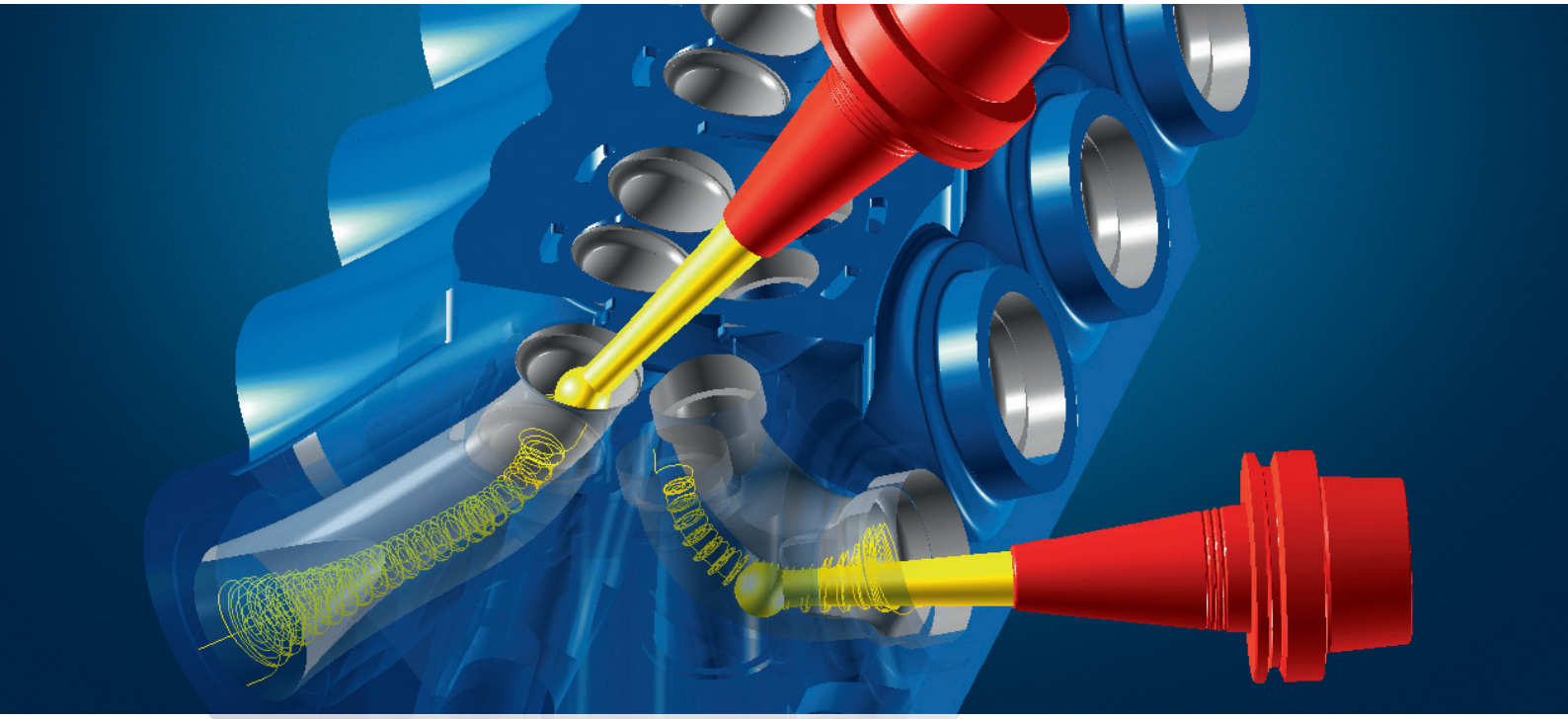
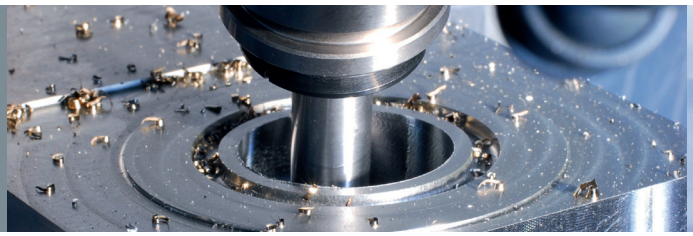
hyperMILL®
5AXIS

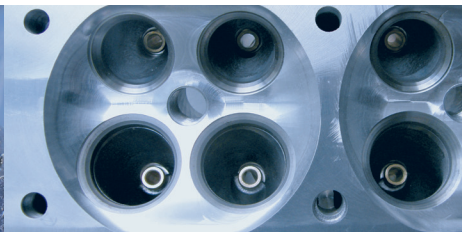


Tubes. Quickly programmed. Easily milled.

