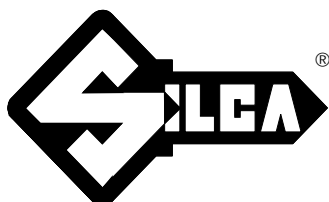


# CROWN

Operating manual

**D422143XA**

vers. 1.0



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# INDEX

|           |   |           |
|-----------|---|-----------|
| <b>1</b>  | <b>TRANSPORT</b> .....                                    | <b>3</b>  |
| 1.1       | Packing .....   | 3         |
| 1.2       | Transport .....   | 3         |
| 1.3       | Unpacking .....   | 3         |
| 1.4       | Machine handling .....                                    | 3         |
| <b>2</b>  | <b>WORKING PARTS</b> .....                                | <b>4</b>  |
| <b>3</b>  | <b>MACHINE DESCRIPTION</b> .....                          | <b>5</b>  |
| 3.1       | Technical data .....                                      | 6         |
| 3.2       | Electrical circuit .....                                  | 6         |
| <b>4</b>  | <b>ACCESSORIES PROVIDED</b> .....                         | <b>7</b>  |
| <b>5</b>  | <b>MACHINE INSTALLATION AND PREPARATION</b> .....         | <b>8</b>  |
| 5.1       | Checking for damage .....                                 | 8         |
| 5.2       | Environmental conditions .....                            | 8         |
| 5.3       | Positioning .....   | 8         |
| 5.4       | Description of work station .....                         | 9         |
| 5.5       | Separate parts .....                                      | 9         |
| 5.6       | Connection to the mains .....                             | 9         |
| <b>6</b>  | <b>REGULATION AND USE OF THE MACHINE</b> .....            | <b>10</b> |
| 6.1       | Control and gauging .....                                 | 10        |
| 6.2       | Gauging .....   | 10        |
| 6.3       | Cutting operations .....                                  | 11        |
| <b>7</b>  | <b>MAINTENANCE</b> .....                                  | <b>12</b> |
| 7.1       | Cutter replacement .....                                  | 12        |
| 7.2       | Tracer point replacement .....                            | 12        |
| 7.3       | Replacing the fuses .....                                 | 12        |
| <b>8</b>  | <b>WASTE DISPOSAL</b> .....                               | <b>13</b> |
| <b>9</b>  | <b>ASSISTANCE</b> .....                                   | <b>14</b> |
| 9.1       | How to request service .....                              | 14        |
| <b>10</b> | <b>SYNCHRONISED DEVICES</b> .....                         | <b>15</b> |
| 10.1      | Devices T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9 - T13 ..... | 16        |
| 10.2      | Self-Centering Device T10 .....                           | 17        |
| 10.3      | Self-Centering Device T15 .....                           | 20        |
| 10.4      | T14 synchronised device for cutting 5VP3 keys .....       | 22        |
| 10.5      | T17 Synchronised device .....                             | 23        |



## GUIDE TO THE MANUAL

This manual has been produced to serve as a guide for users of the CROWN key-cutting machine. Read it carefully; it is essential if you wish to operate your machine safely and efficiently.

### CONSULTATION

| The contents of the manual are divided into sections relating to: | Chapter |
|---|---------|
| - Transport and handling .....                                    | 1       |
| - Description of machine and safety devices .....                 | 2-3-4-5 |
| - Proper use of the machine .....                                 | 5-6     |
| - Maintenance .....   | 7       |
| - Optional devices .....  | 10      |

## GENERAL INSTRUCTIONS

The CROWN key-cutting machine has been designed according to the specifications of the Machine Directives. From the design stage risks for the operator have been eliminated in all areas: transport, regulation, cutting and maintenance.

The use of protective goggles is compulsory during cutting operations, as indicated on the machine itself and in this manual.

The material used in the manufacture of this machine and **the components employed during use of the machine are not dangerous and their use complies with standards.**

### USE

The CROWN key-cutting machine must be installed and used in the way laid down by the manufacturer, as illustrated in this manual.

If the machine is used differently or for purposes different from those described in this manual, the customer will forego any rights he may have over SILCA S.p.A. Furthermore, unforeseen danger to the operator or any third parties may arise from incorrect use of the machine.

Negligence in the use of the machine or failure on the part of the operator to observe the instructions given in this manual are not covered by the guarantee and the manufacturer declines all responsibility in such cases.

**It is therefore indispensable to read the operating manual carefully in order to make the best use of the CROWN key-cutting machine and benefit from its potential.**

### FURTHER RISKS

There are no further risks arising from the use of the CROWN key-cutting machine.

### PROTECTION AND SAFETY PRECAUTIONS FOR THE OPERATOR

The CROWN key-cutting machine is built entirely to standards. The operations for which it has been designed are easily carried out at no risk to the operator.

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

The CROWN key-cutting machine is designed with features which make it completely safe in all its parts.

#### • Power supply

The key-cutting machine must be supplied with electricity. The plug must be earthed.

#### • Start-up

The machine is started up:

- by means of the START button on the safety device (standard with 230V key-cutting machines, on request for other voltages);
- by means of the master switch.

#### • Operation

The machine is started up by means of a motor switch.

#### • Maintenance

The operations to regulate, service, repair and clean the machine have been devised in the simplest and safest way possible. There is no danger of removable parts being replaced wrongly or unsafely.

#### • machine identification

The CROWN is provided with an identification label which shows the serial number (fig. 1).

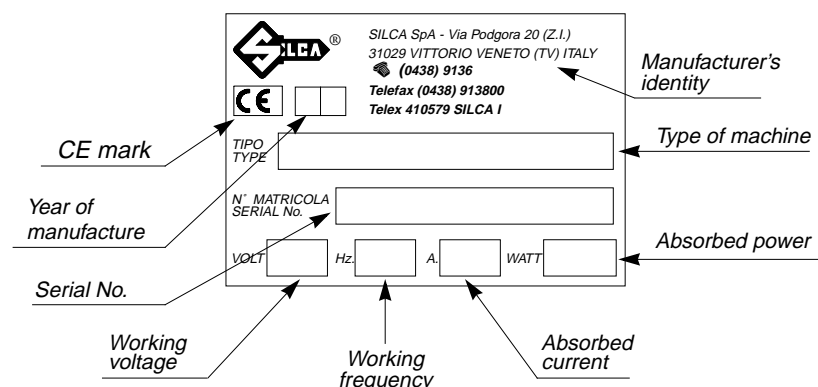


Fig. 1

# 1 TRANSPORT

The CROWN key-cutting machine is easily transported and is not dangerous to handle. The packed machine can be carried by one person.

## 1.1 Packing

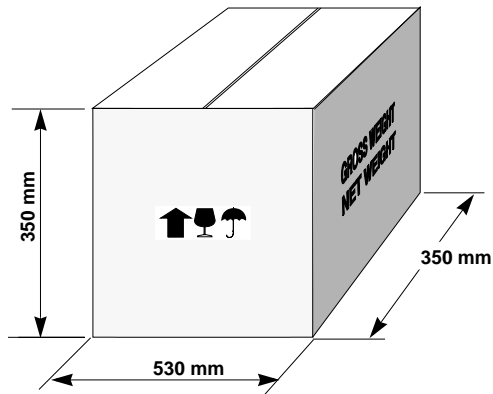


Fig. 2

## 1.2 Transport

It is advisable to use the packing every time the machine is transported, as this will avoid knocks which could cause damage to the machine, persons or things.

## 1.3 Unpacking

To remove the machine from the packing box:

- 1) cut the straps with scissors and remove.
- 2) prise off the staples
- 3) open the box without damaging it as it may be used again (e.g. removals, dispatch to the manufacturers for repairs or servicing).
- 4) check the contents of the box, which should comprise:
  - 1 CROWN key-cutting machine
  - 1 set of documents, including: operating manual, spare parts list and guarantee
  - 1 set of accessories
  - 1 power cable

## 1.4 Machine handling

When the CROWN key-cutting machine has been unpacked, place it directly on its workbench.

