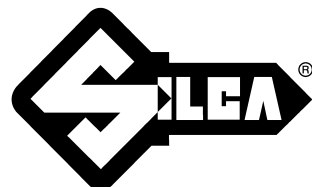


CROWN

Operating manual

D418486XA

vers. **2.0**



CROWN - CROWN-15 key cutting machine

POWER SUPPLY

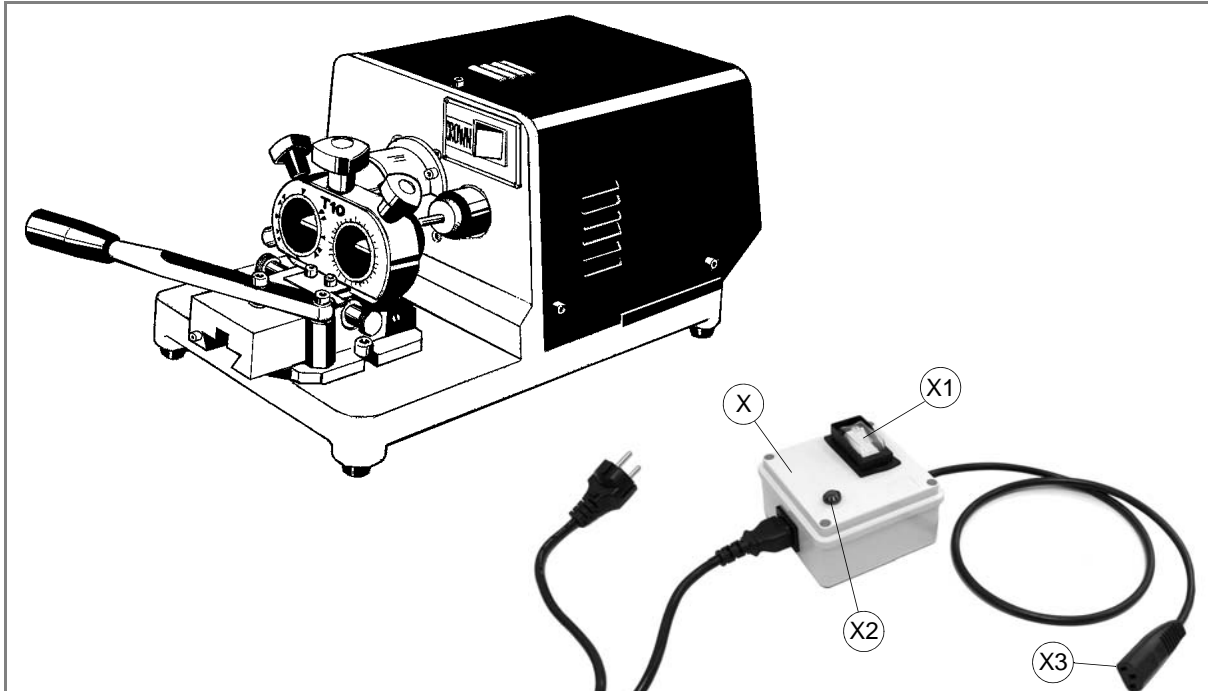
The key-cutting machine must be supplied with electricity by means of a safety device (standard with 230V key-cutting machines, on request for other voltages). The plug must be earthed.

SAFETY DEVICE

The device is connected to a power plug with a differential switch, power the key-cutting machine by pressing the switch (X1).

The warning light (X2) illuminates to indicate voltage in the plug (X3).

ATTENTION: switch (X1) is electromagnetic, in the event of a power failure it goes out automatically. When electricity is restored it must be reset manually to power the machine again by means of the plug (X3).



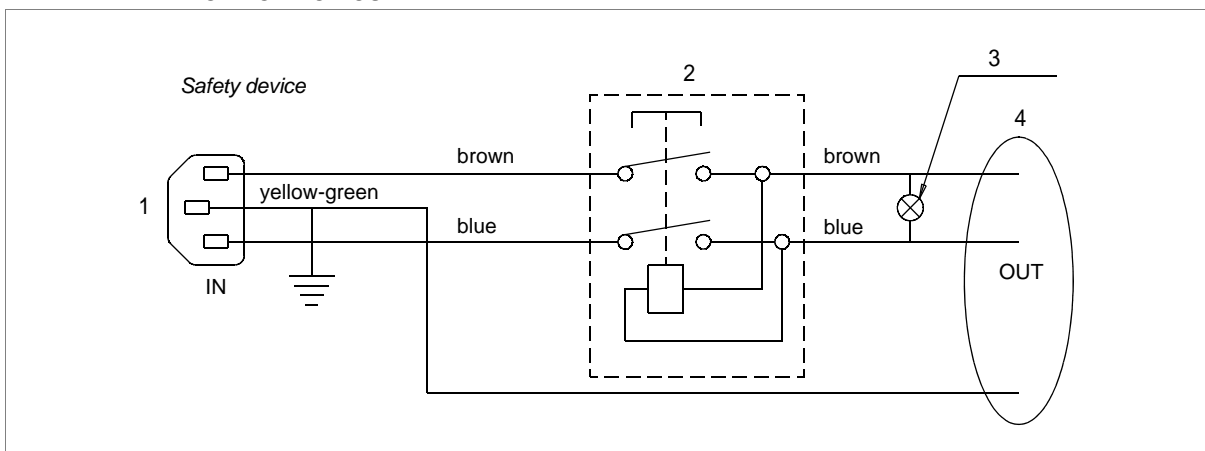
X - safety device (supplied with the 230V machines)

X1- main switch

X2- warning light

X3- plug

ELECTRICAL CIRCUIT



1) Safety device inlet.

2) Safety main switch

3) Warning light

4) Wiring clip

GENERAL INSTRUCTIONS

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

Other risks have been eliminated by the use of protective devices for the operator.

The protective devices used are designed not to provoke further risks and, above all, they cannot be ignored unless deliberately cut out. They do not hinder visibility of the work area.

The materials used in the manufacture of this machine and employed during its use are not dangerous and all comply with the directives.

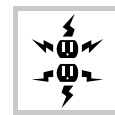
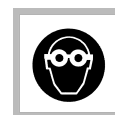
IMPORTANT

To operate under conditions of maximum safety do not use the key-cutting machine without reading and understanding clearly the contents of the Operating Manual and this leaflet; only in this way can you become familiar with the machine, its functions, limitations and possible dangers.

Keep this leaflet in a safe place and make sure that every person who has to use the key-cutting machine reads it carefully.

