

MÁQUINA DUPLICADORA VIENNA
MANUAL DE INSTRUCCIONES

KEY CUTTING MACHINE VIENNA
INSTRUCTION MANUAL

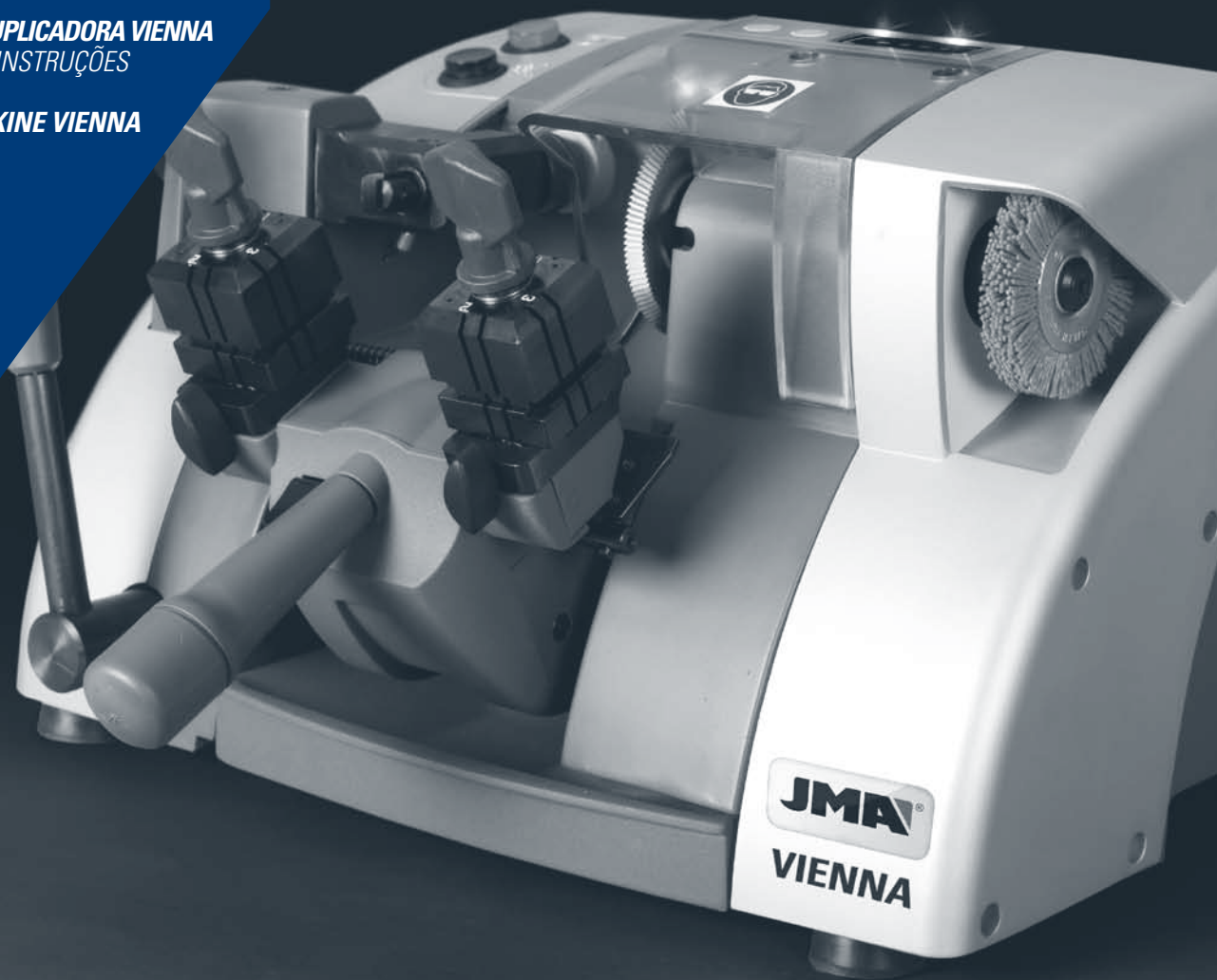
KOPIERMASCHINE VIENNA
ANWEISUNGSHANDBUCH

MACCHINA DUPLICATRICE VIENNA
MANUALE D'ISTRUZIONE

MACHINE A TAILLER LES CLES VIENNA
NOTICE D'UTILISATION

MÁQUINA DUPLICADORA VIENNA
MANUAL DE INSTRUÇÕES

NØGLEMASKINE VIENNA
MANUAL



ENGLISH

KEY CUTTING MACHINE
VIENNA
INSTRUCTION MANUAL

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PRESENTATION AND GENERAL ASPECTS

1.1 GENERAL POINTS

The VIENNA key cutting machine has been designed on the basis of the safety standards currently in force in the EU.

The safety of the personnel involved in the handling of this type of machines can only be achieved with a well designed worker safety programme, like the implementation of a maintenance programme and following recommended advice as well as compliance with the safety standards included in this manual.

Although the machine is not difficult to install, it is best not to try to install, adjust or use it without having first read this manual.

The machine leaves our factory ready for use and only requires calibration operations for the tools that are going to be used.

1.2 TRANSPORT AND PACKING

The machine comes in a robust cardboard box protected with packing foam with the following dimensions:

Width = 570 mm; Height = 410 mm; Depth = 520 mm

Weight of machine plus packing = 30 Kg.

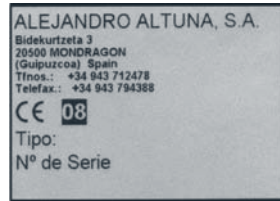
When you unpack the machine, check carefully if it has suffered any damage during transportation.

If you find any problems, please inform the carrier immediately and do not do anything with the machine until the carrier's agent has carried out an inspection.

To move the machine from one place to another, get hold of the machine by the handles on the base, and not by any other part.

1.3 IDENTIFICATION LABEL

The VIENNA key cutting machine has an identification label, giving the serial number, the manufacturer's name and address, the CE mark and the year of manufacture.

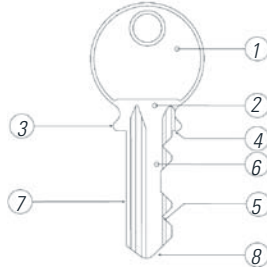


2- CHARACTERISTICS OF THE MACHINE

The VIENNA machine is a highly robust, precision, semi-automatic key cutting machine, for cutting flat cylinder lock, vehicle, cross-shaped and special keys.

2.1 PARTS OF THE KEY

1. Head
2. Neck
3. Top shoulder
4. Bottom shoulder
5. Teeth
6. Blade
7. Back
8. Tip



2.2 MAIN ELEMENTS OF THE MACHINE

- | | |
|---|--|
| 1.- Cutter | 12.- Tracer depth adjustment control |
| 2.- Tracer | 13.- Tracer side adjustment control |
| 3.- 4 sided clamp | 14.- Brush |
| 4.- Knob to open-close the clamp | 15.- Swarf tray |
| 5.- Knob to change the clamp face | 16.- Tray for keys, accessories, etc. |
| 6.- Slide | 17.- Handles for carrying the machine. |
| 7.- Slide control lever | 18.- Start switch |
| 8.- Slide traverse lever | 19.- Brush start switch |
| 9.- Slide release button | 20.- Lighting diodes |
| 10.- Handle to position the positioning devices | 21.- Multifunction display |
| 11.- Tracer support | |

see figure 2

2.3 TECHNICAL INFORMATION

Motor:Single phase 220V, 50 Hz, 0.18Kw, 1350 rpm, 1.7 Amp.
(Optional: 110V, 60Hz, 0.18Kw, 1700rpm, 3.14Amp.)
Cutter:High speed steel (HSS); Ø 80x16x5
Cutter speed:612 rpm
Clamps:Steel, with 4 clamping faces
Displacements:On self-lubricated bearings
Effective stroke:X axis = 53 mm
Lighting:By means of DIODES
Dimensions:Width = 430 mm; Height = 280 mm; Depth = 420 mm
Weight:27 Kg

2.4 COMPONENTS AND FUNCTIONAL PARTS

2.4.1 ACCESSORIES

See figure 3

- 1.- Size 18 spanner.
- 2.- Keys for side and depth adjustment, using the traditional method.
- 3.- Templates for side and depth adjustment, using electrical contact.
- 4.- Wedges to adjust key by tip.
- 5.- Recessed wedges, to stop cross-shaped keys.
- 6.- Ø 1,20 rods.
- 7.- Ø 1,70 rods.
- 8.- Rod for changing the cutter or the brush.
- 9.- Set of allen keys (2, 2.5, 3, 4, 5).

2.4.2 ELECTRIC CIRCUIT

The main electric circuit and electronic components are as follows:

1. General socket
2. Start switch
3. Brush button
4. Slide microswitch
5. Motor
6. Transformer
7. Electronic card
8. Tracer contact connection
9. Counter microswitch
10. Earth connection
11. Cutter contact connection
12. Keypad

2.4.3 FOUR-SIDED CLAMP

The clamp has been designed to clamp a different family of keys on each of its 4 sides.

The figures below show the cutting possibilities on each side of the clamp.

A) CUTTING WITH SUPPORT ON THE BACK OF THE KEY:

- Side 1: Keys with a normal blade
Side 2: Keys with a narrow blade

B) CUTTING WITH CLAMPING ON THE KEY GUIDE (PROFILE):

- Side 3: Key with guide at the bottom
Side 4: Key with guide at the top

See figure 5A

c) Cutting with clamping on the guide of a NEIMAN type key:

See figure 5B

3- HOW TO OPERATE THE MACHINE

3.1 DISPLAY FUNCTIONS





LIGHTING button.

Press this button for the lighting diodes to come on (if they are off) or to go off (if they are on).



FUNCTION button.

Press this button to go to the ADJUSTMENT function (if you are in COUNTER function) or to go to the COUNTER function (if you are in ADJUSTMENT function).



MODE button.

Press this button (when you are in COUNTER function) to display the TOTAL COUNTER for three seconds.

After this time, the display automatically returns to the PARTIAL COUNTER.



RESET button.

Press this button (when you are in COUNTER function) to reset the PARTIAL COUNTER. That is to say, back to "0".

ADJUSTMENT lights.



Using the ADJUSTMENT function, these lights indicate the following:

- Left-hand light on: Indicates that the TRACER is in contact with its adjustment TEMPLATE.
- Right-hand light on: Indicates that the CUTTER is in contact with its adjustment TEMPLATE.
- Both lights on: Indicates that the TRACER and the CUTTER are in contact with their respective adjustment TEMPLATES.

DISPLAY.



• Using the COUNTER function:

- Displays the number of keys cut since the last time the counter was reset to "0" (PARTIAL COUNTER).

- Press the MODE button to display for 3 seconds the total number of keys cut since the machine was purchased (TOTAL COUNTER).

• Using the ADJUSTMENT function, it provides information about the direction to turn the adjustment wheel:

- If a LINE appears, this indicates that neither the cutter nor the tracer is in contact with the adjustment key.
- If an arrow appears pointing LEFT, this means that you have to turn the adjustment wheel ANTICLOCKWISE.
- If an arrow appears pointing RIGHT, this means that you have to turn the adjustment wheel CLOCKWISE.
- If an arrow appears indicating BOTH DIRECTIONS, this means that the machine is ADJUSTED.

