

FORMAX[®]

Cut-True 29A S/N 0592 and above
Electric Guillotine Paper Cutter

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1. GENERAL INFORMATION

- This operator manual introduces the machine for the user and shows what for the machine was designed for to enable safe and comfortable work on the machine
- Inside the manual there are listed special safety requirements necessary to use the product
- The manual should be stored near the machine and secured from lost or damage
- The operator should read the manual before using the machine with special focus on chapter "Safety rules"
- The manual should be accessible by operator at any time and read carefully by all the machine operators

It refers to:

I. Operation and first installation

II. Troubleshooting of workflow

III. Maintenance (service, repairs) and transportation

- In addition to the manual operator should keep general safety norms and local, national health and safety requirements. The employer is also obliged to train the staff properly to operate the machine in harmony to the manual.

1.1 Identification

Single knife paper cutter is marked with nameplate sticker located on the right side of the guillotine 1 (figure. 1)

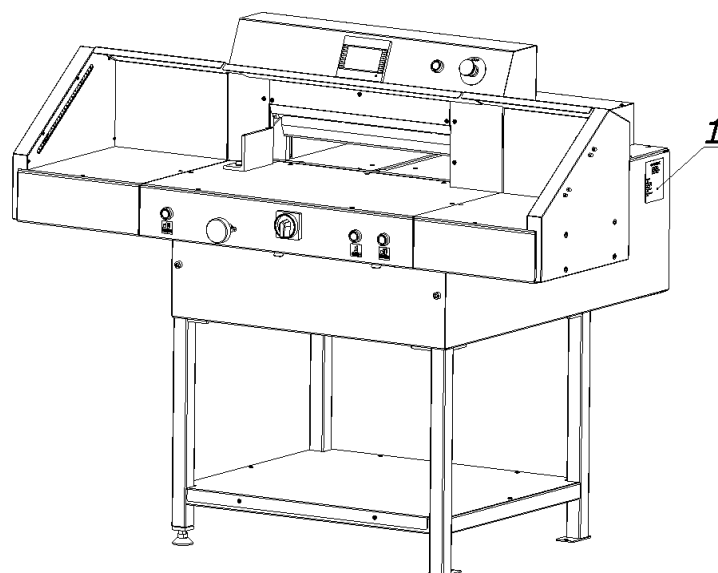


Figure 1

After the machine purchase it is suggested to check the serial numbers of machine nameplate with purchase documents.

A –Machine category (Paper cutter)

B –Machine type (G52)

C - Four digits serial no.

D – Production year

E – Voltage (V) / frequency (Hz)

F – Maximum power installed (kW) / amperage (A)

G – Machine weight (kg)

1.2 Purpose of use

Single knife cutter is designed for cutting to requested dimension reams of paper, cardboard and other materials like pvc, plastics, fiber, foils, lamination and rubber etc. It is mainly used by printing houses, print finishing specialists, copy shops and offices. In case of some materials (like ex. plastics) it is recommended to use smaller ream than maximum designed (to be consulted with manufacturer). The machine must be used according to the rules given in operator manual and conditions as assemble, disassemble, reassemble, installation, controlling and maintenance should be respected.

Danger of damage in case of wrong usage!

- **operator is fully responsible for any damages caused by incorrect using of the machine!**
- **the machine is designed only for purposes given in this manual by the manufacturer!**

1.3 Documentation

- This operator manual is deliver with the machine
- The operator manual is not the service manual.
- It is a must to use only the original spare parts delivered by manufacturer or authorized agent.
- The drawings in the manual are example and may slightly differ from the real machine received.
- The maintenance substances mentioned in the manual like oils, greases etc. are

exemplary, available at manufacturer region when the manual was created. It is allowed to use other materials with similar properties available at local market.

- The manual should be always stored near the machine
- The staff of user should be familiar with the manual before starting to operate the machine.

1.4 Introduction

In this manual there are included information about safety features of the guillotine. The manual should be stored near the machine and secured from lost or damage. It is necessary to operate the machine according to manual but also to local, general rules of safety. The employee is also obliged to train respectively the the operators of the machine according to the manual. Each operator should confirm receiving of the manual and sign the obligation to respect it. The requirement is necessary to start working on the machine.

2. SAFE OPERATION

The elements of mechanics, electronics of the guillotine are made according to latest solutions and general rules of technology to secure the operator in case of failure. The adequate level of safety elements ensure operator safety. It is necessary to check with manufacturer if user wants to use special, extra equipment which was not installed and delivered by manufacturer. Otherwise the factory warranty is no longer valid and manufacturer takes no responsibility for modifications done in the machine and damages cause by such.

This requirement is also applicable to the spare parts used during the repairs!

The repairs should be made only by servicemen who were trained by the manufacturer. In case of the repairs done by unauthorized service the warranty given by manufacturer is not valid and manufacturer is no longer responsible for any damages.

- **Warranty is terminated if the machine is modified by user without any permission of manufacturer**
- **Modification by user removes all responsibility from the manufacturer for any damages**

Despite all precautions the operating of the machine by not trained staff or wrongly trained can cause the risk of damage.

Each person present during the installation, maintenance and usage of the machine must be familiar with the manual, especially the chapter Safety of use.





Despite the obligation to do it prior using the machine such means should be also repeated!





Possible effects of incorrect usage:

- risk of injury
- risk of machine damage
- risk of deterioration of technical condition of machine

2.1 Symbols: meaning and application

Table 1. Symbols meaning

	<ul style="list-style-type: none"> • Read operator manual • Respect operator manual <ul style="list-style-type: none"> • INFORMATION
	<ul style="list-style-type: none"> • WARNING! • Risk of machine damage • Risk of deterioration of technical condition of machine
	<ul style="list-style-type: none"> • CAUTION! DANGER! • Danger to life • Danger of body damage
	<ul style="list-style-type: none"> • Dangerous electrical voltage!

	<ul style="list-style-type: none"> • Children must not operate the device!
	<ul style="list-style-type: none"> • Do not put hands underneath the knife!
	<ul style="list-style-type: none"> • Do not leave knives unattended • Do not remove or transport knives without covers! <ul style="list-style-type: none"> • Risk of injury!
	<ul style="list-style-type: none"> • Do not cut hard materials or materials, which may be splattered

2.2 Employee qualifications

- The guillotine cutter can only be operated by qualified employees who have been properly trained by the cutter manufacturer. With regard to safety rules, in the contents of this instruction, by a qualified employee should be understood as a person authorized to set machines, circuits and electrical circuits in accordance with the standards of security technology.
- The guillotine cutter should only be operated by employees trained and authorized for this purpose by the employer. **Such employees must be of legal age.**
- An operator who does not use the language of the available version of the user manual in speaking or writing, should be fully instructed in verbal instructions and complete comprehensive and practical training to familiarize with the content of the document.

This requirement is especially important for chapter "Safety of use".

The manufacturer recommends that the operator be given the translation of "Safety of use" in his mother language with confirmation of receipt of such a document.



INFO

Before operating the cutter the operator must read the operating instructions.

- Every employee delegated to work during assembly, disassembly, reassembly, commissioning, servicing and maintenance (technical inspection, servicing, repairs) of the cutter must read the entire operating manual, in particular the chapter "Safety of use".
- The manufacturer recommends that the buyer of the machine, transferring it for use, obtained a written confirmation of the contents of the instructions.
- Every employee authorized to perform assembly, start-up, operation and maintenance and repair of the cutter must read the entire operating manual, in particular the chapter "Safety rules".

2.3 Requirements for the operator's workplace.

The user is obliged to create working conditions at the cutter workplace that preclude the operator from slipping, slipping or falling due to poor ground conditions, the way of routing the wires or the lack of convenient access!

2.3.1 Personal protection equipment

If necessary or if it results from the regulations in force, use the following personal protective equipment:

- Wear safety shoes
- Wear safety goggles - eg when cutting fragile material
- Use hearing protection - eg when cutting hard material

2.3.2 Permissible environmental and operational conditions

- Operation of the machine is permitted in closed rooms
- Humidity: 35% - 95% (non-condensed)

- Ambient air temperature: + 5 ° C - + 30 ° C

2.4 Expected risks when operating the cutter

Using the single cutter as intended, you can predict some of the risks to your life and health. To avoid existing hazards, the rules of using and operating the cutter must be explained in detail. Special attention should be paid to the cutter units and situations posing a threat to the operator and third parties:



DANGER!

The operator can operate the machine in good technical condition.

