



**hyperMILL®**

2023

*hyperMILL®* 2023

**WHAT'S NEW?**

 **OPEN MIND**  
THE CAM FORCE



## Release Strategy – Now as Fast, Agile & Responsive as our Service

As an OPEN MIND customer, you will be familiar with our exceptional service and support that underpins why *hyperMILL*® is the industry's leading CAD/CAM solution. To remain a benchmark in the manufacturing industry, we invest significant resources into our product research and development. The result is a development team that works tirelessly behind the scenes to continually evolve our technology and provide our valued customers with annual product updates.

From 2023, we'll be changing the way we provide you with updates, so you'll be able to update *hyperMILL*® as soon as the latest updates become available. Starting with *hyperMILL*® 2023, we will release one new software version annually in December. Following this annual release, you will receive a product update (previously service packs) every 6 weeks. This agile new software development and issue strategy ensures that your business is always working with the very latest product improvements. Of course, we'll be providing comprehensive information on the new features and updates as they become available.

### CONTENTS

#### General

<i>hyperMILL</i> ® SIMULATION Center	3
Faster POF status check	3

#### CAM – Feature and Macro Technology

<b>HIGHLIGHT</b> “General Transformation Pattern” feature	3
Prioritization of macros	4
Improved job list optimization	4
Macro technology – Stock linking	4

#### CAM – AUTOMATION

<b>HIGHLIGHT</b> <i>hyperMILL</i> ® AUTOMATION Center	5
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#### CAM – 2.5D Strategies

<b>HIGHLIGHT</b> 2.5D Back Boring	5
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#### CAM – 3D Strategies

Enhanced milling surface extension	6
------------------------------------	---

#### CAM – 5-axis Strategies

<b>HIGHLIGHT</b> 5-axis Halfpipe Machining	6
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#### *hyperMILL*® PROBING

Workpiece alignment along edge – “Z-” mode	6
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#### *hyperMILL*® BEST FIT

<i>hyperMILL</i> ® SHOP Viewer – BEST FIT function	7
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#### CAM – MILL TURN

“Smooth overlap” for turning	7
Groove plunging with free tool geometry	7

#### CAM – VIRTUAL Machining

Info pages	8
Display toolpaths at the start of the simulation	10
Save collision settings	10
<b>HIGHLIGHT</b> NC Optimizer – Optimization of additional axes	10
<b>HIGHLIGHT</b> Support for mill-turn machines with Siemens controller	11
User interface with two-window mode	11
Job list-related session	11

#### CAD integration: *hyperCAD*®-S

<b>HIGHLIGHT</b> Part selection when importing assemblies	12
Changes to the “Holes” feature	12
“Boolean difference” extension	12
Collision check for “Shape spherical” analysis	13
Compensate curves	13
<b>HIGHLIGHT</b> Parametric Boolean operations	14

#### *hyperCAD*®-S Electrode

Custom orbit variations	14
Custom material list	15
<b>HIGHLIGHT</b> Modify erosion path with C-axis rotation	15



QR codes are clickable

**Review system compatibility:** To ensure optimal performance and stability, we recommend regularly running our diagnostic program, Systemchecktool.exe.

**Note:** Windows® may reset the graphics driver or its settings when carrying out updates.

**System requirements:** Windows® 10/11 (64-Bit) | **CAD integrations:** *hyperCAD*®-S, Autodesk® Inventor®, SOLIDWORKS

**Software languages:** de, en, es, fr, it, nl, cs, pl, ru, sl, tr, pt-br, ja, ko, zh-cn, zh-tw

## hyperMILL® SIMULATION Center

Performance when the SIMULATION Center starts has been significantly improved. New methods have resulted in a significantly faster launch process and overall loading and analysis process.

**Benefit:** Improved performance.

## Faster POF status check

Checking the POF status now no longer depends on the size of the file, making the check significantly faster. In addition, the POF status is now checked automatically when the file opens.

