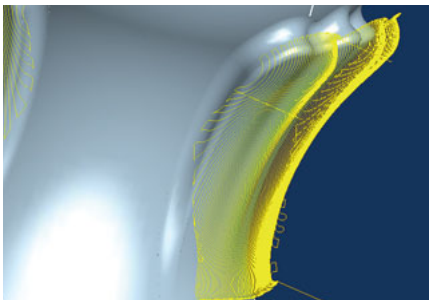
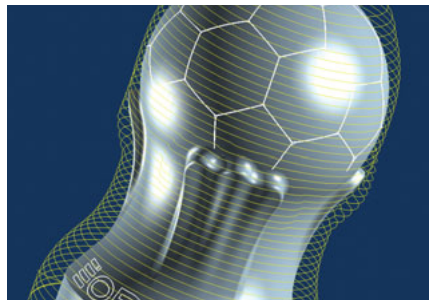


## Trophy: Milled on a Makino V33

The trophy, which is given to visitors of the Makino Exhibition Centre, demonstrates the flexibility *hyperMILL*® brings to modern 5-axis machining. The methods employed include 3+2 fixed-axis milling, machining cycles from the cavity package and contour machining.



**3+2 fixed-axis milling** Simple machining tasks with undercuts can be milled collision free using fixed tool positions and short tools.



**5-axis cavity cycles** The cavities package expands the 3D cycles to include simultaneous multi-axis machining. In comparison with the 3+2 strategy, it enables continuous machining and yields a better surface quality.



**5-axis contour machining** When engraving, the tool must follow the surface with extreme precision. *hyperMILL*® is equipped with a fast and easy collision checking and prevention feature that guarantees reliable milling results.



### Machine: Makino V33

<b>Main drive (motor spindle)</b>	<b>Maximum spindle speed</b>	200 – 30.000 min <sup>-1</sup> , 15kW
<b>Machining area</b>	<b>Rapid travel X/Y/Z</b>	20.000 mm/min
	<b>Traverse path X/Y/Z</b>	600/400/350 mm
<b>NC swivelling rotary table</b>	<b>Worktable area</b>	750 x 400 mm
	<b>Max. feedrate</b>	20.000 mm/min
	<b>Max. torque</b>	21 Nm
	<b>Max. workpiece weight</b>	300 kg
<b>Automation</b>	<b>Controller</b>	<b>Microprocessor-CNC-controller Pro3 (FANUC 16iM)</b>
<b>Workpiece</b>	<b>Dimensions</b>	25x25x50 mm
	<b>Material</b>	Aluminium



**OPEN MIND Technologies AG**  
 Argelsrieder Feld 5 • 82234 Wessling  
 Phone: +49 8153 933-500 • Fax: +49 8153 933-501  
 E-mail: Info.Europe@openmind-tech.com  
 Internet: www.openmind-tech.com



**MAKINO GmbH**  
 Kruichling 18 • 73230 Kirchheim unter Teck • Germany  
 Phone: +49 7021 503-0 • Fax +49 7021 503-400  
 E-mail: office@fbt.makino.de  
 Internet: www.makino.de