At the beginning of each work shift and after each knife replacement, check the operation of the safety devices. Interference in security or bypassing them (eg safety light curtains, two-handed controls) creates a danger to life or injury!

At the moment, the cutter can only support one operator!

The operator himself must also make sure that the machine is not operated by unauthorized persons!

Table 2. List of safety concerns occurring while operating the cutter

Lp.	Factor and / or dangerous place	Type of threat
I	Mechanical hazards	
1	Motor, belt drive mechanism of the clamp bar drive	Rapture, crush
2	Motor, belt drive for the backguage drive mechanism	Rapture, crush
3	Motor, belt drive for the knife drive mechanism	Rapture, crush
4	Pressing movement of the clamp bar	Crush
5	Approach move of the backguage	Crush

6	Cutting zone	Cut off, cut
7	Manipulation with a knife during the change	Cut off, cut
8	The edges and corners of the cutter elements	Cut
9	Surfaces	Chipping, clash
II	Electrical hazards	
1	Direct touch	Electric shock

2.5 Description and evaluation of residual risk

The Grafmasz company takes responsibility for the construction of the cutter in order to eliminate the danger, although some risk elements during the cutting machine operation are possible. Residual risk resulting from incorrect behavior of the cutter operator.

- Failure to follow the safety rules described in the operating instructions
- Using the cutter for other purposes than those described in the user's manual
- Staying unauthorized persons, especially children, when cutting on the machine
- Unauthorized making any alterations
- Cleaning and lubrication of the cutter during operation
- Work with dismantled or defective covers
- Manipulation within the drive units and moving parts of the cutter during operation
- Checking the cutter's technical condition and performing servicing or repairs with the cutting machine
- Checking transmission gears during operation

When presenting the residual risk, the cutter is treated as a device that was designed and manufactured according to the state of the art in the year of its manufacture.

Residual risk assessment

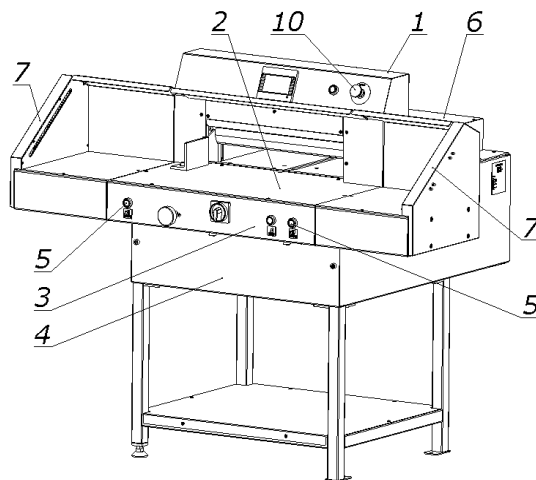
When following such recommendations as:

- Comply with the safety rules described in the operating instructions
- Careful reading of the operating instructions
- It is forbidden to put your hands in dangerous and forbidden places
- It is forbidden to make any alterations on your own
- Prohibition of the cutter in the presence of unauthorized persons, especially children
- No modification of the software of programmable control systems
- Maintenance and repair of the cutter only by suitably trained persons
- Operating the cutter by persons who have been previously trained and read the operating instructions
- Cutter protection against access of children residual threats can be eliminated.

2.6 Safety systems used in the cutter

- **Two-handed protective device** - the cut is released by the two-handed cut start system
- **Non-contact protection device** - an optoelectronic device that creates a safety curtain
- **Cam device** - a device that controls the knife stop in the upper position.

2.7 Safety Features



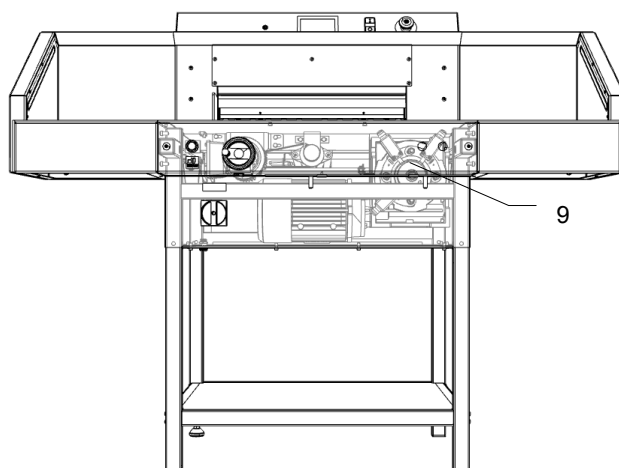


Figure 3. Arrangement of covers and protective elements

Table 3. Safety measures used to eliminate hazards (according to Figure 3)

	Factors and / or dangerous places	Security measures	Identification
I	MECHANICAL		
1.	The lever assembly mechanism of the clamp bar drive	<ul style="list-style-type: none"> – fixed cover – Emergency stop 	1,3,4 10
2.	Motor, belt drive mechanism of the clamp bar drive	<ul style="list-style-type: none"> – fixed cover – Emergency stop 	3,4 10
3.	The belt drive for the drive mechanism of the backgauge	<ul style="list-style-type: none"> - fixed cover -front table - emergency switch 	3,4, 2 10
4.	The screw mechanism of the backgauge drive	<ul style="list-style-type: none"> - cutter body - fixed cover 	2 6
5.	Motor, lever mechanism of the knife drive mechanism	<ul style="list-style-type: none"> – fixed cover – front table – Emergency stop 	3,4,1 2 10

6.	Lowering of the clamp	<ul style="list-style-type: none"> - fixed cover - electro sensitive protective device - two-handed device - Emergency stop 	<p>1</p> <p>7</p> <p>5</p> <p>10</p>
7.	Backguage movement	<ul style="list-style-type: none"> - fixed cover - Emergency stop 	<p>6</p> <p>10</p>
8.	Cutting zone	<ul style="list-style-type: none"> - two-handed device - electro sensitive protective device - cam device that monitors the knife stop at the upper turning point - Emergency switch 	<p>5</p> <p>7</p> <p>9</p> <p>10</p>
9.	Manipulation with a knife during its replacement	<ul style="list-style-type: none"> - transport handles - special protective packaging 	
10.	Sharp edges and corners of the cutter elements	<ul style="list-style-type: none"> - refraction, dullness, rounding 	
11.	Uneven or rough surfaces	<ul style="list-style-type: none"> - precise workpiece machining - paint coatings 	
II	ELECTRICAL		
1.	Direct contact of active elements	<ul style="list-style-type: none"> - closed housing - partially reduced voltage supply to the control system up to 24V AC/DC. 	3,4

2	Indirect touch	- protection against indirect contact according to PN-EN 60204-1 - continuity of the protective conductor	
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2.8 Safe working rules

1. training of the operator:

- aware of the potential hazards that may occur when operating the cutter
- clearly defining activities which, under the conditions of a given plant, are or are not the responsibility of the cutter operator and are reserved for designated authorized persons, in particular as regards the removal of defects and repairs - including electrical installations.

2. prohibition to use the cutter if:

- the machine is used contrary to its intended use and/or the cutting parameters specified in the operating instructions would be exceeded
- the cutter is visibly inefficient
- any covers of moving parts have been removed from the cutter

3. order:

- Checking the correctness of the protection devices:
 - two-handed control (each time before starting work)
 - contactless protective device (each time before starting work)
- order to carry out maintenance and repairs with disconnected electrical power

The above-mentioned requirements should be the subject of training and the content of the station instructions!

2.9 Safety control

Periodic security check should be carried out in accordance with the law. These provisions concern:

- accident prevention
- guarantee of efficient work and precision of operation

- eliminating production stoppages.



INFO

At the latest after 5 years of use, at least control of the following functions should be carried out and the results should be documented.

- operation of the control function
- check the correct position of the knife
- control of the power supply of the cutter linear indicator
- operation of the safety curtain
- operation of the two-hand control function
- protection against continuous knife movement.

The above mentioned service should be ordered by the cutter manufacturer's technical service.

3. TRANSPORT AND STORAGE

3.1 Packaging

3.1.1 Package characteristic

The transport packaging used is a disposable packaging. The transport platform is made of wood and the outer packaging is made of cardboard. Inside the box the cutter and accessories are packed in anti-corrosion covers made of plastic and oiled paper.

3.1.2 Package removal

Used packaging should be removed in accordance with legal regulations applicable in the country of the user.

3.2 Transport

The box with the machine should be transported in accordance with the markings on it (fig.4). When using a forklift (Fig. 5a), make sure that the fork length is suitable so that you can grasp the entire depth of the box.

