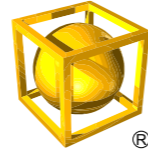# elbo controlli ® NIKKEN

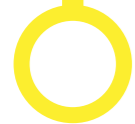E68L

E68L IS

E68LA

E68LA IS

TOOL PRESETTER

" For every need, there is a solution.
Novelty has charms that our mind can hardly withstand"
William Makepeace Thackeray

E68L

TOOL PRESETTER

E68L IS
INTEGRATED SOLUTION

**Double monitor for
TP32 tool management**

**TID Automatic Tool
Identification System**

E68LA
AUTOFOCUS

AUTOFOCUS function

E68LA IS
INTEGRATED SOLUTION
AND AUTOFOCUS

AUTOFOCUS function

**Double monitor for
TP32 tool management**

**TID Automatic Tool
Identification System**

elbo controlli NIKKEN

E68L

PRECISION AND ACCURACY

The quality of a measurement depends both on the operator's skill and on the reliability of the equipment used.
E68L 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 E68L 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

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 E68L 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 with precision, reliability and dimensional stability

Compact and rigid, perfect for use in an industrial environment where the vibrations are constant and can create disturbances: E68L 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.
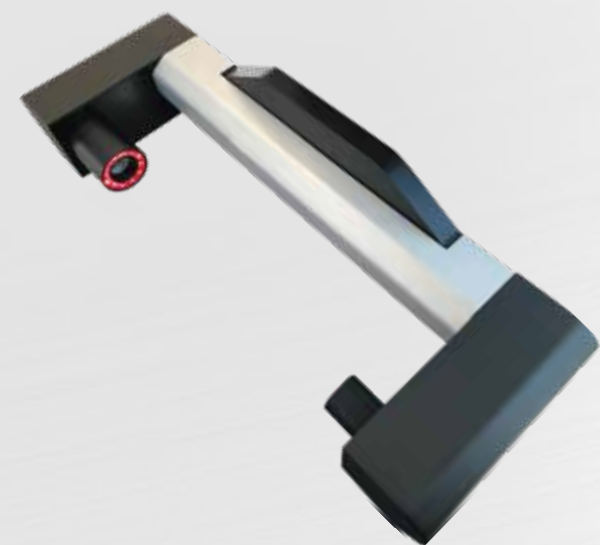
The spindle body with double ball bearing cage allows perfect coupling and the universal motorized pull-stud clamping does the rest.

WHEN TECHNOLOGY COMBINES
QUALITY AND PERFORMANCE

Technology today is an integral part of daily life, radically changing our lifestyles.

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.

518 mm

313 mm

A great monitor adorns a great machine

The best solution to make the experience of presetting and machine management smooth and complete: a 22" capacitive vertically mounted touch-screen monitor, where all the machine functions are present.

Our motto is "User friendly", easy, intuitive and zero complications. Everything you need, at the right time.

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.

With just a simple click our machine software is always on hand to help

DXF CREATION

There is no easier way to create a DXF: frame the tool, acquire the profile and export it.
E68L series allows you to import a DXF file to overlap on it on the tool profile.
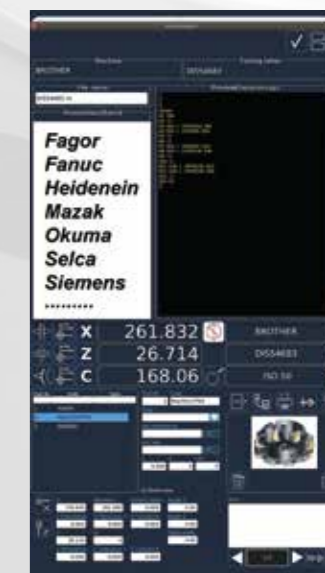
Nothing is left to chance, it's all in your hands.
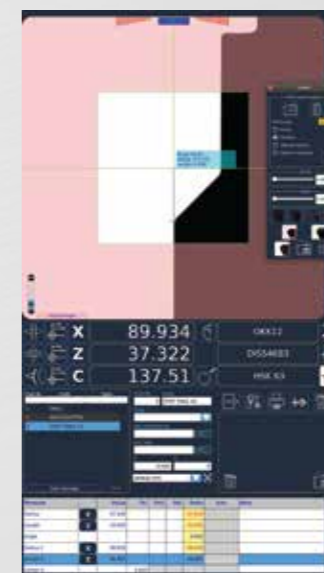
CUSTOMIZABLE TOOL TABLE

All the information you need in the right place at the right moment. Internal/external angles, radii, heights, diameters.

