

NOVA 2000 Francia

Operating Manual

D421104XA - vers. 3.0

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GUIDE TO THE MANUAL

This manual has been produced to serve as a guide for users of the NOVA 2000 Francia 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:

- Transport and handlingCh. 1
- Description of machine and safety devicesCh. 2-3-4
- Proper use of machineCh. 5-6-7
- MaintenanceCh. 8-9-10

Technical terms

Common technical terms are used in this manual. To assist those with little experience of key cutting, below is an illustration of the terms used for the different parts of keys.

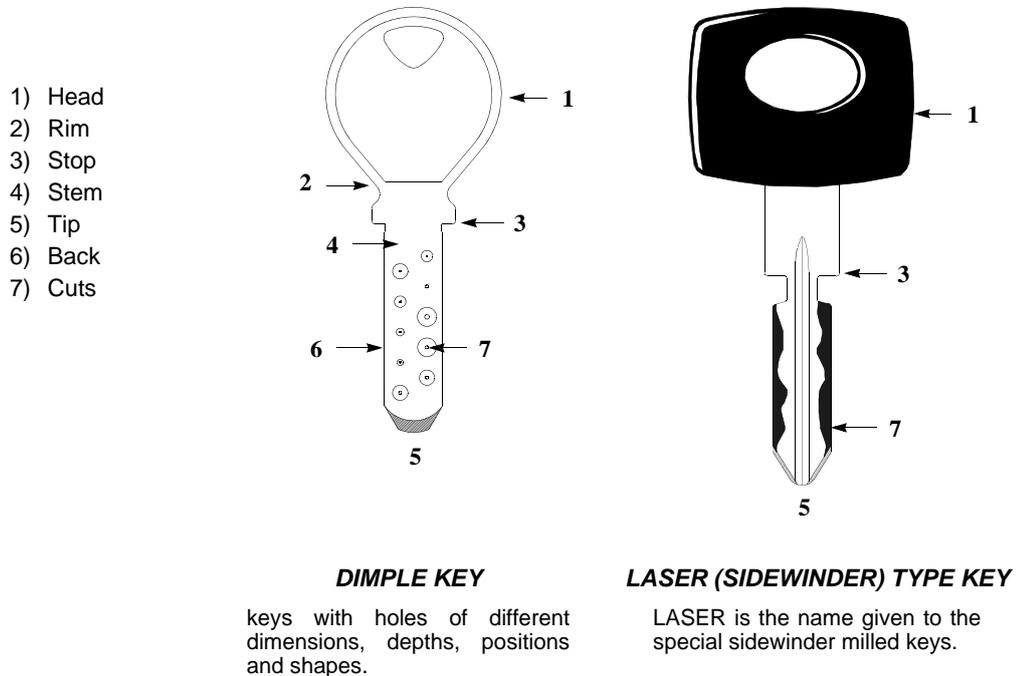


Fig. 1

GENERAL INTRODUCTION

The NOVA 2000 Francia 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, 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.

A special adhesive label is attached to the machine warning the operator to use goggles during the cutting operations, and this is strongly recommended 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 NOVA 2000 Francia must be installed and used in the way laid down by the manufacturer.

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 Ilco-Orion. 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 NOVA 2000 Francia and benefit from its potential.

Further Risks

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

Protection and safety precautions for the operator

The NOVA 2000 Francia 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 (wearing protective goggles) and observation of the instructions provided by the manufacturer in this manual eliminate all human error, unless deliberate.

The NOVA 2000 Francia key-cutting machine is designed with features which make it completely safe in all its parts.

- **Power supply**

The key-cutting machine is powered directly by electricity supplied through a safety device (standard with 230V key-cutting machines, on request for other voltages).

- **Start-up**

The machine is started up:

- by means of the main switch on the safety device (standard with 230V key-cutting machines);
- by means of the master switch.

- **Operation**

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

- **Illumination**

The work area is illuminated by a lamp which operates when the machine is switched on with the master 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 re-placed wrongly or unsafely.

- **Machine identification**

The NOVA 2000 Francia key-cutting machine is provided with an identification label which shows the serial number (fig. 2).

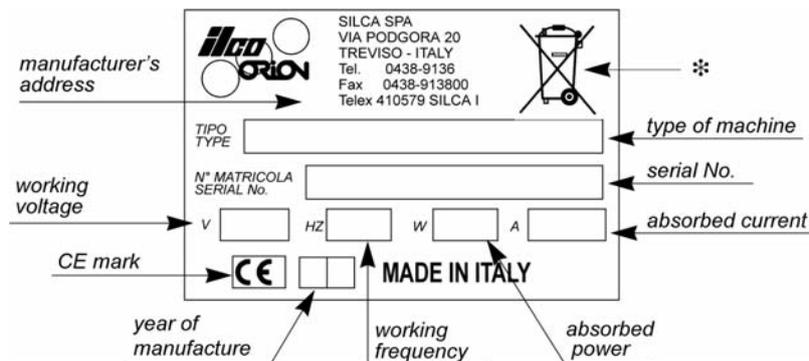


Fig. 2

(*) see chap. 9 DISPOSING OF MACHINE, page 19.

