

smart machine smart grinding

grindsmart[®] nano5



english



smart grinding unlimited grinding solutions

The 5-axis grinding center, GrindSmart®Nano5, has been designed to manufacture medical, dental and industrial cutting tools with diameters as large as 6.35 mm (.25") in HSS, stainless steel or carbide material.

The newly designed shank guiding system offers greater accuracy and easier runout adjustment which considerably reduces setup time while maintaining concentricity tolerances below 0.002 mm.

The GrindSmart®Nano5 is designed for production, and as such, comes standard with an integrated robot loader which can accommodate up to 1000 tools. Rollomatic's industry proven pick & place loader is accurate, reliable and fast, loading/unloading tools in just 8 seconds.

The GrindSmart®Nano5 is operated by a Fanuc CNC control with integrated PC, 15" touch screen and new ergonomic control panel. In addition, Rollomatic offers its powerful, intuitive and user-friendly programming software VirtualGrind®Pro as standard equipment, giving you powerful software and world-wide support.

Environmental issues continue to be of great concern and Rollomatic has been working continuously at reducing CO₂ emissions and at optimizing energy efficiency. Through its commitments, our company follows the global initiative agreed upon by Switzerland with the United Nations in regard to the objectives of the Kyoto Protocol. In this respect, the GrindSmart®Nano5 is manufactured using mainly recyclable materials and has been designed with specific dimensions of the mechanical and electrical components enabling an optimal reduction of energy usage.



with the GrindSmart®Nano5 for dental, surgical and industrial burs



The production of high quality tools has always driven Rollomatic in its design choices of machines. In order to guarantee optimal precision and superior machining quality, this machine has been designed in an innovative and advanced way, with the following distinctive advantages:

Compact design, with the shortest possible travel distances

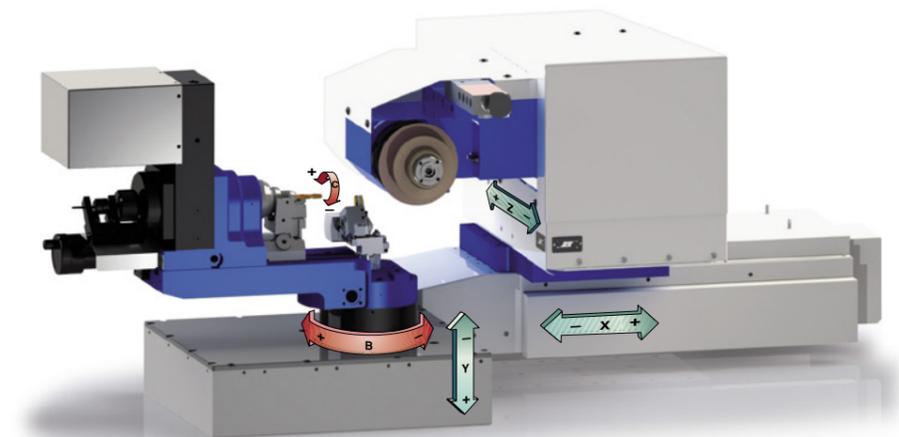
- Cycle times reduced by 20 %
- Minimal thermal expansion, increase of production stability by 30 %