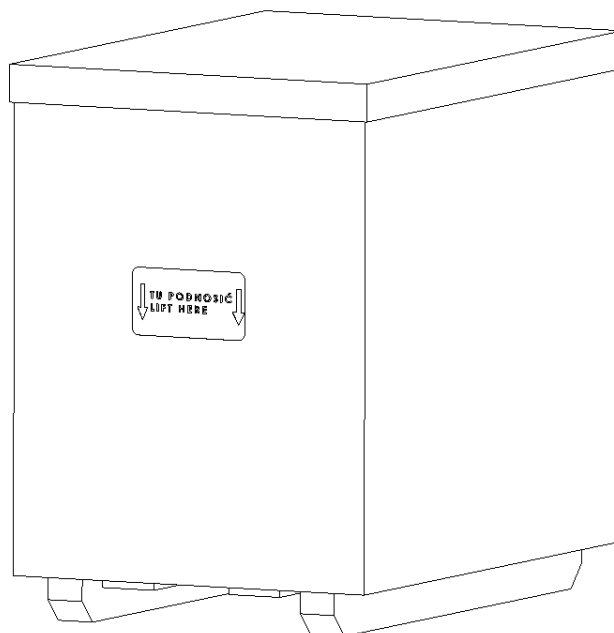


Figure 4. Cutter in a transport crate.



Figure 5a. Transporting the cutter in the crate using a forklift.

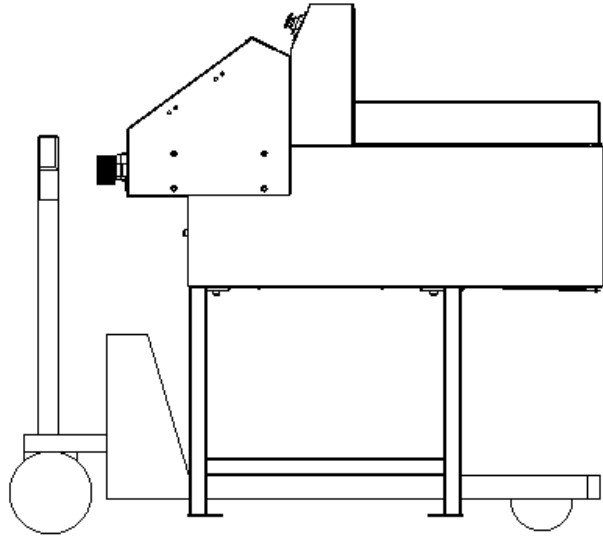


Figure 5b. Transporting cutters with a pallet truck

3.3 Delivery status

The cutter can be supplied by the manufacturer:

- completely assembled and ready for use (Fig. 6a).
- with disassembled side tables, assembly of tables according to Figure 6b.
- with unfolded base and disassembled side tables, (non-standard equipment), assembly according to figures 6b and 6c

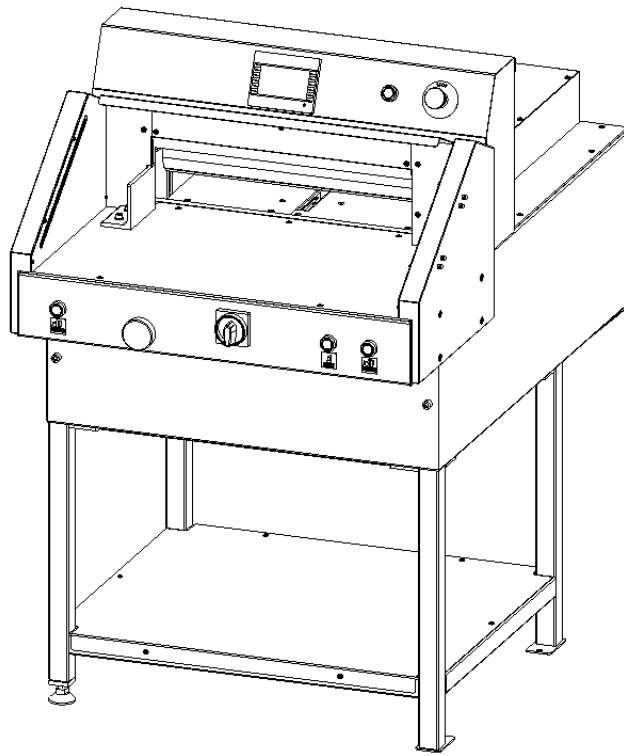


Figure 6a. Cutter without side tables

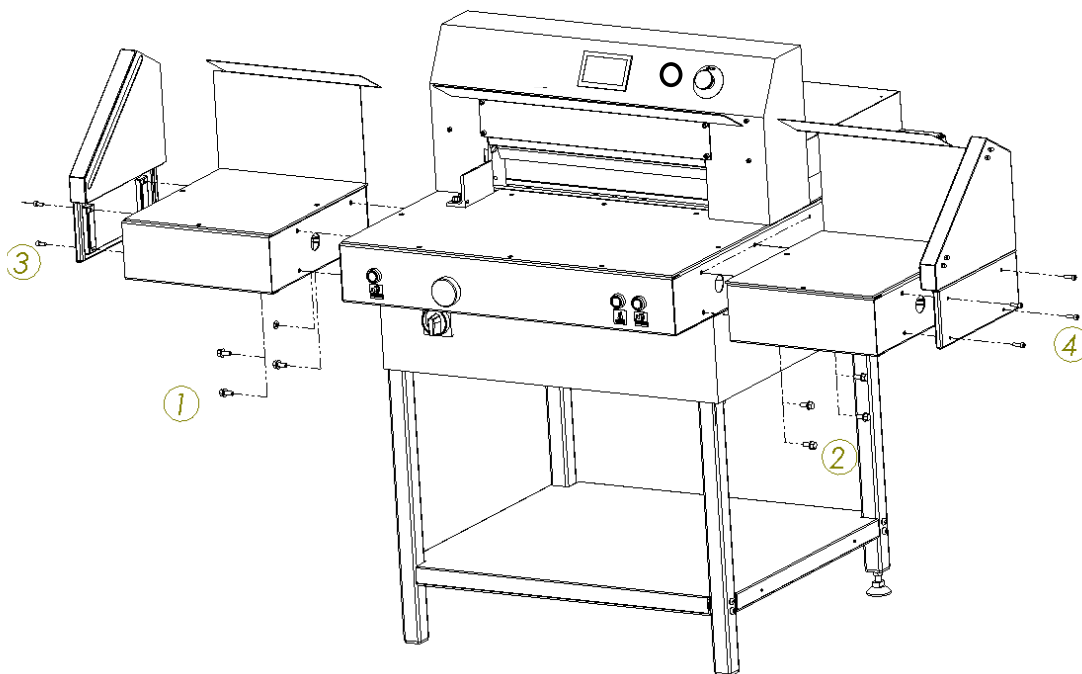


Figure 6b. Tightening of the side tables

1. Left side table + M8x25 screw (4 pieces) + washer 8 (4 pieces)
2. Right side table + M8x25 screw (4 pcs.) + 8 washer (4 pcs.)
3. Left photocell + M8x25 screw (4 pcs) + washer 8 (4 pcs) + M8 nut (4 pcs)

4. Right photocell + M8x25 screw (4 pcs.) + 8 washer (4 pcs.) + M8 nut (4 pcs.)

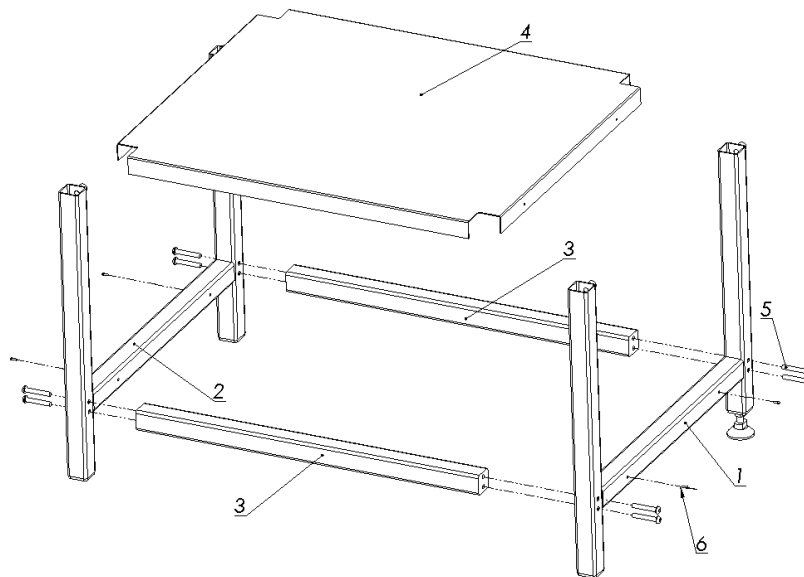


Figure 6c. Assembling of the base

1. Right side 1 piece
2. Left side 1 piece
3. Bracket 1 item
4. Shelf 1 item
5. Screw M 8x50 8 pcs.
6. Screw M 5x16 4 pcs