N.B.: If the machine has not been used for 20 minutes, it goes into STANDBY status. That is to say: the lighting diodes and the screen switch off to save energy. It is easy to recognise this status, as a small indicator in the form of a red dot will appear on the display. If you release the slide or press any of the buttons on the display, the machine will return to its previous operating status.

3.2 CHANGING THE SIDE ON THE CLAMP

See figure 6

The side on the clamp can be changed in two different ways:

A) TRADITIONAL METHOD

- Unscrew the clamp knob (B) at least 2 turns.
- Insert your fingers into the bottom of the clamp (M) and raise it overcoming the force of the spring.
- Gently turn the clamp in the direction you want and then release it.
- Manually turn the clamp until it engages into the next side.

B) SEMI-AUTOMATIC METHOD

- Unscrew the clamp knob (B) at least 2 turns.
- Half turn the knob (G) in the direction you want.
- Manually turn the clamp until it engages into the next side.

3.3 ADJUSTMENT BY ELECTRICAL CONTACT

3.3.1 DEPTH ADJUSTMENT

See figure 7

- Switch off the machine using the start switch (round red switch), in order to be able

to carry out the operation, making it impossible for the cutter to move.

- Clamp the adjustment templates (W) onto "side 1" of the clamps, so that the bottom shoulder of the adjustment template is in contact with the inner face of the clamp (J).
- Clamp the template with the letter "P" in the left-hand clamp.
- Clamp the template with the letter "F" in the right-hand clamp.
- Press the FUNCTION button to go from the COUNTER function to the ADJUSTMENT function. A line will appear on the display.
- Release the slide by pressing the button (M).
- Rest the tracer (P) and/or cutter (F) on the flat part of the adjustment template.
- If the two adjustment lights come on: This indicates that both the cutter and the tracer are in contact with their respective adjustment templates. The machine is adjusted. Moreover, an arrow pointing in both directions will appear on the display.
- If the left-hand light comes on: This indicates that the tracer is in contact with its adjustment template, but that the cutter is not. In this case, the machine requires depth adjustment.
- If the right-hand light comes on: This indicates that the cutter is in contact with its adjustment template, but that the tracer is not. In this case, the machine requires depth adjustment.
- When the machine is not adjusted, an arrow appears on the display indicating the direction you have to turn the adjustment wheel (A), to make the necessary adjustment.
- Undo the setscrew (Z) so that the tracer shaft is released, but leaving the setscrew (Z) gently touching the tracer shaft. This will prevent the tracer shaft from accidentally turning during the depth adjustment phase.
- Move the tracer forward or back, turning the adjustment wheel (A), in the direction shown by the arrow on the display.
- Once the adjustment has been made, lock the tracer again by means of the setscrew.
- Lock the slide, remove the adjustment templates and press the FUNCTION button to return to the COUNTER function.

N.B.: The tracer depth adjustment system has a reference drum (O) which facilitates the particular adjustment operation. To reset the tracer, make the white line on the reference drum (O) coincide with the white line on the graduated drum (N), in the following way:

- With one hand, firmly hold the adjustment wheel (A).
- With the other hand, turn the reference drum (O).

Each notch on the graduated drum corresponds to a variation of 0.05 mm. in the tracer depth.

3.3.2 SIDE ADJUSTMENT

See figure 8

- Switch off the machine using the start switch (round red switch), in order to be able to carry out the operation, making it impossible for the cutter to move.
- Clamp the adjustment templates (W) onto "side 1" of the clamps, so that the bottom shoulder of the adjustment template is in contact with the inner face of the clamp (J).
- Clamp the template with the letter "P" in the left-hand clamp.
- Clamp the template with the letter "F" in the right-hand clamp
- Make sure that the support faces of the positioners (H) coincide perfectly with the top shoulders of the adjustment templates. If this is not the case, undo the right positioner tightening screw and tighten it up again in the right position.
- Press the FUNCTION button to go from the COUNTER function to the ADJUSTMENT function. A line will appear on the display.
- Using the slide traverse lever (U), move the slide to the stop on the left-hand side. With the slide in this position, release it by pressing the button (M), and bring it closer to the cutter (F) and the tracer (P), until the slide itself can go no further.
- Move the slide sideways, until the side of the template comes into contact with the side of the tracer and/or cutter.
- If the two adjustment lights come on: This indicates that both the cutter and the tracer are in contact with their respective adjustment templates. The machine is laterally adjusted. Moreover, an arrow indicating both directions will appear on the display.
- If the left-hand light comes on: This indicates that the tracer is in contact with its adjustment template, but that the cutter is not. In this case, the machine needs side adjustment.
- If the right-hand light comes on: This indicates that the cutter is in contact with its adjustment template, but that the tracer is not. In this case, the machine needs side adjustment.
- When the machine is not adjusted, an arrow will appear on the display indicating the direction you have to turn the adjustment wheel (R), to make the adjustment necessary.
- Undo the setscrew (T) on the tracer support (S).
- Move the tracer support sideways, turning the adjustment wheel (R) in the direction indicated by the arrow on the display.
- Once the adjustment has been made, lock the tracer support again, by tightening the setscrew (T).
- Lock the slide, remove the adjustment templates and press the FUNCTION button to return to the COUNTER function.

3.4.1 DEPTH ADJUSTMENT (WITH NO ELECTRICAL CONTACT)

See figure 9

- Switch off the machine using the master switch, in order to be able to carry out the operation in complete safety and prevent the cutter from being moved.
- Clamp the two adjustment keys (L) in "side 1" of the clamps, so that the bottom shoulder of the adjustment key is in contact with the inner face of the clamp (J).
- Release the slide by pressing the button (M). Bring the adjustment keys closer to the cutter (F) and tracer (P).
- Rest the tip of the tracer on the flat part of the adjustment key. In this position, manually turn the cutter in the opposite direction to the operating direction, until it has completed a full turn.
- If the cutter lightly touches the adjustment key, this indicates that the depth is correctly adjusted.
- If the cutter turns freely, this indicates that the cutter is too far back from the tracer and that the milling depth is insufficient. The depth needs adjusting.
- If the cutter is jammed up against the adjustment key, this indicates that the cutter is too far forward in relation to the tracer and that the milling depth is excessive. The depth needs adjusting.
- To adjust the cutter depth, you need to proceed as follows with the micrometric tracer:
 - Undo the setscrew (Z) so that the tracer shaft is released, but leaving the setscrew (Z) very gently touching the tracer shaft. In this way, you will prevent the tracer shaft from turning accidentally during the depth adjustment phase.
 - Turn the adjustment wheel (A) clockwise to move the tracer back.
 - Turn the adjustment wheel (A) anticlockwise to move the tracer forward.
- Once you have adjusted the depth, lock the tracer again by means of the setscrew.
- Lock the slide and remove the adjustment keys.

N.B.: The tracer depth adjustment system has a reference drum (O) which facilitates the particular adjustment operation. To reset the tracer, make the white line on the reference drum (O) coincide with the white line on the graduated drum (N), in the following way:

- With one hand, firmly hold the adjustment wheel (A).
- With the other hand, turn the reference drum (O).

Each notch on the graduated drum corresponds to a variation of 0.05 mm. in the tracer depth.

3.4.2 SIDE ADJUSTMENT (WITH NO ELECTRICAL CONTACT)

See figure 10

- Switch off the machine using the master switch, in order to be able to carry out the operation in complete safety and prevent the cutter from being moved.
- Clamp the two adjustment keys (L) in "side 1" of the clamps, so that the bottom shoulder of the adjustment key is in contact with the inner face of the clamp (J).
- Make sure that the support faces of the positioners (H) coincide perfectly with the top shoulders of the adjustment keys. If this is not the case, undo the right positioner tightening screw and tighten it up again in the right position.
- Release the slide by pressing the button (M). Move the adjustment keys closer to the cutter (F) and tracer (P).
- Insert the tracer tip into the notching of the adjustment key. In this position, manually turn the cutter in the opposite direction to the operating direction, until it has completed a full turn. Make sure that the cutter lightly touches the adjustment key notching. If this is not the case, make the necessary adjustment in the following way:
 - Undo the setscrew (T) on the tracer support (S).
 - Move the tracer support sideways, by turning the adjustment wheel (R).
 - Once you have made the adjustment, lock the tracer support again, by tightening the setscrew (T).
- Lock the slide and remove the adjustment keys.

3.5 KEY CUTTING

See figure 11

- Decide which side of the clamp you are going to use to cut the key. If necessary, turn the clamp to change the side.
- Put the original key into the left-hand clamp, so that the start of the teeth more or less coincides with the edge of the clamp. With the key in this position, clamp it by turning the clamp knob (B).
- If you are clamping the key in "side 1" or "side 2", make sure that the back of the key is resting correctly on the base of the clamp.
- If you are clamping the key in "side 3" or "side 4", make sure that the clamp guide is correctly inserted into the key guide.
- Put the blank key into the right-hand clamp and align the two keys in the following way:
 - Raise the positioners, and rest them on the top shoulders of the keys. Use knob (D) to do this.
 - With the blank key in this position, clamp it by turning the clamp knob.
- N.B.:** Both the original key and the blank key must be inserted from the left side of their respective clamps.
- Release the slide by pressing the button (M), and move the keys towards the cutter (F) and the tracer (P).
- N.B.:** The positioners withdraw automatically when you press the button (M).
- Remember that you must work from left to right. Rest the original key against the tracer and start cutting, moving the slide sideways with the help of the slide-traverse

lever (U). Make sure that the pressure exerted by the original key against the tracer is that required by the spring inside the slide.

- Once you have finished cutting: lock the slide and remove the keys.

N.B.: If the key cutting operation has left some burrs on the cut key, these can be removed using the brush the machine is fitted with for this purpose.

3.5.1 CUTTING KEYS WITH NARROW BLADES

To cut this type of key, and for the cutter to reach the maximum depth in the key to be cut, you need to use "side 2" of the clamp.

3.5.2 CUTTING KEYS WITHOUT SHOULDERS

See figure 12

- Put the two wedges (Y) into the vertical grooves (E) in the clamps.
- N.B.:** Depending on the length of the key to be cut, choose one pair of grooves or another.
- Put the original key into its clamp, until the tip of the key comes up against the wedge (Y). With the key in this position, clamp it by turning the clamp knob (B). Do the same with the blank key.
- Remove the wedges, release the slide and start the cutting operation.

3.5.3 CUTTING CROSS-SHAPED KEYS

See figure 13

- To cut this type of key, you need to use "side 1" of the clamp.
- Insert the wedges (X) into the vertical grooves (E) in the clamps. Insert them so that the opening in the wedge is looking towards the cutter or tracer.
- N.B.:** Depending on the length of the key to be cut, choose one pair of grooves or another.
- Put the original key into its clamp, until the shoulder of the key comes up against the wedge (X). With the key in this position, clamp it by turning the clamp knob (B). Do the same with the blank key.
- Release the slide and start the cutting operation.
- N.B.:** This is a key with three toothed blades. So the same operations have to be repeated twice more, but with the other two blades of the key.

