



INSTRUCTION BOOK

ELITE model SC-2

Band and circular saw blade automatic sharpening machine

APPLICABLE TO THE SHARPENING MACHINE:
ELITE model SC-2



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1. CONTENTS AND USE OF THIS MANUAL

IMPORTANT! This user manual is addressed to the owner, the machine user, the cleaning personnel, the maintenance personnel, the staff responsible for repair services and whoever has access to the machine. Read the whole manual before using the machine.

- **Usefulness of the manual**

The manual provides the necessary instructions for the machine transport and handling, installation, use according to the design specifications, cleaning and maintenance; moreover, it aims to train people, make order of spare parts easier and to indicate the residual risks.

- **Limits of use of the manual**

The machine hereunder described is intended for professional use only; this user manual cannot therefore substitute the operator's adequate experience.

- **Importance and retention of the manual**

This manual is an integral part of the machine and shall be retained up to the machine complete dismantling. Moreover, it shall always be readily available to the operator.

- **Request for a new manual**

In case of loss and/or damage of the manual, the user may request a new copy of it by indicating the following characteristics of the machine: type, model, serial number and year of construction.

- **Manual update**

The manufacturer reserves the right to modify the specifications indicated in this manual and/or the characteristics of each machine. Some figures in this manual may show some partly or totally different details than those assembled on the machines. Technical drawings and data may be modified without notice.

- **Further information and clarification**

The manufacturer may be contacted to ask for further information and clarification on the correct use of the machine and on maintenance and repair at any time.



- Relief from responsibility

The manufacturer considers himself relieved of any responsibility in case of:

- a) improper use of the machine;
- b) use of the machine by non-trained personnel;
- c) lack of maintenance foreseen;
- d) non-authorized interventions or modifications;
- e) use of non-original spare parts and/or non-specific for the model;
- f) partial or total non-observance of the instructions.



2. SAFETY RULES AND CONFORMITY

The non-observance of the following safety rules may cause damage to people, animals and properties. The installation and maintenance of the machines in hand in this manual shall be made by skilled people only, who know the machine functioning as well as the European regulations on the installation of industrial machines. The welding machines herein described shall be used for the blade welding. Any other use is therefore forbidden.

Declaration of Conformity of the sharpening machine:

Elite model SC-2

The “EC” mark on the machines indicates their conformity with other European Community Directives:

- 98/37/CE
- 72/23/CE
- 89/336/CE
- EN 292-1
- EN 418
- EN 294
- EN 349
- EN 60204-1
- EN 60439

These warnings do not involve all possible risks resulting from an improper use of the machine. Therefore, the operator shall work with the greatest circumspection and observe the rules.

DANGER: HIGH POWER-LINE VOLTAGE!

The machine shall be installed, maintained and used by skilled people in compliance with regulations concerning the electrical machinery in force in the country of use.



SAFETY SHOES ARE COMPULSORY

EYE PROTECTION IS COMPULSORY

PROTECTIVE GLOVES ARE MANDATORY



3. MOVING AND TRANSPORTING OF MACHINE

The machine is transported packed (wooden crate – figure 1). For transport: upright position or set down on the back side (control panel upwards).



figure 1



figure 2

For unpacking, remove the frontal panel and the wooden blocking pieces. On the back side (figure 2) there is a ring (ring **W**, figure 2) for transporting the machine. The shape of the machine itself guarantees sufficient stability. The base of the machine has four holes, so that it can be fixed to the floor. We therefore advice you to constrain the machine to the floor using expansion bolts.

Back side description

- W** Ring for transporting the machine without packing
- Z** Housing of height adjustable rod for rolls
- X** Main switch (yellow - red)

Insert the rod with the rolls in its vertical place (**Z** figure 2) on the back side of the machine. Move the rolls so that they can keep in place the ring of the blade during setting and sharpening operations. Block the lower end of the support using the bolts that you can find in the housing. Each roll is used for a specific operation (figure 3, page 6).



IMPORTANT!

The roll for SETTING must be positioned 3-4 cm. from the horizontal rod. The roll for SHARPENING must be positioned 15-20 cm from the horizontal rod (Figure A).



4. MAIN PARTS OF THE MACHINE

The grinder sharpener Elite model SC-2 is made up of the following parts (figure 3):

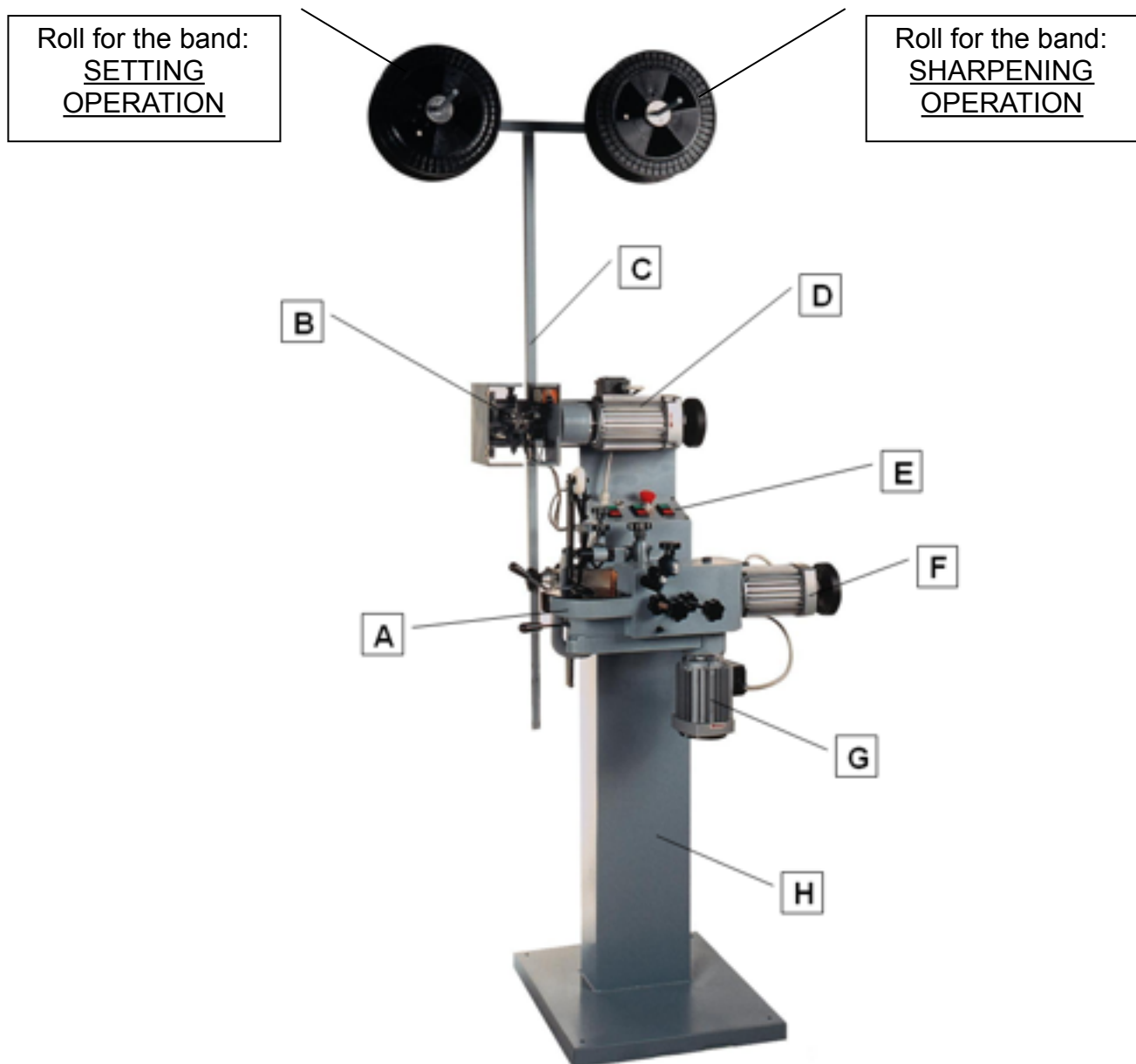


figure 3



- A. GRINDER UNIT
- B. SETTER UNIT
- C. ROD OF ROLLS FOR BANDSAW
- D. MOTOR AND REDUCTION UNIT OF SETTING MACHINE
- E. SWITCHBOARD
- F. DRIVING MOTOR OF GRINDER UNIT
- G. MOTOR FOR GRINDER ROTATION
- H. BASE

5. ELECTRICAL CONNECTION*

The machine is equipped with plug CE and must be connected with a three-phase network** (380V): this is written on the label on the back side of the machine (see fig. 4). **Only** the earth cable can be connected with the yellow-green cable in the middle (earthing).

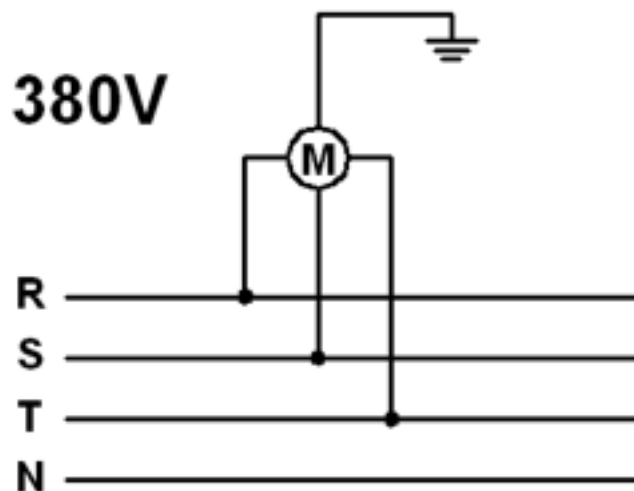


figure 4

Note

* The machine can work also with 220V three-phase. In this case you must modify the configuration of the clamp set. This change can be demanded at the moment of the order.

** On request, the machine can be prearranged for being connected with a single-phase network (220V).



We do not assume any responsibility in case of a wrong electric connection that may cause not only a bad performance of the machine, but also damages to people, animals, things.