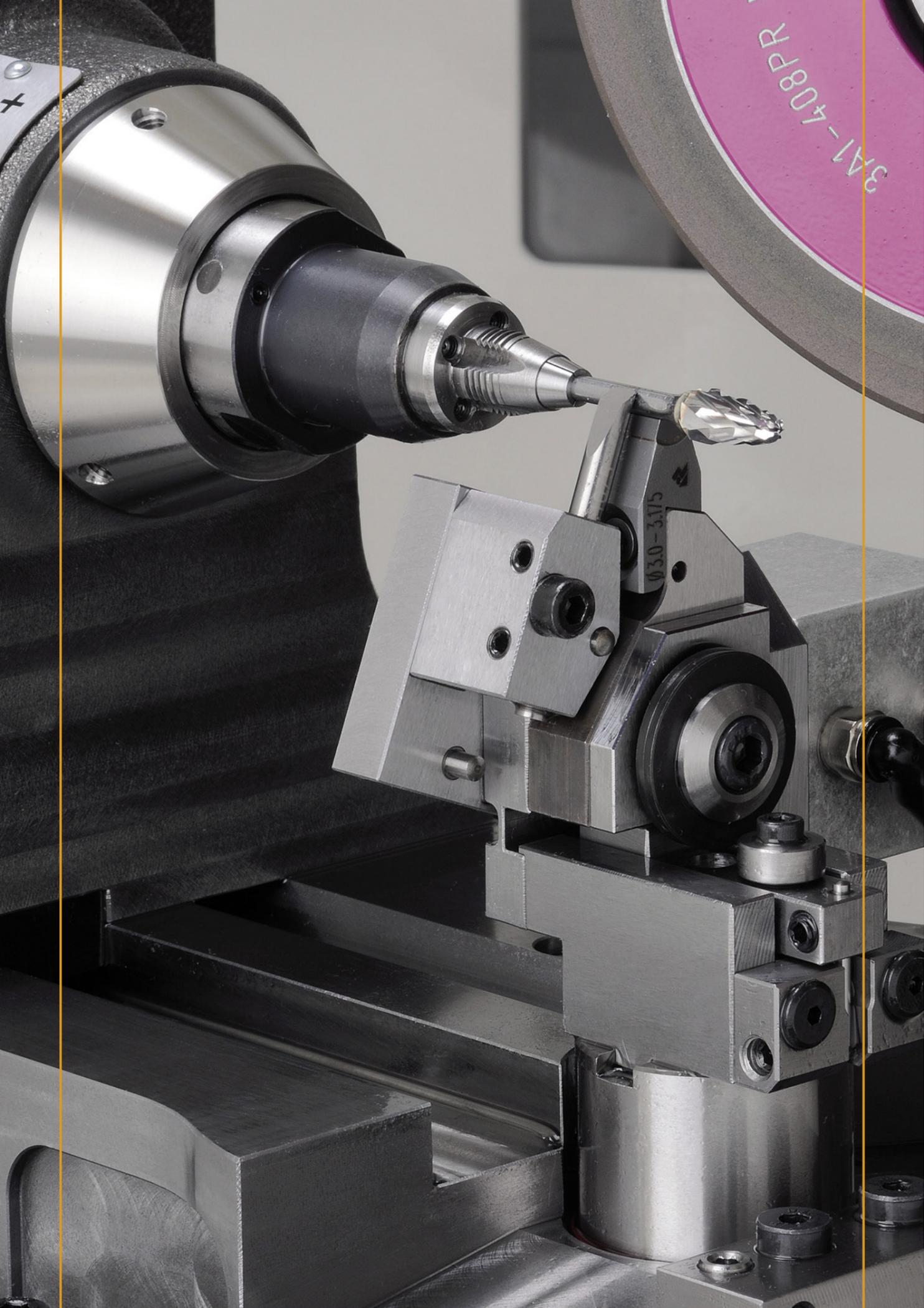
Machine hood physically disconnected from the machine base

- Reduces problems linked to external disturbances and improves grinding quality

Direct drive 1.5 kW spindle motor and PerfectArbor™ flange system

- Increases surface finish quality
- Precise and repetitive grinding wheel mounting within 0.002 mm





Precise and repetitive setup process

For the production of endmills, drills, or rotary burs, the GrindSmart®Nano5 is available with the ideal shank guide and tool support system for your application. These guiding systems guarantee a repetitive setup and precise concentricity. Moreover, for long fluted tools, a steady rest support system is available to help support tools during grinding operations.

- Fast and simple setup
- Repetitive adjustment of the radial runout below 0.002 mm

Increased efficiency and productivity

The integrated robot loader allows for handling of burs with heads larger than the shank. The fast-front loading reference guarantees consistent stock removal during the entire batch without using the probe. The fast axis travel and compact design of the loader enables quick, reliable tool changing every time.

