

“*rock solid measurement*”

elbo controlli  **NIKKEN**

E68L

E68L IS

E68LA

E68LA IS



elbo controlli  **NIKKEN**

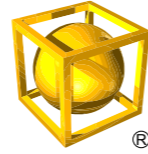


Distributed by

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

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



# E68L

*"Quality is never accidental: it is always the result of intelligent effort" John Ruskin*

## 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

## 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

## LONGEVITY

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



# 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 greatness of art is not to find what is common but what is unique" Isaac Bashevis Singer*

*"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*



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: 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.

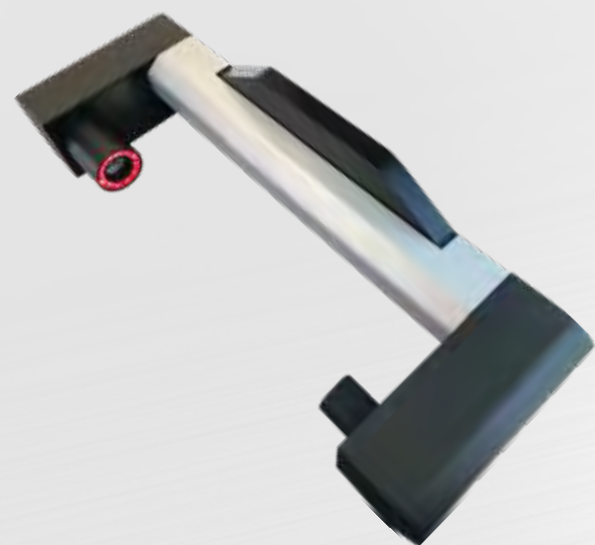


# WHEN TECHNOLOGY COMBINES QUALITY AND PERFORMANCE

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 a 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 a human hair? Simple, with a high performance camera system where each element has been specifically designed and built exactly for this function.

Bi-telescopic 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.



*"All human innovations, no matter what form they take, do not have to follow the rules, otherwise we would never have anything new"* Charles Kettering

*"The ability to simplify means to eliminate the unnecessary so that the necessary may speak"* Hans Hofmann



## 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.

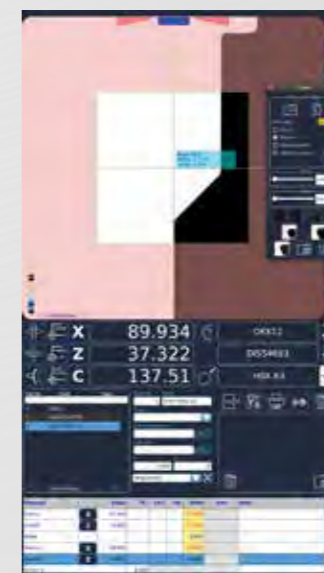
With just a simple click our machine software is always on hand to help



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.

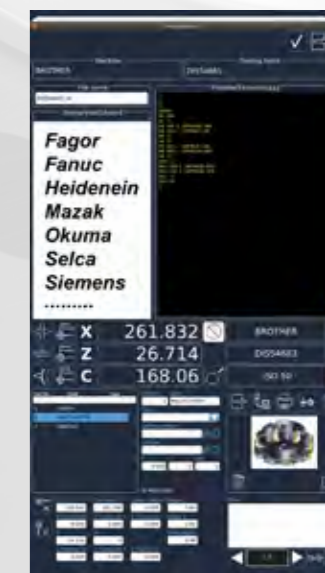
Nothing is left to chance, it's all in your hands.



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.