1 TRANSPORT

The NOVA 2000 Francia key-cutting machine is easily transported and is not dangerous to handle. The packed machine can be carried by two persons.

1.1 Packing

The packing used for the NOVA 2000 Francia guarantees that the machine will travel safely without danger of damage to it or its components.

The packing comprises two shells, lower and upper in expanded plastic in the machine is wrapped. A strong outer cardboard box, the measurements of which can be seen in fig. 3 and the plastic wrapping protect the machine even over a long period of storage.

Note: keep the packing and use it every time the machine must be transported.

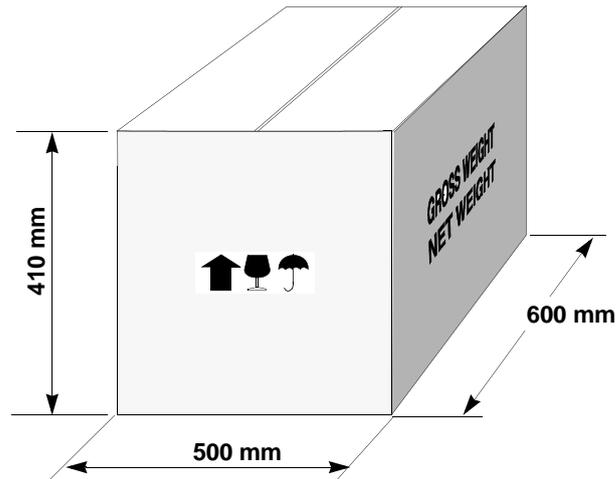


Fig. 3



1.2 Transport

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

Use of the packing box whenever the machine is transported will avoid knocks or bumps which could cause damage.

1.3 Unpacking

To remove the machine from the packing box:

- 1) cut the straps with scissors and remove.
- 2) open the box without damaging it as it may be used again (e.g. removals, dispatch to the manufacturers for repairs or servicing).
- 3) check the contents of the box, which should comprise:
 - 1 NOVA 2000 Francia key-cutting machine packed in a protective shell.
 - 1 set of documents, including: operating manual, spare parts list and guarantee.
 - 1 accessory container.
 - 1 connecting wire.
 - 1 safety device (supplied with the 230V machines);
- 4) remove the key-cutting machine from the protective shell.

1.4 Handling the machine

When the NOVA 2000 Francia has been unpacked, place it directly on its workbench. This operation can be carried out by one person.

ATTENTION: *holding the base, and no other part, to lift and carry the machine.*

1.5 Safety

- **Protective shield**

A special transparent plastic shield prevents chippings from flying into the air.

- **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).

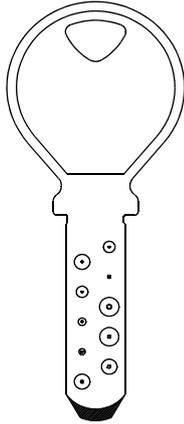
ATTENTION: *switch (X1) is electromagnetic, in the event of a power failure it goes out automatically. When electricity is restored it must be reset manually to power the machine again by means of the plug (X3).*

2 MACHINE DESCRIPTION

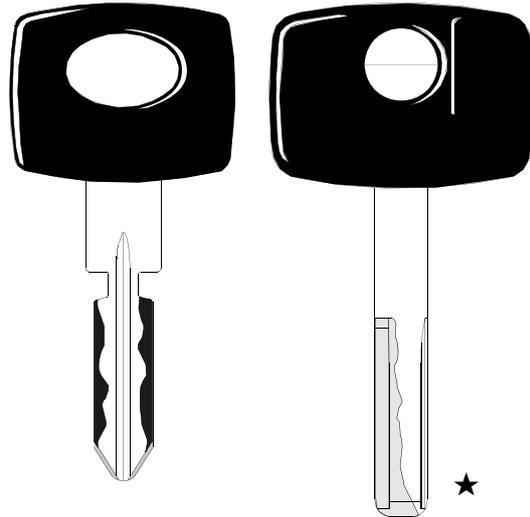
The NOVA 2000 Francia is an excellent quality, high precision key-cutting machine. It features great versatility in cutting keys of different types without the need to replace the clamp or apply fixed adapters. NOVA 2000 Francia cuts the following types of keys:

- **dimple keys** (with flat cuts)
- **Laser (sidewinder) type keys**
- **keys for Fichet**