**Benefit:** Improved performance.

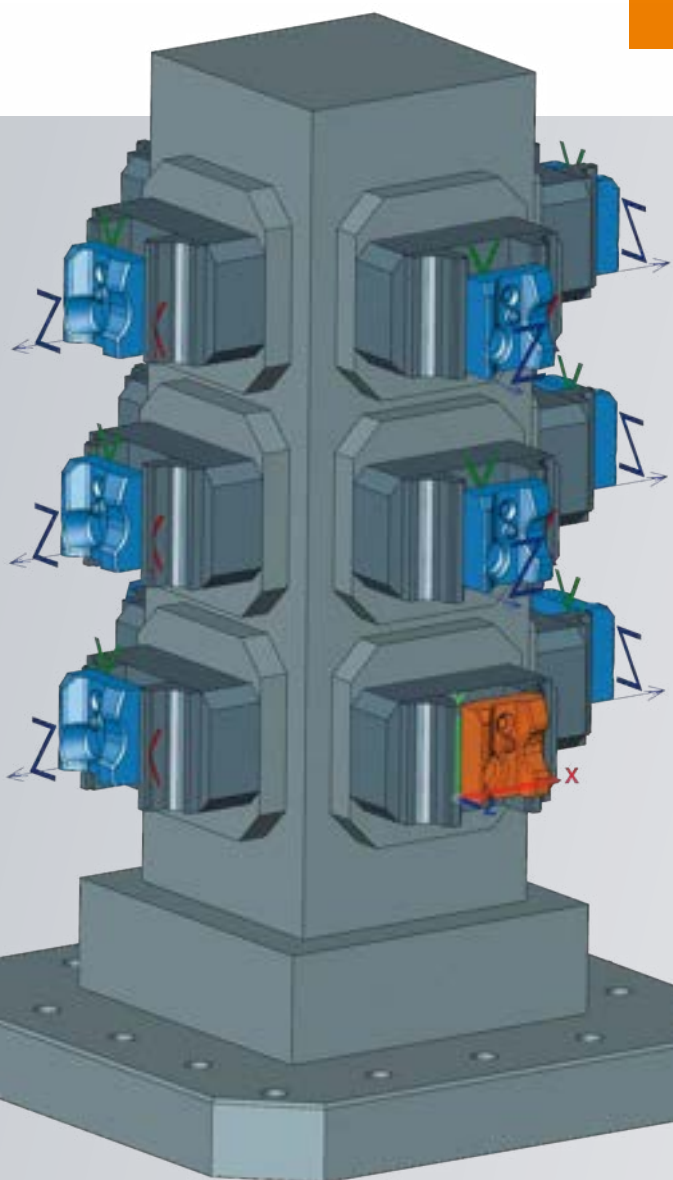
## CAM – FEATURE AND MACRO TECHNOLOGY

### HIGHLIGHT

## “General Transformation Pattern” feature

This feature uses a selected reference geometry and searches for the same reference in all other models. From this, it creates a general transformation pattern, including the associated frames. The feature can be used in many ways, for example if there are multiple components.

**Benefit:** Straightforward creation of general transformation patterns.

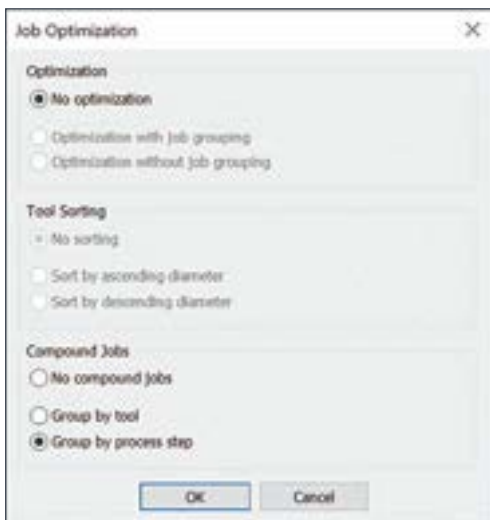




## Prioritization of macros

Users working with multiple macros for a feature can now prioritize the macros from 1 to 9. This allows them to specify which macro should be given preference.

**Benefit:** Easier assignment of the required macros.



## Improved job list optimization

Existing and new functions for optimizing the job list are now combined on a single interface. In addition to the familiar functions for optimizing macro jobs, an additional function for sorting by tool diameter in ascending and descending order has been added. The tool sequence specified in the macro is also taken into account. Compound jobs can now be created automatically in order to generate a clear structure for manually created jobs quickly. These are named according to the tool or strategy. Successive jobs using the same tool or the same strategy are combined into one compound job.

**Benefit:** Greater clarity, faster programming.

## Macro technology – Stock linking

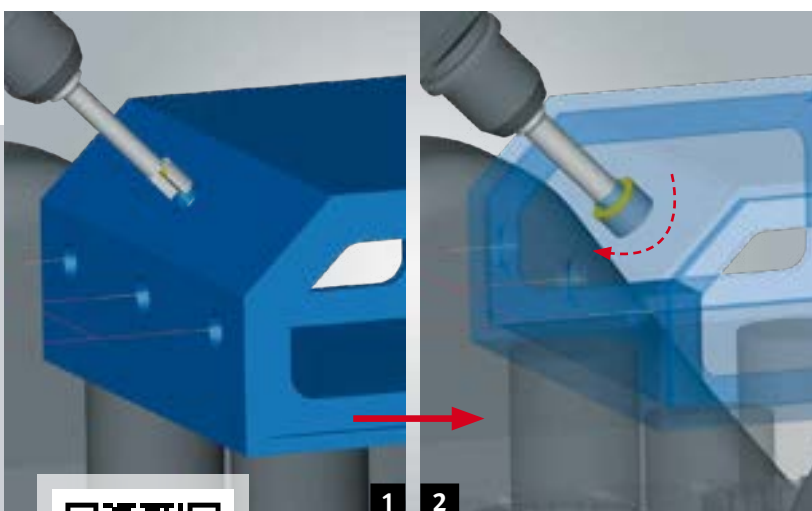
Jobs added to a macro later on can now also be linked to a stock reference. All jobs for calculating a resulting stock can be re-linked in the macro database.

