hyperMILL®

2018.2

What's New?

OPEN MIND
THE CAM FORCE

What's New in 2018.2?

Quicker programming, more efficient machining – *hyper*MILL® 2018.2 has a lot to offer! Users will enjoy a large number of innovations and optimizations. Practical CAD-for-CAM functions such as V-sketch and automatic face extension for 3D Z-level Shape Finishing reduce the amount of programming required and ensure improved milling results. There are also two new strategies available for measurement. Two options have also been added to the *hyper*CAD®-S Electrode module.

Contents

Drill Hole and Pocket Recognition

In order to provide a clearer representation, cross holes are now sorted by diameter or length.

During pocket recognition, the start point for the greatest possible diameter is automatically calculated. This allows a large volume of material to be obtained during starting hole drilling.

Benefit: Efficient pocket machining.

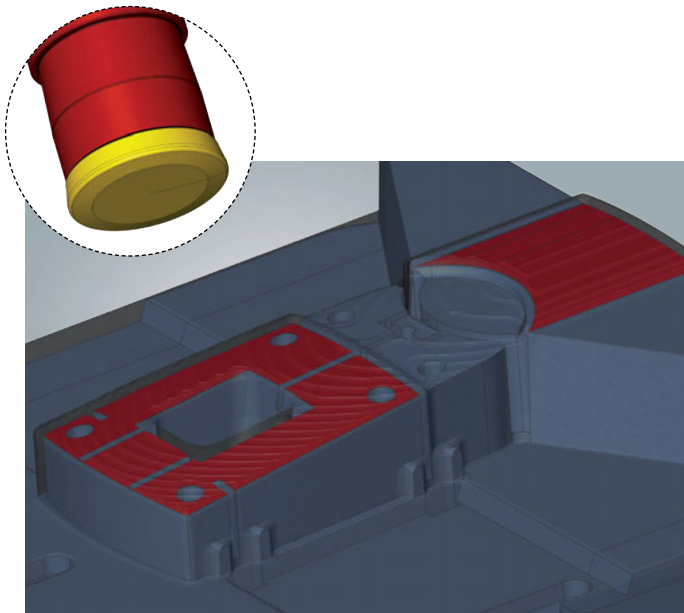## Macro Database

New functions in the macro database simplify tool management for the macros.
- Changes in tools can easily be added to the macro database.
- A filter option makes it possible to quickly find tools in the database.
- You can easily replace tools in the macro database using the shortcut menu.

Benefit: Improved tool management in the macro database.

3D Optimized Roughing

An enhancement ensures that multiple allowances are now taken into account when free tool geometries are used.

Multiple Allowances
Different allowances can be defined for machining within a milling area. The strategy recognizes the multiple allowances and adapts the machining accordingly.

Free Tool Geometry
High feedrate cutters have a special cutting geometry and are very easy to define via tool management. *hyper*MILL® uses the free geometries of the tool cutting edge for calculation, simulation, and collision checking.

Benefit: Easy to program and high level of flexibility for defining special tools.
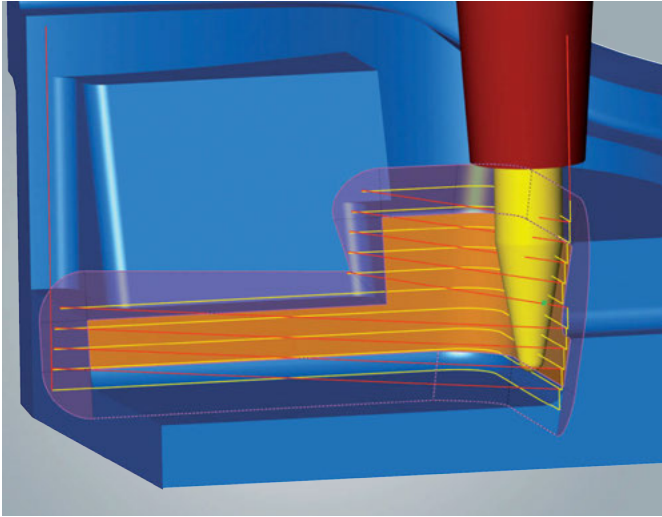
3D Z-level Shape Finishing