SAFETY REGULATIONS:

- 1) The use of protective goggles is compulsory during key-cutting operations; badly installed keys or loose chippings could fly out and damage to the eyes.
- 2) Always make sure that the protective shields are in place on the machine.
- 3) Check the electrical wiring periodically; if the wires are worn they should be repaired or replaced.
- 4) Never work with wet, greasy or oily hands.
- 5) Disconnect the machine from the mains when it is not in use or in order to carry out maintenance work (e.g. replacing the cutting tool or brush, if applicable).
- 6) Never tug at the electricity supply wire and make sure it does not come into contact with oil, sharp objects or excessive heat.
Never remove the earth wire from the plug and check regularly that it is properly connected.
- 7) If the key-cutting machine is used outdoors, make sure that the extension is provided with an earth wire.
- 8) Do not use the machine in dangerous places (damp or wet) and ensure that it is well illuminated during operation.
- 9) Never attempt to remove the key blank or original key from the clamps when the cutting tool is in motion.
- 10) Do not use compressed air to remove cutting dust and chippings.
- 11) Keep the work area clean and free of work tools: untidiness can cause accidents.
- 12) Do not allow visitors, especially children, to stand near the machine or its wiring; insist that they keep a safe distance.
- 13) Do not use the machine for purposes different from those described in the Operating Manual.
- 14) Never strain the machine for any reason; it will work better and more safely.
- 15) Wear suitable clothing when using the key-cutting machine, avoiding voluminous garments, ties or jewellery which could be caught up in the moving parts.
- 16) Always secure the keys in the clamps properly. Never hold the head of the key during cutting. If the key will not lock securely into the clamp, do not attempt to cut it.
- 17) Ensure that the cutting tool is always sharp; a worn, blunt blade is not only inefficient but also dangerous.
- 18) Always pay careful attention to the work you are doing and do not use the machine if you are tired.
- 19) Do not operate the machine under the influence of alcohol, drugs or medicines.
- 20) Do not use the key-cutting machine if the ON/OFF switch is not working properly.
- 21) Always keep these instructions to hand.



USE

The key-cutting machine must be installed and used in the way laid down by the manufacturer in the Operating Manual. If the key-cutting machine is used differently or for purposes different from those described in this manual, the customer will forego any rights he may have over the manufacturer. 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 the manual are not covered by the guarantee and the manufacturer declines all responsibility in such.

Further risks

There are no further risks arising from the use of the machine.

Protection and safety precautions for the operator

Our key-cutting machines are designed with features which make it completely safe in all its parts and are built entirely to the Machine Directives.

The operations for which it has been designed are easily carried out at no risk to the operator.

Observation of safety regulations and the instructions provided by the manufacturer in this leaflet and the Operating Manual eliminate all human errors, unless deliberate.

MACHINE CHARACTERISTICS

Noise level

Noise pressure: L_p (A) = 75,76 dB (A)
--

Power supply

The machine is supplied with electricity by means of a separable earthed plug.

The key-cutting machine must be connected to a socket provided with a differential switch.

• Start-up

The machine is started up by means of the master switch.

• Machine Identification

The key-cutting machine is provided with an identification label which shows the serial number.

Use the serial number when ordering spare parts or requesting servicing.

(*) see DISPOSAL.

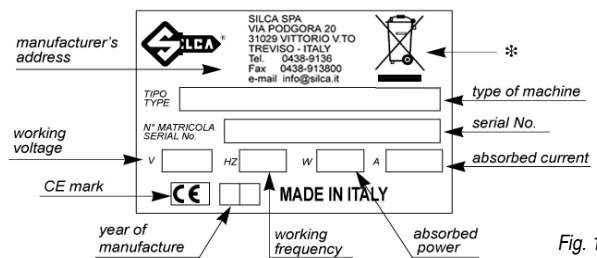


Fig. 1

TRANSPORT

Our key-cutting machines are easily transported by one or more persons (if the weight is over 25-30 Kg.) and is not dangerous to handle.

Packing

Internally the packing comprises expanded polymer shells which enclose the machine and its parts, holding them securely in place during handling.

A robust cardboard box and nylon wrapping give further protection to the machine even for long storage periods.

Transport

The packing protects the machine from the risks of handling (knocks, etc.) and is clearly marked with suitable symbols showing the ideal conditions for transport.

Contents of packing

Check that the packing box contains:

1 key-cutting machine enclosed in the protective shells

1 supply connecting wire

1 tool kit

1 set of documents, including:

Operating Manual, General Instructions, Spare parts list, Guarantee form

It is advisable to keep the cardboard box in good condition, as it may be used again (e.g. removals, dispatch to the manufacturer for repairs or servicing).

Handling the machine

When the key-cutting machine has been unpacked, place it directly on its workbench. This operation can be carried out by one or more persons **firmly holding the base, and no other part, to lift and carry the machine.**

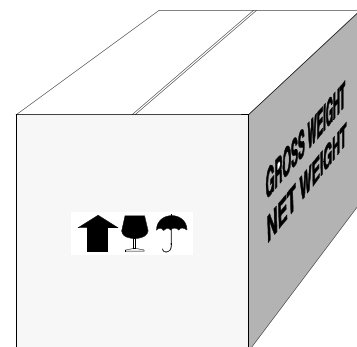


Fig. 2

MAINTENANCE

Although our key-cutting machines do not require special maintenance, it is advisable to check and, if necessary, replace the parts subject to wear, such as: cutting tool, tracer point, transmission belt and brush, if applicable.

Replacement: the operations are simple and can be carried out by the operator. The removable parts are so designed as to exclude the possibility of their being re-assembled or installed wrongly or dangerously.

Cleaning: keep the carriage and clamps free of chippings from the cutting operations by cleaning with a dry brush. **WARNING! DO NOT USE COMPRESSED AIR.**

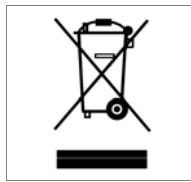
Before starting any type of maintenance read the instructions below:

- **never carry out maintenance or servicing with the machine in motion**
- **always remove the mains plug**
- **use original spare parts**

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;

Suitable separate collection for the purpose of forwarding discarded equipment 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.

The sanctions currently provided for by law shall apply to users who dispose of products in unauthorised ways.

ASSISTANCE

Silca provides full assistance to purchasers of its key-cutting machines. To ensure complete safety for the operator and the machine, any job not specified in the manual should be carried out by the manufacturer or in the special service centres recommended by Silca.

