



hyperMILL[®]

2019.1

What's New?



OPEN MIND
THE CAM FORCE

© The helmet was programmed and produced by JVA SHIN.



What's new in 2019.1?

hyperMILL® 2019.1 stands for even more performance and better milling results! A highlight is the '5-Axis Prismatic Fillet Finishing', an innovative method to make finishing with barrel cutters efficient. 'High Performance Turning' ensures significant time savings and tool- and machine-friendly roughing operations. These additions complement the *hyperMILL*® MAXX Machining performance package.

Furthermore, the 'Surface precision mode' means better surfaces can be achieved in '3D Profile Finishing' than ever before.

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Review system compatibility: To ensure optimal performance and stability, we recommend regularly running our diagnostic program, Systemchecktool.exe. **Note:** Windows 10 may reset the graphics driver or its settings when carrying out updates.

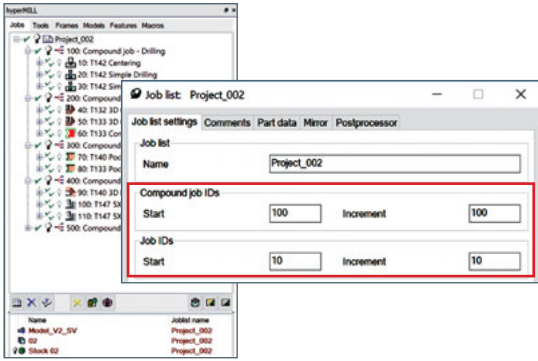
System requirements: Windows® 7 (64 Bit), Windows® 8.1 Pro and Windows® 10 | **CAD integrations:** *hyperCAD*®-S, Autodesk® Inventor®, SOLIDWORKS, ThinkDesign, *hyperCAD*® | **Software languages:** de, en, es, fr, it, nl, cs, pl, ru, sl, pt-br, ja, ko, zh-cn, zh-tw

Highlight

Changing the job ID

An improvement in job management now means a job ID can be changed without having to subsequently recalculate the machining job in question. The consecutive numbering of the compound and machining jobs is controlled via a start value and an increment value.

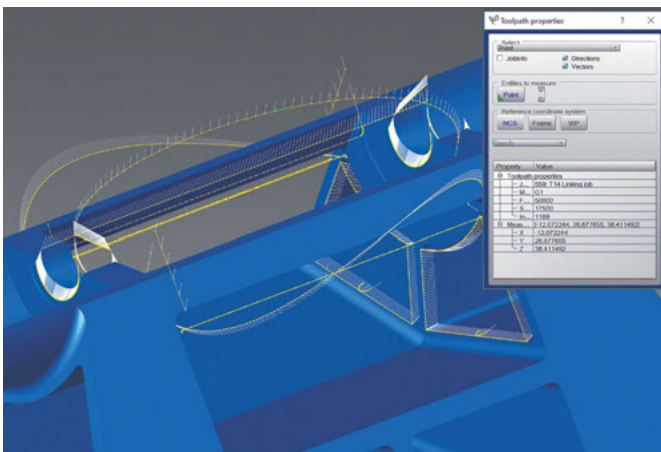
Benefit: Transparent structuring, reduced calculation times.



Toolpath analysis

Toolpath points and toolpath vectors can now be displayed in *hyperCAD*[®]-S. Furthermore, the user can see the start and end points, as well as the machining direction and the related job information.

Benefit: Fast check of toolpaths.

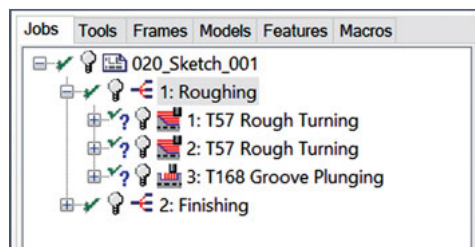
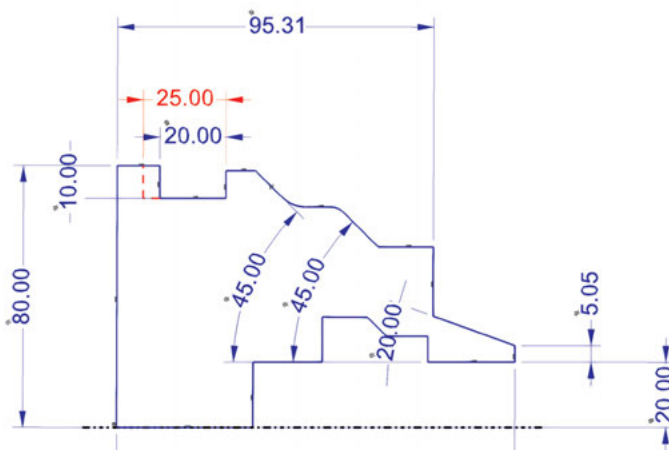


