

hyperMILL®

MOLD&DIE Solutions



Complete CAM Solution
for Efficient
Blow Mold Machining

MORE THAN 25 YEARS OF EXPERIENCE

in Tool and Mold Making

As a pioneer of 5-axis milling technology, we laid the foundations for reliable and efficient machining of components in tool and mold making more than 25 years ago. The innovative *hyperMILL*® CAM system has been setting standards ever since and also offers a complete solution for blow molders, which covers everything from the data import to NC code simulation and automation. *hyperMILL*® enables you to meet strict requirements, regardless of whether your products are destined for the food, beverage, pharmaceutical, or household goods industries. We also use a customer-oriented development process and work closely with machine tool and cutter manufacturers to ensure that *hyperMILL*® will continue to fulfill requirements in terms of quality and machining times, and can improve processes in the future, too.



Continuity from CAD to NC code

CAD

Interfaces for all standard formats. Optimal component analysis and processing. Customized CAD for CAM programmers.

CAM

Optimized machining strategies: to ensure efficient machining that is easier on the tool and the machine.

Simulation

True NC code simulation and automated NC code optimization.

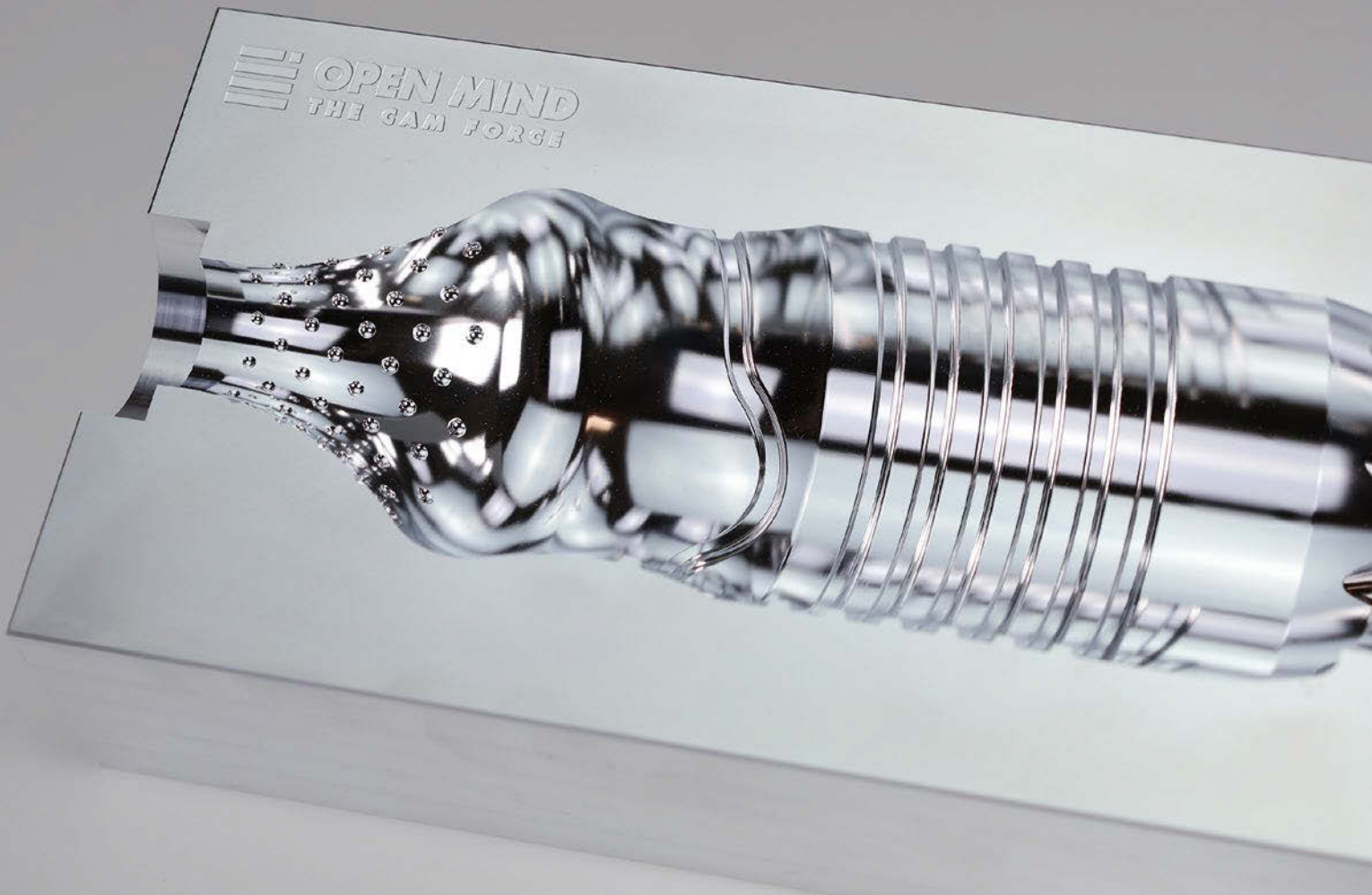
Automatisierung

Competitive advantage thanks to automated CAD and CAM process programming. Automated programming ranging from partially automated to fully automated.



“Our aim is to develop innovative and practical solutions for our customers entire process chains.”

Stefan Jacobs, Product Manager Tool and Mold Making
OPEN MIND Technologies AG



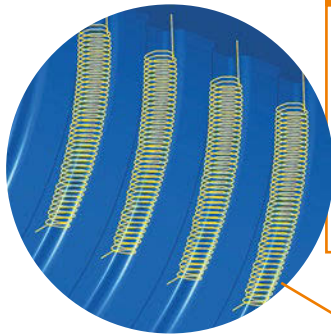
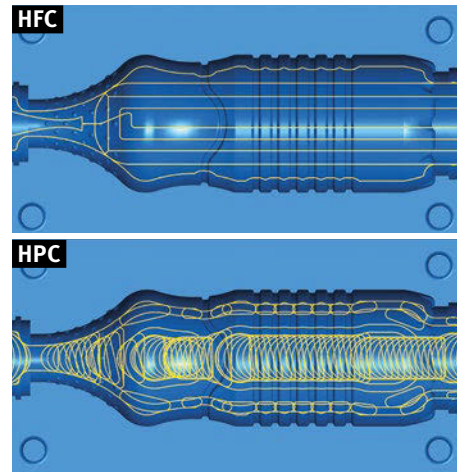
Roughing

Various roughing strategies

High-feed cutting (HFC) that boasts very high feedrates as well as high-performance cutting (HPC) with spiral and trochoidal tool movements are available for roughing blow molds. You can use the most efficient variant to rough the material as quickly as possible, depending on the shape of the blow mold.

Features

- Highly efficient and proven strategies
- Calculation based on stock
- True-to-detail tool mapping