4.- MAINTENANCE

When carrying out any maintenance operation, it is necessary to adhere to the following requirements:

- Never carry out any maintenance work with the machine in operation.
- The electrical power cable must be unplugged.
- The indications in this manual must be strictly adhered to.
- Only use original spare parts.

4.1 REPLACING THE BRUSH

See figure 14

When the brush starts losing its ability to remove burrs, it needs to be replaced with a new one.

The procedure is as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Insert the blocking rod in the hole in the cutter shaft.
- 3) With the help of a 4 mm allen key, undo the screw securing the brush.
- 4) Replace the brush and tighten it up with the screw.
- 5) Removing the blocking rod.

4.2 REPLACING THE CUTTER

See figure 15

When the cutter is worn it needs to be replaced with a new one. The procedure is as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Undo the two screws securing the cutter's transparent protection, with the help of a no. 4 allen key.
- 3) Remove the protection from the cutter, to obtain a bigger working area.
- 4) Insert the locking rod into the hole in the cutter shaft.
- 5) With the help of an 18 mm spanner, undo the nut securing the cutter. Bear in mind that it has a left-hand thread.
- 6) Carefully clean the new cutter and any areas that will come into contact with it.
- 7) Replace the cutter and secure it in place with the left-hand thread nut.
- 8) Make sure that the cutter is secured in the right direction, as it turns in a clockwise direction.
- 9) Put the cutter protection back and secure it in place and remove the blocking rod from the cutter shaft.
- 10) It is a good idea to readjust the machine (depth adjustment and side adjustment). Chapters 3.3 and 3.4 explain how to carry out these adjustments.

4.3 REPLACING THE TRACER

See figure 16

The procedure for replacing the tracer is as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Fully undo the screw (1) with the help of a 2.5 mm allen key, and remove the tracer (P).
- 3) Fit and secure the new tracer, making sure that it rests properly on its rear support face.
- 4) It is a good idea to readjust the machine (depth adjustment and side adjustment). Chapters 3.3 and 3.4 of this manual explain how to carry out these adjustments.

4.4 ADJUSTING THE MAXIMUM DEPTH OF THE SLIDE

See figure 17

In order not to damage the clamps and the cutter, it is necessary to establish a maximum cutting depth.

The distance between cutter-tracer and clamp has to be 0.1 mm. If this distance is bigger or smaller, proceed as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Release the slide and move it closer to the cutter-tracer, until it butts up against it.
- 3) Remove the swarf tray.
- 4) Loosen the locking nut (2), with a 10 mm spanner.
- 5) Using a 3 mm allen key, adjust the setscrew (3) until you achieve a separation of 0.1 mm.
- 6) Tighten up the setscrew (3) with the nut (2), and replace the swarf tray.

4.5 REPLACING THE FUSES

If the machine does not start when you turn on the start switches, you need to check the state of the fuses.

This operation is done in the following way:

- 1) Switch off the machine from the master switch and unplug the power cable.
- 2) Remove the fuse-holder which is to be found next to the master switch.
- 3) Check (using a tester) if any of the fuses have blown and, if necessary, replace the blown fuse with one of the same type and value.

4.6 REPLACING THE START SWITCH AND THE BRUSH BUTTON

See figure 18

This operation is carried out in the following way:

- 1) Switch off the machine and unplug the power cable.
- 2) Undo the 6 screws (4) securing the "left side guard", with the help of a 4 mm allen key.
- 3) Carefully turn the "left side guard", in order to gain access to the switch or button connectors.
- 4) Remove the connectors, noting down the position of each of them before hand.
- 5) Press down on the tabs (5), in order to be able to remove the switch or button.
- 6) Insert the new switch or button right into its housing.
- 7) Reconnect each of the connectors in their correct position.
- 8) Fit the "left side guard" and screw it in place with the 6 screws (4).

4.7 REPLACING AND/OR TIGHTENING THE BELT

See figure 19

To carry out these operations, the sequence is as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Insert the blocking rod into the hole in the cutter shaft.
- 3) With the help of a 4 mm allen key, undo the screw securing the brush, and remove the brush.
- 4) Remove the blocking rod from the cutter shaft.
- 5) Undo the 6 screws (6) holding the "right side guard" in place, with the help of a 4 mm allen key, and remove it.

• TIGHTENING:

- Release the tightening screw (7), by loosening the setscrew (8).
- To tighten the belt: Turn the tightening screw (7) clockwise.
- To loosen the belt: Turn the tightening screw (7) anti-clockwise.
- Once you have the tightness required, lock the tightening screw (7) by tightening up the setscrew (8).

• REPLACEMENT:

- Release the tightening screw (7), by loosening the setscrew (8).
- Loosen the belt, by turning the tightening screw (7) anti-clockwise.
- Remove the old belt. To do this, manually turn the large pulley, and at the same time apply a little pressure on the side of the belt in the area of the small pulley, until it comes out of its housing.
- Fit the new belt. To do this, first of all, insert it into the small pulley. Then, to insert it

into the large pulley: manually turn the large pulley whilst applying pressure laterally on the belt in that area.

- Visually check that the belt has been fitted correctly.
 - Tighten the belt, turning the tightening screw (7) clockwise.
 - Once you have the tightness required, lock the tightening screw (7) by tightening up the setscrew (8).
- 6) Put the "right side guard" into place, and secure it with the 6 screws (6).
 - 7) Insert the blocking rod into the hole in the cutter shaft.
 - 8) Fit the brush, and secure it place with its screw.
 - 9) Remove the blocking rod from the cutter shaft.

4.8 REPLACING THE MOTOR

See figure 20

This operation is carried out as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Remove the swarf tray.
- 3) Turn the machine, to gain access to the "lower protection plate".
- 4) Undo the machine's 4 feet, and remove them.
- 5) Unscrew the 5 screws (10) securing the "lower protection plate", and remove it.
- 6) Disconnect the motor's power cable.
- 7) Screw on the machine's 4 feet, to be able to support the machine on its feet again.
- 8) Insert the blocking rod into the hole in the cutter shaft.
- 9) Undo the screw securing the brush, and remove the brush.
- 10) Remove the blocking rod from the cutter shaft.
- 11) Undo the 6 screws (6) securing the "right side guide", and remove it.
- 12) Undo the 6 screws (4) securing the "left side guide", and move it slightly to the left to gain access to two of the seven screws holding the "motor guard" in place.
- 13) Undo the 7 screws (9) holding the "motor guard" in place, and remove it.
- 14) Release the tightening screw (7), by loosening the setscrew (8).
- 15) Loosen the belt, turning the tightening screw (7) anti-clockwise.
- 16) Remove the belt. To do this, manually turn the large pulley, and at the same time exert a little pressure on the side of the belt in the area of the small pulley, until it comes out of its housing.
- 17) Undo the 4 screws (11) securing the "motor support", and remove the motor together with the "motor support".
- 18) Undo the 4 screws (12) securing the motor to the "motor support", and remove the old motor.
- 19) Undo the setscrew (13) securing the small pulley to the motor, and remove the small pulley.
- 20) Insert the small pulley into the new motor, as far as it will go. In this position, screw in the small pulley with the setscrew (13), making sure that the setscrew is inserted into the groove in the motor shaft.
- 21) Fit the new motor onto the "motor support", so that the sides of the base of the motor butt up against the heads of the screws sticking out of the "motor support". In this position, secure the motor with the 4 screws (12).
- 22) Secure the "motor support" to the bed, with the 4 screws (11).
- 23) Fit the belt. To do this, first of all, insert it into the small pulley. Then, to insert it into the large pulley: manually turn the large pulley whilst applying pressure laterally on the belt in that area.
- 24) Visually check that the belt has been correctly fitted.
- 25) Tighten the belt by turning the tightening screw (7) clockwise.
- 26) Once the belt is as tight as required, lock the tightening screw (7) by tightening the setscrew (8).
- 27) Fit the "motor guard", securing it in place with the 7 screws (9).
- 28) Fit the "left side guard", fixing it in place with the 6 screws (4).
- 29) Fit the "right side guard", securing it in place with the 6 screws (6).
- 30) Insert the blocking rod in the hole in the cutter shaft.
- 31) Fit the brush, and secure it in place with its screw.
- 32) Remove the blocking rod from the cutter shaft.
- 33) Turn the machine to gain access to the bottom area.
- 34) Connect the motor's power cable.
- 35) Undo the machine's 4 feet and remove them.
- 36) Fit the "lower protection plate", securing it in place with the 5 screws (10).
- 37) Screw on the machine's 4 feet.
- 38) Turn the machine so that it is in position ready for use.
- 39) Fit the swarf tray into the machine.

4.9 REPLACING THE MOTOR CAPACITOR

See figure 21

This operation is carried out in the following way:

- 1) Switch off the machine and unplug the power cable.
- 2) Insert the blocking rod into the hole in the cutter shaft.
- 3) Undo the screw securing the brush, and remove the brush.
- 4) Undo the 6 screws (6) securing the "right side guard" in place, and remove the guard.
- 5) Undo the 6 screws (4) securing the "left side guard" in place, and move it slightly to the left to gain access to two of the seven screws holding the "motor guard" in place.
- 6) Undo the 7 screws (9) holding the "motor guard" in place, and remove the guard.
- 7) Undo the 4 screws (14) holding the "terminal box" cover in place, and remove the lid.
- 8) Disconnect the two cables on the old capacitor (C) and remove it.

- 9) Fit the new capacitor (C) and connect its two cables.
- 10) Put the cover onto the "terminal box", securing it with the 4 screws (14).
- 11) Fit the "motor guard", securing it in place with the 7 screws (9).
- 12) Fit the "left side guard", holding it in place with the 6 screws (4).
- 13) Fit the "right hand guard", securing it in place with the 6 screws (6).
- 14) Fit the brush, and fix it in place with its screw.
- 15) Remove the blocking rod from the cutter shaft.

4.10 REPLACING THE CLAMP RAISING CAM

See figure 22

If as a result of excessive wear it becomes necessary to replace the "clamp raising cam", proceed as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Unscrew the clamp knob (B), and remove the clamp.
- 3) With the help of a small punch, hit the pin (16) until it is expelled from underneath the slide.
- 4) Remove the knob (G) together with its shaft, pulling on it in the axial direction.
- 5) Remove the old cam. To do this, you can use a small rod to push the old cam from the bottom of the slide, so that it comes out from the top of the slide.
- 6) Insert the new cam into its space, at the same time as you insert the shaft of the knob (G) into its hole.
- 7) Make the hole in the shaft of the knob (G) coincide with the hole in the new cam. In this position, insert the pin (16).
- 8) Replace the clamp and its corresponding knob (B).

4.11 ACCESS TO THE INSIDE OF THE SLIDE

See figure 23

For any maintenance operation requiring access to the inside of the slide, proceed as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Remove the swarf tray.
- 3) Turn the two knobs (G) 90°, in order to be able to remove the "slide cover" without any hindrance later.
- 4) Release the slide by pressing the button (M), and move it towards the cutter-tracer, until the slide will go no further forward.
- 5) Unscrew the "slide control lever", and remove it.
- 6) Undo the 4 screws (15) securing the "slide cover", and remove the cover.

