E346+ / E346V+

elbo controlli NIKKEN

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

REV. 1.0 – 01/20

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2. CERTIFICATION

The manufacturer, ELBO CONTROLLI Srl., under its own responsibility,

DECLARES THAT:

the pre-registration and tool management tools models E346+ ed E346V+ conforms to the following safety standards where enforceable:

- ***2006/42/CE Machinery Directive (MD)***
  to the harmonized standards EN ISO 12100:2010
- ***2014/30/UE Electromagnetic Compatibility Directive (EMC)***
  to the harmonized standards EN61326-1:2013, EN55011:2009+A1:2010 ISM (group 1, class A), EN61000-3-2:2014, EN61000-3-3:2013, EN61000-4-2:2009, EN61000-4-3:2006+A1:2008+A2:2010, EN61000-4-4:2012, EN61000-4-5:2006, EN61000-4-6:2009, EN61000-4-11:2004
- ***2014/35/UE Low Voltage Directive (LVD)***
  to the harmonized standards EN60950-1:2006+A2: 2013, EN60204-1:2006+A1:2009, EN61010-1:2010
- ***2011/65/UE Restriction of Hazardous Substances (RoHS II)***
- ***2012/19/UE Waste Electrical and Electronic Equipment (WAEE)***

as shown in the technical file and the enclosed test reports, stored at our headquarters.

MEDA, _____

Massimiliano Tasca
General Manager

ELBO CONTROLLI S.r.l.
Via S. Giorgio, 21
20036 Meda (MI) Italia

Modello / Model	
Numero seriale / SN	
Anno costruzione / Year	
Tensione / Voltage	
Corrente / Current	
Massa / Weight	

Information relating to this presetter is listed on the identification plate stamped on the left-hand side of the machine as shown above. .

3. WARNINGS

3.1 INTRODUCTION

The following operation and maintenance manual of the E346+/V+ should be considered an integral part of the apparatus and it should therefore be kept with care for future reference.
All the procedures and information contained in the manual cannot be a substitute for the end user's adequate tool presetting experience, but they provide the necessary information for the correct and proper use of the PresetterE346+/V+.
Unauthorized equipment handling, non-compliance of instructions or improper or incorrect use may lead to unforeseen results for which *ELBO CONTROLLI Srl.* declines all civil or criminal liability.
ELBO CONTROLLI Srl. reserves the right to modify at any time the tool presetter and the operator's manual without prior notification on account of the continuous technical updating of the product in pursuit of the Company strategy aimed at perfecting presetter technology of tool measurement and presetting and of customer satisfaction.
All suggestions for improvements of the apparatus or manual are welcome either by fax or email to our head office.

3.2 PURPOSE

The aim of the present manual is to allow the operator of the presetter E346+/V+ to become acquainted with the machine operating directions, routine and non-routine maintenance, the proper operating procedures, and to show all the required necessary actions from the Presetter's introduction until disposal
Implement only the allowed use and the configuration reported, approved by *ELBO CONTROLLI Srl*.; any other use or configuration is not recommended, as it may compromise the tool's proper functioning and/or its safety.
The manual does not substitute or replace the experience and the technical expertise of the personnel involved in the use of the Preset machine and is to be considered as a guide at all times.
This manual must be read following the chapters in their logical order, because the repeated information is explained in full the first time it appears, thereafter it is only mentioned because it constitutes knowledge already acquired.

3.3 TYPOGRAPHICAL CONVENTION

This manual is sub-divided into chapters, which contain homogeneous information; each chapter is identified by a title in the following typographical character:

X. FIRST CHAPTER

Each chapter is sub-divided into individual paragraphs into following typographical format:

X.X FIRST PARAGRAPH

☑ Notes or instructions of particular interest are indicated by the following typographical format:

☑ *Notes or Instructions of particular interest.*

4. PRESENTATION

First, we would like to take this opportunity to thank you for your purchase of *ELBO CONTROLLI's* E346+/V+ *Presetters; y*ou will certainly have great satisfaction with the decision you have made and you will increase the productivity of your NC machines.
E346+/V+ tool presetter have been manufactured in compliance with ergonomics and simplicity principles and offer outstanding technological solutions. The mechanical systems, electronics and software deal with tool measurement and pre-adjustment. The vision system, designed by *ELBO CONTROLLI*, is used to collect measurement data automatically.
The excellent value for money and measurement precision make the E346+ e E346V+ one of a kind.

TECHNICAL FEATURES

- Measuring range: diameter max 360 mm (radius 180 mm); height max 460 mm.
- Base and column made of natural granite: linearity max error 2 µm/Mt certification with Taylor Hobson res.1 µm/Mt electronic millesimal level.
- Machine structure in electro-welded and detensioned steel.
- ISO/BT/HSK/POLYGONAL TAPER... etc. interchangeable rotating spindle-holder (to be specified) max run-out error < 4 µm.
- Double vault arc prismatic slideways: N°2 X axis slideways; N°1 Z axis slideway.
- Double re-circulating ball bearing slides lubricated for life (3) (preloaded slides/slideways: P/H class).
- Manual mechanical braking of the interchangeable spindle-holder rotation.
- Tool clamping with VACUUM system (Only E346V+ model).

- Vision-system for tool measuring including:
  - C-MOS sensor-framed imaged area 6,4 x 6,4 mm.
  - Magnifications 25X.
  - Cutting inspection.

- Machine operator interface:
  - Vertical Touch Screen TFT 15" colour 16:9.
  - Intel Celeron Series N 4 Core.
  - UBUNTU LINUX operating system.
  - SSD solid state disk data storage.

- Standard Software:
  - CNC machine origin management and adapters.
  - Tool list creation and/or single tool.
  - Tool set and Post Processor universal generator.
  - Magnetic chip code-holders (Balluff for example, hardware not included).
  - Printable tool set report.
  - Management of theoretical measurements and tolerances.

- Analog comparators to measure on the fix reticule.
- Telecentric lens and LED illuminator.
- Axes resolution: X = 1 µm, Z = 1 µm.
- TID (Automatic Tool Identification System) ready.

- Overall dimensions: L = 950mm, H = 972mm, P = 430mm
- Net weight: 90 Kg

Option

Machine stand for preset model E346+ / E346V+

ISO / BT / SK / CAT Interchangeable spindle-holder available in 50, 45, 40, 30 versions.

ISO / BT / SK / CAT Interchangeable spindle-holder equipped with VACUUM locking system available in 50, 40, 30 versions (Only E346V+ model)

HSK FORM A-C-E Interchangeable spindle-holder available in 100, 80, 63, 50, 40, 32 versions.

VDI Interchangeable spindle-holder available in 50, 40, 30 versions.

POLYGONAL TAPER ISO 26623 Interchangeable spindle-holder available in C4, C5, C6, C8 versions.

ISO/BT/CAT to: HSK/VDI/POLYGONAL TAPER ISO 26623/KM cone reduction adapter.

ISO and HSK resetting gauge.

DYMO mini-labels printer.

5. PREPARATION AND INSTALLATION

5.1 SHIPPING LIST

Before proceeding with preparation and installation, check that the tool presetter packaging contains the following components:

TOOL PRESETTER

Model	☐ E346+		Spindle	☐ ……..... ☐ ……...……
	☐ E346V+			☐ ……..... ☐ ……...……
				☐ ……..... ☐ ……...……

RESETTING GAUGES

☐ …… ☐ ……
☐ …… ☐ ……

CONE REDUCTION ADAPTER

☐ ISO ..... ISO ...….....
☐ ISO **.....** ISO **..**….....
☐ ISO ..... HSK ...….....
☐ ISO ..... HSK ...….....
☐ ISO ..... VDI ...….....
☐ ISO ..... VDI ...….....

☐ other .....…….…….....
☐ other .....…….…….....

MINI PRINTER LABELS

☐ DYMO
☐ LABELS PACK

POWER SUPPLY

OPERATION MANUAL CD

TEST CERTIFICATE

WARRANTY

CHECKED BY.....

5.2 SAFETY NORMS

The personnel destined to use the Presetter E346+/V+ are not required to use any particular protection; however, they must be informed of the following potential dangers:

- In particular during the vertical axis measurement positions, the vision system of the support structure can be a hazardous obstacle at head height if the machine is used without the neccessary care and attention.
- We recommend the careful handling of tools due to their sharp and potentially dangerous nature.

