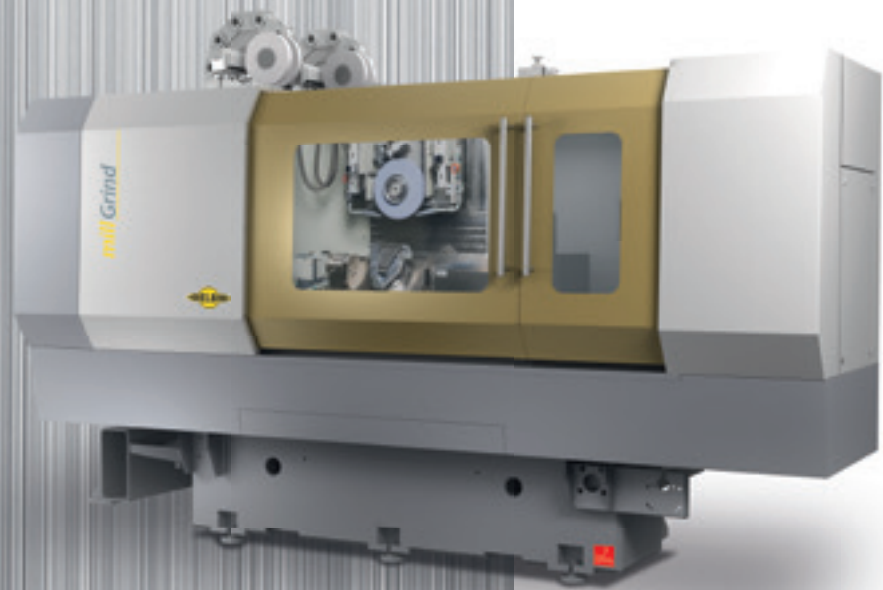




Turbine Industry



smartLine Kombi millGrind

Experience the smartLine Kombi millGrind

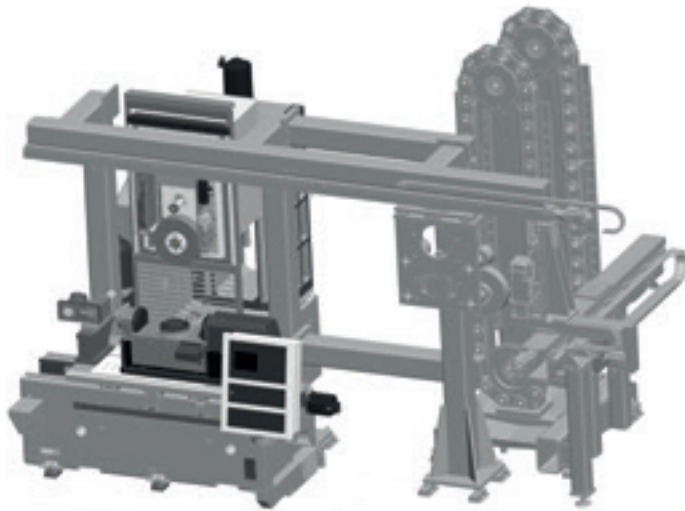
The millGrind series is specially developed for the requirements of machining in the turbine industry as multiple technology solution in one set-up. The modular machine system in travelling table design allows an individual configuration of the machine according to the customers needs.

Automatic tool and diamond roll changing allows the machining via

- Grinding, Al-Oxide, CBN and Diamond Grinding Wheels
- Boring
- Milling
- Laser Cladding
- Measuring of the unfinished workpiece
- Measuring of the machine workpiece including rework

in one set-up. This guarantees that all machined surfaces run to each other and errors are avoided by repeated re-chucking.





In addition to the machining of new blades and vanes for rework a laser cladding device can be added. This allows the measuring, cladding and grinding or milling of the worn areas.

For grinding with high stock removal rates the grinding wheels can be sharpened via overhead dressing unit and intermittent or continuous dressing. For pilot production or small lot sizes a table mounted dressing unit with interpolated dressing via vertical and cross feed axis can be used.

The tools will be exchanged automatically out of a magazine with 20/40 storage positions.

In combination with a 2 or 3 axes rotary tilt table mounted on the machine table a multiple sided machining is possible. The multiple axes interpolated machining of complex profiles will be achieved due to the sophisticated CNC control Siemens 840D.

For almost all applications proven Elb cycles are already written. For each machining application a team of experienced application engineers and programmers are available.

Benefit Overview

- Multiple Technology Solution in one Set-Up
- Automatic Tool and Diamond Roll
- Quick Change Over Time < 8 Sec.
- High Stock Removal Rate due to Continuous Dressing Capability
- Good Cost-Performance Ratio
- 2- or 3-Axes Rotary Tilt Tables as Option
- Automatic Workpiece Changing as Option



Multiple Axes interpolated Machining of Vane Segments in Two Set-Ups.



Economical Machining of Root and Shroud End on Turbine Blades

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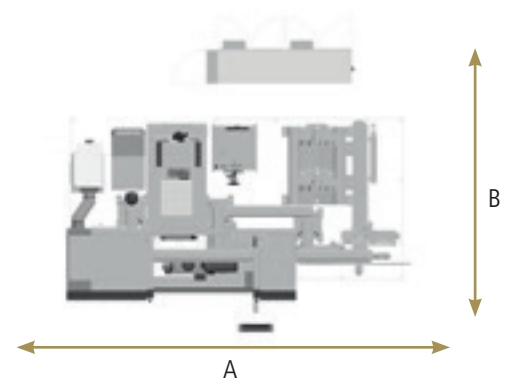
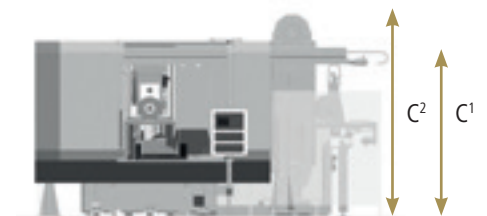
Grinding Width (mm)	600	750	
Grinding Length (mm)	1,000	1,500	2,000
Distance Spindle Center to Table (mm)	700	900	1,150
Spindle Power (kW)	36		
Spindle Cone (mm)	HSK 80	HSK 125	
Grinding Wheel (mm)	400 x 100 x 127	500 x 100 x 127	
Tool Dimension (Milling Cutter/Drill)	400 x 100 x 127	500 x 100 x 127	

Dimensions / Weight

Length A* (mm)	6,200	6,850	7,500
Width B (mm)	5,000		
Height C ¹ (mm)	3,050	3,200	3,400
Height C ² (mm)	3,800		
Weight machine (kg)	9,000	10,500	12,000
Weight tool changer (kg)	7,000		

All values are approximated and may change depending on selected options.
All information is subject to change.

* incl. Tool changer



Contact

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Grinding Applications
for a Global Market