**Benefit:** Improved stock management in macros.

**HIGHLIGHT****hyperMILL® AUTOMATION Center**

The *hyperMILL®* AUTOMATION Center offers several new features:

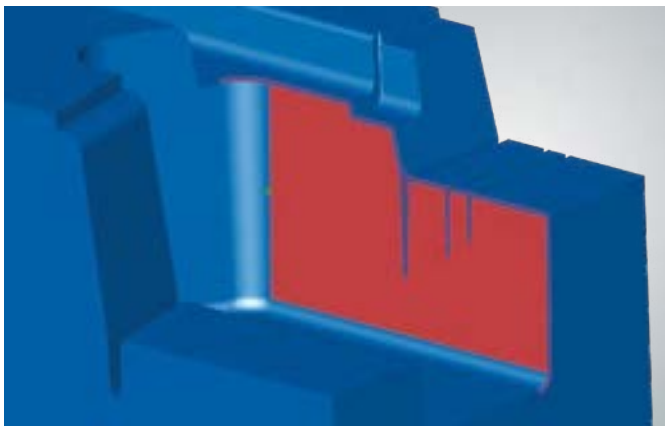
- **Recent scripts**  
Users can quickly select and apply recent scripts from a drop-down menu.
- **Script filter**  
A filter can now be used to narrow down existing scripts to make it quicker to find the required script.
- **Bookmarks**  
Components and functions can be bookmarked so that you always have quick access to them.
- **Convert components to subscript**  
Components can be easily converted to subscripts in the future to improve structuring.
- **Support for turning features**  
Turning features are now fully usable in the *hyperMILL®* AUTOMATION Center.
- **Job report**  
Job reports are fully usable.

**CAM – 2.5D STRATEGIES****HIGHLIGHT****2.5D Back Boring**

This new strategy enables back boring tasks to be programmed on machines with different kinematics conveniently and easily. Tool holders and inserts, as well as monobloc tools, are displayed one-to-one in the virtual machine and checked for collisions. This ensures the highest level of safety for this critical type of machining.

**Benefit:** Simple and reliable programming for back boring.



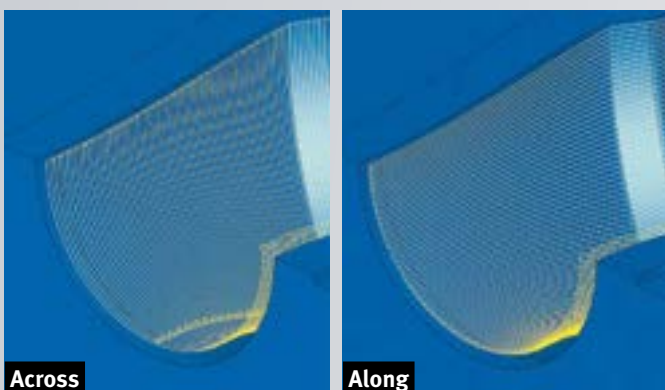


## Enhanced milling surface extension

An extended milling surface extension is available for the “3D Z-Level Shape Finishing” and “3D Profile Finishing” strategies. New options ensure high-quality and reliable surface extensions, even with complex geometries. Surface extensions are only created where they make sense from a process engineering point of view. This makes it exceptionally easy for users to reliably protect sharp edges and divide up machining areas without issue. This function guarantees high-quality surfaces in tool and mold making in particular when combined with the “Smooth overlap” option.