☑ *The person responsible for employee safety should train the people required to use the tool presetter by insisting on the reading of this manual. (per l'Italia vedi D.Lgs. 81/2008 come modificato da D.Lgs. n. 106 del 3 agosto 2009).*

5.3 SUGGESTED USE OF THE MACHINE

The E346+/V+ Tool Presetter is an instrument to preset and measure the tools surveying their dimensions along X-Z-axes, in accordance with the axes definition of the machine using the above-mentioned tools. The measurable tools are to be compatible with the presetter spindle; any attempt to adapt the tool presetter spindle taper without using the appropriate adaptors supplied by *ELBO CONTROLLI Srl.* is to be considered improper use.
The maximum weight of the tool to be measured should be no more than 30Kg.
Any other use is to be considered improper and potentially compromising to the operator's safety.

☑ *The E346+/V+ Presetter is to be handled by a single person in conditions of tested and controlled efficiency, in respect of all procedures described in this manual.*

5.4 PACKING, TRANSPORT AND STORAGE

The instrument must be handled inside its proper cardboard box, which prevents it from normal mechanical stresses.
Stated on the outside of the packaging are the shipping instructions, particularly the specified total weight, transport position and using symbols, vulnerability to atmospheric agents and the need to handle with care.
Keep the original packing and use it for further transportation of the instrument.
Tool Presetter transportation is to be carried out by qualified carriers able to grant the correct handling of the transported goods, observing the following precautions:

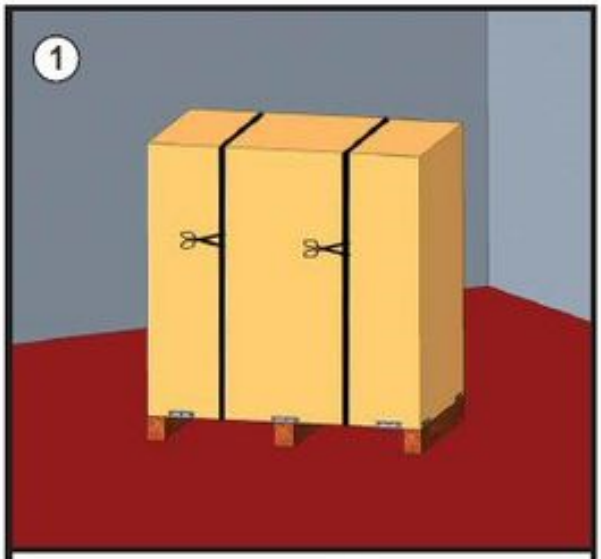
- lift only with trolleys or pallet jacks;
- do not bump, throw, drop, roll or drag the case;
- do not overcharge the packing by piling more than three cases;
- avoid exposure to atmospheric agents;
- maintain the prescribed transportation position.

The storage environment must fall within the following environmental conditions:

- safe from atmospheric agents;
- temperature between -10 and 50 °C;
- relative humidity between 20% e 95% without condensation.

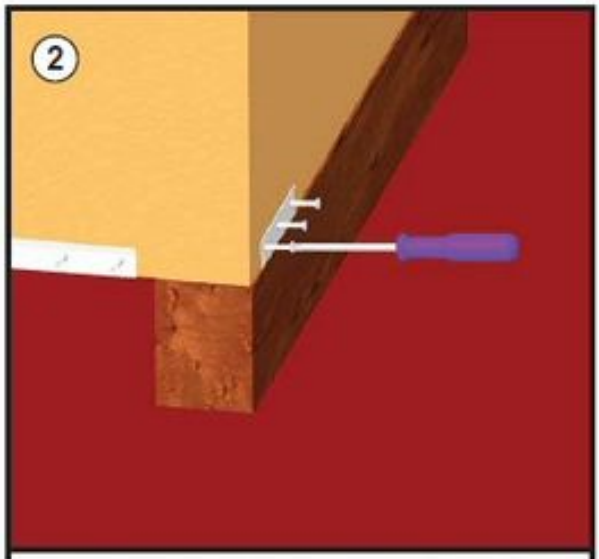
5.5 UNPACKING INSTRUCTIONS

ISTRUZIONI DISIMBALLAGGIO PRESET E346+/E346V+
E346+/E346V+ UNPACKING INSTRUCTIONS



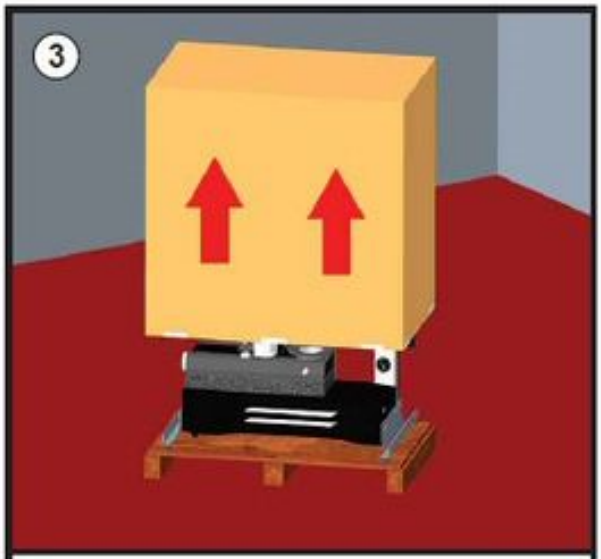
Tagliare la reggia di sicurezza

Cut the safety band strap



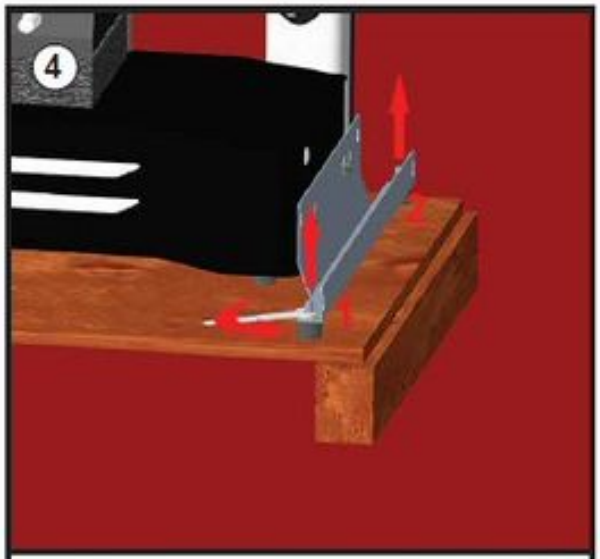
Svitare le viti che fissano il coperchio alla base

Untighten the screws fastening the cover to the base



Sfilare il coperchio verso l'alto

Take the cover off



Svitare i dadi che fissano la macchina al pallet e rimuoverli

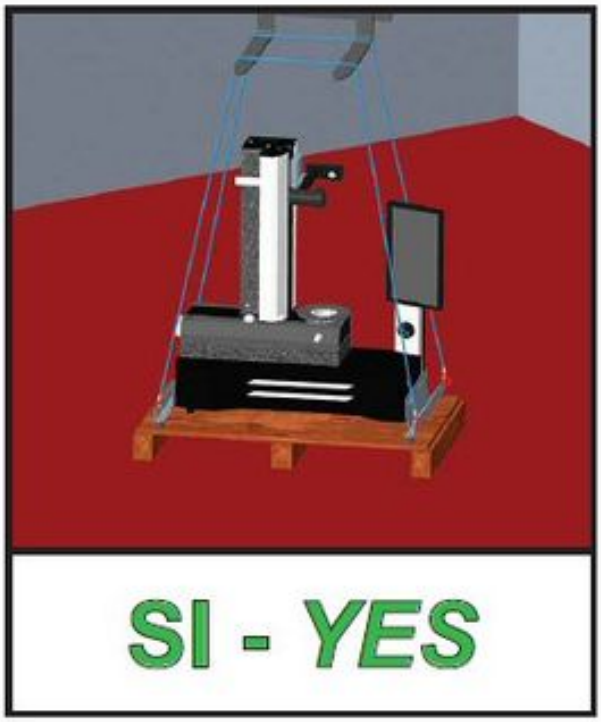
Untighten the nuts fastening the machine to the wooden pallet and remove them