Below is a list of Silca specialised Service Centres all over the world.

How to request service

The guarantee attached to our key-cutting machines ensures free repairs or replacements of faulty parts within 12 months of purchase.

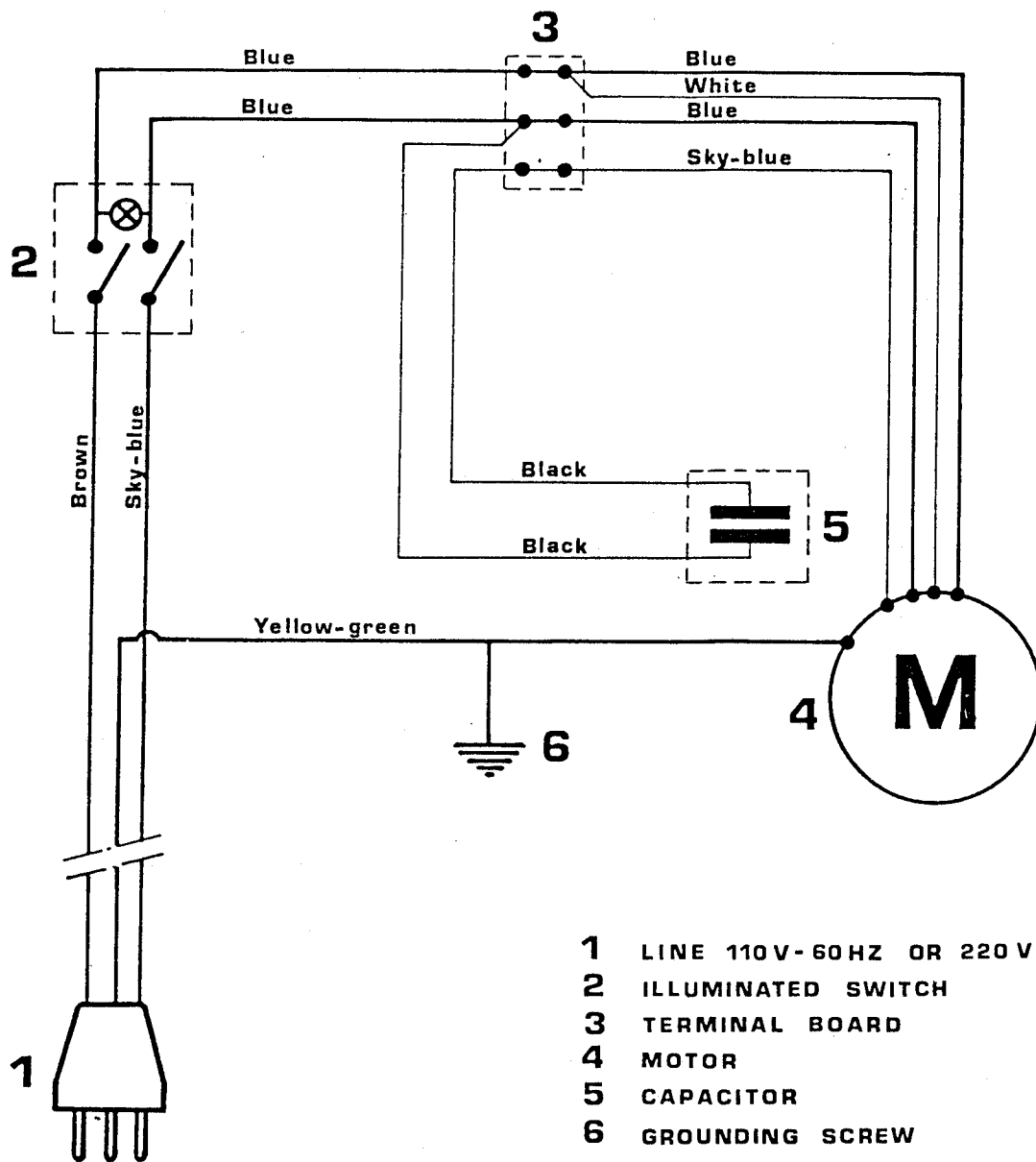
All other service calls must be arranged by the customer with Silca or with a Service Centre.

TECHNICAL DATA

- MOTOR :Single phase 110 V.-60 Hz. (220 V. - 50 Hz.) 0,15 Kw.
2800 r.p.m. (special voltage on request).
- CUTTER :Cylindrical clamping type with 4 front blades in HSS.
- MOVEMENTS :Manual, on dovetail guides.
- CLAMPS :Self-centering type,hardened and knurled with synchro-
nized rotation.
- DIMENSIONS :Width 9.40 in. (230 mm.),height 7.35 in. (180 mm.),
depth 18.36 in. (450 mm.)
- WEIGHT :Approximately 34 lbs. (15.5 kg.)
- OPTIONS :Devices for several types of front cut keys (to be used
as an alternative to the synchronized self centering de-
vice); average weight 2.2 lbs (1 kg.) each.
- PROTECTIONS :Safety screen and protecting cover over the motor.
- PRELIMINARY
CONTROLS :All machines are factory tested.

WARNING: before using the machine, make sure that the
voltage of the motor is correct. Read all directions
completely before turning on the motor.

WIRING DIAGRAM



- 1 LINE 110V-60HZ OR 220V-50 HZ
- 2 ILLUMINATED SWITCH
- 3 TERMINAL BOARD
- 4 MOTOR
- 5 CAPACITOR
- 6 GROUNDING SCREW

MAIN OPERATING PARTS

A Master switch (green)	F Synchronized self-cent. device	M Clamp fixing ring
B Cutter	G Selector	N Key retainer
C Tracer-point	H Knob	O Reference scale
D Slide	I Height adjusting screw	P Zero setting plate
E Lever	L Locking handle	Q Safety screen