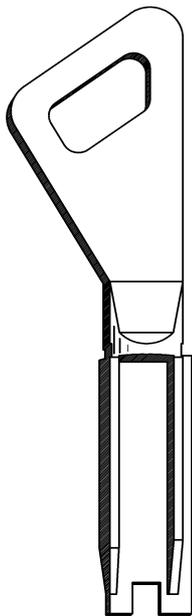
dimple keys



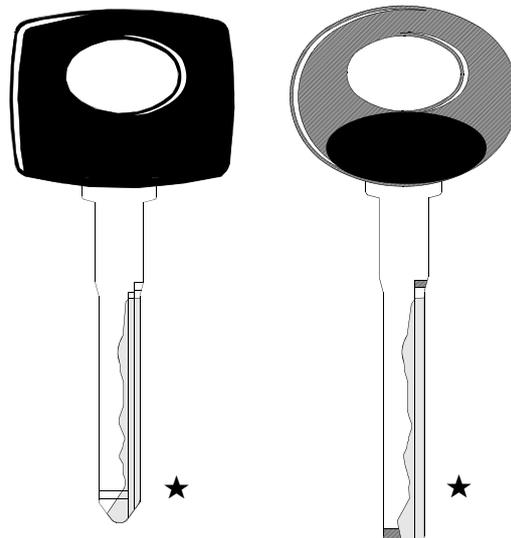
Laser (sidewinder) type keys



keys for Fichet



Laser narrow-stemmed (sidewinder) type keys



★ with Optional

Fig. 4

High precision work is guaranteed by the combination of the functional features on the NOVA 2000 Francia and all its components, such as:

- **MOVEMENTS**

The three axes move on ball guides which provide smooth running and easy sliding without play.

- **TRACER POINT SPRING SYSTEM**

This system guides and facilitates self-centering of the cuts on dimple keys.

- **PROTECTIVE SHIELD**

A special transparent plastic shield prevents chippings from flying into the air.

- **LAMP**

Placed directly on the machine, it illuminates the work area.

- **CENTESIMAL MICROMETRIC RING NUT**

Ensures perfect depth alignment of the tools and makes it possible to adjust for defects on worn keys with minute, controllable depth variations ($\pm 0,02$ mm).

- **LEVERS AND KNOBS**

Each lever and knob has been designed with dimensions, materials and positions which render grip and movement extremely simple.

Materials and finish have been chosen according to the use of each part, especially:

- **lever (I) for vertical carriage (Z axis)**

- **lever (C) X-Y axes**

The lever which guides movement along the X-Y axes is ergonomic and makes precise, sensitive movements.

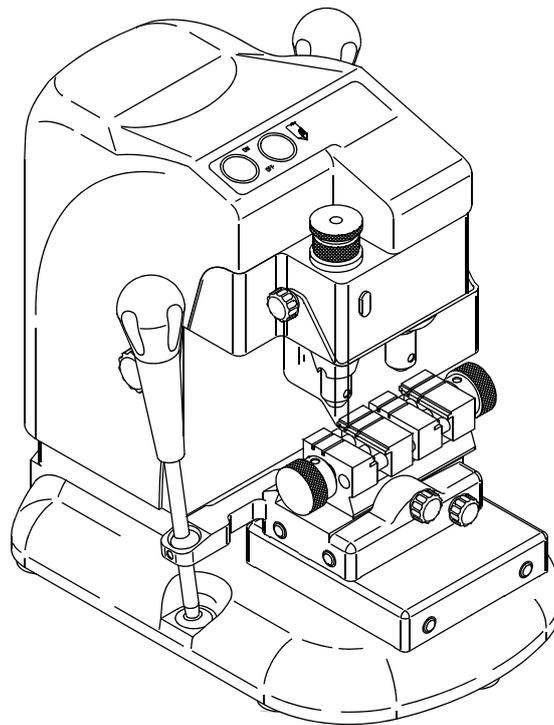
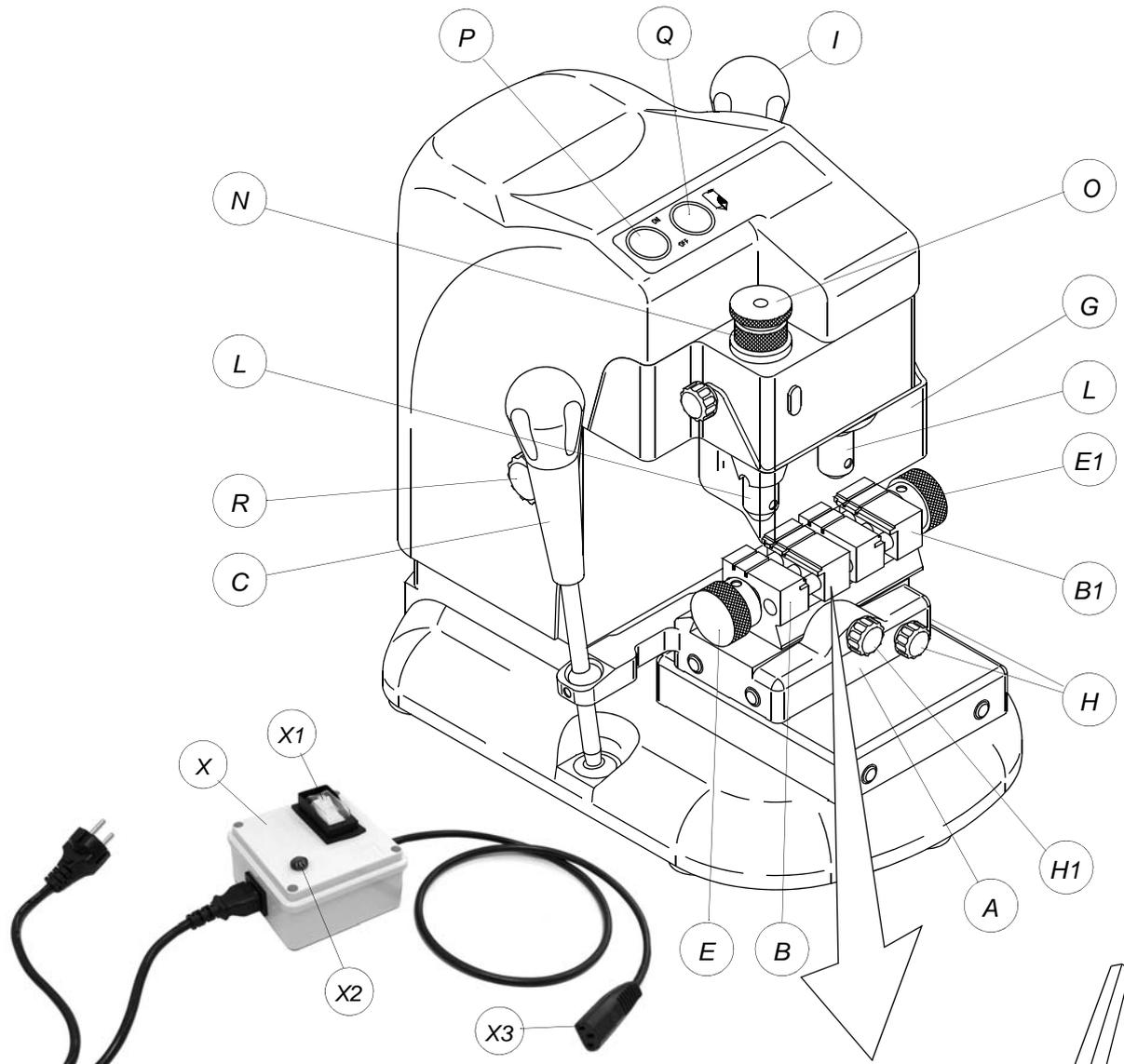