Two new functions are available for 3D Z-level Shape Finishing:

Automatic Face Extension

During programming, the 'Automatic face extension'* function can be used to extend the selected milling surfaces. This CAD-for-CAM function eliminates the need to modify the milling faces in the CAD system beforehand.
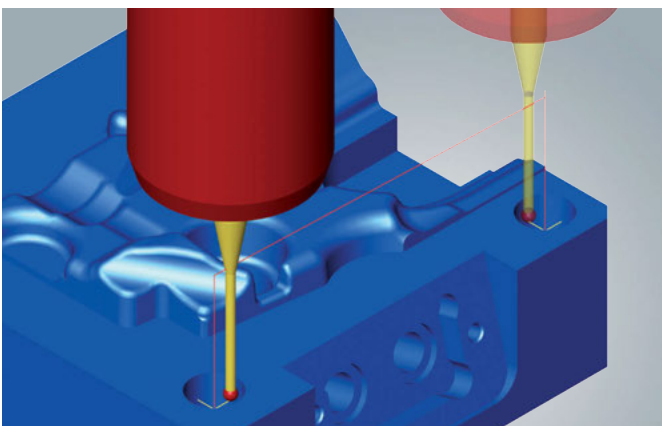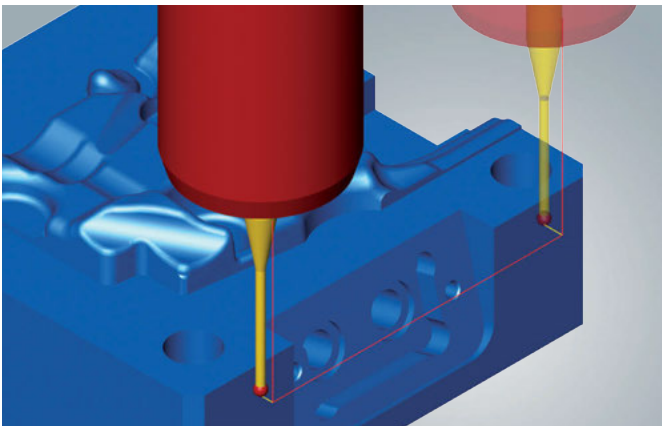
New Tool Types

Barrel cutters can now be used for 3D Z-level Shape Finishing, and are launched in the strategy as a standard tool. General, tangential, and conical barrel cutters are supported.

Benefit: Reduced programming time, improved milling results.

*Only available in *hyper*CAD®-S.

Measurement

Two new measurement strategies allow workpiece angular misalignment to be recorded and compensated for. *hyper*MILL® calculates the required compensation values and communicates these to the machine's control cycle. Within the control cycle, the determined workpiece misalignment is compensated for using the basic rotation function.

Workpiece Alignment Using an Edge

The angular misalignment using two measuring points on a line.

Workpiece Alignment Using Two Holes

The center points of two holes are measured and recorded. *hyper*MILL® automatically calculates the angle between the machine's main axis and the straight lines joining the two hole center points and adjusts the workpiece origin.

Note: An adjusted postprocessor is required for these measurement strategies.