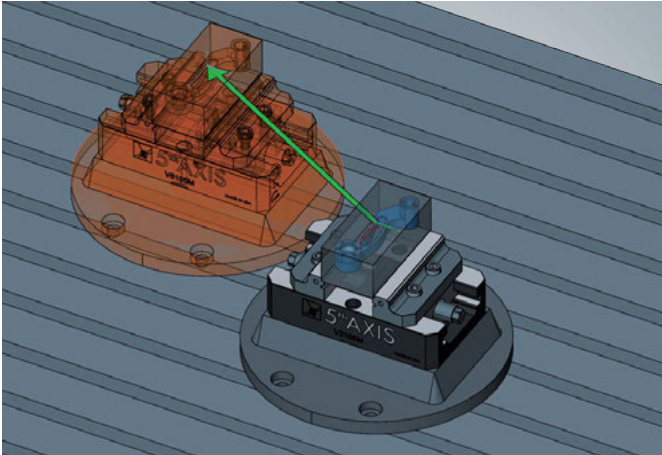
Support for V-sketches

The *hyperCAD*[®]-S functionality V-sketch is now supported in all *hyperMILL*[®] strategies in which contour selection is possible.

If a V-sketch is changed, the individual contours are updated based on their dependency. *hyperMILL*[®] retains this associatively, contours are not reselected.

Benefit: Easy to change machining contours.

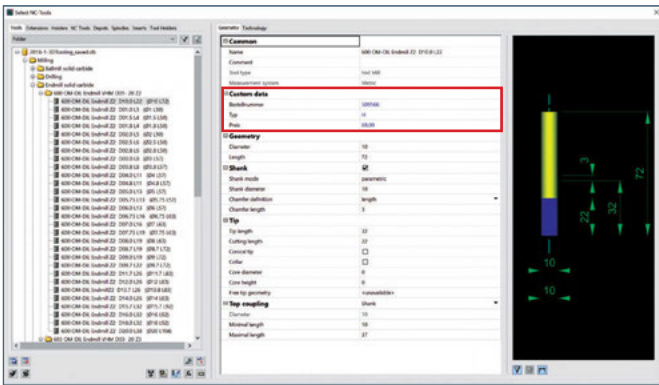




Updating the clamping position

The clamping position can now be moved after programming without having to recalculate every machining job.

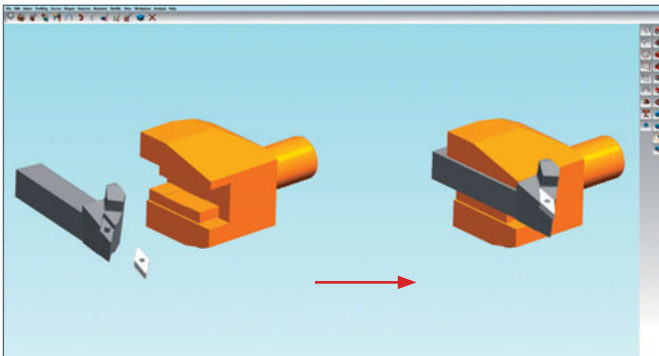
Benefit: Reduced calculation times.



Additional information in the tool database

Customer-specific information can be added to tools in the tool database. The data fields for the tools can be defined in order to store, for example, order numbers, prices or even information on tool life. This ensures improved tool management. This information is visible to every programmer.

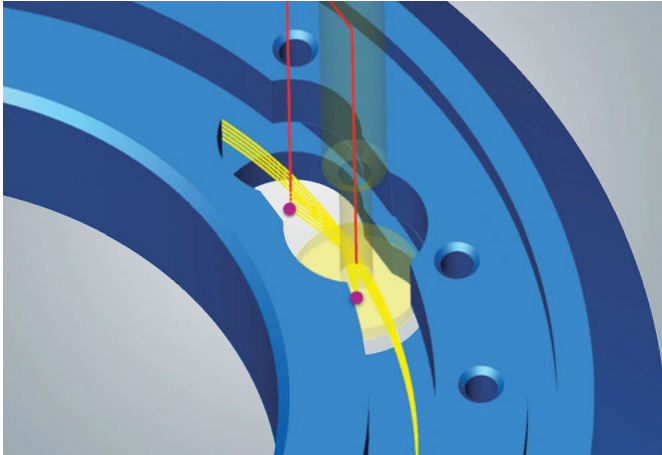
Benefit: Improved tool management.



hyperMILL® TOOL Builder

The new 'Assembly Mode' allows tools to be assembled easily and quickly. Direct modelling and all selection commands can now also be used in hyperMILL® TOOL Builder.