Fig. 5

3 WORKING PARTS



- A - clamp carriage (X-Y axes)
- B - left-hand jaw
- B1- right-hand jaw
- C - clamp carriage lever (X-Y axes)
- E - left-hand jaw knob
- E1- right-hand jaw knob
- G - protective shield
- H - clamp carriage locking knobs
- H1- clamp group locking knob
- I - vertical carriage lever (Z axis)
- L - sleeve (cutting tool and tracer point holder)
- N - micrometric ring nut for tracer point adjusting
- O - regulating knob spring system
- P - master switch
- Q - motor start switch
- R - "Z" axis locking knob

- X - safety device (standard with 230V key-cutting machines)
- X1- safety main switch
- X2- warning light
- X3- plug

Fig. 6

3.1 Technical data

Electricity supply:

230V-50Hz (110V-60Hz)

Maximum absorbed power:

230V: 1 Amp. 210 Watt

Motor:

One-speed single phase

Cutting tool:

Super rapid steel HSS

Movements:

50Hz: 6000 rpm (+/- 10%) - 60Hz: 7000 rpm (+/- 10%)

Movements:

on 3 axes: vertical axis on bars, longitudinal and transversal axes on bars and bushings

Clamp:

universal interchangeable

Runs:

X axis (lower): 40 mm Y axis (upper): 50 mm Z axis (vertical): 30 mm

Dimensions:

width: 250 mm depth: 370 mm height: 370 mm

Weight:

Kg. 24

Sound pressure:

sound pressure Lp(A)

- steel: max. 97,4 dB(A)

- brass: max 97,8 db(A)

3.2 Graphics



THE USE OF PROTECTIVE GOGGLES
IS COMPULSORY

Fig. 7

3.3 Electrical circuit

The main parts of the electrical and electronic circuit on the NOVA 2000 Francia are listed below:

- 1 - Safety device intake
- 2 - Safety main switch
- 3 - Warning light
- 4 - Wiring clip
- 5 - Machine plug
- 6 - Fuse rapid 5x20 3,15A - 250V
- 7 - Master switch
- 8 - Lamp 25W 230V
- 9 - Motor start switch
- 10 - Electric motor with collector 200W - 220V - 50Hz