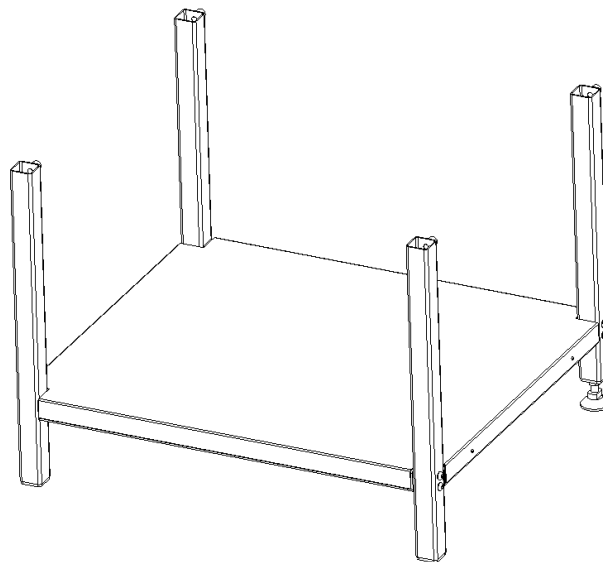


Figure 6d. Assembled base

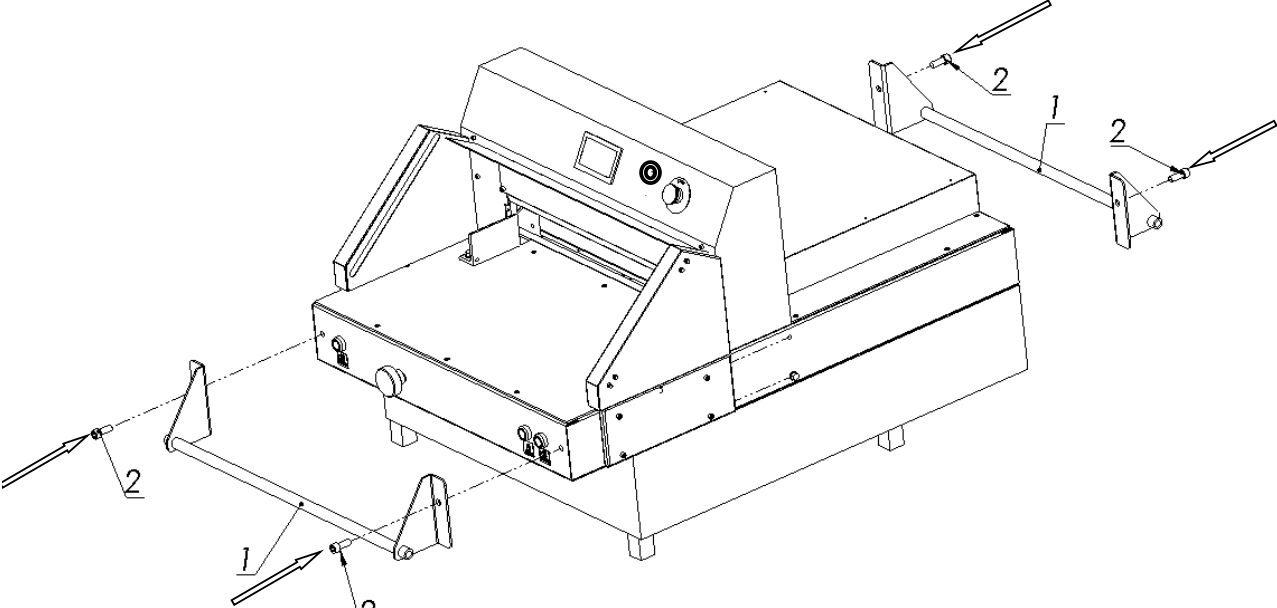


Figure 6e Tightening the transport handles

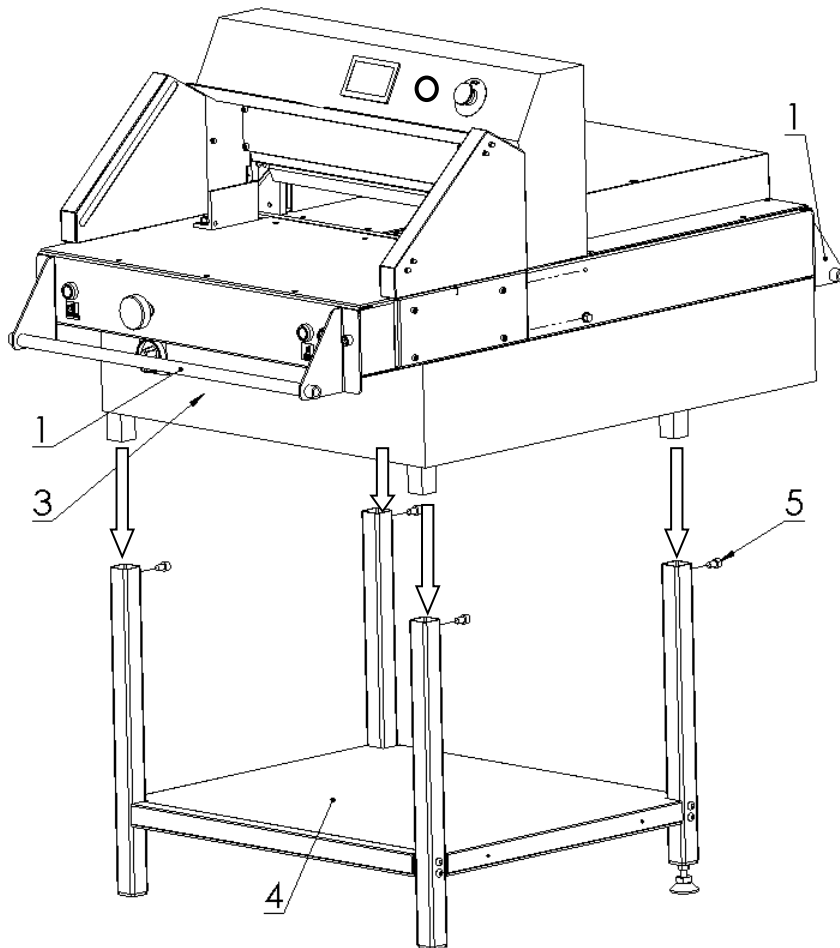


Figure 6f. Setting the cutter on the base

- 1. Transport handle 2 pcs
- 2. M12x30 screw 4 pcs
- 3. cutter
- 4. basis
- 5. M10x16 screw 4 pcs

4 strong people are needed to raise the machine and set it on the base!



Danger!

Protect the power cable from sharp tools, high temperature and oil.

3.4 Setting the cutter

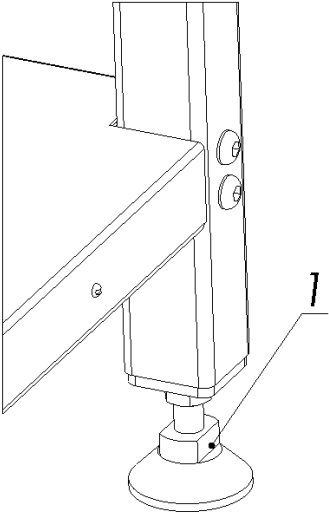
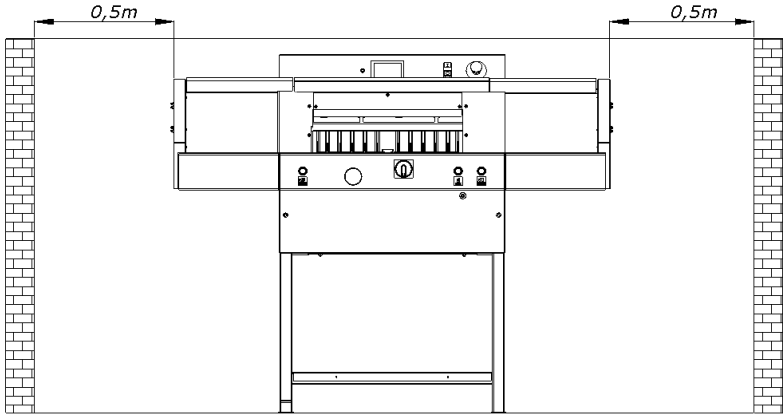


Figure 7. Adjusting the cutter setting.