**Benefit:** Improved milling surface extension.

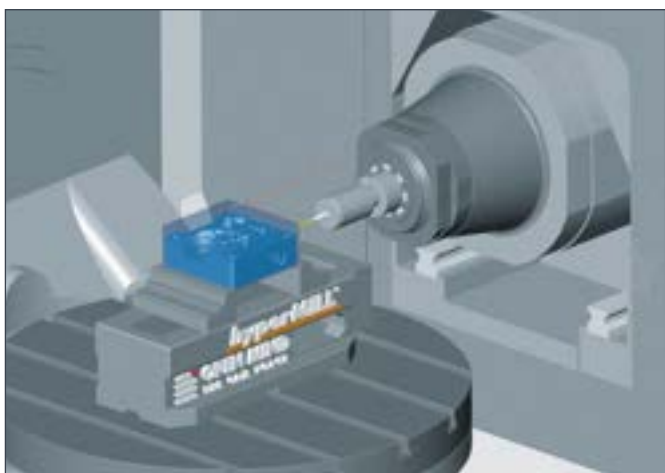
### HIGHLIGHT



## 5-axis Halfpipe Machining

This strategy makes programming high-quality toolpaths for half-pipes and tubes convenient. The user interface is designed to be easy to use and intuitive. The calculation mode of this strategy enables a wide range of applications and ensures the best possible quality of the output toolpaths. Sharp edges, for example, are accurately mapped, and surface quality and precision are thus ensured in these areas as well.

**Benefit:** Intuitive operation, high quality of tool paths, wide range of applications.



## Workpiece alignment along edge – “Z-” mode

This new option means workpieces can now also be aligned in the Z- direction. In particular, this makes the component easy to align if it cannot be aligned in the XY direction. The NC code is output via control cycles.\*

**Benefit:** Extended options for workpiece alignment.

\*Currently available for hyperMILL® VIRTUAL Machining with Heidenhain and Siemens control systems.



## hyperMILL® SHOP Viewer – BEST FIT function

Machine operators now have the option to add the “BEST FIT Shopfloor” function to the *hyperMILL*® SHOP Viewer. Using *hyperMILL*® BEST FIT allows them to virtually orient the part to the shopfloor independently of the *hyperMILL*® programmer and generate the adapted NC code for machining.

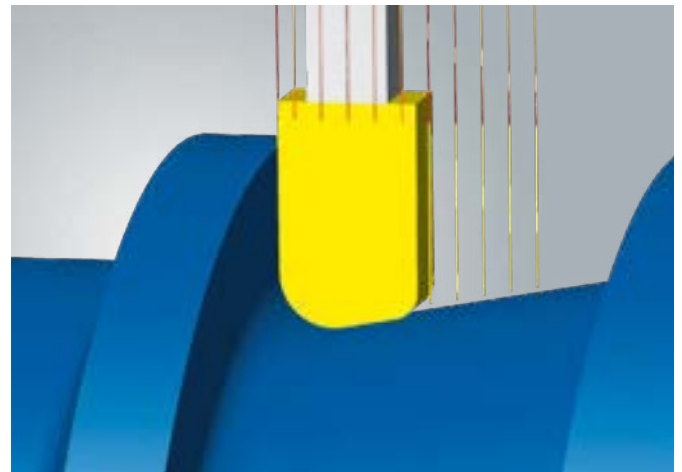
**Benefit:** Optimal workflow between CAM programmer and machine operator.



## “Smooth overlap” for turning

“Smooth overlap” is now also available for finishing paths in turning. The function ensures flawless transitions when multiple tools or orientations are required for machining. Approach and retract macros can be used as usual.

**Benefit:** Excellent surface quality in transition areas.



## Groove plunging with free tool geometry

Groove plunging with free tool geometry has been fundamentally improved. All tool geometries can now be used for any type of workpiece contour when roughing. In addition, the same setting options and approach and retract macros are available to the user as for groove plunging with standard tools.

**Benefit:** More flexible and simplified programming of free-form tools.

# Safely generate, optimize, and simulate NC code

hyperMILL® VIRTUAL Machining closes the gap between CAM system and real machine environment – providing an unprecedented level of process control and optimization. This is industry 4.0!

hyperMILL® VIRTUAL Machining consists of three modules.

In the **simulation solution**, the machine, including controller and PLC, is represented virtually and simulated based on the NC code – for maximum safety.

During the postprocessor run, the **Optimizer** automatically selects the best solution for collision-free orientation. All traverse movements between the individual machining steps are optimally linked with one another.

**CONNECTED Machining** enables bidirectional networking with the machine. Parameters are compared against the CAM programming. And also the machine can be controlled remotely.



Thanks to *hyperMILL® VIRTUAL Machining*, we can continue to increase our performance with full confidence. Today, we work more safely and efficiently than ever before.

Steven Donner, Managing Director Donner GmbH

Discover how Donner GmbH uses our *hyperMILL® VIRTUAL Machining* technology. Simply scan the QR codes!