6. INSTRUCTION FOR USE THE MACHINE

STARTING UP

Rotate the main switch (switch X, fig. 2, page 5) on the electrical switchboard located on the back side of the base: the lamp P (fig. 21, page 15) placed on the switchboard will light up indicating that the machine is ready to be used.



figure 5

OPERATIONS

Correct operation sequence:

1st OPERATION → <u>SETTING</u>
2nd OPERATION → <u>SHARPENING</u>

- A – Prearrangement for setting and set up for setting machine;
- B – Setting operation;
- C – Sharpening: prearrangement and operation;



A – PREARRANGEMENT FOR SETTING AND SET UP FOR SETTING MACHINE

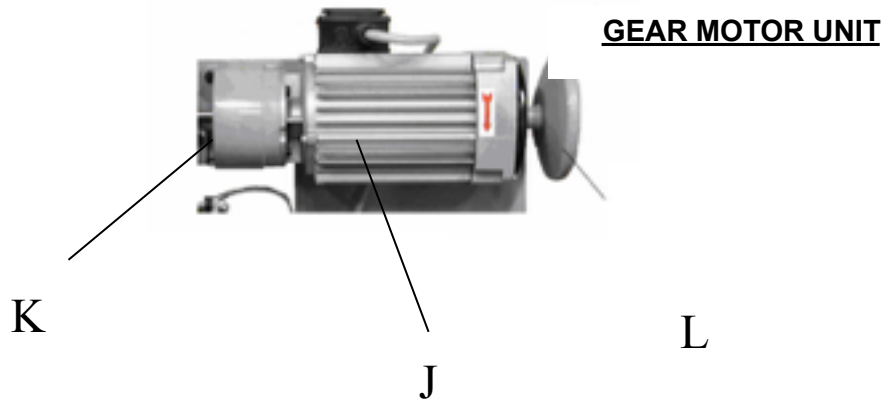
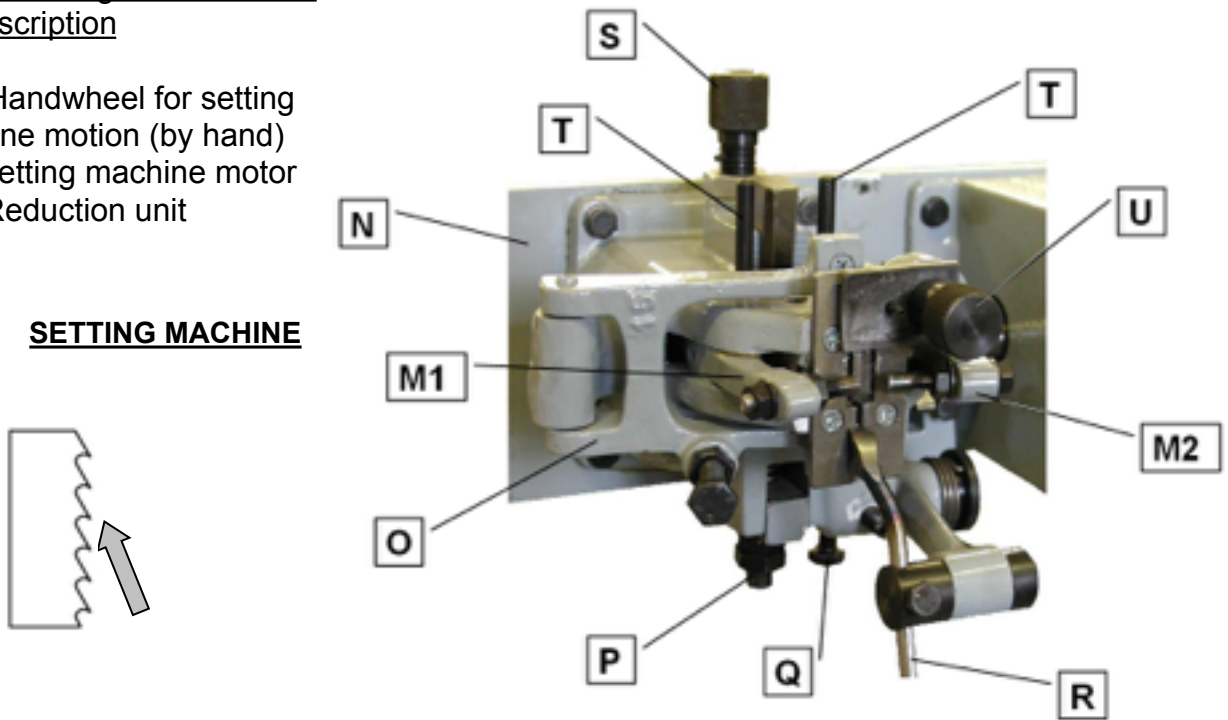


figure 6

Setting machine description

- I** Handwheel for setting machine motion (by hand)
J Setting machine motor
K Reduction unit



TOOTH PUSHER
DIRECTION **R**

Figure 7



- M1** Adjustable little hammer (left)
- M2** Adjustable little hammer (right)
- N** Support for setter unit
- O** Support for band sliding with adjusting screw
- P** Adjusting screw for the vice closure (preregulated: DO NOT MODIFY)
- Q** Adjusting screw for the tooth pitch
- R** Tooth pusher
- S** Adjusting screw for quantity of setting
- T** Little cylinders for manual opening of the vice
- U** Plate of device that presses the band

Set up sequence:



Pay attention when handling the blade during its installation : it is necessary to be very careful in order to avoid being hurt. It is necessary to wear work gloves to protect the operator from hurting himself with the teeth of the saw.

- Hang the blade on the left roll with the back of the blade turned towards the back part of the machine, the teeth turned towards the front part and the cutters towards the floor.
- The result of the following operations can be checked rotating by hand the handwheel, observing the motion of the setter.
- Open the device **U** used for pressing the blade (fig. 7, page 10). Rotate the handwheel **I** till the little hammers **M1** and **M2** reach the maximum opening (see under here).

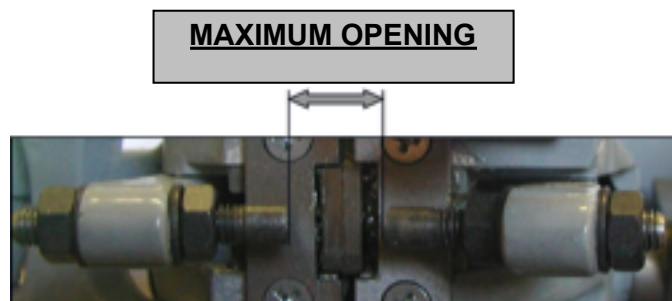
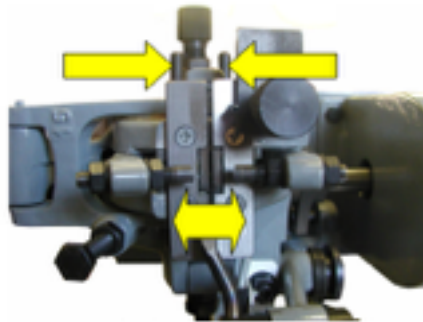


figure 8



- Open the jaws of the vice and press the two little cylinders **T** of the setting device, using your fingers (fig. 7, page 10).



**PUSH THE LITTLE
PIVOT TO OPEN THE
VICE**

figure 9

- Adjust the height of the blade sliding support (screw **O**, fig. 7, page 10), so that only the tooth profile protrudes entirely from the jaws of the vice. Close the plate **U** (fig. 7, page 10) on the teeth of the blade. Pressing the blade against the support, the plate guarantees a right operation. At the same time the blade can slide well (fig. 10).

**ADJUST HIGH OF
BANDSAW: ONLY THE
TEETH OUT**

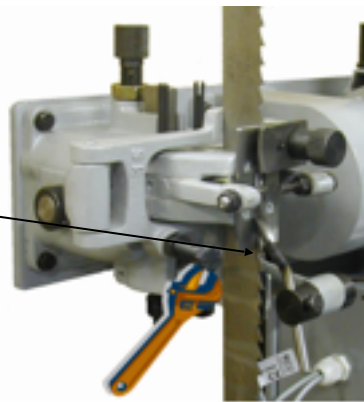


figure 10

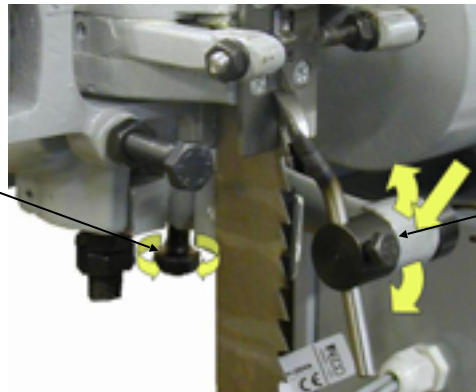
- Position correctly the tooth pusher **R** (fig. 7, page 10). It must push only one tooth at a time.

IMPORTANT: The perfect pushing action of the tooth pusher is very important: the whole setting operation depends on it.

- Adjust the blade feeding (adjusting screw **Q**, fig. 7, page 10) in conformity with the pitch of the teeth and the type of setting. The tips of the teeth must reach the same trajectory of the little hammers.



ADJUST THE PUSHING ACTION USING THE SCREW Q



IT IS POSSIBLE TO ADJUST THE LENGTH OF THE TOOTH PUSHER

figure 11

- Adjust the quantity of setting using the adjusting screw (screw **S**, fig. 7, page 10) changing the race between the two little hammers (right and left) that move alternately but symmetrically, moving at the same speed. Increase or decrease the travel of the two little hammers (right and left) according to your needs. You can also modify the length of the little hammers **M1** and **M2** using the adjusting nut (fig. 7, page 10).