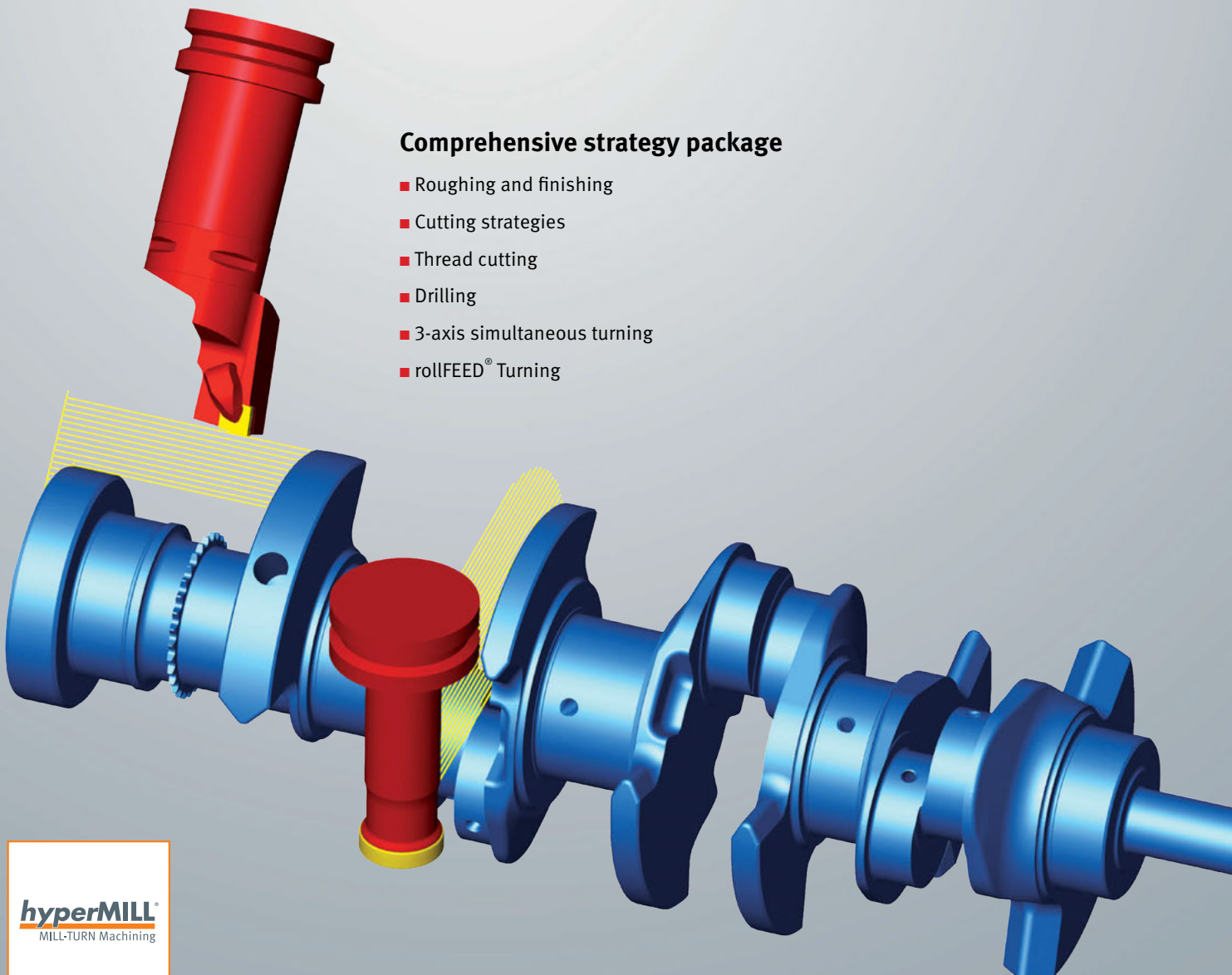**Benefit:** Simple and fast workpiece orientation.

*hyper*MILL® MILL-TURN Machining

Comprehensive turning strategies

The *hyper*MILL® MILL-TURN Machining module supports the programming of any common turning strategy on mill-turn machines. The function range also includes special strategies such as 3-axis simultaneous turning for roughing and finishing with a swivel head on the third axis.