4.12 TIGHTENING THE SLIDE SPRING

See figure 24

This operation is carried out in the following way:

- 1) Switch off the machine and unplug the power cable.
- 2) Access the inside of the slide, as explained in the section above.
- 3) With the help of two no. 4 allen keys, loosen the tightening device's (18) two setscrews (17): Loosen one of the two setscrews. Then, with one of the allen keys loosen the second setscrew, using the second allen key to hold the tightening device (18) thereby preventing it from turning unexpectedly when you loosen the second setscrew.
- 4) With the allen key inserted in the setscrew (17), turn the tightening device (18) until you achieve the force required. In this position, lock the tightening device (18) by means of the two setscrews (17).

4.13 ACCESS TO THE BOTTOM AREA

See figure 25

For any maintenance operation requiring access to the bottom area of the machine, proceed as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Remove the swarf tray.
- 3) Turn the machine, in order to be able to gain access to the "lower protection plate".
- 4) Unscrew the machine's 4 feet and remove them.
- 5) Undo the 5 screws (10) securing the "lower protection plate", and remove them.

4.14 REPLACING THE MICROSWITCHES

See figure 26

This operation is carried out as follows:

- 1) Switch off the machine and unplug the power cable.
- 2) Release the slide by pressing the button (M), and move it towards the cutter-tracer, until the slide itself will go forward no further.
- 3) Remove the swarf tray.
- 4) Turn the machine, to gain access to the "lower protection plate".
- 5) Unscrew the machine's 4 feet, and remove them.
- 6) Undo the 5 screws (10) holding the "lower protection plate" in place, and remove the plate.
- 7) Unscrew the two nuts (19) and remove the two microswitches.
- 8) Disconnect the old microswitch's cables, noting down the position of each of them

beforehand.

- 9) Connect the cables to the new microswitch.
- 10) Put the two microswitches back, securing them with the two nuts (19).
- 11) Fit the "lower protection plate", fixing it in place with the 5 screws (10).
- 12) Screw on the machine's 4 feet.
- 13) Turn the machine so that it is in position ready for use.
- 14) Raising and lowering the slide, check that the microswitches work properly.
- 15) Put the swarf tray back into the machine.

4.15 REPLACING THE DISPLAY

See figure 27

This operation can be carried out in the following way:

- 1) Switch off the machine and unplug the power cable.
- 2) Insert the blocking rod into the hole in the cutter shaft.
- 3) Undo the screw securing the brush, and remove the brush.
- 4) Undo the 6 screws (6) securing the "right side guard" in place, and remove the guard.
- 5) Undo the 6 screws (4) holding the "left hand guard" in place, and move it slightly to the left to gain access to two of the seven screws securing the "motor guard".
- 6) Undo the 7 screws (9) securing the "motor guard", and remove it.
- 7) Undo the 2 screws (20) securing the "electronic guard", and turn it backwards to gain access to the lower part of it.
- 8) Remove the old display's connector, noting down beforehand the position of the connector.
- 9) Unstick the old display from the "electronic guard", and remove it.
- 10) Stick the new display onto the "electronic guard", so that it is centred in its groove.
- 11) Plug the display's connector into the electronic card. Check that it has been connected in the right position.
- 12) Fit the "electronic guard", securing it with the 2 screws (20).
- 13) Fit the "motor guard", securing it with the 7 screws (9).
- 14) Fit the "left side guard", securing it with the 6 screws (4).
- 15) Fit the "right side guard", securing it with the 6 screws (6).
- 16) Fit the brush, and secure it in place with its screw.
- 17) Remove the blocking rod from the cutter shaft.

4.16 REPLACING THE ELECTRONIC CARD

See figure 28

This operation is carried out in the following way:

- 1) Switch off the machine and unplug the power cable.
- 2) Insert the blocking rod into the hole in the cutter shaft.
- 3) Unscrew the screw holding the brush in place, and remove the brush.
- 4) Undo the 6 screws (6) securing the "right side guard", and remove the guard.
- 5) Undo the 6 screws (4) securing the "left side guard", and move the guard slightly to the left to gain access to two of the seven screws holding the "motor guard" in place.
- 6) Undo the 7 screws (9) securing the "motor guard", and remove the guard.
- 7) Undo the 2 screws (20) holding the "electronic guard" in place, and turn it backwards to gain access to the bottom part of it.
- 8) Remove the display's connector, noting down beforehand the position of the connector.
- 9) Undo the 2 screws (21) securing the "electronic card" to the "electronic guard", and remove the card.
- 10) Disconnect the old "electronic card's" cables, noting down beforehand the position of each of them.
- 11) Connect the cables to the new "electronic card". Check that they have been connected in the right position.
- 12) Fit the "electronic card", securing it with the 2 screws (21).
- 13) Plug the display's connector into the electronic card. Check that it has been connected in the right position.
- 14) Fit the "electronic guard", securing it with the 2 screws (20).
- 15) Fit the "motor guard", fixing it in place with the 7 screws (9).
- 16) Fit the "left side guard", securing it with the 6 screws (4).
- 17) Fit the "right side guard", securing it with the 6 screws (6).
- 18) Fit the brush, and secure it in place with its screw.
- 19) Remove the blocking rod from the cutter shaft.

5- SAFETY

For your safety, we recommend that you follow these guidelines:

- Do not try and start or operate the machine until all the safety aspects, installation instructions, operators' guide and maintenance procedures have been complied with and understood.
- Always disconnect the mains electricity supply, before carrying out any cleaning or maintenance work.
- Always keep the machine and the area around it clean.
- Work with dry hands.
- Always use protective goggles, although the machine is fitted with guards.
- Make sure that the machine has an earth connection

6.- WASTE DISPOSAL

Waste is understood to be any substance or object from human activities or natural cycles, that is no longer being used or not intended for any further use.

6.1 PACKING

- As the packing the VIENNA comes in is made of cardboard, it can be recycled as packing.
 - As waste, it is comparable to solid urban waste and, therefore, can only be disposed of in special containers for cardboard.
 - The elements protecting the machine inside the cardboard box are made of polymeric material comparable to solid urban waste and, therefore, can only be disposed of in the normal installations for waste disposal.
-

6.2 SWARF

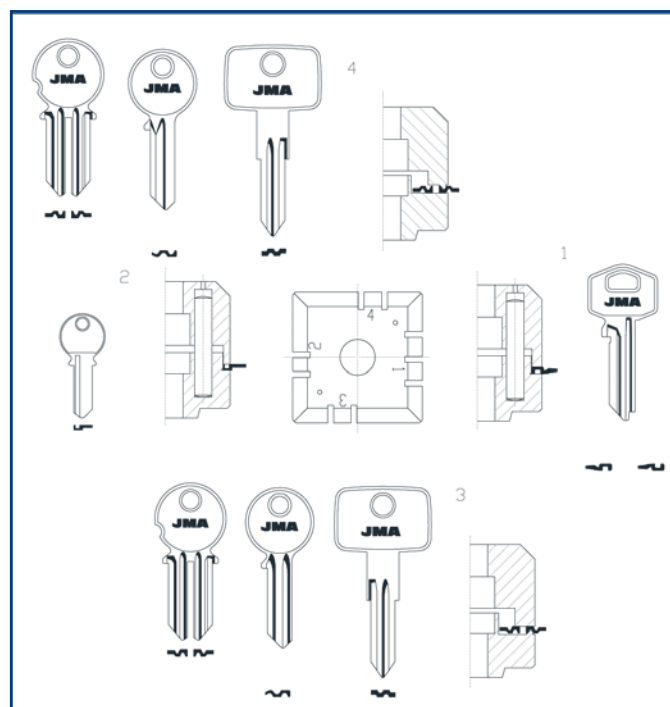
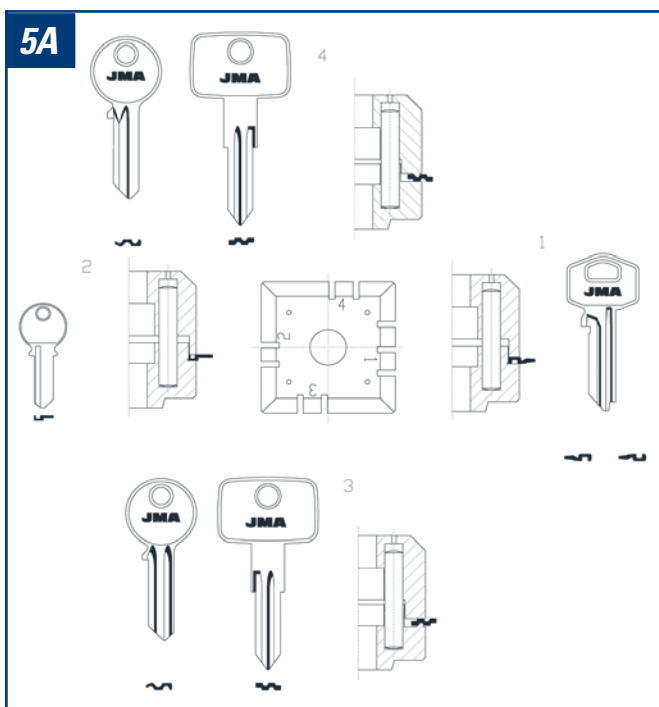
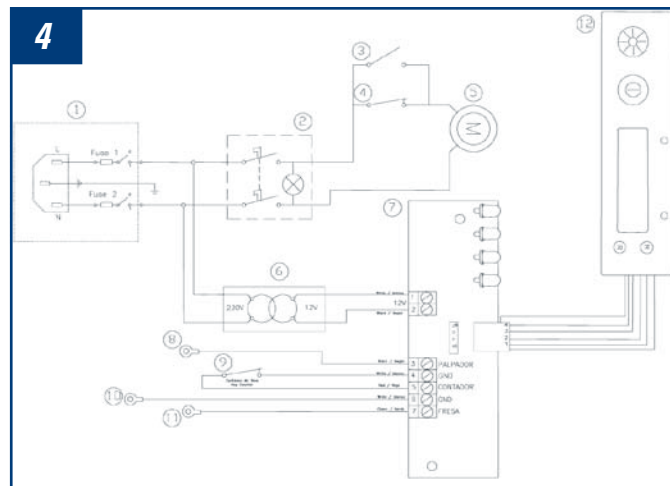
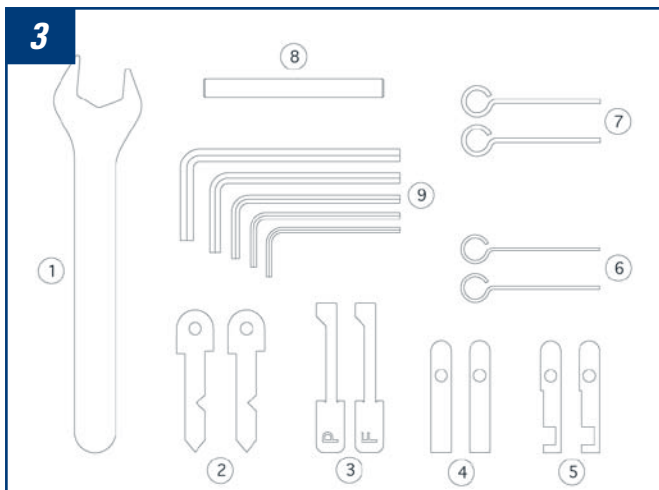
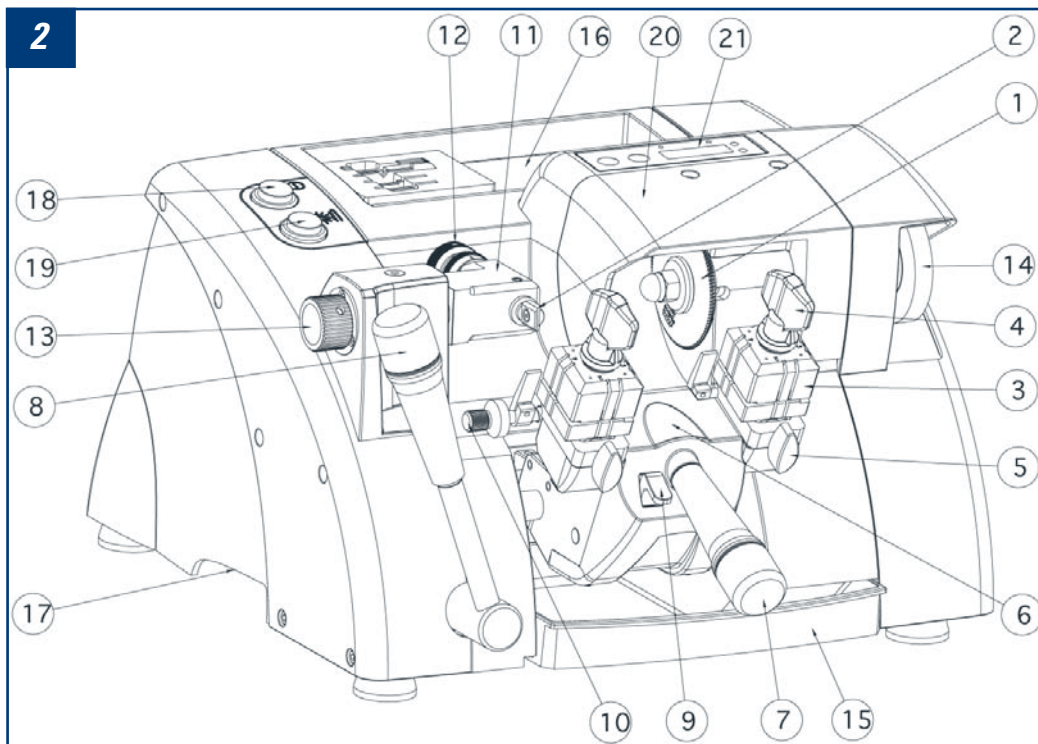
- The waste from the key cutting process is classified as special waste, but is comparable to solid urban waste, like for example a metal scouring pad.
 - This waste shall be disposed of as classified by the laws currently in force in the EU, by taking it to special installations for waste disposal.
-