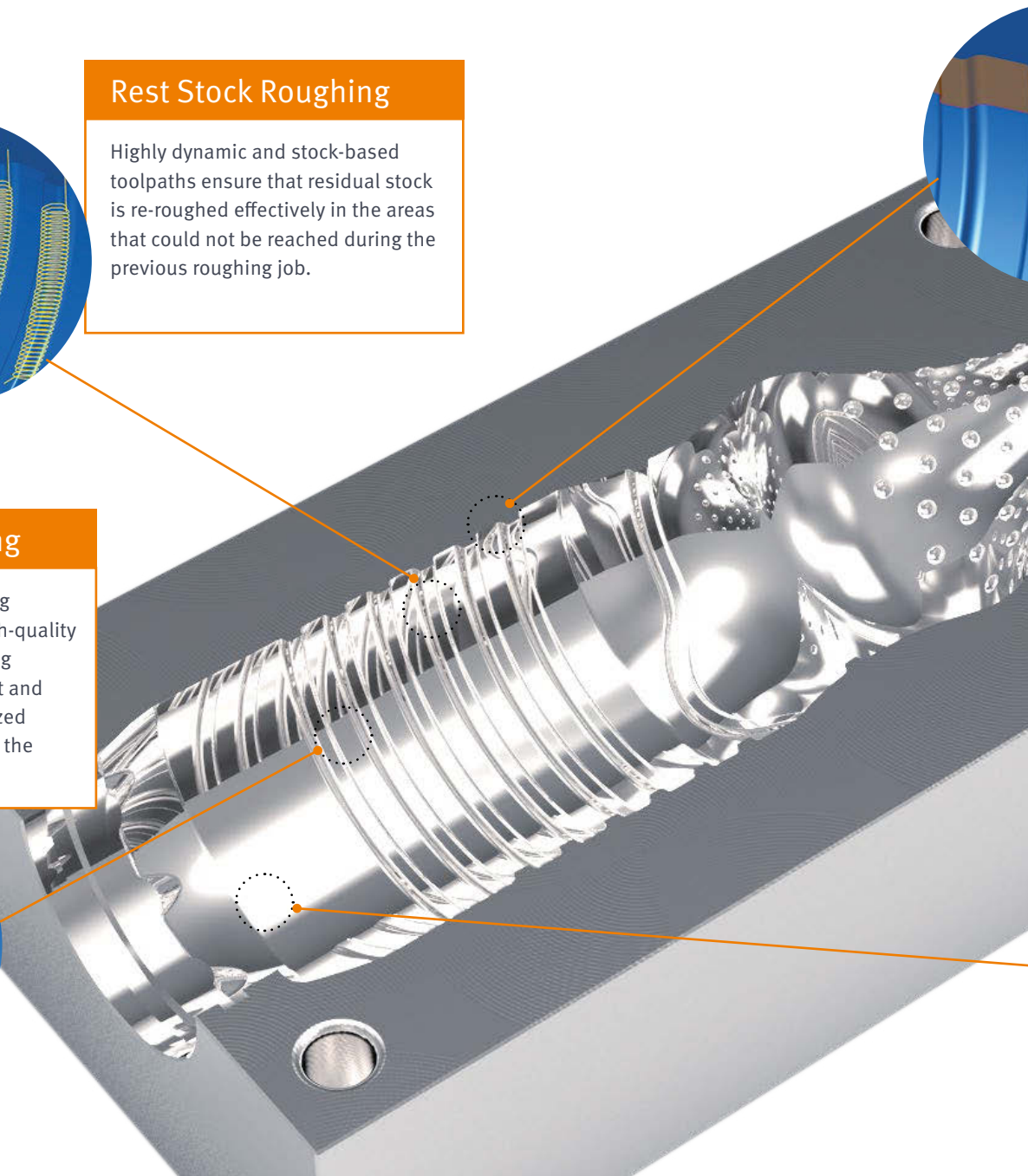
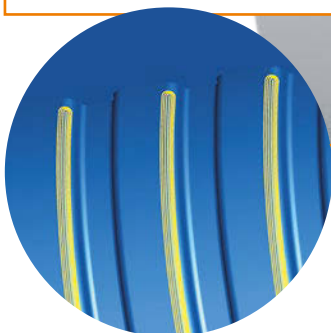


Rest Stock Roughing

Highly dynamic and stock-based toolpaths ensure that residual stock is re-roughed effectively in the areas that could not be reached during the previous roughing job.

Rest Stock Finishing

Proven strategies for finishing residual stock guarantee high-quality milling results. The machining processes are highly efficient and precise thanks to the optimized toolpaths that run parallel to the contour.



Finishing

High precision surface mode delivers perfect surfaces

hyperMILL® offers the “High precision surface mode” for finishing surfaces that have especially strict quality requirements. The toolpaths are calculated on the original surfaces, which means machining tolerances are also factored in down to the micrometer.

Features

- Toolpath calculated directly on the CAD surfaces
- Excellent surfaces at the push of a button
- Facet-free surfaces

Surface Extension

The “Automatic surface extension” function can be used during programming to extend the circumference of selected milling surfaces.

Advantages

- › Precise component edges for clean mold separation
- › Automatic protection of adjacent surfaces
- › Reduced CAD design work
- › Fast and convenient programming