TUBE

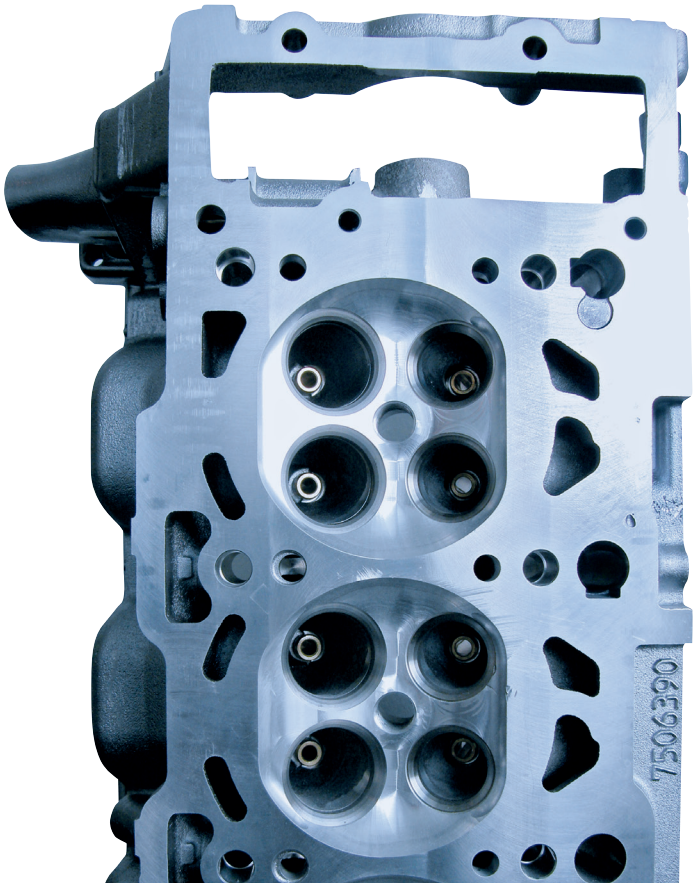
OPEN MIND THE CAM COMPANY





An easy job: Tube milling with *hyper*MILL®

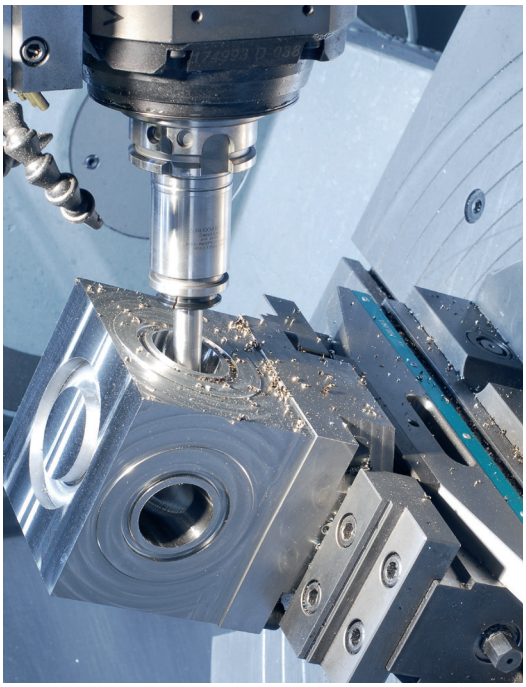
With the *hyper*MILL®-5axis tube package even extremely undercut channels can be programmed very conveniently. The data model does not need to fulfil any special requirements, thus eliminating the need for time-consuming trimming, closing of gaps or surface feedback. You only define a simple guiding curve. On this basis you can program the continuous tube machining with three 5axis strategies. Thanks to reliable collision avoidance and simulation, time-consuming machining tests are no longer necessary.



For intake and exhaust tubes for engines as well as pipe inlets and outlets for pumps and condensers

Optimised machining strategies:
These 5axis milling cycles are specially optimised for machining tubes. They offer clear advantages when compared to conventional 3D and 5axis strategies. Even complex geometries can be completely programmed in a few hours instead of several days.