This operation can be carried out by one person, **firmly holding the base, and no other part, to lift and carry the machine.**

## 2 WORKING PARTS

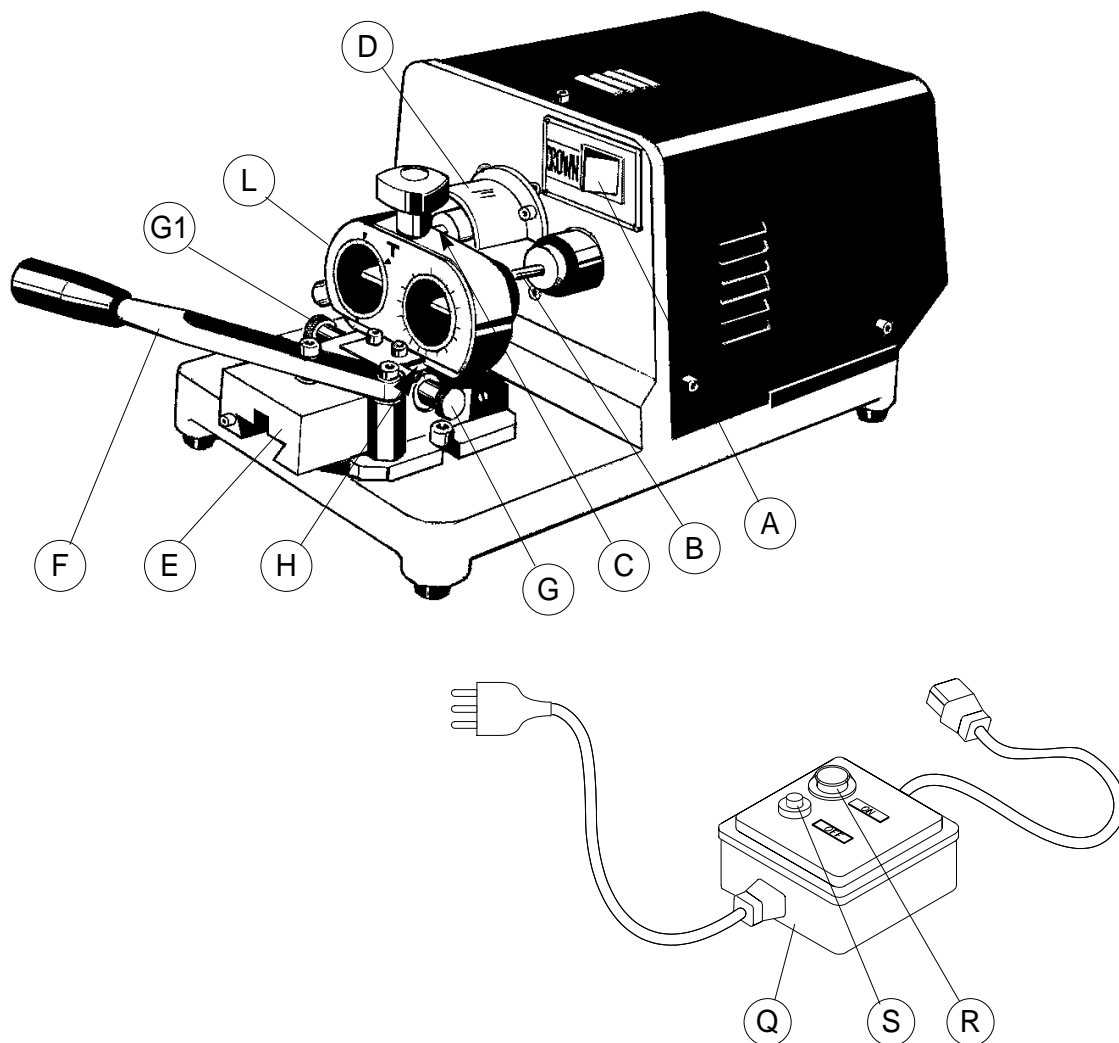


Fig. 3

- A - Master switch
- B - Tracer point
- C - Cutter
- D - Safety screen
- E - Slide
- F - Lever
- G - Height adjusting screw
- G1- Wedge locking knob
- H - Wedge
- L - Synchronised device (optional)

- Q - Safety device
- R - START button
- S - STOP button



### 3 MACHINE DESCRIPTION

The CROWN is a professional machine designed for cutting tubular keys. The main parts of the machine are described below:

#### **SAFETY DEVICE**

The device is connected to a power plug with a differential switch. It activates the key-cutting machine when the illuminated START button (R) is pressed and cuts out when the STOP button (S) is pressed.

#### **MASTER SWITCH**

The master switch (A) with which to start the induction motor is situated on the front of the key-cutting machine, on the right.

#### **MOTOR UNIT**

The CROWN key-cutting machine has a direct drive motor. The shaft/cutter unit is protected by a cover (D).

#### **MOBILE UNIT**

The mobile unit comprises a slide (E) and an adjustable wedge (H).

The slide moves by lever (F) which returns to the idle position by means of a return spring located under the slide.

The height of the wedge can be adjusted by means of a knob (G), which is also used to lock the wedge in position.(G1)

#### **KEY-CUTTING UNIT**

The key-cutting unit comprises the operational parts of the machine, which work together to read and reproduce the key.

- **Cutter**

A cutter with cylindrical hold (C) is the part of the key-cutting machine used to cut the key blank. It is made of super rapid steel and has four cutting edges.

- **Tracer point**

The tracer point (B) is used for reading the original key and is located on the right-hand side of the machine.

- **Device**

The device installed, in this case a T10, is used to seat the key to be copied on the right and the key blank to be cut on the left.

Devices may vary according to the type of key to be cut. Their names, installation and operation are described in this manual (see cap.10 a pag.15).

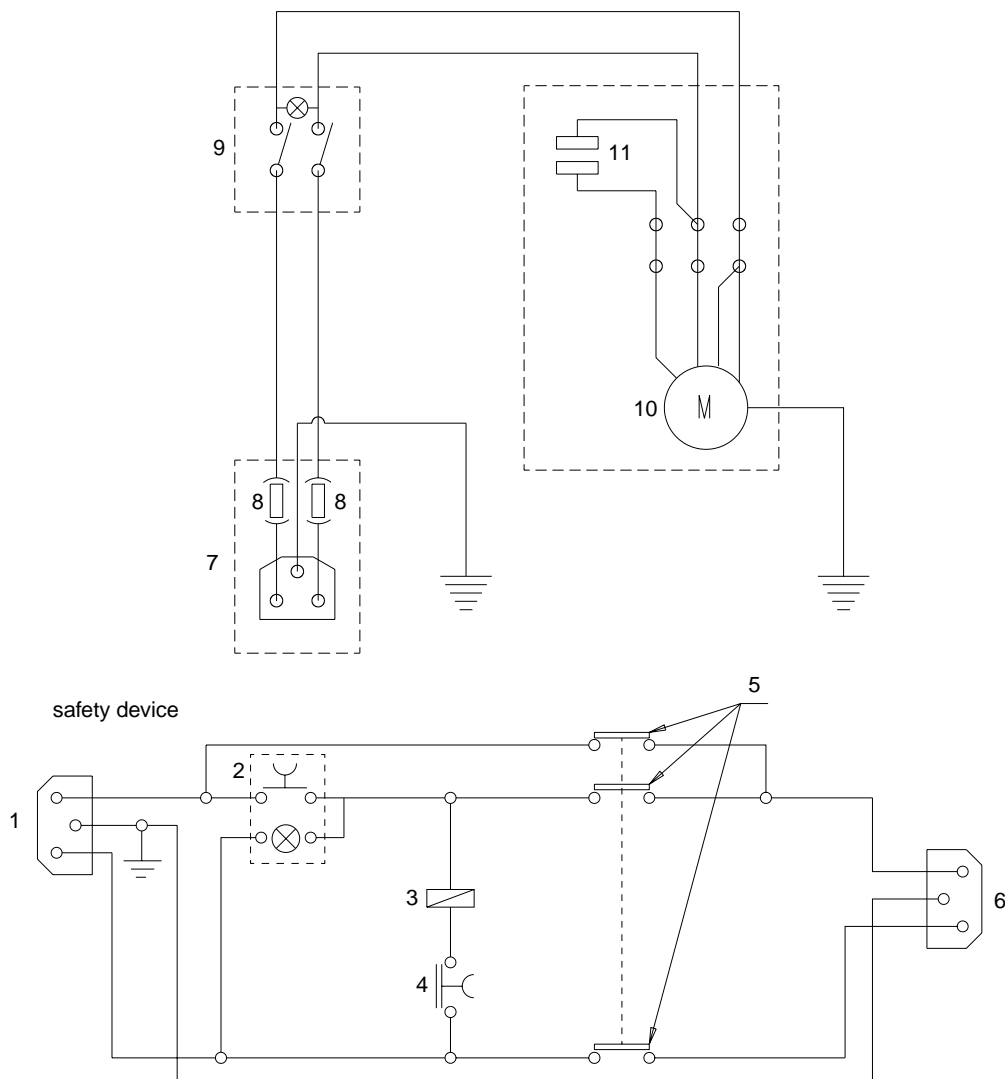
### 3.1 Technical data

|                 |   |
|-----------------|---|
| MOTOR:          | One-speed single phase; Volt:220, Hertz:50, Kw:0.15, rpm:2800 |
| CUTTING TOOL:   | Super rapid steel HSS   |
| MOVEMENTS:      | manual on guide   |
| DIMENSIONS:     | width: 230 mm depth: 450 mm height: 180 mm                    |
| WEIGHT:         | Kg. 15,5  |
| SOUND PRESSURE: | sound pressure Lp(A) max. 75,76 dB(A)                         |

### 3.2 Electrical circuit

The main parts of the electrical and electronic circuit on the CROWN are listed below:



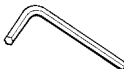


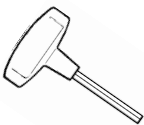
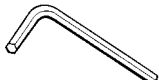



- 1) Safety device intake
- 2) START button
- 3) Relay 3 contacts 220V
- 4) STOP button
- 5) Relay contacts
- 6) Safety device plug
- 7) Machine plug
- 8) Fuse rapid 5x20 3,15A - 250V
- 9) Master switch
- 10) Motor 230Va.c. 50Hz
- 11) Condenser 6,3  $\mu$ F



## 4 ACCESSORIES PROVIDED

A set of accessories is supplied for use with the machine or for servicing (tools, Allen keys and adapters).

