

# QUATTROCODE

*D600 D700*

## Operating Manual

Translation of original instructions

D4A7586XA

vers. 1.0

EN

CE

UK  
CA



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## USE OF THE MANUAL

This manual has been drawn up by the Manufacturer and is an integral part of the machine literature. The manual gives information that is obligatory for the operator to know and which makes it possible to use the machine safely.

### User's Manual

This user's manual is provided because it is essential for proper use and maintenance of the machine. The manual must be kept carefully throughout the life of the machine, including the decommissioning stage. Keep in a dry place close to the machine where it is always to hand for the operator.



**IT IS OBLIGATORY to read the manual carefully before using the machine.**

### Readers' characteristics

This manual must be read and its contents acquired by those who will use it.

### Manufacturer's ID

Quattrocode machine has an ID plate located on the back of the machine, showing the serial number.

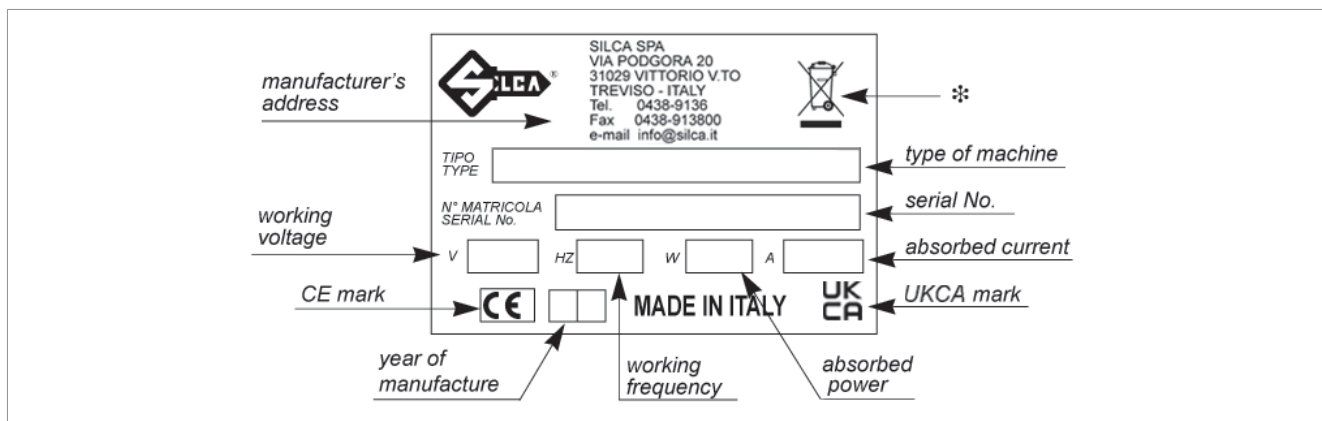


Fig. 1

(\*) see Ch. 17 DISPOSAL.

### How to apply for after-sales service

Silca provides purchasers of QUATTROCODE D with After-Sales Service.

For the total safety of the operator and machine, any operation not described in the manual must be carried out by the manufacturer or in the special Service Centers recommended by Silca.

At the end of the manual there is a list of manufacturers' and authorized Service Centre addresses; if the manual was downloaded is necessary visit the website to see the contacts ([www.silca.biz](http://www.silca.biz)).

The warranty card attached to the machine covers free repairs or replacement of faulty parts for 24 months from the date of purchase\*. All operations must be agreed by the user with Silca or the Service Center.

\* Damage caused by negligence or wrong use of the machine by the user will null the warranty.

TERMINOLOGY

For those inexperienced in the subject of keys and key cutting, below is an illustration of the most frequently used terms:

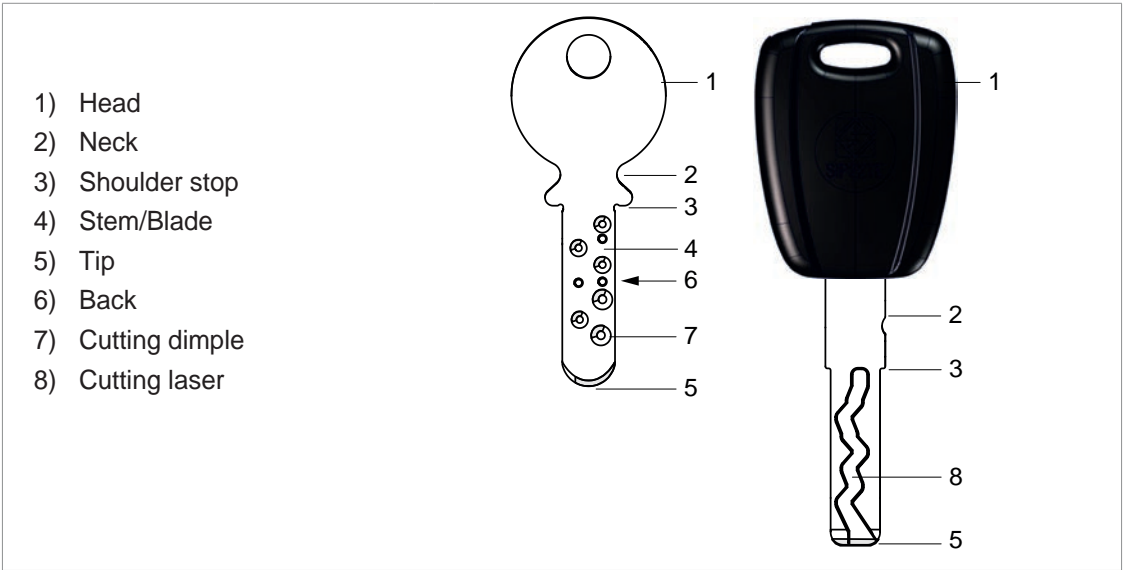








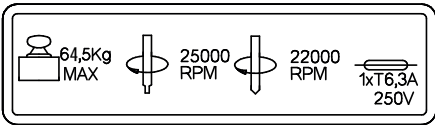
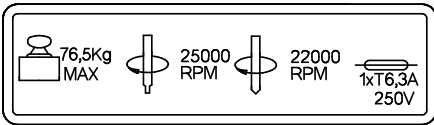


Fig. 2

GRAPHICS IN THE MANUAL

	
Pay attention	Obligation to read the manual

GRAPHICS ON THE KEY-CUTTING MACHINE

				
Do not clean with compressed air	Obligation to read the manual	ATTENTION! DANGEROUS MOBILE PARTS	ATTENTION! DANGER OF CRUSHING FINGERS	ATTENTION! Do not touch. Sharp surface
				
ATTENTION! Electrostatic charges	QUATTROCODE D600 Adhesive label Mass-RPM-Fuse		QUATTROCODE D700 Adhesive label Mass-RPM-Fuse	

## GENERAL WARNINGS

QUATTROCODE D key-cutting machines are designed to European Standards (CE).

Right from the design stage solutions have been adopted to eliminate hazards for the operator in all the stages of use: handling, regulation, use and maintenance.

The materials used in manufacture and the components employed in using the machine are not dangerous and ensure that the machine complies to current standards.

Silca S.p.A. has also experimented and applied numerous technical solutions that allow the key-cutting machine to optimize the quality of the cut keys.

To guarantee maintaining these results over time, please follow the instructions below:

- **Observe the procedures described in this manual;**
- **Always use Original Silca Tools as they are designed to make the best of QUATTROCODE D and provide quality key-cutting;**
- **Use Silca key blanks, made with top quality materials;**
- **Have the key-cutting machine checked periodically by an authorized Silca After-Sales Service Center;**
- **Always use Silca Original Spare Parts. Beware of imitations!**

## NORMAL USE

QUATTROCODE D are key-cutting machines and must be installed and used observing the manufacturer's rules and specifications.

The key-cutting machine must be used only by skilled personnel (professional use).

The key-cutting machine is designed for use on business or industrial premises (e.g. hardware shops, key cutting centers, etc...).

Any other use different from that indicated in this manual will cause the forfeiture of all customers' rights to make claims on Silca S.p.A. and may be an unknown source of hazard for the operator or third parties.



**ATTENTION: negligent use or failure by the operator to observe the instructions in this manual are not covered by the warranty and the manufacturer declines any responsibility in such cases.**

## RESIDUAL RISKS

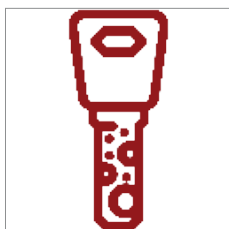
QUATTROCODE D key-cutting machines do not produce residual risks

## SAFETY REGULATIONS

- **Always disconnect the machine when it is not in use or when performing maintenance operations.**
- **Check the electrical wiring periodically; replace any wires that show signs of wear.**
- **Always work with dry hands free of grease or oil.**
- **Never tug on the electricity supply lead and make sure it is not in contact with oil or other liquids, sharp objects or heat. Never remove the grounding pin from the plug. Check that the ground wire is connected properly.**
- **Do not use the machine in dangerous environments (wet or damp).**
- **All visitors, especially children, must stay at a safe distance from the machine and must never come into contact with the electric wiring. This equipment should not be used where children may be present.**

## 1 QUATTROCODE D MACHINE DESCRIPTION

QUATTROCODE D are professional electronic key-cutting machines for:



- **DIMPLE and LASER KEY key duplication**



- **KEY ENGRAVING**



### QUATTROCODE D700

- **QUATTROCODE D700 machine is equipped with a ROBOT for handling and positioning the keys in the clamp during the duplication/decoding procedure.**

The Quattrocode D700 and D600 multi-axis (standard - robot - rotary axis) electronic machines with controlled movement. Studied down to the smallest detail, they combine the characteristics of speed of execution and ease of use with a high degree of precision in the results.

Both dimple and laser keys are decoded by the tracer.

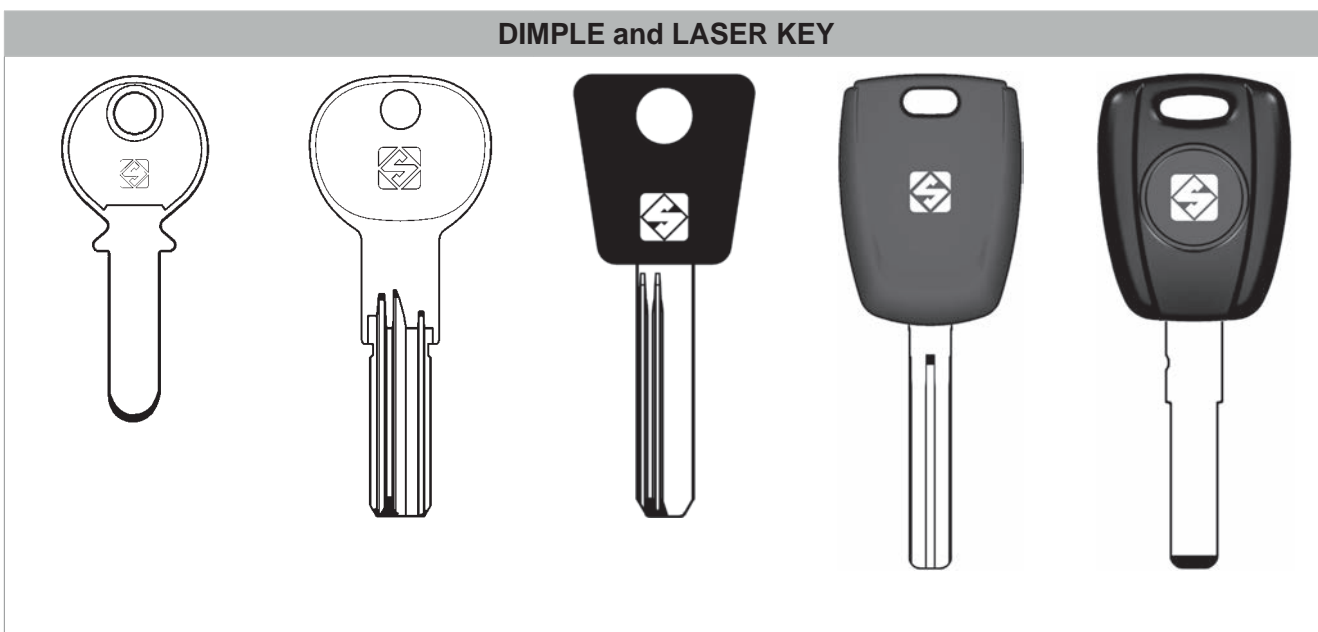


Fig. 3

## 1.1 MAIN CHARACTERISTICS

- **Movements**

The axes (X-Y-Z and the robot) move by means of ball screws activated by step motors, on ground roller runners.

- **Automatically opening and closing safety shield**

The shield closes itself automatically when the decoding and/or cutting process starts.

The shield opens itself automatically at the end of the decoding and/or cutting process.

- **Clamp**

Electric (03QC) on QUATTROCODE D700

Manual (02QC) on QUATTROCODE D600

- **Cutter**

Cutter for dimple keys.

Cutter for laser keys.

Engraving cutter.

The cutter is in hard metal, easily replaced and with resistance and cutting properties suitable for the type of process involved and the tool rotation speed.

Silca's specific cutters for QUATTROCODE D recognised automatically by the machine and enable better performance.

- **Engraving Unit**

The device engraves the key head (see chap. 13)

It does not engrave plastic or anodised key heads.

- **Monitor (display)**

The display for machine function management is placed on top of the machine.

- **Pull-out cutter drawer**

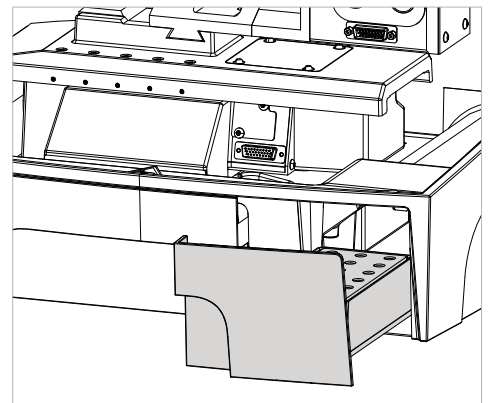


Fig. 4

## IGNITION

Starting the machine, connect the power lead and turn on switch (B) on the back. Check that the emergency button (R) is released: turn the knob (R) 45°.

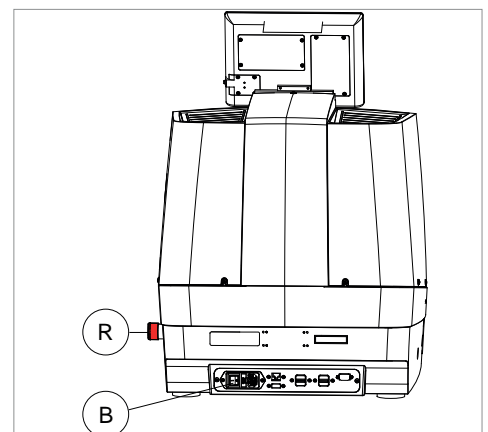


Fig. 5

## 1.2 ELECTRICAL CONTACT

QUATTROCODE D key-cutting machines come with a low voltage electrical device that detects the key blank as it approaches the cutter at operating speed.

The electrical contact function is used for keys in steel, brass, silver nickel, zamak or iron (nickel-plated or not).

The electrical contact is used for:

- **decoding the key**
- **measuring the length of the cutter**
- **the machine calibration process**
- **the engraving function**
- **finding the width and length of the key (D700 only)**

Electrical contact decoding **CANNOT** be used on keys without electrical conductivity (anodised aluminium, plastic...).

## 2 SAFETY

QUATTROCODE D key-cutting machines fully comply with Machine Directive. The operations for which each machine is designed are easy to perform with no risk whatsoever for the operator.

The adoption of general safety precautions and observation of the instructions provided by the manufacturer in this manual eliminate all human error, unless deliberate.

QUATTROCODE D is designed with features which make it completely safe.

### 2.1 SAFETY SHIELD

The protective shield is designed to cover the working parts as completely as possible, ensuring operator safety.

The shield must be open to fit the keys to be cut or to perform other operations on the machine.

The operator activates shield opening and closing by means of a button on the machine display or manually if necessary.

The shield is controlled by microswitches that activate/deactivate operating and movement functions, including those of the cutter.

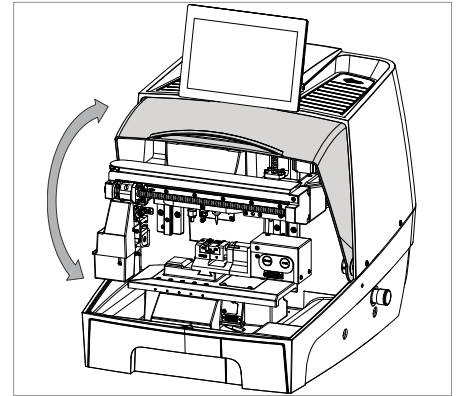


Fig. 6

### 2.2 EMERGENCY STOP

Use the red emergency button (R) (Fig. 7) located on the right-hand side of the machine to stop the machine immediately in the event of serious malfunctioning or a hazard for the operator.

When the cause of the emergency has been eliminated, turn the button 45° clockwise to deactivate it.

**NOTE:** the operator is responsible for keeping the area around the button clear so that it can be reached as quickly as possible



**ATTENTION:** if the machine stops the display remains active.

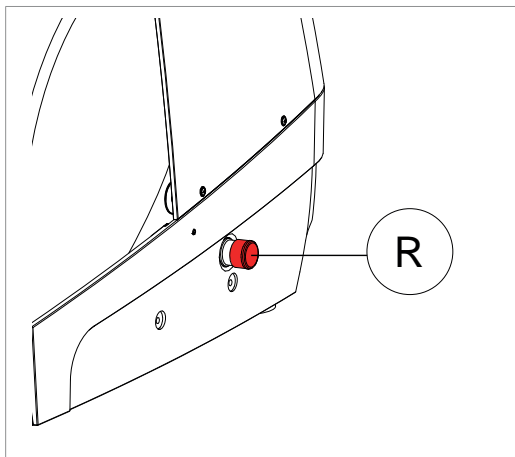


Fig. 7

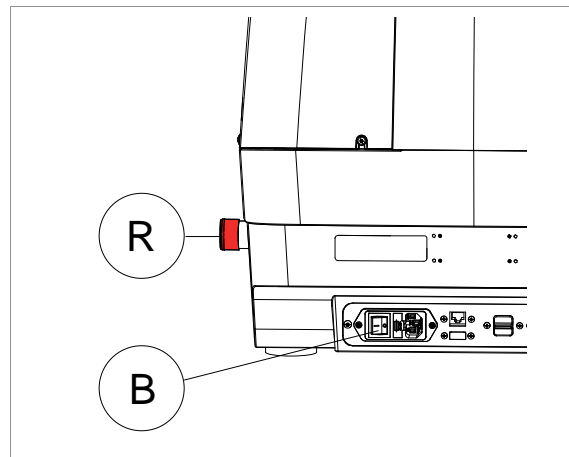


Fig. 8



**ATTENTION:** turn off the master switch (B) on the back of the machine (Fig. 8) and unplug before carrying out maintenance operations..

### 2.3 SWARF COLLECTION UNIT OPENING/CLOSING MICROSWITCHES

If the swarf collection unit is missing or partially open, special microswitches deactivate the operating and movement functions, including those of the cutter.

**NOTE:** *the machine must always have a swarf collection unit, which must be properly closed.*

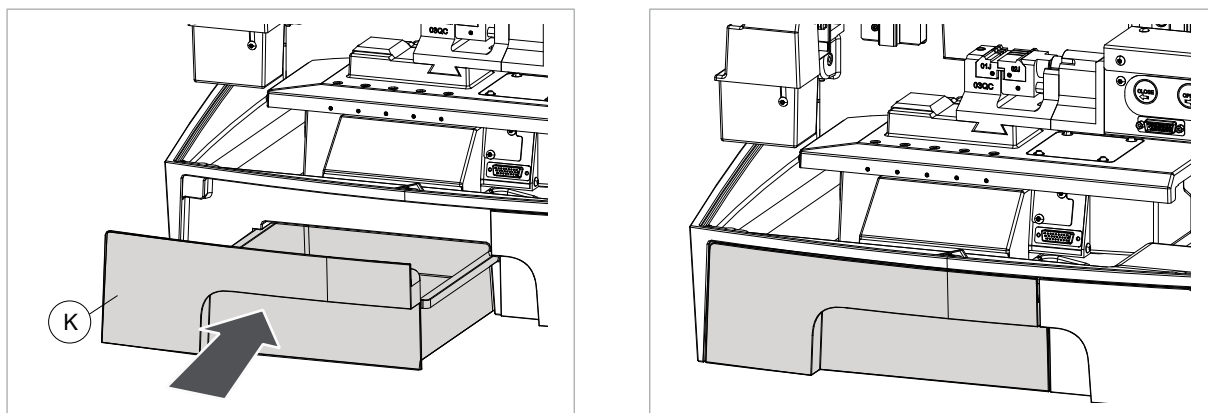


Fig. 9



### 3 TECHNICAL DATA

<b>Electricity supply:</b>	100-240V - 50/60Hz
<b>Cutter motor:</b>	48VDC
<b>Engraving motor:</b>	24VDC
<b>Key cutters:</b>	cutter in hard metal
<b>Engraving cutter:</b>	cutter in hard metal
<b>Tool speed:</b>	Key cutters: 25000 rpm engraving cutter: 22000 rpm
<b>Clamping trolley movements:</b>	on 3 axes with ball screws activated by step motors on ground roller runners.
<b>Manual clamp 02QC (QUATTROCODE D600):</b>	removable and equipped with interchangeable jaws
<b>Electronic clamp 03QC (QUATTROCODE D700):</b>	removable and equipped with interchangeable jaws
<b>Robot movement (QUATTROCODE D700):</b>	on axis with ball screws activated by step motors on ground roller runners.
<b>Runs:</b>	with clamp:            axis X: 80 mm   axis Y: 77 mm   axis Z: 40 mm

#### Noise Level - Equivalent noise level (Leq)

<b>QUATTROCODE D700:</b>	dBA
Steel laser key cutting	65,1
Brass laser key cutting	65,4
Silver-nickel dimple key cutting cycle	64,5
Brass dimple key cutting cycle	64,0



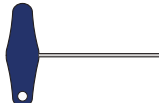
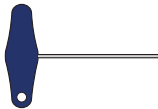
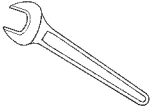


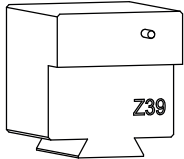
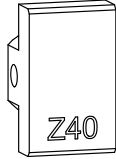





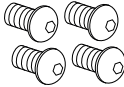






**Max dimensions:**            width: 502 mm - depth: 740 mm - height: 680 mm

#### Mass:

<b>QUATTROCODE D600:</b>	64,5 Kg
<b>QUATTROCODE D700:</b>	76,5 Kg

### 3.1 ACCESSORIES PROVIDED

QUATTROCODE D key cutting machines are provided with a series of accessories for their use and maintenance (tools, hex keys, fuses...):

Allen keys set 1,5 ÷ 5 mm 	"T" allen key 6 mm 	"T" allen key 2 mm 
"T" allen key 4 mm 	10 mm spanner 	13 mm spanner 
stop bar 	Template Z39 (present in the chip drawer) 	Template Z40 
stylus touch pen 	USB pen 	slanted brush 
1 Amp. fuse rapid (2 pz.) 	6,3 Amp fuse delayed (2 pz.) 	screws for closing holes on the base 
Tracer point 10T 	Cutter 101 	Cutter 500 
Engraving cutter W325 	Manual clamp recognition connector 	Template KA1 

## 4 HANDLING

There are no particular hazards involved in handling the QUATTROCODE D key-cutting machine. The packed machine must be carried manually by 2 (or more) people or with a transpallet truck.