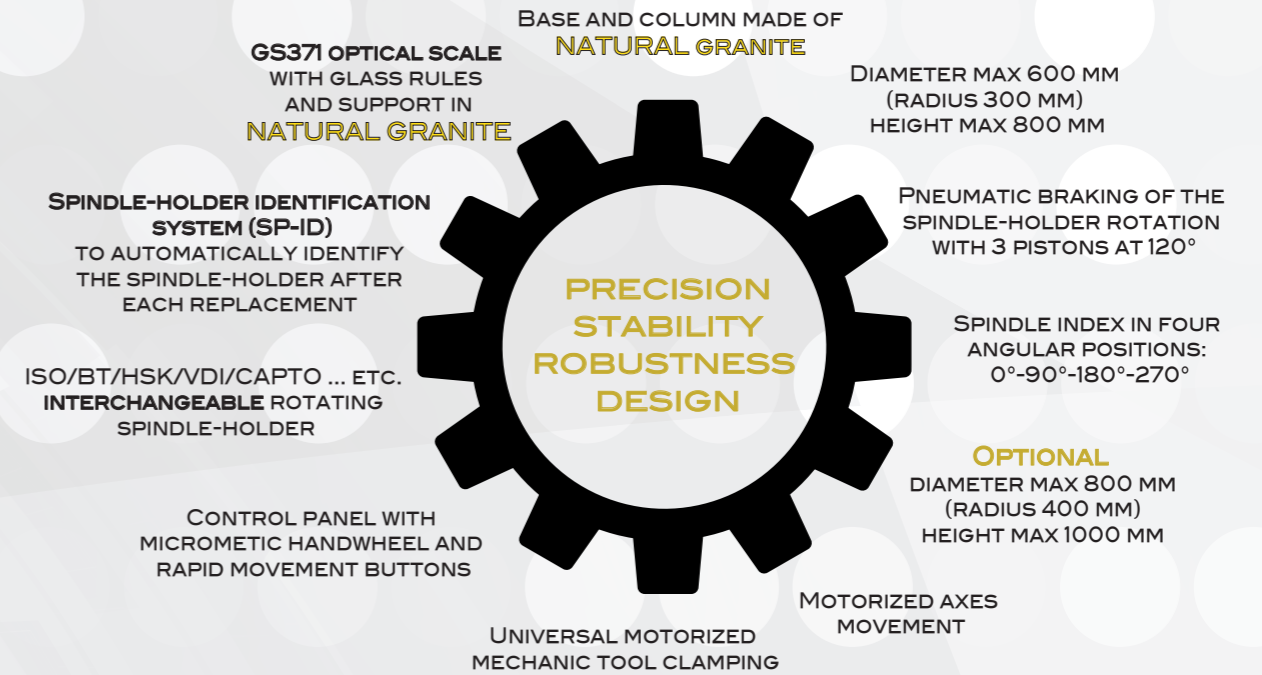




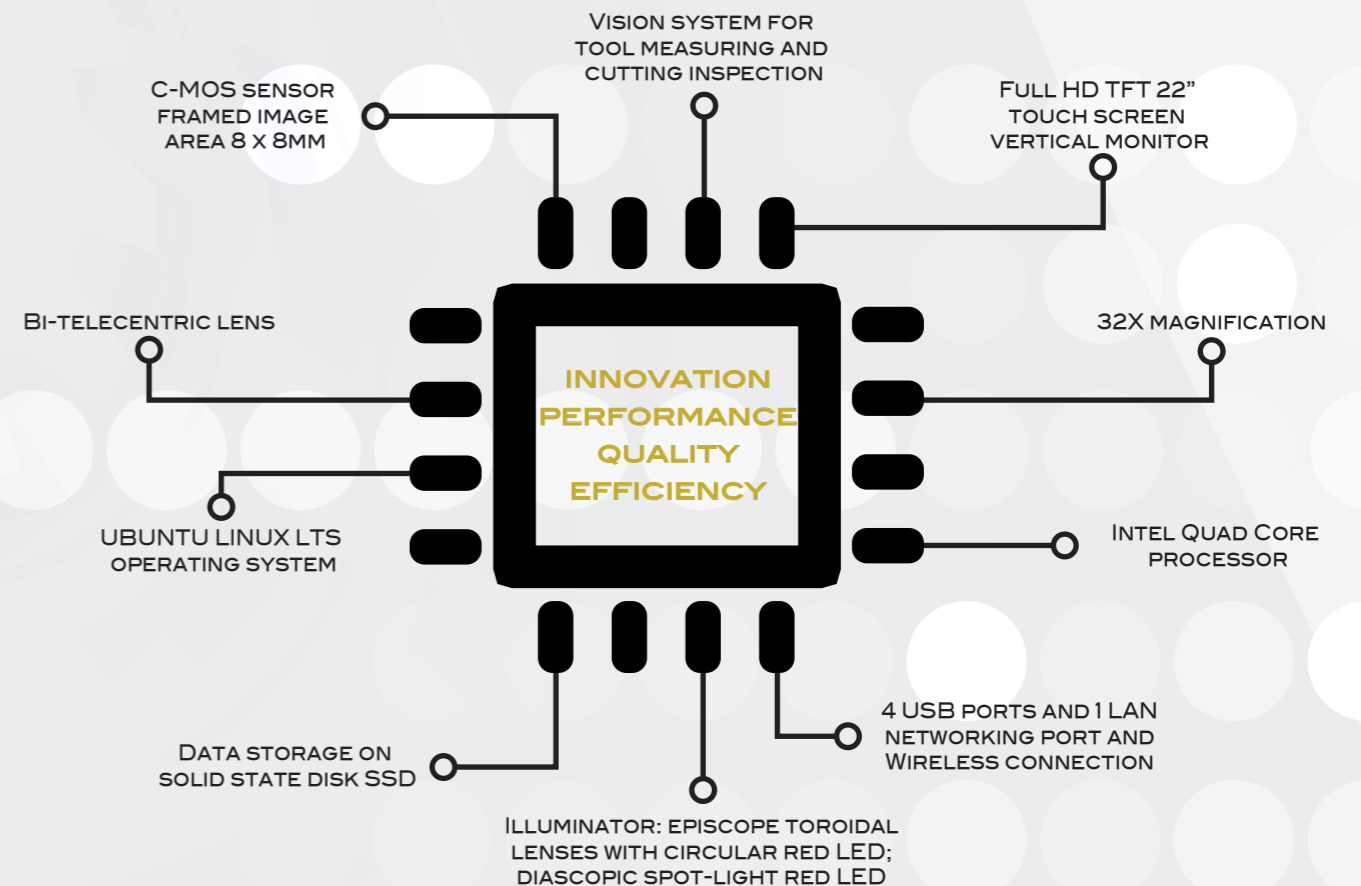
# E681

*"Form and content cannot be distinguished in a work of art, they are one" Oscar Wilde*

## MECHANICS



## ELECTRONICS - OPTICS





# 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

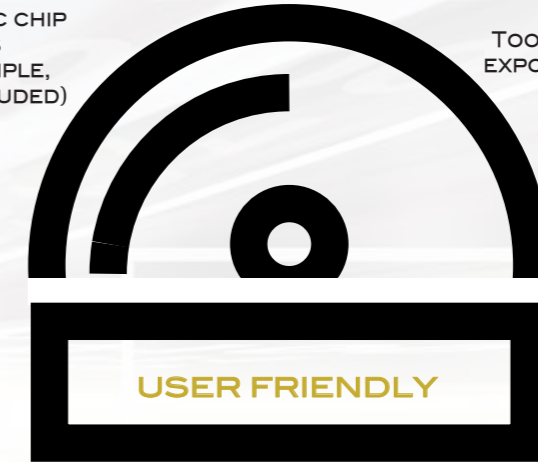
READY FOR MAGNETIC CHIP  
CODE-HOLDERS  
(BALLUFF FOR EXAMPLE,  
HARDWARE NOT INCLUDED)

TOOL PROFILE ACQUISITION  
EXPORTABLE IN DXF FORMAT

PRINTABLE TOOL  
SET REPORT

AUTOMATIC CHANGE OF  
CNC MACHINE ORIGIN  
ALLOCATION

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)

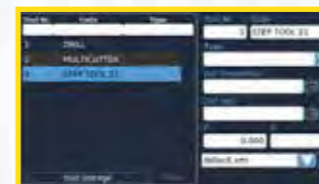
Advanced instruments  
to improve the  
measurement procedure



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)



# E68/A 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 peripheral 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

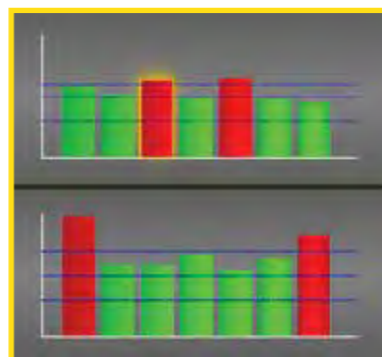


4 measuring modes:

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

	X	Z
Theoretical	50.000	102.300
1	50.000	102.300
2	50.000	102.300
3	50.000	102.300
4	49.999	102.300
5	50.001	102.300
6	49.999	102.300
7	49.998	102.300

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 right way is like water which, adapting to everything, is suitable for everything" Vito Marcuso

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.