ROTATE THE KNOB TO INCREASE OR DECREASE THE SETTING

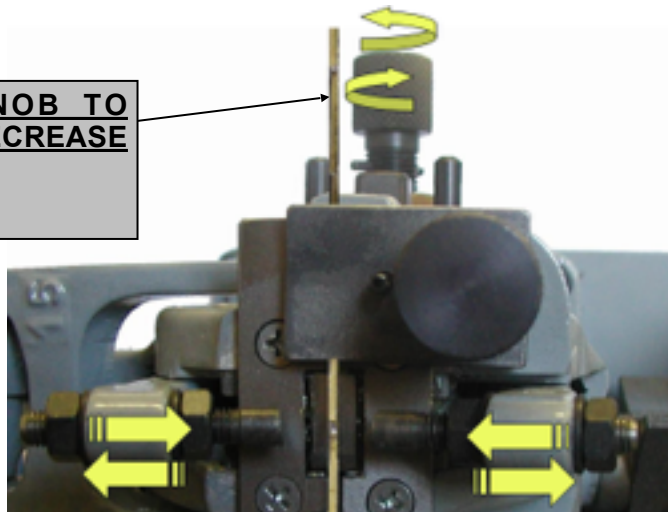


figure 12

- Rotate the handwheel **I** (fig. 7, page 10) and observe the result that you have obtained. If you do not obtain a good result, repeat the operation changing values.



TYPE OF SETTING

This setter can perform two types of setting:

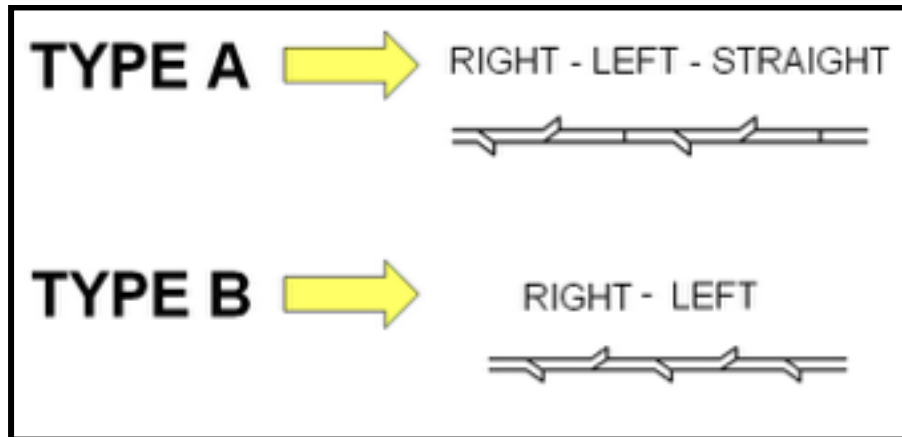


figure 13

The machine is always preset for type of setting.

➤ To pass from type of setting A to type of setting B:

- Looking at the setter from the front: on the right side there is a cam between the setter and the reduction gear. Loosen the clamping bolt of the bearing and move the tooth pusher arm towards the reduction body and screw the clamping screw.

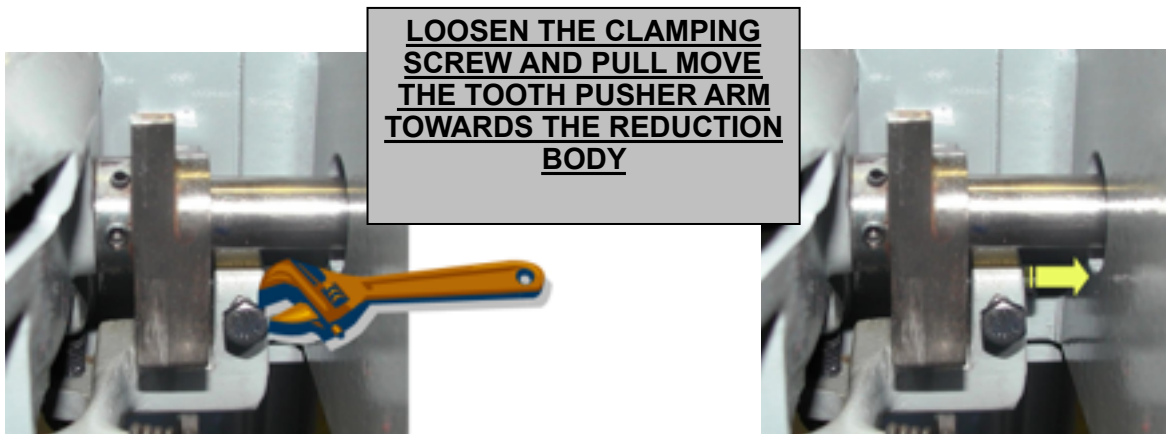


figure 14

figure 15



Result of this operation: the bearing that is on the tooth pusher arm moves on the portion of the cam having only two tips: the setting will turn into type B (teeth bended left/right).

TYPE B

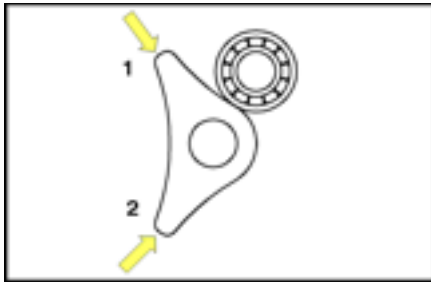
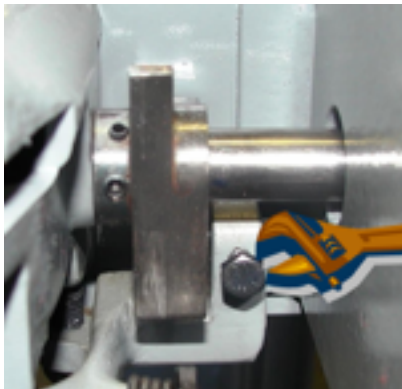


figure 16

➤ Back to type of setting A:

- Starting from the cam between the setter and the reduction gear, loosen the clamping screw and press the tooth pusher arm towards the setter body.



**LOOSEN THE CLAMPING
SCREW AND PUSH THE
TOOTH PUSHER ARM
TOWARDS THE SETTER
BODY**

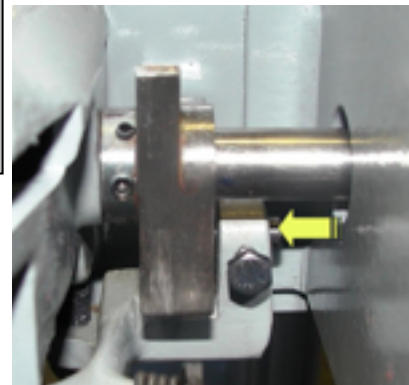


figure 17

figure 18

Result of this operation: the bearing that is on the tooth pusher arm moves on the portion of the cam having three tips: the setting will turn back into type A (teeth bended right/left/straight).



TYPE A

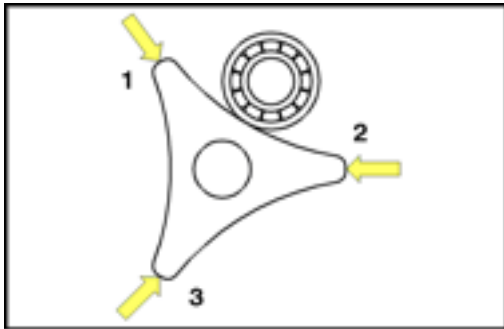
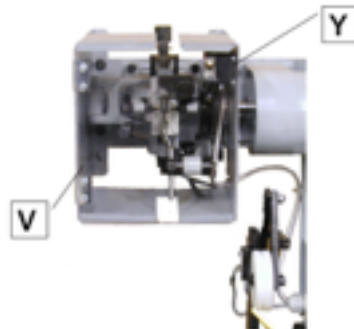


figure 19

B – SETTING OPERATION

The starting of the setter is possible only when the movable protective cover **V** in front of the moving parts (fig. 20) is perfectly closed.

- V.** Movable protective cover
- Y.** Sensor





FRONTAL CONTROL BOARD

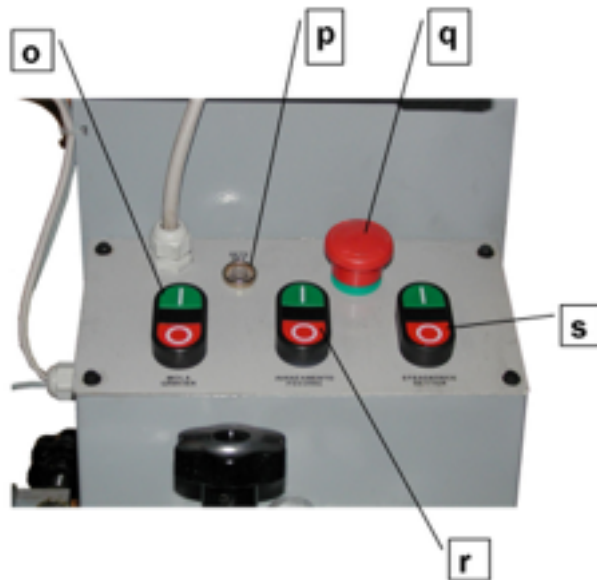


figure 21

Buttons description

- o** Button start/stop grinder rotation motor
- p** Lamp
- q** Emergency button
- r** Button start/stop feed of grinder unit blade
- s** Button start/stop setter motor

For stopping the machine automatically after a full turn, place a small magnet (supplied with each machine) on the edge of the band already set. The magnet will cause the shutdown near the sensor **Y** (fig. 20).

Make sure that the lamp **p** is lighted (figure 21) and the movable protective cover **V** is closed (fig. 21). Press the green button **1** (push-button panel **s**, fig. 21) in order to start the setter.



