"rock solid measurement"

elbo controlli NIKKEN

20821 MEDA (MB) - Italy - Via San Giorgio, 21
T. +39 0362 342745 - **F.** +39 0362 342741
www.elbocontrolli.com - info@elbocontrolli.it

AZIENDA CONCESSIONARIA DEL MARCHIO UCIMU

CE

Distribuited by

E68B

E68BA

elbo controlli NIKKEN

TOOL PRESETTER

E68B

" Quality in a service or product is not what you put into it. It is what the client or customer gets out of it" Peter Drucker

PRECISION AND ACCURACY

The quality of a measurement depends both on the operator's skill and on the reliability of the equipment used.
E68B makes accurate measurements with its high level of precision

EASY TO USE AND SIMPLICITY

An easy and simple tool for anyone is the key to success. This is the Elbo Controlli NIKKEN philosophy: to study and realize products based on ease of use and of learning

RIGIDITY AND DIMENSIONAL STABILITY

Rigidity is the ability of a body to resist to an elastic deformation caused by an applied force.
The ***NATURAL GRANITE*** structure maintains an unmatched rigidity and a dimensional stability

LONGEVITY

All Elbo Controlli NIKKEN presettter machines have a high level of longevity, thanks to the use of superior quality components and a constant search of perfection

EFFICIENCY AND PRODUCTIVITY

Improve productivity and increase production efficiency is essential to reducing costs.
The E68B series increases these two aspects by minimizing human error, increasing production capacity and measuring the tools without machine downtime

SOLID AS A ROCK, ACCURATE AS AN ELBO CONTROLLI NIKKEN PRESETTER MACHINE

"El Capitan, the dream of many climbers from all around the world, is a magical appearance. A vertical granite wall, straight as if it had been chiselled, immense and majestic. One of the symbols of the Yosemite park, the largest granite monolith in the world" Anonymous

NATURAL GRANITE, when used as a construction material is ideal as it has unique physical and mechanical characteristics:

- *THERMAL AND DIMENSIONAL STABILITY*
- *HARDNESS*
- *WEAR RESISTANCE*
- *WORKING PRECISION*
- *RESISTANT TO ACIDS, AMAGNETICITY, ELECTRIC INSULATION, STAINLESSNESS*

The E68B base and column are in natural granite, with larger area sections compared to previous model to guarantee a better rigidity and stability over time.

and not only... the new GS371 optical scale with NATURAL GRANITE ruler

All the E68 presetter machines series are equipped, both on the X axis and on the Z axis, with **GS371** optical scales with natural granite ruler and graduated glass scale.

The first and only optical scale in the world that uses natural granite, ensuring a precision and repeatability never seen before.

The new GS371 optical scale reaches goals to make it a high precision measurement system, thermally stable and without mechanical calibrations.

The oversized monoblock structure is synonymous of precision, reliability and dimensional stability

Compact and rigid, perfect for use in an industrial environment where the vibrations are constant and can create disturbances: E68B will leave you speechless, the depth of its performances backed up by facts.

Why limit yourself to using an adapter? The real strength is the interchangeability

At any time you want and when you need to.
All the spindle-holders are totally interchangeable, which avoids coupling errors.
Following strict construction and testing procedures, the result is guaranteed: the run-out error is less than 2 µm.

The spindle body with double ball bearing cage allows perfect coupling and the universal motorized pull-stud clamping does the rest.

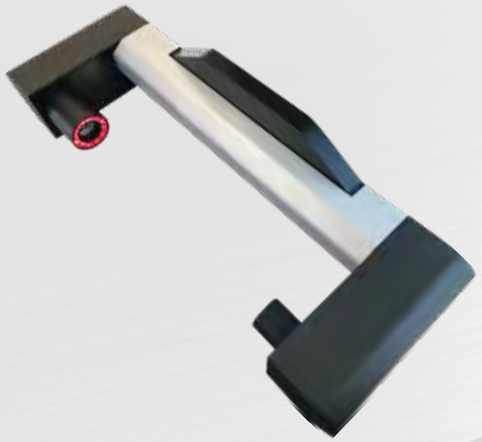
"A work of art is the unique result of a unique temperament" Oscar Wilde

WHEN TECHNOLOGY COMBINES QUALITY AND PERFORMANCE

Today, technology is an integral part of daily life, radically changing our lifestyle.

The goal of technology is to solve problems or improve one or more aspects of everyday life, but sometimes it's not enough: the importance of having an high quality and performance instrument is fundamental, especially when it comes to measurements to one thousandth of a millimeter.

This is the reason why Elbo Controlli NIKKEN invests its time and resources into researching high-level technologies and developing unique solutions made for this type of application.



