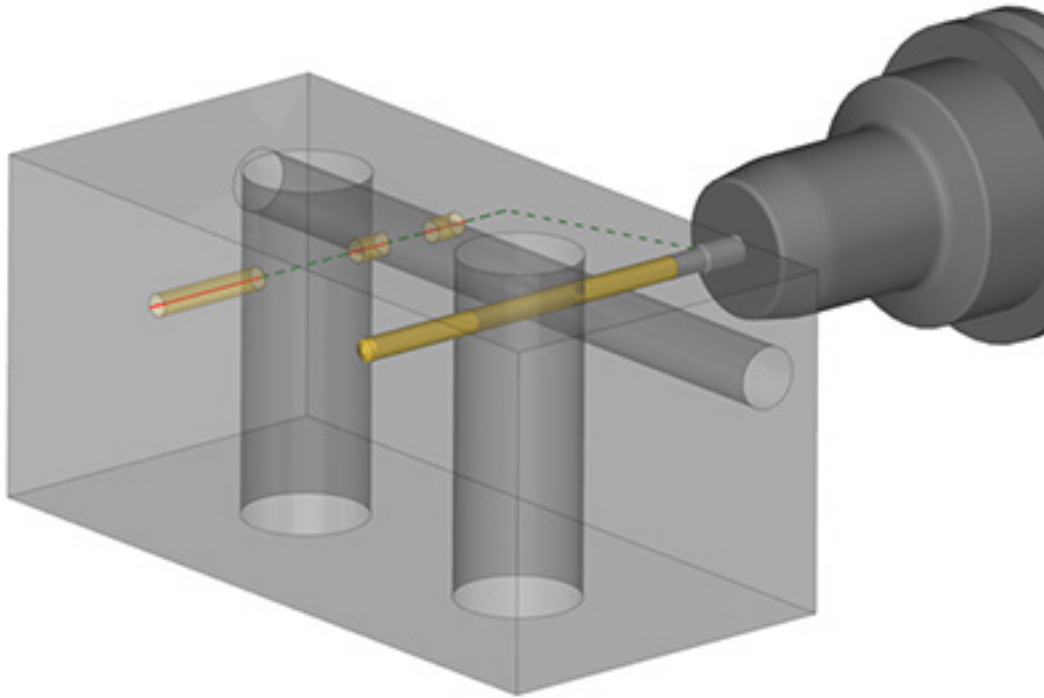


Probing in ESPRIT 4.3 now includes the following new cycles:

- 4th Axis - Measure the slope of a surface between two points, and adjust the rotary axis position to compensate.
- 5-point Rectangle - Measure the size of a rectangular feature, and employ a double touch on one side to locate the true center even when the feature is not square to the machine axes.
- Angled Surface / Web/Pocket - Set up probing cycles with an angled approach to probe surfaces that are not aligned with the X or Y axis of the feature coordinate system.
- Corner Distance - Support for corner distance arguments in X and Y (D and E arguments in the probe cycle) lets you specify the distance from the corner to the first touch position along that axis.

As always, ESPRIT offers intelligent cycle type selection for all probing cycles, and full keyword support for post processors.

Drilling Interrupted Holes



ESPRIT 4.3 supports automatic feedrate adjustments for drilling cycles that encounter existing holes or pockets during the cycle, to minimize burr formation, improve chip evacuation, prevent tool deviation, and reduce tool wear and avoid tool breakage.

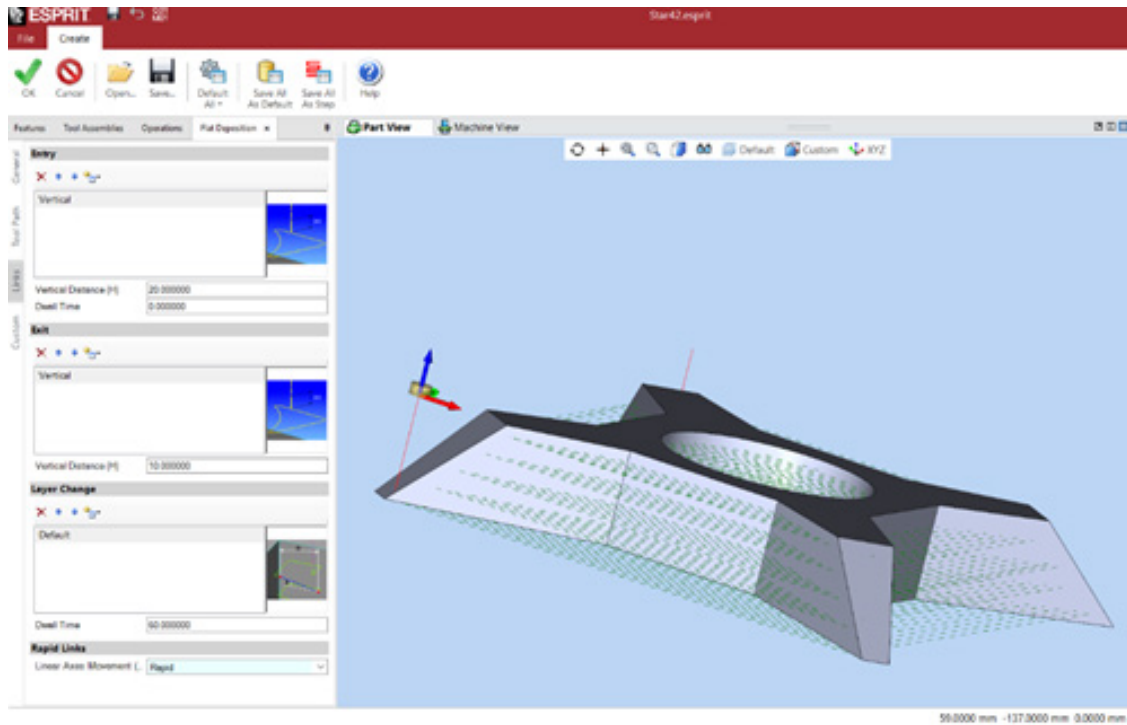
Intersection feedrate management options are available in the Hole Settings tab for holemaking operations. Specify the desired behavior through intersections, feedrate adjustment percentages, and clearance distance to apply through any intersecting hole.

