



## Elbo Controlli NIKKEN E68BA Tool Presetting Machine

Our range of standard and advanced tool presetting machines are designed, developed and manufactured by our sister company Elbo Controlli NIKKEN.

All Elbo Controlli NIKKEN tool presetters are designed and manufactured 'in-house' at our two sites in Meda near Milan, Italy. Every single construction material and component is carefully controlled and developed specifically with the function and requirement of measuring tools in mind (from the optics and electronics right through to the glass scales, spindles and structural assemblies).



### MAIN FRAME & CONSTRUCTION

Steel monoblock machine structure featuring four floor mounted vibration damped adjustable supports. Ground granite column and base to guarantee and maintain maximum accuracy. This construction ensures durability and offers high levels of thermal stability making the E68BA highly suitable for machine shop conditions with no issue of concern in respect of accuracy, repeatability and reproducibility. Axis movement is motorized via servo motors.

### SPINDLE SYSTEM

A wide variety of tools can be pre-set utilizing interchangeable spindle cartridges rather than adaptors. This reduces the number of interface connections delivering accuracy across all spindle types. The machine allows for fully automatic tool clamping of all such adaptors and provides drawer storage for up to two additional spindle cartridges. All cartridges feature an innovative spindle identification system (SP-ID) which ensures only the correct reference(s) applicable to that particular spindle size/type can be chosen and used by the operator.

### FUNCTIONALITY

The E68BA features a 15" touch screen mounted horizontally to the right of the main spindle for easy viewing. The screen layout and design is split into two distinct sections. The left half of the display shows visible images of the current tool and profile whilst the right section allows access to all the current software functions. Simple icon and graphically driven menus enable the operator to quickly and intuitively manage all tool measurement and inspection functions, in addition a range of auxiliary functions are available such as creating CNC Machine origins and tool sets. The E68BA also features an automatic measuring cycle which powers the spindle rotation to quickly capture the required values for each and every cutting edge! The E68BA is TiD ready!

### SERVICE & SUPPORT

NIKKEN have a UK based service and Engineering team offering unrivalled levels of customer support, we are able to offer a comprehensive range of services including:

- Installation, training, technical support, service and calibration. Our team is 'manufacturer' trained and we stock a wide range of spares to facilitate quick response times and a highly efficient service.



## TECHNICAL DATA

**Measuring range:** Diameter max 600 mm (radius 300 mm); height max 800 mm.

**Motor providing automatic rotation of the spindle with pneumatic engagement of the motion transmission providing zero backlash (patented system).**

**C Axis visualisation for the angular position of the spindle-holder with 0.01° resolution.**

**Elbo Controlli NIKKEN linear transducers in optical glass directly mounted onto granite supports. Slide GS371 certified with HP laser. Axes resolution: X = 1 µm, Z = 1 µm.**

### **Standard mechanical/electronic and optical equipment:**

Base and column made of natural granite to guarantee the maximum accuracy: linearity max

Error 2 µm/Mt – certification with Taylor Hobson res.1 µm/Mt. electronic millesimal level.

Monoblock machine structure in steel, floor mounted with 4 vibration damper adjustable supports.

ELBO CONTROLLI NIKKEN Linear Transducers in optical glass type GS 371 certified HP laser:

Axes resolution: X= 1 µm, Z= 1 µm.

ISO / BT / HSK / VDI... etc. Interchangeable rotating spindle-holder (to be specified) max run-out error < 2 µm.

Spindle Index in four angular positions: 0°-90°-180°-270°.

Motor providing automatic rotation of the spindle with pneumatic engagement of the motion transmission providing zero backlash (patented system).

Spindle-holder Identification System (SP-ID) with NFC technology to automatically identify the spindle-holder after each replacement.

Double vault arc prismatic slideways: 2 for X axis slideways and 1 for Z axis slideway.

Double re-circulating ball bearing slides (four in total), lubricated for life (preloaded slides/slideways: P/H class).

Universal motorised mechanical tool clamping (ISO/BT/HSK/CAPTO tooling – to be specified).

Pneumatic-mechanical braking of the spindle-holder rotation with 3 pistons at 120° position.

Motorized axis movement.

Control panel with micrometric handwheels and rapid movement buttons (2.5 m/mm).

Constant load Archimedean spiral spring (as opposed to a mass counter-balance system).

Vision-system for tool measuring and cutting inspection consisting of:

C-MOS sensor – Framed image area 5 x 5 mm.

Magnification around 38X.

Bi-telecentric lens.

Illuminator: episcopic ring-light LED's, diascope telecentric lenses spot-light red.

### **Machine operator interface through:**

TFT 15" colour Touch Screen monitor.

Industrial motherboard with Intel Processor.

UBUNTU LINUX LTS operating system.

Data storage on solid state disk SSD.

Four USB ports

One LAN networking port and wireless connection.

### **Standard software:**

Ease of use thanks to the integrated touchscreen.

CNC machine origin and spindle adaptor management.

Tool list creation and/or single tool. Also possibility to create a customized format.

Theoretical measurement and tolerance management.

Td SIX (tool data SIX) Post Processor universal generator.

Automatic change of CNC machine origin allocation.

Printable tool set report.

Spindle holder auto rotation with automatic tool measurement cycles for single cutter or multi-edged cutters.



Peripheral speed of spindle rotation is calculated and controlled based on the diameter of the current tool being measured.

Ready for TiD infrastructure for tool identification and data transfer using a data matrix tag/code.

Ready for Magnetic chip code-holders (Balluff for example, hardware not included and available as option).

Anti-dust cover provided for when not in use.

**Overall dimensions:** Length = 1700 mm, Height = 2300 mm, Depth = 700 mm. Net weight: 570 Kg.

**Interchangeable spindle options available:**

Part Description	Part Numbers	
	Interchangeable Spindle	Resetting Gauge
ISO/BT/SK/CAT Spindle-holder with C Axis display and SP-ID system. Equipped with automatic tool clamping. 7/24 taper versions for 50,40 & 30 are available.	04PA50RA	04B125
	04PA40RA	04B123
	04PA30RA	04B122
HSK Spindle-holder with C Axis display and SP-ID system. Equipped with automatic tool clamping. HSK100 and HSK63, A,C,T versions are available.	04PH100RA	04B128
	04PH63RA	04B127
VDI Spindle-holder with C Axis display and SP-ID system. VDI50 & 40 versions are available.	04PV50RA	N/A
	04PV40RA	
CAPTO Spindle-holder with C Axis display and SP-ID system. Equipped with automatic tool clamping. C8, C6, & C5 versions are available.	04PC8RA	N/A
	04PC6RA	
	04PC5RA	

Other spindle holders and accessories available by request