Interview  
Simulation  
Technology



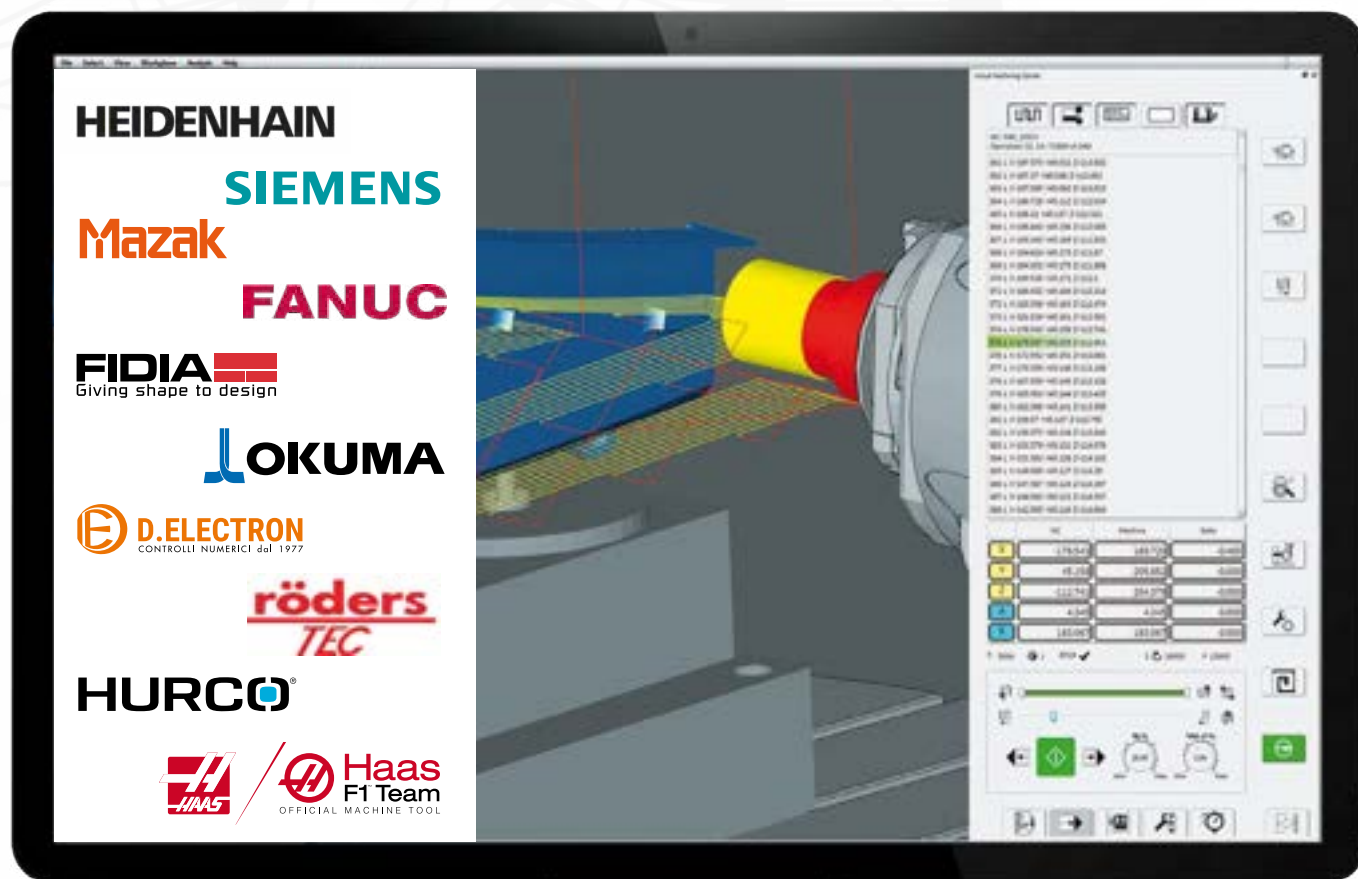
Interview  
NC Optimization



Find out more about  
*hyperMILL*® VIRTUAL Machining  
Machining in our product video!



**Broad control support:**  
Our *hyperMILL*® VIRTUAL Machining technology  
already supports a wide range of controls and  
is continuously being developed to include new  
controls and functions.





## Display toolpaths at the start of the simulation

To significantly improve performance when starting *hyperMILL*® VIRTUAL Machining or *hyperMILL*® SIMULATION Center, the toolpaths will no longer be displayed as default. However, this can be changed and saved using the “Display toolpaths at the start of the simulation” option.

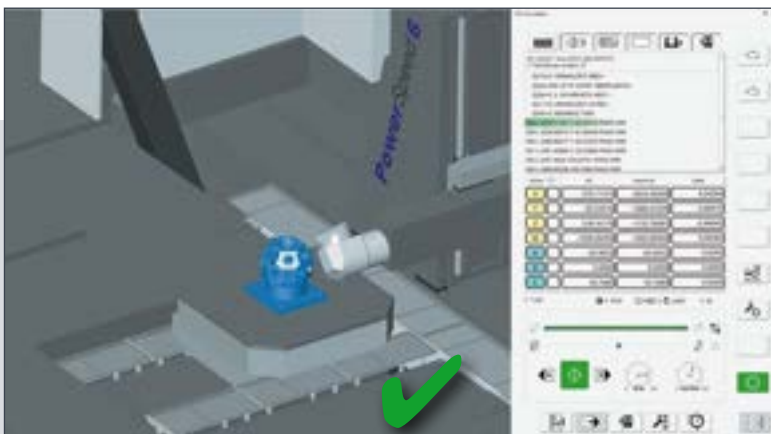
**Benefit:** Improved performance.