ATTENZIONE

PER IL SOLLEVAMENTO E IL TRASPORTO, ATTENERSI ALLE IMMAGINI CHE SEGUONO

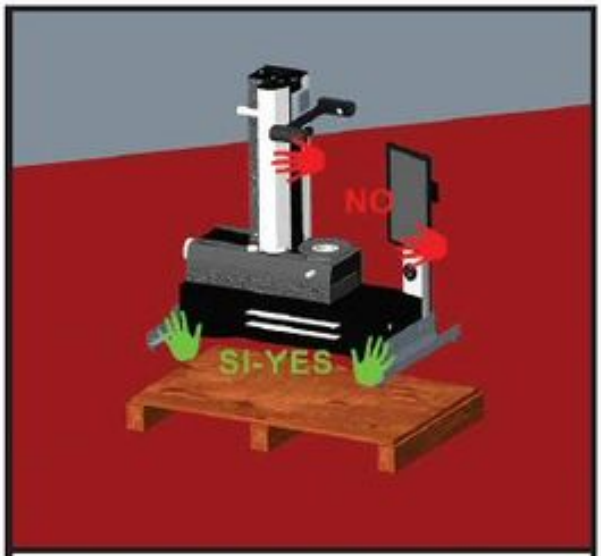
WARNING

FOR LIFTING AND TRANSPORTATION, REFER TO THE FOLLOWING PICTURES



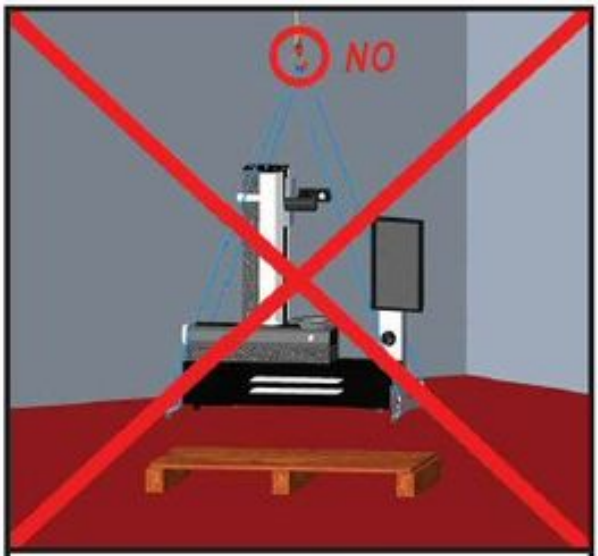
SI - *YES*

NO



Sollevare la macchina dagli appositi punti di presa: non toccare assolutamente la colonna o il sistema di visione

Lift the machine by the proper handling points: absolutely do not touch the column or the vision system



NO

5.5.1 FRONT VIEW

5.5.2 REAR VIEW

5.6 OPERATING CONDITIONS

The E346+/V+ Presetter is a precision instrument, it shall be positioned in a trouble-free site (free from dust / or corrosive air substances, excessive vibrations, extreme temperature fluctuations), away from direct sunlight and far from windows and skylights. Preferably, it should be positioned in rooms with diffused artificial lighting and suitable working space for measurement taking.
The instrument does not generate acoustic emissions.
The recommended climatic conditions are as follows:

- away from atmospheric agents;
- temperature between 10 and 40 °C;
- relative humidity between 20% and 95% without condensation.

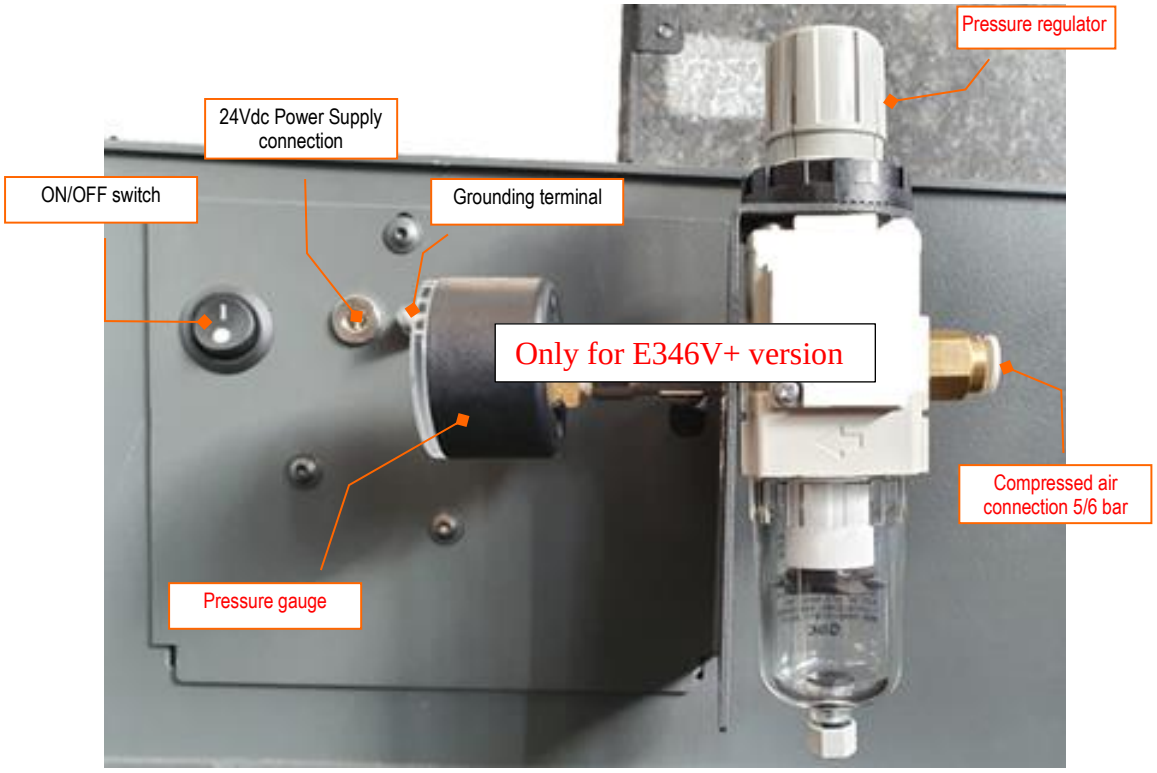
☑ *The best performance is obtained in a constant-temperature environment.*

5.7 POWER SUPPLY

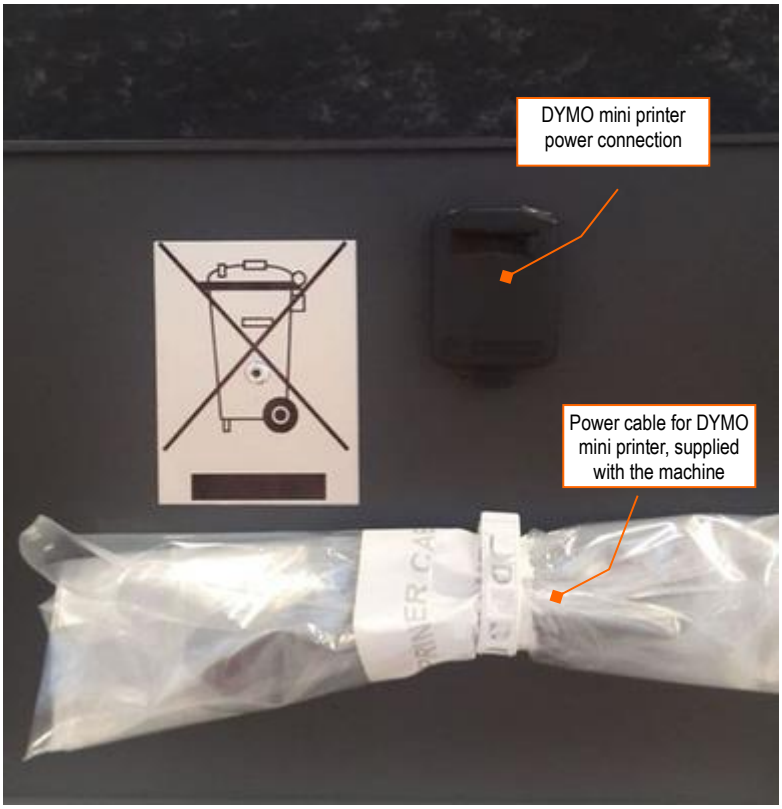
The power supply points are located on the back of the preset (also pneumatic for E346V+ version).
E346 + / V + Presetter is powered at 24 Volt in direct current through an external power supply, supplied as standard, to be connected to the electrical network 115 / 230V AC, 50 / 60Hz, 75W.