C - SHARPENING: PREARRANGEMENT AND OPERATION

Sharpener description

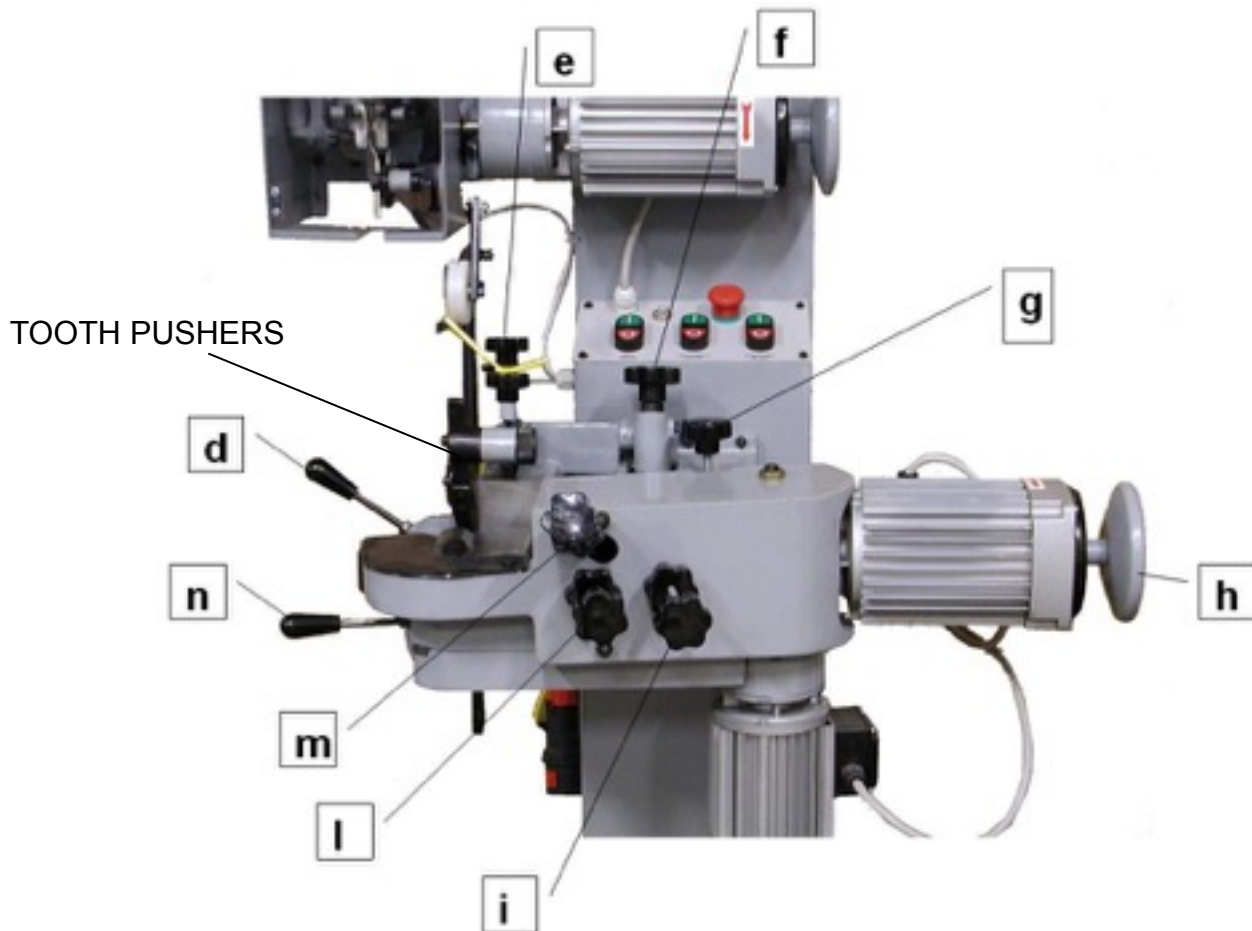


figure 22

- d** Knob for opening the blade vice
- e** Knob for regulating the tooth pusher feed
- f** Knob for tooth pitch variation
- g** Knob for regulating the grinder inclination
- h** Handwheel for the grinder unit manual run
- i** Knob for spaced tooth
- l** Knob in/out (depth of gullet)
- m** Knob for the grinder output rate (tooth back)
- n** Lever for the manual grinder unit shift

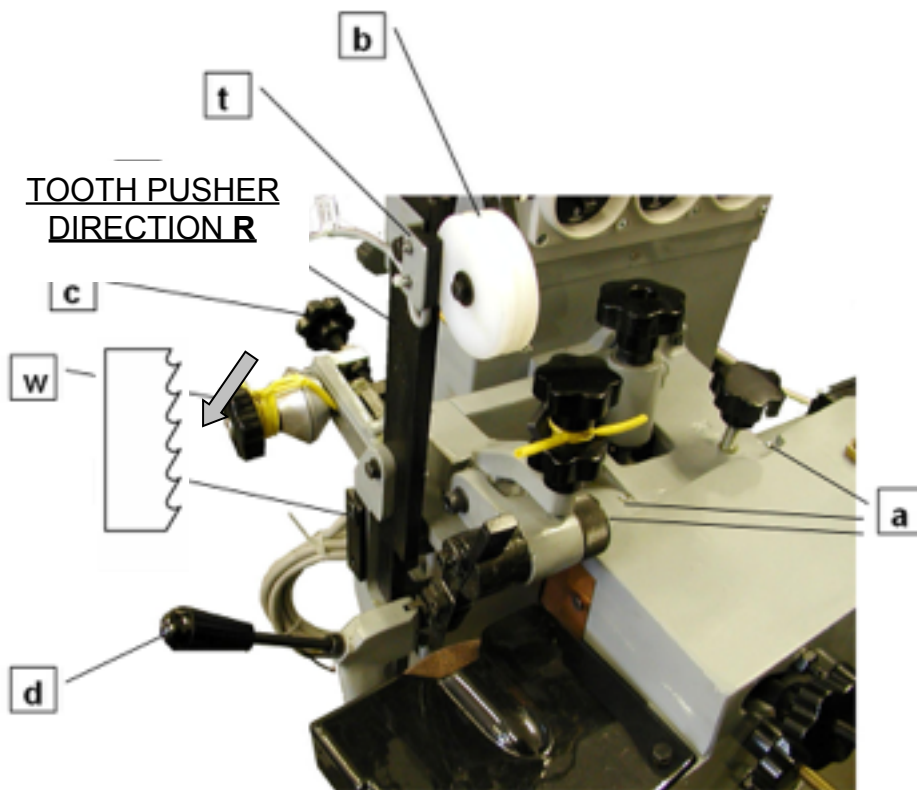


figure 23

Description: blade guide unit and tooth pusher

- c. Knob for regulating the blade guide
- d. Knob for opening the vice
- z. Spacer for small size circular blades
- a. Oilers
- b. Device for pressing the blade
- w. Support for circular blades
- t. Sensor
- x. Blade guide

Set up sequence:

◆ **For this operation the machine must be turned off:**

- Remove the ring of the toothed blade from the left roll (setting) and hang it on the right roll (sharpening): see fig. 3, page 6. Keep the back of the blade turned towards the



- back side of the machine and the teeth turned towards the front part. Unlike the previous operation, the cutters must be turned upwards.
- Open the blade guide using knob **c** (fig. 23) and open the vice using lever **d** (fig. 23). Screw knob **I** (fig. 22, page 16) in order to remove the grinder unit from the bandsaw.

**OPEN THE GUIDE AND
LOWER THE BLADE
HOLDER LEVER**

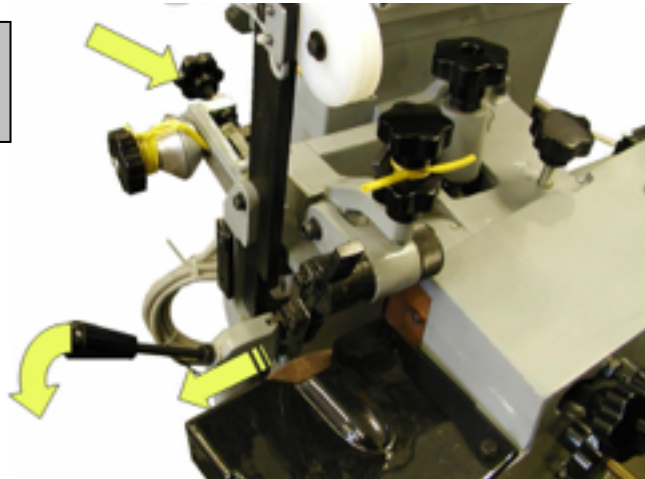


figure 24

- Insert the bandsaw in the blade guide and close the vice using lever **d** (fig. 23). Rotate the knob **c** (fig. 23) in order to feed the bandsaw. The teeth gullet must protrude from the lateral fixed support of the vice (about 2 mm.).

**CLOSE THE GUIDE AND
FEED THE BLADE BEYOND
THE FIXED SUPPORT**



figure 25



- Using knob **g** (fig. 22, page 16) unblock the grinder unit (attention: support by hand the whole unit) and regulate the inclination according to the cutting angle of the bandsaw.

**SUPPORTING THE GRINDING UNIT,
LOOSEN THE KNOB **g** AND CHOOSE
INCLINATION**

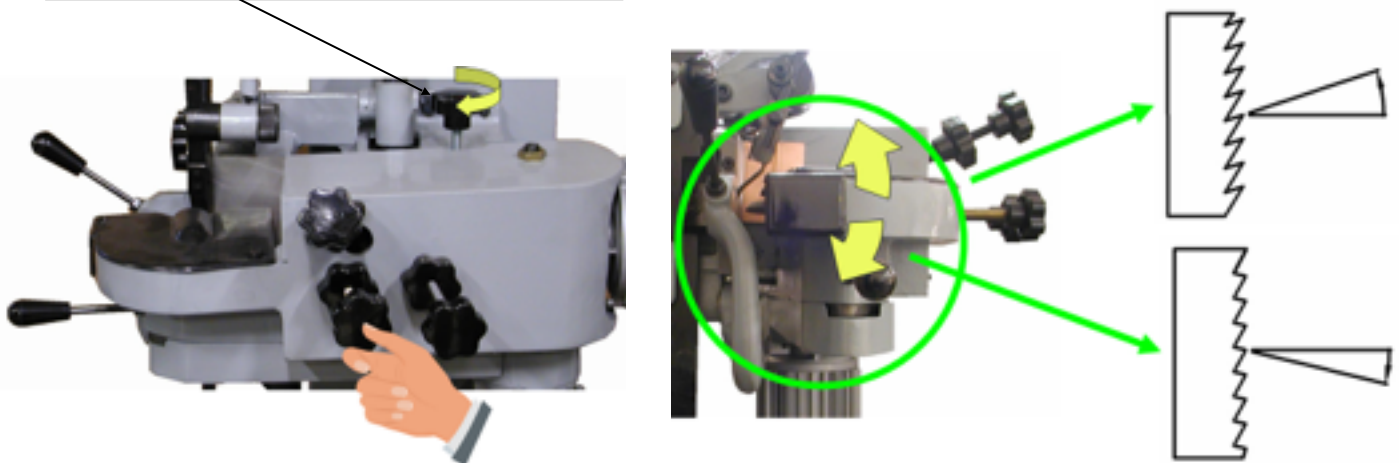


figure 26

- Rotate the handwheel **h** (fig. 22, page 16): the tooth pusher causes the blade feed. Regulate it using the adjusting screw of the tooth pitch **f** (fig. 22, page 16).
- Loosen the knob **l** (fig. 22, page 16): the grinder unit advances towards the blade cutter. check that the grinder does not strike the tooth. If the grinder strikes the tooth, go back to the previous point and regulate again the feed pitch, increasing it.