## Save collision settings

The settings for the collision check can now be saved as default values. They are stored across machines and simulations for the *hyperMILL*® VIRTUAL Machining Center and the *hyperMILL*® SIMULATION Center. However, it is still possible to temporarily change the settings for the collision check. The settings can also be applied as a company-wide default.

**Benefit:** Improved user-friendliness.

### HIGHLIGHT



## NC Optimizer – Optimization of additional axes

Manually positioning fixed rotary axes and parallel axes is very time consuming. In most cases, the user can only determine a suitable and collision-free solution for the machine kinematics by performing several tests.

Fixed rotary axes and parallel axes can now be optimized with the NC Optimizer, as it automatically finds a kinematically correct and collision-free solution. This also applies to machines with Hirth gearing. As a result, users will no longer lose time by manually interacting with the axes.

**Benefit:** Simplified programming.



### HIGHLIGHT

## Support for mill-turn machines with Siemens controller

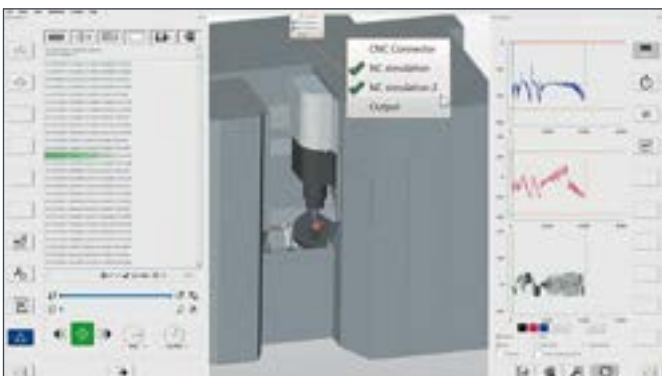
*hyperMILL*® VIRTUAL Machining now supports mill-turn machines with A/C kinematics. This means that both technologies are perfectly combined in one operating environment, and the user benefits from maximum safety and process control.

**Benefit:** Increased safety, process control, and efficiency.

## Job list-related session

Sessions in the *hyperMILL*® VIRTUAL Machining Center and the SIMULATION Center now refer to a job list. If you work with several job lists, a separate simulation session opens for each job list. The update function of a session that has already been opened is now also assigned to the respective job list. The separate simulation sessions make it possible to work on several job lists simultaneously.

**Benefit:** Improved user-friendliness.



## User interface with two-window mode

Simulations can now be run separately in a second window to improve the use of the simulation and analysis functions. All other elements, such as axis diagrams, can be displayed at the same time. This makes it possible to control the simulation and analyze the axis movements at the same time. This display option can also be used with two monitors.

**Benefit:** Improved user-friendliness.



**HIGHLIGHT**

### Part selection when importing assemblies

Users can now import individual components from assemblies. Filters make it easy to select the required parts. This reduces loading times, especially for large assemblies. Parts that are not required no longer need to be deleted subsequently.

Available for the following formats:

- CATIA V5
- Creo
- Siemens NX
- SOLIDWORKS

**Benefit:** Improved data import.



### “Boolean difference” extension

Boolean operations allow the user to decide which original solid (A or B) to keep. They can also select both.

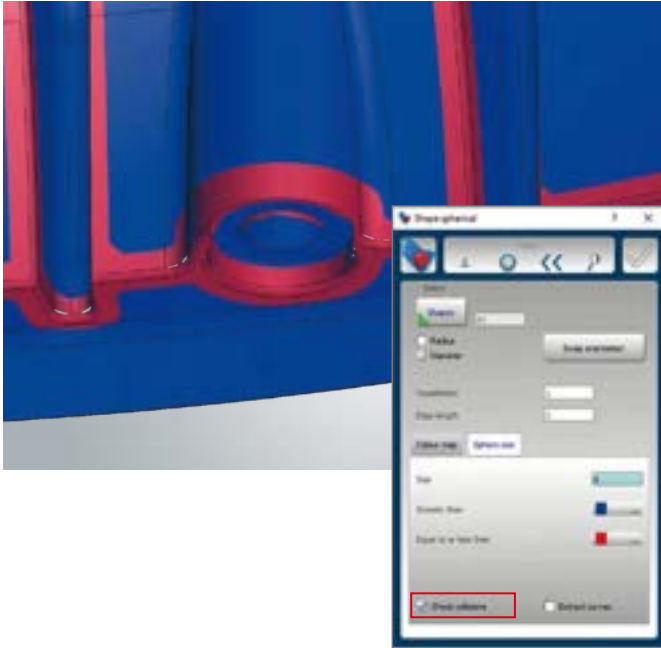
**Benefit:** Improved user-friendliness.