Easy machining definition:
There are no special requirements regarding the number of surfaces, the quality of the surface patches or the profile of the ISO lines and the orientation of the surfaces. You can work directly on digitised surfaces.

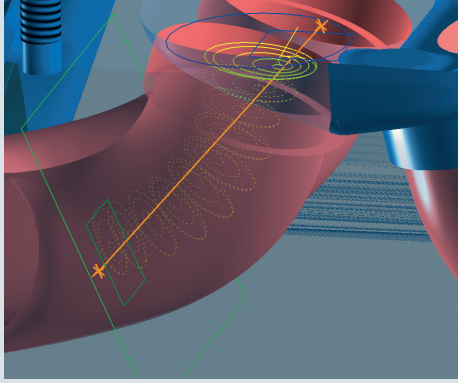


Programmed in just a few hours

Superb process safety:
The proven collision control and avoidance mechanisms ensure safe use of lollipop and standard ball mills as well as short tools and tools with thick shanks.

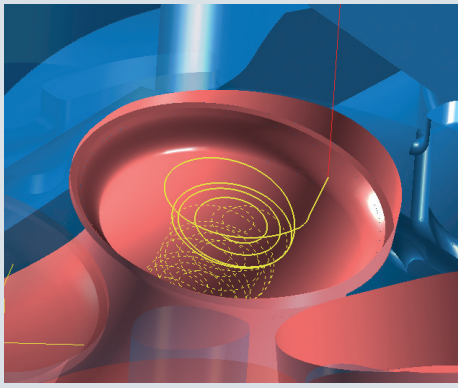
Integrated in a complete CAM system:
Integration in *hyper*MILL® means that 2D, 3D and 5axis cycles with broad applications are available alongside specialised machining strategies. And there is no need for a second CAM system.

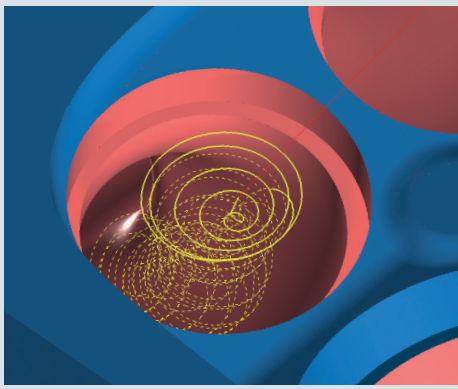
Machining definition:
The guiding curves can be defined on the basis of surface or digitised data. There are therefore no limitations regarding the geometry, such as differing cross-sections, tubes that run into one another or additional features in the tube.



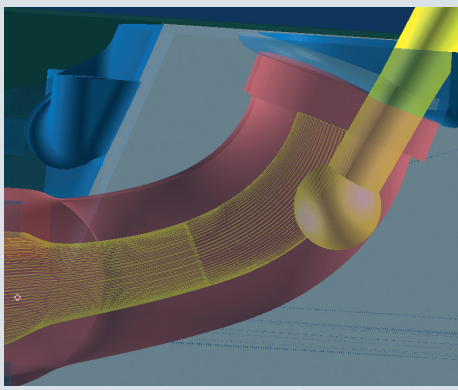
5axis tube roughing:
With this strategy the tube is milled in a continuous machining process from the stock. This 5axis strategy is an effective alternative to machining with several axes in fixed positions. There is spiral infeed to the bottom, and work is executed on the plane.

Removal can occur from either inside to outside or outside to inside.

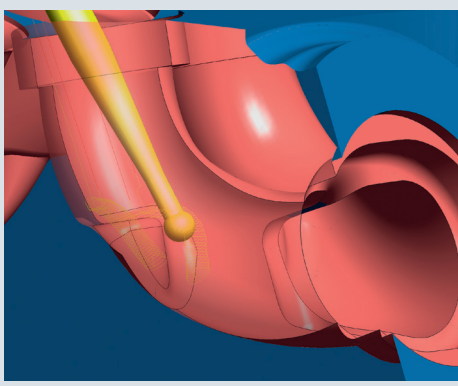




5axis tube finishing:
With this strategy the tube is finished with a spiral or parallel tool path. The spiral tool path creates a seamless, high-quality surface. With parallel machining, it is possible to avoid unnecessary movements of the rotary axes.



5axis tube rest machining:
With this strategy, rest material areas are machined in either a spiral or parallel movement. The areas to be machined are described by a reference curve. The machining width can be limited by defining a value symmetrical to the reference curve.



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