Why not have the freedom to choose? You decide, based on your needs.

POST PROCESSOR

Limits are made to be overcome and with the post-processors universal generator, no obstacle will be insurmountable.
The program transmission is instantaneous without zero errors.
More than 50 post-processors are included.
Can't find yours? No fear. Contact us and we will develop it without additional cost.

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.

INNOVATION

E68L

Mechanics

GS371 OPTICAL SCALE
WITH GLASS RULES
AND SUPPORT IN
NATURAL GRANITE

Base and column made of
NATURAL GRANITE

Diameter max 600 mm
(radius 300 mm)
height max 800 mm

Spindle-holder identification system (SP-ID)
TO AUTOMATICALLY IDENTIFY
THE SPINDLE-HOLDER AFTER
EACH REPLACEMENT

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

ISO/BT/HSK/VDI ... ETC.
INTERCHANGEABLE ROTATING
SPINDLE-HOLDER

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

PRECISION STABILITY ROBUSTNESS DESIGN

OPTIONAL
diameter max 800 mm
(radius 400 mm)
height max 1000 mm

Control panel with
micrometic handwheel and
rapid movement buttons

Motorized axes
movement

Universal motorized
mechanic tool clamping

Electonics - Optics

C-MOS sensor
framed image
area 8 x 8mm

Vision system for
tool measuring and
cutting inspection

Full HD TFT 22"
touch screen
vertical monitor

Bi-telecentric lens

32X magnification

INNOVATION PERFORMANCE QUALITY EFFICIENCY

UBUNTU LINUX LTS
operating system

Intel Quad Core
processor

Data storage on
solid state disk SSD

Illuminator: episcope toroidal
lenses with circular red LED;
diascopic spot-light red LED

4 USB ports and 1 LAN
networking port and
Wireless connection

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

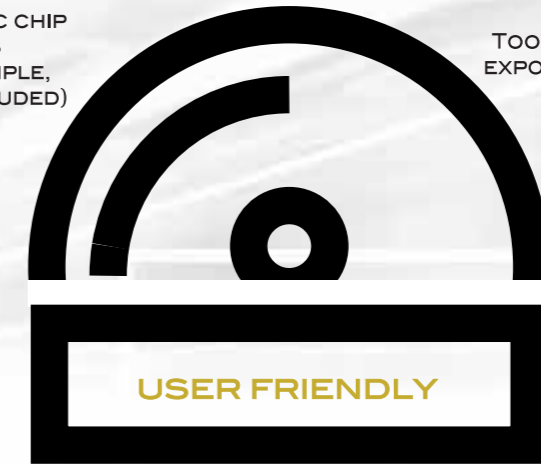**Ready for TID infrastructure for tool identification with Datamatrix code**

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

Tool profile acquisition exportable in DXF format

Printable tool set report

Automatic change of CNC machine origin allocation

USER FRIENDLY

CNC machine origin management

Post Processor universal creator

Tool creation list and/or single tool

Theoretical measurement and tolerance management

Easy is synonymous of practical: how does it work?

TOOLBAR

DXF functionality: creation (with options) import / export and profile removal

Settable recticle (circles and angles)