### Changes to the “Holes” feature

The “Holes” feature now offers a simplified basic function in addition to the extended Holes function. This makes it possible to create simple holes in just a few clicks. A library is now available for both options where frequently used hole types can be stored for reuse at a later time. Both Holes functions are also available parametrically.

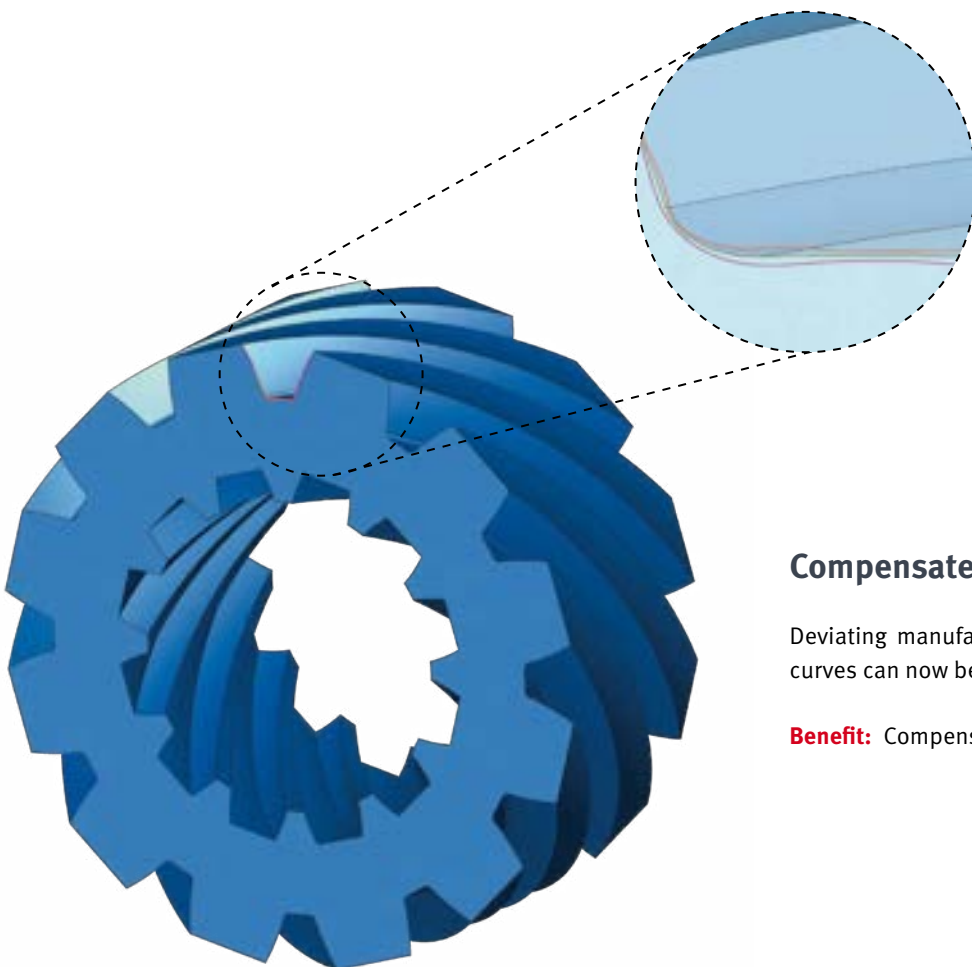
**Benefit:** Quickly create and reuse simple holes.



## Collision check for “Shape spherical” analysis

The new collision check in the “Shape spherical” analysis function helps users to check the tool diameter for machining. In addition, corners can be detected thanks to the collision check. This can be extremely useful, especially when creating electrodes.