The accessories provided are:

|  |   |
|--|---|
| <p><b>1</b></p>  <p><i>cod. D302434ZZ</i><br/>1,5 mm ALLEN KEY</p>    | <p><b>6</b></p>  <p><i>cod. D300225ZZ</i><br/>5 mm ALLEN KEY</p>                                     |
| <p><b>2</b></p>  <p><i>cod. D300221ZZ</i><br/>2 mm ALLEN KEY 2 mm</p> | <p><b>7</b></p>  <p><i>cod. D300226ZZ</i><br/>6 mm ALLEN KEY</p>                                    |
| <p><b>3</b></p>  <p><i>cod. D300222ZZ</i><br/>2,5 mm ALLEN KEY</p>    | <p><b>8</b></p>  <p><i>cod. D300219ZZ</i><br/>3 mm ALLEN KEY</p>                                     |
| <p><b>4</b></p>  <p><i>cod. D300223ZZ</i><br/>3 mm ALLEN KEY</p>     | <p><b>9</b></p>  <p><i>cod. D302883ZZ</i><br/>8 mm SPANNER</p>                                     |
| <p><b>5</b></p>  <p><i>cod. D300224ZZ</i><br/>4 mm ALLEN KEY</p>    | <p><b>10</b></p>  <p><i>cod. D309226ZZ</i><br/>FUSE 5X20 (2 pz)<br/>3,15 Amp fuse-rapid (230V)</p> |

## 5 MACHINE INSTALLATION AND PREPARATION

The key-cutting machine can be installed by the purchaser and does not require any special skills. However, some checks and preparation for use need to be carried out by the operator.

### 5.1 Checking for damage

The CROWN key-cutting machine is solid and compact and will not normally damage if transport, unpacking and installation have all been carried out according to the instructions in this manual. However, it is always advisable to check that the machine has not suffered any damage.

### 5.2 Environmental conditions

To ensure that the best use is made of the CROWN key-cutting machine, certain parameters must be borne in mind:

- damp, badly ventilated sites should be avoided.
- the ideal conditions for the machine are:
  - temperature: between 0 and 40°C
  - relative humidity: approx 60%

### 5.3 Positioning

Place the machine on a horizontal surface, solid enough to take the weight (16 Kg).

To facilitate operation and maintenance, install the machine with a clearance of at least 200 mm on all sides (fig. 4).

Check that the weight of the machine is evenly distributed over the four feet; horizontal positioning prevents vibrations during operation.

**WARNING:** *ensure that the machine voltage is the same as that of the mains, which must be properly earthed and provided with a differential switch.*

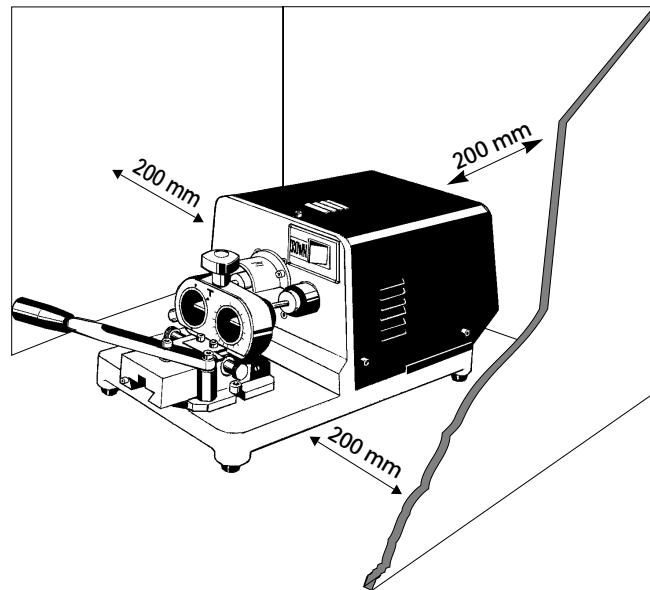


Fig. 4

## 5.4 Description of work station

The machine needs only one operator, who has the following controls at his/her disposal (fig. 5):

- **safety device (Q).**
- **master switch (A).**
- **carriage lever handle(F).**

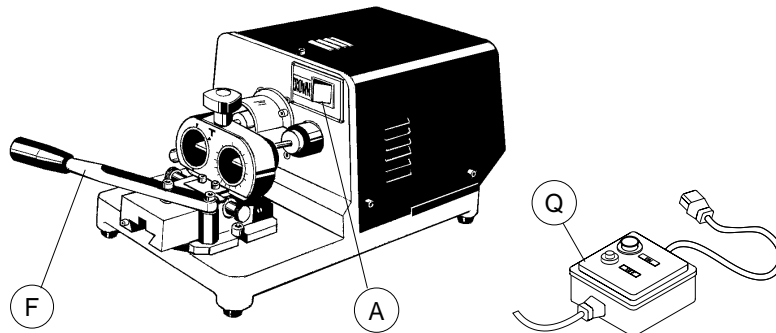


Fig. 5

## 5.5 Separate parts

The detachable parts of the machine are packed separately and must be fitted to the CROWN by the operator, as follows:

### POWER CABLE

First connect the key-cutting machine and the power cable (Q) then connect the free end of the power cable to the power mains (fig. 6).

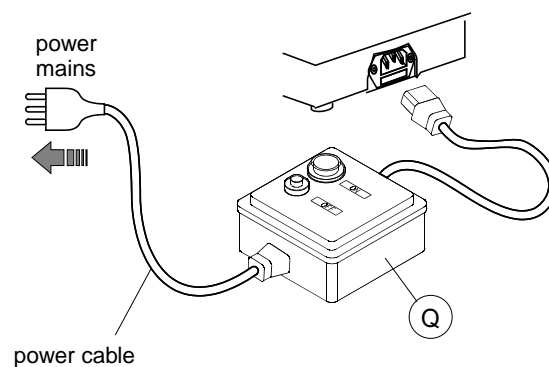


Fig. 6

## 5.6 Connection to the mains

It is extremely important for the operator's safety to ensure that the key-cutting machine is connected to the power mains with the right voltage and **by means of a properly earthed differential switch.**

## 6 REGULATION AND USE OF THE MACHINE

### 6.1 Control and gauging

The cutter on the CROWN key-cutting machine requires periodic replacement when it is too worn to cut properly.

Every time the cutter is replaced, it must be gauged.

### 6.2 Gauging

- **Gauging the cutter**

Gauging consists of aligning the machine cutter with its tracer point. To do so, proceed as follows:

- 1) detach the power supply cable from the machine socket.
- 2) fit the new cutter, but do not lock in with the grub screw (C1) (fig. 7).
- 3) fit two key blanks into the device and secure in place.
- 4) take the slide forward so that the tracer point comes into contact with the key. In this position use the grub screw to lock the cutter butting against the key (fig. 7).

- **Gauging height**

The height of the wedge is adjusted solely by means of the self-centring devices, the instructions for the use of which are included in this manual (see ch.10, page 15.).

Using the standard synchronised devices the position of the wedge should be on **0**.