☒ *Connection procedure*

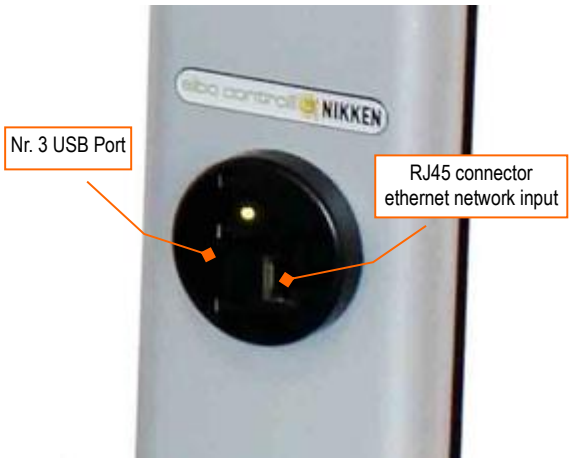
Connect the power supply to E346 + / V + by inserting the round plug of the power supply into the power socket of the preset, then connect the preset to the grounding terminal using a yellow / green conductor section min 1.5 mmq and fix to the appropriate connector.
Only or the version E346V+: connect the preset to the compressed air system and adjust the pressure between 5 and 6 bar.



Also, on the rear panel, the attachment is available to power the DYMO mini printer (optional) with the relative cable supplied.



5.7.1 USB-RJ45 HUB



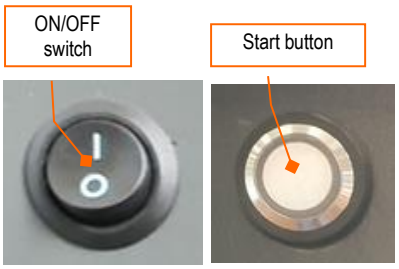
In the support column of the LCD monitor, there is a HUB equipped with:

- 3 USB ports for connecting any external peripherals (e.g. mouse, keyboard, DYMO mini printer, …).
- 1 RJ45 port to permit connection to the company data network.

6. MAIN FUNCTIONS DESCRIPTION

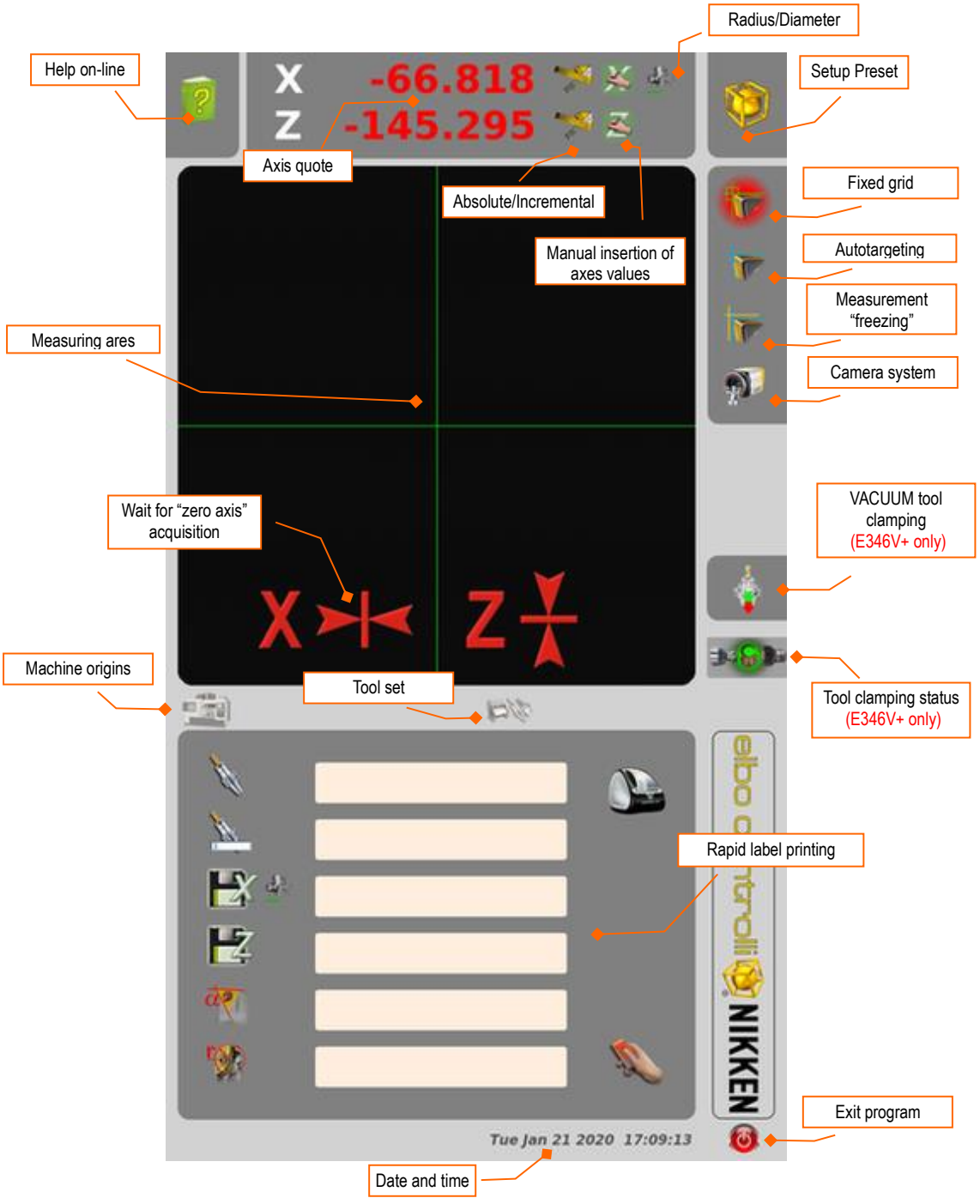
6.1 INTRODUCTION

Before turning on the machine, it is necessary to connect it to the electrical (and pneumatic for the E346V+ version) as described in paragraph 5.7.



6.2 POWER ON

Turn the main switch on the back of the machine to the ' **I** ' position, then press the power button on the right side of the machine and wait for the software to commence.
For use, refer to the software manual supplied with the machine.



6.3 POWERING OFF MACHINE

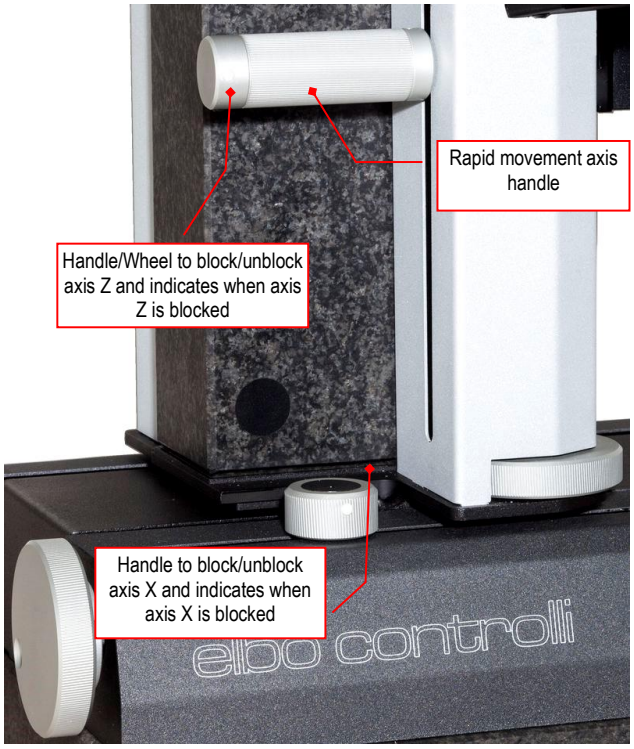
It is advisable not to leave the machine turned on for long periods (day after day), it is recommended to turn it off in the evening at the end of the working day. To do this, press the power button on the right side of the machine and wait for the machine to turn off, then turn the main switch on the back of the machine to the position ‘O ‘.

6.4 AXIS MOVEMENT

Axes movements are manual and provide two options: rapid and acute.
The rapid movement is used to move the tool to the visual field and to return it at the end of the measurement. The acute movement is used to collimate the tool profile and to acquire the measurement.
The transition from rapid movement to the acute movement occurs by unlocking and locking the respective axes: axis unlocked = rapid movement; axis blocked = acute movement.