The slicer does not need to be attached to the ground. The correct and safe setting of the machine is achieved by twisting the adjusting foot 1, as shown in Figure 7.

3.5 Work area

In order to easily access the cutter's mechanisms during adjustment, maintenance or servicing activities, it is recommended to keep a free space of about 0.5 m around the device. (Fig.8)



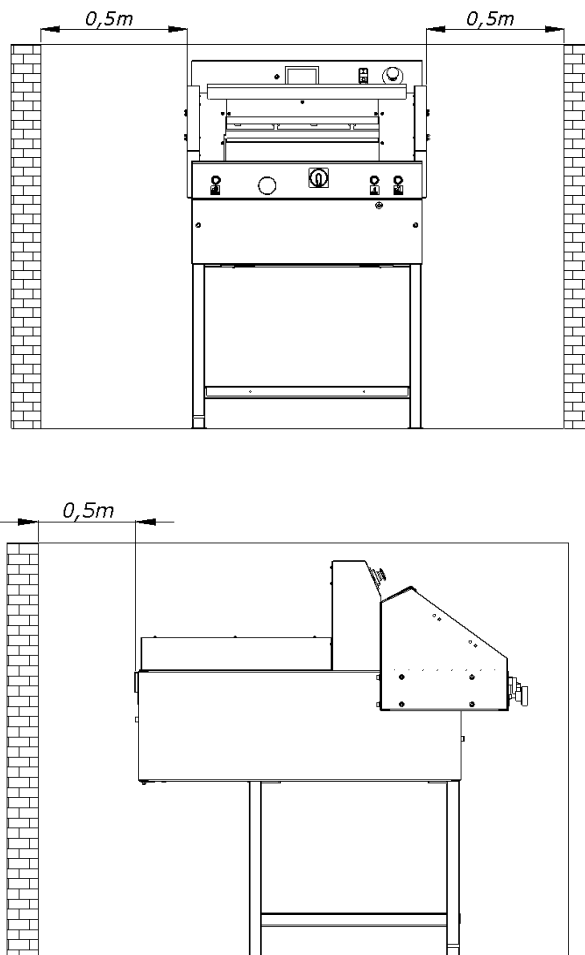


Figure. 8

4. TECHNICAL CHARACTERISTICS OF THE GUILLOTINE

4.1 Destiny

The cutter is intended for trimming the required size of a stack of paper, cardboard and other materials: plastics, fibers, metal foil, laminate, rubber, etc. It is mainly used in printing houses, bookbinding shops and offices.

4.2 Basic parameters

4.2.1 Technical data

Table 4.

PARAMETER		G 52
Maximum stack width (mm)		520
Maximum stack height (mm)	Without false clamp	80
	With false clamp	76
Cutting depth (mm)		520
Front table length (mm)		466
Narrow cut (mm)	Without false clamp	22
	With false clamp	40
Sound power level (dB)		74,6
Backgauge speed (mm/s)		58
Side table load (kg)		15
Weight (kg)	Without side table	310
	With side tables	332
Static load substrates (daN / m ²)	Without side table	343
	With side tables	282

4.2.2 Technical data - electrical system

Table 5.

Parameter	G-52
Maximum power	2 kW
Voltage / frequency	230/50 Hz
Fuse	20A
Motor power of the knife drive (kW)	1,5
Motor power of clamp drive (kW)	0,37
Motor power of backgauge drive (kW)	0,18

4.2.3 External dimensions

The dimensions of cutters in different equipment versions are shown in figure 9a, 9b and table 6.

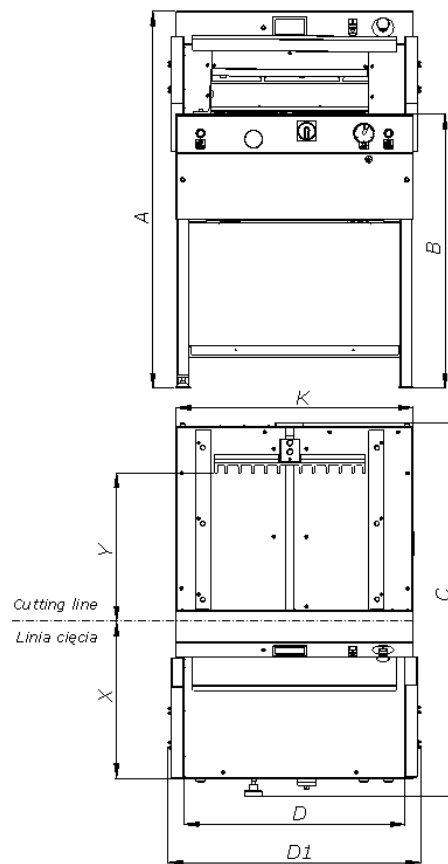


Figure 9a. External dimensions of the cutter without side tables.

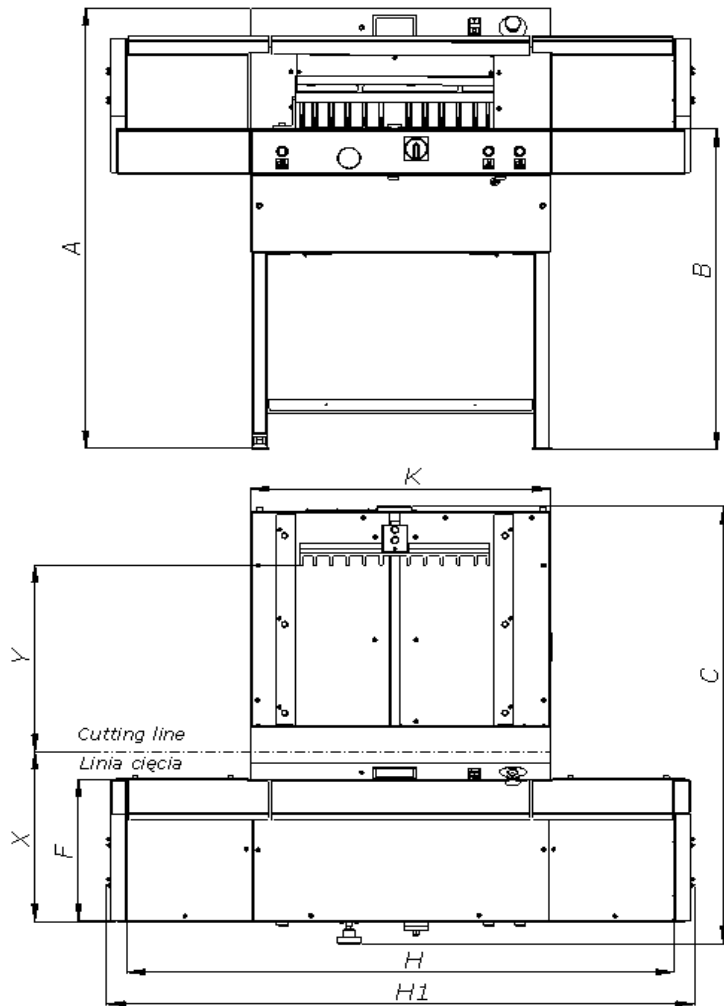


Figure 9b. External dimensions of the cutter with side tables

Table 6.

DIMENSION	VALUE(mm)
A	1244
B	904
C	1215
D	730
D1	833
F	400
H	1430
H1	1533
K	785
X	466
Y	520

5. OPERATION

5.1 Operating safety

5.1.1 Safety instructions

- Before each start-up or start-up on the cutter, the next change should be made to ensure that the safety components are complete and work properly.
- The cutter can only be operated if all safety components and safeguards such as detachable covers, emergency stop switches are installed and fully functional.
- In the event of a malfunction, stop the cutter immediately and block it.
- All defects must be eliminated immediately.

5.1.2 Warning about special hazards

You should refrain from performing any actions that infringe safety in the machine.

In particular, it is prohibited to:

- Putting your hands into the field of knife and pressure.
- Putting hands in the field between the clamping and infeed bars.
- Exercise extreme caution when handling the knife! Use transport handles when installing / removing / carrying the knife.
- Use only undamaged and sharp knives!
- The knife can only be changed by trained personnel.
- When cutting on the work table, there must be no objects (such as keys, screwdrivers)

5.2 Control system

Danger!