Seamlessly integrated

Thanks to integration in *hyper*MILL®, the mill-turn strategies as well as all 2D, 3D, and 5-axis milling strategies are available from a single user interface. This means that all strategies can be freely combined with one another. Stock tracking is calculated for all turning and milling operations, and the tool database can be jointly used for all tools.

Comprehensive strategy package

- Roughing and finishing
- Cutting strategies
- Thread cutting
- Drilling
- 3-axis simultaneous turning
- rollFEED® Turning

hyperMILL®
MILL-TURN Machining

Performance, Performance, Performance

Speed is more crucial than ever these days. This is why OPEN MIND developed *hyper*MILL® MAXX Machining, the comprehensive high-performance solution for roughing, finishing and drilling. Trochoidal tool paths ensure extremely fast material removal. Innovative strategies for barrel cutters allow for finishing in record time. Milling tools tilted in the cutting direction can quickly and easily drill holes and open pockets in hard material without the need for a predrilled hole.

These unique solutions from OPEN MIND save enormous amounts of time while ensuring the same high quality. This allows CAM programmers to maximize machine performance for any application.

Drilling

hyperMILL®
MAXX Machining

| Roughing | Finishing | Drilling |
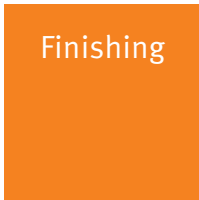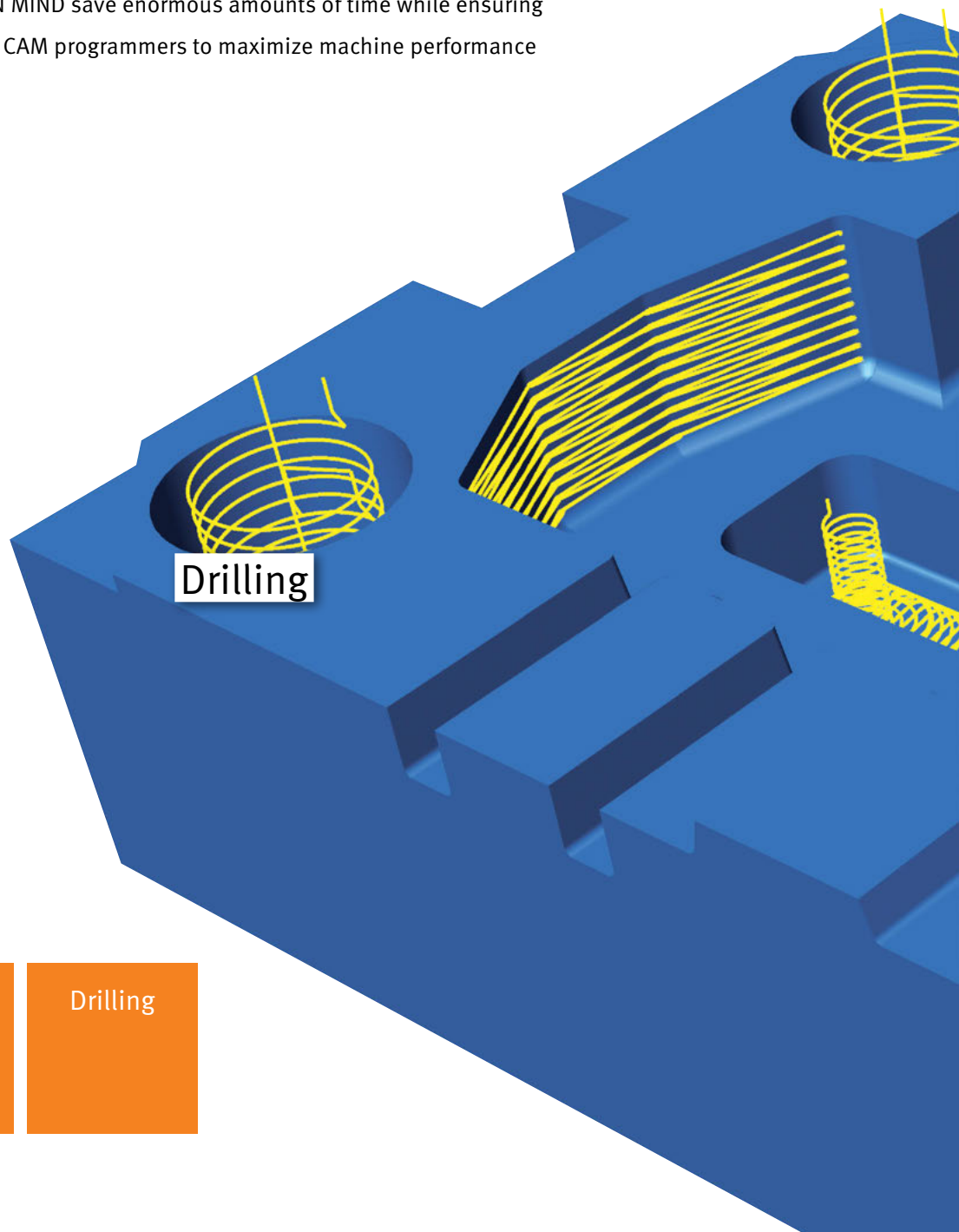
hyperMILL®