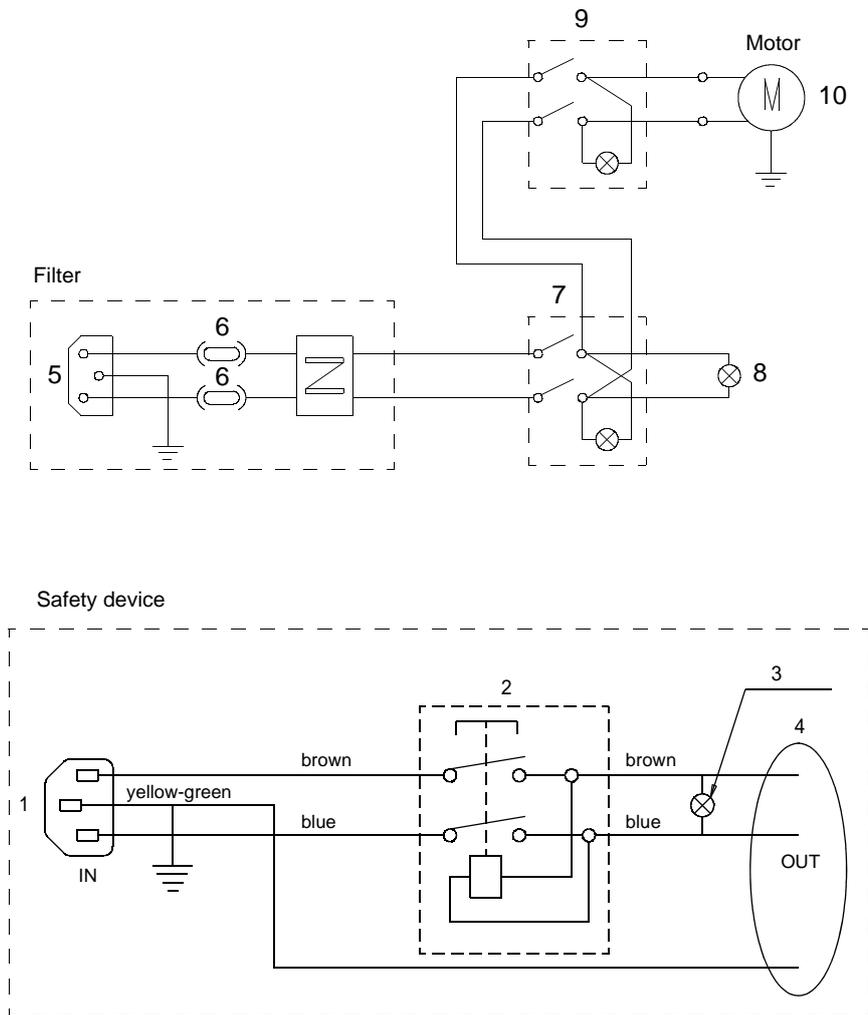
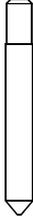
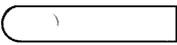


Fig. 8

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>1</p>  <p>code DMK260043</p> <p>CUTTING TOOL for dimple keys</p>	<p>4</p>  <p>code DMK260047</p> <p>TRACER POINT for Laser (sidewinder) keys</p>
<p>2</p>  <p>code DMK260044</p> <p>TRACER POINT for dimple keys</p>	<p>5</p>  <p>code D300223ZZ</p> <p>3 mm ALLEN KEY</p>
<p>3</p>  <p>code DMK260048</p> <p>F22 CUTTING for Laser (sidewinder) keys</p>	<p>6</p>  <p>code DR94352J</p> <p>STEEL TIP STOP BAR 2 pcs.</p>

5 MACHINE INSTALLATION AND PREPARATION

The key-cutting machine can be installed by the purchaser and does not require any special skills. The machine is supplied ready for use and does not need to be set up, except when changing to different tools. However, some checks and preparation for use need to be carried out by the operator.

5.1 Checking for damage

The NOVA 2000 Francia 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 NOVA 2000 Francia 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 key-cutting machine on a horizontal surface, solid enough to take the weight.

For comfort when using the working parts of the machine, the workbench should be at the same height as the operator's hips.

It is important to leave clearance of at least 30 cm behind the machine and on each side to ensure proper ventilation.

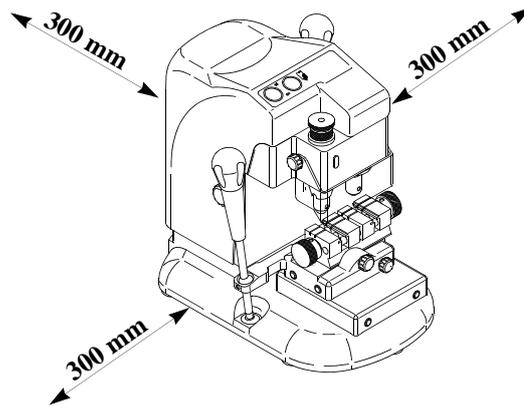


Fig. 9

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

5.4 Description of work station

The key-cutting machine needs only one operator, who has the following controls at his/her disposal:

- **safety device (X) (standard with 230V key-cutting machines).**
- **master switch (P).**
- **motor start switch (Q).**
- **levers:**
 - lever (C) to move the clamp carriage
 - lever (I) to move the vertical carriage

Note: the letters in brackets refer to fig. 6 on page 9.

6 MACHINE REGULATION AND UTILIZATION

Before carrying out cutting operations is necessary proceed with regulation about:

- **fitting the tools and setting**
- **inserting the spring system (for dimple keys) (ch.7.4, page 16)**

6.1 Fitting and regulating the tools

ATTENTION: *switch on the machine with the master switch.*

to remove the tracer point and cutting tool from the sleeves:

- 1) place the tracer point all the way into the left-hand sleeve and secure by tightening the grub screw (M) (fig. 10).
- 2) place the cutting tool all the way into the right-hand sleeve and secure by tightening the grub screw (M1).

Releasing the tools

Unscrew the grub screw (M) and (M1) to remove the tracer point and cutting tool from the sleeves.