6.4.1 RAPID MOVEMENT

In order to rapidly move the axis, rotate the respective unblocking handle/wheel until the white bullet marker is positioned on the front part of the machine.
Grip the rapid movement handle (see figure), then manoeuvre it in the direction desired (X o Z).
As noted in the figure, the handle for blocking/unblocking the Z axis is integrated into the handle of axes movement. Unblocking both axes makes it possible to move quickly to the measuring zone of the tool.



☑ *In order to prevent damage to the Presetter, do not strike the limit stops at the end of the stroke.*

6.4.2 ACUTE MOVEMENT

After having approached or framed the tool profile with the rapid movement, to manoeuvre an axis with precision rotate the respective blocking wheel handles until the black bullet marker is positioned on the front part of the machine.
Rotate the acute movement handle of the axis to the area of interest on the screen to carry out the measurement.

6.5 THE SPINDLE

E346+/V+ is equipped with an interchangeable rotating spindle system making it is possible to insert different rotating spindles of a pre-selected shape and size (ISO, BT, HSK, POLYGONAL TAPER ISO 26623, VDI).

6.5.1 REPLACING ROTATING SPINDLE

In case different rotating spindles are available, follow the instructions for their replacement.

☒ *Procedure for the replacement of rotating spindle*

- Position the column to make it easier to dismantle the spindle: axis X all to the left, Z all above;
- remove the tool from the spindle making sure that it isn't blocked by the brake (see par. 6.5.2);
- remove the rotating spindle upwards keeping it parallel to the column;
- clean the removed spindle and lubricate the parts with antioxidant liquid (eg. PRO-setral-KS spray) before storing;
- clean the spindle and insert it into the presetter;
- introduce the new spindle into the holder, during insertion keep it parallel with the column.
- If you have adapters instead of rotating spindles, follow the procedure below.

☒ *Procedure for replacing spindle adaptors*

- Remove, if present, the other adaptor, clean and lubricate the rectified parts with antioxidant liquid (es. PRO-setral-KS spray), then put it in a protected place;
- clean the spindle and its new adaptor;
- insert the new adaptor into the spindle.

6.5.2 MANUAL SPINDLE BRAKE

The spindle brake allows the locking at any point of the rotation of the spindle of the presetter.
It will then be possible to lock the rotation of the spindle in the exact measuring point of the tool (see para. 7.2), the micrometric adjustment of a pre-adjustable reamer will be possible without causing measurement mistakes due to an involuntary movement of the spindle.
In order to activate the rotating spindle brake, rotate the wheel in clockwise direction; wheel rotation in a counter clockwise direction releases the brake, allowing the spindle to rotate freely.

☑ *Do not exceed the torque force of 5 N/m in order to avoid any damage to the preset spindle.*

7. COLLIMATION

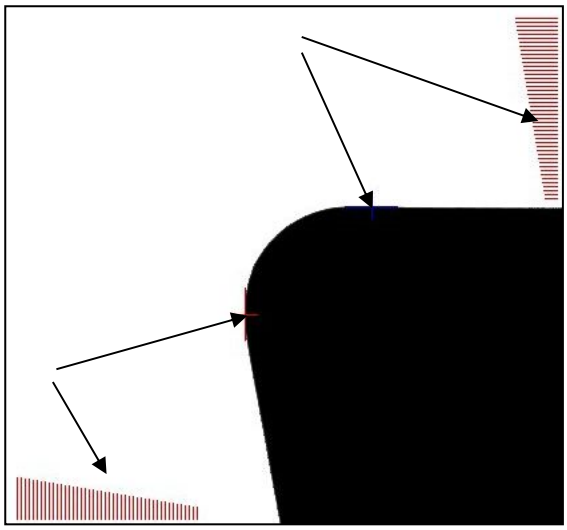
7.1 INTRODUCTION

Collimation is the operation that detects the point in which you have to carry out the measurement.
E346+/V+ is equipped with an industrial vision system, which was exclusively designed for tool measurement/prerecording without contact.
Its operating principle is similar to the one of the optical profile projector; by means of a specific shooting lens, a collimated light source projects the profile of the tool to be found between the two elements over a C-MOS image sensor, through an appropriate lens, the profile of the tool is interposed between the two elements. The tool outline acquired by the image sensor is displayed in real time on to a colour LCD screen; the framed field equals approximately 6,4 x 6,4 mm, which establishes an image visual scale ratio in the screen of about 25 times (25X).
Furthermore, there are two bars to monitor image focusing: one bar detects the focus of the X-axis measurement point, while the other detects the focus of the Z-axis measurement point. This way the operator can easily detect the point of maximum tangency of the tool.

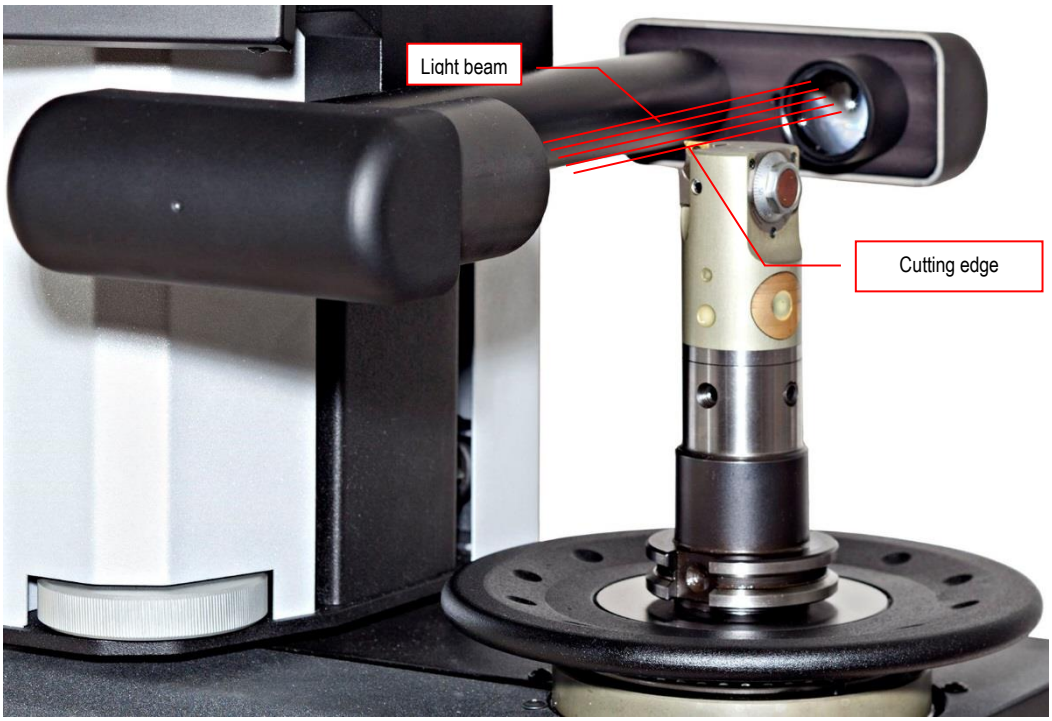
The real advantage, if compared to an optical profile projector, is the exclusion of measurement subjectivity, which makes measurements objective and repetitive. In fact, E346+/V+ can analyse the cutting edge of the tool and find out its measurement points in the profile with a resolution of 1μm., it is the task of the operator to decide whether to carry out the measure on the central reticule, assisted by the compared electronics, or in whichever position on the screen: E346+/V+ establishes the measurements in real time from the addition between the coordinates of reticule centre and image position.
The measurements are continuously displayed on the screen in order to have all necessary pieces of information available in the same area.