6.3 MACHINE

- Before demolishing the machine it is necessary to first put it out of action, cutting off the electricity supply and separating the plastic parts from the metal parts.
 - After carrying out this operation, all the waste can be disposed of in compliance with the laws in force in the country in which the machine was used.
-

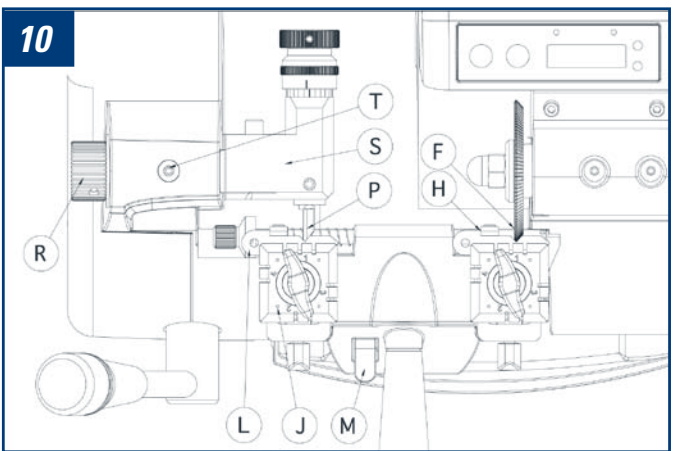
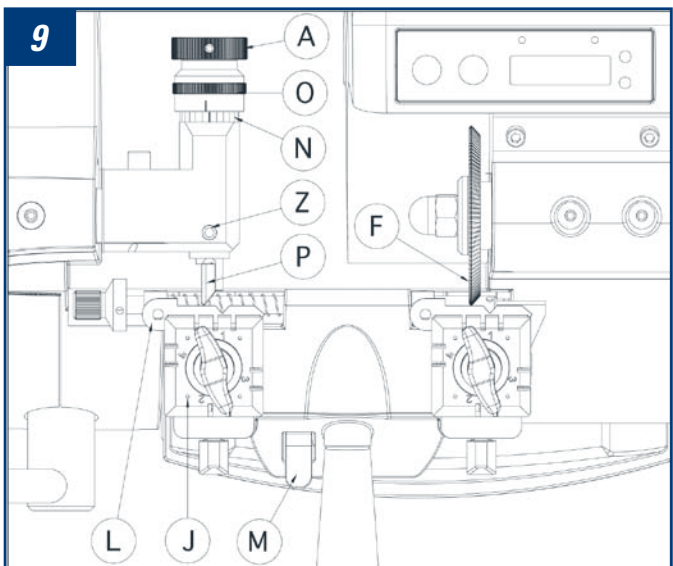
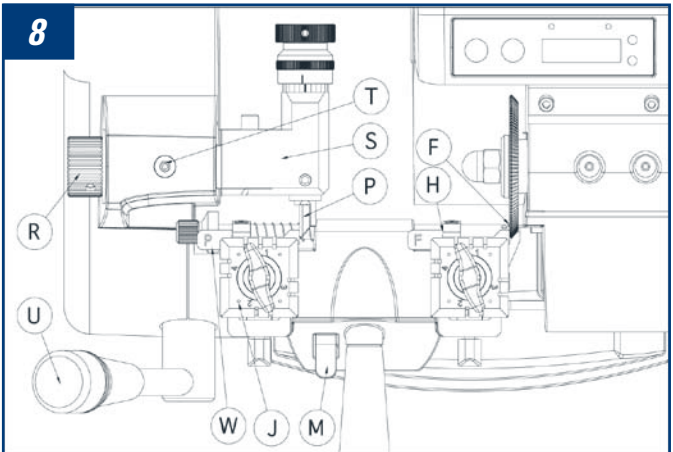
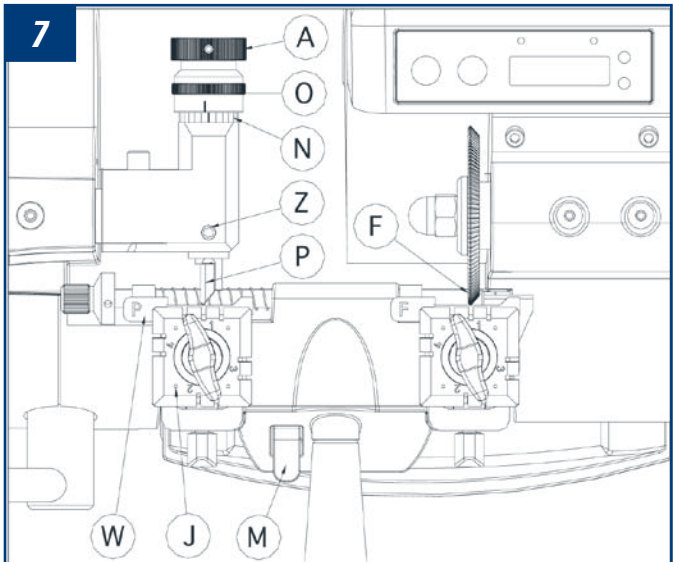
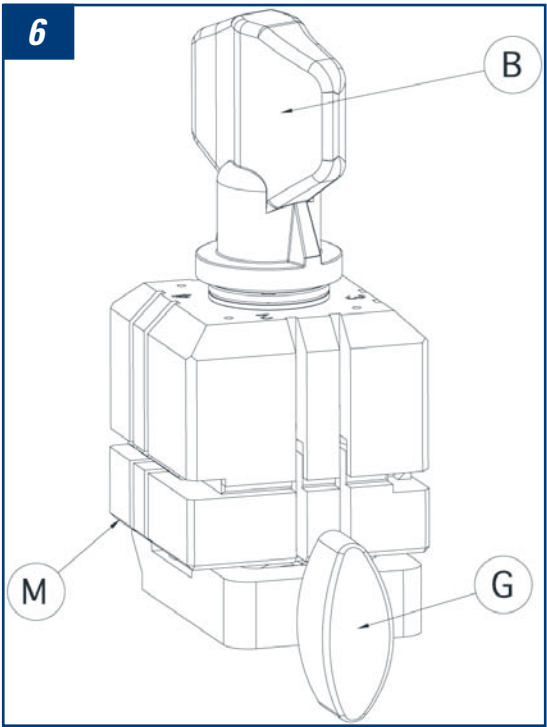
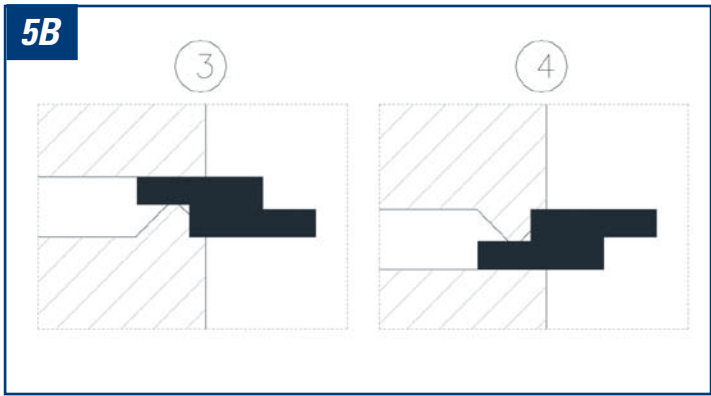
7.- EXPLODED VIEW