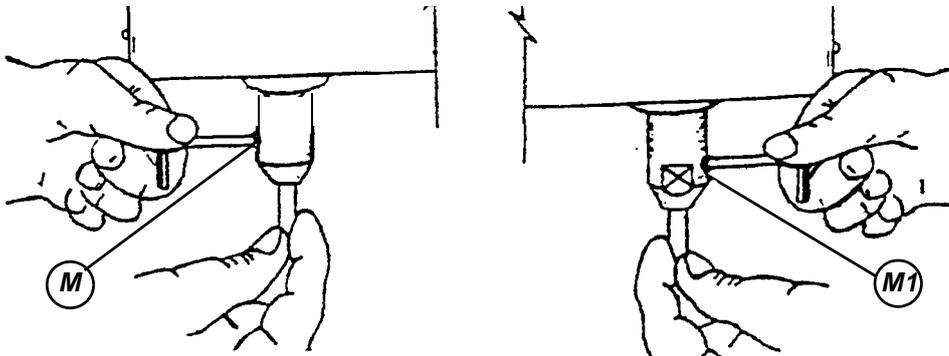


Fig. 10

6.2 Setting

Set up the tools, place two keys into the clamps and proceed as follows (see fig. 6 on page 9):

- 1) turn the micrometric ring nut (N) anti-clockwise.
- 2) lower the vertical carriage by means of the lever (I) and rest the tracer point lightly on the relative key.
- 3) turn the micrometric ring nut (N) clockwise until the cutting tool touch the relative key.
- 4) lock ring nut (O) and the knob.

7 CUTTING OPERATIONS

For complete safety during the cutting operations, take the following precautions:

- **Always work with dry hands.**
- **Check that the machine is properly earthed.**
- **Wear protective goggles even if the machine is provided with a safety shield over the cutting tool.**
- **Before starting the motor (switch Q), carry out the following operations:**
 - a) place the keys into the clamps.
 - b) install the tools and gauge them.
- **Keep hands away from the cutting tool in motion.**

7.1 Key cutting

- 1) Connect the machine using the switch (P).
- 2) press the switch (Q) to turn on the cutter.
- 3) using the lever (C) move the clamp group according to the cuts that have to be carried out.
- 4) using the lever (I) lower the cutter/tracer group so that the tracer enters every groove of slit in the sample key. Press the lever (I) with sufficient force to make sure the cutter removes all the necessary parts of material from the key being cut.
- 5) repeat the operation for each groove.
- 6) after having carried out all the cuts, turn the machine off using the switch (Q) and remove the keys from the clamps.

7.2 Cutting keys with key stops

- 1) Block the sample key in the left hand clamp of the machine making sure that the key stop is pressed against the clamp.
- 2) block the key to be cut in the right hand clamp of the machine making sure that the key stop is pressed against the clamp.
- 3) adjust the machine according to paragraph 6.2. The machine must be adjusted every time one of the utensils is changed.
- 4) cut the key according to paragraph 7.1.

7.3 Cutting keys without key stops

- 1) Insert the metal pin into the slit in the left hand clamp using the first or second groove according to the key to be cut.
- 2) block the sample key in the left hand clamp of the machine making sure that the key tip is pressed against the stop pin.
- 3) block the key to be cut in the right hand clamp of the machine making sure that the key tip is pressed against the stop pin.
- 4) adjust the machine according to paragraph 6.2. The machine must be adjusted every time one of the utensils is changed.
- 5) cut the key according to paragraph 7.1.

Cutting the back

If cuts are to be made on the back, place the key in a vertical position.

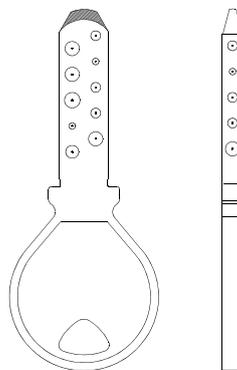


Fig. 11

7.4 Inserting the spring system

The NOVA 2000 Francia key-cutting machine is equipped with a spring mechanism which allows precise duplication of dimple keys. Using this system, it is possible to position the tracer into the groove of the sample first and then proceed with cutting the key. The spring system is to be used only for dimple keys (fig. 1) and is activated by rotating the ring nut (O).

Note: for laser type keys (fig. 1) deactivate this function.

7.5 Cutting Laser (Sidewinder) type keys

Before activating the start switch (Q) lower lever (I) close to the keys and regulate the spring system for laser (sidewinder) key with knob (O).

- start the cutting operation by activating switch (Q).
- lower the spindle and rest the tracer point on a cut part of the original key, cut the key and stop at the beginning of the cut.
- **secure the spindle at this height by means of knob (R).**
- **carry out the cuts using only the left-hand lever (C).**

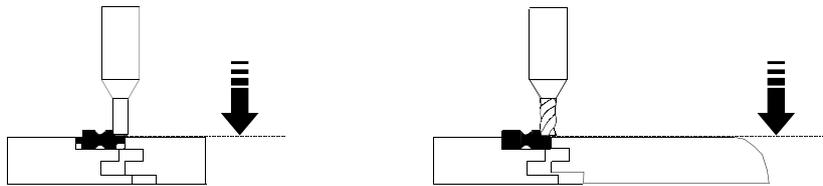


Fig. 12

7.6 Cutting narrow-stemmed Laser (Sidewinder) type keys

The clamp can also be used to cut narrow-stemmed Laser (sidewinder) keys by simply fitting the adapter provided (optional). Proceed as follows:

- 1) open the clamps by loosening knobs (E) and (E1).
- 2) place the stop bar into the groove.
- 3) insert the key so that it butts against the bar.
- 4) secure the adapter and key by tightening knob (E).
- 5) remove the bar and repeat the same operations on the right-hand jaw.