### 4.1 PACKING

The packing for the QUATTROCODE D key-cutting machine ensures transport safe for people and the machine and all its components. It comprises a pallet base to which the machine is attached, and a cardboard box as a cover. The machine is fixed to the base of the pallet with screwed down brackets that hold it firm into place. This prevents the machine and its protective shield from any damage.

The closed packing is held in place by two straps which hold the cardboard box firmly on the pallet.

Symbols are printed on the outside of the cardboard box to give instructions and warnings for transportation.

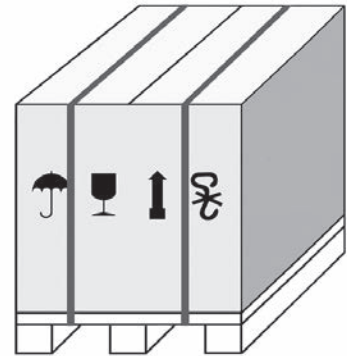


Fig. 10



Keep dry



Handle with care



Up



Use no hooks



**ATTENTION:** to avoid knocks which could damage the machine, it is advisable to use the original packing and fix the machine with the special brackets every time it is transported. The complete packing (cardboard, pallet, brackets, handles and screws) should be kept for use whenever the machine is moved.

## 4.2 OPENING PACKING

To remove the machine from its packing:

- 1) Remove the straps.
- 2) Lift the cardboard box.
- 3) Check the contents of the packing (see table).
- 4) Remove the screws attaching the machine-locking side brackets to the pallet (Fig. 13).
- 5) ATTENTION: to lift the machine see chap. 4.3 MACHINE HANDLING.

### PACKING CONTENT

1 key-cutting machine QUATTROCODE D

1 power cable

1 tool set

1 slanted brush

1 Electronic clamp 03QC

only for QUATTROCODE D700

1 set of documents, including: user's manual, spare parts sheet and warranty

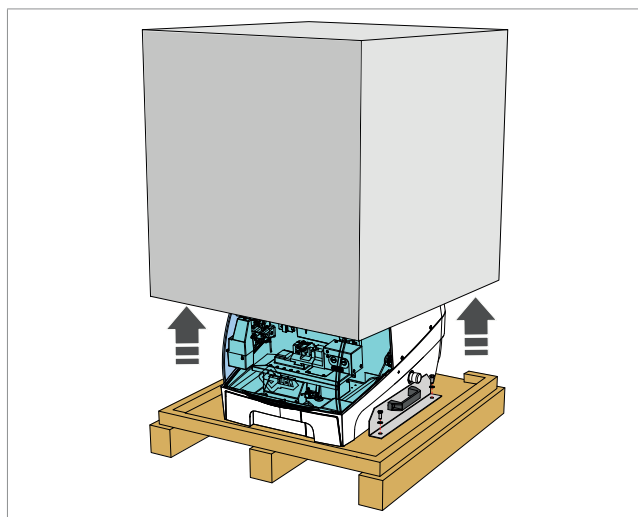


Fig. 11

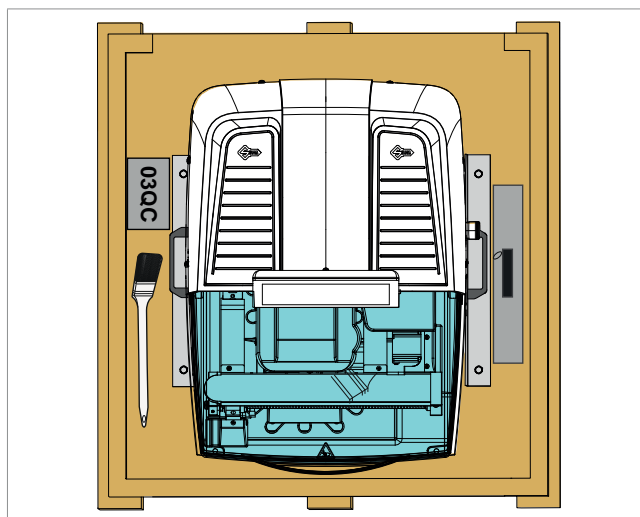


Fig. 12

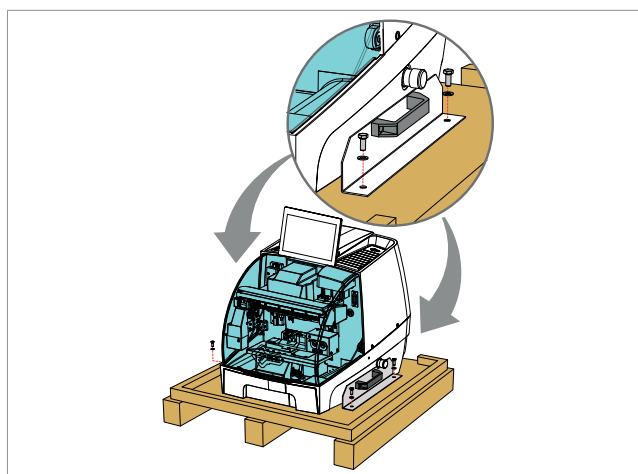


Fig. 13

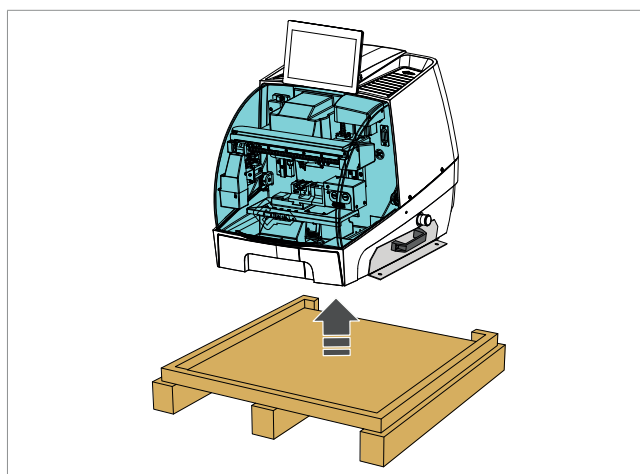


Fig. 14 - ATTENTION see chap.4.3

### 4.3 MACHINE HANDLING

**IMPORTANT:** check that the work bench where the key cutting machine will be placed is solid and strong to support the weight of the machine (see chap. 3, pag.9).

At least 2 people are needed to lift and move the machine.



**ATTENTION:** lift the machine using the handles and by holding the rear and front of the base (Fig. 15 and Fig. 16).

Never lift the machine by holding the swarf collection unit, clamps or other parts.

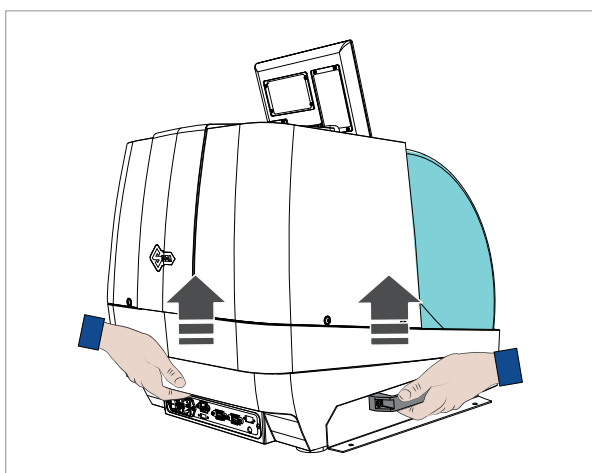


Fig. 15

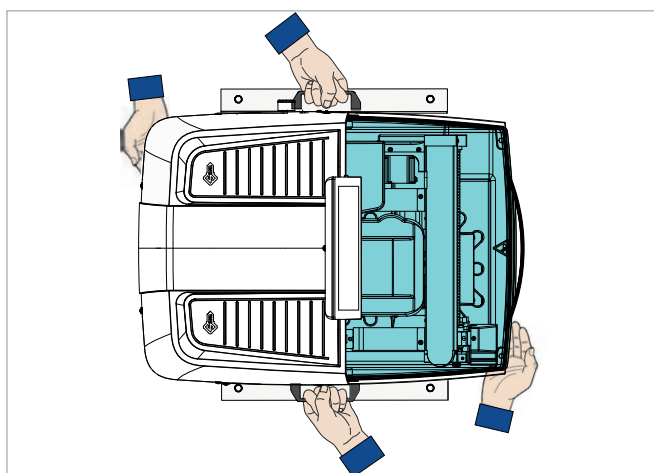


Fig. 16

- 1) After positioning, release the machine from the brackets by removing screws, handles and spacers (Fig. 17).
- 2) Close the holes on the base with the screws provided (Fig. 18).

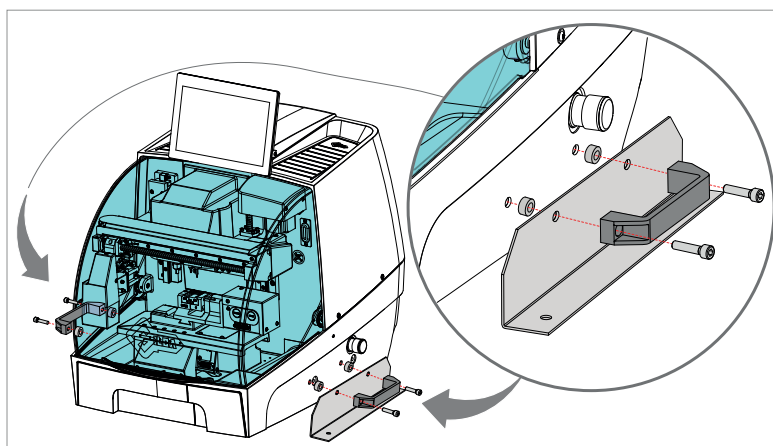


Fig. 17

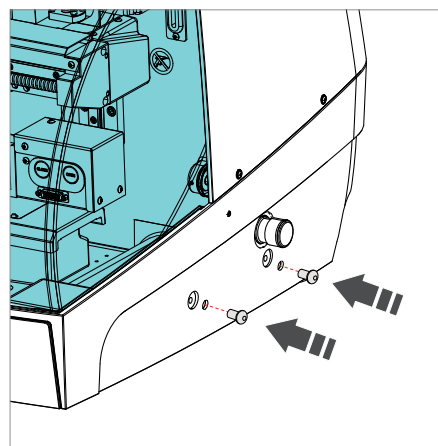


Fig. 18

## 5 MACHINE INSTALLATION AND PREPARATION

Installation is the customer's task and does not require any special skills.

The key-cutting machine is supplied ready for use and does not need calibration except for the tools to be used; however, the operator is required to make certain checks and prepare the machine for use.

### 5.1 CHECKING FOR DAMAGE

QUATTROCODE D is a solid machine and will not break if handling, unpacking and installation are carried out to the instructions in this manual. However, it is good practice to check that the machine has not been damaged.

### 5.2 ENVIRONMENTAL CONDITIONS

To make the most of the key-cutting machine, bear in mind the following environmental parameters: it is advisable for the area to be dry with good air circulation.

The optimum environmental conditions for machine operation are:

- temperature 10°C to 40°C;
- relative humidity: approx 60%.

### 5.3 POSITIONING

- 1) Place the key-cutting machine on a solid horizontal work bench suitable for the weight of the machine (cap.3, pag.9). The work bench should be approximately 100-120 cm high to facilitate access to the working parts. We recommend leaving at least 30 cm clearance behind and around the machine to ensure good ventilation and facilitate handling (Fig. 19).
- 2) Install any separate parts (see chap.6).
- 3) Make sure machine voltage is suitable for the mains supply and that the latter is earthed with a differential switch.
- 4) Connect the power lead to the machine.

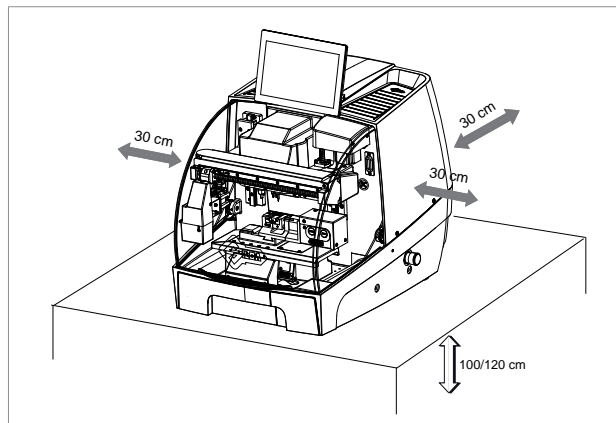


Fig. 19

### 5.4 ADJUSTING MONITOR INCLINATION

The inclination of the monitor can be adjusted with a simple manual rotation.

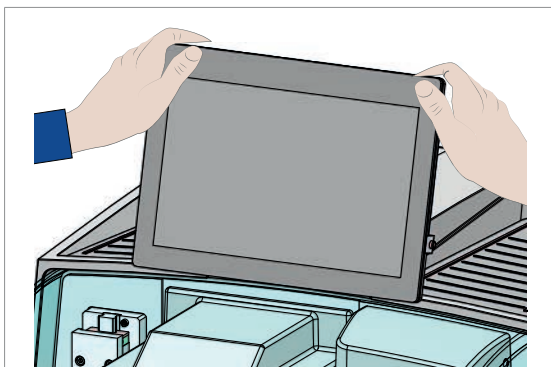


Fig. 20

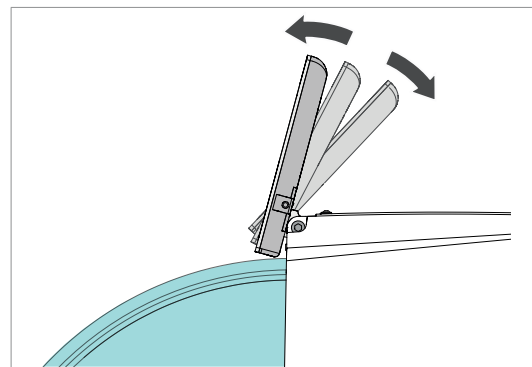


Fig. 21

## 6 SEPARATE PARTS

The QUATTROCODE D700 machine packing also contains the following components, separately packed:

- **ENGRAVING CUTTER W325 (into the tool box)**
- **ELECTRONIC CLAMP 03QC (D700)**

### 6.1 ENGRAVING CUTTER W325 INSTALLATION

To install the engraving cutter, follow these instructions:

- 1) Open the protective screen.
- 2) Loosen the grub screw (S1).
- 3) Insert the new cutter, bringing it into contact.
- 4) Tighten the grub screw (S1).

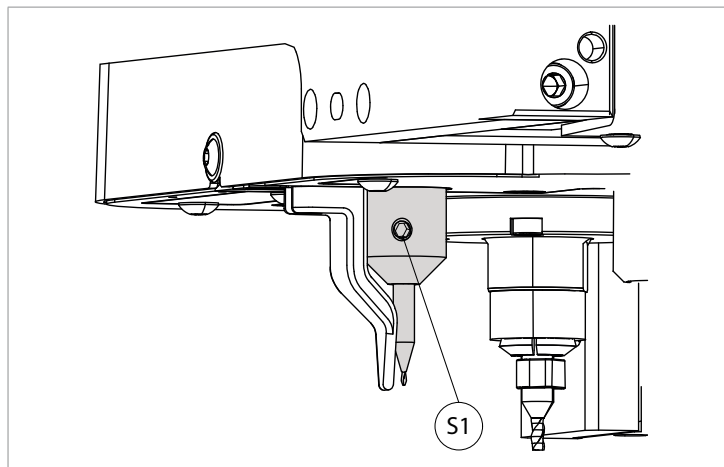


Fig. 22

## 6.2 ELECTRONIC CLAMP 03QC INSTALLATION (D700)

- 1) Loosen the grub screw (N).(Fig. 23)
- 1) Fit the clamp into the special dovetail groove (Fig. 24).
- 2) Tighten the grub screw (N).
- 3) Connect the clamp to the machine with the serial cable (M4) (Fig. 26).

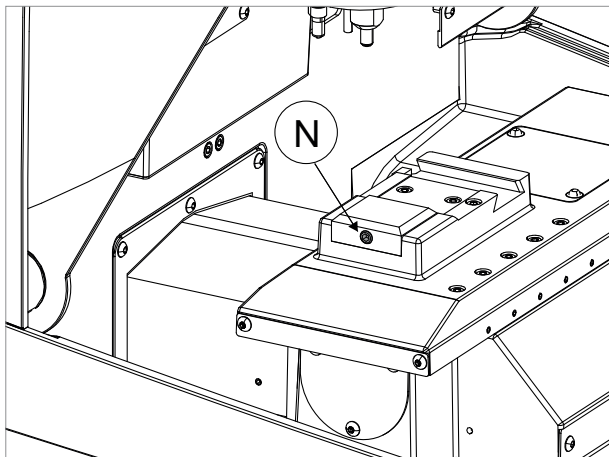


Fig. 23

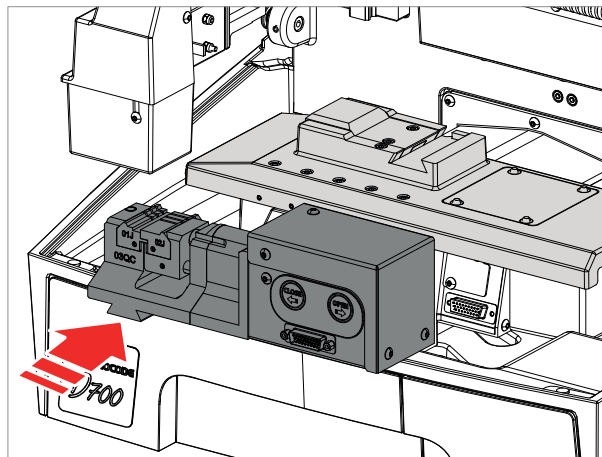


Fig. 24

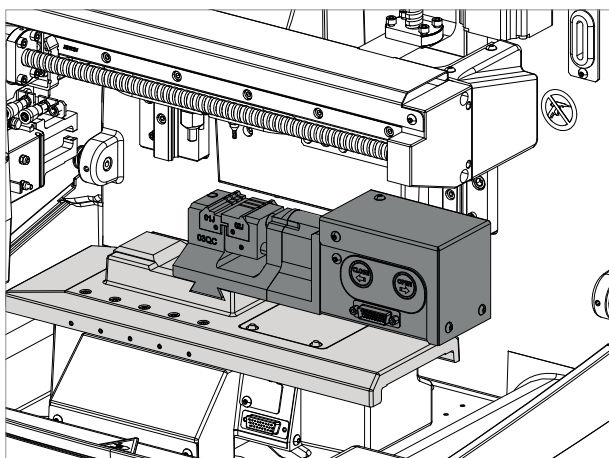


Fig. 25

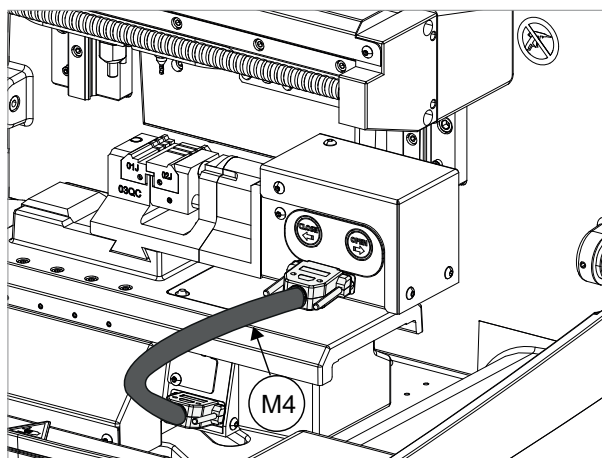


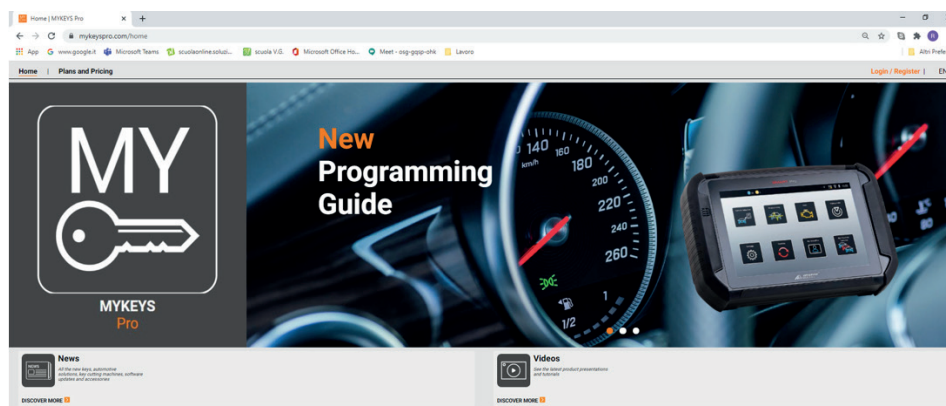
Fig. 26



## 7 MACHINE REGISTRATION

This operation is required to enable the use of authorised updates and protected systems.

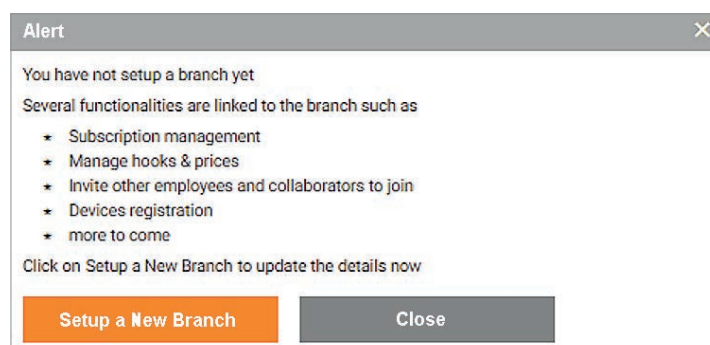
- 1) Go in **mykeyspro.com**



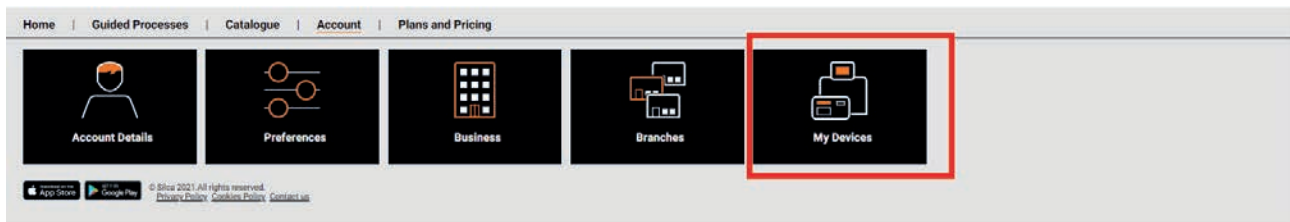
- 2) If you don't have a login follow next step, else follow from step 5.
- 3) Press link "Create account" and follow instructions.