ESPRIT automatically applies the specified feedrate adjustments when:

- Entering into the material
- Breaking through into a pocket or intersecting hole
- Re-entering the material at the other side of the pocket or intersecting hole
- Starting on irregular surfaces

You can also take advantage of dynamic stock awareness when a drill cycle creates and moves through its own intersections.

Additive Cycles



New links settings for Additive cycles provide a dedicated approach/exit for additive trajectories, as well as easy management of dwell times between part layers.

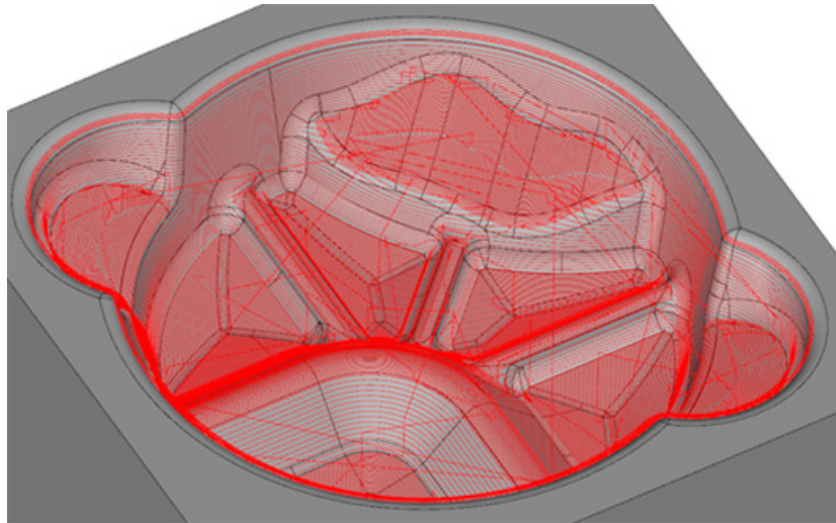
A new dedicated Additive feature allows for more efficient modeling and a consistent workflow between additive and freeform cycles.

Toolpath Improvements

FreeForm Performance Improvement - Target Part Caching

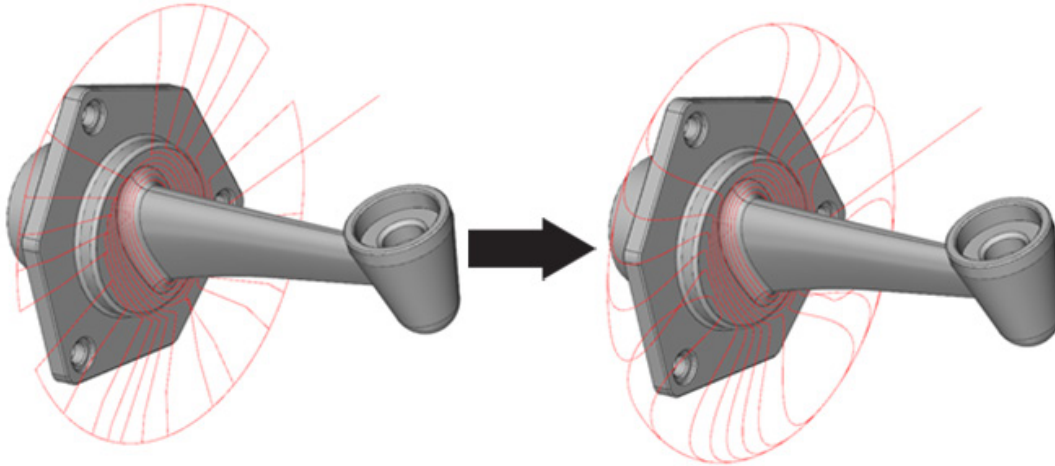
With the new target part caching processing mode for FreeForm features, ESPRIT always considers the complete part solid when calculating toolpaths for FreeForm cycles. This results in drastically improved system responsiveness, letting you continue programming during toolpath calculation, as well as improved safety - should you forget to include a part solid as check; ESPRIT still considers the solid and will not gouge the part.

Finishing Enhancements for FreeForm Machining



- Global Finishing Enhancements
 - New options in global finishing subdivide the machining into steep and shallow areas where separate cutting strategies and stepovers can be specified.
 - This increases machined surface quality while avoiding excessive tool engagement
- Floor Finishing Enhancements
 - Open pocket passes with concentric cutting strategy
 - Options for extra cutting moves, with or without loops, in small uncut areas
 - Tangent extensions

Smooth Radial Link - 5-Axis Cycles



A new rapid link type, Smooth Radial Around Axis, produces continuous smooth motion to:

- Optimize 5-axis motion in entry/exit links
- Reduce sharp rotary axis accelerations and tool-axis changes to improve cutting times

Installation and Security

New Installer with Notification Manager

A new installer also includes a new Notification Manager that seamlessly automates license renewal and provides improved notifications about new features in ESPRIT.