



## Elbo Controlli NIKKEN E46LTW 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 E46LTW 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/BT 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 E46LTW all feature 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 E46LTW 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 (using the E46LTW's unique triple camera system), 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.



## TECHNICAL DATA

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

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

Base and column made of natural granite to guarantee the maximum accuracy: linearity max error 2  $\mu\text{m}/\text{Mt}$  – certification with Taylor Hobson res.1  $\mu\text{m}/\text{Mt}$ . electronic millesimal level.

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

Axes resolution: X= 1  $\mu\text{m}$ , Z= 1  $\mu\text{m}$ .

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  $\mu\text{m}$ .

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.

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

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

Universal electro-mechanical tool clamping (ISO/BT 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).

**Main Camera:**

Bi-telecentric lens.

Optical doublets at low F/Number in order to eliminate the error of the clearness circle.

Magnification 26X, digital zoom 2x and 4x available.

C-MOS sensor 1.3 mega pixels, USB 2.0 high speed connection.

Framed image area 10 x 10 mm (3 times larger than standard values).

Episcopic illuminator with ring lens and red LED's. Diascopic illuminator with puntiform red light.

**Second/Third Cameras:**

Bi-telecentric lens.

Opportunity to view the tool from the top (front) or from the side (flank). The twin camera design allows it to be retracted through 90 degrees to remove it from above the tool so as not to obstruct normal measuring processes.

Magnification 60X, digital zoom 2x and 4x available.

C-MOS sensor 1.3 mega pixels, USB 2.0 high speed connection.

Framed image area 4 x 4 mm (3.9  $\mu\text{m}/\text{pixel}$ ).

Illuminator: episcopic ring with diffused light and low angle reducing the possible glare caused by characteristics of the tool surfaces/materials.

**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.

**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 = 1237 mm, Height = 1874 mm, Depth = 646 mm. Net weight: 258 Kg.

**Interchangeable spindle options available:**

Part Description	Part Numbers	
	Interchangeable Spindle	Resetting Gauge
ISO/BT/SK/CAT Spindle-holder with SP-ID system. 7/24 taper versions for 50,45,40 & 30 are available.	04PMS50R	04B125
	04PMS45R	04B124
	04PMS40R	04B123
	04PMS30R	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.	04PMH100R	04B128
	04PMH80R	04B131
	04PMH63R	04B127
	04PMH50R	04B130
	04PMH40R	04B133
	04PMH32R	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.	04PMH100RM	04B128
	04PMH63RM	04B127
	04PMH50RM	04B130
	04PMH40RM	04B133
VDI Spindle-holder with SP-ID system. VDI50,40 & 30 versions are available.	04PMV50R	N/A
	04PMV40R	
	04PMV30R	
CAPTO Spindle-holder with SP-ID system. Equipped with an integrated manual mechanical clamping system. C8, C6, C5 & C4 versions are available.	04PMC8RV	N/A
	04PMC6RV	
	04PMC5RV	
	04PMC4RV	
NEW CAPTO Spindle-holder with SP-ID system. Equipped with an integrated motorized mechanical clamping system. C8, C6 & C5 versions are available.	04PMC8RM	N/A
	04PMC6RM	
	04PMC5RM	
Other spindle holders and accessories available by request		