7.2 IMAGE FOCUSING

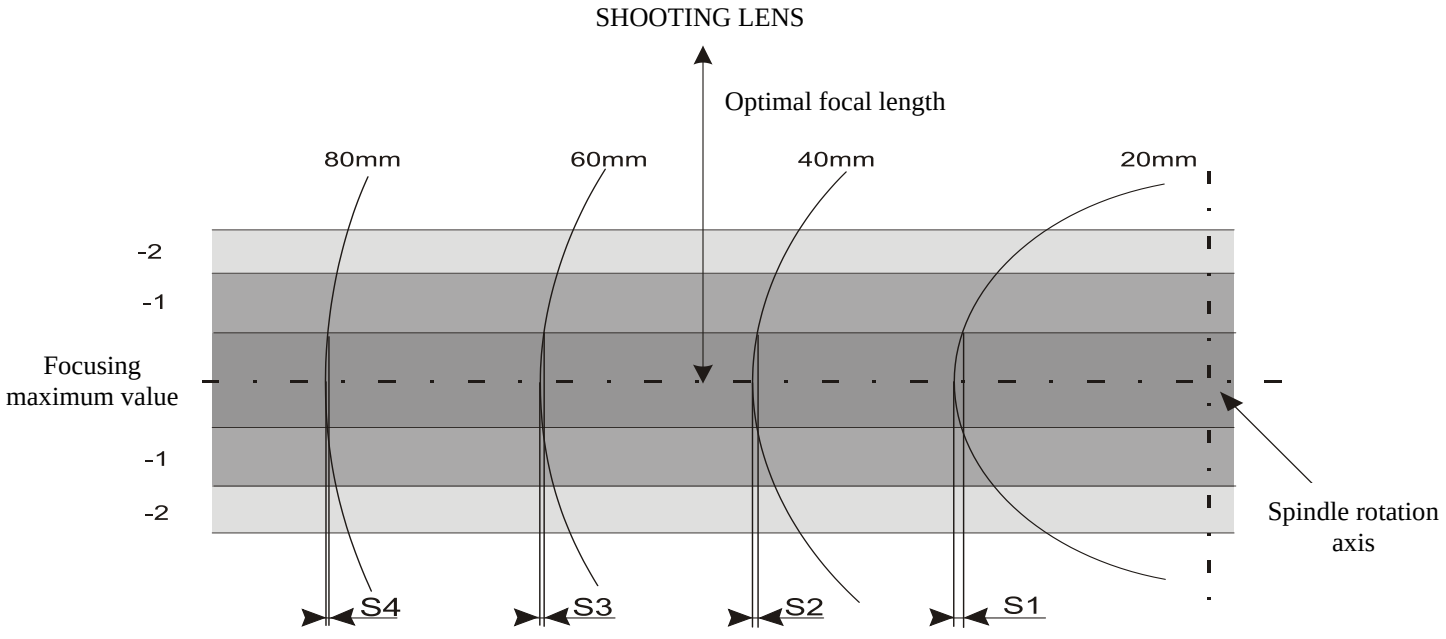
With the E346+/V+ measurements are carried out in a way similar to those made with optical profile projectors; you have to frame the tool outline in the screen by placing it in the light beam using rapid manual displacements.
Before carrying out the measurement, it is necessary to rotate the spindle to search for the point that has the best image focusing.
The screen always displays two control bars for image focusing (one for each axis); it is sufficient to rotate the cutting edge until reaching the highest possible value on the bar of the specific axis, to obtain the best focus.



☑ *The dimensions taken as the reference for focusing are the ones relating to the two X and Z measurement points, which were detected by the two pointers.*



The focusing control bars supply information about image sharpness in the measurement points that are specified in the figure; therefore, it's possible to obtain different pieces of information (in the maximum value) for different tools or also for different cutting edges in the same tool. For example, this depends on the degree of usage or the draft angle.
However, in order to carry out correct measurements, it is necessary to reach the highest possible value, which is highlighted by the peak indicator to be found with each bar.
Don't forget the measurement point is the one relating to the tool maximum tangency and that focusing is only used to make the search easier; in fact, the **maximum tangency will always be found in the maximum focusing value**. But this means that **the maximum focusing value contains a residual measurement inaccuracy,** which is determined by the radius of the measured tool.
The following figure shows the relation between the focusing value (indicating the distance of the tool from the lens) and the maximum tangency of the tool (indicating the angular position of the tool compared to the spindle rotation axis).



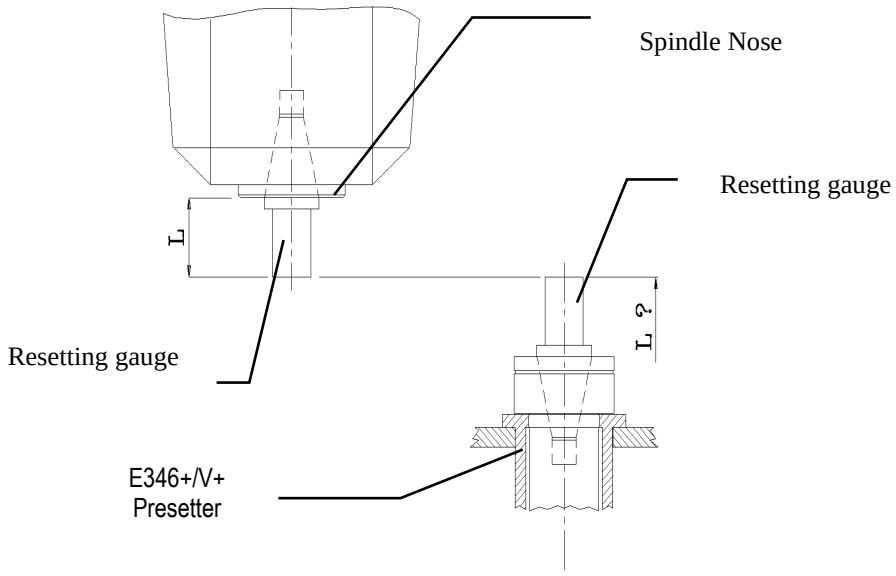
As you can see, the residual inaccuracy value (S1, S2, S3, and S4) depends on the radius of the measured tool and approximately corresponds to 0.01 mm, for tools having a radius of 20 mm, while it is smaller than 0,001 mm. For radii that are bigger than 80 mm.
Based on these considerations, it is necessary to reach the best obtainable focus and after that search for the maximum tangency, that is, the maximum measurement being displayed.

8. MACHINE ORIGINS

8.1 NC MACHINE ORIGINS

It is important to say that in tool measurement operations, there are no particular problems for the X axis radial measurements, but a conventional reference point must be established for length (Z axis) measurements. When a tool radius or diameter is measured, the zero point will always be located on the tool, though the situation is quite different for length measurements. For this reason, the tool presetter must be reset on the same point for the Z axis of this NC machine (absolute machine zero-point, spindle nose, etc.).

One method is to measure a resetting gauge or a reference tool directly on the NC machine, to transfer the value to the tool presetter in correspondence to its length and set the values on the display.



A more efficient system is to use the same origin given by the length marked on the reset gauge, for all of the machines having the same spindle intersection.
The electronic equipment 212S of E346+/V+ presetter allows you to choose which system to use in order to express the length on the Z axis and includes, in preset functioning, the self-learning function of the origins for each machine or group of machines according to the system applied.
It is possible to specify, for every origin, if the tool corrector has to be expressed as a radius or as a diameter, the unit of measurement and even the counting direction or the exchange of single axis (very useful settings for lathe tools measurements).
All settings saved for each machine become active simultaneously with the origin shifting, that is, every time they are recalled and therefore avoiding any possible error.

9. INSTALLING DYMO MINI PRINTER

9.1 DYMO CONNECTION

The E346+/V+ Presetter software is pre-programmed for printing on DYMO labels cod. 99012, 89x36 size via the DYMO labelling and printing machine, Label Writer 450.

If the labelling machine is purchased together with the presetter, it will already have been installed by Elbo Controlli, so it can be connected to the power supply with the feeder and to the presetter via the USB port.

If the printer is purchased later, it requires installation through the following procedure:

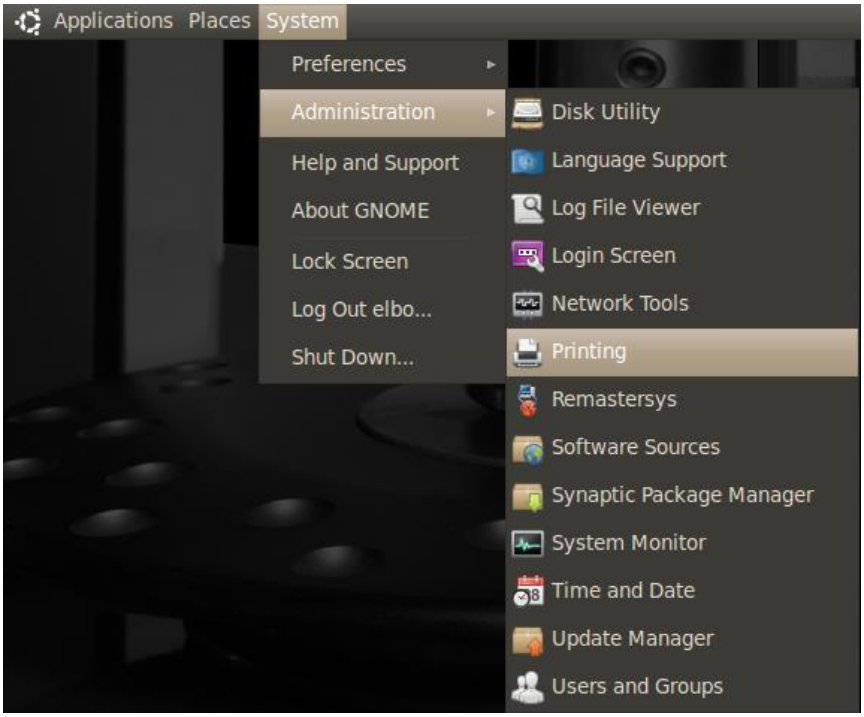
- exit the measurement software by pressing the EXIT key