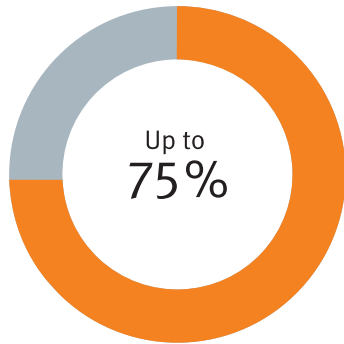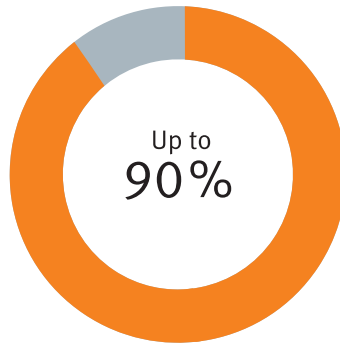## MAXX Machining

ADVANTAGES
- Highly efficient
- Perfect surfaces
- Tool friendly
- Simple to program

Up to
75%

Time savings
for roughing

Up to
90%

Time savings
for finishing

100%
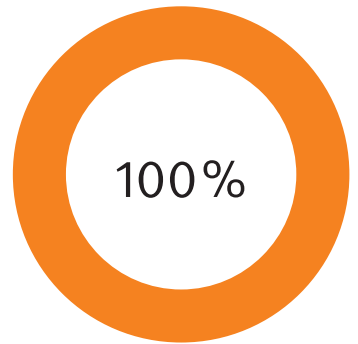
Process safety

POSSIBLE APPLICATIONS:
- Tool and mold manufacturing
- Production Machining
- Aerospace
- Automotive
- Motor sports
- Energy industries

Finishing

Roughing

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 *hyper*MILL®. 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.

*hyper*CAD®-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. *hyper*CAD®-S is pure 'CAD for CAM'.
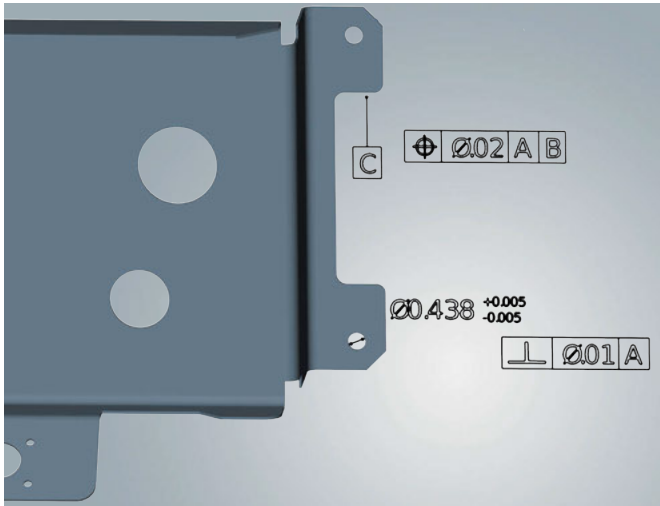
hyperCAD®
CAD for CAM
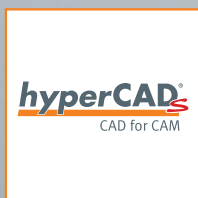
| Interfaces	Geometric Engine	Solids Mesh	Deformation	Electrode