◆ **For this operation the machine must be turned on:**

- Push buttons **r** and **o** (fig. 27) to start the feed and rotation motors of the grinder.

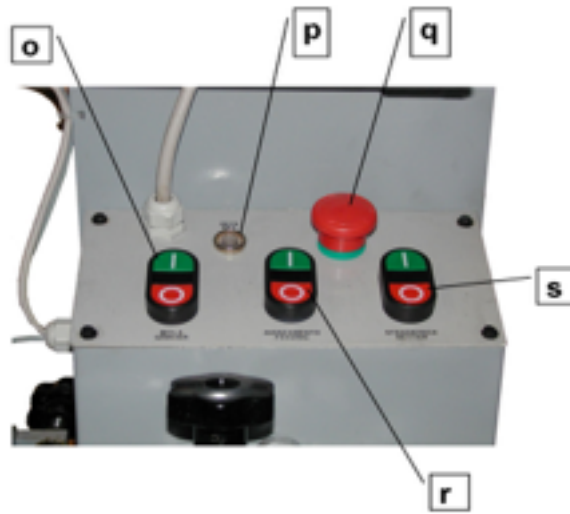


figure 27

- Regulate the grinder in/out run using knob **l** (fig. 22, page 16) in order to sharpen the whole cutter until the bottom of the tooth gullet. Using the pitch adjusting screw **e** (fig. 22, page 16) put the grinder in contact with the cutter (avoid an exaggerated removal).
- Regulate the grinder exit using knob **m** (fig. 22, page 16). This operation regulates also the tooth back sharpening. Delaying the grinder exit, the grinder grinds the cutter back while the tooth pusher feeds it downwards.
- Knob **i** (fig. 22, page 16) must usually keep completely loosened. If you are using a blade with spaced teeth, use this knob for increasing the grinder stay time inside the gullet in order to grind also the straight portion of the gullet.



BLADE WITH STANDARD
TOOTH

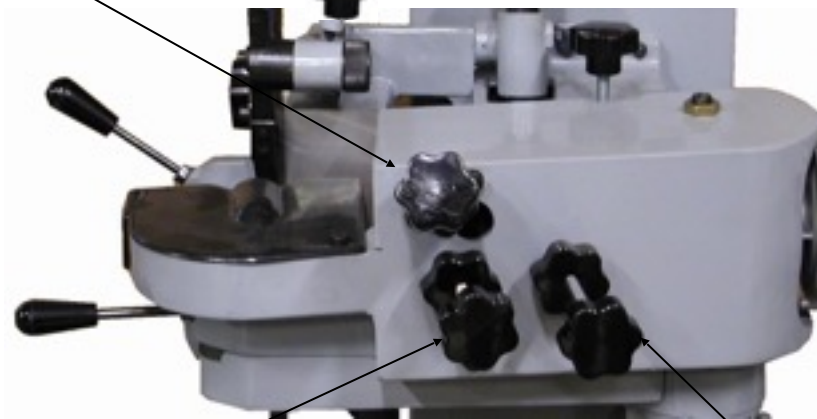


BLADE WITH
SPACED TOOTH



Knob (m) – output rate: it is used to regulate the grinder exit, permitting to grind only the cutter, or the cutter and the back

Knob (e) - tooth pusher pitch: it is used to regulate the removal on the tooth frontal side



Knob (l) – grinder in/out: it is used to regulate the working depth of the grinder

Knob (i) – grinder stay time inside the gullet: it is used to grind the blades having a spaced tooth

figure 28

The sharpening operation is now set correctly and the machine can work automatically and non stop.

For stopping the machine automatically after a full turn, place a small magnet (supplied with each machine) on the edge of the band already set. The magnet will cause the shutdown near the sensor **t** (fig. 23, page 17).

IMPORTANT!

The tooth pusher must always push the tooth that it is sharpening. This is the most important rule to follow when using any type of sharpener.

A run which is too short does not permit the blade to advance, whereas a too long run causes a poor sharpening.



CIRCULAR BLADES SHARPENING

To sharpen circular blades, it is necessary to shift the whole blade guide unit, putting it on the back side of the machine. Loosen the bolt (fig. 29) and remove the unit. Screw it on the back side of the machine (threaded hole) (see figure 30).



figure 29



figure 30

In case of blades having diameter <150 mm. , use spacer **z** (fig. 23, page 17).
(Remove spacer **z**, loosen support unit **w**, connect spacer **z** on the right side of the guide turned towards the right side, then connect the support unit **w** to the spacer).

ATTENTION!

- You can sharpen only circular blades without inserts and made of steel.**
- The back side of the tooth must not be >20 mm.**

◆ For this operation the machine must be turned off:

- Attach the saw blade on the appropriate **w** support. To continue sharpening the blade on the appropriate place **w** support group (Figures 23 , p . 17) . To do so, unscrew the knob of said support and insert the blade between the two conical pressure. The group support **w** circular blade can slide along a guide to enable you to sharpen blades with different diameters . Once correctly positioned the blade close the **w** group knob.



figure 31

- Using knob **g** (fig. 22, page 16) unblock the grinder unit (ATTENTION: support by hand the whole unit) and regulate the inclination according to the cutting angle of the bandsaw.

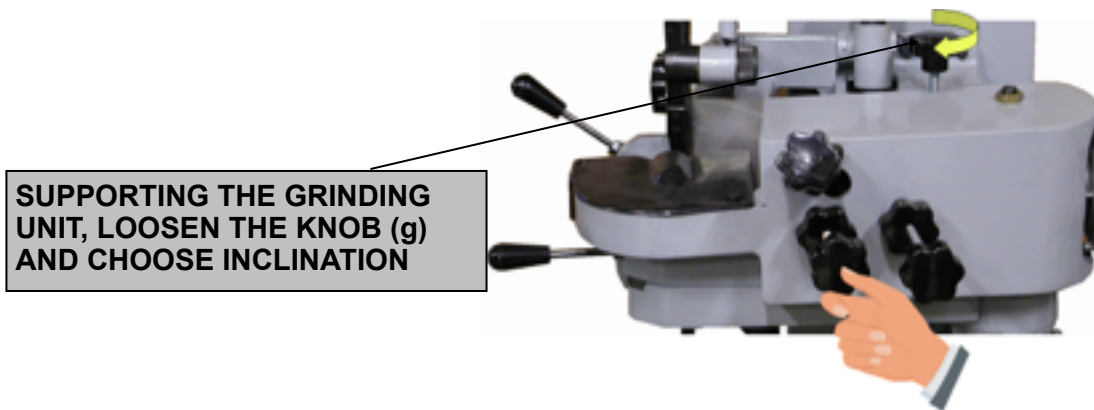


figure 32

- Rotate the handwheel **h** (fig. 10, page 13): the tooth pusher causes the blade feed. Regulate it using the adjusting screw of the tooth pitch **f** (fig. 10, page 13).
- Loosen the knob **l** (fig. 10, page 13): the grinder unit advances towards the blade cutter. Check that the grinder does not strike the tooth. If the grinder strikes the tooth, go back to the previous point and regulate again the feed pitch, increasing it.

◆ **For this operation the machine must be turned on:**

- Push buttons **r** and **o** (fig. 9, page 12) to start the feed and rotation motors of the grinder.

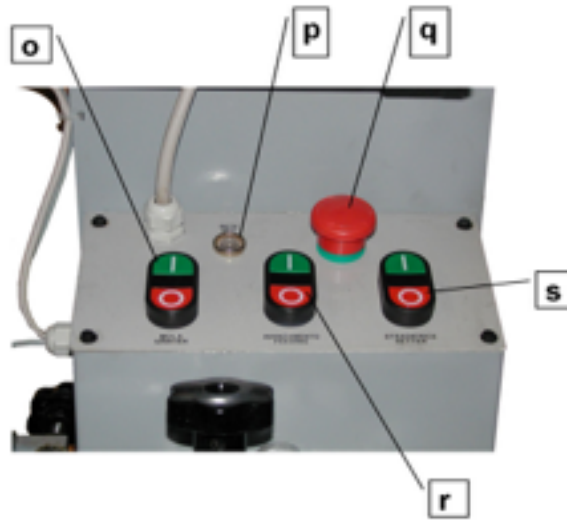


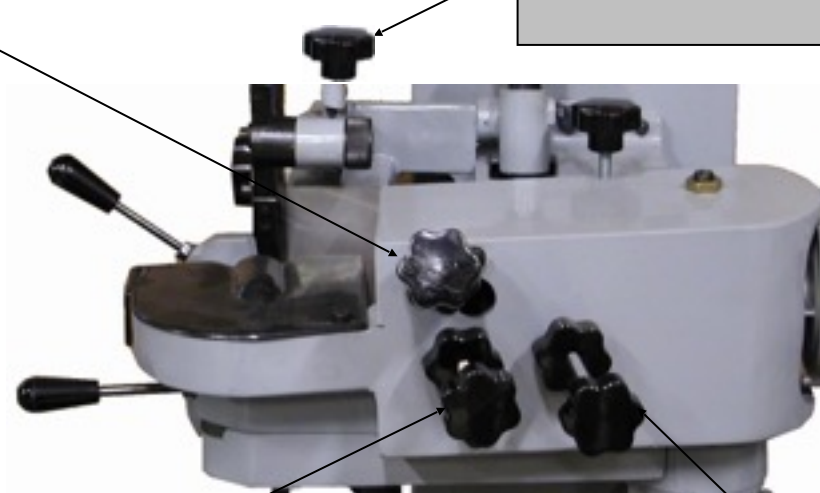
figure 33

- Regulate the grinder run using knob **l** (fig. 22, page 16) in order to sharpen the whole cutter until the bottom of the tooth gullet. Using the pitch adjusting screw **e** (fig. 22, page 16) put the grinder in contact with the cutter (avoid an exaggerated removal).
- Regulate the grinder exit using knob **m** (fig. 22, page 16). This operation regulates also the tooth back sharpening. Delaying the grinder exit, the grinder grinds the cutter back while the tooth pusher feeds it downwards.
- Knob **i** (fig. 22, page 16) must usually keep completely loosened. If you are using a blade with spaced teeth, use this knob for increasing the grinder stay time inside the gullet in order to grind also the straight portion of the gullet.