**Benefit:** Check parts for production suitability quickly and easily.

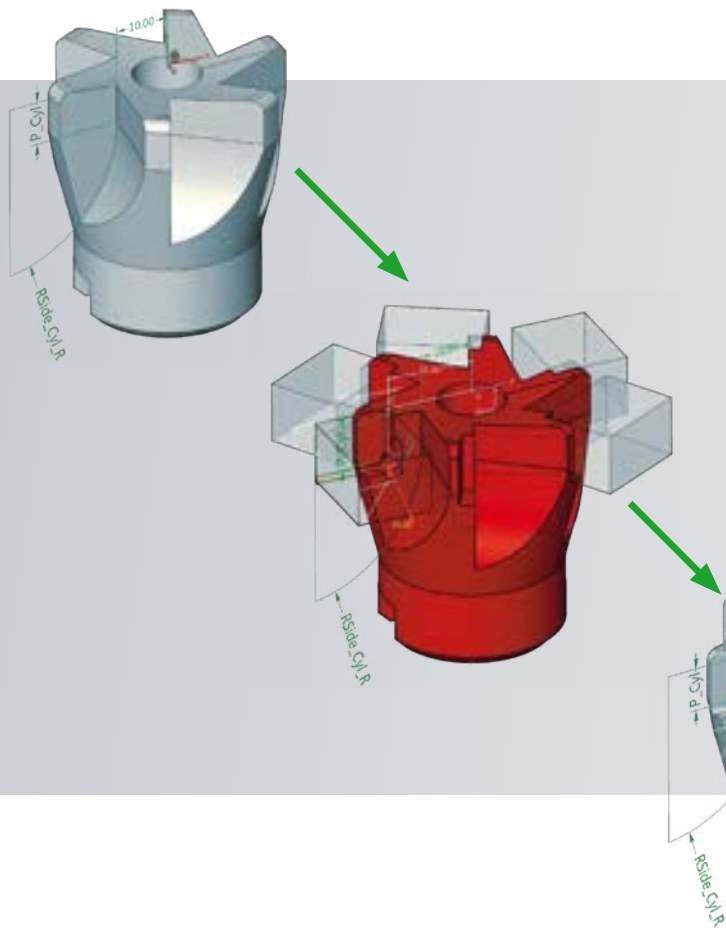


## Compensate curves

Deviating manufacturing tolerances that occur when scanning curves can now be easily compensated for by a reference curve.

**Benefit:** Compensate for deviating manufacturing tolerances.





**HIGHLIGHT**

**Parametric Boolean operations**

This extension allows the user to perform Boolean operations while maintaining the parametric from the solid. For example, Boolean operations can be used easily in patterns that are fully parameterized.

**Benefit:** Easy modification of parametric parts.

**hyperCAD®-S ELECTRODE**



**Custom orbit variations**

Orbit variations of the EDM machine can now be created in a custom list from which users conveniently select the required orbit in a drop-down menu. This selected orbit is used by the EDM converter and for program creation.

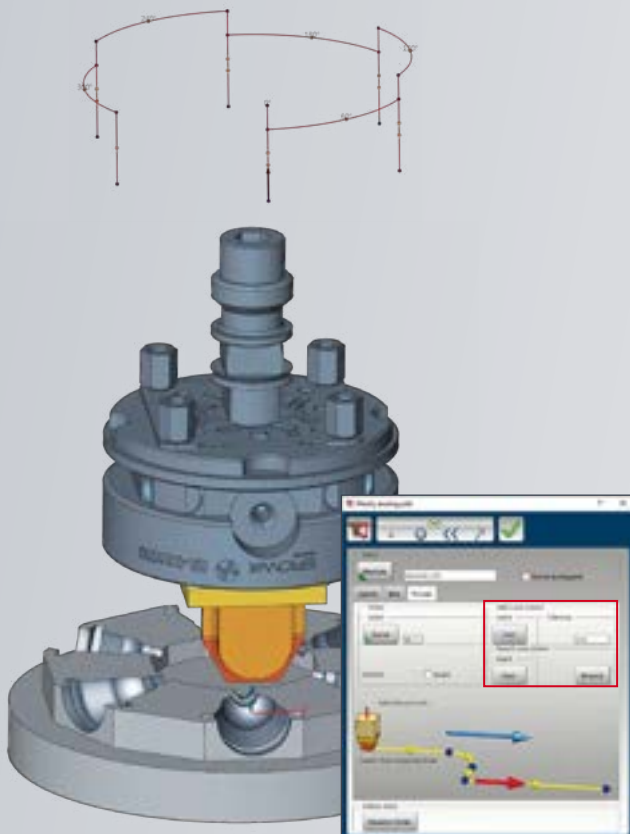
**Benefit:** Simple transfer of orbits to the EDM machine.



## Custom material list

Users can now create the materials for electrodes and workpieces in a specially defined list and then conveniently select them from a drop-down menu. This material selection is used by the EDM converter and for program creation.

**Benefit:** Improved user-friendliness.



## HIGHLIGHT

### Modify erosion path with C-axis rotation

A point selection and angle specification can now be used to apply a C-axis rotation to lines and arcs. As a result, the EDM process can be fully controlled along contours and simulated in the *hyperMILL*® SIMULATION Center.

**Benefit:** Safe programming of complex electrode contours.

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