STEP Import via PMI

STEP files can now be imported using product and manufacturing information (PMI). This means that the CAM programmer has access to all information relevant to production, such as texts, tolerances, surface symbols, and references. These are depicted as a vector graphic in *hyper*CAD®-S.

Benefit: Improved data processing. Compatibility with future-oriented data standards.
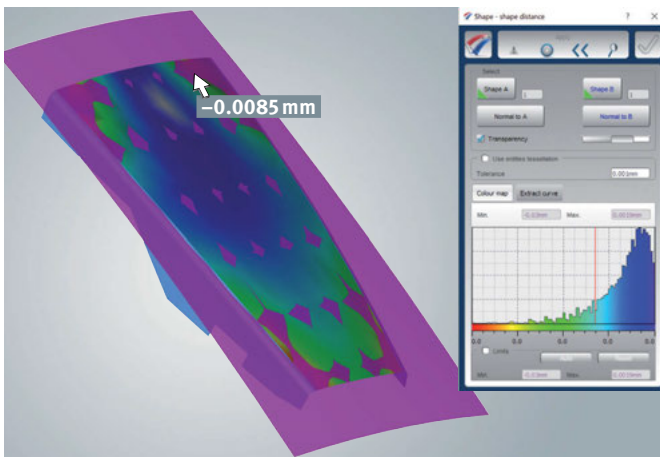
Highlight
Analysis: Shape–Shape Distance

This new analysis function makes it possible to measure the distances between two shapes. This function can be applied to face models, solids, meshes, or stock. For example, this allows a face created using the global fitting function to be compared with the original face. Moreover, the analysis allows casting allowances to be quickly reviewed.
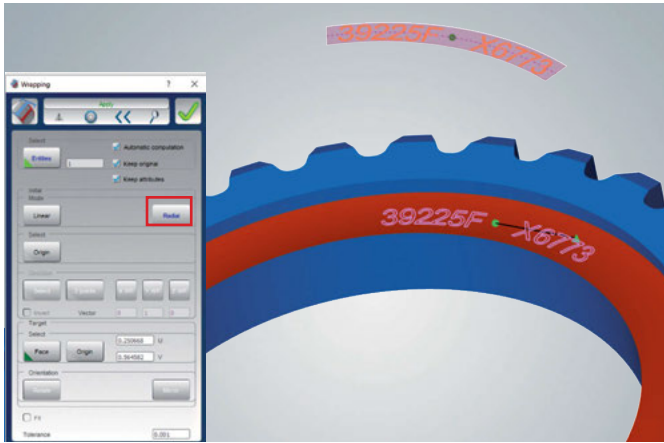
Benefit: Simple distance analysis.
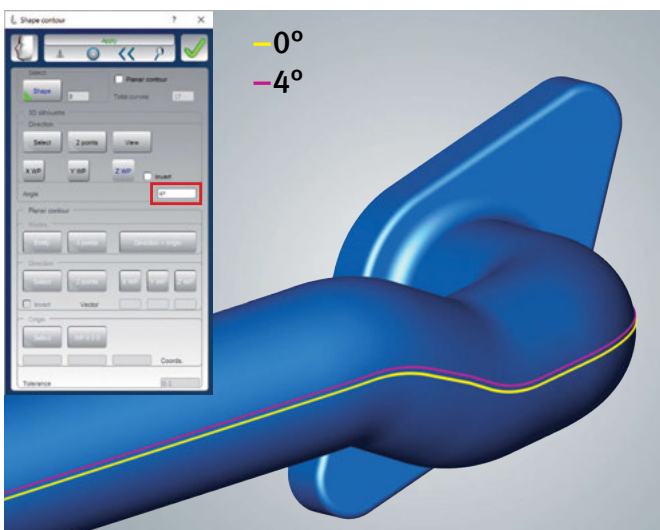
Shape Contour