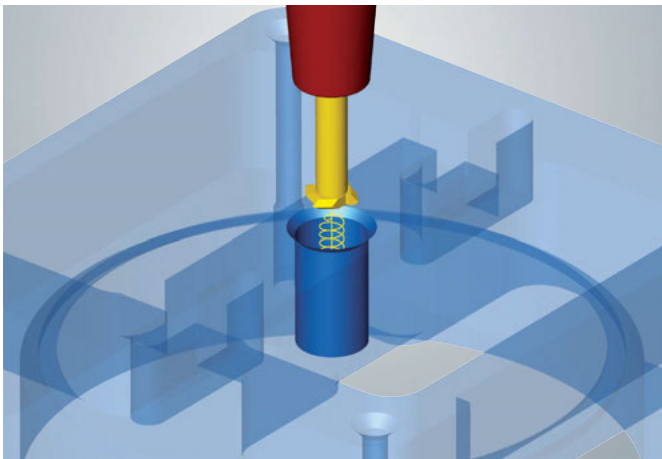
Benefit: Simplified tool definition.



Plunge and retract point

It is now possible to define a plunge and retract point in the '2D T-Slot Milling on 3D Model' and '2D Contour Milling on 3D Model' strategies. This allows the user to control the machining more precisely.

Benefit: Improved programming.



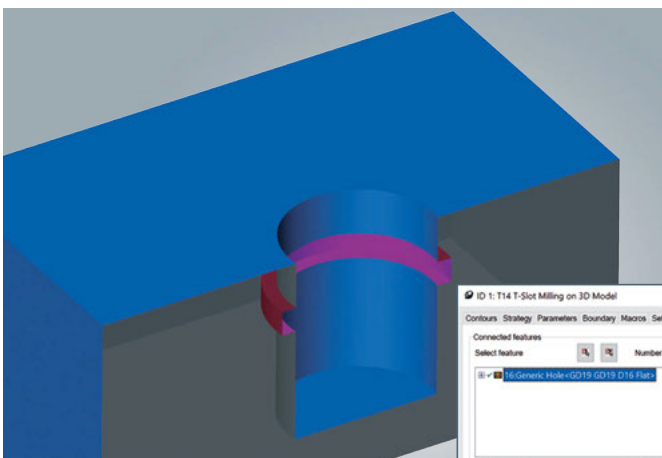
Highlight

Thread Milling

The new strategy for Thread Milling makes programming simpler thanks to a range of improvements:

- New user-friendly interface
- Improved roughing mode with different roughing options
- Edge control
- Simple control of left- and right-hand threads
- Automatic approach and retract macros

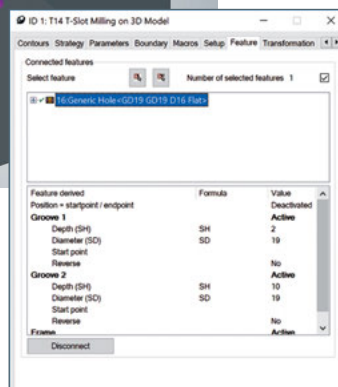
Benefit: Simpler programming.



2D T-Slot Milling on 3D Model

Slots detected in a generic hole can now be selected in the Feature-Job-Connector and therefore programmed quickly.

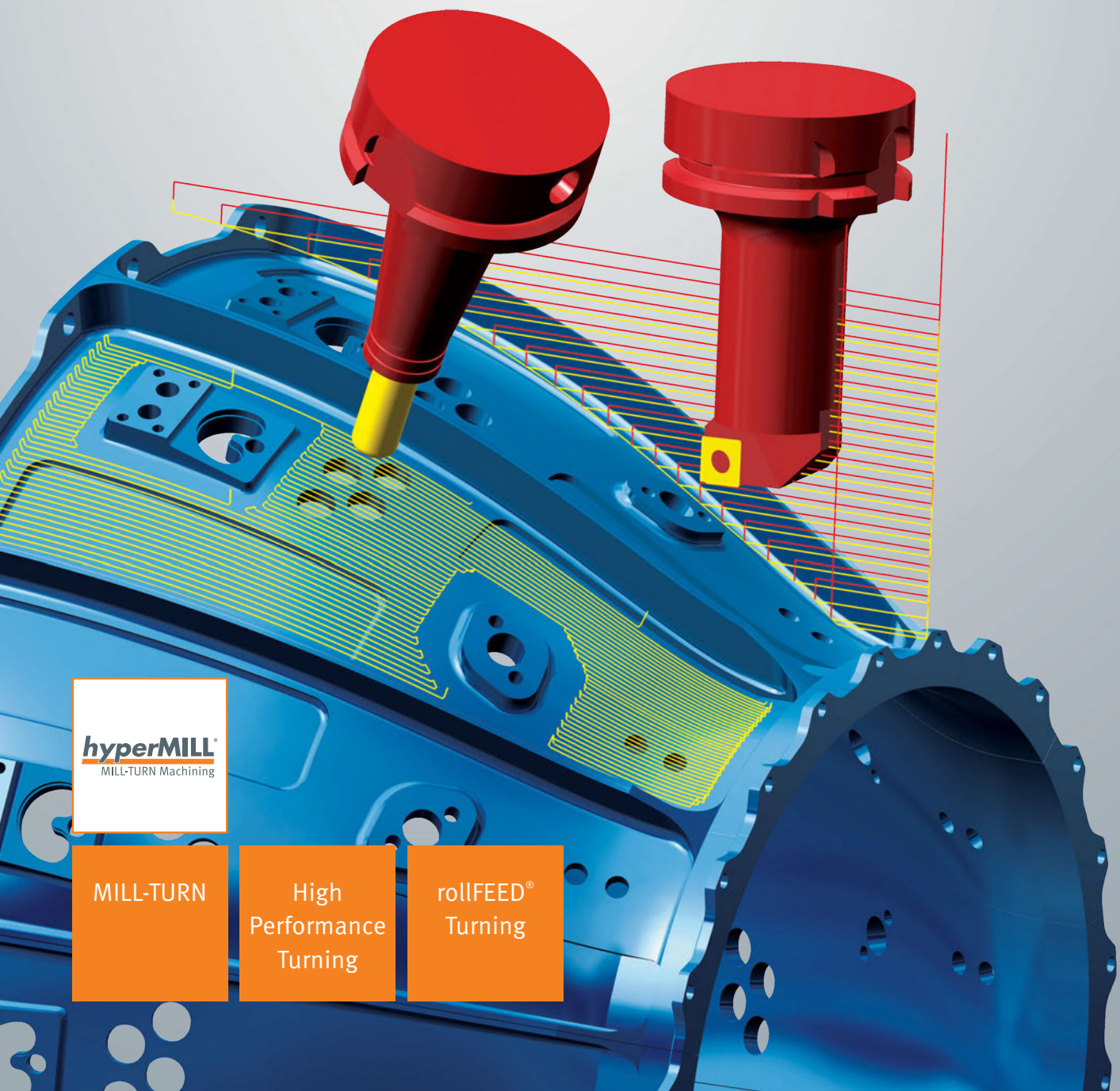
Benefit: Simpler programming.



