



SMART PRO 500

UNIVERSAL GRINDING MACHINE
WITH CONTROLLED MOVEMENT OF 1 - 4 AXES



INNOVATIVE AND PRECISE

The SMART PRO 500 CNC model, with its many variants, is the outcome of the continuous technological research, that has made Nesi a leader in its industry. To obtain design targets, rail with rolling friction have been installed on the longitudinal axis (working table) and transverse axis (carriage support head), with the dual benefit of smoother travel combined with increased working load. The electric spindle has a wide range of speeds, thus allowing accurate calibration for the best cutting result.

Monolithic structure made of cast iron to ensure precision cutting with vibration absorption during machining.

BENEFITS



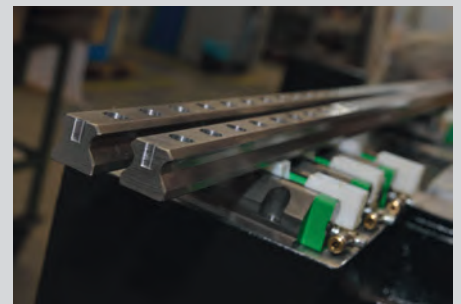
INTUITIVE

- FANUC control.
- Easy installation.
- Safe and simple use.
- Intuitive and customised user interface.



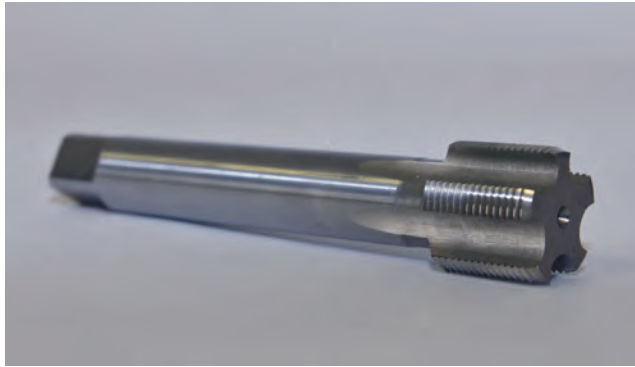
TAILOR-MADE

- Custom configuration.
- Customisation of the software and of the mechanical specifications.
- Machine designed to suit specific cutting requests.



RELIABLE

- Reduced wear of the components.
- Quality guaranteed by years of experience and research.
- Long machine life.



CHARACTERISTICS

- FANUC control.
- Brushless and torque motors (A) for high dynamic range of operations. High precision positioning on linear and rotative axes.
- The longitudinal axis (working table) and the transversal axis (carriage support head) have rail with rolling friction.
- Linear axis with re-circulation ball screws (grindind and preload) to reach high precision.
- Driving axis A with technology "directdrive" for precision positioning.
- All surfaces of support and contact are grinded.
- Positioning system on the axes with optical lines and high resolution encoder directly connected to the operating parts.
- Electric spindle with a wide range of rotation speed for a precise calibration and to reach better cutting conditions.
- Integral structure with front access to load and unload the pieces, side door for practical setup and maintenance.

ACCESSORIES

- Oil mist reduced by centrifugal technology.
- Lubricant and coolant fluid purifiers available for every type of application.
- Automatic part loading/unloading.



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PROCESSING TYPOLOGIES

The machines are available for grinding tools of every type.

Examples of processing:

- Cylindrical mills: cutting angle and first and second dorsal rake angle of both axial and radial cutting edges.
- Taper mills: cutting angle and first and second dorsal rake angle on both axial and radial cutting edges.
- Three edge mills: dorsal rake angles.
- Taps: mating angle.
- Countersink tool: angle on curved surface.
- Given the extreme precision of the machines, it is possible to grind flat surfaces, cylindrical holes and small part shafts.

CONFIGURATIONS

SMART PRO 500 FROM 1 TO 4 CONTROLLED AXES



SMART PRO 500 SIMULTANEOUS MOVEMENT OF THE CN AXES

Tools grinding and grinding of tools or pieces with complex geometric shapes like cylindrical spiral or conical spiral.

THE CONFIGURATIONS

2 AXES CN	XY	XZ	XA
3 AXES CN	XYZ	XYA	XZA
4 AXES CN	XYZA		



SMART PRO 500

CHARACTERISTICS

Longitudinal X axis - piece-holder table

Longitudinal useful stroke [mm]	500
Piece-holder table length [mm]	970
Piece-holder table width [mm]	120
Piece-holder table inclination on horizontal plane, micro-metric	$\pm 45^\circ, \pm 12^\circ$

Transverse Z axis - head-carriage

Transverse useful stroke [mm]	270
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Vertical Y axis - wheel centre head

Vertical useful stroke [mm]	230
Vertical stroke of wheel centre spindle on sliding head [mm]	140
Overall useful stroke [mm]	370
Planetary base orientation on horizontal plane, radius	$\pm 180^\circ, 90\text{mm}$
Wheel centre head orientation on horizontal plane	$\pm 180^\circ$

Rotating A axis - piece holder head

Toolholder	ISO 50 DIN 2080
Speed of axes movement	X = $1 \div 8\text{m/min}$ Y = $1 \div 5\text{m/min}$ Z = $1 \div 5\text{m/min}$ A = $1 \div 700\text{Rpm}$

On-board machine power	8kW
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Dimensions

Width x Depth x Height [mm]	Depending on the model
Overall weight [kg]	Depending on the model