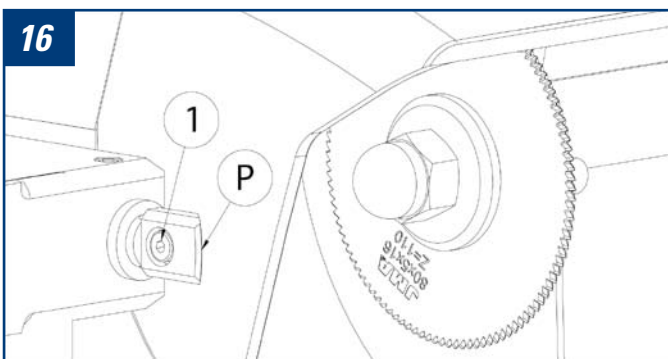
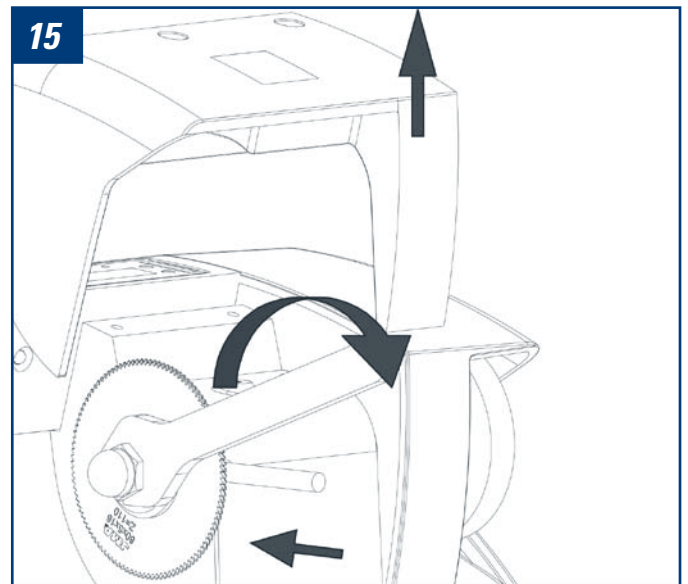
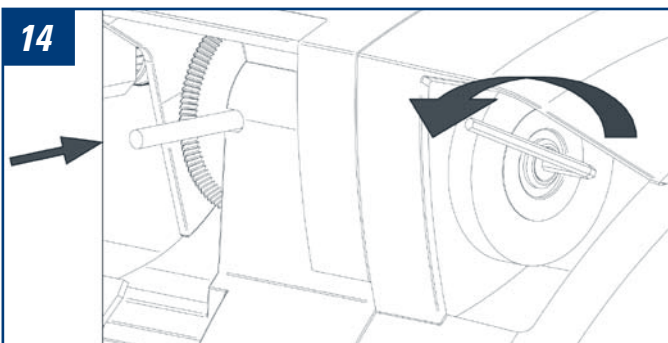
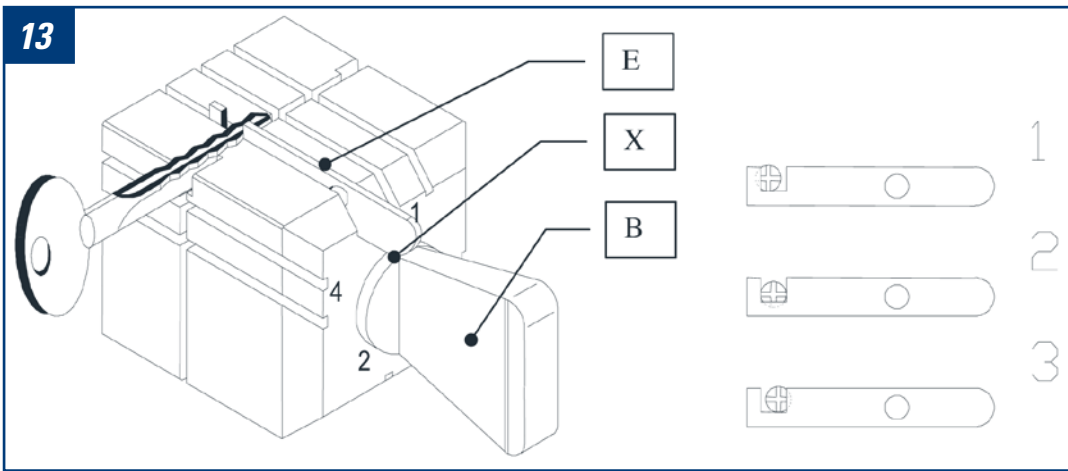
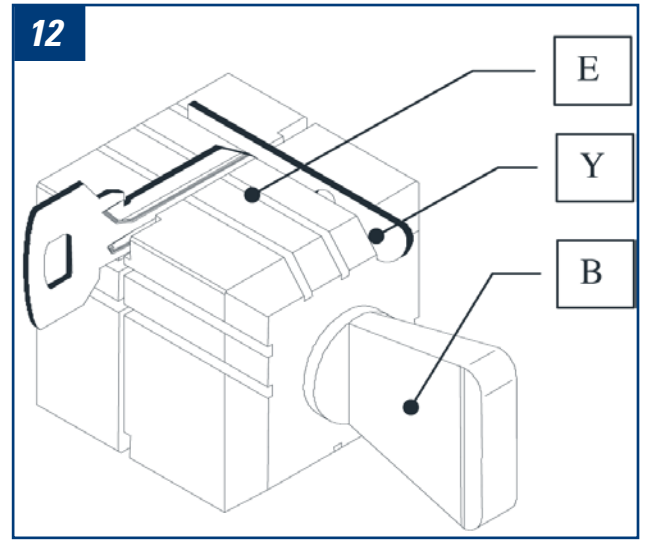
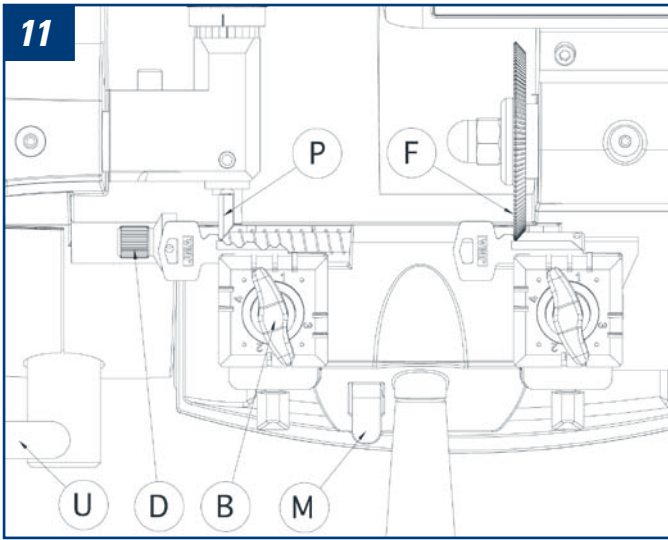
See figure 29

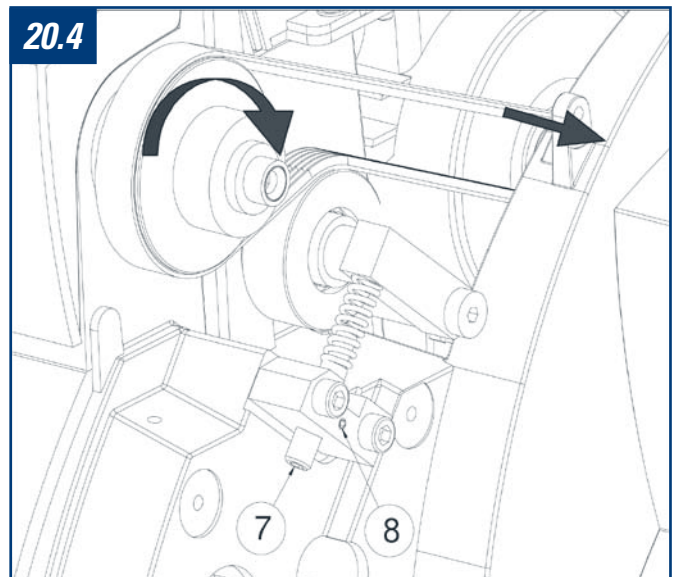
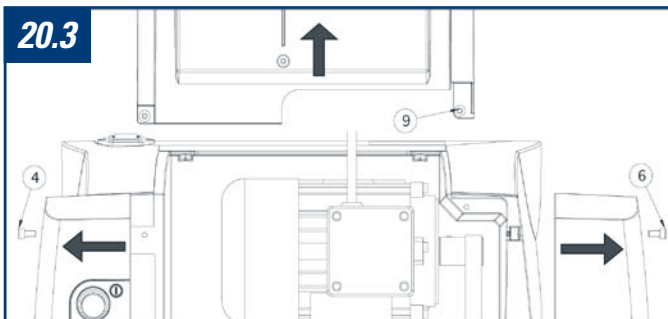
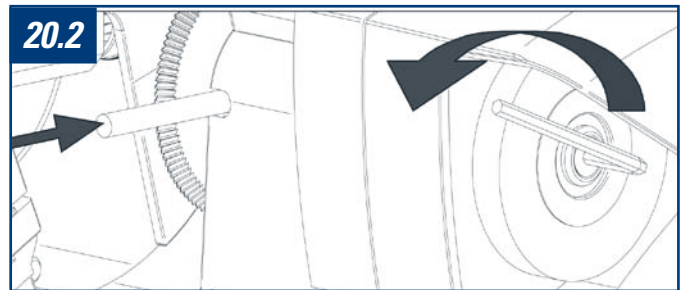
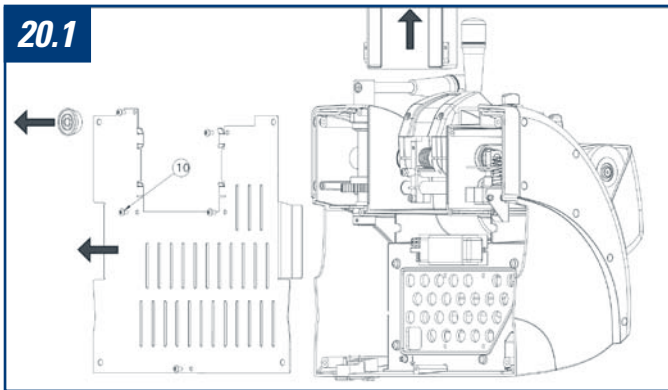
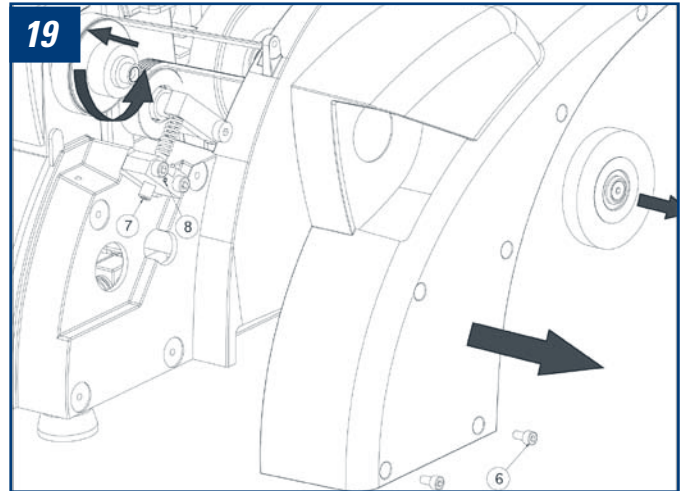
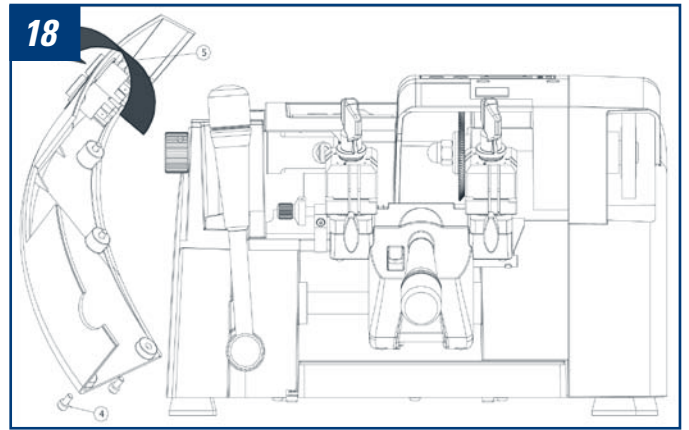
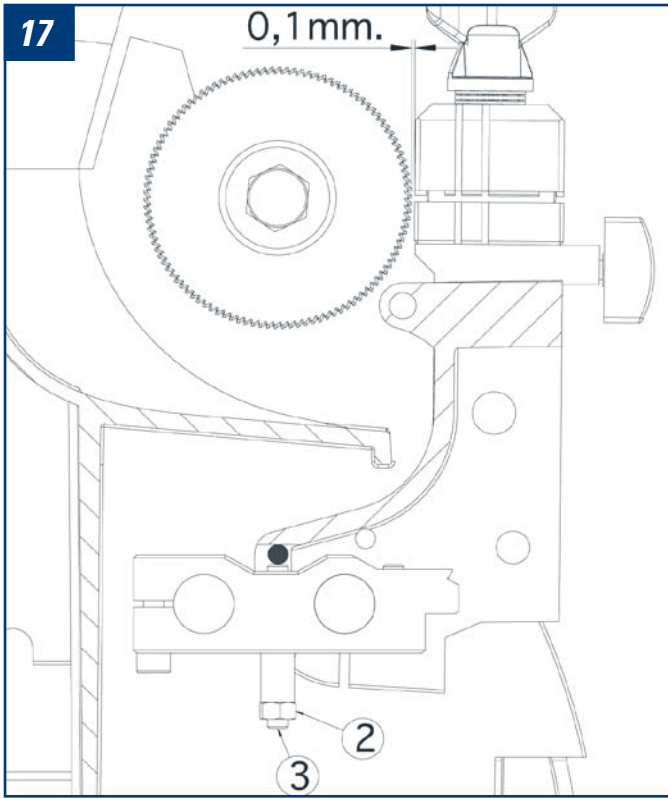