Danger!

The cutter cannot be operated with defective photocells forming the safety curtain!

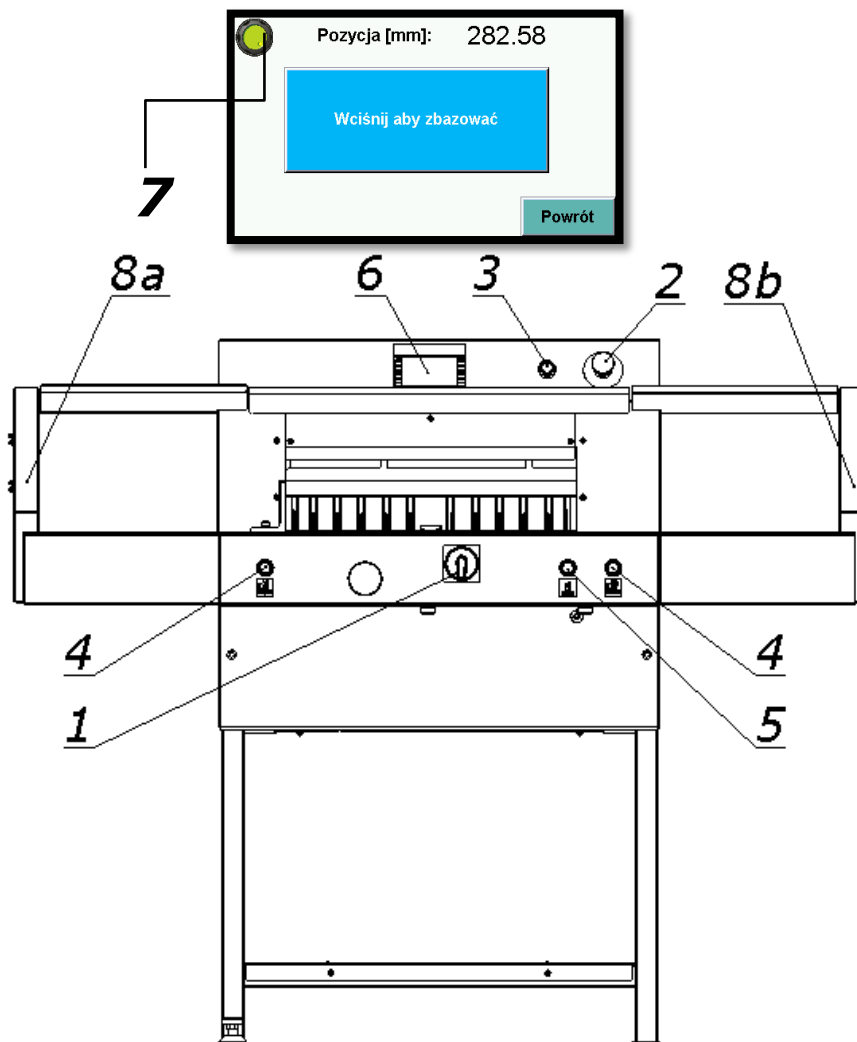


Figure 10. Elements of G 52 cutting machine operation and signaling

1. Main switch
2. Palm button, (emergency stop)
3. Button that activates the control system.
4. Buttons enabling the cutting cycle (two-hand cutting system)
5. A button that activates the movement of the clamp bar
6. Program unit
7. Two-color signal lamp, displayed on the programmer screen.
 - red, signals the power supply off in the control system
 - green, signals the activation of the control system

8. Safety curtain (non-contact protection device)

8a. Transmitter

8b. Receiver

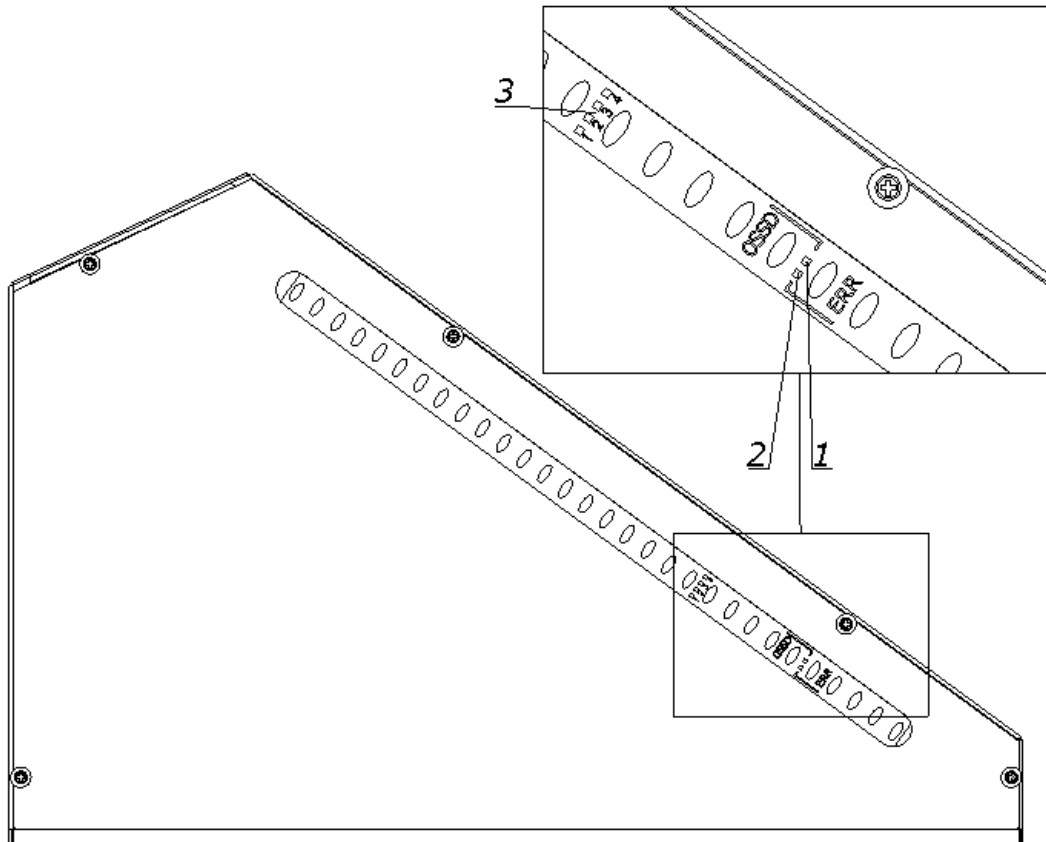


Figure 11. Indicators of the receiver

The receiver is equipped with six LEDs informing about the operating status:

Table 7.

Item	Color of the LED	Display	Text
1	Red/green	Status OSSD	OSSD
2	Red	Error indication	ERR
3	Blue	Quality of setting	1 2 3 4

Blue LEDs informing about the quality of the settings, in conjunction with the flashing red color LED ERR, also indicate errors.

Table 8. Blue LEDs informing about the quality of the settings

LEDs informing about quality settings	Diode LED OSSD	Meaning
It does not light up no LED	red	The setting is insufficient or the protective field is interrupted at least partially. The receiver can not synchronize with the transmitter.
It lights up 1 led	red	The setting is insufficient or the protective field is interrupted at least partially.
It lights up 2 led	red	The setting is insufficient or the protective field is interrupted at least partially.
It lights up 2 led	green	The setting is not yet sufficient to ensure stable availability.
It lights up 3 Led	green	The setting is good, stable availability.
It lights up 4 led	green	The setting is very good.