For Efficient complete Machining: *hyperMILL*® MILL-TURN Machining

Milling and turning in one interface

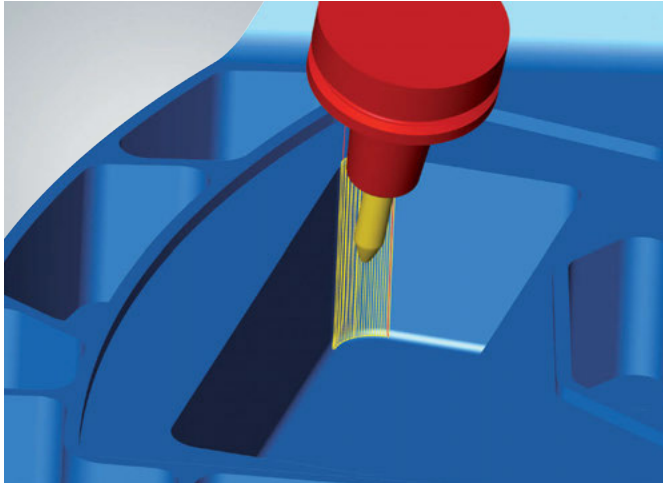
hyperMILL® MILL-TURN Machining is the mill-turn module of the powerful *hyperMILL*® CAM software. It is completely integrated in the base application with only one user interface for all milling and turning strategies. This provides highly convenient access to the advantages of a modern mill-turn machine for all-in-one machining in one setup. All milling and turning strategies can be combined as desired, resulting in a fully flexible production process. Modern simulations and reliable collision checking ensure safe machining.