3D silhouettes can only be created by taking an angle into account. This makes it possible to precisely control the outline of the contour with an angle.
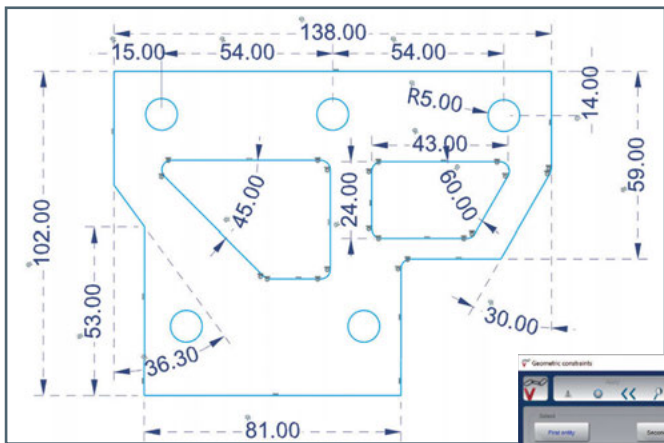
Benefit: Flexible creation of shape contours.

Unwrap

The 'radial' mode has been added to the 'unwrap' command. This allows radially aligned curves or texts on rotational solids to be unwrapped with a constant radial length.

Benefit: Precise creation of engraving or tire labels.

V-sketch

The new 'V-sketch' command is used to assign geometric constraints to 2D contours. If individual contours are changed, the sketch is automatically updated using their dependencies. The values of the V-sketches are edited using dimensional constraints and the parameter list.

Benefit: Easy to change milling boundaries or turning contours.
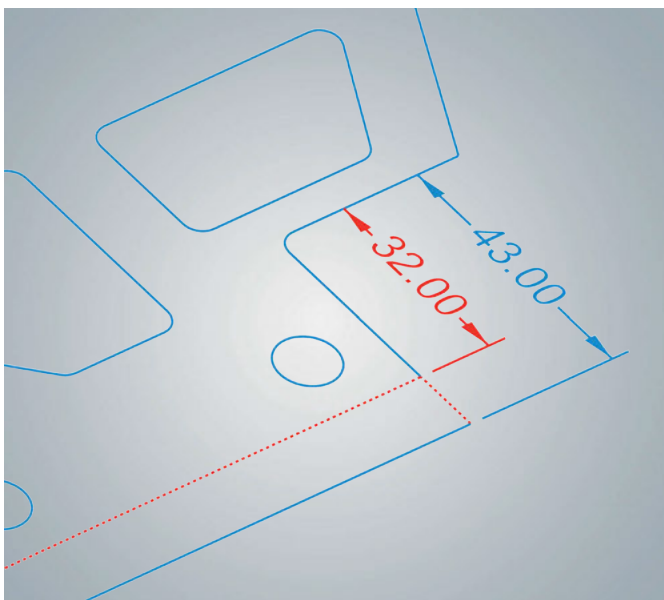
Associative Dimensioning

Dimensioning and coordinates are associative and retain their references, even when changes are made. This means that changes are updated automatically during dimensioning.

Benefit: User-friendly.