- connect the printer to the mains power supply with the feeder and to the presetter via the USB port, then wait for the “installation is completed” message

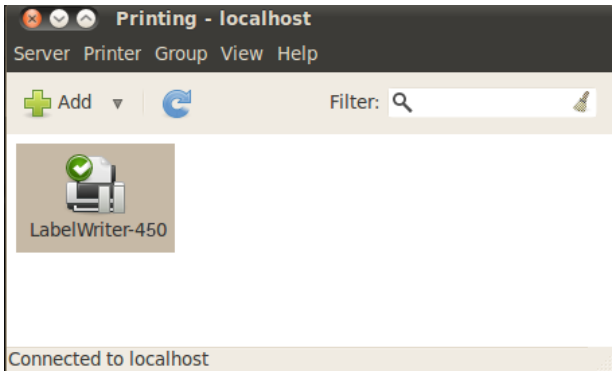
- the Dymo labelling and printing machine is installed and ready to support printing of labels cod. 99012 from the presetter software

9.2 PRINTER REPLACEMENT

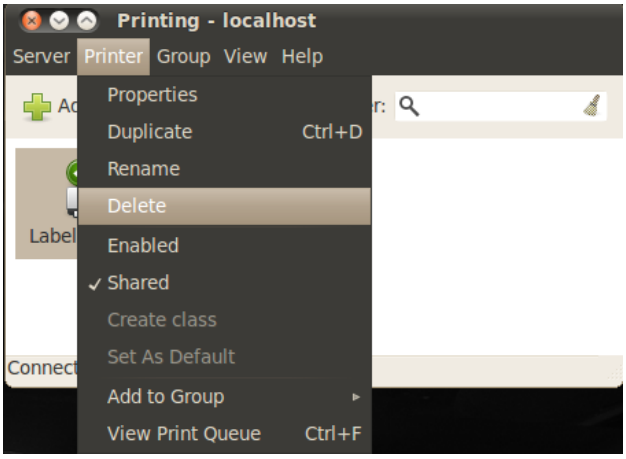
If you need to substitute the labelling machine, you need to uninstall the existing one.
Press “System” on the menu bar, then select “Administrator” and “Printing”



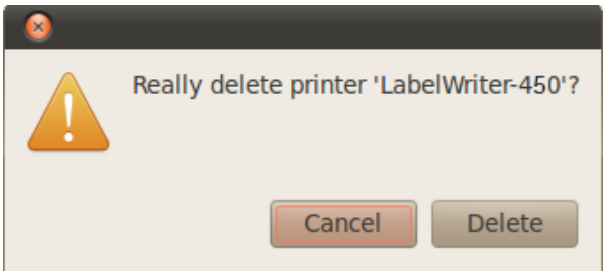
Select the printer icon to be removed.



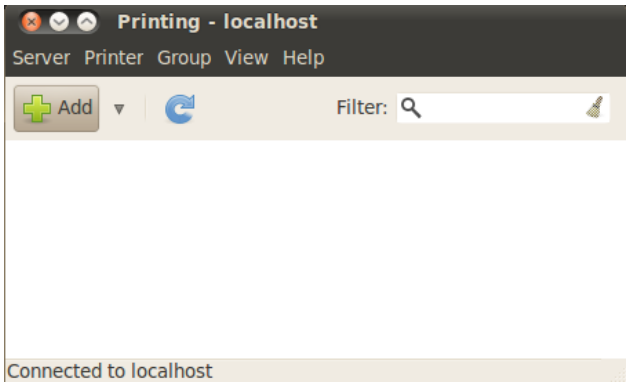
Press “Printer”, then “Delete” to uninstall the existing printer.



To confirm, press “Delete”.



If more than one Dymo LabelWriter printers is installed, repeat the operation until they are all removed:



Press to close the windows.

Now you can install the new printer as described in chapter 9.1

10. MAINTENANCE

10.1 ROUTINE MAINTENANCE

The presetter does not need any regular maintenance, follow these simple steps if necessary.

10.1.1 SPINDLE, ADAPTERS AND RESET GAUGES LUBRIFICATION

To maintain perfect efficiency and ensure accuracy over time, it is a good rule to clean and lubricate these fundamental parts of the preset at each replacement, before storing them in a protected place.
For the spindle, on the other hand, it is necessary to clean and lubricate only the exposed ground parts, at least at the end of the work shift, in order to protect them from oxidation.
For all lubrication operations we recommend the use of suitable antioxidant products, for example the PRO-setral-KS spray or equivalent.

10.1.2 VISION SYSTEM CLEANING

The display panel container is made of metal sheet, the polyester touchscreen; to clean, we recommend the use of a clean cloth, moistened with suitable degreasing products (avoid the use of solvents and abrasive products): do not spray liquids directly on the screen.

10.1.3 CLEANING THE OPTICS

For the optics, objective and illuminator, use an antistatic cloth, possibly moistening the surface with spray or liquid detergents for optical lenses.

10.1.4 CLEANING THE COMPRESSED AIR FILTRED (E346V+ version only)

Periodically inspect the pneumatic system filter located at the rear of the preset in correspondence with the compressed air connection pipe (see figure par. 5.7) and, if necessary, use the tap to drain the condensate that can form inside of the transparent vase. If it is necessary to clean the filter element, disconnect the pneumatic supply and unscrew the transparent bowl; then disassemble and clean the filter element with a solvent, dry with a jet of compressed air before repositioning it.

11. TROUBLE SHOOTING

11.1 FOREWORD

This chapter is a guide to solve the most common problems you may encounter when using the presetter. For each problem, you will find a list of checks and actions to perform in order to fix it. Of course, the list cannot contain every possible problem: If necessary, contact customer care at your local dealer.

11.2 PROBLEM, CAUSES AND SOLUTION

PROBLEM: **the presetter does not switch on.**
CAUSE: *general power supply failure.*
SOLUTION: check the connection with the external power supply circuit;
check any external switches and/or fuses, if these are damaged, change them.
CAUSE: *tool presetter power supply failure.*
SOLUTION: check the correct insertion of the power plug on the rear panel of the preset (see installation par. 5.7);
check the operation of the power supply by measuring if there is an output voltage of 24 Vdc, repeat the test with the preset connected. If the voltage of 24 Vdc is present also in this case, contact the assistance service.

PROBLEM: **difficulty moving the Z axis upwards .**
CAUSE: *counterweight spring broken.*
SOLUTION: remove the spring casing located on the top of the column, check the condition of the counterweight spiral spring and contact the technical assistance service to replace the component.