Advanced instuments to improve the measurement procedure

Incremental measurement and axes management

TOOL MANAGEMENT PANEL

Tool list belonging to the table with tool identification data

ACQUISITION MODE

Collimation on fixed reticle

Autocollimation

Autocollimation with freeze of the maximum dimensions
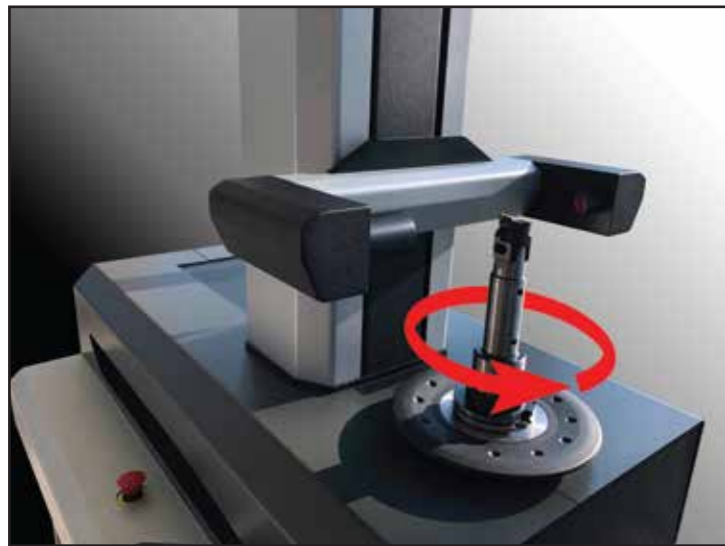
Toolbar

AUTOFOCUS function (if available)

INSPECTION mode

MEASURING mode

Machine origin management

Tool table management

Tool locking status

Quick label

TID read/write (if available)

E68LA AUTOFOCUS

" Any sufficiently advanced technology is indistinguishable from magic"
Arthur C. Clarke

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?

A function characterized by extreme practicality

AUTOMATIC MEASURE MENU

4 measuring modes:

- *SINGLE CUTTING AUTOFOCUS*
- *COMPETE CYCLE*
- *MAXIMUM VALUES SEARCH*
- *CUTTER POSITIONING*

It's possible to acquire X,Z or both values and visualize the out of tolerance measurement for an immediate response at the end of the measurement
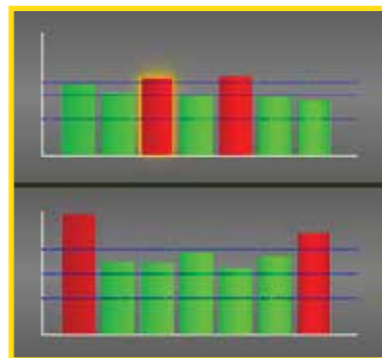
At the end of measurement, the results will be shown in graphic format for a quick consultation.
It is also possible to select a value, and, automatically, the presetter machine will automatically position itself on the desired cutting edge

IS Integrated Solution

The all-round integrated solution for toolroom

E68LA IS is the integrated solution for your toolroom: the presetter machine is equipped with **TP32** (Integrated Tool Management System) and **TID** (Automatic Tool Identification System) which will allow complete management of the toolroom, significantly reducing production costs and optimizing the material supply system.

But the advantages do not stop there.

Manage your tool warehouse, check your vending machine with loading / unloading equipment, set up your machine tools and much more.

Everything you need in one solution.

TID Automatic Tool Identification System

DIRECT CONNECTION PRESETTER-CNC
TID allows a two-way communication between the presetter and the CNC by sending the measurement directly to the CNC without downtime.

SAFETY AND RELIABILITY
Safety and reliability are keywords for TID: insertion errors are eliminated because each tool has its own **UNIQUE** identification, thus guaranteeing the transfer of its data to the CNC.

FULL CUSTOMIZATION
There are no limits: complete customization to manage different configurations according to the tool data required for the specific machine.

TP32

- Procurement
- Machine storages and tooling
- CAM and simulation
- Tool tracking and ID
- PLM, ERP, Analytics
- Tool warehousing
- Tool measurement
- Automated storage

The perfect team: 22" touch screen in harmony

The double Full HD 22" vertical touch screen monitor will amaze you:
- the main monitor (left) is dedicated to all presetting and tool measuement functions
- the secondary monitor (right) has been developed for TP32 tool management and TID tool identification

Every company's reality is different from the other, the real strength is being able to adapt to every situations.

Rotate everything around your needs.

The right tools, in the right place, at the right time

TP32 Integrated Tool Management System

Tool management is made easy and assured with TP32, limiting the possibility of error to a minimum. TP32 has an intuitive graphic interface which guides and helps the user during operation.