Cutting:

- 1) before activating the start switch (Q) lower lever (I) close to the keys.
- 2) start the cutting operation by activating switch (Q).
- 3) lower the spindle, cut the key and stop at the beginning of the cut (ch. 7.5).
- **secure the spindle at this height.**
- **carry out the cuts using only lever (C).**

7.7 Cutting keys for FICHET

The clamp can also be used to cut keys for FICHET (H profile). Proceed as follows:

- open the clamps slightly by loosening knobs (E) and (E1) (fig. 6, page 9).
- place the keys with the stop up against the clamp.
- secure the keys by tightening knobs (E) and (E1).

Cutting:

turn on switch (Q), lower the collet assembly and position on the beginning of the cut.

- **secure the spindle at this height.**
- **carry out the cuts using only lever (C).**

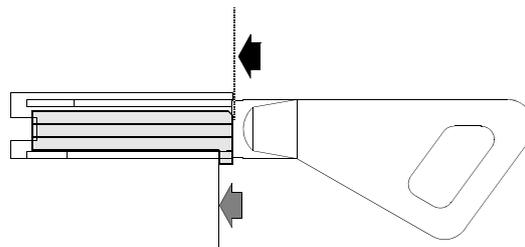


Fig. 13

8 MAINTENANCE

Although the NOVA 2000 Francia key-cutting machine does not require special maintenance, it is advisable to check and, if necessary, replace the parts subject to wear, such as: the (ch. 8.1) and the lamp (ch. 8.2).

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

CLEANING: keep the carriage and clamps free of chippings from the cutting operations by cleaning with a dry brush.

ATTENTION: 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.**

8.1 Replacing the belt and adjusting tension

If the upper part of the machine vibrates, check the tension on the belt, as described below:

- 1) turn off the master switch and remove the mains plug.
- 2) loosen the four screws (Y1), knob (R) (fig. 6, page 9) and remove the upper casing (Y).
- 3) loosen (but do not remove) the four socket head screws (Y2) securing the motor.
- 4)
 - a) **tension:**
 - increase belt tension by pushing the motor towards the back of the machine.
 - b) **replacement:**
 - loosen the belt by pushing the motor slightly towards the tracer point and cutting tool.
 - remove the belt and replace.
 - tighten the tension by pushing the motor towards the back of the machine.
- 5) secure the motor by tightening the four socket head screws (Y2).
- 6) replace the upper casing (Y), secure with the four screws (Y1) and replace knob (R).

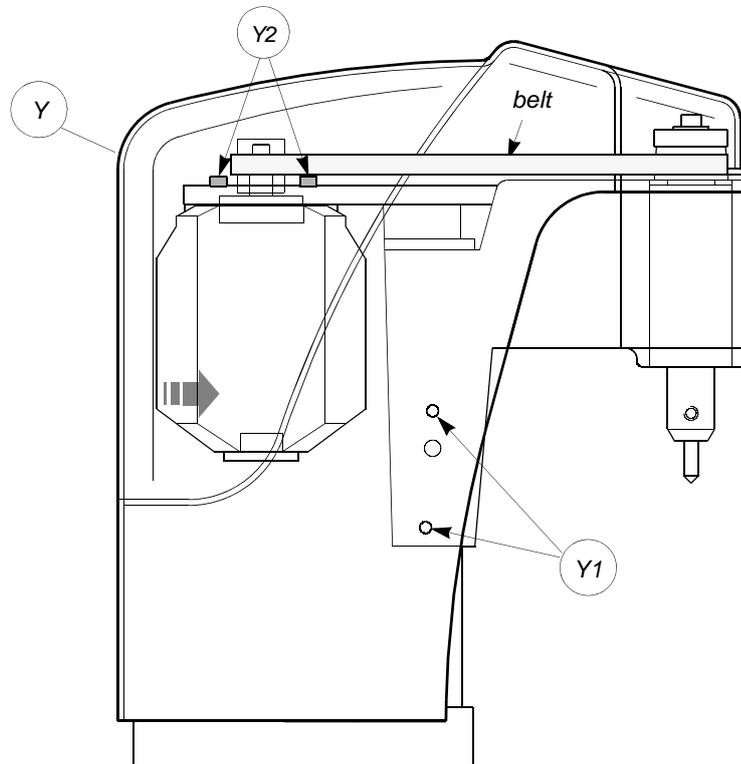


Fig. 14

8.2 Replacing the light bulb

To replace the light bulb:

- 1) turn off the master switch and remove the mains plug.
- 2) remove the four screws which secure the glass cover.
- 3) unscrew the light bulb and remove.
- 4) install the new light bulb and replace the glass cover with the four screws.