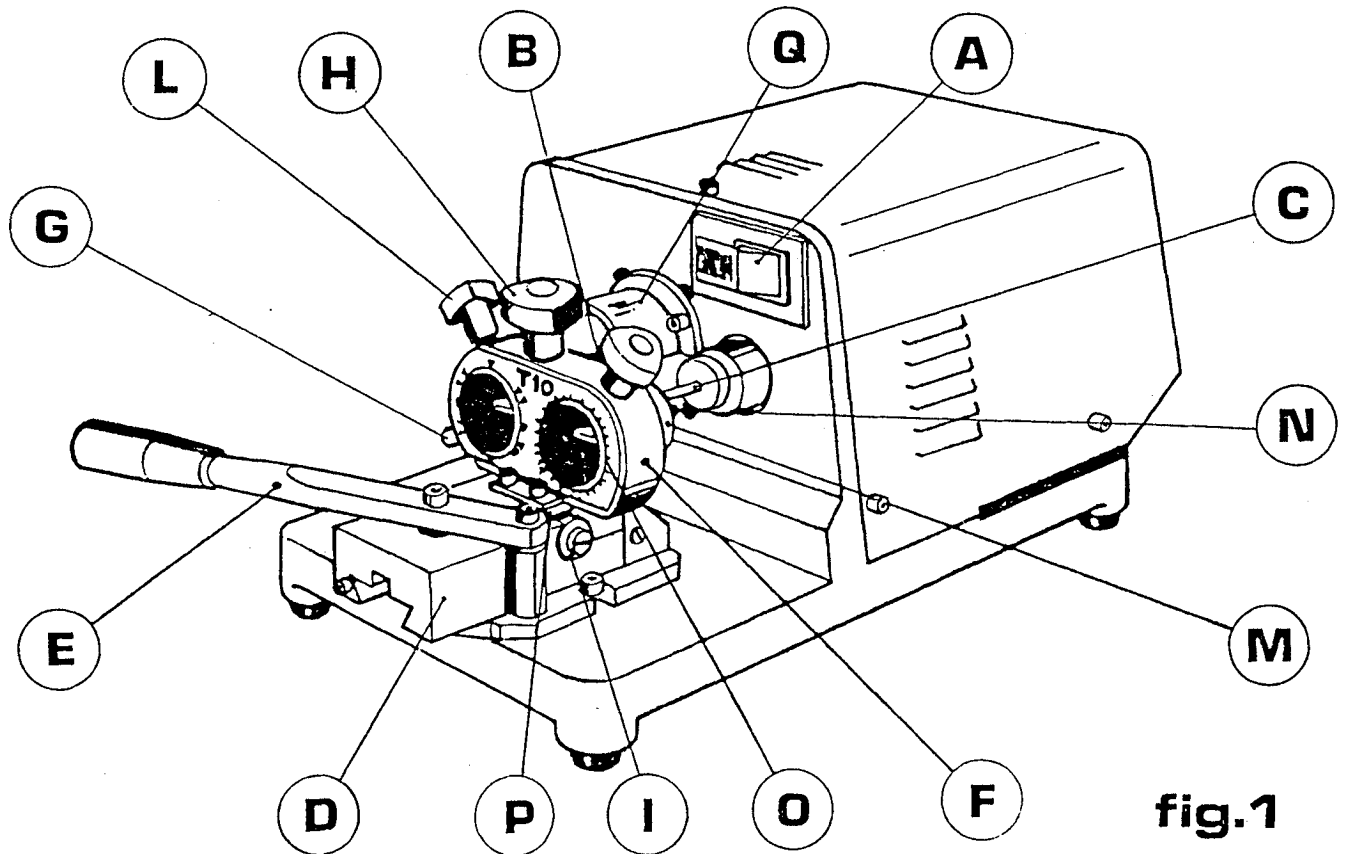


fig.1

The "CROWN" model key cutting machine has been specially studied to simplify the duplication of any type of tubular keys, (when complete with all optional devices you can duplicate all of the front cut keys).

The machine can meet most market requirements also when fitted only with the synchronized self-centering device, T 10. In fact it can duplicate all tubular keys with front cuts in two different ways:

A) Working with the selector (G) inserted; the cutting positions are fixed by a pin in the selector itself.

This device allows to have 6 or 8 different positions that can be read on the display (Y) by means of the reference marks (O).

B) Working with the selector (G) not inserted; keys are cut by tracing the sample key.

The solution allows to cut any type of key with different inclinations and any number of cuts.

The graduated display permits the reading of the angle of the cutting that has been performed.