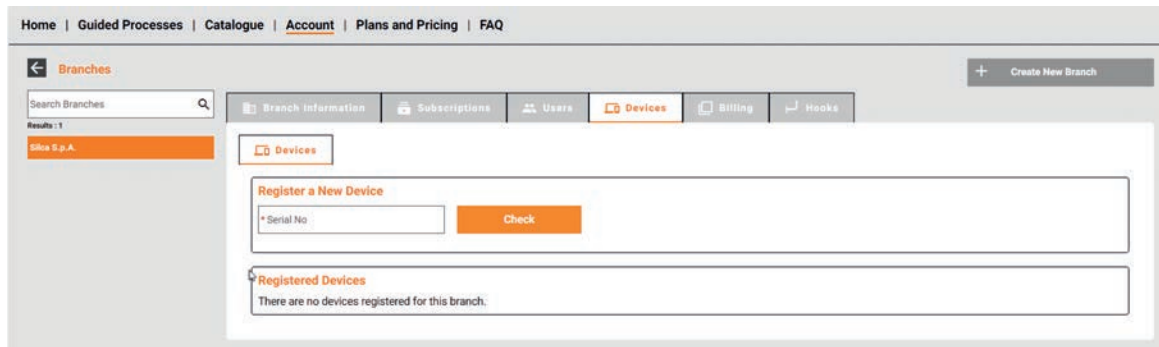
- 4) After registration, apply for login to enter MKP features.
- 5) If you did not create a "Business" into MKP follow next step, else go to step 7.



- 6) Press "Setup a new Branch" to create your Main Branch and follow instructions.
- 7) Select "Account" menu and will appear following page:



8) Select “My Devices”



9) Select “product type” you want to register, enter Serial Number and press “Register” button”.

## 8 HOW TO SET UP A QUATTROCODE D KEY-CUTTING MACHINE IN SKP PRO

- 1) Start the SKP PRO program and enter:



- 2) In the 'Available Machines' window click on 'New'



- 3) In Machine Management, complete the different fields in General Data.

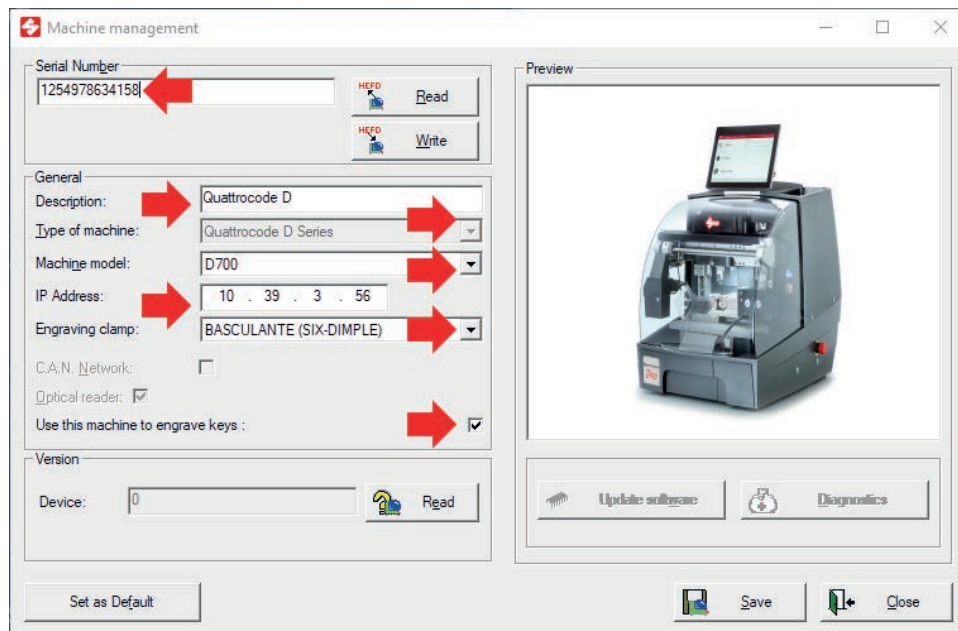


Fig. 27

Note: If the engraving function is required, check the box next to the words 'Use this machine to engrave keys' to enable the engraving function. This function is used to create engraving models in the SKP PRO program. Go to the 'Engraving Models' function to choose the type of engraving "with QUATTROCODE D SERIES" (Fig. 28).

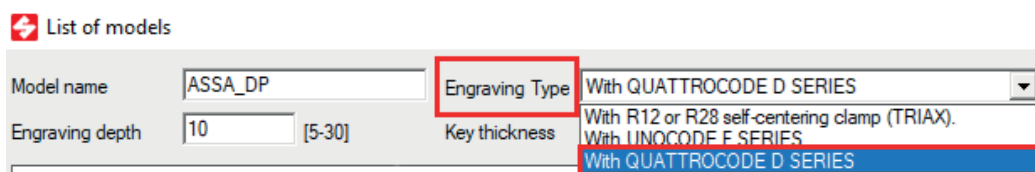
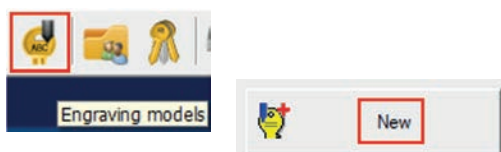
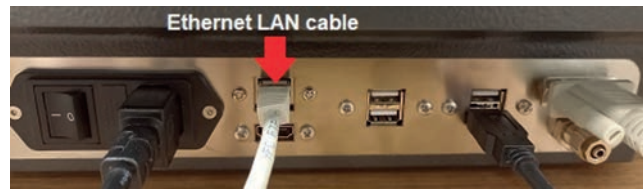


Fig. 28

## How to set the IP address for the QUATTROCODE D in your SKP PRO

- 1) Make sure the QUATTROCODE D is connected to the internet by means of a router (via LAN cable or Wi-Fi connection).



- 2) On the display enter the Settings – Network menu.

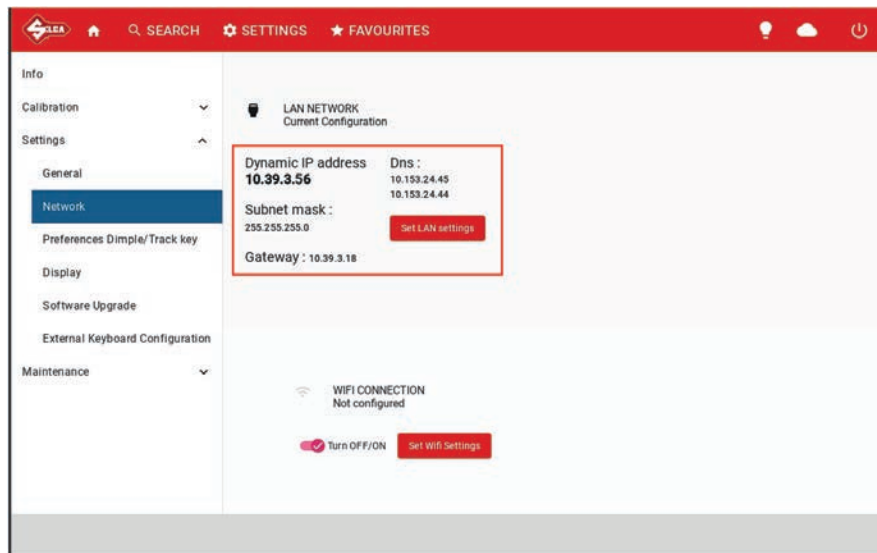


Fig. 29

- 3) If there is no Dynamic IP address, click on 'Set LAN settings'.
- 4) Then digit the Dynamic IP in the IP Address field.
- 5) Click the 'Read' key to find the machine serial number.
- 6) Click on Save.

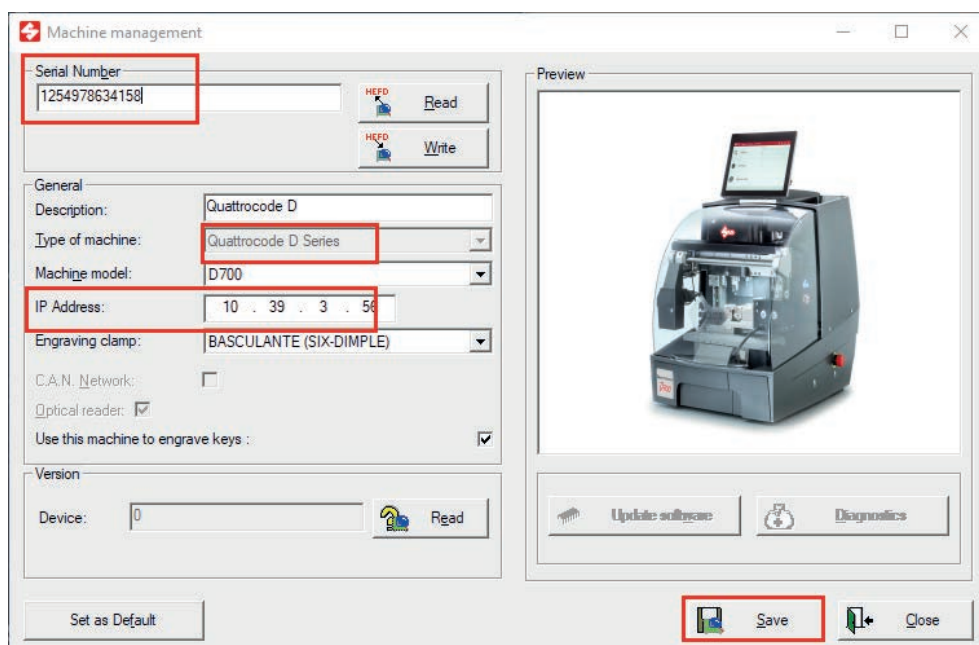
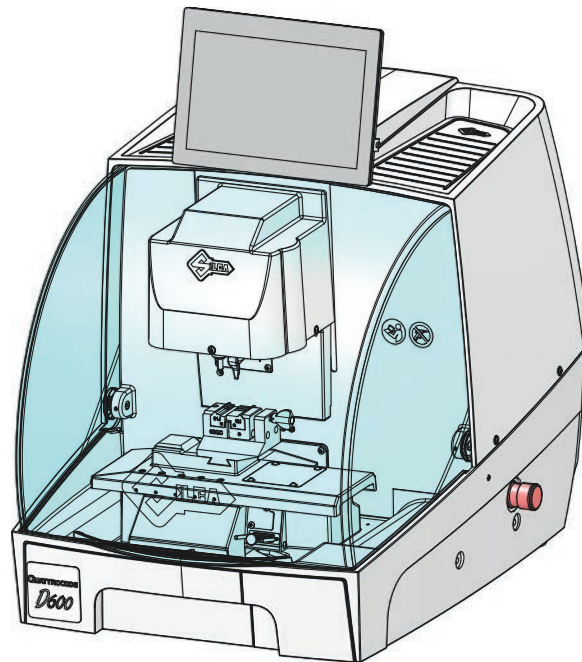


Fig. 30

## 9 QUATTROCODE D600



### Characteristics:

- ENGRAVING FUNCTION
- CAMERA
- 02QC MANUAL CLAMP with 01J-02J jaws

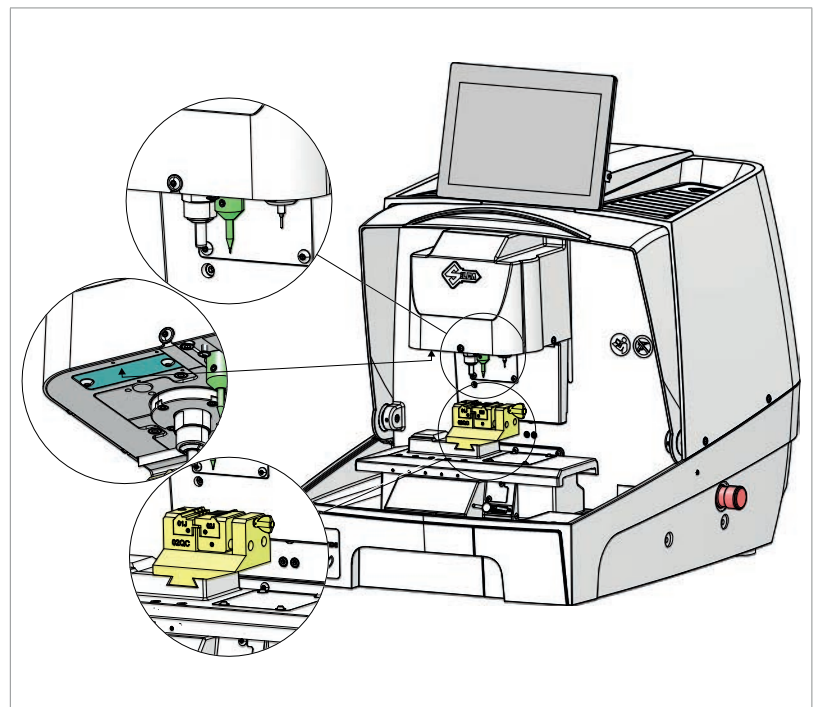


Fig. 31

## 9.1 MAIN OPERATING PARTS

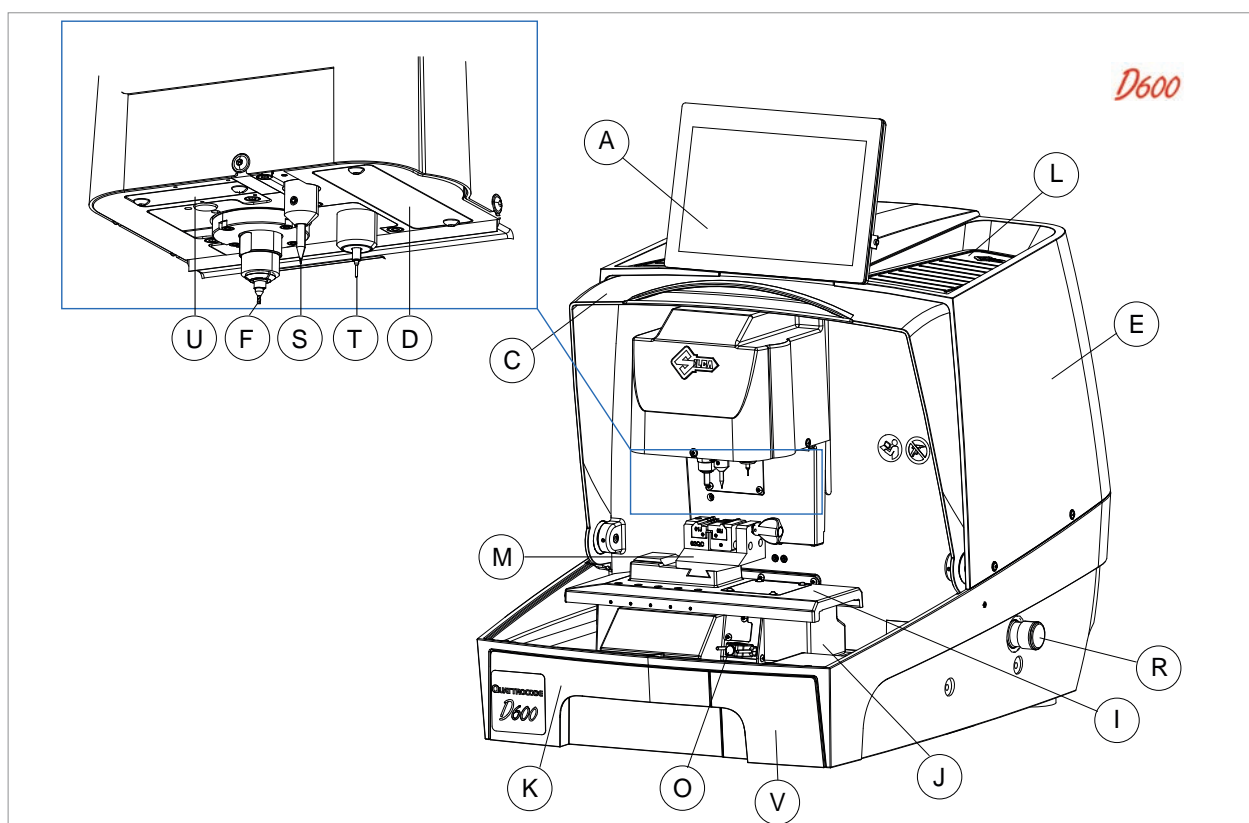


Fig. 32

- A - Monitor touch
- B - Master switch
- C - Protective shield
- D - Lamp
- E - Cover
- F - Cutter
- I - X axis carriage
- J - Y axis carriage
- L - Storage area
- K - Swarf collection unit
- M - 02QC manual clamp
- O - Serial port clamp recognition
- R - Emergency push button
- S - Engraving cutter
- T - Tracer point
- U - Camera
- V - Cutter holder
- V1 - USB ports
- Y - Power inlet
- Y1 - Fuse compartment
- Y2 - Video port
- Y3 - Ethernet port

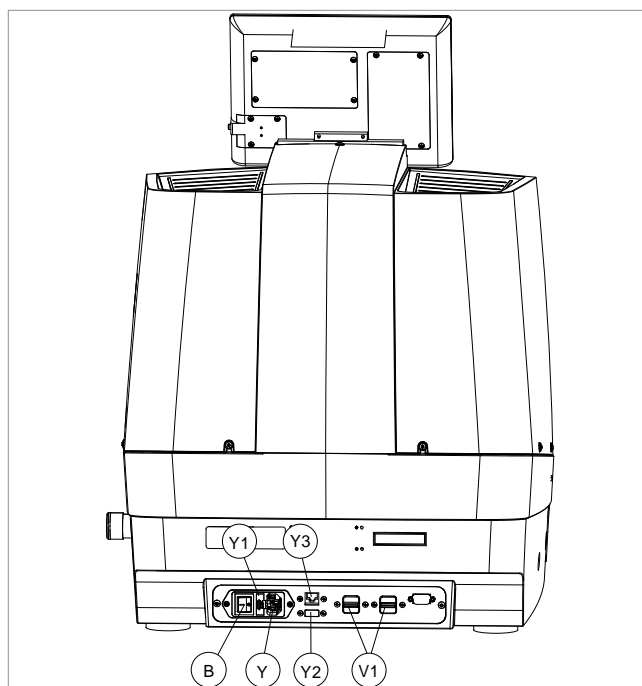


Fig. 33



## 9.2 02QC MANUAL CLAMP



**ATTENTION:** Check that the clamp recognition connector is in place.

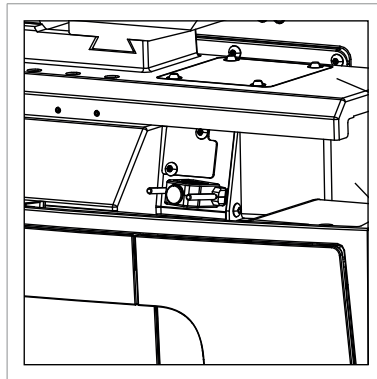


Fig. 34

Depending on the type of key to be decoded and/or cut, follow the instructions in the Silca programme or on the display for:

- **clamp**
- **use of jaws**
- **key stop provided in the clamp**

### KEY INSERTION

The clamp is designed to accommodate high-security keys with stop or tip reference:

- keys fitted with a STOP must be positioned against the jaws (STOP "0") (Fig. 36 and Fig. 38).
- the keys with LOCK IN POINT must be positioned with reference to one of the channels (1-2-3-4) as indicated in the Silca Key Program and/or on the display. Use the bar supplied for this operation (Fig. 37 and Fig. 39).

**Caution:** the stop bar must be removed before proceeding with decoding or cutting operations.

- 1) Unscrew the knob (N)
- 2) Insert the key to be coded into the keyway, resting it firmly on the clamp surface.
- 3) Close knob (N) to lock the key.

