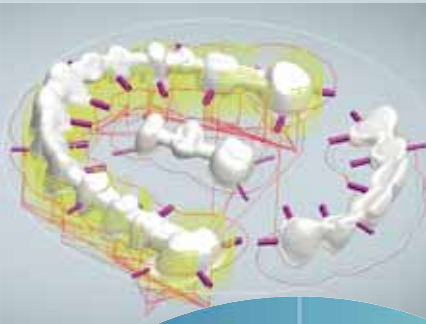


Construction of a dental bridge framework on the MIKRON HSM 400U

The CAM software *hyperDENT*® is a fully automated programming system. It was specially developed for the needs of dental laboratories and dental technicians. From the automatic user interface and the undercut detection to the modern 5axis milling strategies – *hyperDENT*® offers innovative functions for constructing bridge frameworks simply, efficiently and precisely. The collision-free machining, even of undercuts, and the machining simulation ensure a high level of process reliability.

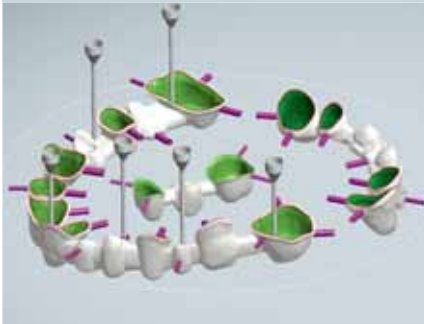
Roughing

With this strategy the surface profile is milled in a single step while preserving the defined allowance on the stock. The rest material areas are machined subsequently with smaller milling tools.



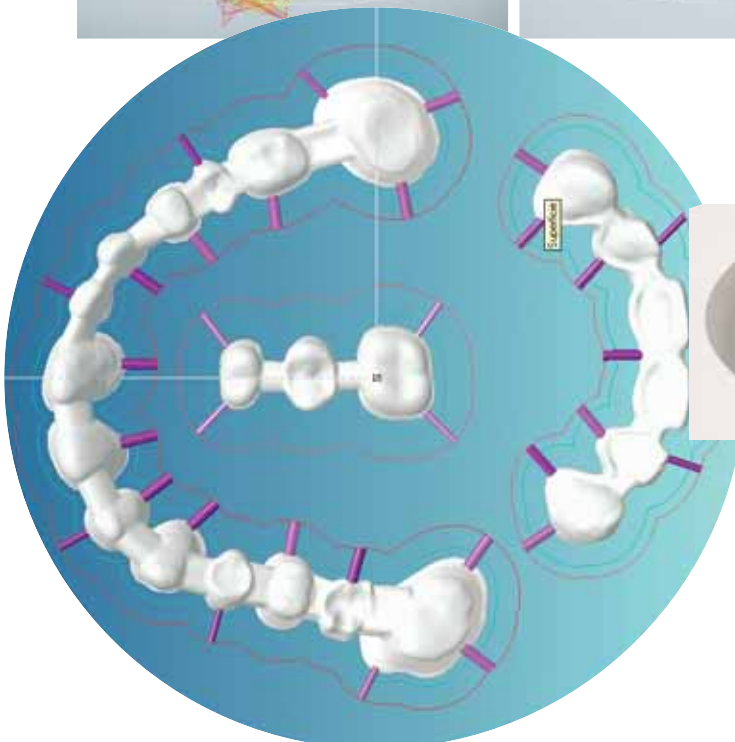
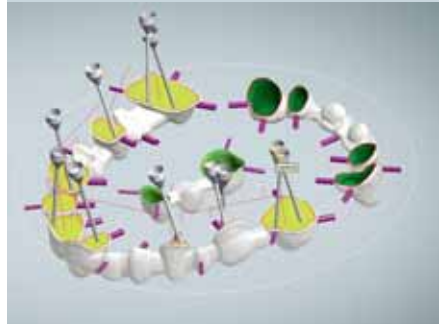
Z-constant finishing

This strategy allows for the finishing of the bridge framework. The material is removed level by level with a constant Z stepdown. Collision with holder, clamp and workpiece are avoided.