SYNCHRONIZED SELF-CENTERING DEVICE

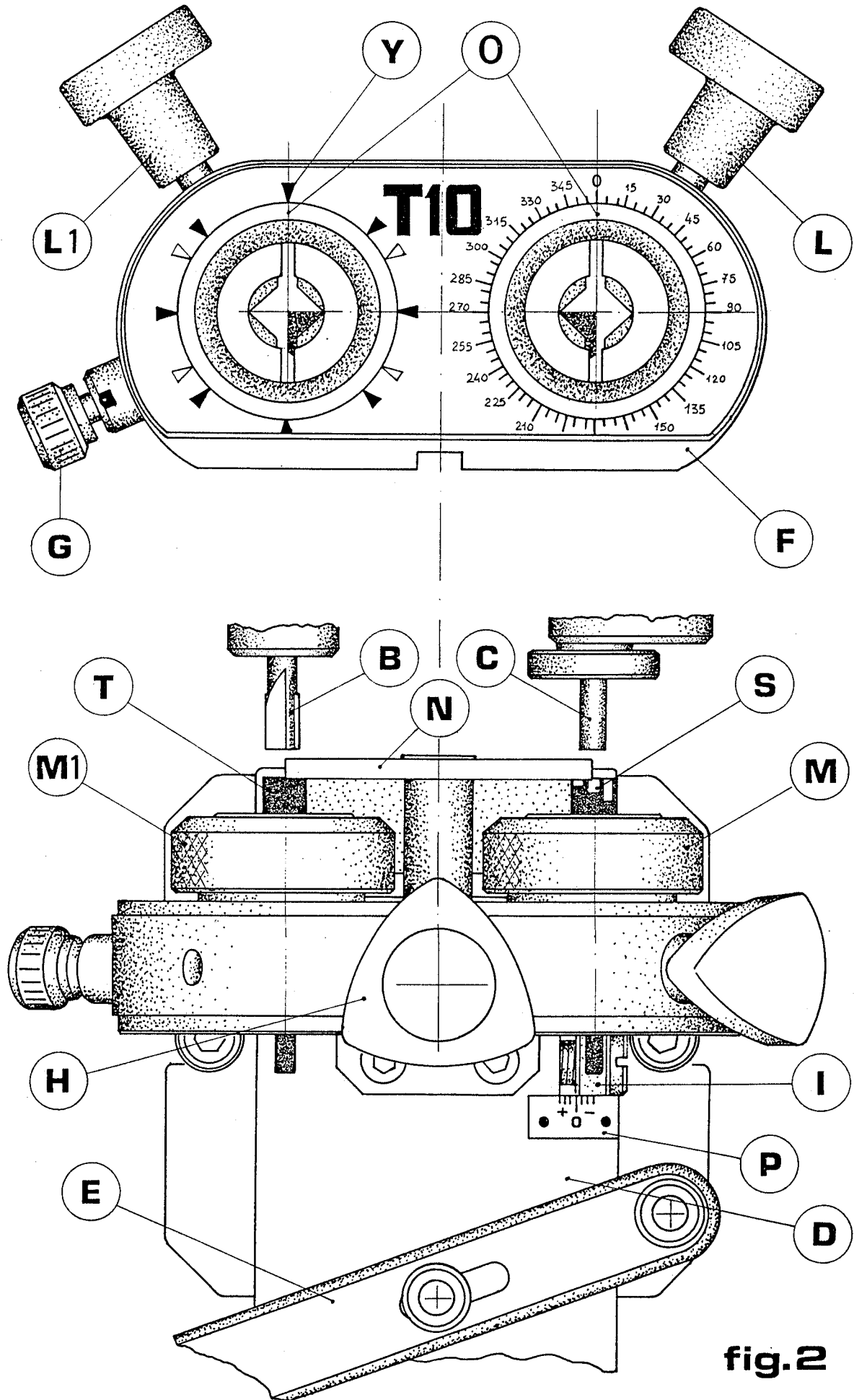


fig. 2

CHARACTERISTICS OF THE SELF-CENTERING DEVICE T 10

This device permits the cutting of tubular keys having a minimum outside diameter of 0.375 in. (9.20 mm.) up to a maximum diameter of 0.416 in. (10.20 mm.) which includes the entire series of tubular keys of the CHICAGO type (7 central cuts, 7 cuts moved to the right, 7 cuts moved to the left, 8 cuts ACE, 8 cuts FORT, 9 cuts NATIONAL, KESET, 5 cuts CENTURY, 10 cuts SIDLEEN) and also the tubular key of CORTELLEZZI, MERONI and eventual other makes of keys which are in the range of the above mentioned diameters. The vertical excursion of the carriage is obtained by the displacement of the wedge (R) which offers the possibility to obtain "step cuts" (cuts within cuts) and enlarged cuts (MASTER).

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

- 1) Place selector (G) so that reference mark (0) is up.
- 2) Lock the two handles (L-L1) in order that the clamp holding bushings can not rotate.
- 3) Insert the sample key (S) into the RH bushing seat, and lean it against the retainer (N) and tighten it with the ring nut (M) using finger tightness only.
- 4) Repeat the same operations with the keyblank to be cut (T).
- 5) Release the two handles (L-L1) to allow rotation of the clamp holding bushings and proceed in duplicating, tightening the knob (L1) during the cutting operation and rotate the key always in a counter clockwise direction by turning the ring nut (M) until the cuts are completed.

INSTRUCTIONS FOR CUTTING KEYS WITH CUTS THAT HAVE IRREGULAR INTERVAL

- 1) Disconnect the selector (G)
- 2) Check that the references marks (0) are up and lock the two handles (L-L1)
- 3) Fit in and lock the sample key (S) and the keyblank (T) as described above in points 3 and 4,
Rotate the ring nut (M) counter clockwise until the tracer point (C) is in front of the first cut, lock the handle (L1) and carry out the duplication repeating these operations for each cut.

HEIGHT CHANGES

(to be carried out only with synchronized self-centering device)

The machine gauging requires (as shown in fig. 3) a distance (X) between the top surface of the wedge (R) and the rotation axis of the key (T) in the device (F), and a 0.167 in. (4.1 mm.) radius corresponding to a key, inside diameter of 0.334 in. (8,2 mm.) and corresponding to the zero on the setting plate (P). However, it may happen that a key has an inside diameter larger (ex. CHICAGO MASTER 0.353 in. (8.65 mm.)) or smaller (ex. FORT MASTER 0.311 in. (7.62 mm.)) than the optional one. In this case, proceed as follow:

- 1) Loosen the knob (H).
- 2) Using a screwdriver, rotate the screw (I) clockwise or counter clockwise as required, bearing in mind that each complete turn of the screw corresponds to a 0.004 in. (0.1 mm.) change in height.
- 3) When the necessary change has been effected, lock the knob again (H).
- 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.