The perfect **team**:  
**22" touch screen in harmony**

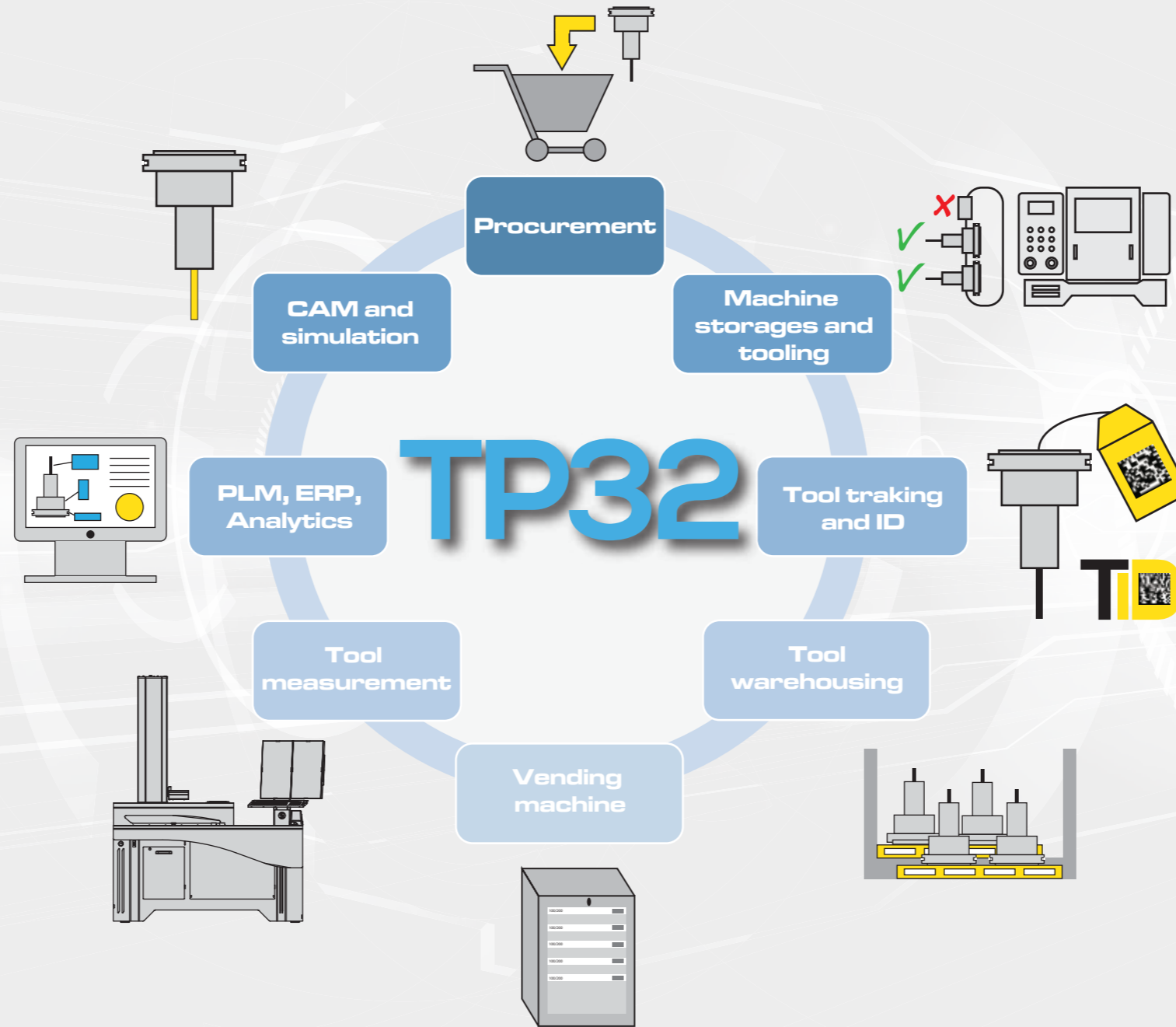
The double Full HD 22" vertical touch screen monitor will amaze you:

- the main monitor (left) is dedicated to all presetting and tool measurement 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



## 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 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.



"The most complex problems have simple solutions" Oscar Wilde

# 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/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 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
- 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 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
- 32X MAGNIFICATION
- BI-TELECENTRIC LENS
- ILLUMINATOR: EPISCOPIC RING-LIGHT RED LEDs; DIASCOPIIC 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/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 (**E68L**)
- DYMO 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	○	○	○	○
<b>Natural granite base and column</b>	●	●	●	●
Steel machine structure	●	●	●	●
Motorized axes fine adjustment	●	●	●	●
<b>Interchangeable spindle (ISO 40, ISO 50, HSK, VDI, CAPTO...)</b>	●	●	●	●
C axis visualization with angular position of the spindle-holder	○	●	○	●
Spindle index in four angular positions: 0°-90°-180°-270°	●	●	●	●
<b>Automatic rotation with AUTOFOCUS function</b>	-	●	-	●
Pneumatic spindle rotation brake with 3 pistons at 120°	●	●	●	●
Motorized mechanical tool holder clamping (for all DIN pull-studs)	●	●	●	●
<b>ELBO CONTROLLI NIKKEN camera system measuring range</b>	8 x 8 mm	8 x 8 mm	8 x 8 mm	8 x 8 mm
<b>ELBO CONTROLLI NIKKEN camera system measuring resolution</b>	1 μm	1 μm	1 μm	1 μm
<b>ELBO CONTROLLI NIKKEN camera system magnification</b>	32 X	32X	32 X	32X
<b>GS371 certified natural granite optical scale</b> (axes resolution = 1 μm)	●	●	●	●
<b>ELBO CONTROLLI NIKKEN tool manager software</b> 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 are refered to standard presetter machines