TP32 integrates with any CNC, automatic warehouse, management (ERP), CAM and simulators.

Elbo Controlli NIKKEN offers 3 different levels, depending on your needs.

| TP32 LITE | TP32 PLUS | TP32 PRO |

E68LA

M.U.S.T.

Measurement User Support Technology: a new and unique way to measure and preset your tools

As always, Elbo Controlli NIKKEN has developed its own way to automatically measure, inspect and analyze your tools.

We have implemented our E68LA series of presetters with what will become a M.U.S.T. for the industry.

Prepare your measuring program with our new, user friendly, smart interface that allows you to set all the measuring points, number of cutters, theoretical values and tolerances. Everything can be set in one page: decide how you want to measure your tools and where you want to export the result of the measurement (post processor, TID, RFID chips or simply save and print your tool report).
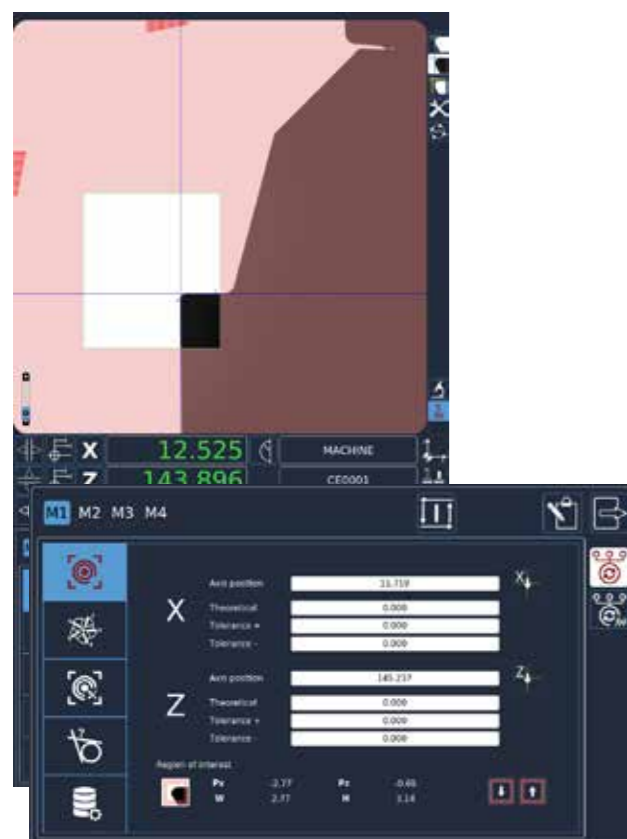
New interface, simple and smart

With M.U.S.T. is possible to position automatically the vision system, to measure the cutting edge with autofocus, to identify adaptively the geometric entities.

Data processing functions are also available,the synoptic of analysis of the results as well as the possibility of exporting/printing the data.

Preparing the measurement program with the new, simple and intelligent interface of Elbo Controlli NIKKEN is possible, with the possibility of setting all the measurement points, the number of cutting edges, theoretical values and tolerances.

M.U.S.T. will make the tool presetting and measurement operation simple and completely automatic, without operator interaction except in the preparatory phase.

M.U.S.T. is aimed at companies that want to allow their operators to work better, with quality and significantly reducing downtime.

Derived measurement

M.U.S.T. allows you to obtain data by processing the measurements made by the various measurement points.

For example, in a program with two M1 and M2 measuring points in which two different types of insert placed at different Z values are measured, it may be necessary to check the distance between the maximum Z value detected with M1 and the maximum Z value detected with M2.

The revolution has begun! What are you waiting for?

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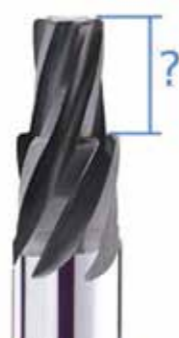
E68LTW

Three cameras, a single result

The new E68LTW is equipped with 3 cameras.
For the front view with 31X magnification, and side and top views of the tool, both with 62X magnification.

The system allows tool manufacturers and tool regrinders to measure all the geometrical features of the tool.