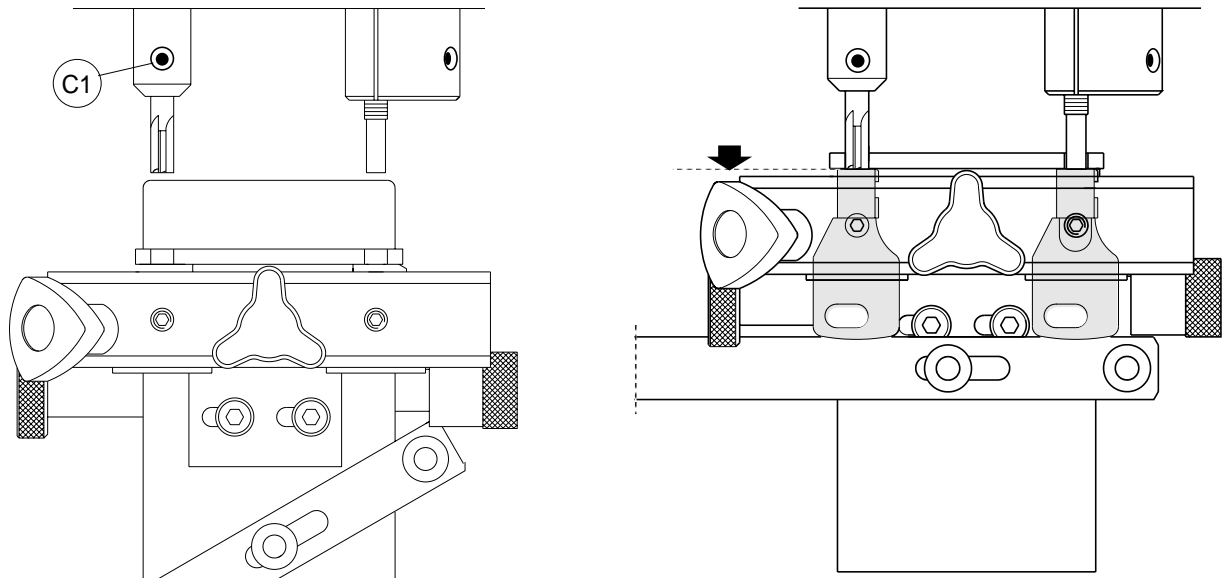


Fig. 7

### 6.3 Cutting operations

**WARNING:** *To work in complete safety, pay special attention to the following recommendations:*

- Always work with dry hands.
- Check that the machine is properly earthed.
- Use the protective goggles, even if the cutting tool is fitted with a protective shield.
- Start the motor only when all the operations with the carriage have been carried out (securing keys, etc.).
- Keep hands away from the cutting tool when in motion.

## 7 MAINTENANCE

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

Although the CROWN key-cutting machine does not require special maintenance, it is advisable to check and, if necessary, replace the parts subject to wear (cutting tool, tracer point).

Replacement is simple and can be carried out by the operator.

**CLEANING:** it is advisable to use a soft brush to keep the carriage and clamps free of chippings from cutting operations.

**WARNING:** *do not use compressed air!*

Before starting any type of maintenance (checks or replacements), read the instructions below:

- **never carry out maintenance or servicing with the machine switched on.**
- **always remove the mains plug.**
- **follow all the instructions in the manual to the letter.**
- **use original spare parts.**
- **always check that any screws or nuts removed when replacing a piece are properly tightened.**

### 7.1 Cutter replacement

To replace the cutter, loosen the grub screw (C1) and remove the cutter. Fit the new cutter and go on to the gauging operation, (see ch.6.2, page 10.).

### 7.2 Tracer point replacement

To replace the tracer point, loosen the screw (B1) and unscrew the tracer point from its threaded seat. Screw in the new tracer point, tighten the screw and go on to the cutter gauging operation (see ch.6.2, page 10.).

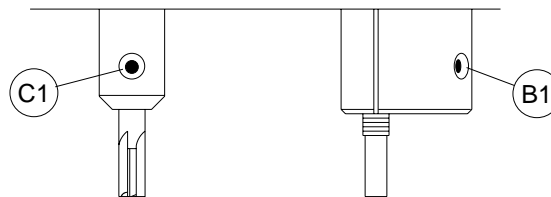


Fig. 8

### 7.3 Replacing the fuses

**WARNING:** *Unplug the machine from the mains.*

- 1) Detach the wiring from the machine plug;
- 2) turn the key-cutting machine so that the fuse box is easily reached;
- 3) remove the fuse box placed below the power inlet (fig. 9);
- 4) replace the fuses;
- 5) close the fuse box and connect the power cable.

**WARNING:** *the fuses must both be of the same type (rapid) and with the same amps (3,15A)*

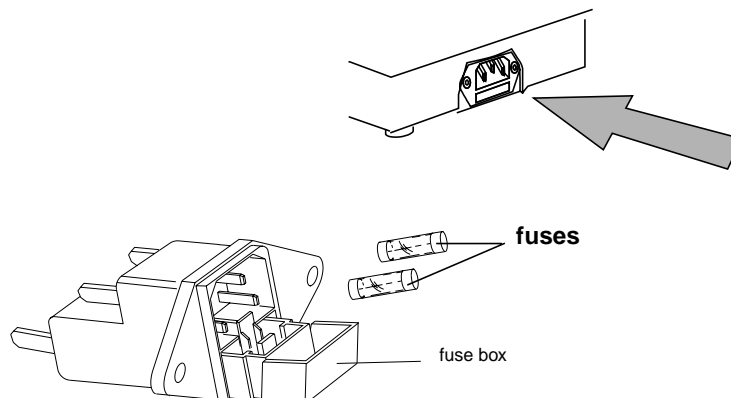


Fig. 9



## 8 WASTE DISPOSAL

EU regulations establish special arrangements for the disposal of waste (\*\*).

### WASTE DERIVING FROM CUTTING OPERATIONS

Although residue coming from the key-cutting operations is classified as special waste, it is included in solid urban waste (SUW) as metal wool.

Such waste is sorted according to its classification under current Italian and EU law and consigned to the proper disposal units.

Cases where waste can be considered contaminated or containing toxic/harmful substance sufficient to transform it from SUW to toxic/harmful waste, are listed in the enclosures to current Italian and EU waste disposal regulations.

Re-cycling is a recommended ecological practice.

### PACKING

The CROWN is consigned in a cardboard packing box which can be re-used if undamaged. When it is to be thrown away it is classified as solid urban waste and should be placed in the special paper collecting bins

(\*\*) "Waste" is any substance or object deriving from human activity or natural cycles, thrown away or to be thrown away.

## **9 ASSISTANCE**

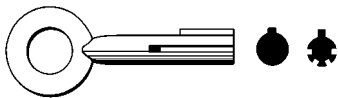
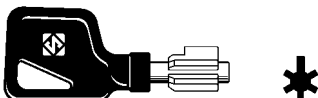
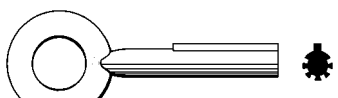
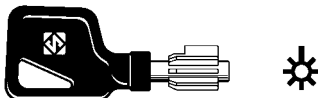
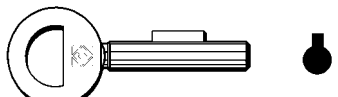
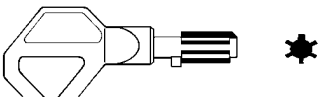
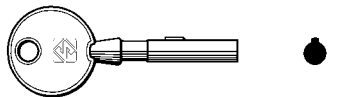
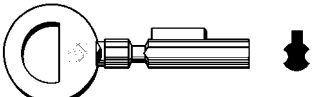

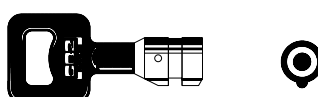


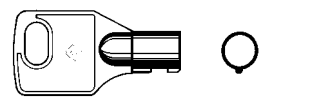
Silca provides full assistance to purchasers of the CROWN key-cutting machine. To ensure complete safety for the operator, any job not specified in this manual should be carried out by the manufacturer or in the special Service Centres recommended by Silca. On the back cover of this manual is a list of the manufacturer's addresses; listed below are the addresses of specialised Service Centres.

### **9.1 How to request service**

The guarantee attached to CROWN key-cutting machine ensures free repairs or replacements of faulty parts within 12 months of purchase. All other service calls must be arranged by the customer with Silca or with a Silca Service Centre

## 10 SYNCHRONISED DEVICES

There are various types of tubular keys and for this reason there are various synchronised devices to use according to the function of the key to be cut.  
To find a device suitable for the key to be cut, consult the table below:

| SYNCHRONISED DEVICES   |   |  |   |
|--|---|--|---|
| <b>T2</b><br><b>D700189ZB</b><br>for:<br>PROGRES-FONTAINE<br>CORNI<br>(5)                  |    | <b>T8</b><br><b>D700195ZB</b><br>for:<br>POLLUX<br>(5)                                   |    |
| <b>T3</b><br><b>D700190ZB</b><br>for:<br>PROGRES-FONTAINE<br>CORNI<br>(7)                  |    | <b>T9</b><br><b>D700196ZB</b><br>for:<br>POLLUX<br>(7)                                   |    |
| <b>T4</b><br><b>F700191ZB</b><br>for:<br>VIGIE-PICARD<br>(6)                               |    | <b>T13</b><br><b>D700199ZB</b><br>for:<br>CAVITH   |    |
| <b>T5</b><br><b>D700192ZB</b><br>for:<br>LAPERCHE<br>(6)                                   |   | <b>T14</b><br><b>D704534ZB</b><br>for:<br>VIGIE-PICARD<br>(8)                            |   |
| <b>T6</b><br><b>D700193ZB</b><br>for:<br>JPM<br>(5)  |  | <b>T17</b><br><b>D709355ZB</b><br>for:<br>GB2  |  |
| <b>T7</b><br><b>D700194ZB</b><br>for:<br>DAD-DECAYEUX<br>(5)                               |  |  |   |
| <b>T10</b><br><b>D700193ZB</b><br>for:<br>tubular keys<br>ø universal<br>mm 9,2 ... mm10,2 |  | <b>T15</b><br><b>D709355ZB</b><br>for:<br>tubular keys<br>ø universal<br>mm 6 ... mm12,5 |  |