Rework-machining

Cavities and undercuts are machined collision-free with the 5axis simultaneous machining.



Templates

The order of the machining steps is specified in predefined templates. They are the basis for programming by mouse click.

Image source: The dental images used were made available by Smile. They are examples of typical dental applications.

Working spindle (40% duty cycle, S6)

30,000 rpm, HSK-E40: kW/ Nm 12,0/8,8

42,000 rpm, HSK-E40: kW/ Nm 13,0/4,2

54,000 rpm, HSK-E32: kW/ Nm 8,5/3,5

Forward speed

Feed rate/rapid traverse (X, Y): 20/40 m/min

Feed rate/rapid traverse (Z): 20/40 m/min

Feed rate/rapid traverse tipping: 55/165 rpm

Feed rate/rapid traverse turning: 55/250 rpm

Work table

Clamping surface: Pallet dimensions

Max. table load: 25 kg

Tool magazine HSK-E40: 18/36/68

Tool magazine HSK-E32: 20/40

Automation

Pallet size:

MACRO MAGNUM Ø 156/18 x

EROVA ITS Ø 148/20 x

Max.: 25 kg

CNC control (Heidenhain): iTNC 530

Machine: MIKRON HSM 400U

Traverse path

Horizontal, X: 400 mm

Transversal, Y: 240 mm

Vertical, Z: 350 mm

Tipping axis: -110°/+110°

Rotary axis: n. x 360°



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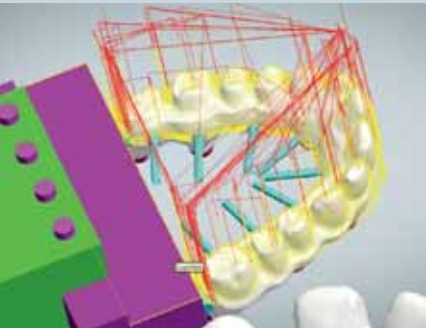
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Construction of an implant-supported bridge framework on the MIKRON HSM 400U

The CAM software *hyperDENT*® is a fully automated programming system. It was especially developed for the needs of dental laboratories and dental technicians. From the automatic user interface and the undercut detection to the modern 5axis milling strategies – *hyperDENT*® offers innovative functions with which you can construct implant-supported bridge frameworks simply, efficiently and precisely. The collision-free machining, even of undercuts, and the machining simulation ensure a high level of process reliability.

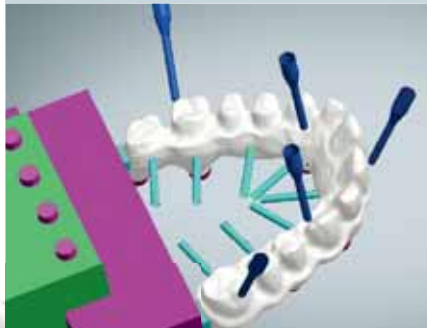
Roughing

With this strategy the surface profile is milled in a single step while preserving the defined allowance on the stock. The rest material areas are machined subsequently with smaller milling tools.



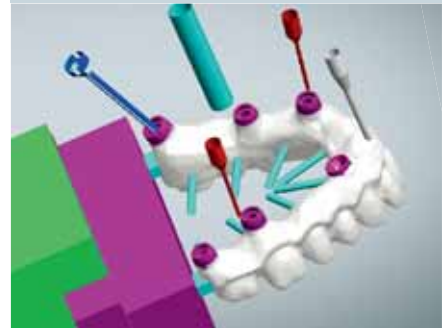
5axis profile machining

With this 5axis strategy the dentures can be manufactured collision-free and close to the contour. A constant cutting speed is maintained.



Drilling

hyperDENT® automatically recognises holes in any 3D model. 5axis drilling combines spiral milling from different machining angles with optimised position movements in one single procedure.



Templates

The order of the machining steps is specified in predefined templates. They are the basis for programming by mouse click.

Image source: The dental images used were made available by Smile. They are examples of typical dental applications.

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Rotary axis: n. x 360°



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