Engage / retract in total autonomy

The vertical camera can be positioned in the maximum position Z with an automatic cycle to facilitate the measurement of bulky tools, so that it doesn't interfere with the tool.

At the end of the current operation with the vertical camera, a simple click on the icon allows the presetter machine to retract and move the camera to the initial position, allowing the operator to resume standard operations in complete safety.

What can you do with E68LTW?

Measure the front extent rake angles to determine the performance of a tool's working conditions.

Measure the back-rake angles, required to guarantee finish cutting without vibrations affecting the material being processed.

Measure the helix angle and rake angle, important to determinate to suit the type of application and the type of material being processed.

All this and much more.

SIMPLY E68LTW

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 adjustable 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... 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 E68LA)
- Motor providing automatic rotation of the spindle with pneumatic engagement of the motion transmission for zero backlash (patented system) (AVAILABLE ON E68LA)
- Spindle-holder identification system (SP-ID) with NFC technology to automatically identify the spindle-holder after each replacement
- Linear slideways: two for X axis slideways, one for Z axis slideways
- Double re-circulating ball bearing slides (five in total), lubricated for life
- Universal motorized mechanic tool clamping (ISO/BT/HSK/polygonal taper tools to be specified)
- Pneumatic braking of the spindle-holder rotation with 3 pistons at 120°
- Motorized axes movement
- Control panel with micrometric 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 8 x 8 mm
- 30X magnification
- Bi-telecentric lens
- Illuminator: episcope ring-light red LEDS; diascopic telecentric lenses spot-light red LED
- Full HD TFT 22" touch screen vertical monitor
- Intel Quad Core processor
- UBUNTU LINUX LTS operationg system
- Data storage on solid state disk SSD
- 4 USB ports
- 1 LAN RJ45 networking port and Wireless connection

◠ Software

- CNC machine origin management
- Tool creation list and/or single tool, possibility to create a customized format
- Theroetical measurement and tolerance management
- Post Processor universal creator
- 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 cutter (AVAILABLE ON E68LA)
- Peripheral speed of the spindle rotation is calculated and controlled based on the diameter of the current tool being measured (AVAILABLE ON E68LA)
- DXF format drawings import capability for overlaying on live tool profile
- Tool profile acquisition exportable in DXF format
- 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... 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 (E68L)
- Brother label printer
- Double Full HD TFT 22" touch screen vertical monitor dedicated to TP32 software integration for tool management
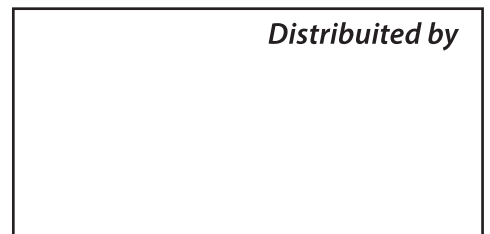
Comparisons

LEGEND: − not available ● available ○ option

	E68L	E68LA	E68L-IS	E68LA-IS
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, BT, HSK, VDI...)	●	●	●	●
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	8 x 8 mm	8 x 8 mm	8 x 8 mm	8 x 8 mm
ELBO CONTROLLI NIKKEN camera system measuring resolution	1 µm	1 µm	1 µm	1 µm
ELBO CONTROLLI NIKKEN camera system magnification	30 X	30 X	30 X	30 X
GS371 certifed natural granite optical scale (axes resolution = 1µm)	●	●	●	●
ELBO CONTROLLI NIKKEN tool manager software on LINUX platform	●	●	●	●
Tool inspection function	●	●	●	●
DXF format drawings import capability for overlaying on live tool profile	●	●	●	●
Tool profile acquisition exportable in DXF format	●	●	●	●
Full HD TFT 22" touch screen vertical monitor	●	●	●	●
Double Full HD TFT 22" touch screen vertical monitor	−	−	●	●
TID (Automtic Tool Identification System)	○	○	●	●
TP32 (Integrated Tool Management System)	○	○	●	●
Label printer	○	○	○	○

The provided info relates to standard presetter machines

elbo controlli NIKKEN

"rock solid measurement"

elbo controlli **NIKKEN**

UCIMU

Distribuited by

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

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