## 10.1 Devices T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9 - T13

Instructions for the assembly and use of the above-mentioned devices are given below:

- 1) Fit the chosen device on the CROWN key-cutting machine and lock in place by means of the knob (M) (fig. 10).
- 2) Place the key to be copied into the right-hand side of the device and the key to be cut in the left-hand side (there is only one possible position dictated by the shape of the key) and push in all the way up to the front stop (N). Lock in place with the grub screws (T) and (T1), which are visible through the holes on top of the device. If they are not visible, turn the key clockwise until the grub screws can be seen.
- 3) Block rotation of the device with the knob (K) and turn on the machine motor to start cutting.
- 4) Push the carriage lever forwards so that the tracer point can enter the cut to be copied. Take great care when carrying out this operation.
- 5) Take the carriage back to the idle position, release rotation by means of the knob (K) and turn the key clockwise until it reaches the next notch, block the knob (K) and make the second cut.
- 6) Repeat the operation above until all the cuts have been made.

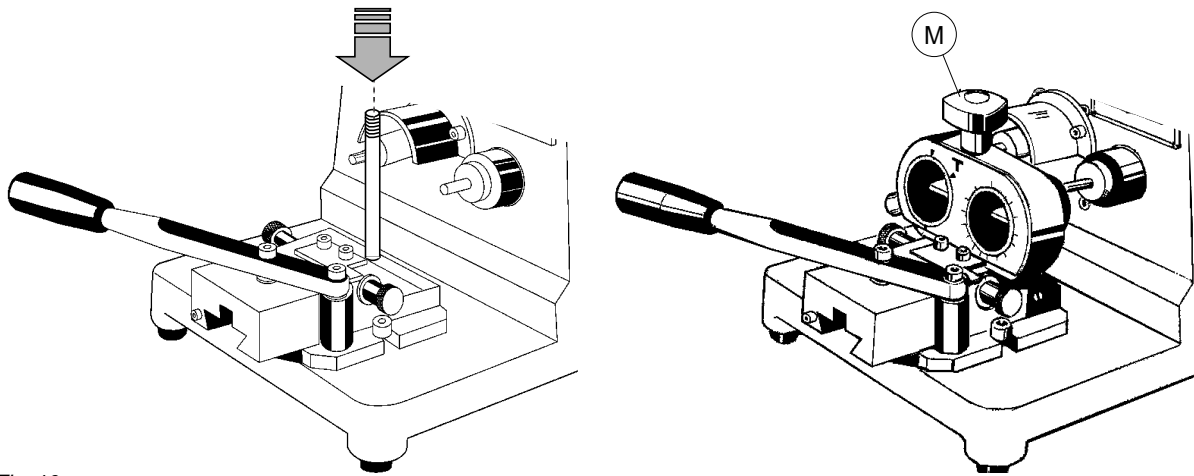


Fig. 10

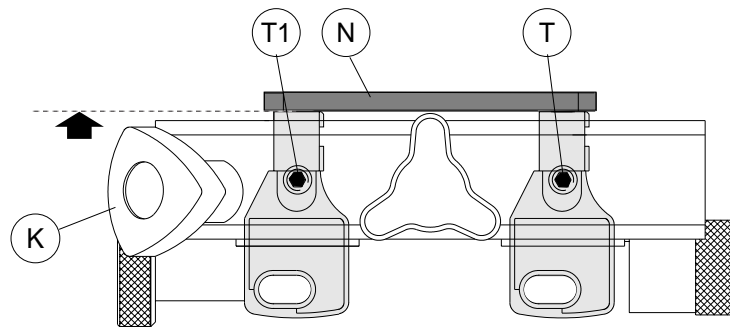


Fig. 11

## 10.2 Self-Centering Device T10

This device permits the cutting of tubular keys having a minimum outside diameter of 9,20 mm (0.375 in.) up to a maximum diameter of 10,2 mm (0.416 in.) (see table on page 15).

The vertical excursion of the carriage is obtained by the displacement of the wedge (H) (fig. 13) which offers the possibility to obtain "step cuts" (cuts within cuts) and enlarged cuts (MASTER).

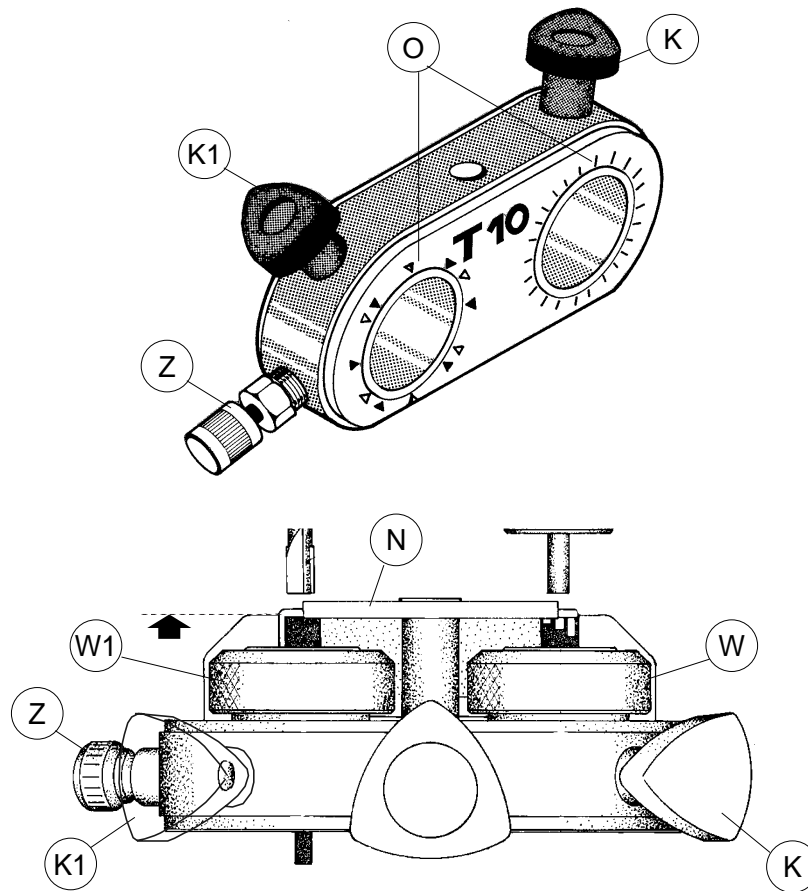


Fig. 12

### CUTTING KEYBLANKS CARRYING OUT REGULAR CUTS EVERY 60° AND/OR 45° INTERVAL

- 1) Place selector (Z) so that reference mark 0 is up.
- 2) Lock the two handles (K) (K1) in order that the clamp holding bushings can not rotate.
- 3) Insert the sample key into the RH bushing seat, and lean it against the retainer (N), and tighten it with the ring nut (W) using finger tightness only.
- 4) Repeat the same operations with the keyblank to be cut.
- 5) Release the two handles (K) (K1) to allow rotation of the clamp holding bushings and proceed in duplicating, tightening the knob (K1) during the cutting operation and rotate the key always in a counter clockwise direction by turning the ring nut (W) until the cuts are completed.

### CUTTING KEYS WITH CUTS THAT HAVE IRREGULAR INTERVAL

- 1) Disconnect the selector (Z).
- 2) Check that the references marks 0 are up and lock the two handles (K) (K1).
- 3) Fit in and lock the sample key and the keyblank as described above in points 3 and 4.
- 4) Rotate the ring nut (W) counter clockwise until the tracer point is in front of the first cut, lock the handle (K1) and carry out the duplication repeating these operations for each cut.