Knob (m) – output rate: it is used to regulate the grinder exit, permitting to grind only the cutter, or the cutter and the back

Knob (e) - tooth pusher pitch: it is used to regulate the removal on the tooth frontal side



Knob (l) – grinder in/out: it is used to regulate the working depth of the grinder

Knob (i)– grinder stay time inside the gullet: it is used to grind the blades having a spaced tooth



figure 34

The sharpening operation is now set correctly and the machine can work automatically and non stop.

For stopping the machine automatically after a full turn, place a small magnet (supplied with each machine) on the edge of the band already set. The magnet will cause the shutdown near the sensor **t** (fig. 23, page 17).



7. TECHNICAL CHARACTERISTICS OF MACHINE

VALUES	SC-2	
WIDHT OF BLADES OF THE BANDSAW*	SETTING	MAX 50 mm
	SHARPENING	MAX 70 mm
DIAMETERS OF CIRCULAR BLADES	110 - 600 mm	
PITCH*	SETTING	5 - 25 mm
	SHARPENING	5 - 35 mm
SPEED (TEETH)	SETTING	70/min
	SHARPENING	140 - 210 /min
TYPES OF SETTING	 TYPE A  TYPE B	
POWER OF MOTORS	N°3 x 0.25 HP	
GRINDING WHEEL Ø **	152x20x6 mm	
PACKING DIMENSIONS	160x90x70 cm	
WEIGHT (NET-GROSS)	100 kg	



* On request, it is possible to increase the machine capacity.

** On request, also grinder 152x20x8 mm and 152x20x10mm are available.

8. MAINTENANCE

Our machines need very little maintenance. However we suggest you to carry out the following operations periodically. (ATTENTION: before any type of maintenance, push the emergency button **q** (fig. 33, page 22) or disconnect the machine):

- **Every day: remove the emery dust from the machine:** To remove easily, keep the knob **n** pulled (fig. 23, page 17).
- **Every week: lubricate all the oilers** (points **a** fig. 23, page 17).
- **Periodically: dress the wheel.**

The machine is equipped with a grinder type:

- **GRINDING WHEEL 152X20X6** which is already balanced by the producer

To substitute the wheel, follow this procedure:

- turn the machine off
- push the emergency button (or disconnect the machine)
- remove the grinder cover, using a key 20 loosen the bolt which is at the centre of the grinder clockwise, then substitute it and tighten the bolt anticlockwise
- disconnect the emergency button (or connect the machine)

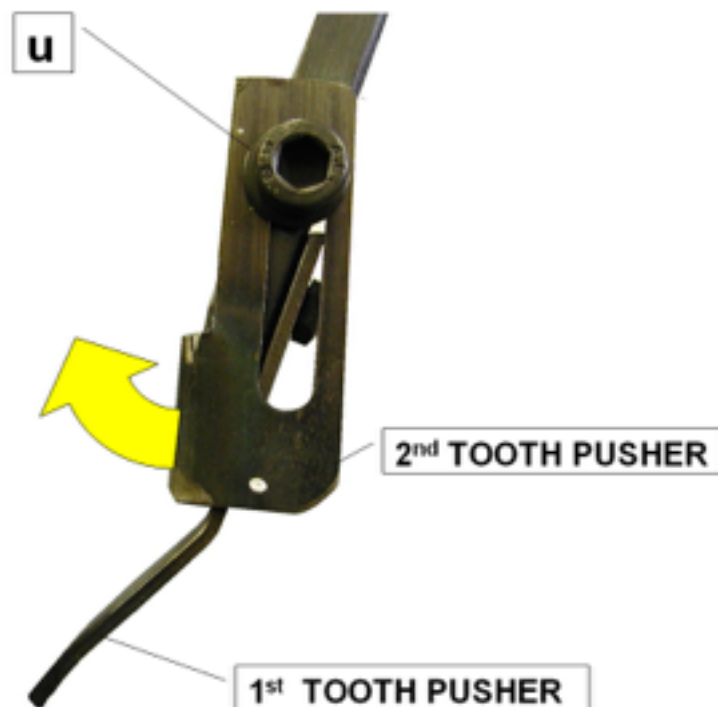


9. PROBLEMS AND SOLUTIONS

In case of problems, read this section. Problems can be solved acting on different values:

- You cannot start the machine.
 - solution: Check that the machine is correctly connected with the three-phase network. Check that the electric tension corresponds to the one indicated on the machine (fig. page 21). Check that the motors turn in the direction indicated by the arrows, otherwise invert the position of the two wires on the current plug.
- The blade does not move.
 - solution: Check the blade: it may have one tooth less. Regulating the second tooth pusher, you should solve this problem. For this operation: loosen screw **u** (fig. 35) and regulate the second tooth pusher. Then close the screw **u** again.

Figure 35





- While sharpening, the machine aims to wear the tooth.
 - Solution1: The setting pitch may not be regulated correctly. Using knobs **g** or **e** (fig. 22, page 16) regulate the feed pitch of the band. See instructions page 9 and table page 24.
 - Solution2: Knob **i** (fig. 22, page 16) used to regulate the spaced pitch may be screwed. If you do not need a spacing between the teeth, this knob must be kept loosened.
 - Solution3: The wheel may be too worn-out and may need to be replaced.
 - Solution4: The blade may not be positioned correctly. Check that it is free to slide perfectly along its guide.

- The machine stops inexplicably.
 - Solution1: It may be due to the magnet used for the automatic stop of sharpening operation. Check its position and, if necessary, position it correctly.
 - Solution2: The protective cover **v** (fig. 20, page 15) may be open or closed wrongly.
 - Solution3: The emergency button **q** (fig. 33, page 22) may have been activated: disable it.
 - Solution4: There may be a motor overheating due to a prolonged use of the machine. Let motors rest for a while, then start the machine again.

- The setter vice does not operate correctly on the blade; you are using blades having a thickness >1 mm or < 0,6mm.
 - Solution: The setter vice is preset for blades having thickness between 0,6 and 1 mm. If your blades have a different thickness you must use screw **p** (fig. 7, page 10): increase or decrease the vice opening (ATTENTION: blade thickness MAX 1,2 mm).

For any other problem, get in touch with us: www.elite.cat or info@elite.es



10. WARRANTY

Our machines are guaranteed against any possible defect from manufacturing, under normal usage and maintenance conditions.

Such a guarantee lasts 12 months from the purchasing date and consists in the free replacement of the defective parts.

The guarantee intervention cannot be claimed if the machines have been tampered by unauthorized people or firms, or if they have undergone any use different from our instructions.

The warranty does not include the parts liable to wear (e.g. grinder, tooth pusher).

11. TECHNICAL CHARACTERISTICS

With regard to the technical characteristics of the machine, see label on it.

12. LEVEL OF ACOUSTICS PRESSURE

Acoustics pressure level which is continuous and circumspect (A) at working positions:

THIS RATE IN THE MACHINE TESTED BY US IS: 88 dB (A) position 10

MAXIMUM RATE OF ACOUSTICS PRESSURE WHICH IS INSTANT AND CIRCUMSPECT (C) AT WORKING POSITIONS (This must be declared if it exceeds 63 Pa)

THIS RATE IN THE MACHINE TESTED BY US IS: <63 Pa

ACOUSTICS PRESSURE LEVEL GIVEN OUT BY THE MACHINE. If the acoustics pressure level is continuous and also circumspect (A) at working positions exceeds 85 dB (A)

THIS RATE IN THE MACHINE TESTED BY US IS: 103 dB.

ACOUSTICS PRESSURE LEVEL CONTINUOUS AND EQUIVALENT VALUED IN DETERMINED POINTS AND APPARENT IN THE REPORT



13. DRAWING AND PART LIST

PART LIST WHOLE DRAWING (figure 43)

01	ROD FOR HOLDING THE ROLLS
02	ROLL
03	DISC FOR HOLDING THE ROLLS
04	SHARPNER UNIT
05	MOTOR CABLE FOR THE GRINDER ROTATION
06	DRIVING MOTOR CABLE FOR THE GRINDER UNIT
07	CONTROL PANEL CABLE
08	SETTING MACHINE MOTOR CABLE
09	SWITCH LABEL
10	SWITCH
11	BOX
12	CABLE GLAND
13	SETTING MACHINE UNIT
14	PANEL
15	LAMP
16	EMERGENCY BUTTON
17	CONTROL PUSH BUTTON
19	COLUMN