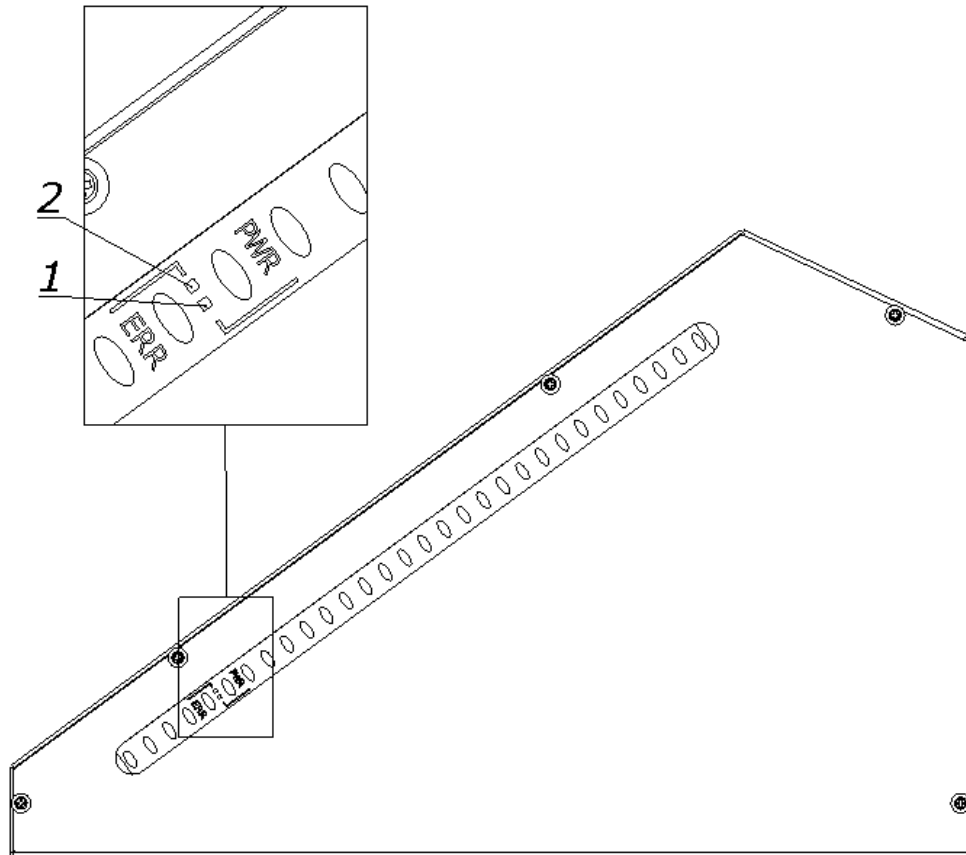



Figure 12. Indicators of the transmitter


The transmitter is equipped with two LEDs informing about the operating status:

Table 9.

Position	LED diode colour	Indication	Text
1	yellow	Work status indicator	PWR
2	red	Error indication	ERR

5.3 Electrical apparatus

 **Danger!**

 **Dangerous electrical voltage!**

Before opening the housing, switch off the main switch!

- 1. Hinged housing of electrical apparatus (Fig. 13)
- 2. Nuts fixing the housing (Fig. 13)

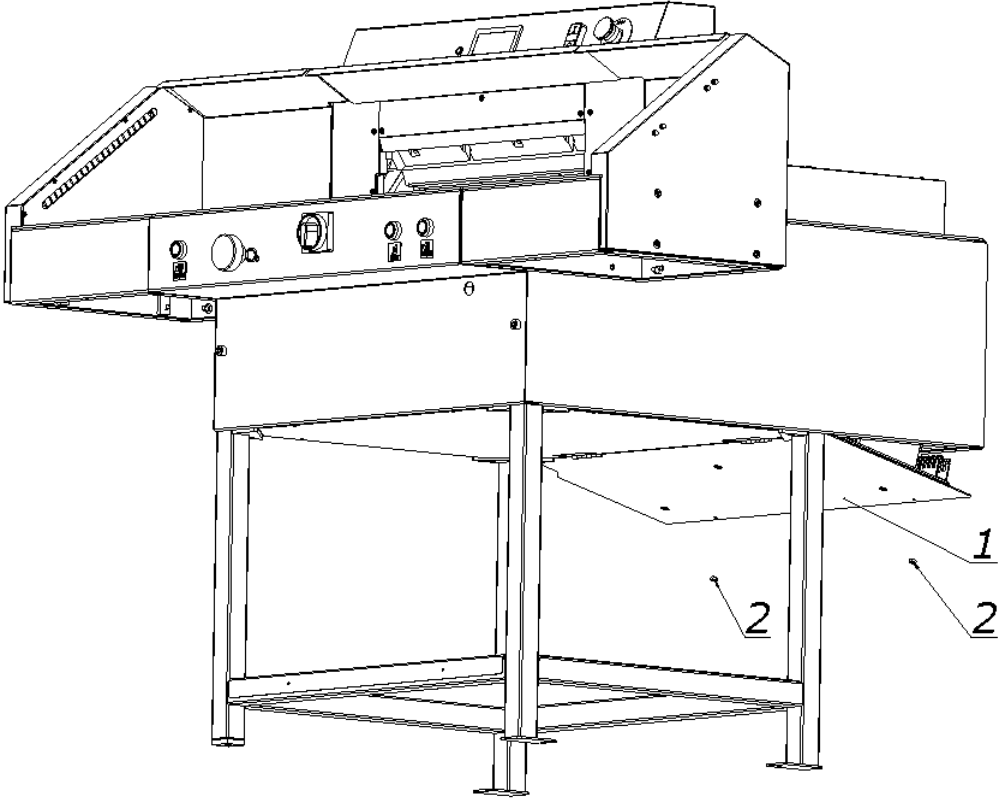
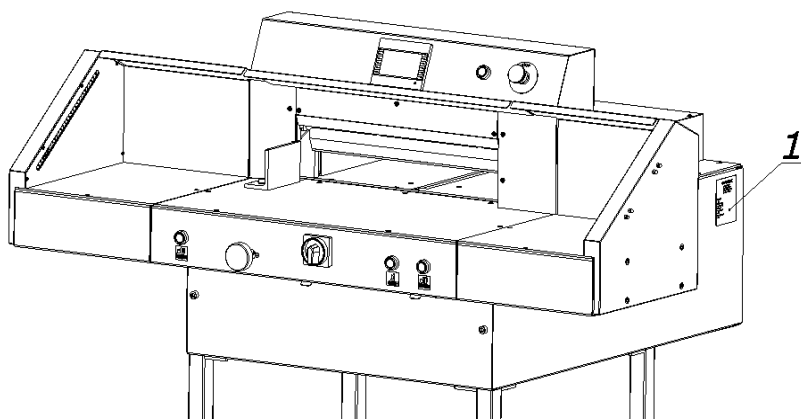


Figure 13. Location of electrical apparatus

6. POWER SUPPLY



**OSTRZEŻENIE
WARNING**

The data on the plate must correspond to the current parameters in the mains!

Parameters of frequency converters (inverters) are set by the cutter manufacturer and can not be changed!

Cutter should be grounded.

7. USING THE CUTTER

The user is obliged to create working conditions at the cutter workplace that preclude the operator from slipping or falling due to poor ground conditions, the way of routing the wires or the lack of convenient access!

7.1 Work area for operational staff

The working area is the front side of the (operational) cutter!

7.2 Danger zones in the cutter

- knife and clamp zone
- back side of the cutter frame (access to clamp zone and knife)
- back side of the cutter (access to the backguage)
- bottom side of the rear table access to the backguage zone (spindle and slider)

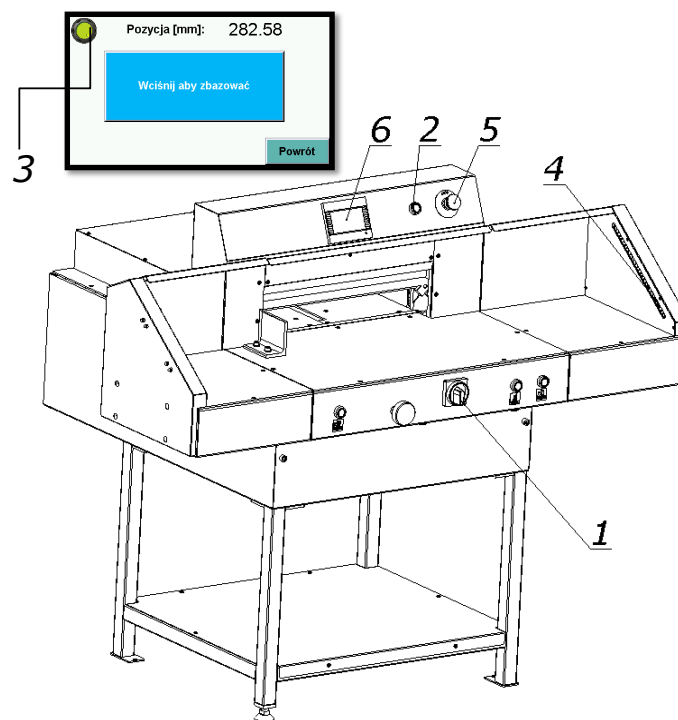


Figure 15. Arrangement of the elements used when switching the cutter.