## HEIGHT CHANGES

The machine gauging requires (as shown in fig. 13) a distance "X" between the top surface of the wedge (H) and the rotation axis of the key in the device, and a 4,1mm (0.167 in.) radius corresponding to a key, inside diameter of 8,2 mm (0.334 in.) and corresponding to the zero on the setting plate (I). However, it may happen that a key has an inside diameter larger (ex.: CHICAGO MAS. 8,65 mm) or smaller (ex.: FORT MAS. 7,62 mm); than the optional one. In this case, proceed as follow:

- 1) loosen the knob (M).
- 2) rotate the screw (G) clockwise or counter clockwise as required, bearing in mind that each complete turn of the screw corresponds to a 0,1 mm (0.004 in.) change in height.
- 3) when the necessary change has been effected, lock the knob again (M).
- 4) proceed in making two cuts opposite to each other and check the diameter without taking out the key, being sure it is equal to the original key diameter.

**Important:** for normal use the machine has to set to zero so that it goes back to its basic gauging point 0, corresponding to a key of an inside diameter of 8,2 mm (0.334 in.).

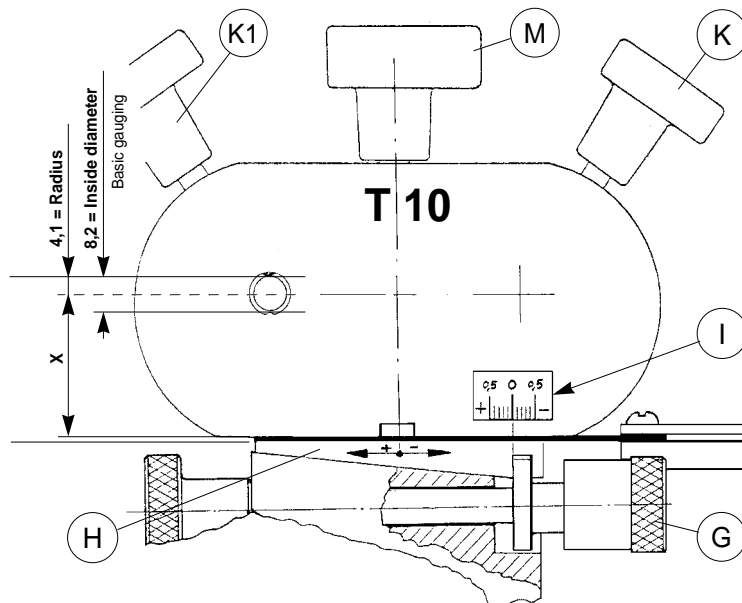


Fig. 13

## WARNING

The pin of a cylinder are divided into normal, oversized (MASTER), and with steps; as shown on fig. 14, to distinguish the different cuts, we use the indicated denomination.

In order for the key to work easily in the cylinder, we suggest you use a blank approximately 0,1 mm smaller in diameter than the original. This small difference will cause no problems in operation and will help to avoid errors in centering.

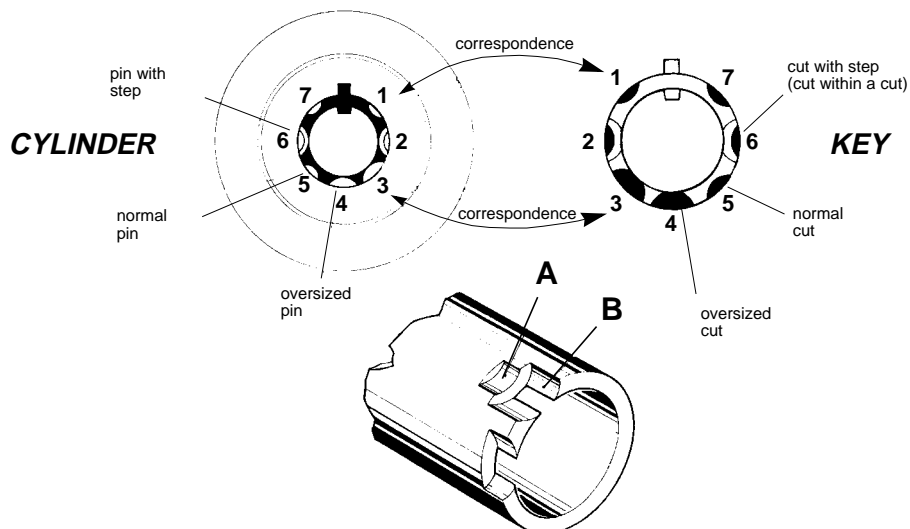


Fig. 14

**HOW TO DUPLICATE KEYS WITH STEP CUTS**

- 1) measure the diameter on the original key.
- 2) set up the machine in order to conform to duplicate (lifting or lowering the device the necessary distance in order to have the same diameter as measured on the original key, and also to have the same average diameter of the shank.
- 3) proceed in duplicating the cuts "A" (fig. 14).
- 4) reset machine in order to make cuts as described in the calculation here below.
- 5) proceed in duplicating cuts "B".

**Example of calculation:**

The original CHICAGO MASTER key has shank diameter of 8,65 mm as shown on the table.

We will have:

$8,65 \text{ mm} - 8,2 = 0,45/2 = 0,225 \text{ mm}$ . which is equal to two and quarter revolutions of the screw (G) in a counter clockwise direction in order to lower the device.

In order to make this particular stem cut we must turn the screw (G) completely in a clockwise direction until it reaches the end of the stroke.

**CONTROLS AND COMPARISONS**

(among various types of keys)

The picture fig. 15 illustrates the correct way to control the diameter of the original key that is compared with the data on the table.

If by chance the diameter is either larger or smaller than 8,2 mm (shank diameter - adjust) proceed as mentioned in points 1-2-3 described on "Height changes" page 18.

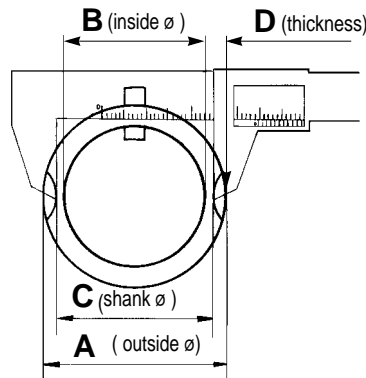


Fig. 15

**DATA TABLE**

| MAKE   | Key measurements (mm) |      |      |      |
|--|-----------------------|------|------|------|
|  | A                     | B    | C    | D    |
| All (ACE - ALPHA- L&F - AMERICAN - FORT - GEM ...) | 9,50                  | 7,90 | 8,26 | 0,81 |
| CENTURY  | 10,02                 | 7,52 | 8,36 | 0,75 |
| CHICAGO  | 10,16                 | 8,30 | 8,65 | 0,95 |
| CHICAGO  | 9,30                  | 7,60 | 7,75 | 0,82 |
| FORT MAS.  | 9,53                  | 7,20 | 7,62 | 1,15 |
| MERONI   | 9,55                  | 8,05 | 8,36 | 0,75 |
| PC (CORTELLEZZI)                                   | 9,65                  | 8,00 | 8,32 | 0,83 |
| SIDLEEN  | 9,50                  | 7,50 | 8,20 | 1,00 |
|  |                       |      |      |      |

### 10.3 Self-Centering Device T15

This device permits the cutting of tubular keys having a minimum outside diameter of 6 mm up to a maximum diameter of 12,5 mm.

#### HEIGHT VARIATIONS

The machine setting (as shown in fig. 16) has a point "X" between the upper part of the wedge (H) and the rotation axis of the key on device, with a radius of 4,1 mm. equal to a greater shank diameter (e.g. CHICAGO MAS. 8,65 mm.) or lesser shank diameter (e.g. FORT MAS. 7,62 mm.). In such a case proceed as follows:

- 1) loosen knob (M).
- 2) turn screw (G) in the direction required, bearing in mind that a complete turn of the screw gives a height variation of 0,1 mm.
- 3) when the variation required has been obtained, tighten the knob (M).
- 4) cut the two opposite grooves. Without removing the keys, check the two diameters, which should be identical.

**Important:** the machine must be zeroed in order to work with the setting based on an average shank diameter of 8,2 mm (with a thickness of 1 mm).