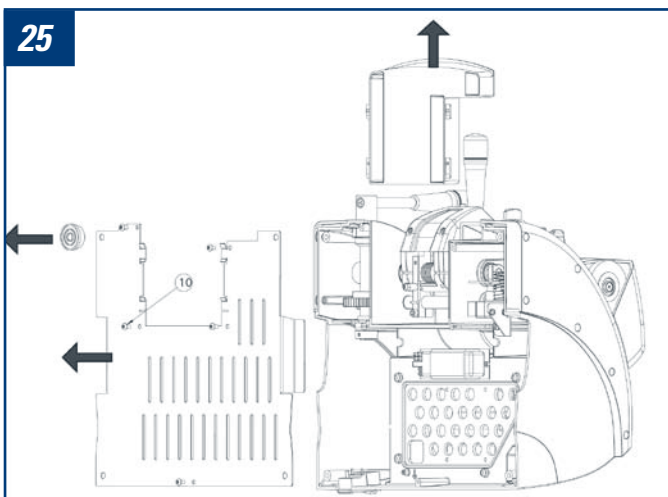
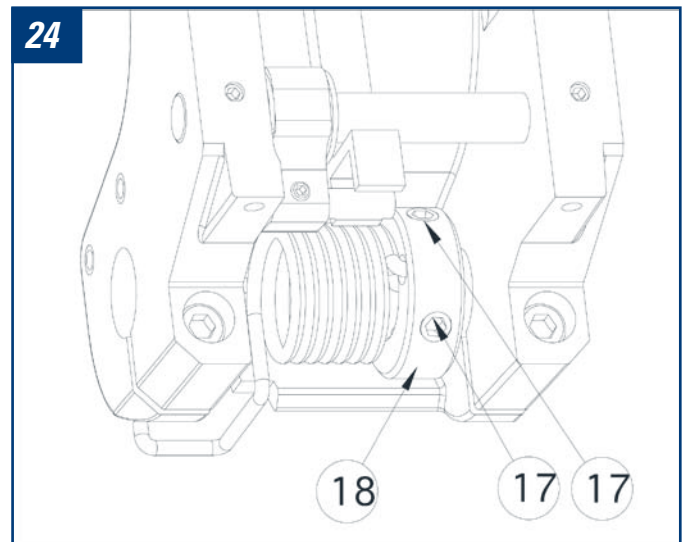
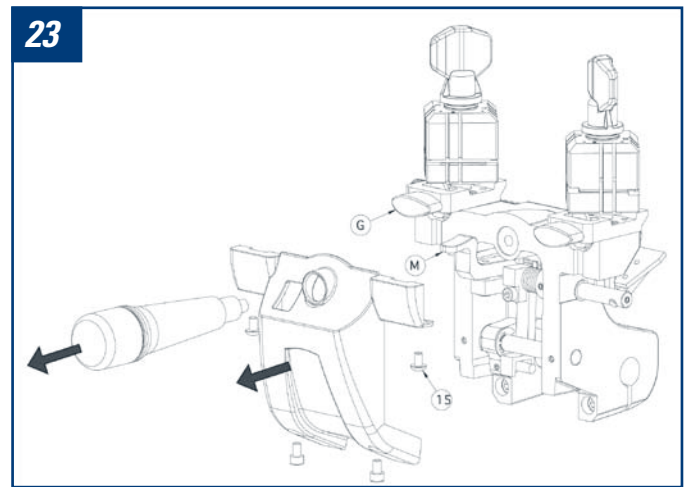
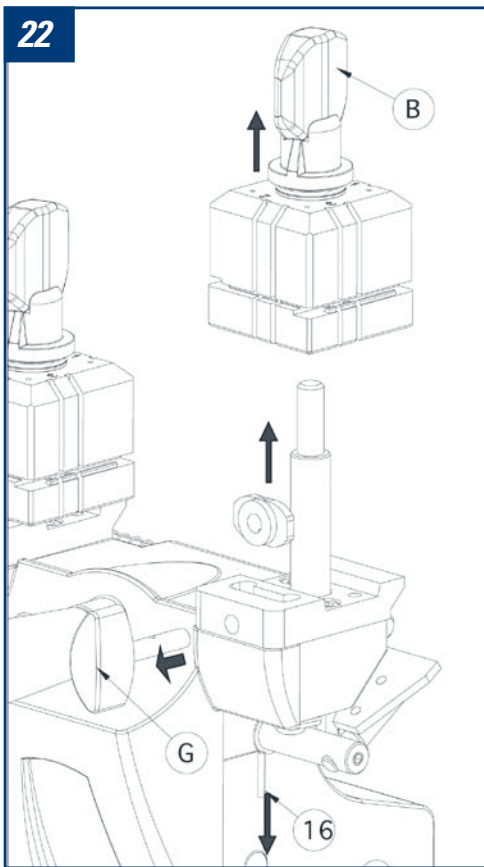
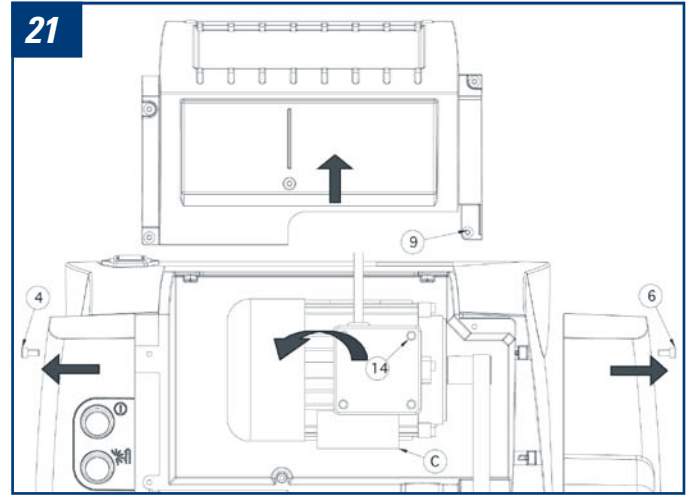
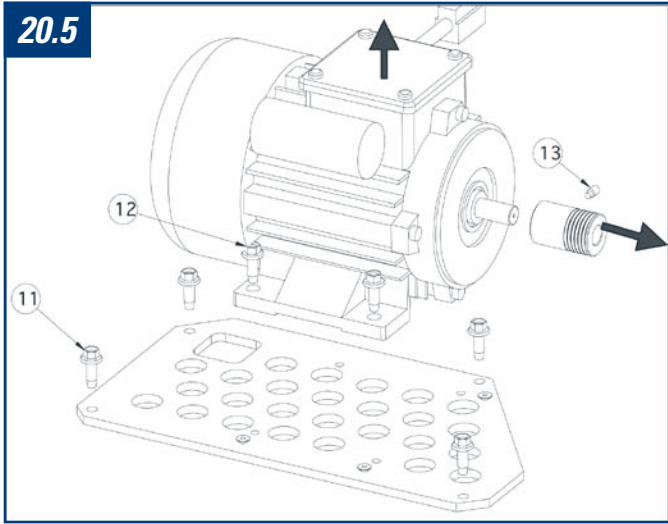
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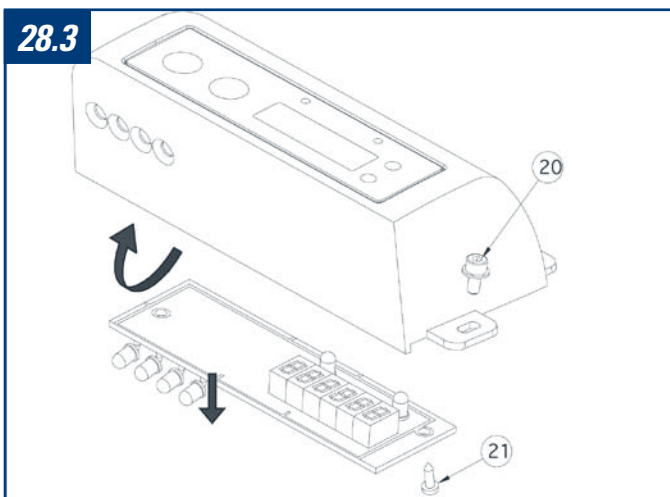
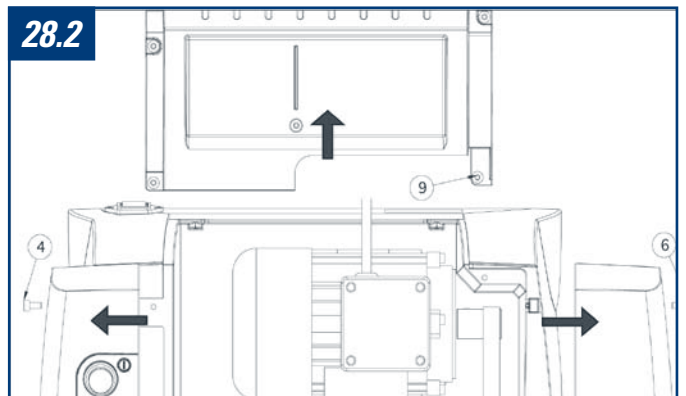
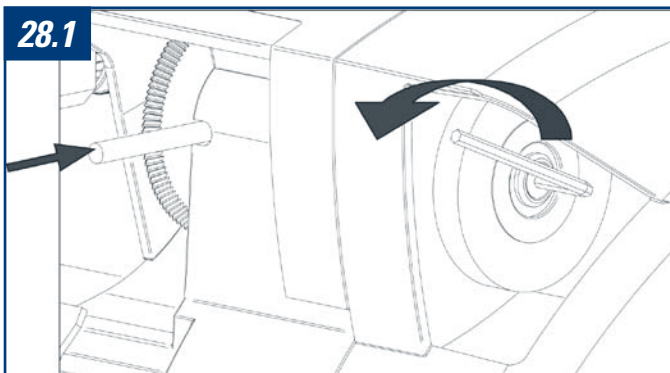
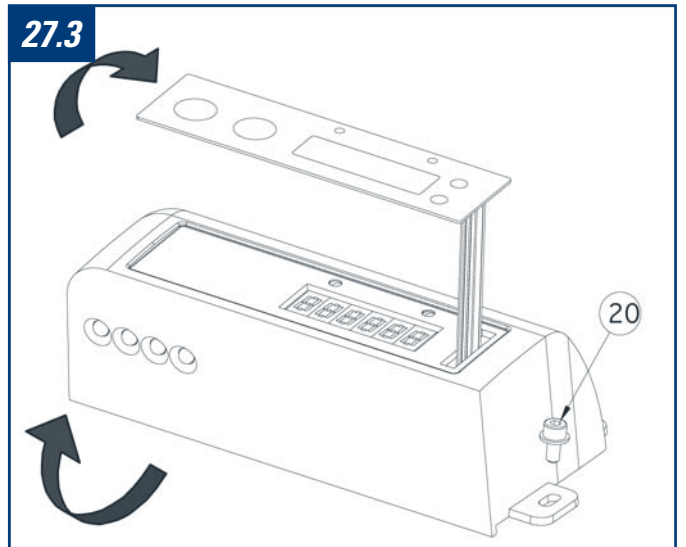
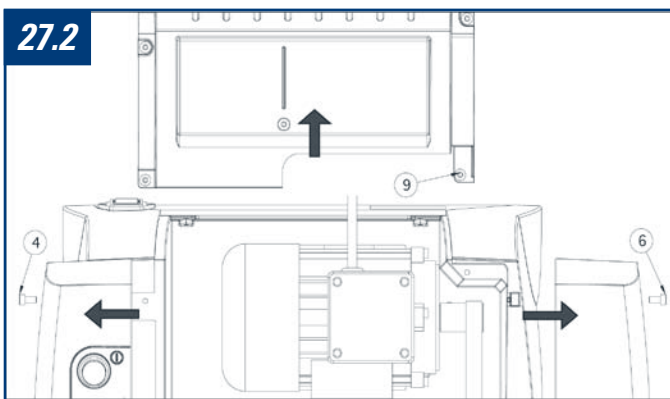
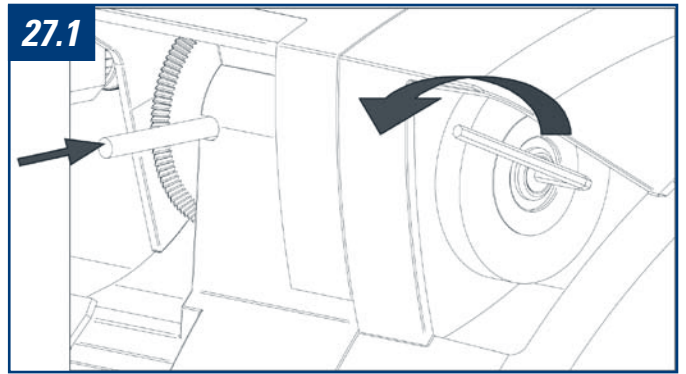
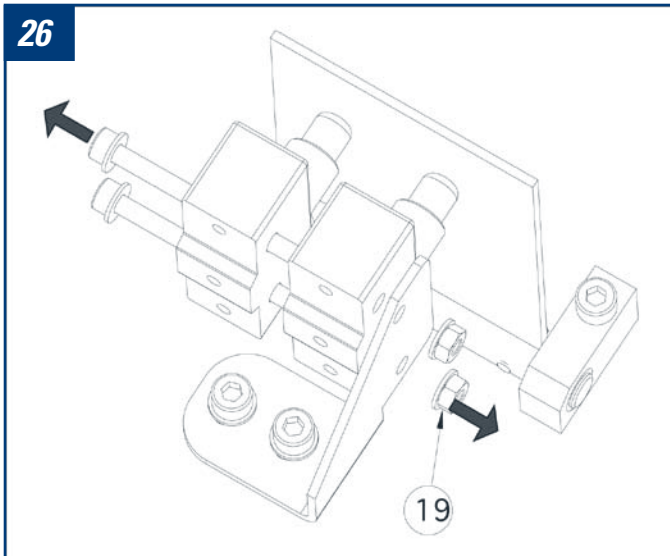
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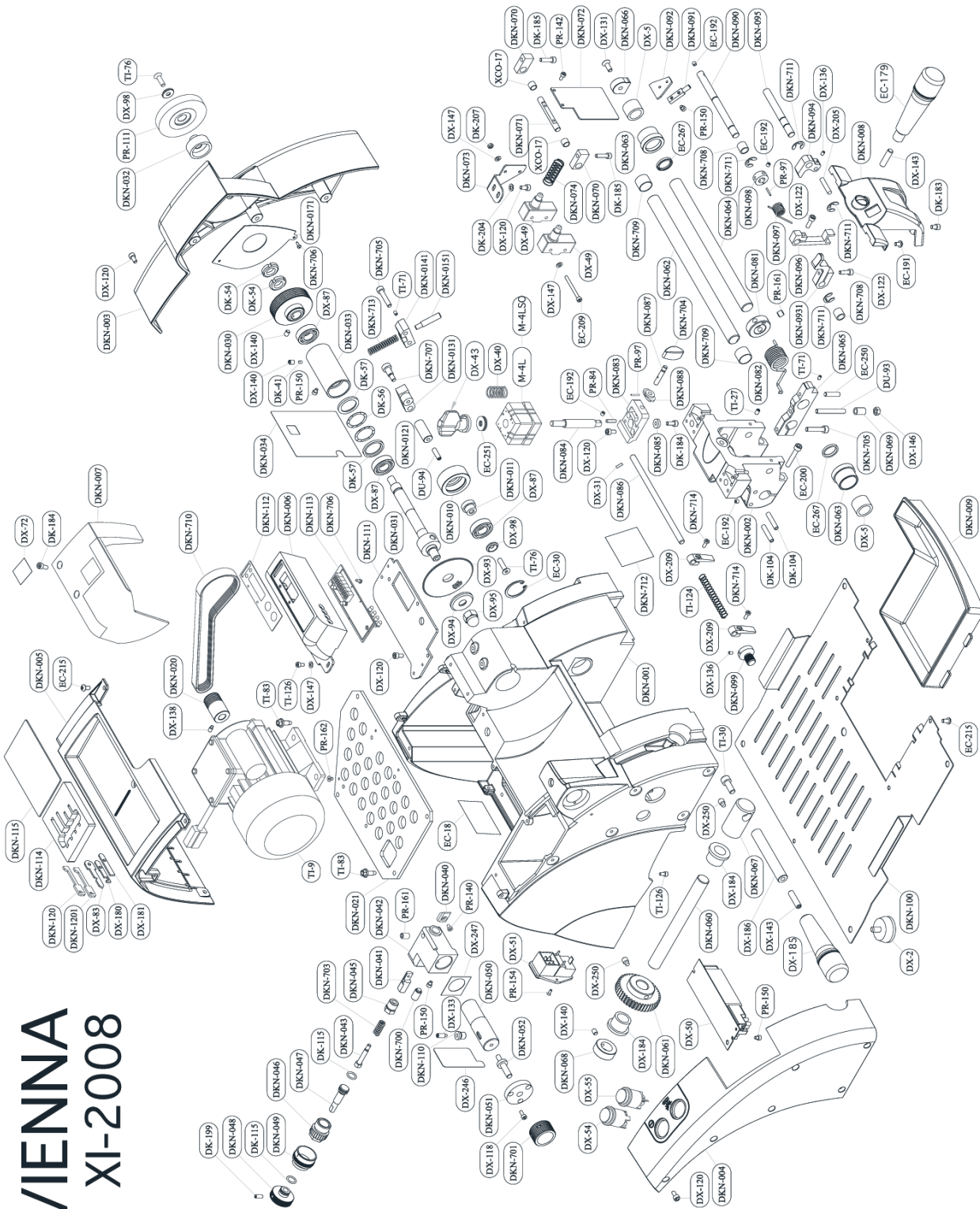