- Reliable loading in less than 8 seconds
- Capacity up to 1000 tools

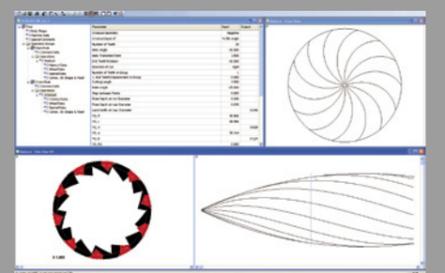
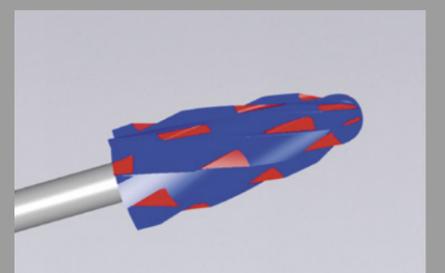
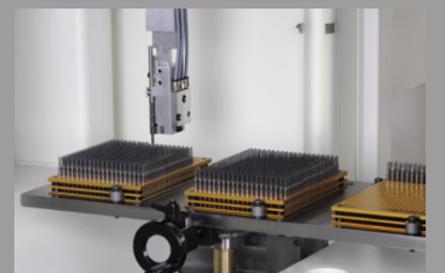
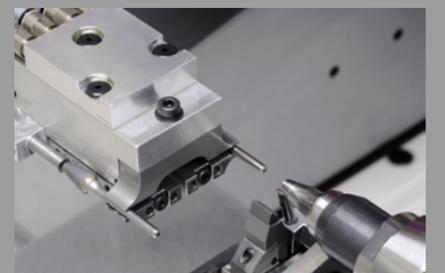
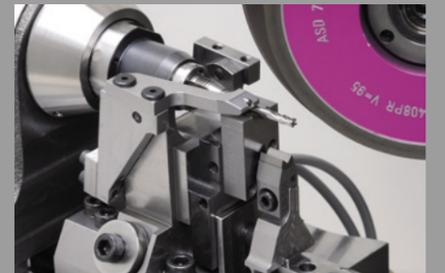
VirtualGrind®Pro and BurCalc® unlimited programming solutions

The GrindSmart®Nano5 is supplied with an intuitive software package for the design of endmills, drills, rotary burs and other tools.

Rollomatic's flexible software offers total freedom of design over the entire tool geometry. In addition, you can choose to program directly on the machine or on a networked PC, and all software updates from Rollomatic are free of charge.

A powerful, stable and extremely fast simulator enables generation of 3D images from the programmed tool. With this off-line software, you can visualize the movements of the machine before grinding in order to reduce setup time and enable verification and avoidance of possible collisions while increasing production time.

- Intuitive and simple programming
- Integrated 3D simulation software
- Reduced setup time with 3D machine animation
- Free updates during the entire lifetime of the machine



ROBOTS SPECIFICATIONS

GRINDING RANGE

Grinding Ø range	0.3 – 6.35 mm (.012" – .25")
Shank range	1.0 – 6.35 mm (.04" – .25")
Cutting length	30 mm (1.18")
Overall blank length	100 mm (4")

GRINDING SPINDEL

Power	1.5 kW direct drive
Rotation speed	2000 – 10000 rpm
Grinding wheels	4 grinding wheels with max. Ø 125 mm (5")

CONTROL

FANUC 30iMB

X axis	Stroke	146 mm (5.75")
	Fast travel	15 m/min (50 ft/min)
	Encoder type	Rotary on AC motor
Y axis	Stroke	99 mm (3.9")
	Fast travel	15 m/min (50 ft/min)
	Encoder type	Rotary on AC motor
Z axis	Stroke	146 mm (5.75")
	Fast travel	15 m/min (50 ft/min)
	Encoder type	Rotary on AC motor
B axis	Type	Harmonic drive
	Stroke	200°
	Fast rotation	10800°/min
C axis	Stroke	continuous
	Fast rotation	1000 rpm
	Encoder type	Rotary on AC motor
	Resolution	0.0001°

CLAMPING

Collet type	W12 and W5
Clamping	with spring

ROBOT LOAD & UNLOAD

Number of tools	up to 1000 (3 cassettes)
Shank diameter	1.0 – 6.35 mm (.04" – .25")
Overall length	101.6 mm (4")
Speed	60 m/min (2400"/min)
Clamping	Pneumatic

TOOL SUPPORT

Shank guide	Special burs, pneumatic clamping
Shank guide	Standard cutting tools (option)
Steady rest	"V" or half moon shape (option)

MACHINE

L x W x H	1970 x 1460 x 2060 mm (78" x 58" x 81")
Weight	2900 kg (6400 lbs)
Total power	10 kW
Energy consumption in production	0.9 kWh

* Specifications are subject to change without notice