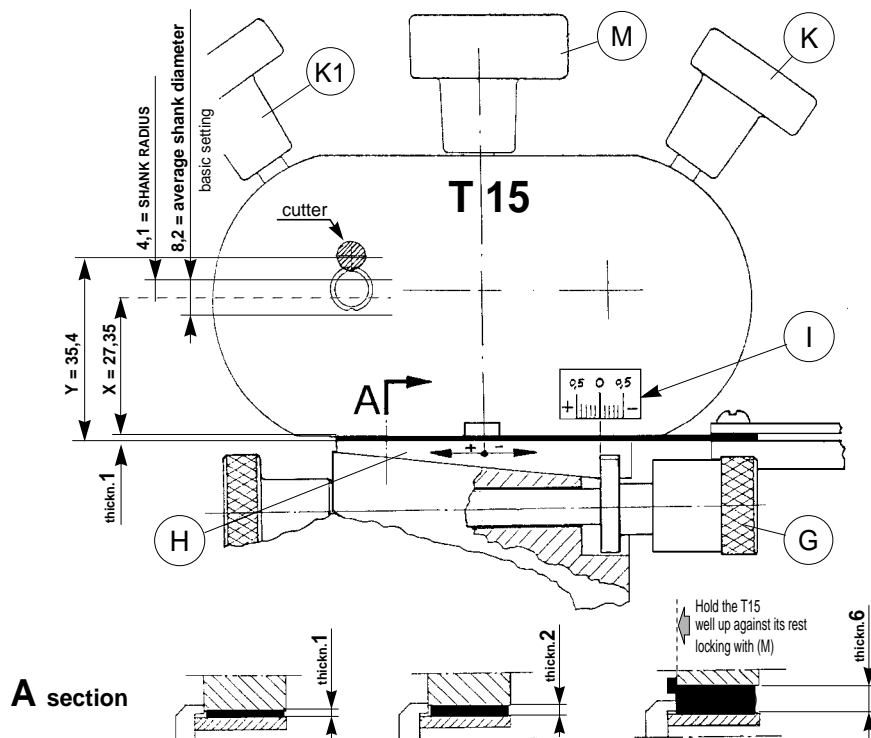


Fig. 16

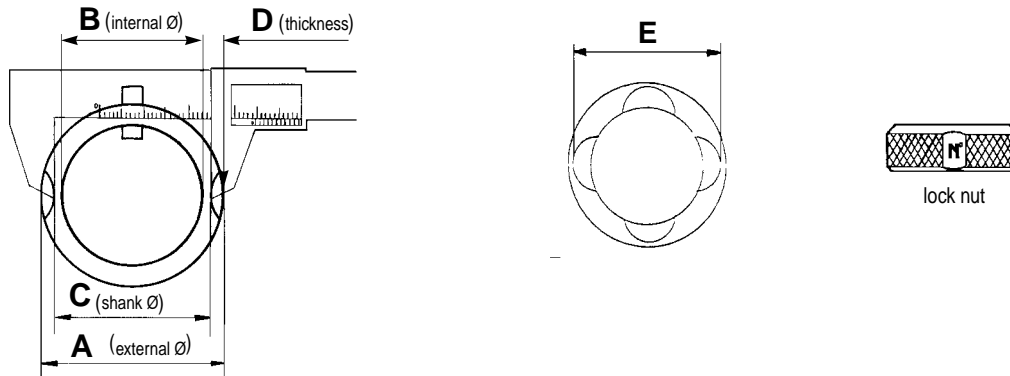


### COMPARISONS AND CHECKS

(for the different types of keys)

The fig. 17 shows the correct way to check the shank diameter of the sample key to compare against the data table.

If the shank diameter is larger or smaller than 8,2 mm (average shank diameter - basic setting) proceed as described in points 1, 2, 3, of "Height Variations" page 20.



Calculation of movement for measurement C:

$$y - (x + \text{thickness} + \frac{\text{Ø Cutter}}{2} + \frac{C}{2}) = \text{movement}$$

Calculation of movement for measurement E:

$$(y + \frac{\text{Ø Cutter}}{2}) - (x + \text{thickness} + \frac{E}{2}) = \text{movement}$$

Fig. 17

### DATA TABLE

| MAKE  | Key Measurements (mm) |      |           |       |     | Ø Cutter<br>Ø Tracer p. | Thickness | N° lock nut | mov.<br>+ and - | Optional<br>T15 |
|---|-----------------------|------|-----------|-------|-----|-------------------------|-----------|-------------|-----------------|-----------------|
|   | A                     | B    | C         | D     | E   |                         |           |             |                 |                 |
| All (ACE - ALPHA - L&F - AMERICAN - FORT - GEM ...) | 9,50                  | 7,90 | 8,26      | 0,81  | -   | 6 - 5,4                 | 1         | 1           | 0               |                 |
| CENTURY   | 10,02                 | 7,52 | 8,36      | 0,75  | -   | 6 - 5,4                 | 1         | 1           | -0,13           |                 |
| CHICAGO   | 10,16                 | 8,30 | 8,65      | 0,95  | -   | 6 - 5,4                 | 1         | 1           | -0,275          |                 |
| CHICAGO   | 9,30                  | 7,60 | 7,75      | 0,82  | -   | 6 - 5,4                 | 1         | 1           | +0,175          |                 |
| FORT MAS.   | 9,53                  | 7,20 | 7,62      | 1,15  | -   | 6 - 5,4                 | 1         | 1           | +0,24           |                 |
| MERONI  | 9,55                  | 8,05 | 8,36      | 0,75  | -   | 6 - 5,4                 | 1         | 1           | -0,13           |                 |
| PC (CORTELLEZZI)                                    | 9,65                  | 8,00 | 8,32      | 0,83  | -   | 6 - 5,4                 | 1         | 1           | -0,11           |                 |
| SIDLEEN   | 9,50                  | 7,50 | 8,20      | 1,00  | -   | 6 - 5,4                 | 1         | 1           | 0               |                 |
| AGA MONDRAGON (Spain)                               | 9,55                  | 7,90 | 8,10      | 0,825 | -   | 6 - 5,4                 | 1         | 1           | 0               |                 |
| "   | 12                    | 9,80 | 10        | 1,10  | -   | 6 - 5,4                 | -         | 1           | 0               |                 |
| "   | 9                     | 6,50 | 5,2 - 7,2 | 1,30  | -   | 6 - 5,4                 | 2         | 2           |                 |                 |
| "   | 11                    | 8    | 7,2 - 9,2 | 1,50  | -   | 6 - 5,4                 | 1         | 1           |                 |                 |
| "   | 7                     | 5,50 | -         | 0,75  | 6,7 | 6 - 5,4                 | 6         | 2           | 0               |                 |
| OLIVETTI  | 7                     | 5,40 | 5,70      | 0,80  | -   | 3 - 2,4                 | 1+2+1     | 2           | -0,3            | ●               |

## 10.4 T14 synchronised device for cutting 5VP3 keys

- 1) Install the tracer point provided with the T14 device and gauge with the cutter. The tracer point has a bushing (B2) which must be removed if a  $\varnothing 3$  mm cutter is used.
- 2) fit the ring (Y) onto the cutter, hold it against the cutter support and secure with the grub screw (Y1). In this way the setting is maintained when the cutter is replaced.
- 3) replace the  $\varnothing 6$  mm cutter with the  $\varnothing 3$  mm cutter (provided with the T14), gauge the depth with the tracer point and fit the ring (Y) to maintain the setting (as described above).
- 4) remove the bushing (B2) by turning it anticlockwise.
- 5) install the T14 device on the machine.
- 6) fit the keys (original and key blank) in front of the tracer point and cutter respectively, push the bit against the stop (N) and secure the keys with the grub screws (T) and (T1).

### 7) Cutting positions 1 - 2 - 4 - 5 - 6 - 8

Move the shim (E1) completely to the right and secure the device in this position with the knob (M). Push the head of the key to turn it clockwise until it clicks into the position mentioned. Secure in position with the knob (K1) and cut.

### 8) Cutting positions 3 - 7

Move the shim (E1) completely to the left and repeat the same operations described above at point 7.