Only one rule: HIGH PERFORMANCE

How is it possible to measure a micron which is 50 times smaller than an human hair?
Simple, with an high performance camera system where each element has been specifically designed and built exactly for this function.

Bi-telecentric optics with higher magnification ratio and increased focal distance, telecentric illuminator, C-MOS sensor (framed image area 8 x 8mm) and much more.

Why stop at measuring? Perfect inspection images, in every detail. Seeing is believing.

Total control on a single panel

The control panel is essential to move the axes: ergonomics buttons for the rapid movement allow you to position and frame the tool quickly and the electric handwheels facilitate the collimation of the tool profile to acquire the measurements.

All motorized. All managed via software.

No errors, precise in every movement.

"Discovery consists of seeing what everybody has seen, and thinking what nobody has thought" Albert Szent-Gyorgyi

Software

" We use Linux for all our applications that have critical tasks. Having the source code means that we are not held hostage by any service department" Russ Nelson

Ready for magnetic chip code-holders (Balluff for example, hardware not included)

Ready for TID infrastructure for tool identification with Datamatrix code

Printable tool set report

TD SIX (Tool data six) Post Processor Universal creator

CNC machine origin management

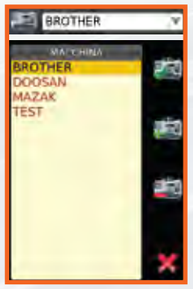
Automatic change of CNC machine origin allocation

Tool creation list and/or single tool

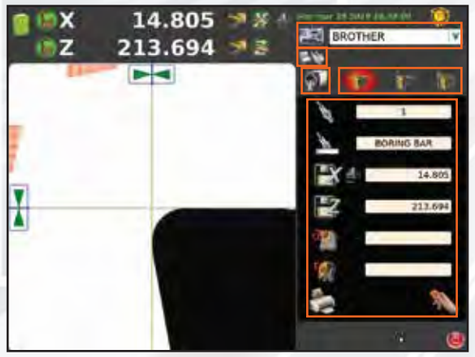
Theoretical measurement and tolerance management

Easy is synonymous of practical: how does it work?

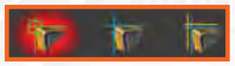
MACHINE ORIGIN



In the machine origin database, all information regarding the main parameters of used tool machines are stored



ACQUISITION MODE



3 modes to acquire the tool measurement:

- Collimation on fixed reticle
- Autocollimation
- Autocollimation with freeze of the maximum dimensions

CAMERA FUNCTION MENU

The "camera functions" key opens a window to access all operative modes of tool measurement and inspection (angles, radii, tool shape traking)

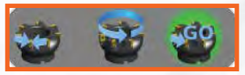
TOOL TABLE

The tool set database contains information regarding all tool sets created, each one of these will be matched to a machine origin

E68BA Autofocus

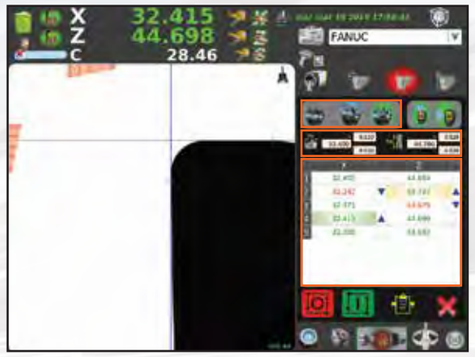
A function characterized by extreme practicality

AUTOMATIC MEASUREMENT MENU

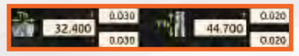


3 modes to acquire the automatic tool measurement:

- Single cutter autofocus
- Multicutter autofocus
- Positioning at the selected measurement



THEORETICAL VALUES AND TOLERANCES



Possibility to insert theroetical values with X and Z measuring tool tolerances

MEASUREMENT RESULTS

	X		Z	
1	32.405		44.684	
2	32.342	▼	44.707	▲
3	32.371		44.679	▼
4	32.415	▲	44.699	
5	32.388		44.682	

At the end of each measuring cycle, the measured values are shown in tabular form. The green highlighted datas are values in tolerance, while the red ones those out of tolerance.

Minimum and maximum of X and Z values display

You don't see the magic, you perceive it

Thanks to **AUTOFOCUS** function, the presetting experience is even easier and more enjoyable.

No data entry, no pre-operation: by clicking on "AUTO" button, the spindle makes a 360° rotation and the software analyzes all the cutting edges.

The rotation spindle peripherical speed is calculated based on the tool diameter.

Why complicate your life when the solution is simple and uncompromising?

