



## Elbo Controlli NIKKEN Hathor Six 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

Designed to be floor mounted with a machine structure in stainless steel to provide increased stiffness with higher stability and rigidity. Solid granite column and base to guarantee and maintain maximum accuracy. This construction ensures durability and offers high levels of thermal stability making the Hathor SIX 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 in conjunction with an innovative taper contact confirmation system to verify proper tool location.

### FUNCTIONALITY

The Hathor SIX features a new and innovative automatic measuring routine allowing the operator to simply rotate the tool through 360 degrees after which the software captures and locks the maximum measured radius/diameter and length values of all the cutting edges. The software is displayed and interacted with via a 15" TFT touch screen mounted horizontally for easy viewing and operation. 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 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.



## 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  $\mu\text{m}/\text{Mt}$  – 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 self-levelling supports in non-deformable 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°.

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-mechanic braking of the spindle-holder rotation.

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 6,4 x 6,4 mm.

Magnification around 30X.

Bi-telecentric lens.

Doublet lenses 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:**

TFT 15" colour Touch Screen.

Intel Atom D.C. fanless motherboard.

UBUNTU LINUX operating system.

Data storage on solid state disk SSD.

X and Z axes lock management for a translation speed lower than 2 mm/sec.

### **Standard software:**

Operator-machine interface simple and intuitive by single screen function.

Ease of use thanks to the integrated touchscreen.

CNC machine origin and spindle adaptor management.

Tool list creation and/or single tool.

Automatic change of CNC machine origin allocation.

Tool set and Post Processor universal generator.

Printable tool set report.

Theoretical measurements and tolerances management.

Anti-dust cover provided for when not in use.

**Overall dimensions:** Length = 1240 mm, Height = 1840 mm, Depth = 558 mm. Net weight: 185 Kg.



Interchangeable spindle options available:

Part Description	Part Numbers	
	Interchangeable Spindle	Resetting Gauge
ISO/BT/SK/CAT Spindle-holder. 7/24 taper versions for 50,45,40 & 30 are available.	04PMS50R	04B125
	04PMS45R	04B124
	04PMS40R	04B123
	04PMS30R	04B122
HSK Spindle-holder. 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
NEW HSK Spindle-holder. 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. VDI50,40 & 30 versions are available.	04PMV50R	N/A
	04PMV40R	
	04PMV30R	
CAPTO Spindle-holder. 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