MILL-TURN

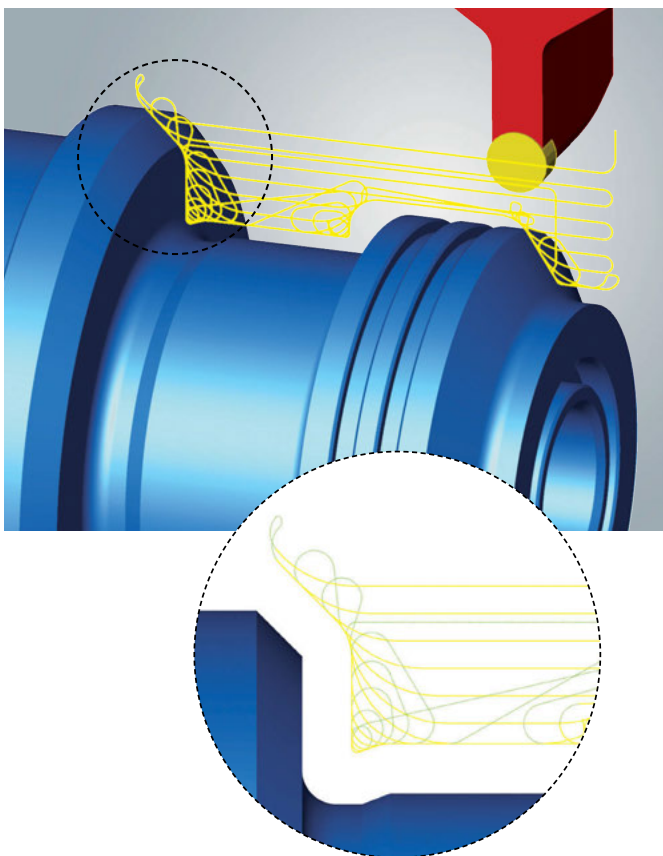
High
Performance
Turning

rollFEED®
Turning

**Highlight****5-Axis Prismatic Fillet Finishing**

The new strategy enables barrel cutters to be used highly efficiently in the finishing of prismatic fillets. An extremely high feedrate is achieved with plunging and pulling motions. The conical barrel cutter is used according to the principle of high feedrate cutters in this strategy. The calculation of the tilt and the contact point of the barrel cutter are fully automated. This allows, for example, high-quality transitions between different wall areas to be formed. Ball and bullnose end mills can also be used efficiently with this strategy.

Benefit: Easy to use, faster machining.

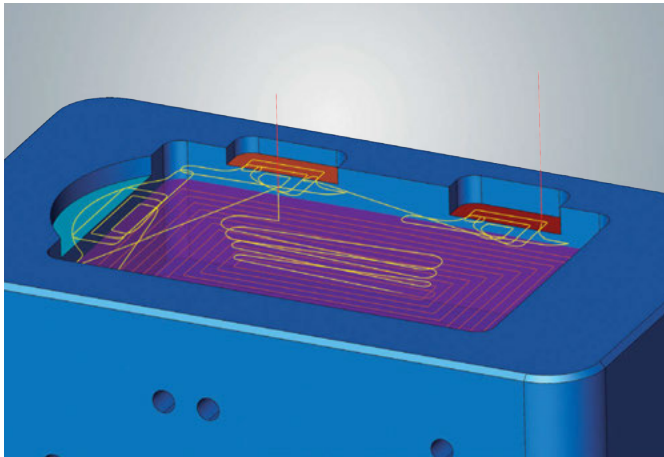
**Highlight****High Performance Turning**

This strategy creates high-performance toolpaths* for roughing with round inserts. Optimized connecting paths and fluid machine movements ensure high-performance machining. This means significantly higher machining technology values can be driven compared to conventional roughing methods. The special plunge behavior of the insert in the material increases process reliability and prolongs the life of the tool and the machine.

Benefit: Increased process reliability, reduced machining time, longer tool life.

*based on proven HPC technology from VoluTurn by Celeritive

**Trochoidal
turning**



Plane level detection

3D Optimized Roughing

New functions in this strategy make roughing operations even more efficient:

- The ‘Plane level detection/Complete’ function ensures efficient machining thanks to an improved cut division. If plane levels are detected, clearing movements are only carried out on the plane surface and not on the entire plane section.
- Thin stock model areas are machined quickly and in a tool-friendly way thanks to a new method in ‘Adaptive pocket’ mode. A new approach movement also ensures optimal cutting conditions when entering the material.

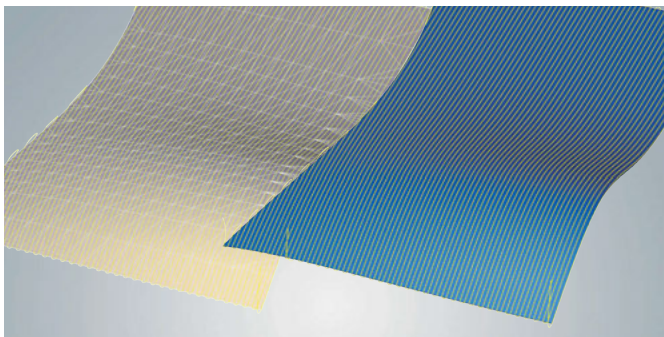
Benefit: Efficient and tool-friendly machining.

Highlight

3D Profile Finishing

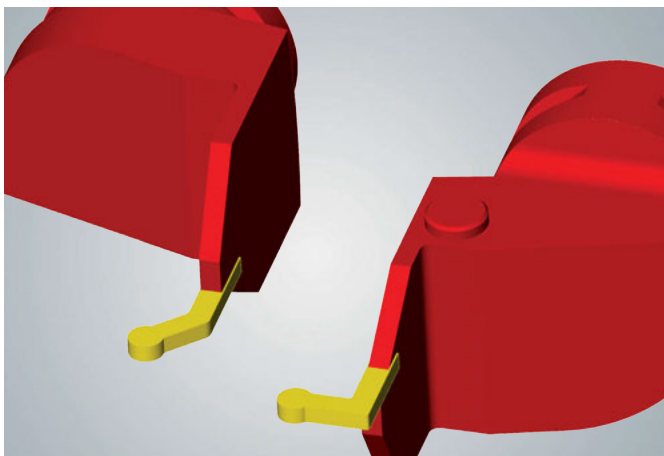
The ‘Surface precision mode’ option is available to further improve surface quality during Profile Finishing. Toolpaths are calculated using actual component surfaces and not a faceted calculation model. This allows ultra-smooth surfaces to be produced.