" Real progress happens only when advantages of a new technology become available to everybody" Henry Ford

Technical Features

Mechanics

- Measuring range: diameter max 600 mm (radius 300 mm); height max 800 mm
- Monoblock machine structure in steel, floor mounted with 4 vibration damper adjistable supports
- Base and column made of ground granite certified with Taylor Hobson RIS.1 µm/m electronic millesimal level
- **ELBO CONTROLLI** linear transducers in optical glass with ground granite support type SLIDE GS371 certified HP laser with axes resolution: X = 1 µm, Z = 1 µm
- ISO/BT/HSK/VDI/CAPTO ... etc. interchangeable rotating spindle-holder (to be selected) max run-out error < 2 µm
- Spindle index in four angular positions: 0°-90°-180°-270°
- C axis visualization: angular position of the spindle-holder with 0.01° resolution (**AVAILABLE ON E68BA**)
- Motor providing automatic rotation of the spindle with pneumatic engagement of the motion transmission for zero backlash (patented system) (**AVAILABLE ON E68BA**)
- Spindle-holder identification system (SP-ID) with NFC technology to automatically identify the spindle-holder after each replacement
- Double vault arc prismatic slideways: two for X axis slideways, one for Z axis slideways
- Double re-circulating ball bearing slides (four in total), lubricated for life (preloading slides/slideways: P/H class)
- Universal motorized mechanic tool clamping (ISO/BT/HSK/CAPTO tools to be specified)
- Pneumatic braking of the spindle-holder rotation with 3 pistons at 120°
- Motorized axes movement
- Control panel with micrometic handwheel and rapid movement buttons (2,5 m/mm)
- Overall dimensions: L = 1700 mm, H = 2300 mm, D = 700 mm
- Net weight: ~ 570 Kg

Electronics - Optics

- Vision system for tool measuring and cutting inspection
- C-MOS sensor framed image area 5 x 5 mm
- 38X magnification
- Bi-telecentric lens
- Illuminator: episcope ring-light red LEDS; diascopic telecentric lenses spot-light red LED
- TFT 15" touch screen monitor
- Industrial motherboard with Intel processor
- UBUNTU LINUX LTS operationg system
- Data storage on solid state disk SSD
- 4 USB ports
- 1 LAN networking port and Wireless connection

Software

- CNC machine origin management
- Tool creation list and/or single tool
- Theroetical measurement and tolerance management
- Printable tool set report
- Automatic change of CNC machine origin allocation
- Td SIX (Tool data SIX) Post Processor universal creator
- Spindle-holder auto rotation with automatic tool measurement cycles for single cutter or multi edged cutter (**AVAILABLE ON E68BA**)
- Peripheral speed of the spindle rotation is calculated and controlled based on the diameter of the current tool being measured (**AVAILABLE ON E68BA**)
- Ready for TID infrastructure for tool identification with Datamatrix code
- Ready for magnetic chip code-holders (Balluff for example, hardware not included)

Optional

- ISO/BT/HSK/VDI/CAPTO... etc. additional spindle-holder
- Diameter max 800 mm (radius 400 mm); height max 1000 mm
- C axis visualization: angular position of the spindle-holder with 0.01° resolution (**E68B**)
- Dymo label printer

Comparisons

LEGEND: ***– not available*** ***● available*** ***○ option***	***E68B***	***E68BA***
Measuring range: 600 mm Diameter, 800 mm Height	●	●
Measuring range: 800 mm Diameter, 1000 mm Height	○	○
Natural granite *base and column*	●	●
Steel machine structure	●	●
Motorized axes fine adjustement	●	●
Interchangeable spindle *(ISO 40, ISO 50, HSK. VDI, CAPTO...)*	●	●
C axis visualization with angular position of the spindle-holder	○	●
Spindle index in four angular positions: 0°-90°-180°-270°	●	●
Automatic rotation *with* ***AUTOFOCUS*** *function*	–	●
Pneumatic spindle rotation brake with 3 pistons at 120°	●	●
Motorized mechanical tool holder clamping (for all DIN pull-studs)	●	●
ELBO CONTROLLI NIKKEN *camera system measuring range*	*5 x 5 mm*	*5 x 5 mm*
ELBO CONTROLLI NIKKEN *camera system measuring resolution*	*1 µm*	*1 µm*
ELBO CONTROLLI NIKKEN *camera system magnification*	*38 X*	*38 X*
GS371 certifed natural granite *optical scale (axes resolution = 1µm)*	●	●
Tool Data SIX (Td SIX) Post Processor universal creator	●	●
Tool inspection function	●	●
CNC machine origin management	●	●
TFT 15" touch screen monitor	●	●
UBUNTU LINUX LTS operationg system	●	●
TID (Automatic Tool Identification System)	○	●
Label printer	○	○
Spindle-holder identification system (SP-ID) with NFC technology	●	●

****The provided info are refered to standard presetter machines***