Electrode Printing

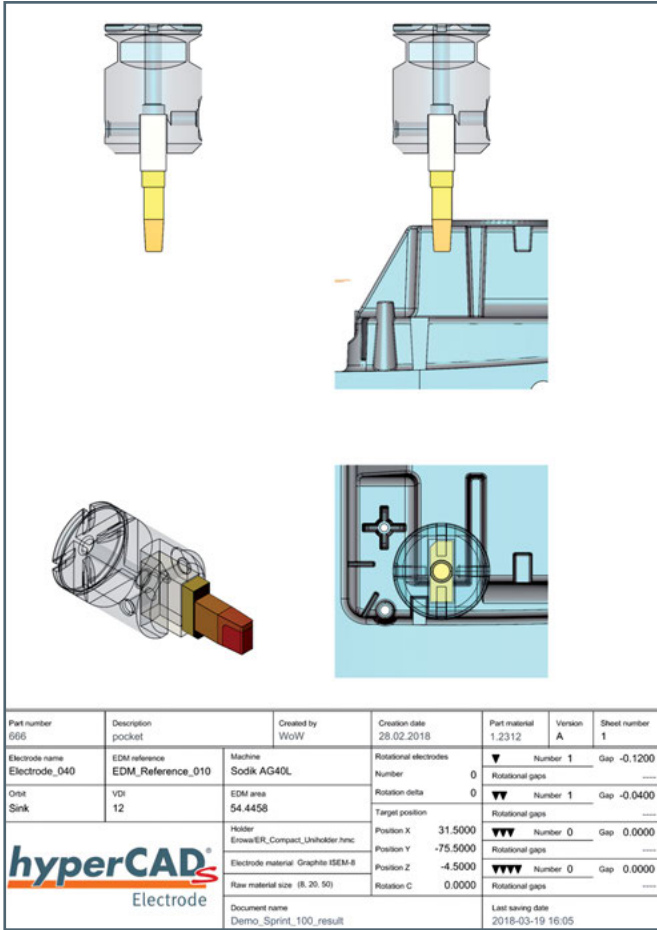The new 'mixed single sheet' printing option prints two views of an electrode as well as two views of the assembly on a single sheet. This provides the machine operator with an overview of the individual electrodes and their eroding positions.

Benefit: Improved documentation in the process.
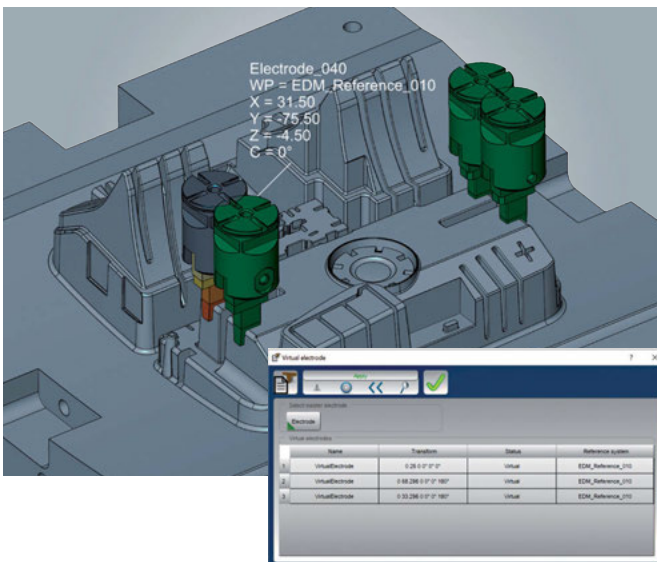
Highlight

Virtual Electrode

Copies of an electrode that has already been created can be generated in various positions. These are checked for collisions and can be assigned the technology values of the master electrode or new technology values. The technology data is correspondingly processed during electrode milling, and the reference system and eroding position for each copy are included in the report.

Benefit: Secure creation of electrode copies.

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