PROBLEM: **the DYMO label printer does not work.**
CAUSE: *the printer is not powered, or the connection was not made correctly.*
SOLUTION: check for power supply and wiring as described in par. 5.7.3
CAUSE: *the printer to lost configuration settings.*
SOLUTION: remove and reinstall the label maker as shown in chapter 9

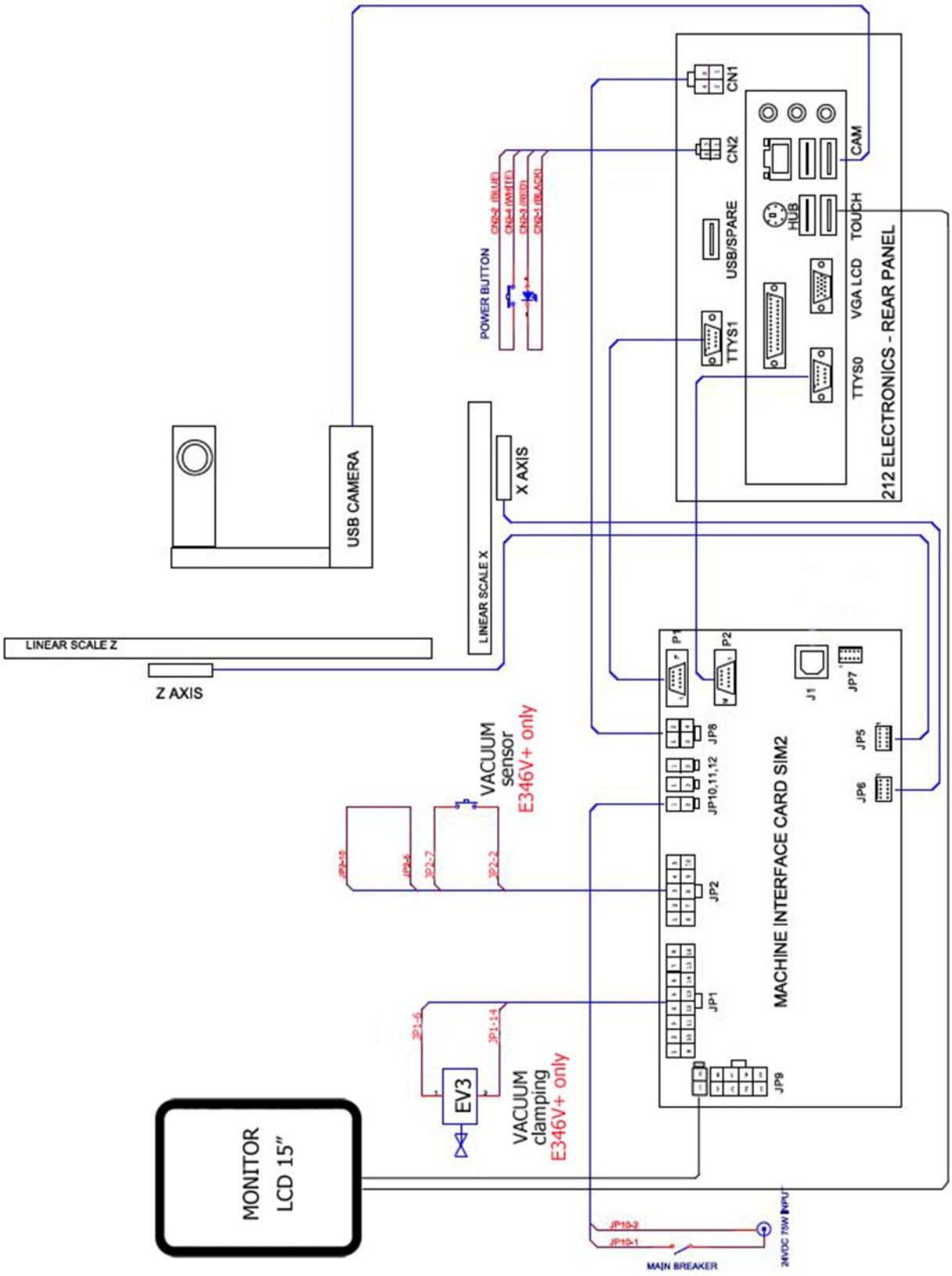
PROBLEM: **The VACUUM locking of the tool does not work.**
CAUSE: *the machine has not been correctly connected to the compressed air system.*
SOLUTION: check the correct connection to the compressed air connection par. 5.7
CAUSE: *the pressure is not enough.*
SOLUTION: adjust the pressure gauge and check the pressure inside the compressed air system

12. DISPOSAL OF MACHINE

Information obligations to the end-users

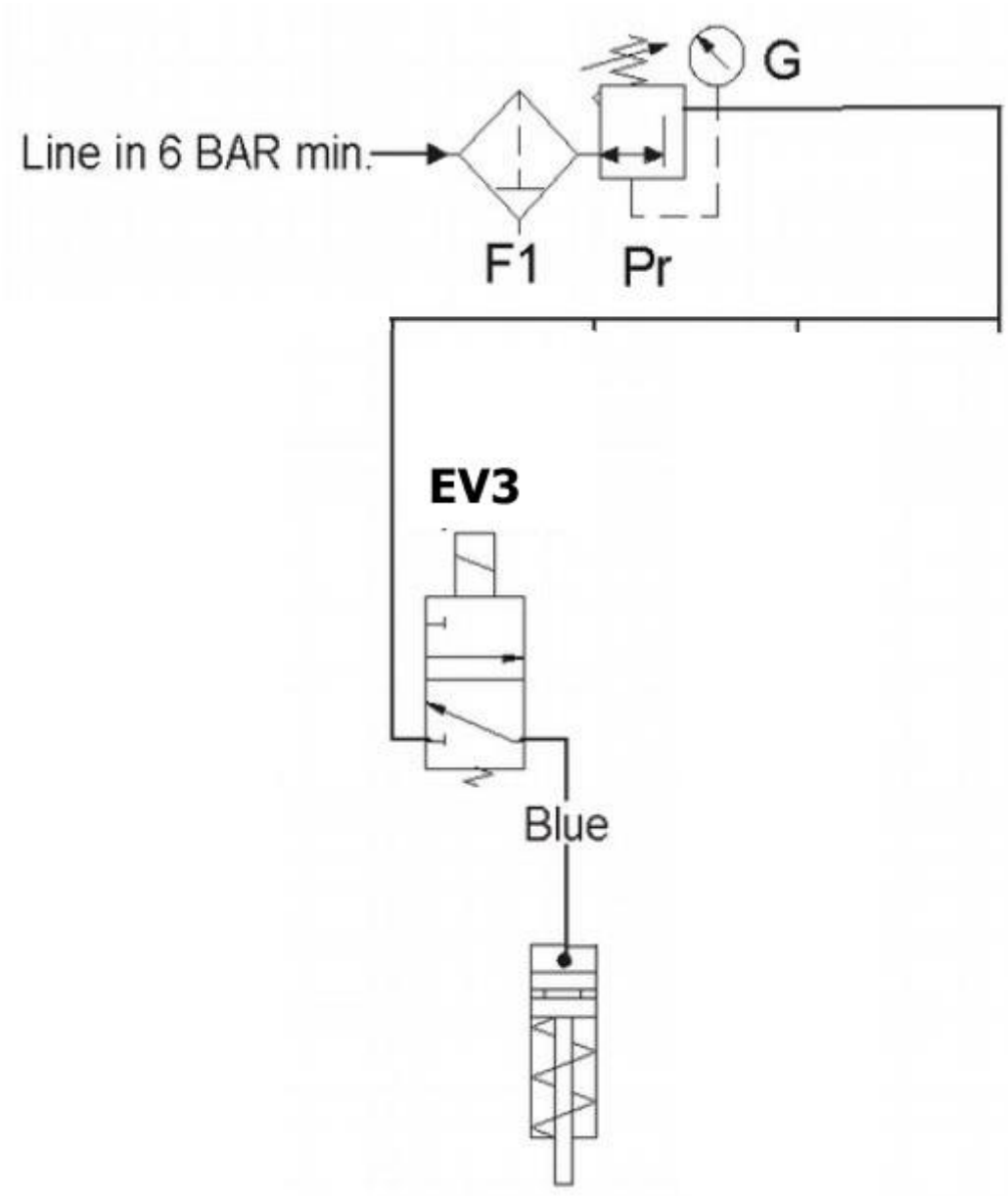
DISPOSAL OF WASTE MATERIALS
INFORMATION FOR PROFESSIONAL USE
As per the 2012/19/EU Directives, concerning the reduction in the use of hazardous substances in electrical and electronic apparatuses, as well as the disposal of waste materials. The symbol of a crossed wheelie-bin applied on the apparatus indicates that at the end of its useful life the product must be collected separately from other waste materials. The separate waste collection of the apparatus, which has reached the end of its useful life, is organized and managed by the national dealer. The end-user who desires to get rid of the present apparatus must therefore contact the national dealer and follow the given instructions. Suitable separate waste collection for future recycling, treatment and environmentally friendly disposal contributes towards preventing any possible negative effects on the environment and on health and encourages the re-use and recycling of the materials the apparatus is made up of. Unauthorised disposal of the product by the end-user will lead to payment of the administrative sanctions in force in the country where it is marketed.

13. ELECTRICAL DIAGRAM



14. PNEUMATIC DIAGRAM

E346V+ VERSION ONLY



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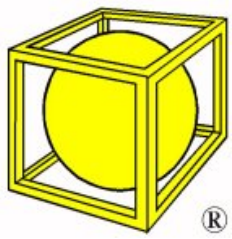

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