

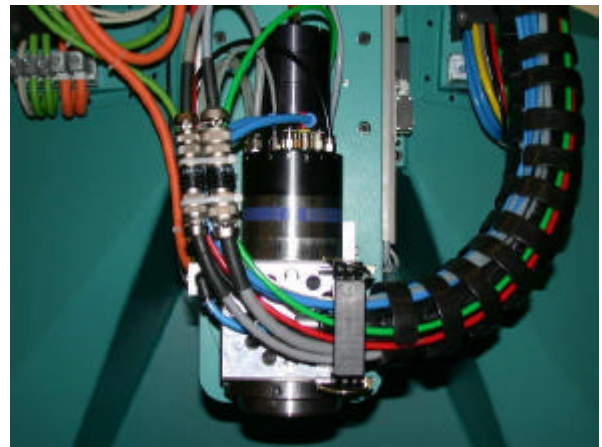
LithoCerm1

5-Axis High Speed Milling Center for natural Stone and technical ceramics

LithoCerm 1 (Small Scale Demonstrator – SSD) is an innovative CNC 5-Axis 3D treatment machining center with the implementation of advanced controls (CAD-CAM coupling, solid model patterning techniques and teleservice), high speed spindle, the dry process and the dedicated new tools for natural stone and technical ceramics



Top left- Lithocerm1



Top right –high speed spindle
IBAG HF 100 AI 50



Right – special milling tools for
Natural stone and ceramics

Innovative Aspects:

- Machining strategies for NEW PROCESS - 3D dry high speed milling of natural stone and ceramics
- Cell-controller for integration of axis controller units, spindle controllers, sensor fusion unit, handling of machining parameter data
- Integrated sensor based monitoring system
- High-speed spindle system
- New milling tools for stoneware and ceramics

Strategic Aspects:

- A new process is added to the traditional stone and ceramics processing technology with the dry high speed treatment.

This will influence:

- stone products for interior use, facades and exterior use;
 - arts, ornaments, reconstruction, restoration;
 - ceramics products for car, motor components, medical, electrical, electronic use
- New products like lighting bodies from natural stones are possible

Rapid Prototyping technologies

Especially in stone working and ceramics industries rapid prototyping technologies are very important due to high variety and high complexity of applications. LithoCerm 1 can be used for a broad range of production demands, including unique custom pieces, such as statues and memorials in artistry or parts of spinal column in medicine. It can be used for jobs, where accuracy and attention to detail is very important.



Features

- Maintenance free machining
- High stiff machine conception
- Micro vibrations minimisation
- Spindle with higher rigidity and a much higher stiffness in radial and in axial directions
- Sure concept for dust, powder and chip adsorption, filtering and disposition

CNC Control System

- Numerical Controller: 840Di with Profibus (Siemens)
- Drive Unit: SIMODRIVE 611U (Siemens)
- PLC Periphery: SIMATIC S7/200 (Siemens)
- Monitoring: ARTIS-CTM (Artis)

Technical Parameters

- Accuracy 0.01 mm
- Stroke x – axis: 400 mm, max. acceleration: 1 g, max. speed: 15 m/min
- Stroke y – axis: 600 mm, max. acceleration: 1 g, max. speed: 15 m/min
- Stroke z – axis: 200 mm, max. acceleration: 1 g, max. speed: 15 m/min
- C – axis: 360°, max. speed 60 min⁻¹
- A – axis: 0...90°, max. speed 60 min⁻¹
- Tool – diameter: up to 10 mm
- Tool – length: up to 50 mm
- Integration of the IBAG motor spindle HF 100 AI 50 C
- Spindle speed 62 000 rpm
- Spindle power 7,7 kW