Benefit: Improved surface quality, less rework machining.



Faceted calculation model

Surface model



New tool type: Round form inserts

Round form inserts with angular support are now supported in *hyperMILL*® MILL-TURN Machining. Difficult-to-reach contours can be machined safely with these special, fully collision-checked tools.

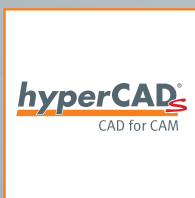
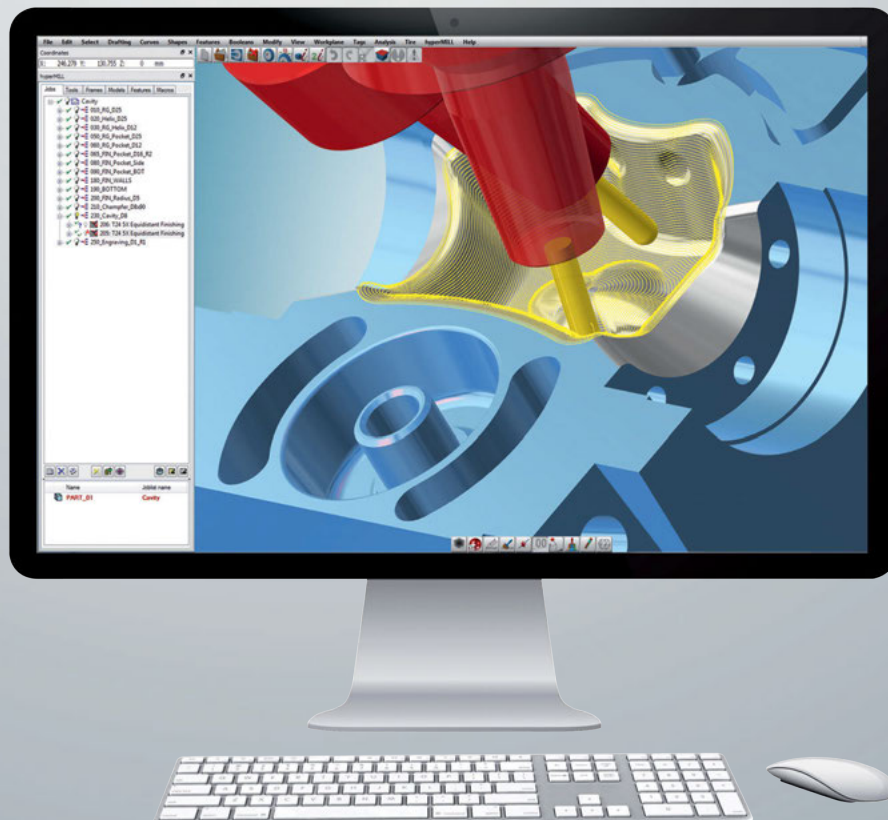
Benefit: Difficult-to-reach contours can be machined.

CAD for CAM

In a class of its own among CAD systems

Only a high-end CAM developer can do CAD for CAM. With this in mind, OPEN MIND Technologies AG – known as an innovative pioneer – developed a new CAD system from scratch that is perfectly matched to *hyperMILL*®. The system has its own 3D CAD kernel made by OPEN MIND. The result is a unique CAD system for CAM programmers that is very easy to learn and that vastly accelerates NC programming processes.

hyperCAD®-S fully exploits the performance offered by contemporary hardware systems to create digital manufacturing data. The advanced and extremely powerful 64-bit system is the perfect solution for mastering many of the daily challenges that arise when working with meshes, faces and solids to create precise components and tools. Large volumes of imported data can be prepared for subsequent NC programming easily, quickly, safely and completely independently from the original CAD system. *hyperCAD*®-S is pure 'CAD for CAM'.