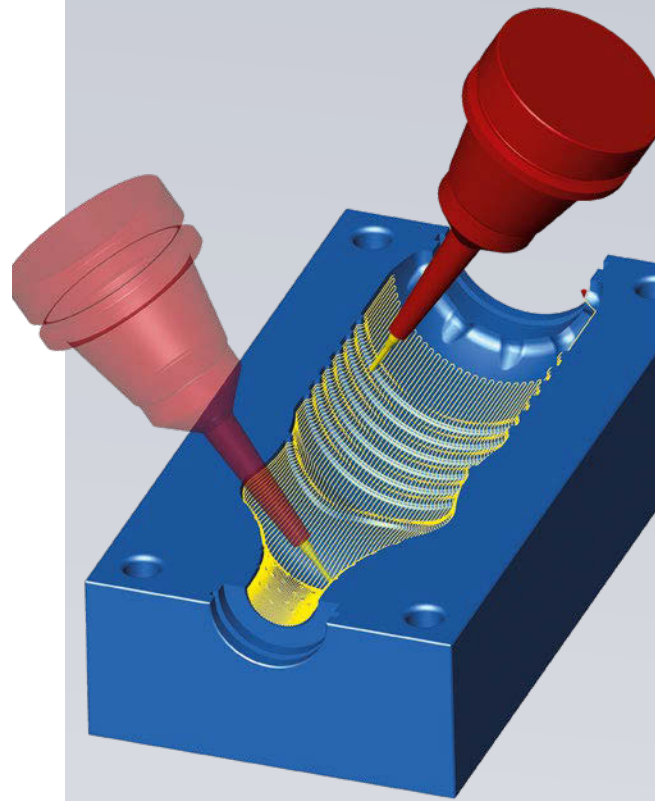
Smooth Overlap

Transition areas are blended automatically to improve the quality of the surface:

- › When machining with various strategies
- › When machining with different tools
- › When machining with a modified tool inclination

Advantages

- › No measurable transition
- › No rework machining required



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5-axis Radial Machining

Specially developed CAM strategy

Thanks to a new radial projection method, the toolpaths are calculated very quickly, and the user can various machining strategies to respond flexibly to the existing component conditions. The 5-axis inclination of the tool is controlled by simple tilt options in the strategy, regardless of whether 3+2 or 5-axis simultaneous machining is involved.

Advantages

- Perfectly suited for blow molds
- High-quality surfaces thanks to the toolpaths being calculated on the CAD surfaces
- The 5-axis inclination is easy to control

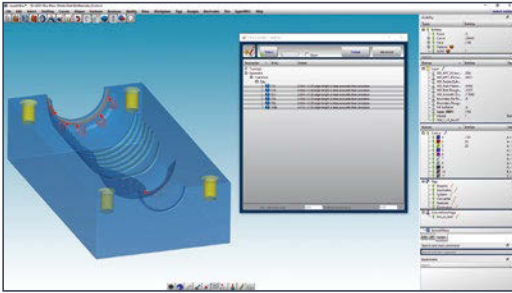
Data import



- Includes feature, model, and manufacturing information (PMI)



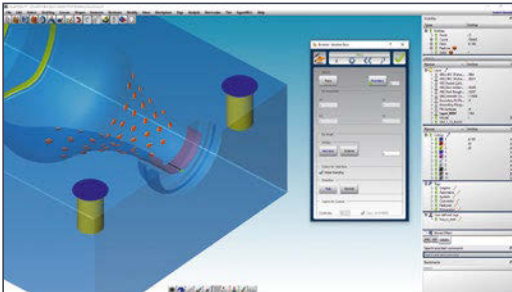
Analysis



- Check the quality of faces/solids
- Find double entities
- Range of analysis functions: Draft angle, undercuts, radii, spherical face analysis, and so on



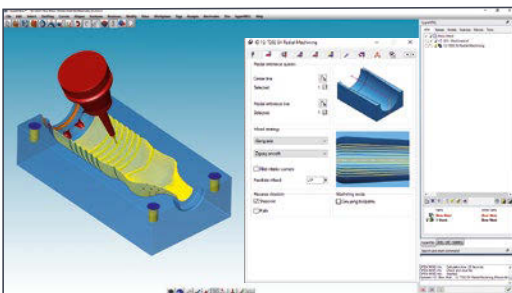
Processing/repair



- Repair faults in surfaces or solids
- Convert faces/solids
- Set boundaries
- Close holes
- Create assistance elements: Surface extensions, curves, and so on



Programming



- Tailor-made selection and filter functions
- Integrated CAD functions in *hyperMILL*® machining jobs
- Set boundaries
- Extend faces

hyperMILL® CAD for CAM

Powerful CAD platform

A modern CAD kernel developed in-house that provides the basis for our powerful CAD/CAM system. Interfaces for all standard as well as less-common formats enable third-party data to be imported easily, even with large 3D models and vast volumes of data.

CAD for CAM

CAM programmers use CAD systems differently from most engineers. That's why we have developed special CAD functionalities in *hyperMILL*®, which are fully oriented to the requirements of CAM users.