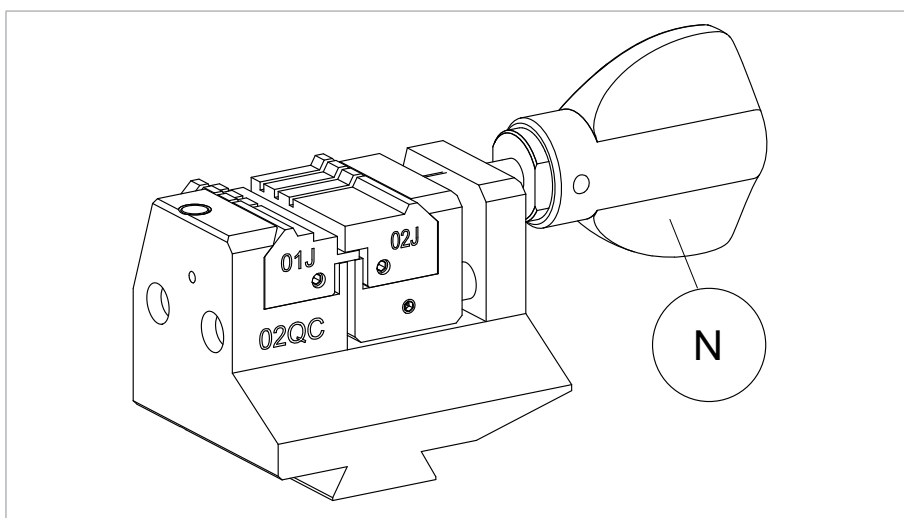


Fig. 35 - 02QC manual clamp

DIMPLE KEYS

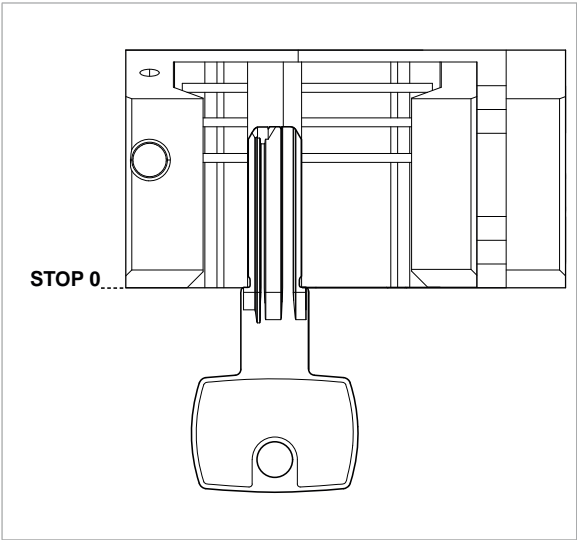


Fig. 36

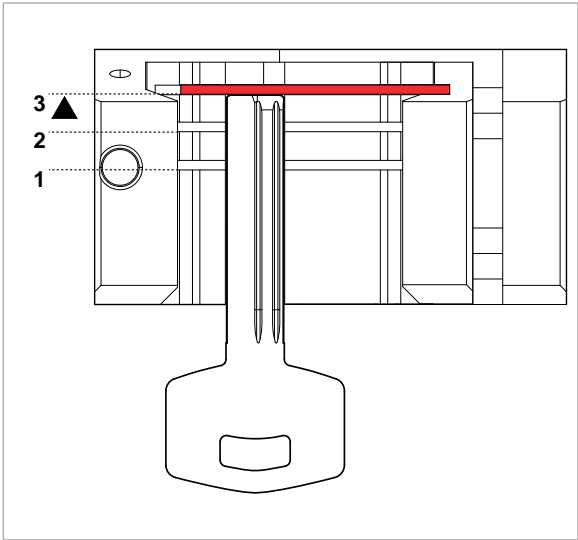


Fig. 37

LASER KEYS

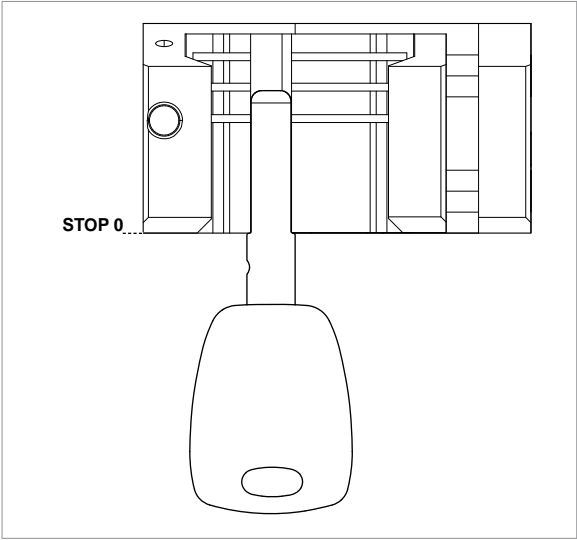


Fig. 38

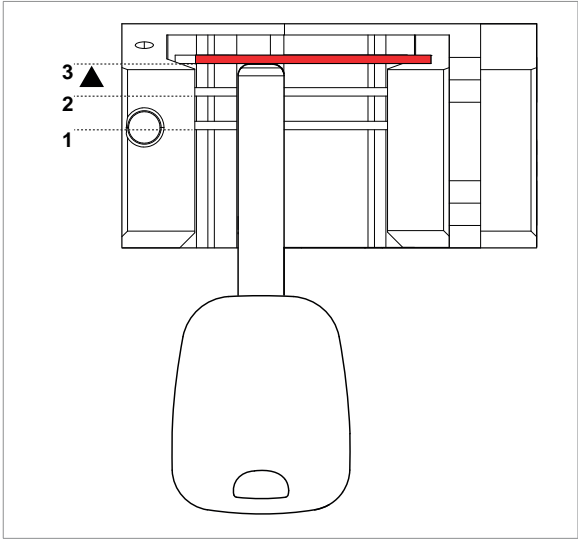
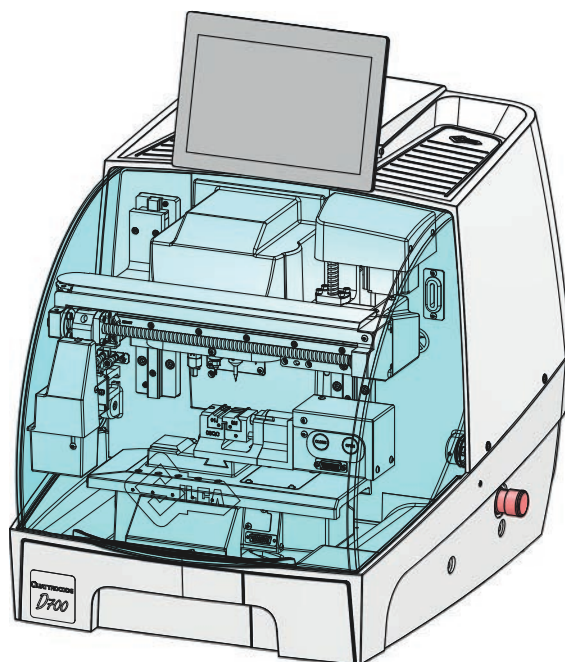


Fig. 39



## 10 QUATTROCODE D700



### Characteristics:

- ROBOT
- 03QC ELECTRONIC CLAMP with jaws 01J-02J
- ENGRAVING FUNCTION
- CAMERA

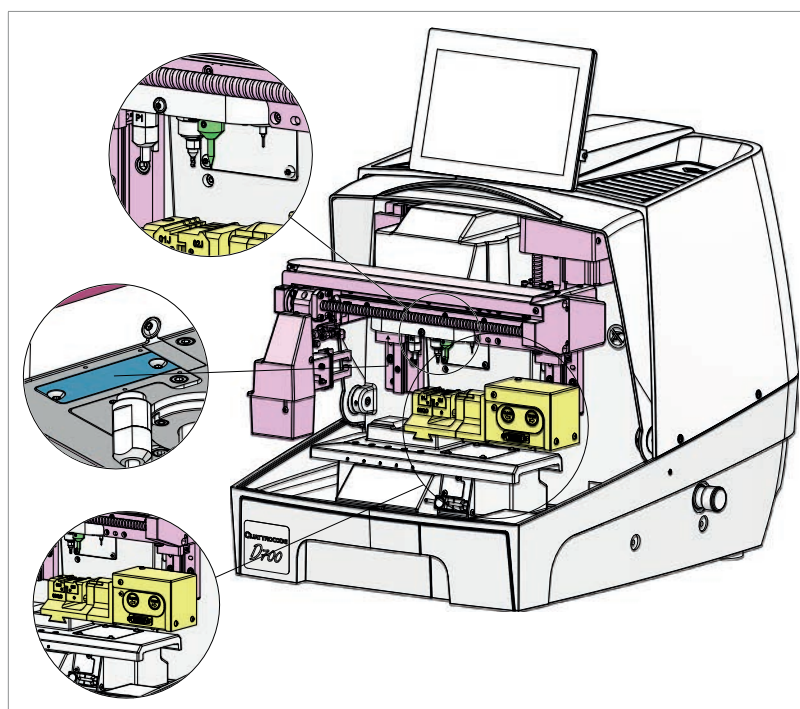


Fig. 40

## 10.1 MAIN OPERATING PARTS

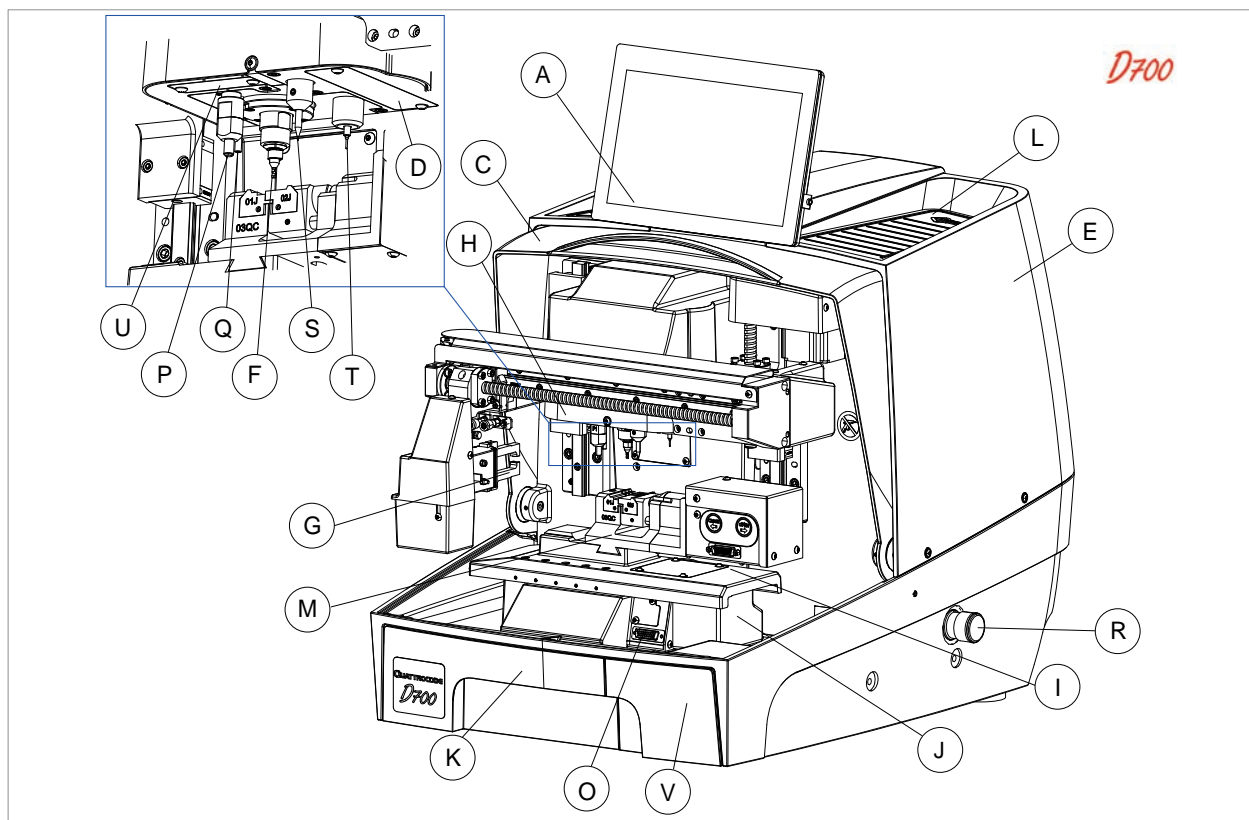


Fig. 41

- A - Monitor touch
- B - Master switch
- C - Protective shield
- D - Lamp
- E - Cover
- F - Cutter
- G - Robot grippers
- H - Z axis carriage
- I - X axis carriage
- J - Y axis carriage
- L - Storage area
- K - Swarf collection unit
- M - 03QC Electronic clamp
- O - Serial port clamp recognition
- P - Key pressor
- Q - Air Hose for Shavings
- R - Emergency push button
- S - Engraving cutter
- T - Tracer
- U - Camera
- V - Cutter holder
- V1 - USB Ports
- Y - Power inlet
- Y1 - Fuse compartment
- Y2 - Video port
- Y3 - Ethernet port

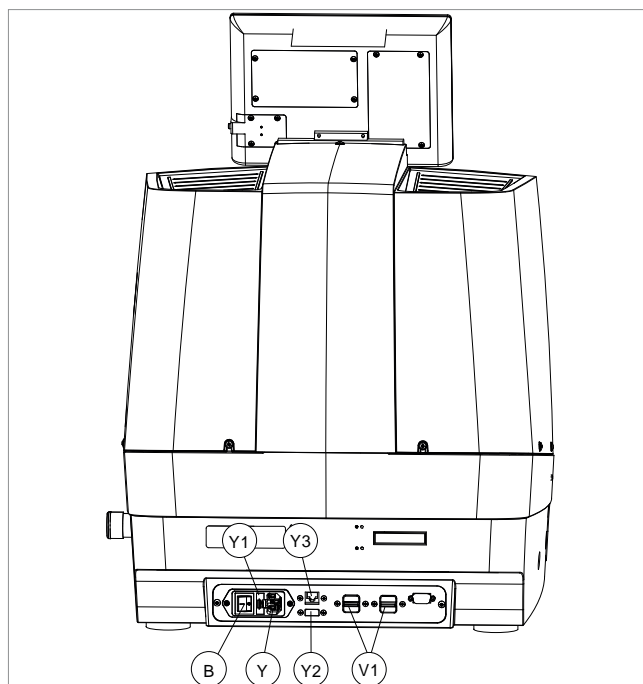


Fig. 42

## 10.2 03QC ELECTRONIC CLAMP

Depending on the type of key to be decoded and/or cut, follow the instructions in the Silca Key Program or on the display for:

- **clamp**
- **use of jaws**
- **key stop provided in the clamp**

### KEY INSERTION

The clamp is designed to accommodate high-security keys with stop or tip reference:

- keys fitted with a STOP must be positioned against the jaws (STOP "0") (Fig. 44 and Fig. 46).
- the keys with LOCK IN POINT must be positioned with reference to one of the channels (1-2-3-4) as indicated in the Silca Key Program and/or on the display. Use the bar supplied for this operation (Fig. 45 and Fig. 47).

**Caution:** the stop bar must be removed before proceeding with decoding or cutting operations.

- 1) Press OPEN
- 2) Insert the key to be coded into the keyway, resting it firmly on the clamp surface.
- 3) Press CLOSE to lock the key.

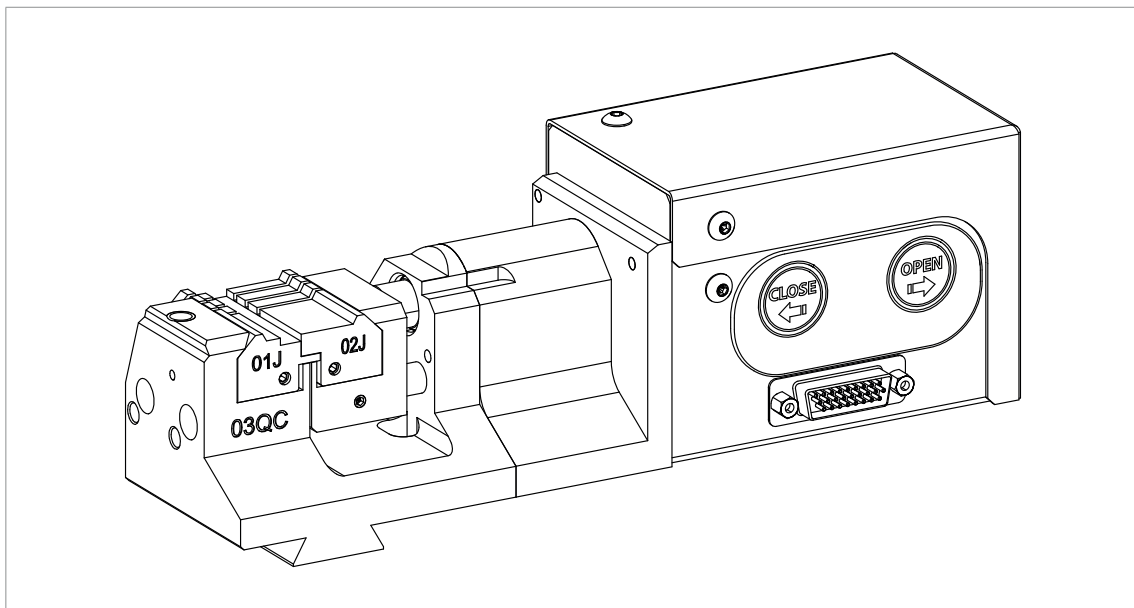


Fig. 43 - 03QC Electronic clamp

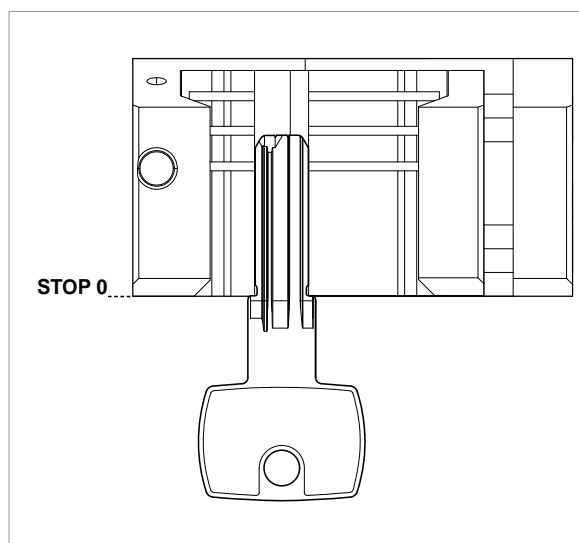
**DIMPLE KEYS**

Fig. 44

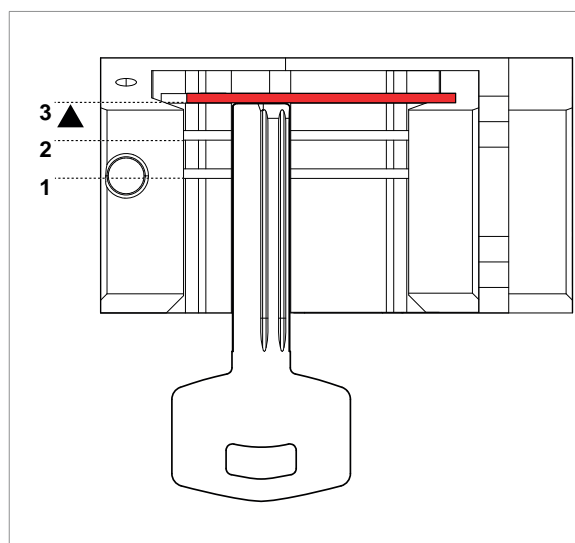


Fig. 45

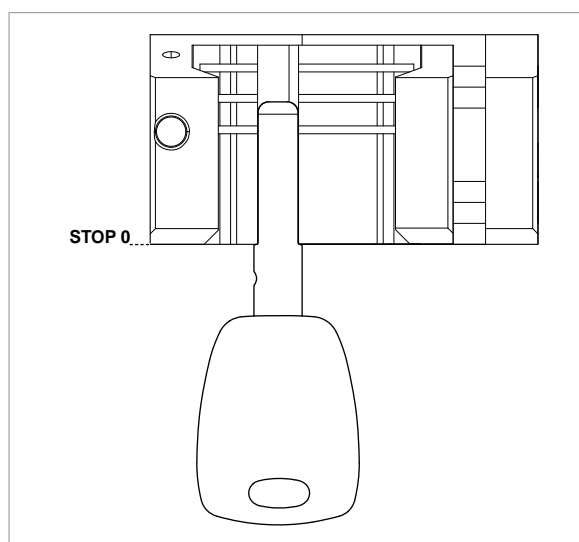
**LASER KEYS**

Fig. 46

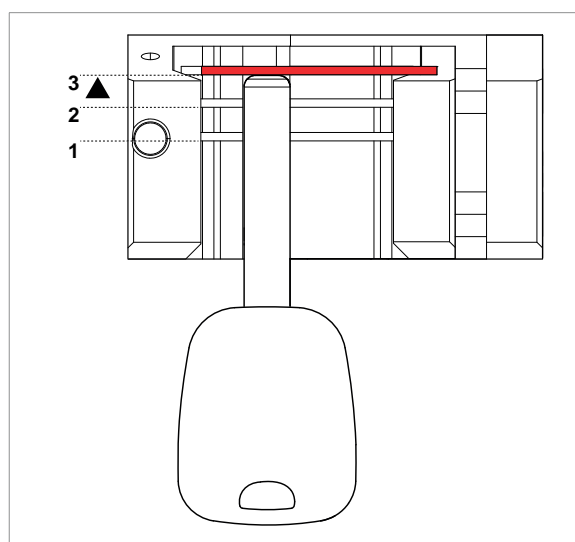


Fig. 47

### 10.3 ROBOT (D700)



The robotic unit makes it possible to speed up key duplication by avoiding manual handling of the key by the operator.

This unit travels on a bridge crane and is equipped with two key grippers.

The robot with the key grippers (M1-M2) can rotate 270°.

Use of the robot is not available for:

- **car key cutting cards.**
- **dimple key cards with tip retainer implemented with removable retainer bar.**
- **dimple key cards that require an adapter.**
- **keys that do not fall within the parameters indicated in Fig. 50.**

**Note:** Dimple key cards that require the use of jaws with a dedicated tip stop (without a bar) can be turned by the robot arm.

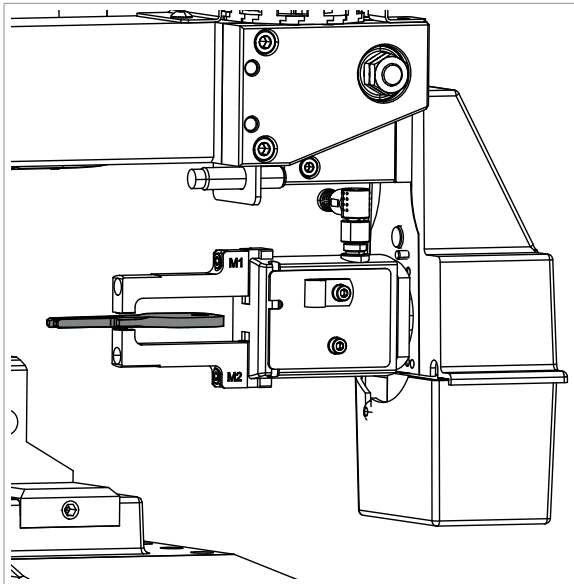


Fig. 48

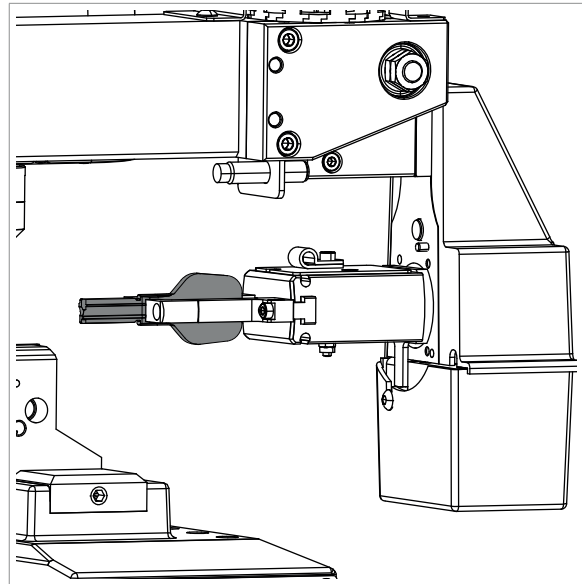


Fig. 49

#### TECHNICAL DATA KEYS SUITABLE FOR ROBOT USE

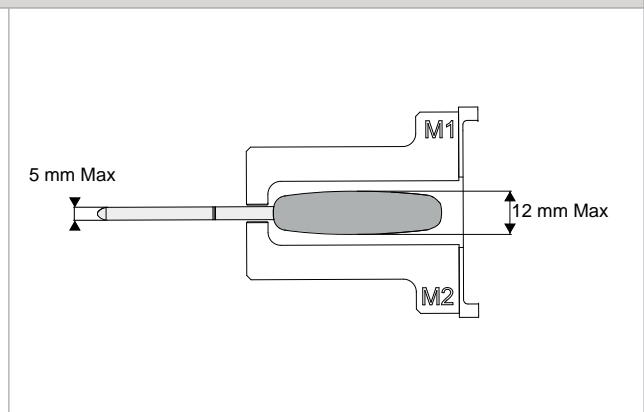
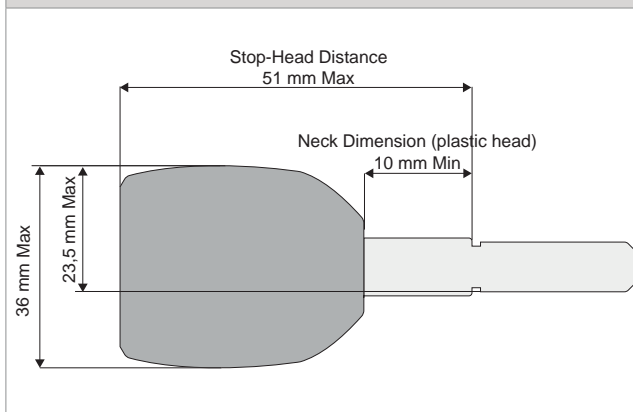


Fig. 50

#### 10.3.1 ROBOT GRIPPER REPLACEMENT (D700)

See chap. 16.1.15 REPLACING THE ROBOT GRIPPERS (D700) pag. 50

## 11 CAMERA

The QUATTROCODE D duplicating machine is equipped with a camera.