VIENNA XI-2008

**JMA HEADQUARTERS
ALEJANDRO ALTUNA, S.A.**

Tel +34 943 79 30 00
+34 943 79 33 32
Fax +34 943 79 72 43
Bidekurtzeita, 6
P.O. Box - Apdo. 70
20500 Arrasate - Mondragón
Gipuzkoa - SPAIN

www.jma.es
ventas@jma.es

JMA POLSKA Sp. z o.o.

Tel +48 42 635 12 80
Fax +48 42 635 12 85
kom +48 695 431 081
91-342 Łódź ul. Zbąszyńska 3

www.jmapolska.pl
biuro@jmapolska.pl

JMA FRANCE

Tel 01 39 22 42 10
Fax 01 39 22 42 11
Technoparc
13, rue Edouard Jeanneret
F-78306 Poissy Cedex

www.jmafrance.fr
service.commercial@jmafrance.fr

JMA PORTUGAL

ALTUNA PORTUGAL
COMERCIO DE CHAVES UNIPESSOAL, LDA.
Tel +35 121 994 7470
Fax +35 121 994 7471
Urbanização dos Azeiros, Lote 67 C/v
2695-733 São João da Talha

www.jmaportugal.com
altuna.portugal@mail.telepac.pt

JMA UK

SKS LTD
Tel +44 144 229 1400
Fax +44 144 286 3683
Unit 2, Canal Side
Northbridge Road
Berkhamsted
Herts HP4 1EG

www.skskeys.co.uk
sales@skskeys.co.uk

JMA INDIA

JMA KEYS INDIA PVT. LTD
H-239 Soshant Shopping Arcade
Sunshant Lok-1, Block B
122002 Gurgaon
Haryana

www.jmakeys.in
info@jmakeys.in

JMA USA

ALTUNA GROUP USA INC.
Tel 817.385.0515
Fax 817.385.4850
2409 Avenue J Suite A
Arlington, TX 76006

www.jmausa.com
info@jmausa.com

JMA MEXICO

LLAVES ALTUNA DE MEXICO S.A de C.V
Tel 52-33-3777-1600
Fax 52-33-3777-1690
Av. Aviación No. 5520
Col. San Juan de Ocotán
C.P. 45019 Zapopan, Jalisco

www.jma.com.mx
ventas@jma.com.mx

JMA ARGENTINA S.A.

Tel 54-3461 462 422
Fax 54-3461 462 422
Av. Central Acero Argentino Oeste 678
Parque Industrial COMIRSA
2900 San Nicolas (Prov. Buenos Aires)

www.jma-argentina.com
info+@jma-argentina.com