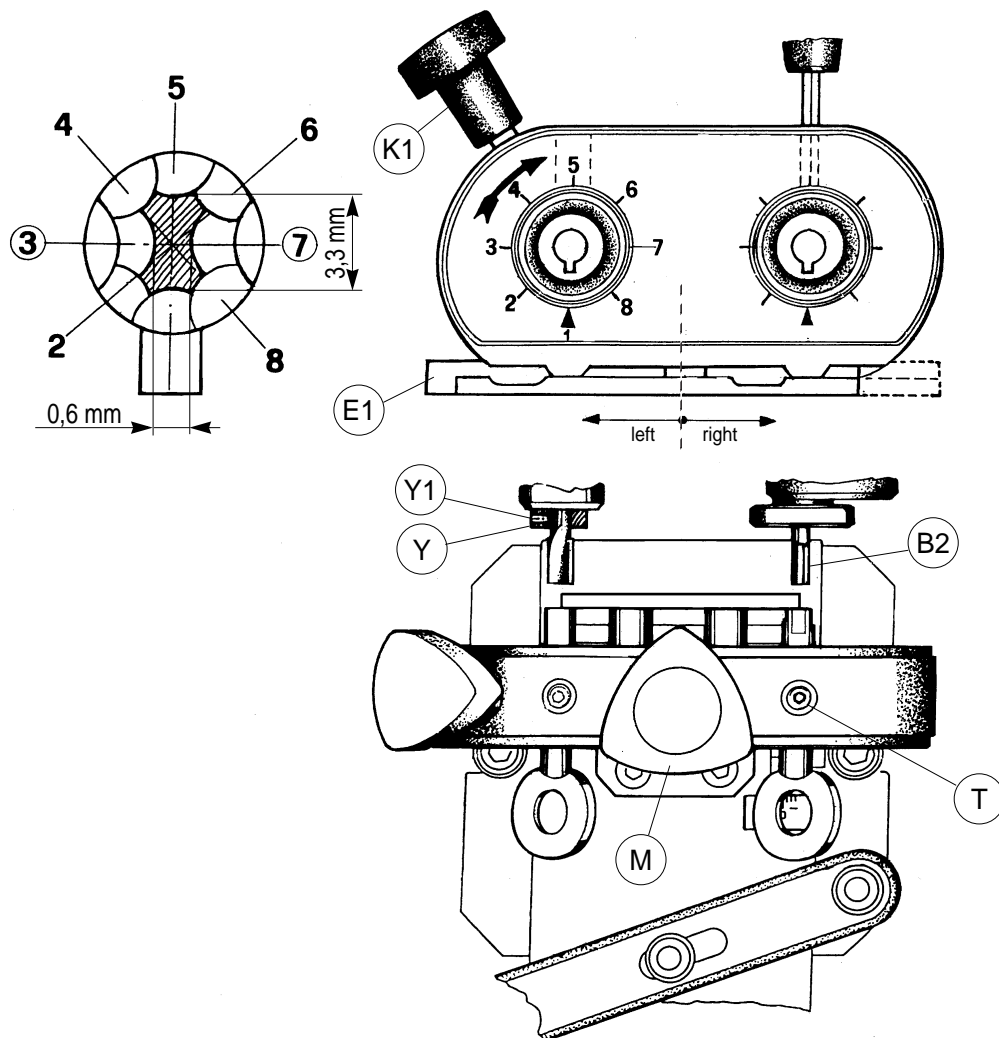


Fig. 18

## 10.5 T17 Synchronised device

- 1) Install the T17 device on a CROWN key-cutting machine and secure with the knob (M).
- 2) tighten the knob (K1) on the T17 device, first ensuring that the key-locking grub screws (T) and (T1) are aligned with the holes on the device.

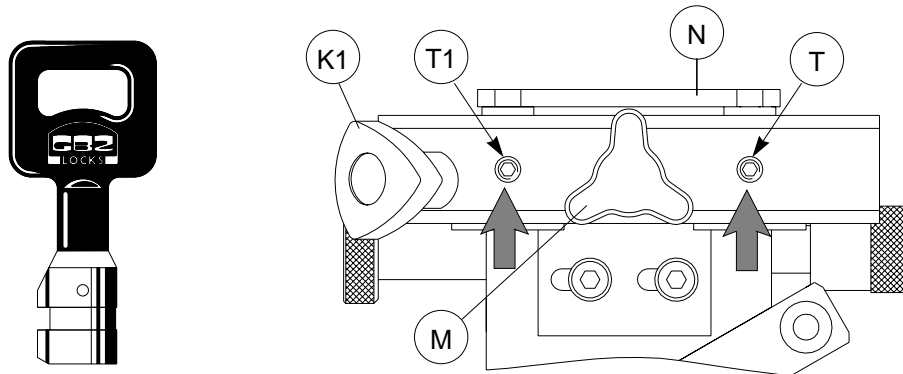


Fig. 19

### Fitting a key:

- 1) Place the sample key into its seat on the right-hand cylinder of the device, as shown in figura 20 and push up to the stop (N).
- 2) turn the key 45° anticlockwise, pull towards the operator up to the stop (J) and secure with the grub screw (T) (fig. 21).

**WARNING:** *before placing the key to be cut into the left-hand seat on the device, check that when the sample key is taken up to the tracer point this enters the first cut freely.*

If not (the tracer point meets obstacles), proceed as follows:

- 1) loosen the grub screw (T), keeping the key firmly against the tracer point (without excessive pressure).
- 2) turn the key clockwise slightly (fig. 21) until the tracer point can enter the cut completely.
- 3) tighten the grub screw (T).
- 4) fit the key to be cut into the left-hand seat on the device, repeating the operations described above for the sample key. Secure the key with the grub screw (T1) then proceed with cutting.

### Cutting:

- 5) release the knob (K1) (fig. 22) and push on the head of the key to be cut to turn it clockwise until it clicks into place for the next cut. Continue in this way for all the cuts.

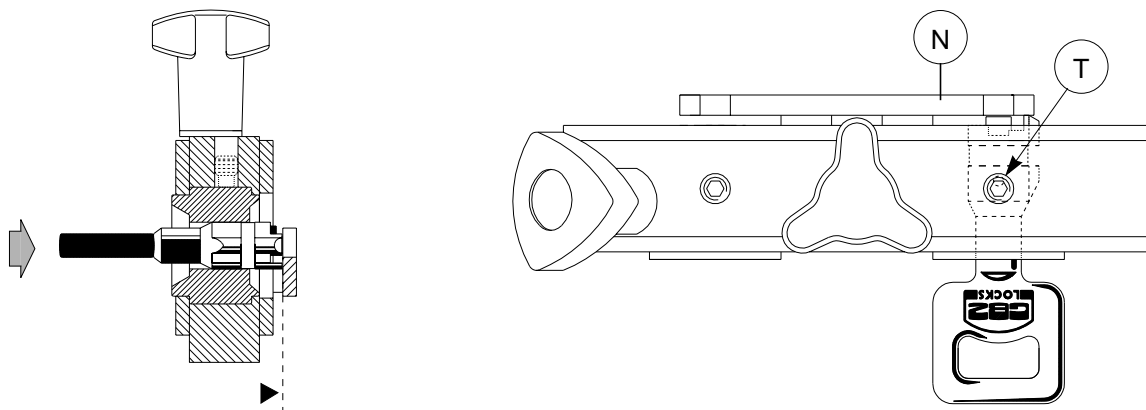


Fig. 20

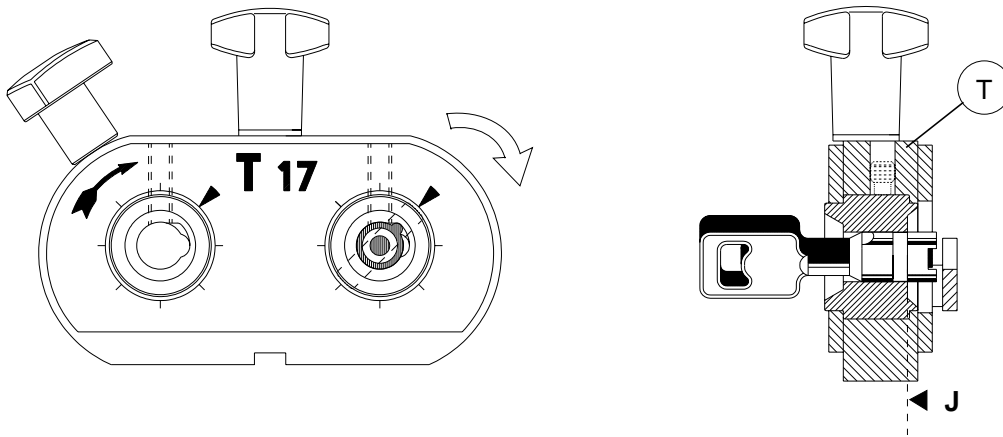


Fig. 21

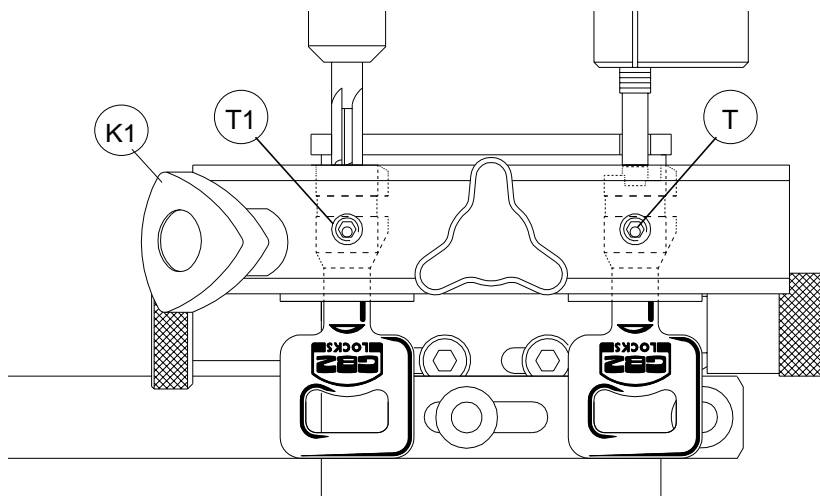
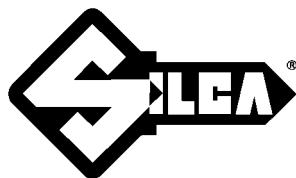


Fig. 22



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