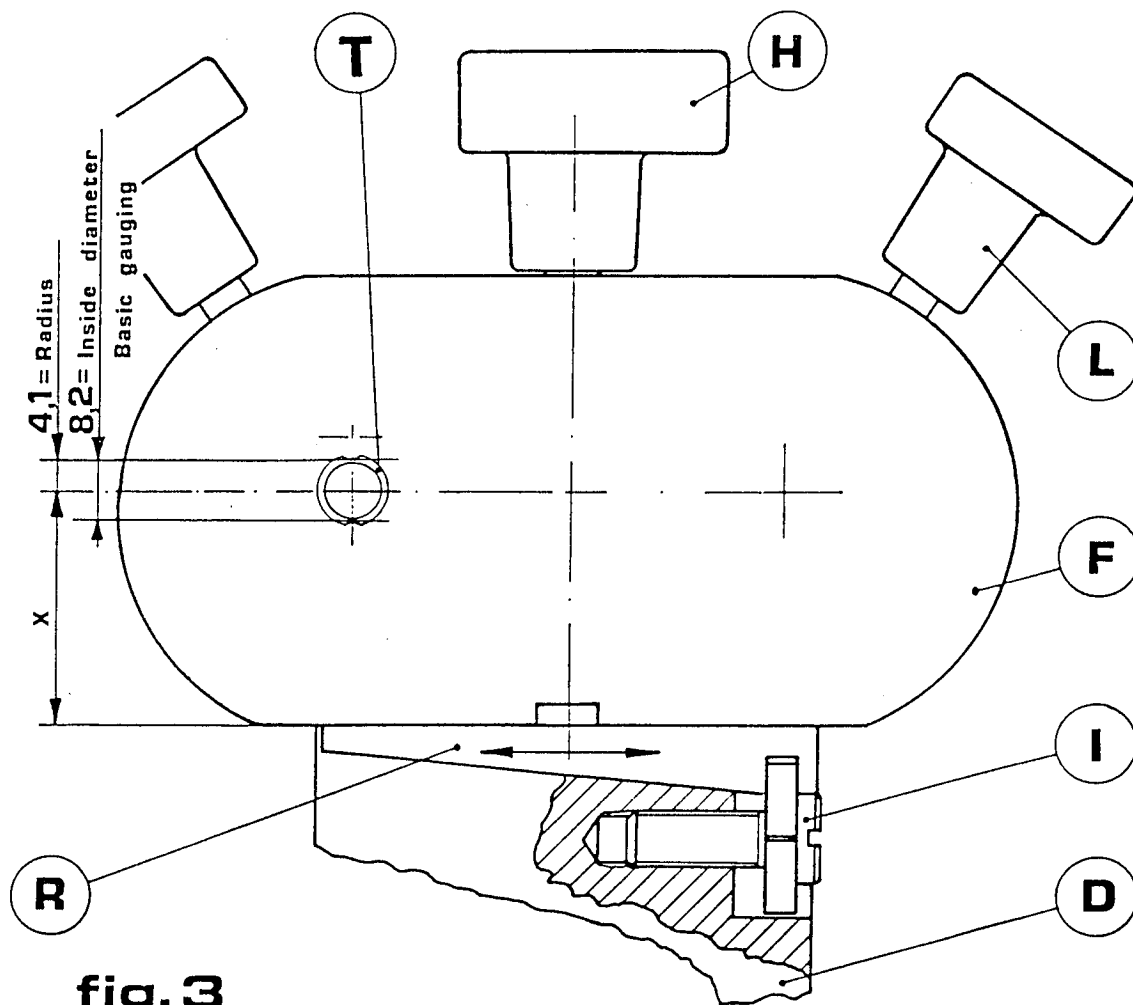


fig. 3

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 0.334 in. (8.2 mm.)

WARNING

The pins of a cylinder are divided into normal, oversized (CHICAGO MASTER), and with steps; as shown on drawing. In order 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 0.144 smaller in diameter than the original. This small difference will cause no problems in operation and will help to avoid errors in centering. All Silca blanks meet this requirement.

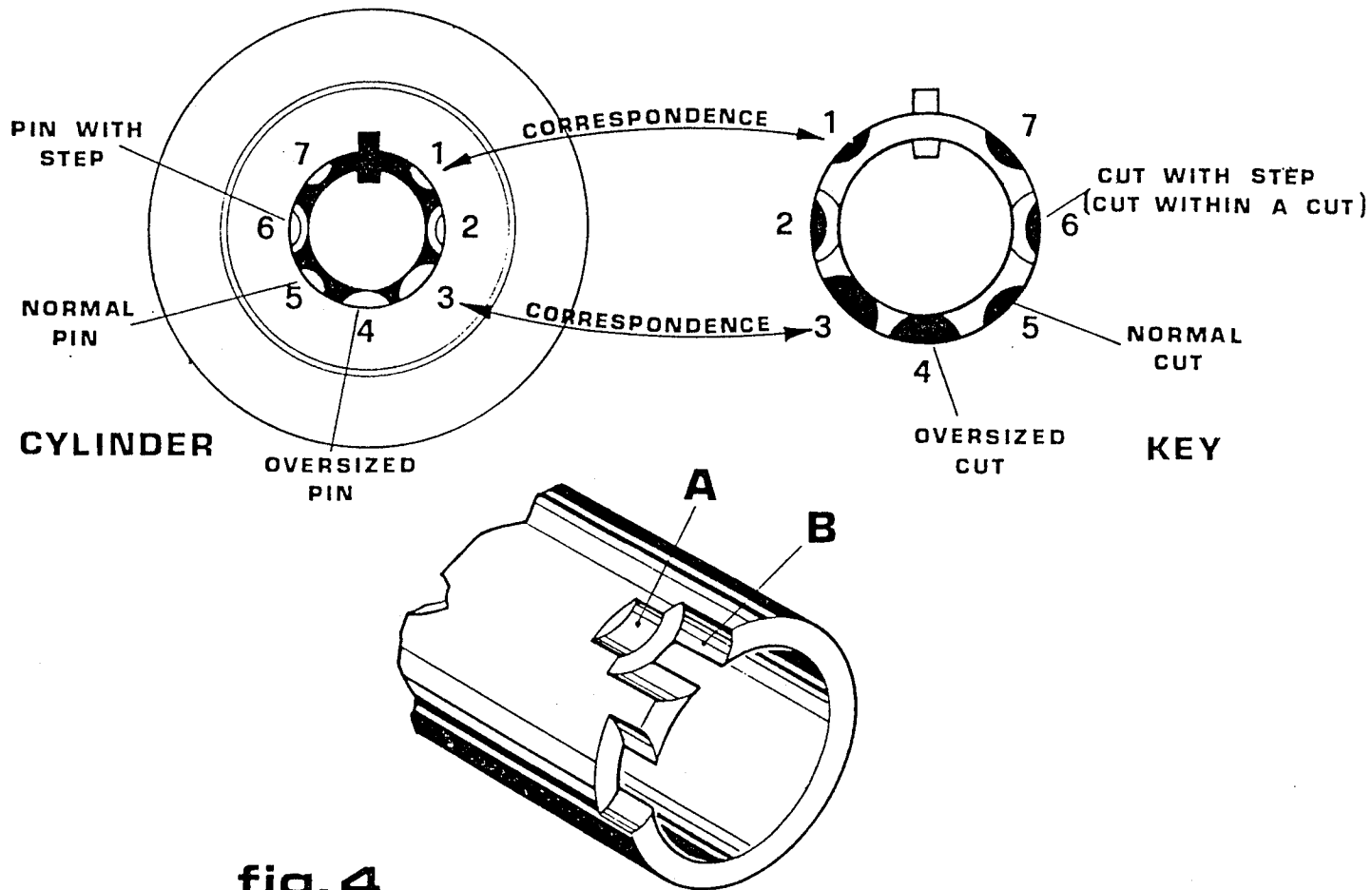


fig. 4

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.4.
- 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 0.353 in. (8.65 mm.) as shown on the table. In this case we will have: $0.353 - 0.334 = 0.018$ in.

$$\frac{0.018}{2} = 0.009 \text{ in. } (8.65 - 8.20 = 0.45 \quad \frac{0.45}{2} = 0.225 \text{ mm.})$$

which is equal to two and a quarter revolutions of the screw (I) in a counter clockwise direction in order to lower the device. In order to make this