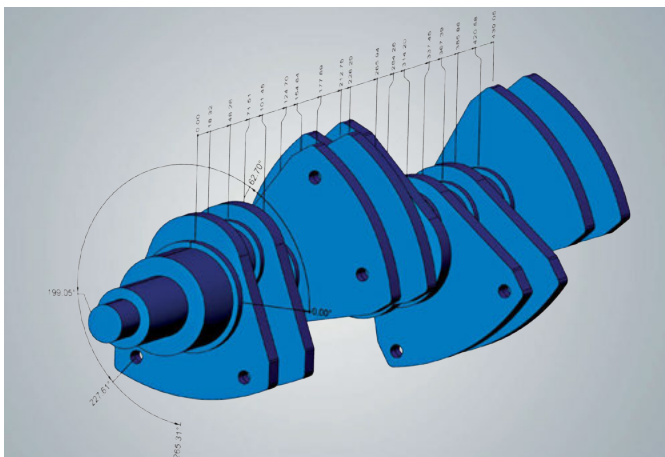
Interfaces

Geometric
EngineSolids &
Mesh

Deformation

Electrode

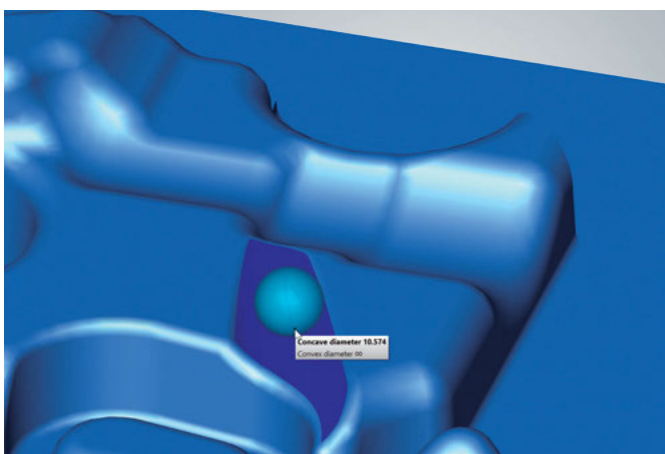
Viewer



Ordinate dimensioning

Ordinate dimensions are easy to create with the new dimensioning. Here, all dimensions are related to a base point. This means that printouts and reports are even clearer and more detailed for the user.

Benefit: Simplified dimensioning.



Spherical face analysis

The 'Spherical face analysis' function allows curvature radii on faces to be checked quickly, for example, in order to calculate the largest possible usable cutter radius.

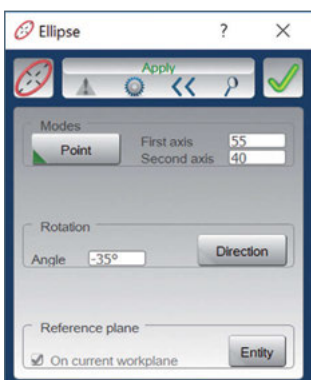
Benefit: More efficient programming through CAD for CAM.

Highlight

Polyline management

It is now possible to machine polylines in hyperCAD®-S, for example, trim, join, orient or select. This means polylines are machined in the same way as all other entities.

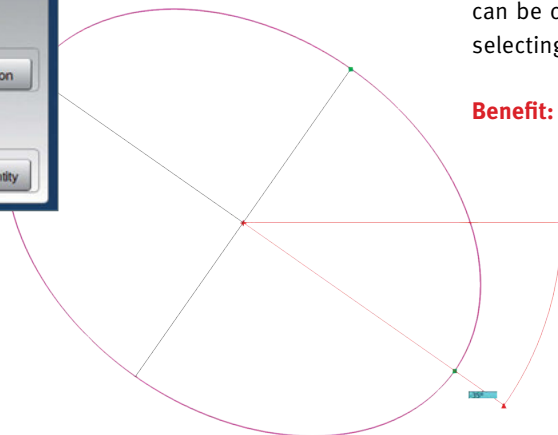
Benefit: More user-friendly.

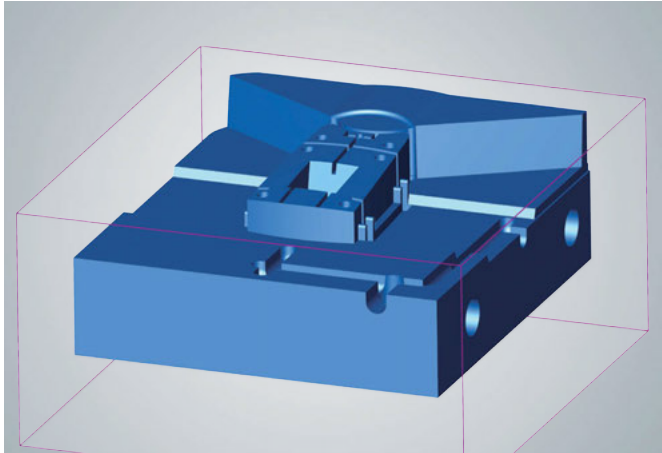


Ellipse

Ellipses can be created quickly via a simple definition. The ellipse can be changed again at any time, meaning it is well-suited for selecting boundaries in hyperMILL®.

Benefit: More user-friendly.