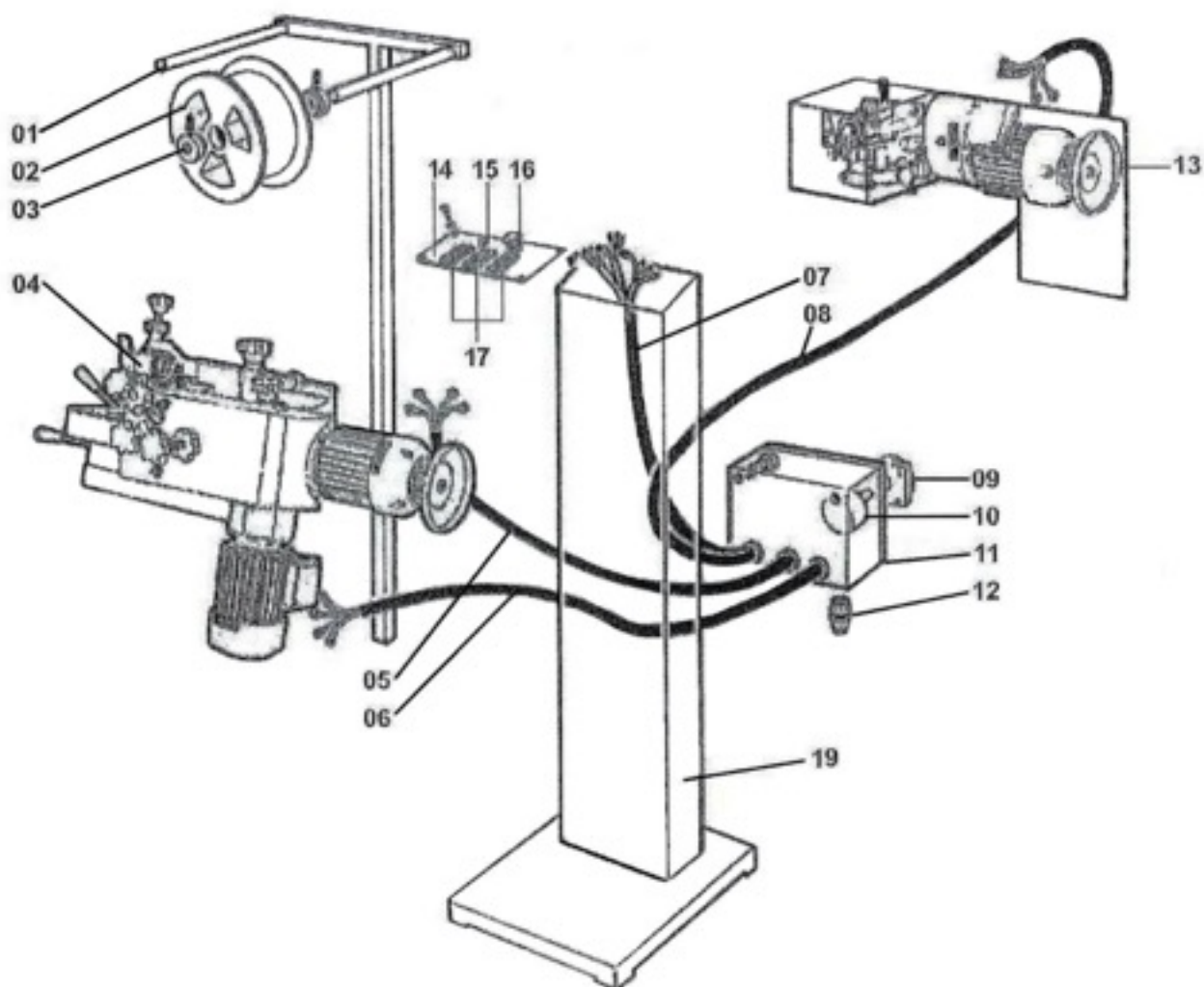


figure 43



PART LIST SHARPENER UNIT DRAWING (EXTERNAL PARTS) (figure 44)

- 1 LEVER FOR GRINDER UNIT MOTION (BY HAND)
- 2 KNOB FOR BLOCKING KNOB 3
- 3 KNOB (IN/OUT DEPTH)
- 4 KNOB OF SPACED TOOTH
- 5 COUNTER HANDWHEEL
- 6 KNOB
- 7 GRINDER PROTECTION
- 8 NUT FOR GRINDER CLAMPING
- 9 UPPER WASHER OF GRINDER
- 10 GRINDER
- 11 LOWER WASHER OF GRINDER
- 12 CLAMPING SCREW OF RING NUT
- 13 UPPER RING NUT
- 14 BELT CASE
- 15 UPPER BEARING
- 16 CAST-IRON BODY
- 17 GRINDER SHAFT
- 18 LOWER BEARING
- 19 LOWER RING NUT
- 20 PULLEY OF THE GRINDER SHAFT
- 21 BODY GRINDER UNIT
- 22 BELT
- 23 DRIVE SHAFT
- 24 MOTOR SUPPORT
- 25 GRINDER MOTOR
- 26 CLAMPING SCREWS OF BELT CASE
- 27 PULLEY CLAMPING SCREW
- 28 NUT
- 29 GRAIN
- 30 OUTPUT RATE KNOB
- 31 KNOB FOR BLOCKING KNOB 30
- 32 SPACER

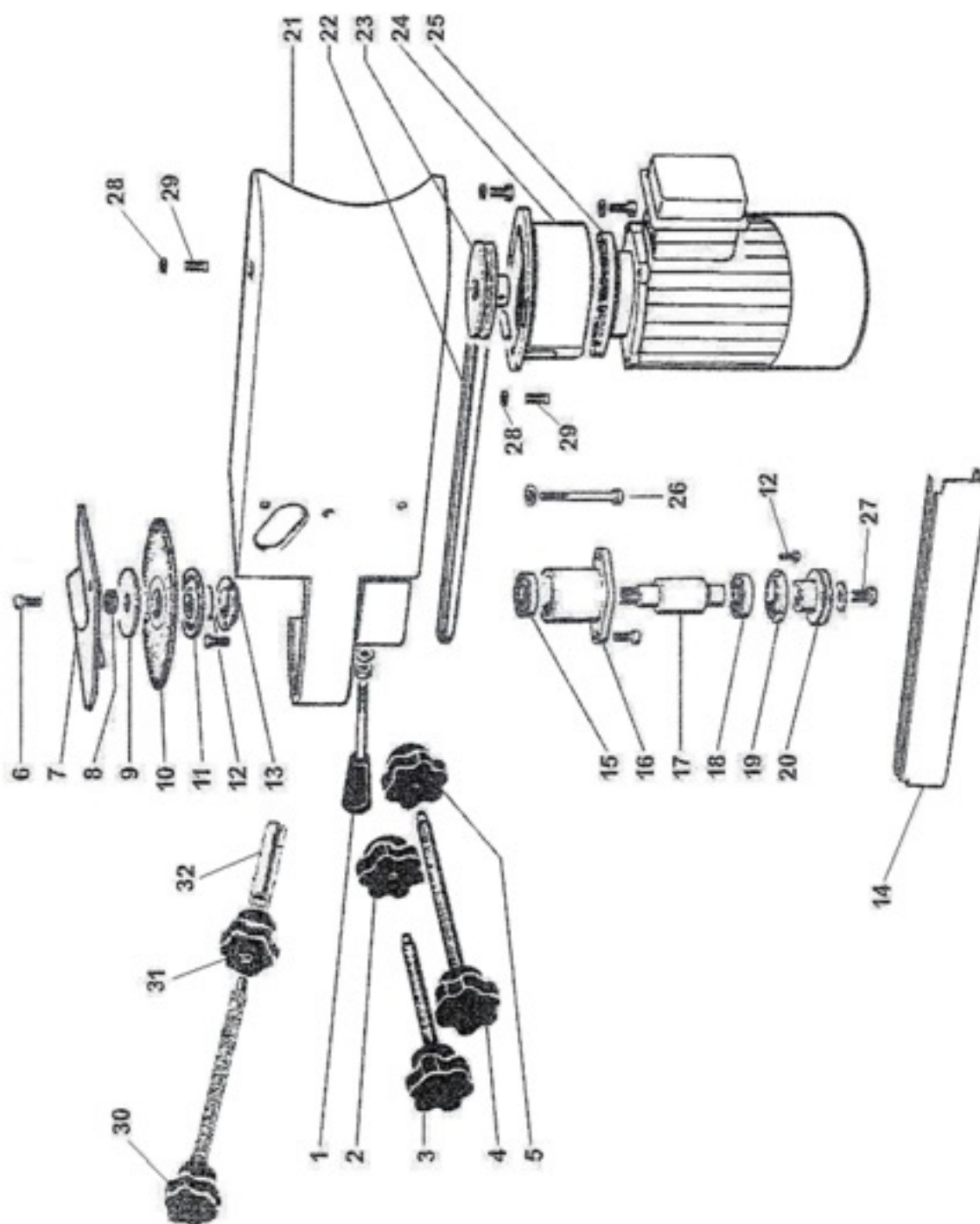


Figure 44



PART LIST SHARPENER UNIT DRAWING (INTERNAL PARTS) (figure 45)

1	SENSORSUPPORT
2	SENSOR
3	BLADE GUIDE SUPPORT
4	BLADE GUIDE
5	MAGNET
6	DEVICE THAT PRESSES THE BAND
7	WHEEL OF DEVICE THAT PRESSES THE BAND
8	ADJUSTING HANDWHEEL OF BLADE GUIDE
9	PIVOT FOR NYLON WHEEL
10	BEARING
28	NUT
29	GRAIN
30	OUTPUT RATE KNOB
31	KNOB FOR BLOCKING KNOB 30
32	SPACER
120	HANDWHEEL
121	COMPLETE FEED MOTOR
135	DRIVING GEAR
136	OIL SEAL
137	REDUCTION UNIT
138	BEARING
141	GEAR
142	SPECIAL SCREW
144	OIL SEAL
145	REDUCTION COVER
146	LUBRICATOR
147	CAST-IRON BODY
148	SPACER
149	CENTRAL PIVOT
150	CAMS
151	BEARING
152	COVER
153	BEARING
154	CONNECTION ROAD
155	PLATE