Camera functions (on QUATTROCODE D700):

- detect the presence of the key.
- Photograph and detect if the the dimensions of the key head are are compatible for use with the robot. (see Fig. 50)

The QUATTROCODE D duplicating machine is supplied ready for use and the camera does not need to be calibrated. If for some reason the camera needs to be recalibrated (e.g. camera replacement), access the “Calibration Menu” from the machine display and follow the procedure using the supplied KA1 template.

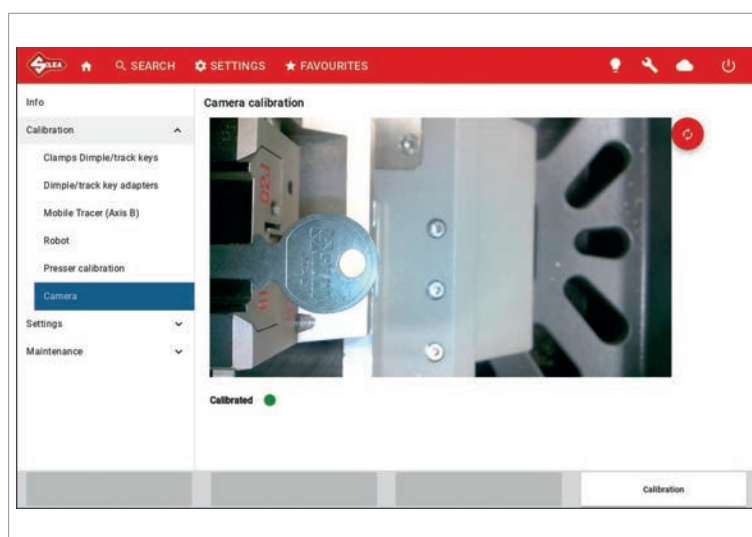
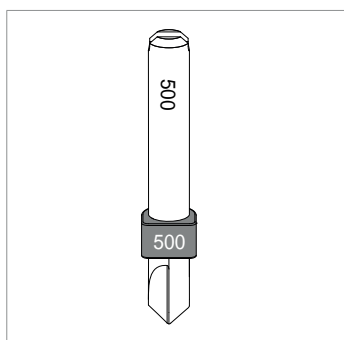
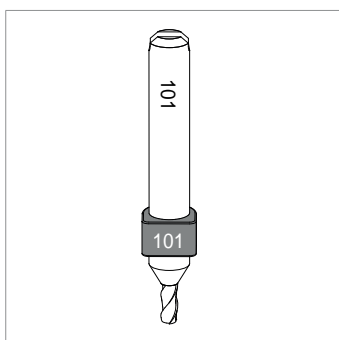


Fig. 51

## 12 USE OF CUTTERS



Cutter for dimple keys with  
90° key angle (500)



Cutter for laser keys (101)



Engraving cutter (W325)

- Cutter for dimple keys (500)
- Cutter for laser keys (101)
- Engraving cutter (W325)

The cutter is in hard metal, easily replaced and with resistance and cutting properties suitable for the type of process involved and the tool rotation speed.

Silca's specific cutters for QUATTROCODE D are recognised by the machine and enable better performance.

### 12.1 KEY CUTTER REPLACEMENT

To replace the key cutter installed on the machine, follow the instructions on the display.

- 1) Select "OPEN SPINDLE" (Fig. 53)
- 2) Remove the cutter and insert the required cutter by pushing it fully in and rotating it until you hear the anti-rotation stop click into the groove (F1) of the tool itself.



Fig. 52

- 3) Select "CLOSE SPINDLE"

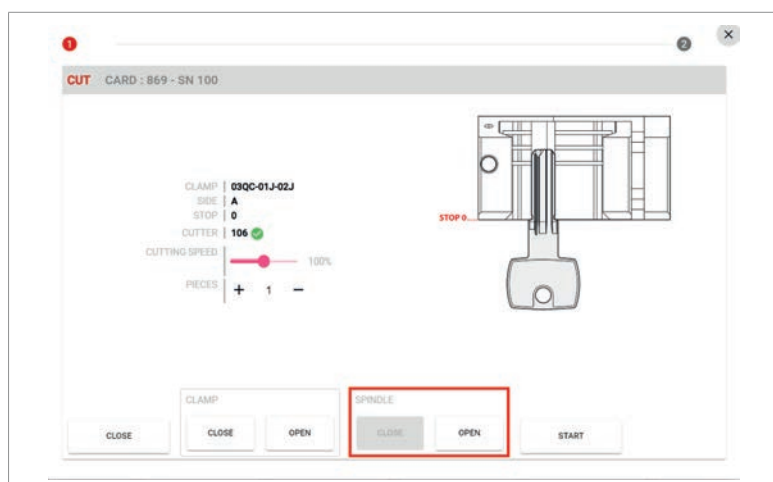


Fig. 53

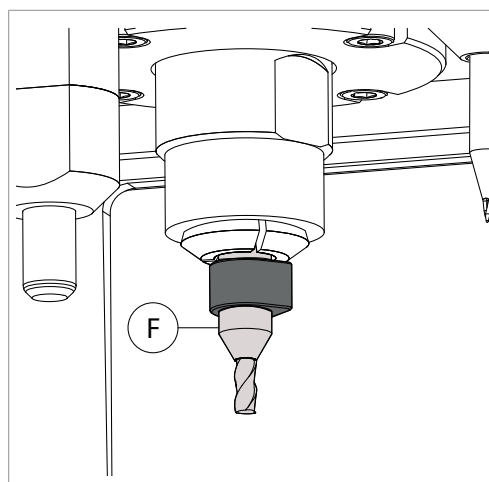


Fig. 54

## 12.2 ENGRAVING CUTTER REPLACEMENT

To replace the engraving cutter installed on the machine, follow the instructions on the display:

- 1) Open the screen.
- 2) Loosen the grub screw (S1) and remove the worn cutter.
- 3) Insert the new cutter, bringing it to the stop.
- 4) Lock the grub screw (S1).

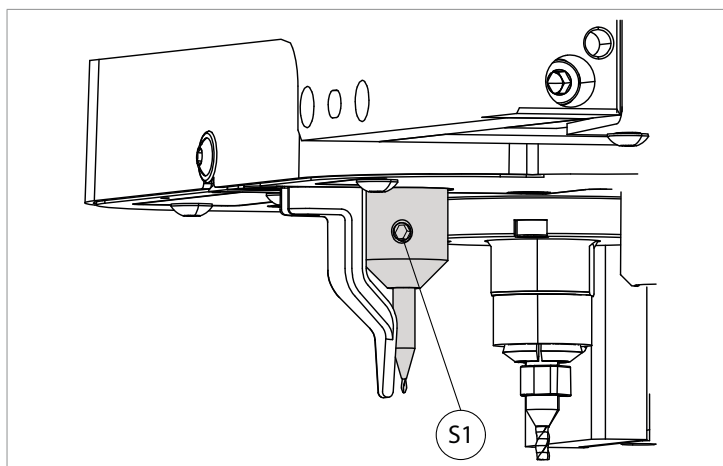


Fig. 55

## 12.3 TRACER POINT REPLACEMENT

To replace the tracer point installed on the machine, follow the instructions on the display:

- 1) Open the screen.
- 2) Lowering the tracer point.
- 3) Loosen the grub screw (T1).
- 4) Remove the tracer point (T) and replace it with the new one by bringing it into line.
- 5) Secure the new tracer point with the grub screw (T1).

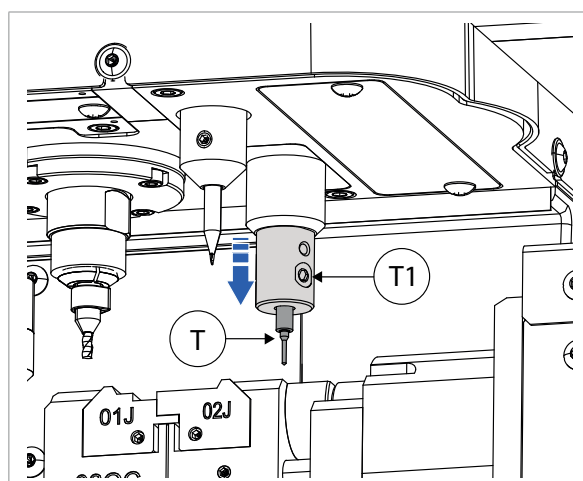


Fig. 56



## 13 ENGRAVING UNIT



QUATTROCODE D key-cutting machine is provided with an ENGRAVING system.  
Engraving can be done on metal flat keys with a flat surface and without plastic heads.



**ATTENTION:**

**Keys must be metal and NOT ALUMINIUM and e NOT STAINLESS STEEL.**  
**The surface to be engraved must be flat.**

### DIMENSIONS

The maximum engraving area is shown in Fig. 57.

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**NOTE:** *In the cutting process, engraving takes place before cutting.*

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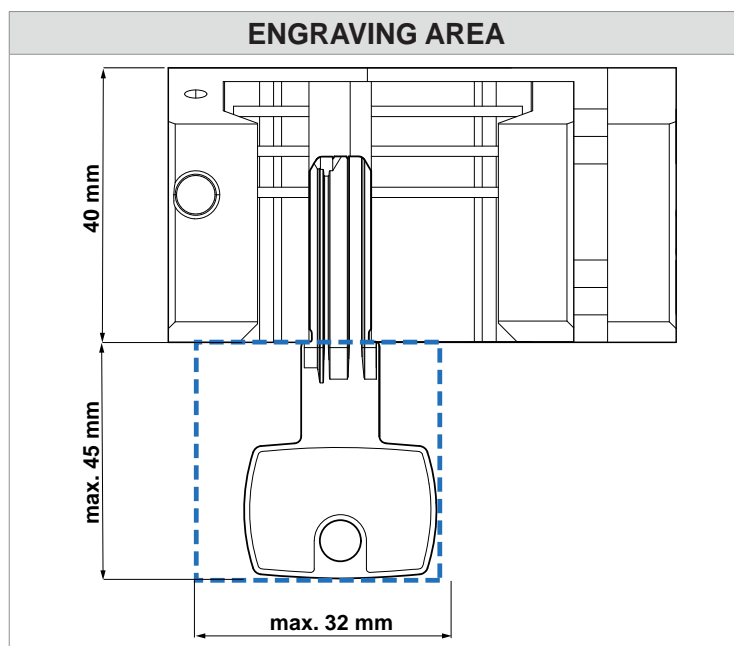


Fig. 57

## 14 CALIBRATIONS

QUATTROCODE D machines are supplied ready for use and do not need calibrating.

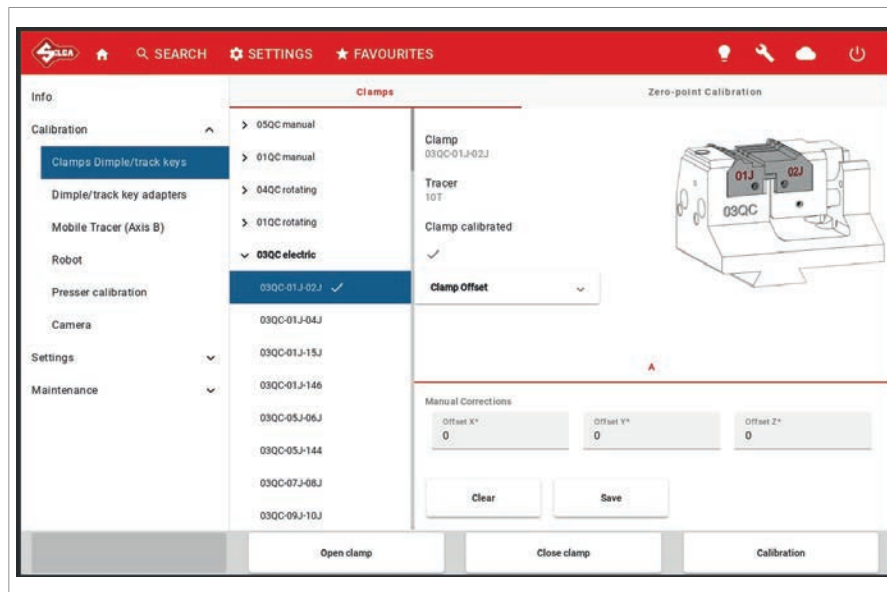


Fig. 58

The machine is equipped with a 'self-calibration' system using specific template and procedures, for the following components:

- **CLAMPS AND JAWS**
- **TRACER POINT**
- **KEY PRESSOR**
- **ROBOT (D700)**

Cutters and the ENGRAVING function do not require an automatic calibration system.

The ADAPTORS do not require an automatic calibration system; however, in cases where the user deems it appropriate, corrections can be made to the cutting values on the keys (see chap.14.4 CALIBRATING THE ADAPTORS). In the events shown in the table, it may be necessary to redo one or all of the calibrations relating to the clamps. This operation is semi-automatic and requires scrupulous attention to the instructions below.

These adjustments must be made when the following events occur:

EVENT	CLAMP calibration	TRACER POINT calibration	ROBOT calibration (QUATTROCODE D700)	MACHINE-ZERO POINT calibration
Photocell replacement	NO	NO	NO	YES
Replacing electronic board (AUX)	NO	NO	NO	NO
Replacing PC card	YES	YES	YES	YES
Replacing sensors	NO	NO	YES	YES
Replacement of recirculation screws	YES	YES	YES	YES
Replacing or maintaining the Tracer Point	NO	YES	NO	NO

**Note:** Before each calibration, check that a tool is inserted in the spindle.

### 14.1 CLAMP CALIBRATION

**Note: The supplied clamps do not need to be calibrated.**

- 1) Check that the clamp is installed with the jaws provided.
- 2) Carefully clean the clamp, the jaws and the calibration pad (M3).
- 3) Follow the instructions on the display.

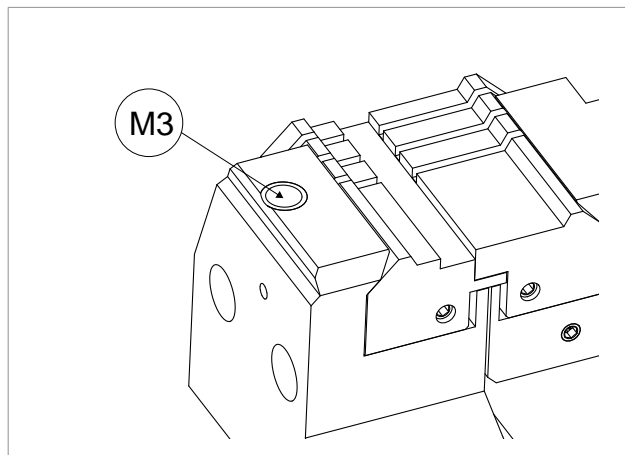


Fig. 59

### 14.2 TRACER POINT CALIBRATION

Necessary when replacing the tracer point (T).

- 1) Loosen the grub screw (N) and remove the existing clamp.
- 2) Insert Z39 template into the dovetail.
- 3) Tighten the grub screw (N)
- 4) Follow the instructions on the display.

**Note: MANUAL ADJUSTMENT not available for calibration of the TRACER POINT.**

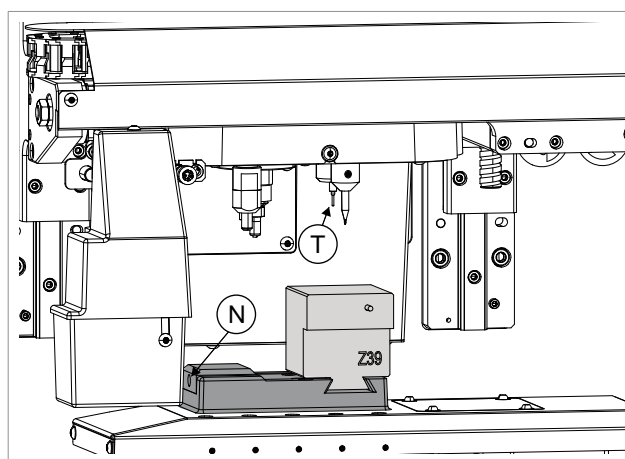


Fig. 60

### 14.3 KEY PRESSOR CALIBRATION (D700)

Necessary when replacing the key pressor (P)

- 1) Loosen the grub screw (N) Fig. 61 and remove the existing clamp.
- 2) Insert Z39 template into the dovetail. (Fig. 61)
- 3) Tighten the grub screw (N).
- 4) Follow the instructions on the display.

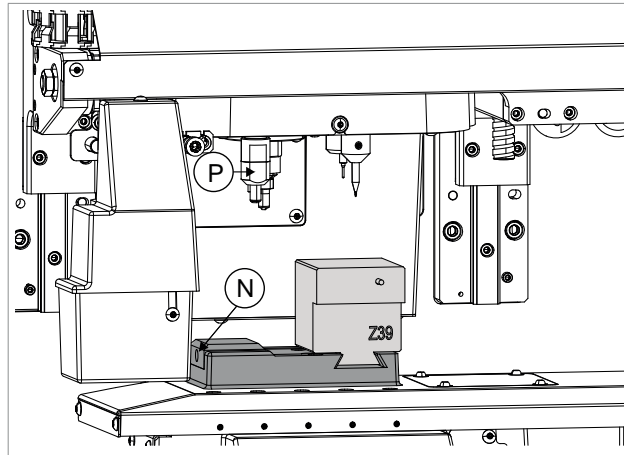


Fig. 61

### 14.4 CALIBRATING THE ADAPTORS

The adaptors do not need to be calibrated; if necessary, the user can make manual corrections.

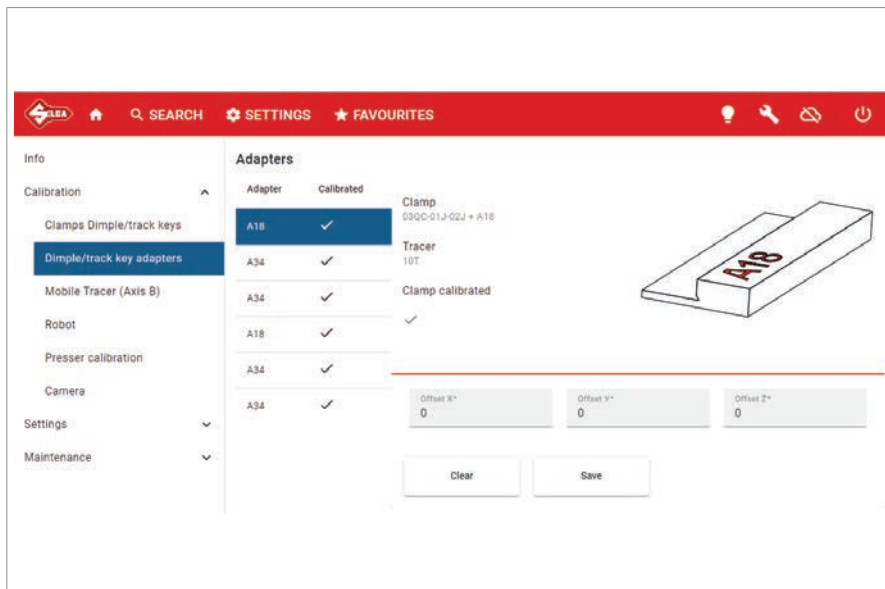


Fig. 62

## 14.5 MACHINE-ZERO POINT CALIBRATION

Necessary when replacing X-Y-Z axis sensors or photocells.

- 1) Loosen the grub screw (N) (Fig. 63) and remove the existing clamp.
- 2) Insert Z39 template into the dovetail. (Fig. 63).
- 3) Tighten the grub screw (N).
- 4) Install the supplied 10T tracer point in place of the cutter (Fig. 64).
- 5) Follow the instructions on the display.

**Note: MANUAL ADJUSTMENT not available for the MACHINE-ZERO point calibration function.**

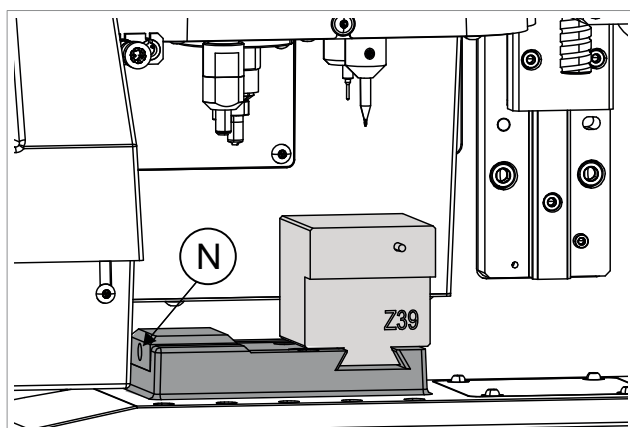


Fig. 63

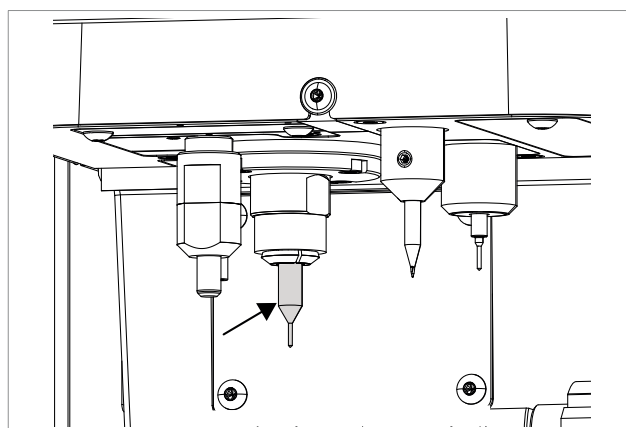


Fig. 64

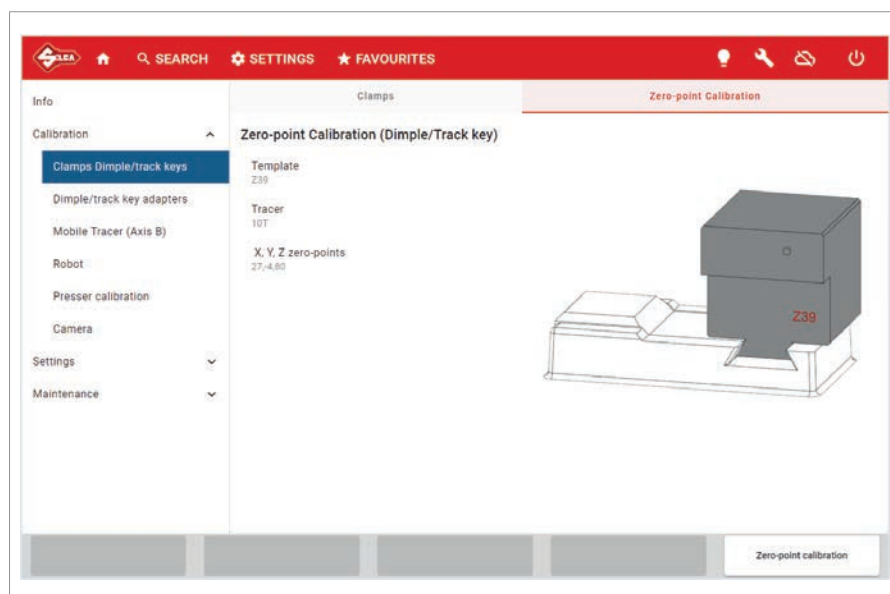


Fig. 65

## 14.6 CALIBRATING THE ROBOT (D700)

Necessary when replacing robot movement axis sensors.