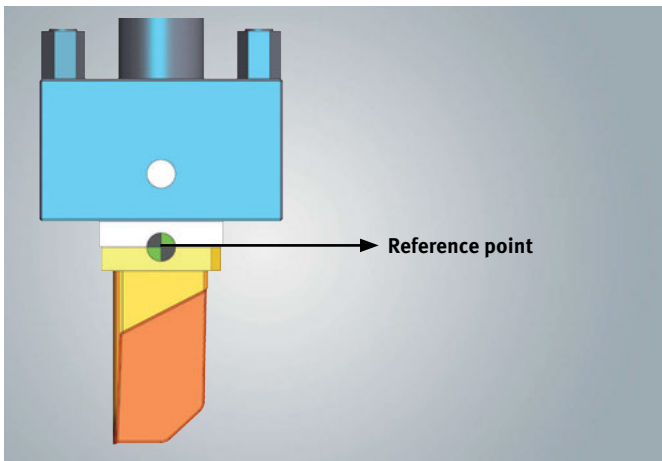


Creating a bounding box

The dimensions of the bounding box can be changed by the user. A new option can also adjust the position and size of the shape to the component to optimize volume and save material. A cylinder can also be created for turning parts.

Benefit: More user-friendly.

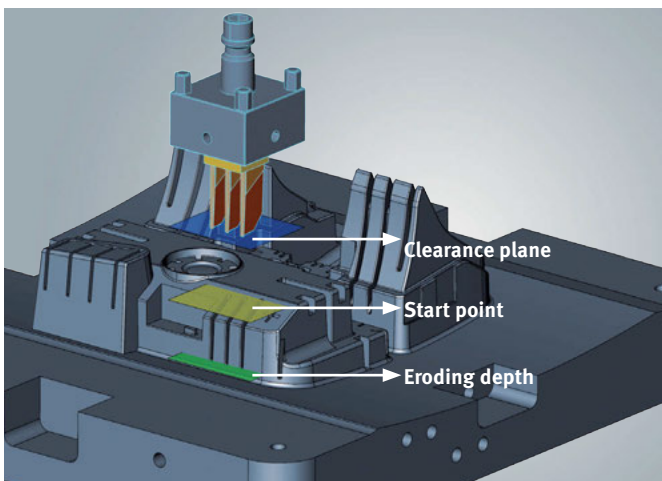
hyperCAD®-S Electrode



Reference point: reduction

A reference point can be defined at the reduction in the electrode options. This means an additional entry position for the electrode is available to the user.

Benefit: Advanced electrode definition.



Clearance distance in the reference system

A clearance plane can be defined in the electrode options. This is issued in the report and ensures a safe fast travel movement up to this point. Machining can be safely controlled via a start point in complex eroding tasks.

Benefit: Improved electrode positioning.

- Headquarters** OPEN MIND Technologies AG
Argelsrieder Feld 5 • 82234 Wessling • Germany
Phone: +49 8153 933-500
E-mail: Info.Europe@openmind-tech.com
Support.Europe@openmind-tech.com
- UK** OPEN MIND Technologies UK Ltd.
Units 1 and 2 • Bicester Business Park
Telford Road • Bicester • Oxfordshire OX26 4LN • UK
Phone: +44 1869 290003
E-mail: Info.UK@openmind-tech.com
- USA** OPEN MIND Technologies USA, Inc.
1492 Highland Avenue, Unit 3 • Needham MA 02492 • USA
Phone: +1 888 516-1232
E-mail: Info.Americas@openmind-tech.com
- Brazil** OPEN MIND Tecnologia Brasil LTDA
Av. Andromeda, 885 SL2021
06473-000 • Alphaville Empresarial
Barueri • Sao Paulo • Brasil
Phone: +55 11 2424 8580
E-mail: Info.Brazil@openmind-tech.com
- Asia Pacific** OPEN MIND Technologies Asia Pacific Pte. Ltd.
33 Ubi Avenue 3 #06-32 • Vertex (Tower B)
Singapore 408868 • Singapore
Phone: +65 6742 95-56
E-mail: Info.Asia@openmind-tech.com
- China** OPEN MIND Technologies China Co. Ltd.
Suite 1608 • Zhong Rong International Plaza
No. 1088 South Pudong Road
Shanghai 200120 • China
Phone: +86 21 588765-72
E-mail: Info.China@openmind-tech.com
- India** OPEN MIND CAD/CAM Technologies India Pvt. Ltd.
#369/4, 1st Floor • 2nd Cross • 1st 'B' Main Road
7th Block, Jayanagar (W) Bangalore – 560070
Karnataka • India
Phone: +91 80 2676 6999
E-mail: Info.India@openmind-tech.com
- Japan** OPEN MIND Technologies Japan K.K.
Misumi Bldg. 3F • 1-17-18, Kichijojihigashicho
Musashino-shi • Tokyo 180-0002 • Japan
Phone: +81 422 23-5305
E-mail: info.jp@openmind-tech.co.jp
- Taiwan** OPEN MIND Technologies Taiwan Inc.
3F., No.153, Huanbei Rd., Zhongli Dist. • Taoyuan City 32055
Taiwan (R.O.C.)
Phone: +886 3 46131-25
E-mail: Info.Taiwan@openmind-tech.com

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We push machining to the limit

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