156	VICE ARM
157	PLATE
158	PIVOT
159	ECCENTRIC
160	CAST-IRON BODY
161	STOPPER
162	SPRING
163	GRAIN
164	KNOB
165	BEARING
166	ANGLE CLEAT
167	PAWL
168	BEARING
169	ANGLE CLEAT
170	THREADED BAR
172	PIVOT
173	CROSSED PIVOT
174	KNOB EXTENSION
175	PIVOT
176	FEEDBACK
177	BLADE GUIDE SLIDE
178	TOOTH PUSHER ARM 1
179	HANDLE
180	THREADED PIVOT - HANDLE
181	SPRING
182	SPRING
183	SPRING HOLDER
184	SPRING
185	TOOTH PUSHER ARM 2
186	PIVOT
187	BAR
188	1st TOOTH PUSHER
189	2nd TOOTH PUSHER
190	LEVER FOR VICE OPENING
191	SLIDE NUTS
192	BLADE FEED SLIDE
193	SLIDE PIVOT
194	SUPPORT FOR CIRCULAR BLADE
195	SUPPORT FOR CIRCULAR BLADE
196	KNOB FOR BLOCKING CIRCULAR BLADE
197	BLOCK FOR KNOB
198	CAP FOR GRINDER SLIDE FEEDING
200	SLIDE BLOCK
201	SLIDE BLOCK
201B	SLIDE
205	SPRING
206	PIVOT
207	COVER
209	SPRING
210	PIVOT
211	NYLON STOPPER

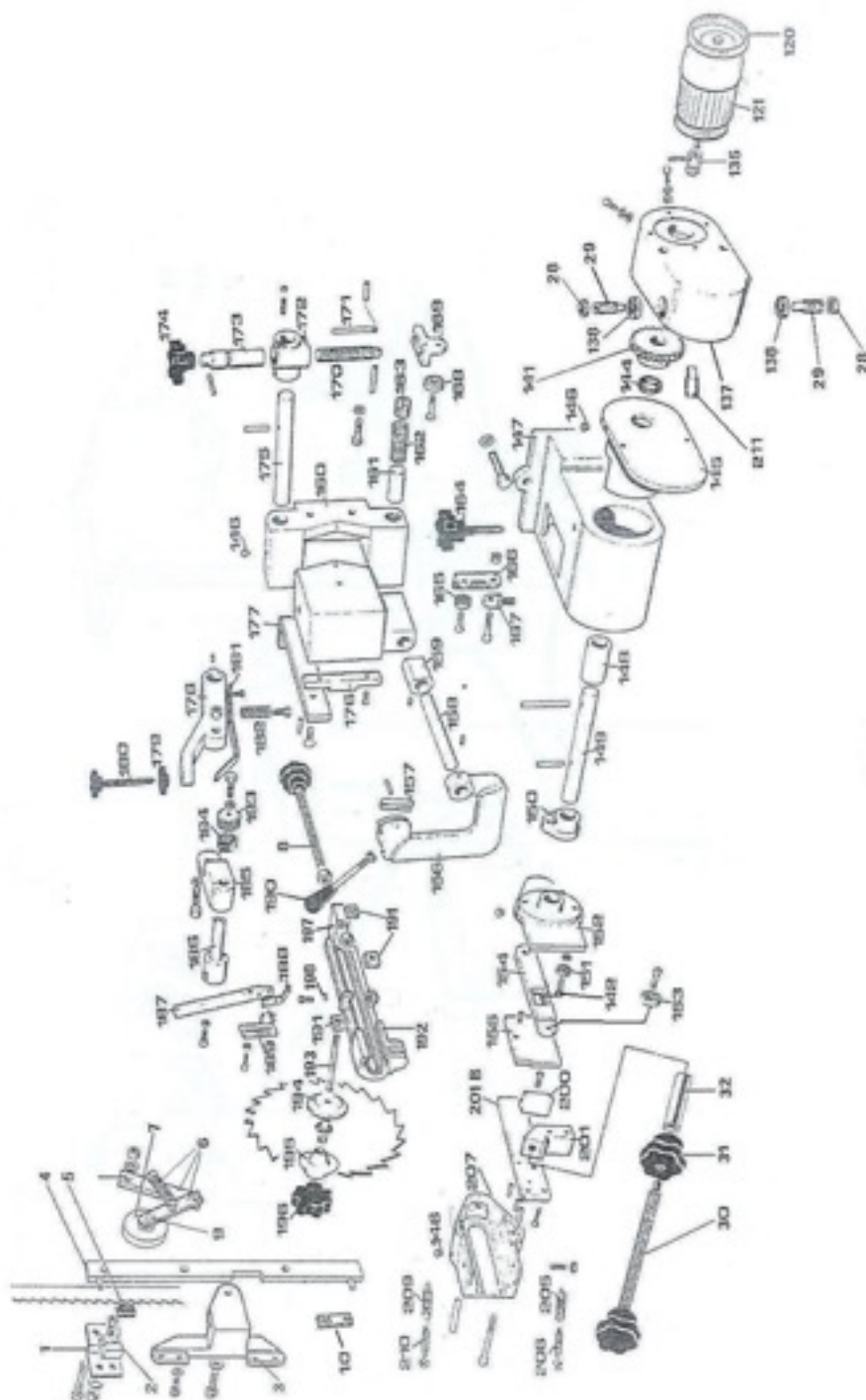


figure 45



PART LIST SETTING MACHINE UNIT DRAWING

4	SECURITY SENSOR
5	SECURITY KEY
6	PROTECTIVE CASE
7	SHAFT
8	MAGNET
9	SENSOR
10	SENSOR SUPPORT
11	EXTERNAL CAM
12	REDUCTION BODY
13	DRIVING GEAR
14	SETTING MACHINE MOTOR
15	GEAR
16	HINGES
17	COVER
18	KNOB
21	PLATE
86	RIGHT INTERNAL CAM
87	LEFT INTERNAL CAM
88	HARDENED LITTLE ROLLS
89	ADJUSTING PIVOT
91	LEVER PAIR
92	LITTLE HAMMER PAIR
93	RETURN SPRING (LEVER)
94	PIVOT OF TOOTH PUSHER ARM
95	SPRING
96	RING
97	BEARING OF TOOTH PUSHER SUPPORT
98	TOOTH PUSHER ARM
99	PIVOT OF TOOTH PUSHER SUPPORT
100	TOOTH PUSHER
101	LITTLE BLOCK
102	SPRING
103	DEVICE FOR REGULATING THE VICE OPENING
104	LITTLE CYLINDER PAIR FOR VICE OPENING
105	ARMS
106	PLUGS
107	SPRING
108	CLAMPS
111	PLATE (RIGHT VICE)
112	PLATE (LEFT VICE)
113	FORK FOR BLADE SUPPORT
114	KNOB
115	DEVICE FOR PRESSING THE BLADE
116	SETTING MACHINE BODY
117	RING
118	ROLLER
119	PIN
120	HANDWHEEL
121	PLATE
122	PIVOT
125	SPRING

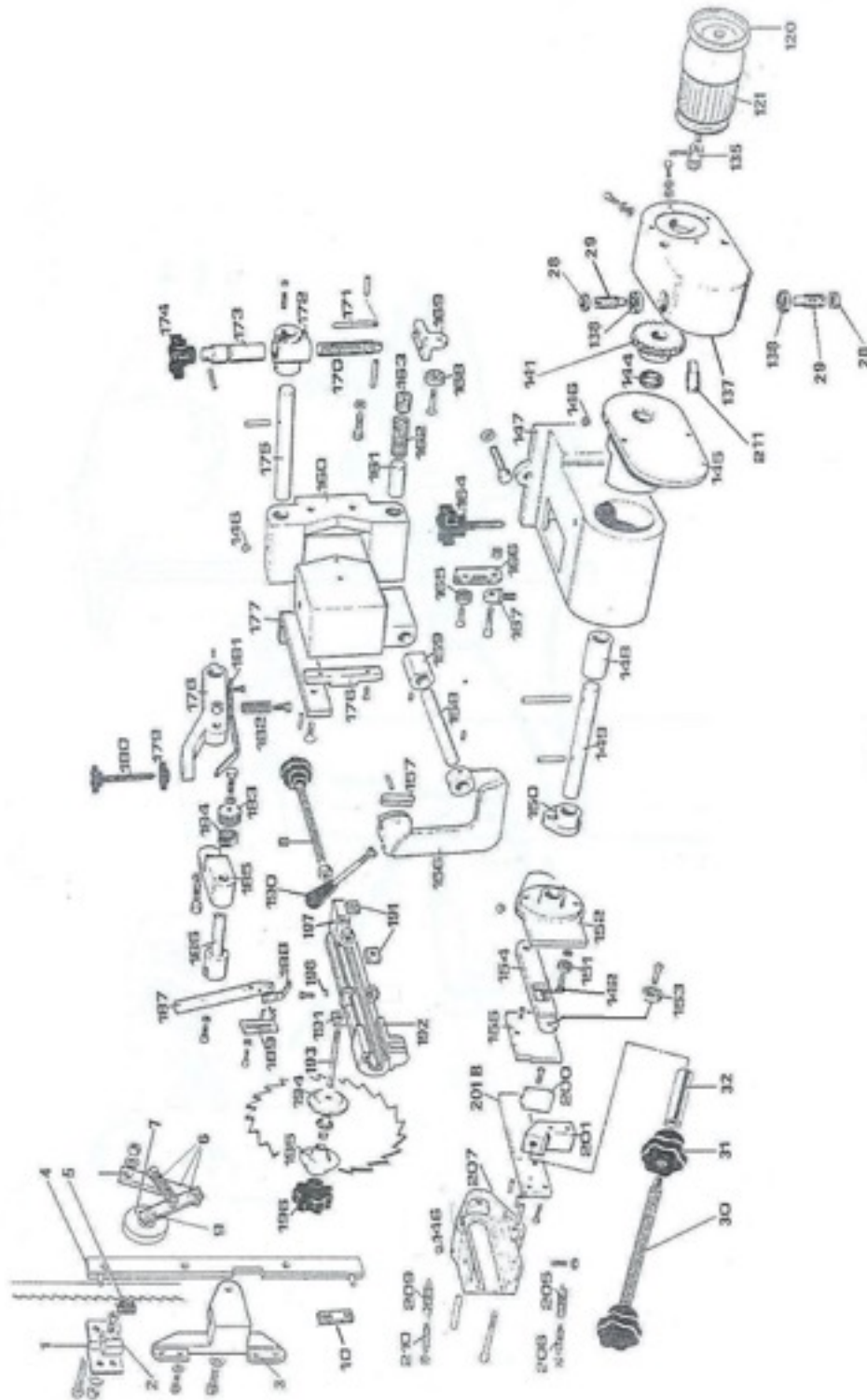


figure 46