- 1) Loosen the grub screw (N) (Fig. 66) and remove the existing clamp.
- 2) Insert Z39 template into the dovetail. (Fig. 66).
- 3) Tighten the grub screw (N).
- 4) Installing the Z40 template between the robot grippers. (Fig. 67).
- 5) Follow the instructions on the display.
- 6) When finished, remove Z39 and Z40 template.

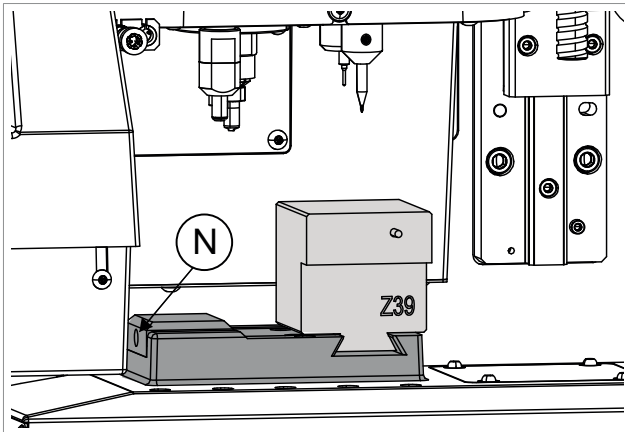


Fig. 66

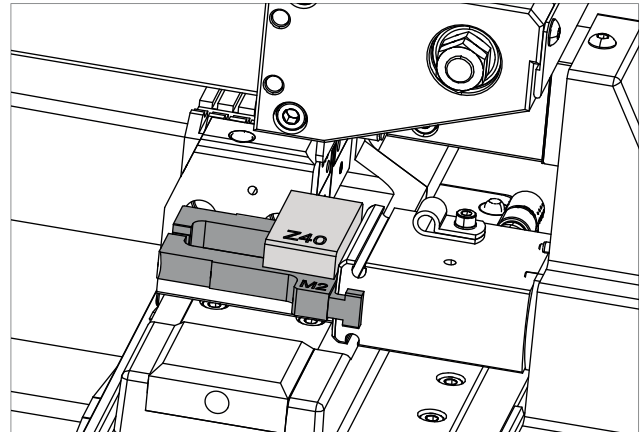


Fig. 67

## 14.7 CALIBRATING THE CAMERA

The QUATTROCODE D duplicating machine is supplied ready for use and the camera does not need to be calibrated. If for some reason the camera needs to be recalibrated (e.g. camera replacement), access the “Calibration Menu” from the machine display and follow the procedure using the supplied KA1 template.

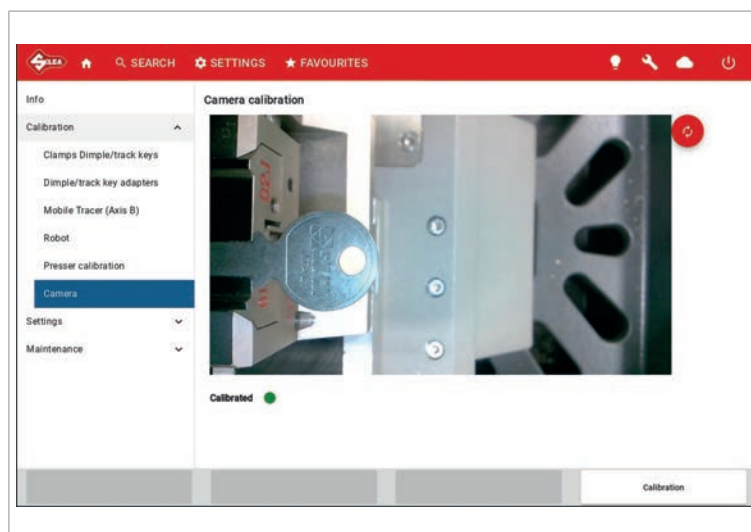


Fig. 68

## 15 CLEANING

- **Keep the operating parts of the machine as clean as possible by removing residual chips with a brush or vacuum cleaner.**
- **Under no circumstances should compressed air be used to clear the work zone of chippings as this will blow them onto the moving parts.**
- **Never use oily products or thinners for cleaning painted surfaces, clamps, electrical or electronic connections.**
- **Carefully clean the clamp, tools (cutters and tracer point), keys, robot, key pressor and camera glass.**

## 16 MAINTENANCE



**ATTENTION:** for repairs or replacement of parts for maintenance, the 'CE' mark is guaranteed only if original spare parts provided by the manufacturer are used.

The QUATTROCODE D key-cutting machine does not need special maintenance, but it is good practice to check and if necessary replace parts subject to wear: cutters, jaws/clamps, belts.

Replacement operations are simple and can be performed by the operator.



**ATTENTION: DO NOT USE COMPRESSED AIR!**



**ATTENTION:** to maintain machine efficiency we recommend using protective oil such as WD40 or similar to apply to the burnished mechanical parts. Make sure the oil does not come into contact with the electronic parts.

Before performing any type of maintenance (checks or replacements) read the warnings below:

- **Do not perform any maintenance operations with the machine on.**
- **Turn off the master switch (B) on the back of the machine and unplug.**
- **Always disconnect the power lead**
- **Follow the instructions in the manual carefully.**
- **Use original spare parts (see provided spare parts sheet).**

### 16.1 OPERATIONS

- **ACCESS TO REAR COMPARTMENT**
- **REMOVING THE PROTECTIVE SCREEN**
- **ADJUSTING MONITOR INCLINATION**
- **REMOVING/FITTING MANUAL CLAMP 02QC (D600)**
- **REMOVING/FITTING ELECTRONIC CLAMP 03QC (D700)**
- **CHECKING AND REPLACING FUSE**
- **REPLACING THE CUTTER**
- **REPLACING THE ENGRAVING CUTTER**
- **REPLACING THE TRACER POINT**
- **REPLACING THE KEY PRESSOR (D700)**
- **REPLACING THE ENGRAVING UNIT BELT (D600)**
- **REPLACING THE ENGRAVING UNIT BELT (D700)**
- **REPLACING THE VERTICAL ROBOT MOVEMENT BELT (D700)**
- **REPLACING THE HORIZONTAL ROBOT MOVEMENT BELT (D700)**
- **REPLACING THE ROBOT GRIPPERS (D700)**
- **REPLACING CAMERA GLASS AND LAMP GLASS**



### 16.1.1 ACCESS TO REAR COMPARTMENT

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Remove the seven screws (E1) securing the cover (E). (Fig. 69).
- 3) Remove the cover slowly. (Fig. 70).
- 4) Replace the cover (E) and secure with the seven screws (E1).

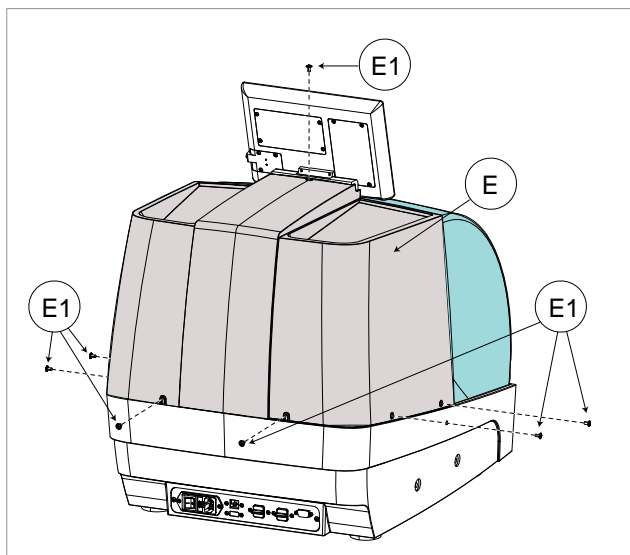


Fig. 69

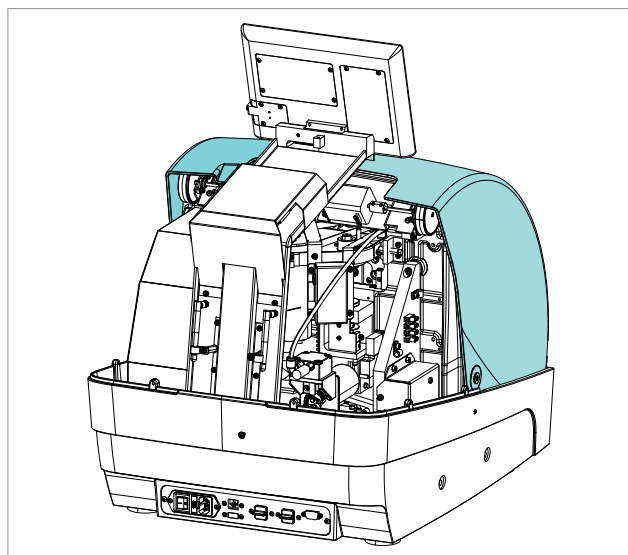


Fig. 70

### 16.1.2 REMOVING THE PROTECTIVE SCREEN

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Remove the machine cover (see chap. 16.1.1).
- 3) Remove the screws (C1) securing the protective screen (C).

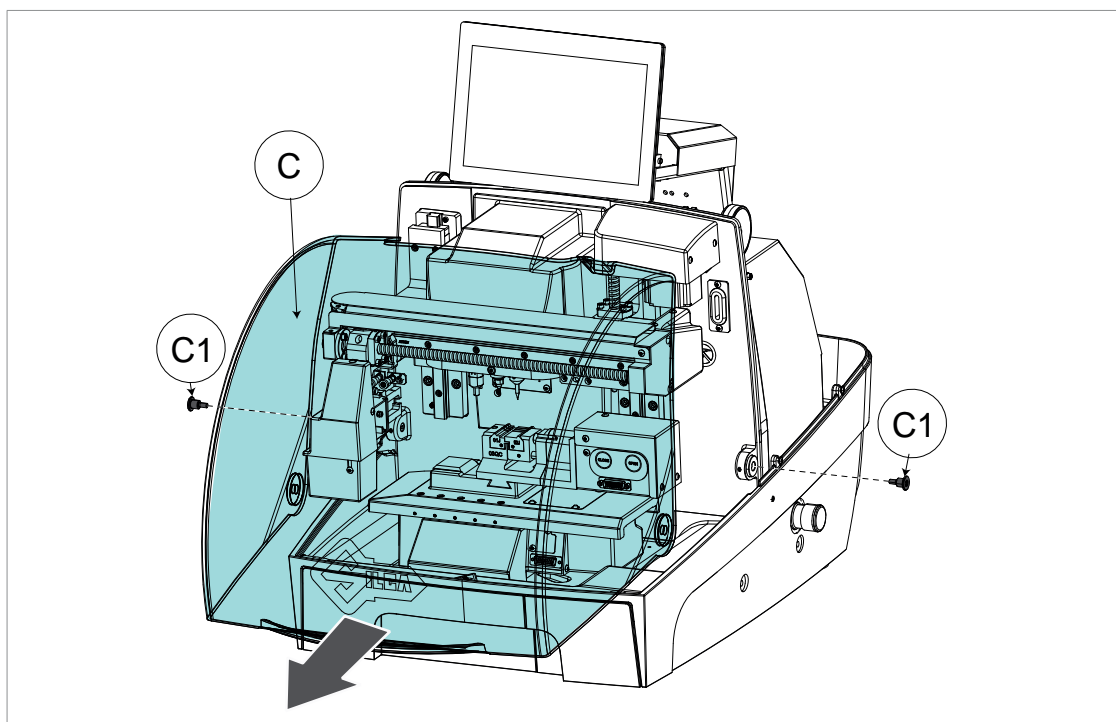


Fig. 71

### 16.1.3 ADJUSTING MONITOR INCLINATION

The inclination of the monitor can be adjusted with a simple manual rotation.

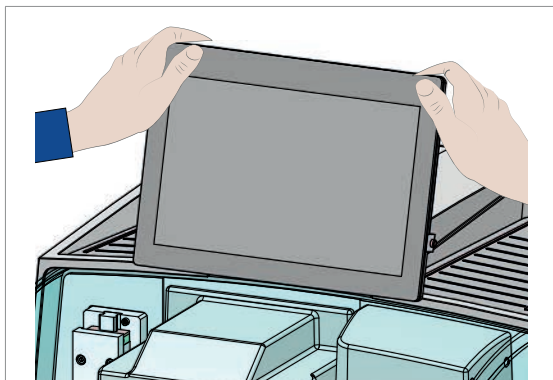


Fig. 72

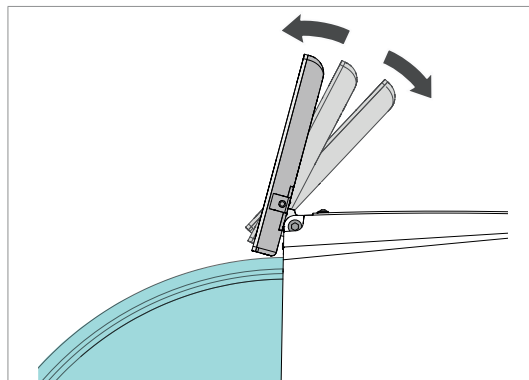


Fig. 73

**Note: if the monitor movement is loose, adjust as follows:**

- 1) Remove the machine cover (see chap. 16.1.1).
- 2) Loosen the grub screw (A1).
- 3) Tighten the screw (A2).
- 4) Lock the grub screw (A1).
- 5) Replace the machine cover.

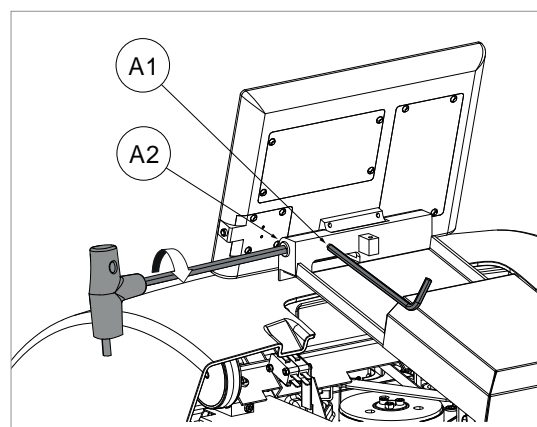


Fig. 74

### 16.1.4 REMOVING/FITTING MANUAL CLAMP 02QC (D600)

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Loosen the grub screw (N) (Fig. 75).
- 3) Insert the clamp unit into the dovetail groove (Fig. 76).
- 4) Tighten the grub screw (N).
- 5) To remove the clamp unit, loosen grub screw N and slide the clamp unit out.

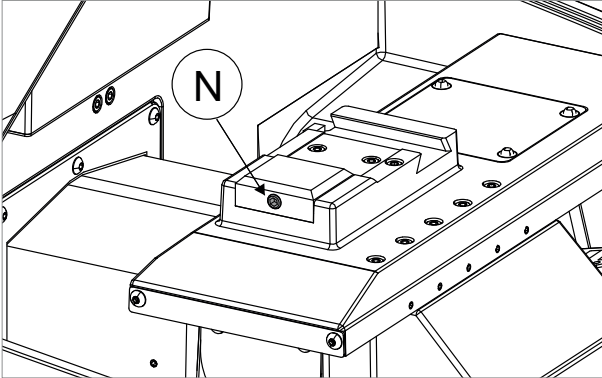


Fig. 75

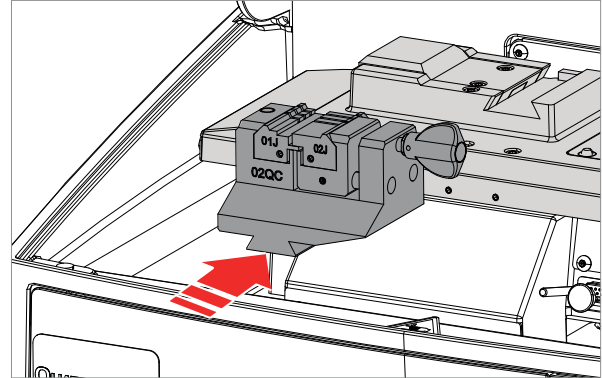


Fig. 76

### 16.1.5 REMOVING/FITTING ELECTRONIC CLAMP 03QC (D700)

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Loosen the grub screw (N) (Fig. 77).
- 3) Insert the clamp unit into the dovetail guide (Fig. 78).
- 4) Tighten the grub screw (N).
- 5) Connect the clamp to the machine with the serial cable (M4) (Fig. 80).
- 6) To remove the clamp unit, disconnect the M4 serial cable, loosen the grub screw N and remove the clamp unit.

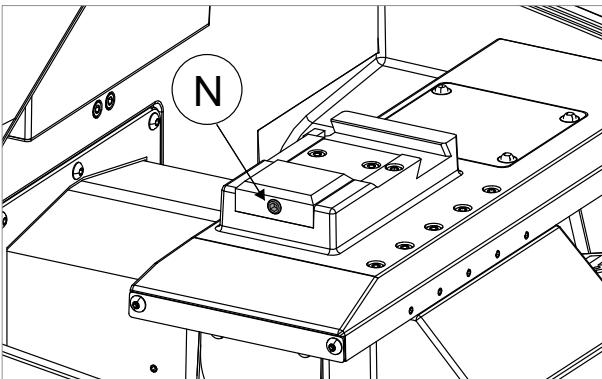


Fig. 77

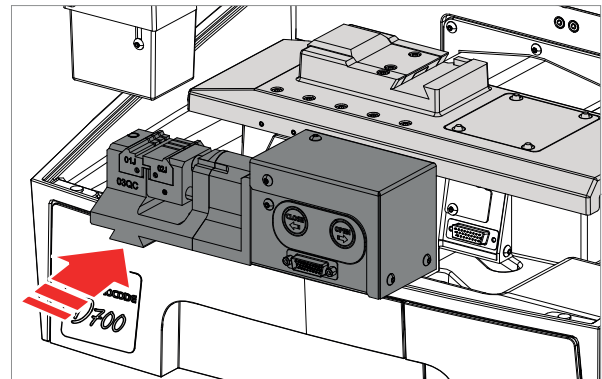


Fig. 78

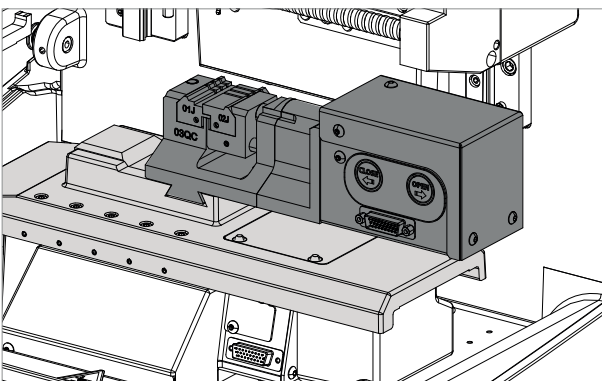


Fig. 79

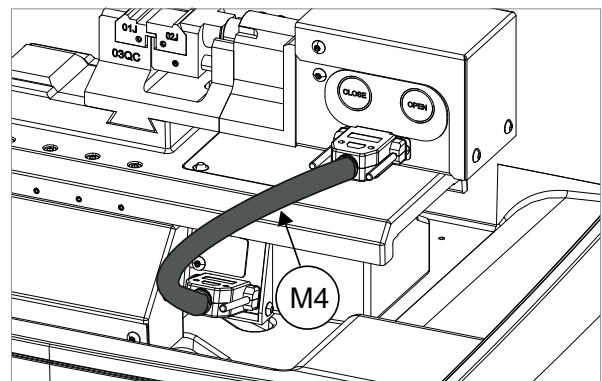


Fig. 80

### 16.1.6 CHECKING AND REPLACING FUSE

Fuses should be checked with a tester (ohmmeter, multimeter, etc.) as they may appear to be in good condition even when they are electrically faulty. Fuses must always be replaced with the same amperage and type (rapid or delayed), as indicated in this manual.

Machines QUATTROCODE D have 2 fuses:

- **1 Amps rapid**

Protects the electronic controls.

If the fuse needs replacing contact Silca After-Sales Service.

- **6,3 Amps delayed**

Located next to the power socket on the back of the machine, next to the main switch. These fuses protect the machine from power surges and/or spikes in the electricity supply. To check and/or replace the fuses proceed as follows:

1) **Turn off the key-cutting machine and disconnect the power lead.**

2) Use a flat screwdriver to extract the fuse box from the socket (Fig. 81), remove the fuse and replace, if necessary.

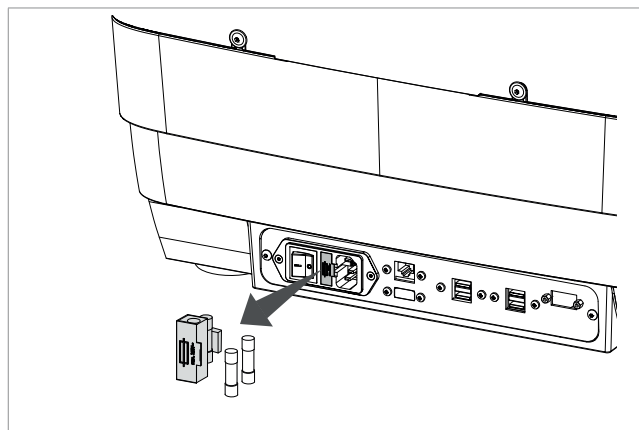


Fig. 81

### 16.1.7 REPLACING THE CUTTER

To replace the cutter installed on the machine, follow the instructions on the display.