8.3 Checking and replacing the fuses

The fuses should always be checked with a continuity measuring instrument (tester, ohmmeter, multimeter etc.) as a visible check may not reveal an electrical fault. Fuses must always be replaced with others of the same type (rapid or delayed) and with the same Amps, as shown in the manual. The NOVA 2000 Francia key-cutting machine has two fuses:

3,15 Amps rapid for machines with **230 Volt**

6,3 Amps rapid for machines with **115 Volt**

placed in the inlet socket, to protect the key-cutting machine from sudden changes in voltage or short circuits.

It is advisable to check the fuses if the machine is not activated by turning on the master switch. Proceed as follows:

- 1) turn off the master switch (P) and remove the mains plug.
- 2) remove the fuse board with the aid of a screwdriver.

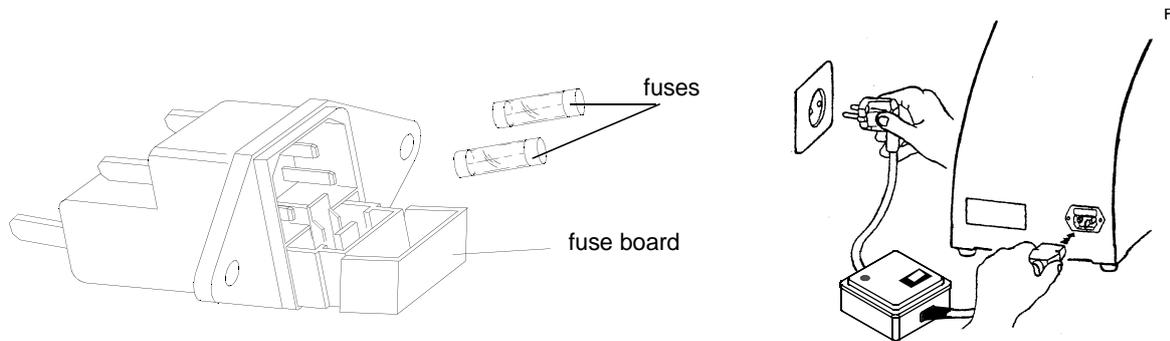


Fig. 15

9 DISPOSING OF MACHINE

To dispose the machine, it must be rendered unusable by carrying out the operations listed below:

- deactivation of the electricity supply;
- separation of the plastic and metal parts;

When these operations have been carried out the machine can be disposed of according to the current regulations in the country of use.

Waste disposal

CEE standards lay down special regulations for waste disposal (**).

Machine

NOVA 2000 Francia is a durable machine and is also re-usable.
Recycling is an ecologically sound practice to be recommended.

Packing

The NOVA 2000 Francia 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.

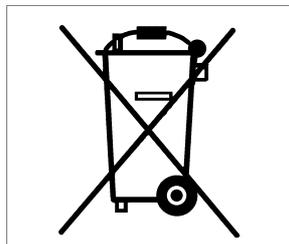
The protective shell containing the machine is in polymer, classified as SUW, and can therefore be placed in an ordinary waste bin.

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 substances sufficient to transform it from SUW to toxic/harmful waste, are listed in the enclosures to current Italian and EU waste disposal regulations.



INFORMATION FOR USERS

*as per art. 10 of Directive 2002/96/CE of 27/01/2003
regarding waste from electric and electronic appliances (RAEE),*

- The symbol illustrated above, also found on the machine, indicates that it has been placed on the market and must be included in separate rubbish collection when the user wishes to dispose of it (including all components, sub-assemblies and consumables that are integrated in the product).
- For information about the collection system for such appliances please contact SILCA S.p.A. or another subject registered in the various National Rolls for other countries in the European Union. Household waste (or of similar origin) can be included in the separate collection system for urban waste.
- On purchasing a new appliance of equivalent type, the old one can be consigned to the dealer. The dealer will then contact whoever is responsible for collecting the appliance.
- Suitable separate collection of the unused appliance and its dispatch for treatment, recovery and environmentally compatible disposal, makes it possible to avoid potential negative effects on the environment and human health, and aids recycling and the recovery of the materials used.
- Unauthorised disposal of the product by users involves the application of the sanctions provided for in received Directives 91/156/CE and 91/689/CE.

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

10 AFTER-SALES SERVICE

Ilco-Orion provides full service to purchasers of the NOVA 2000 Francia key-cutting machine. To ensure complete safety for the operator and machine, any job not specified in this manual should be carried out by the manufacturer or in a Ilco-Orion authorized Service Centre.

10.1 How to request service

The guarantee attached to the NOVA 2000 Francia 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 Ilco-Orion.



VITTORIO VENETO 11/11/2005

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

NOVA 2000

complies with the requirements of the following European Directives:

European Union **DIRECTIVE 98/37/CEE** (Machines)
and with the EN 292/1 – EN 292/2 Standards

European Union **DIRECTIVE 89/336/CEE** (Electromagnetic Compatibility)
and with the EN 55014-1 / EN 61000 – 3 – 2
EN 61000 – 3 – 3 Standards

European Union **DIRECTIVE 73/23/CEE** (Low Voltage)
and with the EN 60204-1 (sections 20.2 – 20.3 – 20.4) Standards

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General Manager Basic Production Center

Corrado Fischer