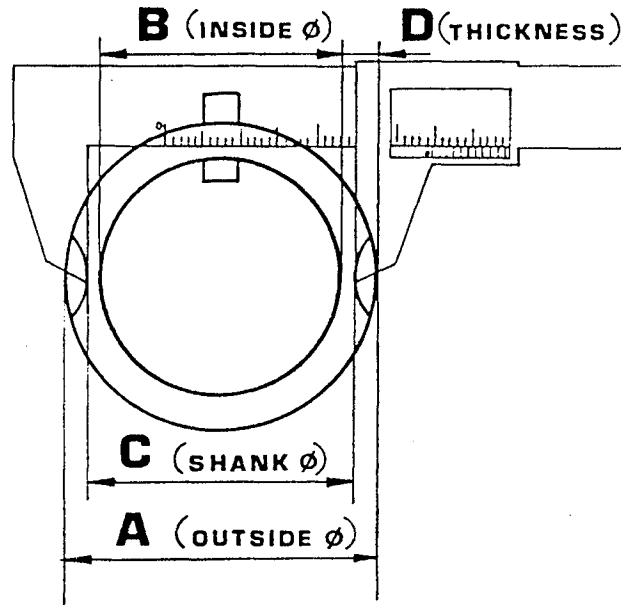
particular stem cut we must turn the screw (I) completely in a clockwise direction until it reaches the end of the stroke.

CONTROLS AND COMPARISONS

(among various types of keys)

The picture 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 0.334 in. (8.2 mm.) proceed as mentioned in points 1,2,3, described on page 5.



DATA TABLE

SILCA'S ARTICLE	MAKE OF THE CYLINDER	DIMENSION OF THE KEY							
		A		B		C		D	
		mm.	inch	mm.	inch	mm.	inch	mm.	inch
CH 9T	All(ACE-ALPHA-AMERICAN-L&F-FORT-GEM...)	9,50	0,374	7,90	0,311	8,26	0,325	0,81	0,032
CEN 5T	CENTURY	10,02	0,395	7,52	0,296	8,36	0,329	0,75	0,029
	CHICAGO	10,16	0,400	8,30	0,327	8,65	0,341	0,95	0,037
	CHICAGO	9,30	0,366	7,60	0,299	7,75	0,305	0,82	0,032
	FORT MASTER	9,53	0,375	7,20	0,283	7,62	0,300	1,15	0,045
MER 22T	MERONI	9,55	0,376	8,05	0,317	8,36	0,329	0,75	0,029
PC 12T	PC (CORTELLEZZI)	9,65	0,380	8,00	0,315	8,32	0,328	0,83	0,033
SD 3T	SIDLEEN	9,50	0,374	7,50	0,295	8,20	0,323	1,00	0,039

INSTRUCTIONS FOR KEY CUTTING USING THE OPTIONAL SYNCHRONIZED DEVICES

- 1) Unscrew the knob (H) remove the self-centering synchronized device and, after checking to see that the seat is clean, fit in the optional synchronized device.. Then tighten the knob (H) again.
- 2) Check the slits in the positioning cylinders (X and W) if they are in the direction of the relevant marks (Y) so as to allow the allen wrench (Z) to operate on the securing set screw (V and U) through the relevant hole.
- 3) Insert the sample key (S) into the RH cylinder seat and push it towards the retainer (N). Then lock the key.
- 4) Repeat the same operations with the keyblank to be duplicated (T).
- 5) Lock the handle (L1) and make first cut.
- 6) Release the handle (L1) and rotate the keyblank (T) clockwise till you hear a click: Carry out all the cuts until the keyblank is finished

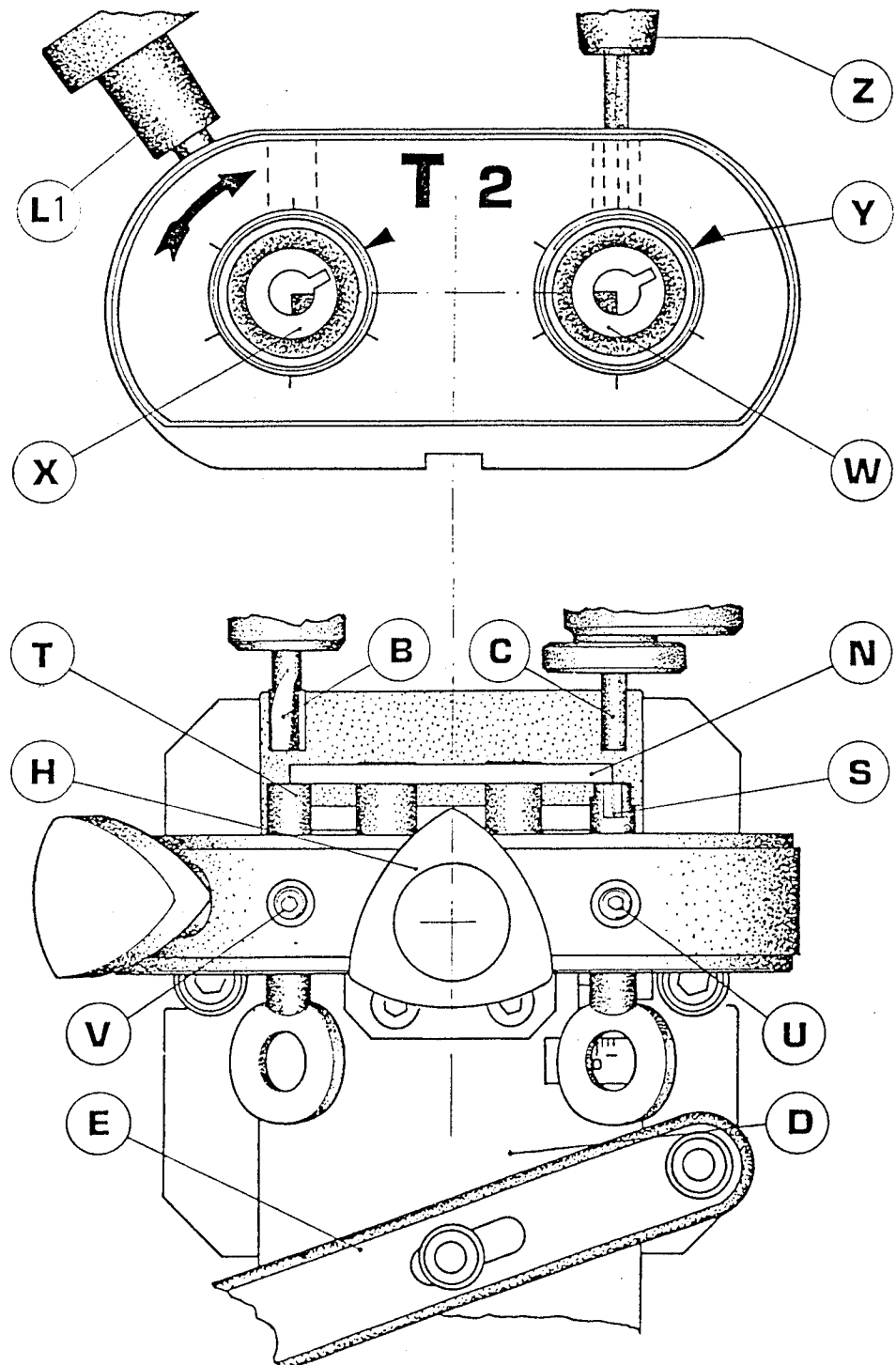
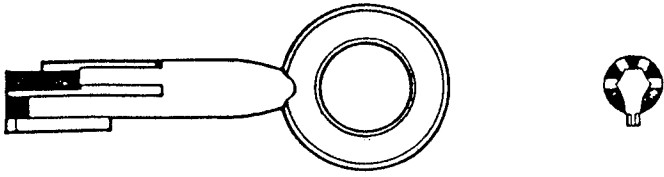