- 1) Select "OPEN SPINDLE" (Fig. 83).
- 2) Remove the cutter and insert the required cutter by pushing it fully in and rotating it until you hear the anti-rotation stop click into the groove (F1) of the tool itself.
- 3) Select "CLOSE SPINDLE".

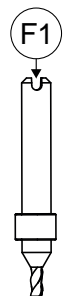


Fig. 82

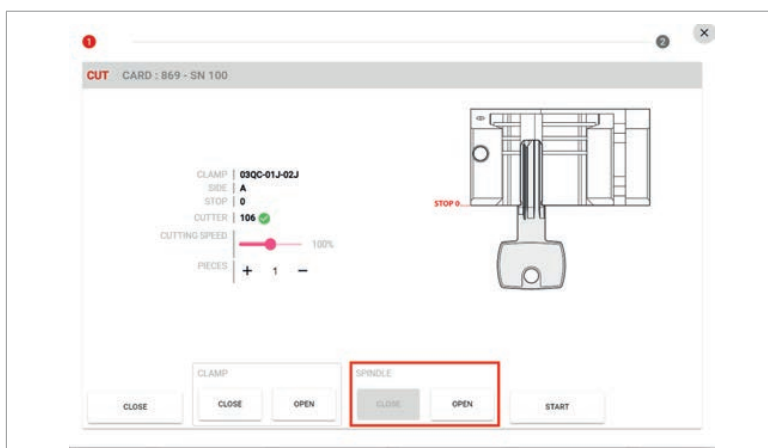


Fig. 83

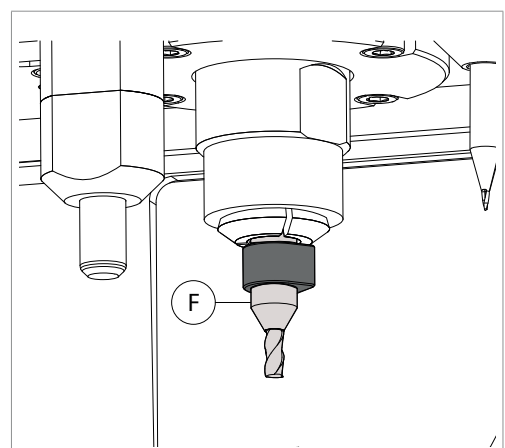


Fig. 84

### 16.1.8 REPLACING THE ENGRAVING CUTTER

To replace the engraving cutter installed on the machine, follow the instructions on the display:

- 1) Open the protective screen.
- 2) Loosen the grub screw (S1) and remove the worn cutter.
- 3) Insert the new cutter, bringing it into contact.
- 4) Tighten the grub screw (S1).

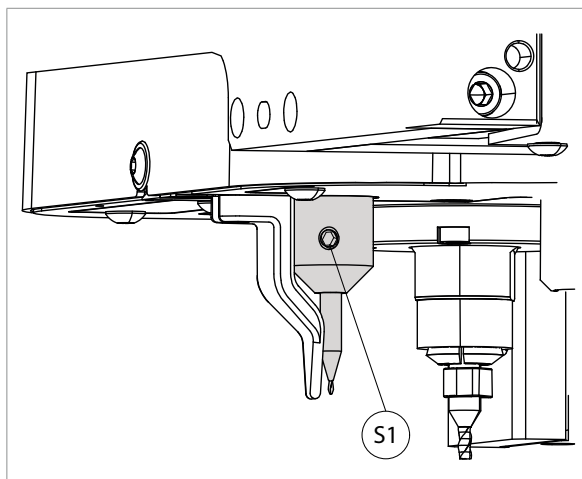


Fig. 85

### 16.1.9 REPLACING THE TRACER POINT

To replace the tracer point, proceed as follows:

- 1) Open the protective screen.
- 2) Lower the tracer point assembly.
- 3) Loosen the grub screw (T1).
- 4) Remove the tracer point (T) and replace it with the new one, bringing it to a stop.
- 5) Secure the new tracer point with the grub screw (T1).

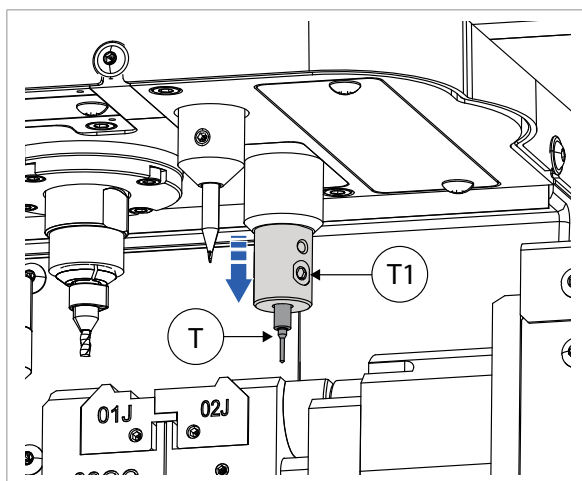
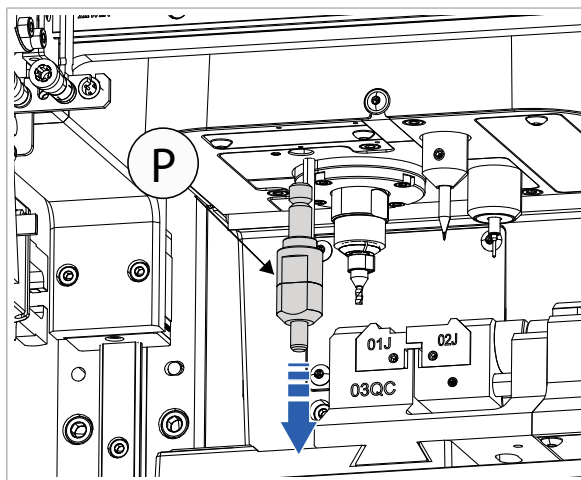


Fig. 86

**16.1.10 REPLACING THE KEY PRESSOR (D700)**

- 1) Turn off the key-cutting machine and disconnect the power lead.**
- 2) Remove the key pressor unit P by pulling it downwards.
- 3) Insert the new key pressor unit by pushing it in until you hear a click.

*Fig. 87*

**16.1.11 REPLACING THE ENGRAVING UNIT BELT (D600)**

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Remove the rear cover (E) (chap.16.1.1).
- 3) Remove the protective screen (C) (chap.16.1.2).
- 4) Loosen the screws (L2), (Fig. 88 and Fig. 89) and remove the cover (L1) upwards.
- 5) Remove the worn or broken belt (Fig. 91).
- 6) Insert the new belt.
- 7) Replace the cover L1 and close the screws (L2).
- 8) Replace the protective shield and rear cover.

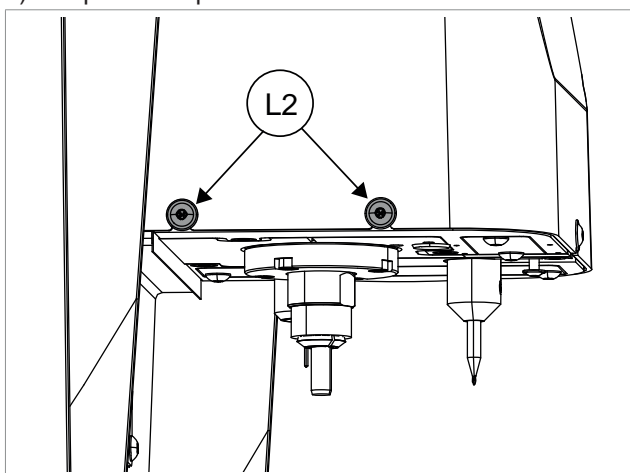


Fig. 88

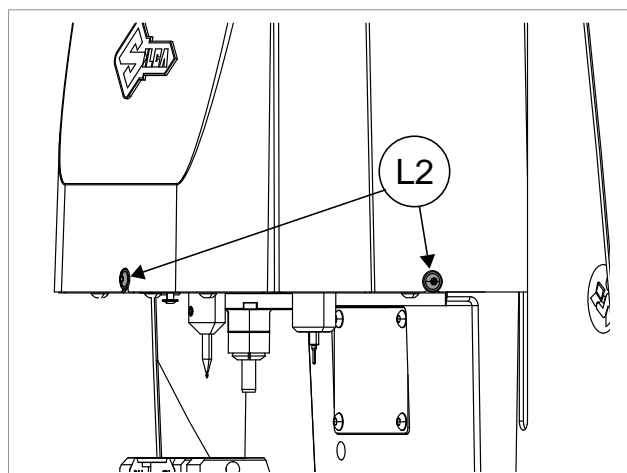


Fig. 89

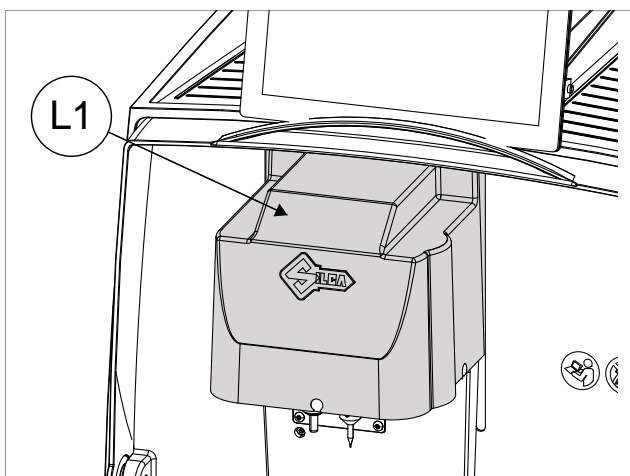


Fig. 90

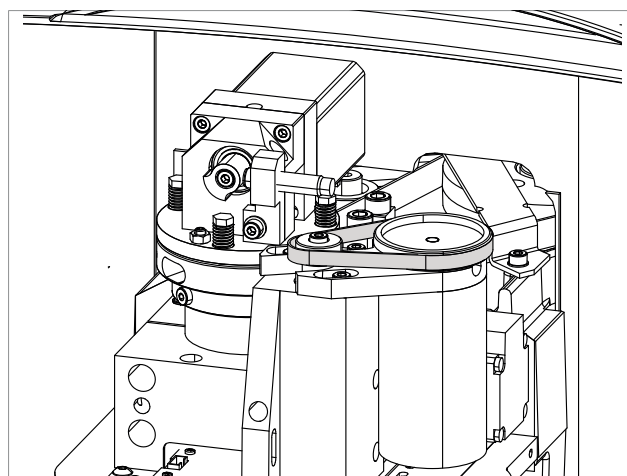


Fig. 91



### 16.1.12 REPLACING THE ENGRAVING UNIT BELT (D700)

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Remove the rear cover (E) (chap.16.1.1).
- 3) Remove the protective screen (C) (chap.16.1.2).
- 4) Loosen the screws (L2), (Fig. 92 and Fig. 93) push down the ROBOT unit (only for QUATTROCODE D700) ( Fig. 94) and remove the cover (L1) upwards.
- 5) Remove the worn or broken belt (Fig. 95).
- 6) Insert the new belt.
- 7) Replace the cover L1 and close the screws (L2).
- 8) Replace the protective shield and rear cover.

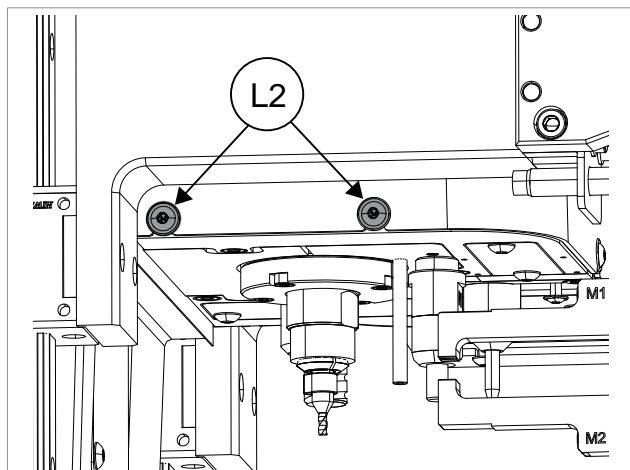


Fig. 92

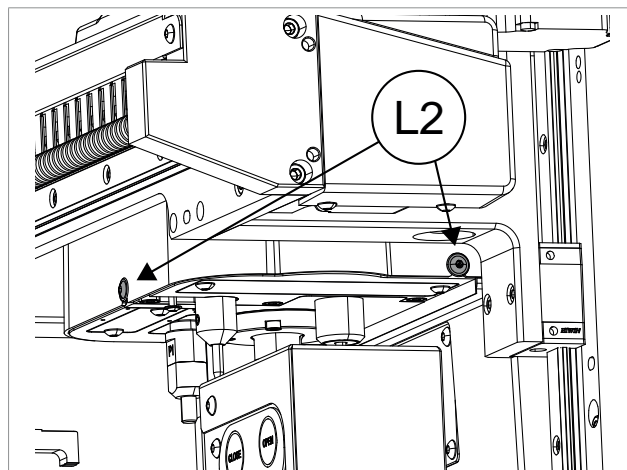


Fig. 93

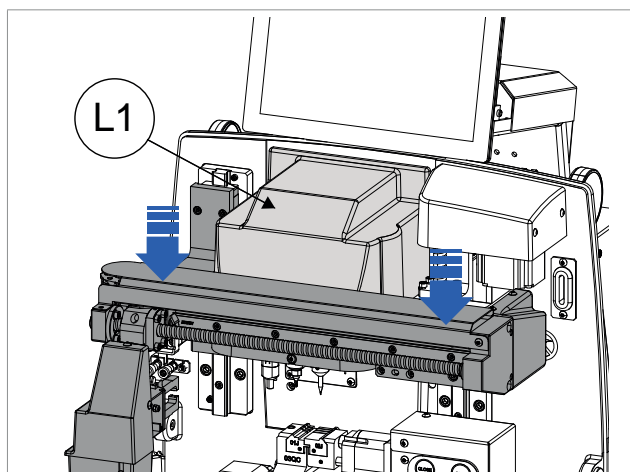


Fig. 94

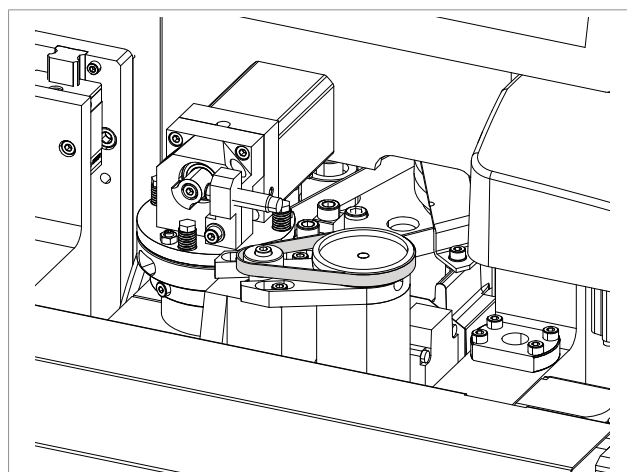


Fig. 95



**16.1.13 REPLACING THE VERTICAL ROBOT MOVEMENT BELT (D700)**

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Remove the rear cover (E) (chap.16.1.1).
- 3) Remove the protective screen (C) (chap.16.1.2)
- 4) Push down cover L1 (cutter unit) to facilitate removal of the screws (R2). (Fig. 96)
- 5) Unscrew and remove the screws (R2) and remove the cover ( R1) to gain access to the belt. (Fig. 97)
- 6) Remove the worn or broken belt (Fig. 98).
- 7) Insert the new belt.
- 8) Replace the cover L1 and close the screws (R2).
- 9) Replace the protective shield and rear cover.

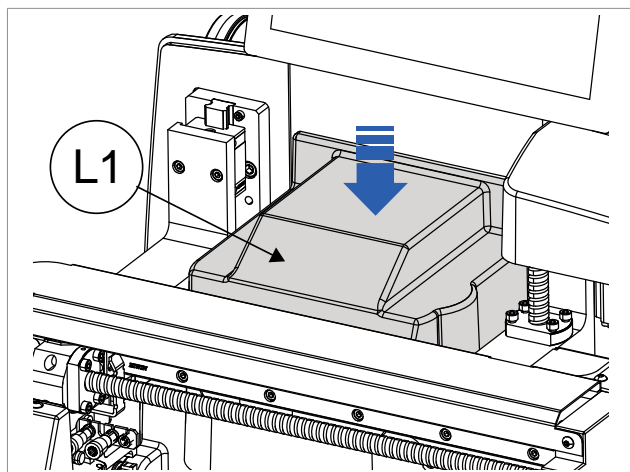


Fig. 96

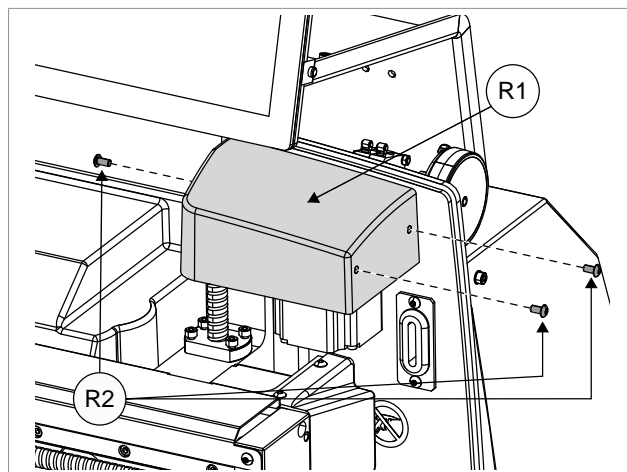


Fig. 97

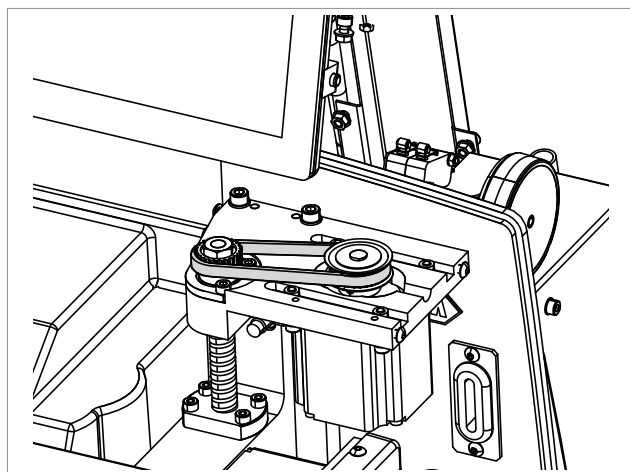


Fig. 98

### 16.1.14 REPLACING THE HORIZONTAL ROBOT MOVEMENT BELT (D700)

**Attention: contact Silca technical support for this operation.**

### 16.1.15 REPLACING THE ROBOT GRIPPERS (D700)

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Remove the 4 screws (G1) (Fig. 99)
- 3) Remove the grippers (G). Attention: The clamp centring rings (G2) must remain in place (Fig. 100)
- 4) Insert the new pliers and secure them with the screws (G1). (Pay attention to the two cables G3)

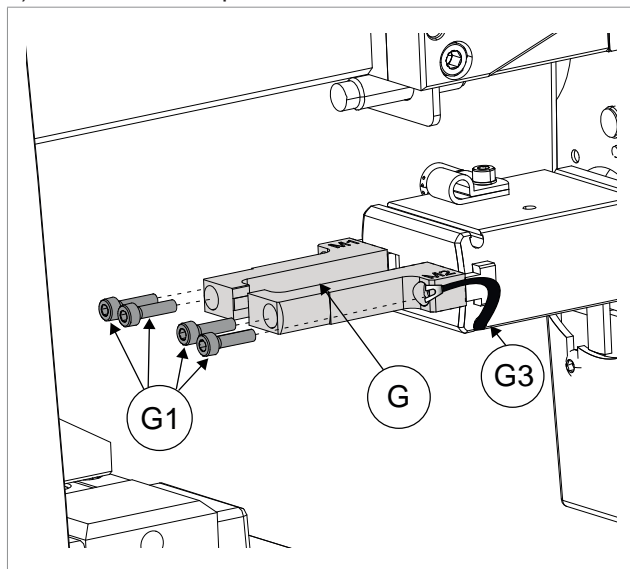


Fig. 99

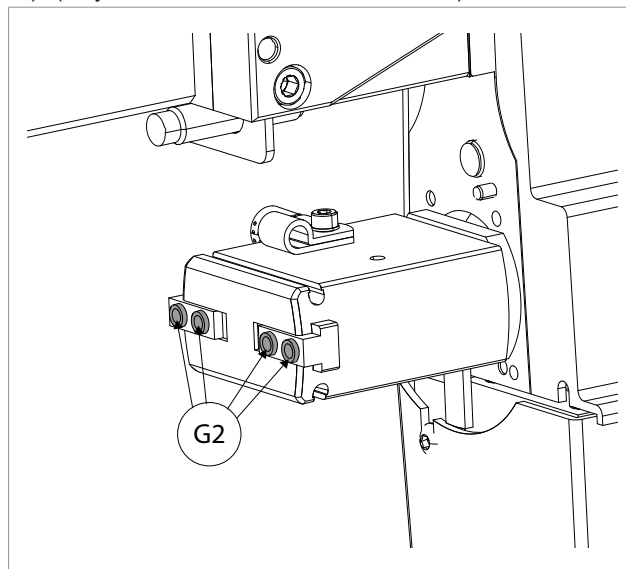


Fig. 100

### 16.1.16 REPLACING CAMERA GLASS AND LAMP GLASS

- 1) Turn off the key-cutting machine and disconnect the power lead.
- 2) Remove the 4 screws (Fig. 101+Fig. 102).
- 3) Remove the glass and replace it by securing it with the two screws

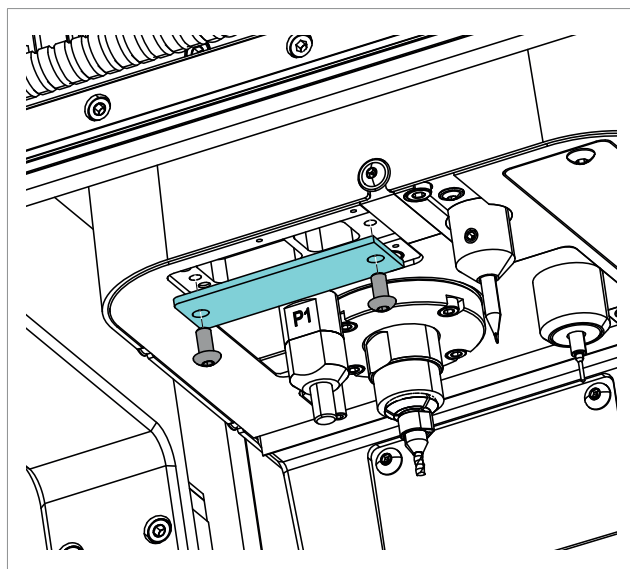


Fig. 101

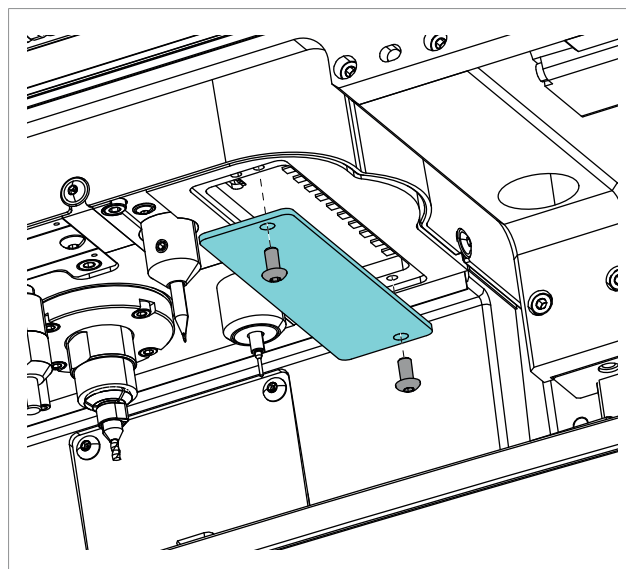


Fig. 102

## 17 DISPOSAL

For correct disposal please refer to current standards.