To be more specific, specially developed functions simplify the daily tasks of CAM programmers. Once the data has been imported, analysis and repair functions make sure that it is of the quality needed to make programming successful. Tasks such as "Create support entities", "Close holes and drill holes," or even "Extend faces on the model" are quick and easy to execute with *hyperMILL*®. Customized filters, selection commands, and a clear visibility control make working intuitive and efficient.

Another highlight is that the user will also find CAD functions integrated directly into the CAM strategies, such as for extending faces automatically.

hyperMILL[®] VIRTUAL Machining

hyperMILL[®] VIRTUAL Machining allows you to simulate, analyze and optimize your manufacturing process. The perfect virtual rendering of the machine combined with NC code simulation enables process control at a level that has never been achieved before.

Highly Efficient and Reliable: Simulation Based on NC Code

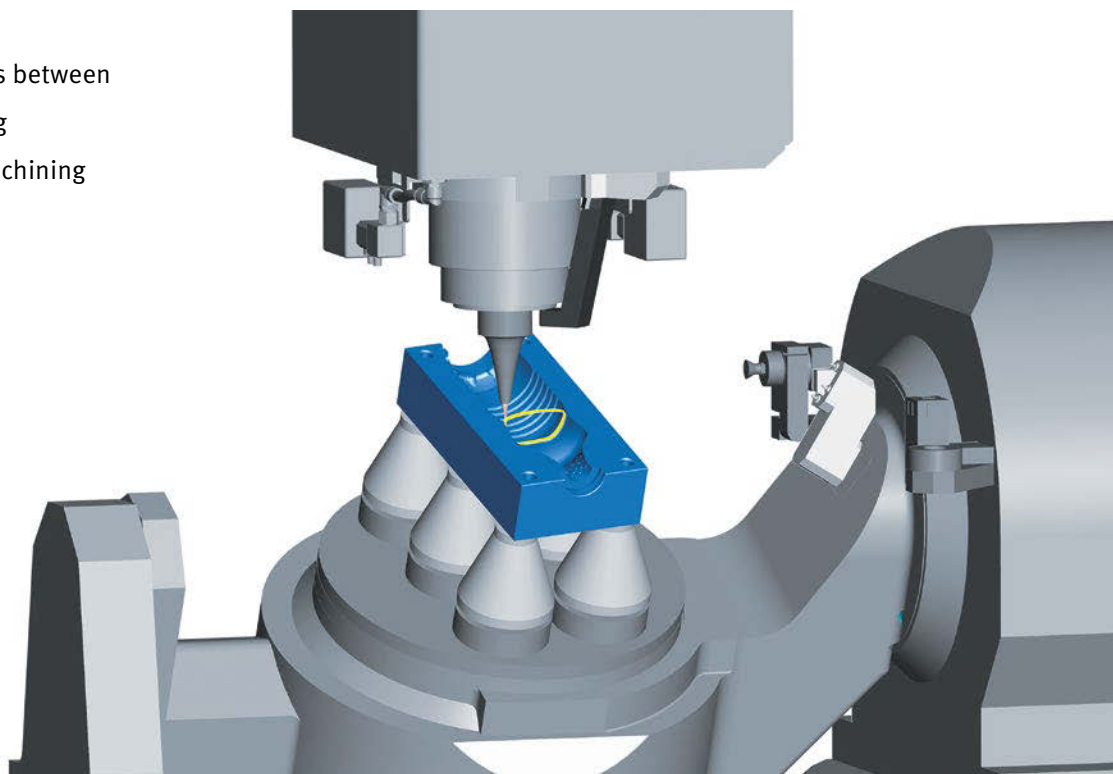
- Full simulation of all movements, including link movements
- Quick collision check that can be carried out independently of the simulation
- Bidirectional linking of NC block and *hyperMILL[®]* job enables the respective machining job to be allocated quickly
- Fast comparison of origins and tools with the actual machine configuration
- Display of axis limitations
- Comprehensive analysis functions

Connected Machining

- Readout of zero-point definitions, tool data, and critical machine parameters from the controller, including comparison with the data stored in *hyperMILL[®]*
- Quick NC program transfer
- Remote operation of CNC machines
- Synchronization of the simulation with the machine's NC block

NC Code Optimization

- Automatic solution selection for multi-axis machining
- Optimized movements
- Automatic connection paths between operations – smooth linking
- Kinematically optimized machining



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We push machining to the limit

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