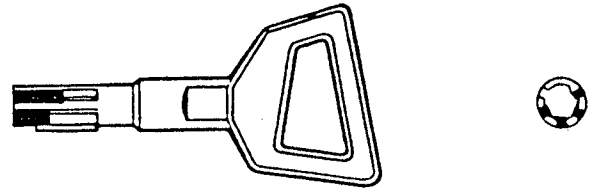
fig. 5

OPTIONAL DEVICES

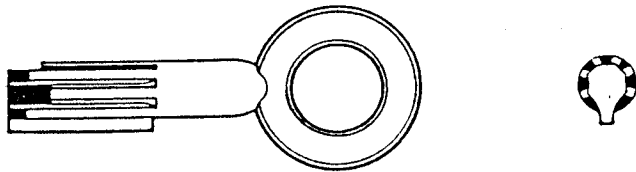
device **T2** for keys type
PROGRES-FONTAINE-CORNI 5 cuts



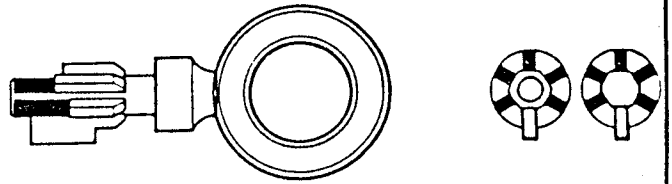
device **T7** for keys type
JPM 505 5 cuts



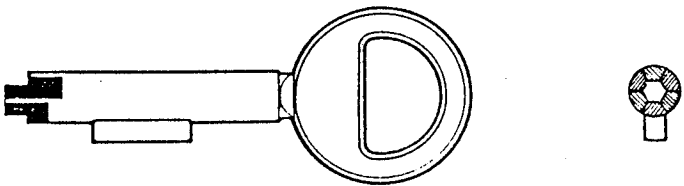
device **T3** for keys type
PROGRES-FONTAINE-CORNI 7 cuts



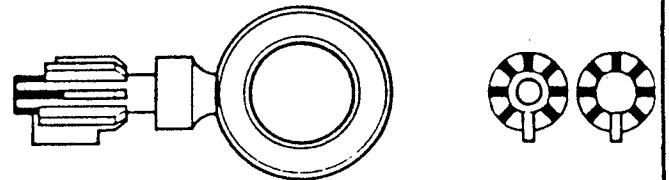
device **T8** for keys type
POLLUX 5 cuts



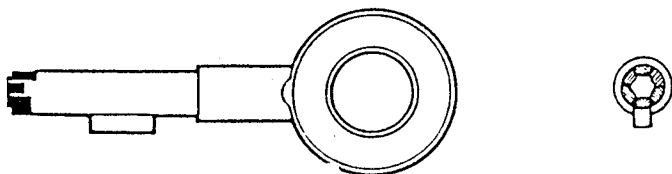
device **T4** for keys type
VIGIE-PICARD 6 cuts



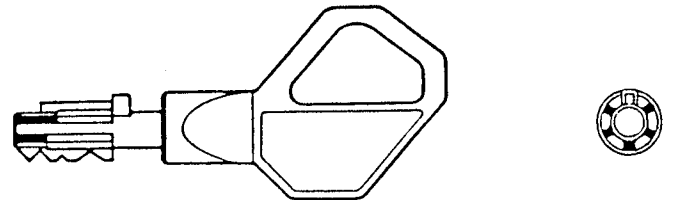
device **T9** for keys type
POLLUX 7 cuts



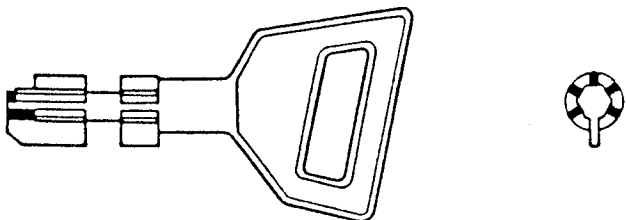
device **T5** for keys type
LAPERCHÉ 6 cuts



device **T13** for keys type
CAVITH 5 cuts



device **T6** for keys type
JPM 405 5 cuts





VITTORIO VENETO 24/03/2011

CE DECLARATION OF MACHINE COMPLIANCE

**SILCA S.p.A. - VIA PODGORA 20 (Z.I.)
31029 VITTORIO VENETO (TV) - (ITALY)
TEL. 0438 9136 - FAX. 0438 913800**

Declares under its own responsibility that the **Key-cutting machine** model

CROWN

complies with the requirements of the following European Directives:

European Union **DIRECTIVE 2006/42/CE** (Machines)
and with the EN 292/1 – EN 292/2 Standards

European Union **DIRECTIVE 2004/108/CE** (Electromagnetic Compatibility)
and with the EN 55013 (section 3.2) – EN 55014 (section 4.1.2) Standards

European Union **DIRECTIVE 2006/95/CE** (Low Voltage) **| 97 |**
and with the EN 60204-1 (sections 20.2 – 20.3 – 20.4) Standards

Claudio Tomasella of the Silca S.p.A. Research & Development Division is authorized to create a Technical File.

General Manager Basic Production Center

Stefano Setti

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Società soggetta a direzione e coordinamento di Kaba Holding AG, con sede in Rümlang (Svizzera),
Hofwisenstrasse 24, ai sensi e per gli effetti degli articoli 2497 - 2497sexies del Codice Civile.

