Elbo Controlli NIKKEN
E46LA 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

Machine structure in high quality structural steel to provide increased stiffness with higher accuracy and rigidity. Solid granite column and base (increased substantially in size over previous generation models) to guarantee and maintain maximum accuracy. This construction ensures durability and offers high levels of thermal stability making the E46LA highly suitable for machine shop conditions with no issue of concern in respect of accuracy, repeatability and reproducibility.

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 push button electro-mechanical tool clamping of ISO adaptors and provides storage for up to six additional spindle cartridges in conjunction with an innovative taper contact confirmation system to verify proper tool location. The cartridges supplied for the E46LA all feature a 'C' axis display our unique spindle identification system (SP-ID) which identifies which spindle is loaded and prohibits selection of the incorrect reference from the library.

FUNCTIONALITY

The E46LA features a new and innovative fully automatic measuring capability allowing the machine and software to rotate the tool to measure and capture the radius/diameter and length values for multiple cutting edges without any operator interaction. The software is displayed and interacted with via a 22" capacitive touch screen mounted vertically for easy viewing and operation. The screen layout and design is split into two distinct sections. The upper half of the display shows visible images of the current tool and profile whilst the lower section, along with our floating menu window, provides access to all the current functions. Simple icon and graphically driven menus enable the operator to quickly and intuitively manage all tool measurement and inspection modes, in addition a range of auxiliary capabilities are available such as creating CNC Machine origins and tool sets.

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.

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TECHNICAL DATA

Measuring range: Diameter max 400 mm (radius 200 mm); height max 600 mm.

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

C Axis display for both spindle body and spindle-holder.

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.
ELBO CONTROLLI NIKKEN Linear Transducers in optical glass type AS 371 certified HP laser: Axes resolution: X= 1 µm, Z= 1 µm.
Machine structure in stainless steel offering high mechanical strength and long life, floor mounted with 3 fixed supports and one adjustable support in steel.
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°.
Spindle-holder Identification System (SP-ID) with NFC technology to automatically identify the spindle-holder after each replacement.
Linear slideways: 2 for X axis slideways and 1 for Z axis slideway.
Double re-circulating ball bearing slides (four in total), lubricated for life. Universal electro-mechanical tool clamping (ISO only).
Pneumatic-mechanical braking of the spindle-holder rotation with radial compensation of the clamping force – no axis angular run error.
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 10 x 10 mm.
Magnification around 26X.
Bi-telecentric lens.
Optical doublets at low F/Number in order to eliminate the error of the clearness circle.
Red light episcopic LED's illuminator with ring lens, red light diascopic LED puntiform illuminator.

Machine operator interface through:
Full HD LCD 22" colour Touch Screen monitor.
Intel I3 Quad Core Processor.
UBUNTU LINUX 14.04 LTS operating system.
Data storage on solid state disk SSD.
X and Z axes lock management for a translation speed lower than 2 mm/sec.
Four USB ports.
One LAN networking port and wireless connection (Wi-Fi 802.11 150Mb/s).

Standard software:
Operator-machine interface simple and intuitive by single screen function (based on ISO7000).
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.
Tool set and 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.
DXF format drawings import capability for overlaying a drawing on a live tool profile.
Tool profile acquisition exportable in DXF format.

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).
Double OS and twin monitor option available to provide integration with Elbo Controlli NIKKEN TP32 management software.
Anti-dust cover provided for when not in use.

Overall dimensions: Length = 1282 mm, Height = 1874 mm, Depth = 672 mm. Net weight: 270 Kg.

Interchangeable spindle options available:

Part Description	Part Numbers	
	Interchangeable Spindle	Resetting Gauge
ISO/BT/CAT Spindle-holder with SP-ID system. 7/24 taper versions for 50,45,40 & 30 are available.	04PMS50RA	04B125
	04PMS45RA	04B124
	04PMS40RA	04B123
	04PMS30RA	04B122
HSK Spindle-holder with SP-ID system. Equipped with an integrated manual mechanical clamping system. HSK100, HSK80, HSK63, HSK50, HSK40 FORM A,C,E versions are available.	04PMH100RA	04B128
	04PMH80RA	04B131
	04PMH63RA	04B127
	04PMH50RA	04B130
	04PMH40RA	04B133
	04PMH32RA	04B132
NEW HSK Spindle-holder with SP-ID system. Equipped with an integrated motorized mechanical clamping system. HSK100, HSK63, HSK50 & HSK40 FORM A,C,T motorized version is available.	04PMH100RMA	04B128
	04PMH63RMA	04B127
	04PMH50RMA	04B130
	04PMH40RMA	04B133
VDI Spindle-holder with SP-ID system. VDI50,40 & 30 versions are available.	04PMV50RA	N/A
	04PMV40RA	
	04PMV30RA	
Polygonal taper Spindle-holder with SP-ID system. Equipped with an integrated manual mechanical clamping system. C8, C6, C5 & C4 versions are available.	04PMC8RVA	N/A
	04PMC6RVA	
	04PMC5RVA	
	04PMC4RVA	
NEW polygonal taper Spindle-holder with SP-ID system. Equipped with an integrated motorized mechanical clamping system. C8, C6 & C5 versions are available.	04PMC8RMA	N/A
	04PMC6RMA	
	04PMC5RMA	
Other spindle holders and accessories available by request.		