### INFORMATION FOR USERS OF PROFESSIONAL EQUIPMENT



#### From “Actuation of Directive 2012/19/EU regarding Waste Electrical and Electronic Equipment (WEEE)”

The symbol of a crossed waste bin found on equipment or its packing indicates that at the end of the product's useful life it must be collected separately from other waste so that it can be properly treated and recycled.

In particular, separate collection of this professional equipment when no longer in use is organised and managed:

- a) directly by the user when the equipment was placed on the market before 31 December 2010 and the user personally decides to eliminate it without replacing it with new equivalent equipment designed for the same use;
- b) by the manufacturer, that is to say the subject which was the first to introduce and market new equipment that replaces previous equipment, when the user decides to eliminate equipment placed on the market before 31 December 2010 at the end of its useful life and replace it with an equivalent product designed for the same use. In this latter case the user may ask the manufacturer to collect the existing equipment;
- c) by the manufacturer, that is to say the subject which was the first to introduce and market new equipment that replaces previous equipment, if it was placed on the market after 31 December 2010;

With reference to portable batteries/accumulators, when such products are no longer in use the user shall take them to suitable authorised waste treatment facilities.

Suitable separate collection for the purpose of forwarding discarded equipment and batteries/accumulators for recycling, treatment or disposal in an environmentally friendly way helps to avoid possible negative effects on the environment and human health and encourages re-use and/or recycling of the materials making up the equipment. To remove batteries/accumulators, consult the manufacturer's specific instructions: (see relevant chapter in the users' manual).

The sanctions currently provided for by law shall apply to users who dispose of equipment, batteries and accumulators in unauthorised ways.

## 18 ASSISTANCE

Silca provides full assistance to purchasers of the QUATTROCODE D key-cutting machine. To ensure complete safety for the operator, any job not specified in this manual should be carried out by the manufacturer or in the special Service Centres recommended by Silca.

At the end of the manual there is a list of manufacturers' and authorized Service Centre addresses; if the manual was downloaded is necessary visit the website to see the contacts ([www.silca.biz](http://www.silca.biz)).

Silca undertakes to make consumables, optional items and spare parts available for the limited time defined in its product obsolescence policy..

### 18.1 HOW TO REQUEST SERVICE

The guarantee attached to the QUATTROCODE D key-cutting machines ensures free repairs or replacements of faulty parts within 24 months of purchase. All other service calls must be arranged by the customer with Silca or with a Silca service center.

### 18.2 IMPROPER USE

The machine is intended and designed for use at specialist retailers.

Improper use could impair the normal operation of the moving parts.

The manipulator assembly (highlighted in pink) and the electronic clamp (highlighted in yellow) carry a 24-month or 30,000 keys handled and cut warranty whichever comes first.

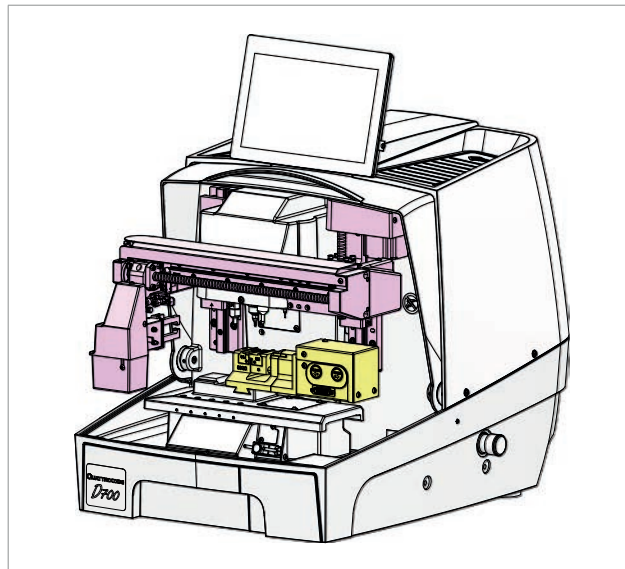
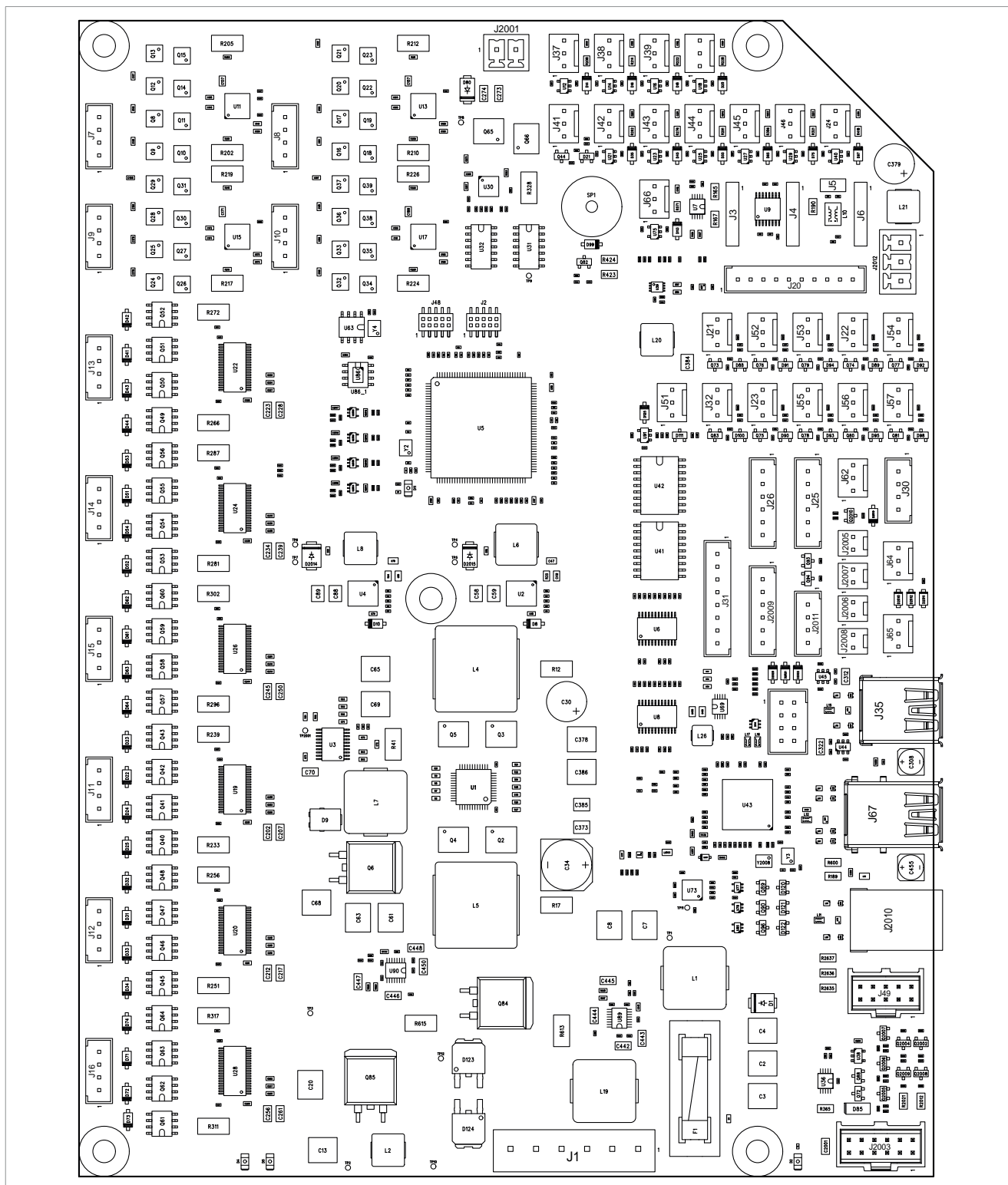
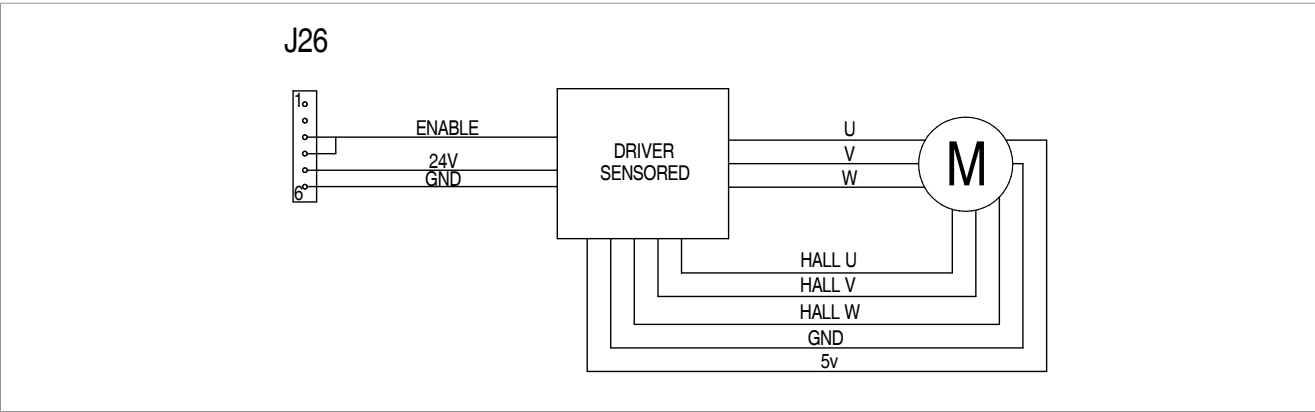
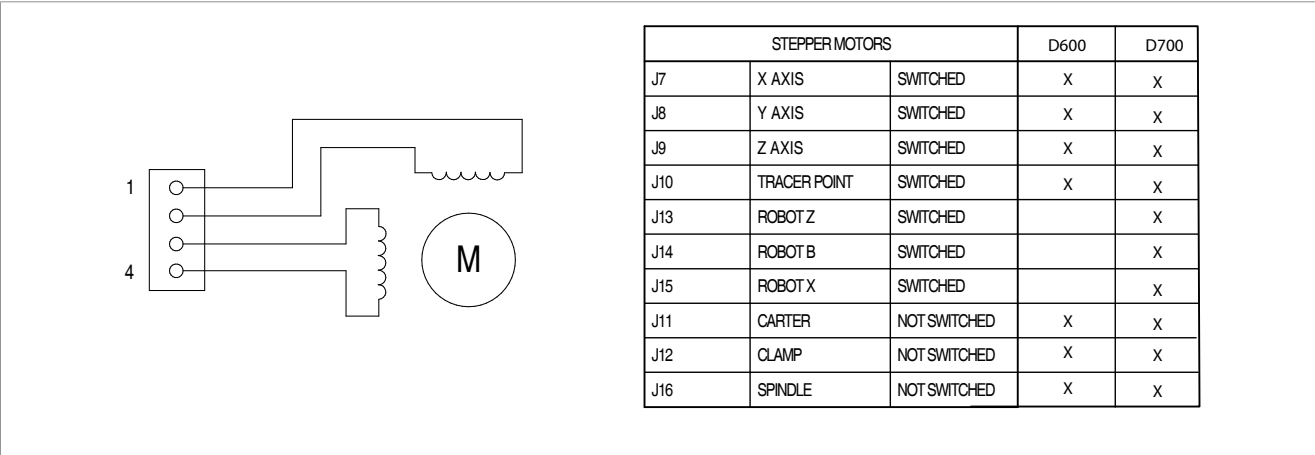
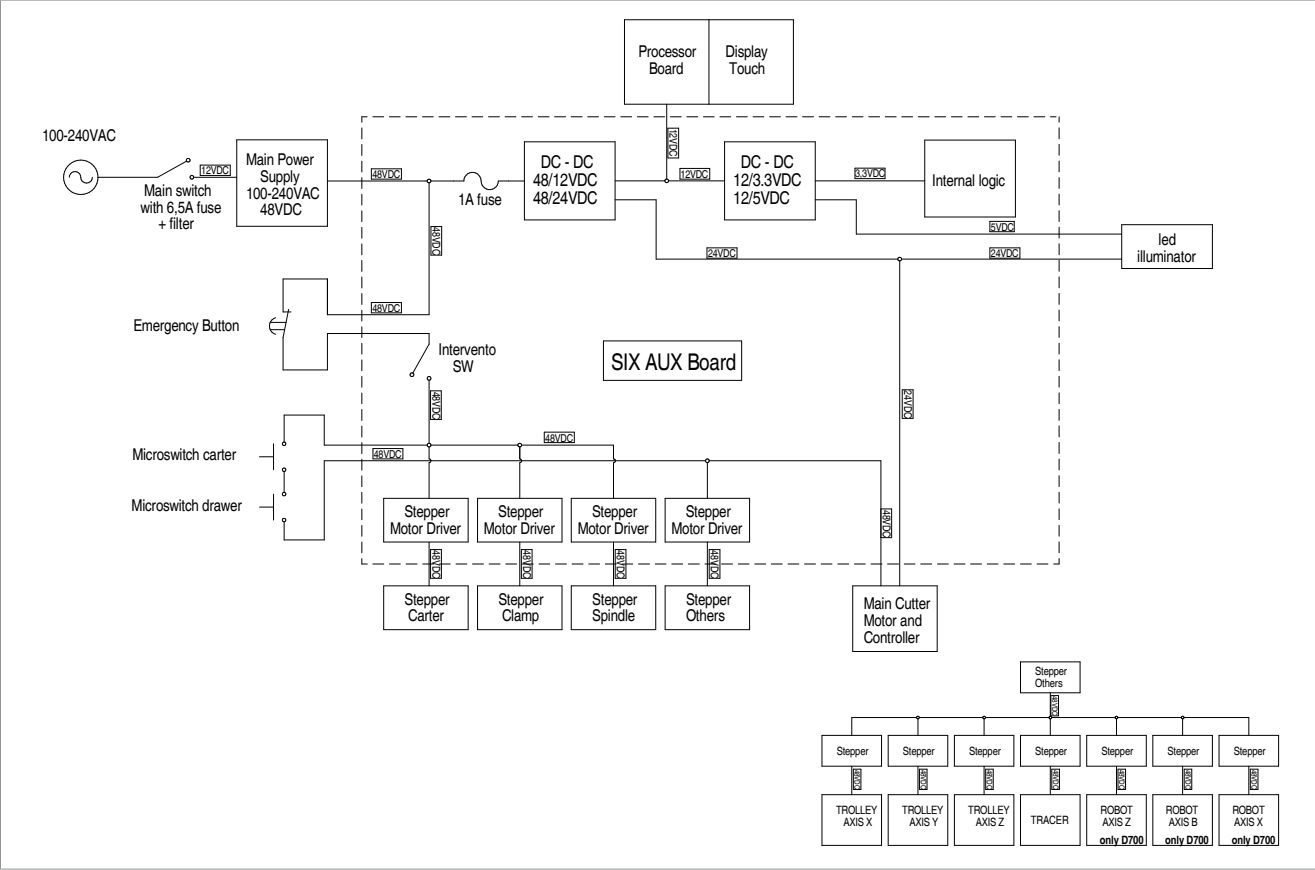


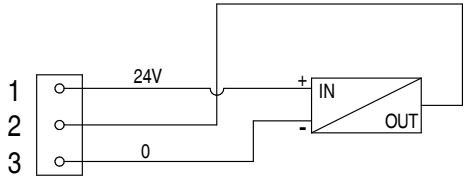
Fig. 103

## 19 ELECTRICAL DIAGRAMS

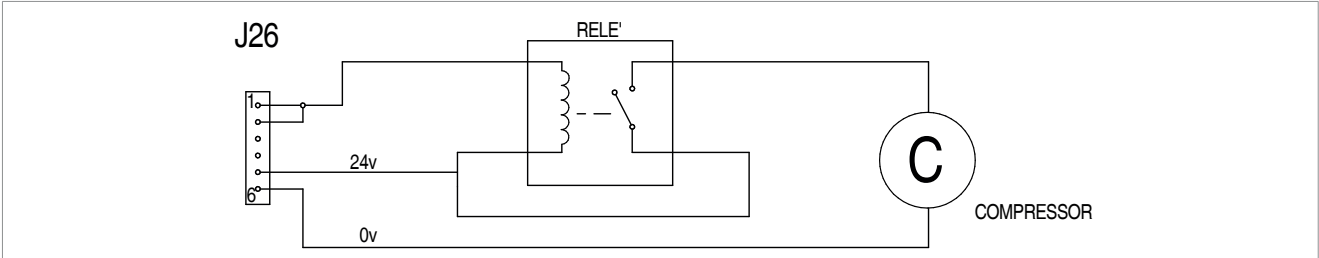


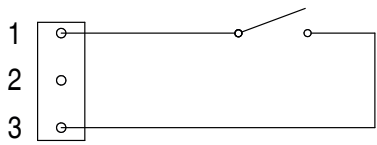
MOTHER BOARD



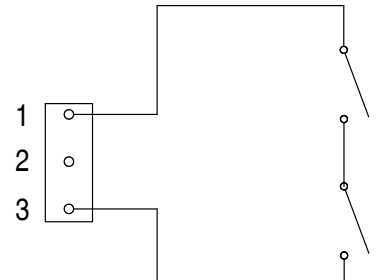


MAGNETIC SENSOR		D600	D700
J37	X AXIS CARRIAGE	X	X
J38	Y AXIS CARRIAGE	X	X
J39	Z AXIS CARRIAGE	X	X
J40	TRACER POINT	X	X
J42	ELECTRIC CLAMP	X	X
J43	Z AXIS ROBOT		X
J44	B AXIS ROBOT		X
J45	X AXIS ROBOT		X
J46	SPINDLE	X	X
J24	Z AXIS ELECTRICAL CONTACT	X	X
J66	GRIPPERS		X

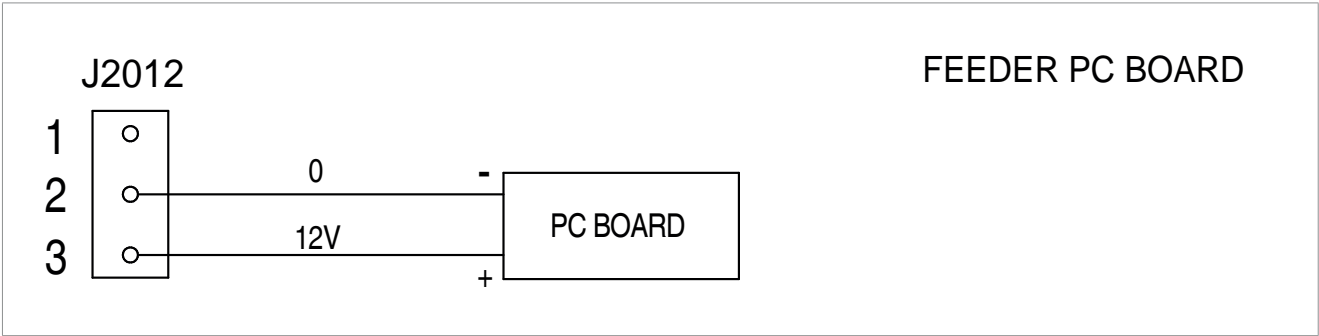


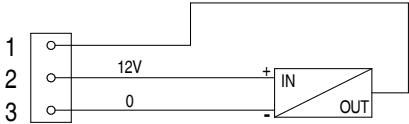


MICRO CARTER	
J55	CLOSED
J23	OPEN

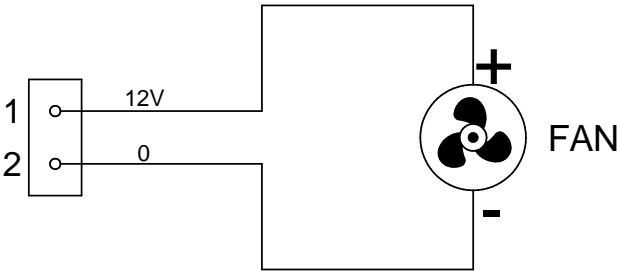


MICRO CARTER/SWARF TRAY	
J51	OPEN

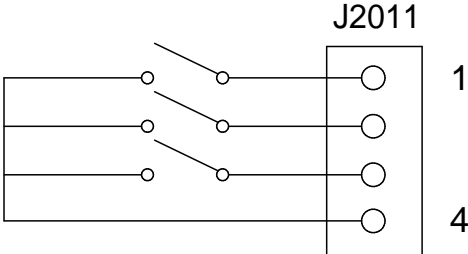




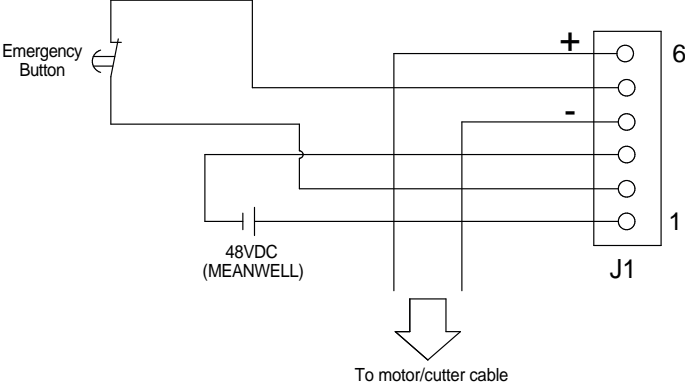
PHOTOCELL SENSORS	
J21	X AXIS
J32	TRACER POINT
J41	CLOSING CLAMP
J22	SWARF DRAWER
J52	Y AXIS
J53	B-AXIS TILTING
J54	KEY PRESSOR
J56	Z AXIS
J57	NOT USED
J23	MICRO CARTER OPEN
J55	MICRO CARTER CLOSE



FAN	
J2005	FAN1
J2006	FAN2
J2007	FAN1
J2008	FAN2



CLAMP DETECTION



FEEDER WIRING

To motor/cutter cable