1. Set the main switch 1 to "ON" 1 position (Fig. 15)
2. Press the green button 2 (Fig.15)
 - green LED 3 on the program unit 6 display lights up (fig.15)
 - the green OSSD 1 LED lights up (Fig.11) in the receiver 4 (Fig.15)

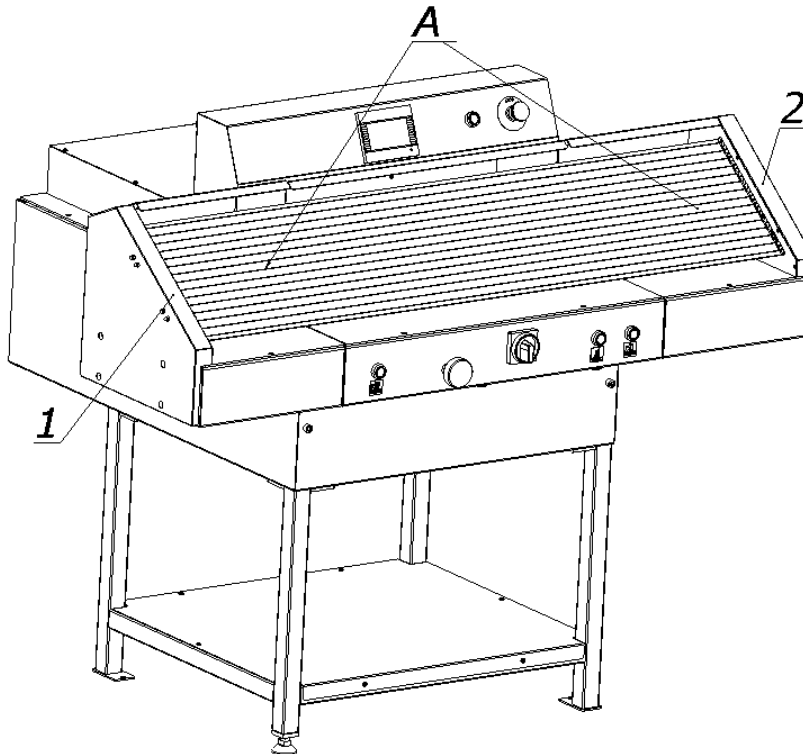


Figure 16. Safety curtain

- 1. Transmitter
- 2. Receiver
- A - field of the security curtain

7.3.2 Diagnostics of the safety curtain after switching on the power supply.

When the cutter is switched on, the transmitter 1 and receiver 2 are initialized (fig. 16). All transmitter and receiver LEDs will light for a moment. After initialization the receiver indicates the quality of the setting using four blue LEDs 3 (Fig.11). Table 8.

The setting indicator extinguishes after a suitable time when the safety light curtain is set (the LED of the device switching the output signal: green item 1 figure 11) and only the PWR LED of transmitter 1 (fig.12) and LED 1 (fig. 11) device for switching the output signal of the receiver.

In case of an error on the device, the red LED will light. On the side receiver red error LED - in combination with blue LEDs - indicates the cause of the error,



Danger!

In case of malfunction of photocells, immediately contact the service!

7.3.3 Emergency stop of the cutter

1. Press the button 5 (Fig.15)

The switch is used for emergency stopping of the machine.

After pressing it, the message "Disable safety button" will appear on the programmer. The pressure bar and knife will stop.

7.3.4 Starting the cutter after emergency stop

1. Unlock button 5 (turn it around) (Fig.15)

2. Press the green button 2

When the stop has been made during the cutting cycle, pressing the cutting buttons again will result in returning to the upper position of the clamping bar and the knife.

7.4 Determining the position of the approaching backguage



Danger!



Do not put your hands into the cutting area when backguage moves!

Determining the position of the approaching backguage is carried out using the programmer 1 and handwheel 2, figure 17.



INFO

The method of determining the position of the backguage as well as the operation of the programmer are described in the "Instruction for program unit".

7.4.1 Changing the position of the backguage with the handwheel

- 1. Press knob 2
- 2. Turn the knob to bring the backguage closer or closer by reading the position value on the programmer screen.

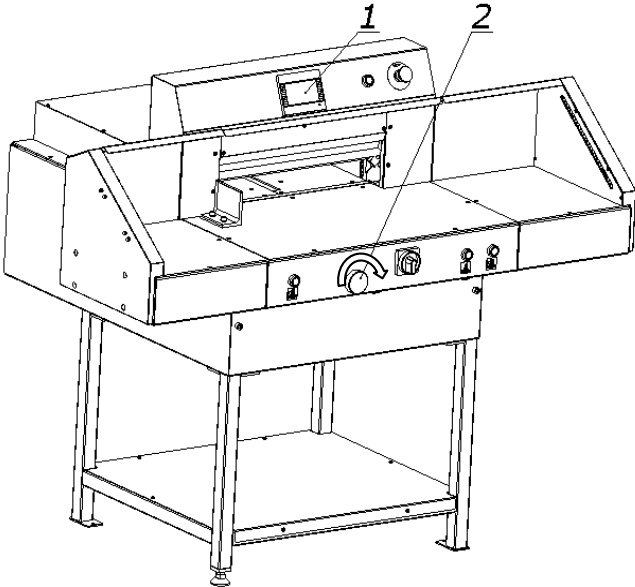




Figure 17. Arrangement of the positioning elements of backguage

7.5 Clamping the material





Danger!








Do not put your hands into the cutting area when pressing!

7.5.1 Clamping the material without cutting to help determine the cutting line

Press the left cutting button 1  and the pressure button 2  simultaneously (Fig.18)

7.5.2 Clamping and holding of sliced material.

1. Press simultaneously the left cutting button 1  and the pressure button 2  (fig.18)
2. Release the clamping button 2  - clamping will continue for the whole time you hold button 1 
3. Release button 1  - the clamp will return to the upper position

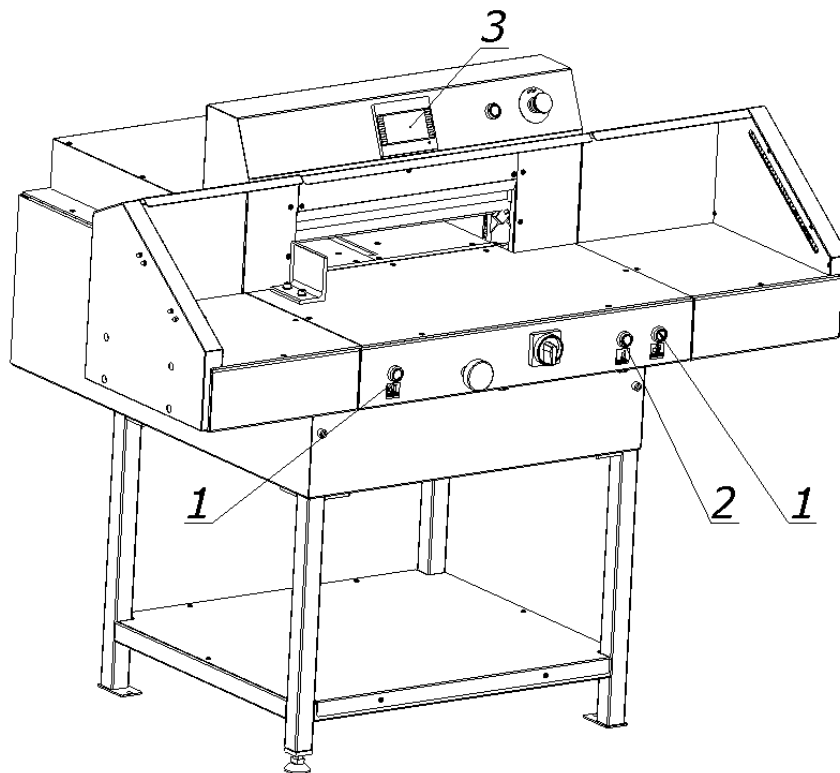


Figure 18. Operating elements during use during clamping.

7.5.3 Change of clamping force

Changes of the clamping force are made on the screen of the programmer 3 (Fig.18)
The method of changing the clamping force has been described in the "Instructions for program unit".

7.5.4 Rules for selecting the contact pressure.

The value of clamping force is selected experimentally, in relation to the type, width and height of the cut material.



The following rules must be observed:

- the higher the pile, the greater the downforce
- the greater the cutting width, the greater the downforce
- the harder the material, the greater the downforce

7.6 Cutting line indicator (optical)

The cutter is equipped with an optical cutting line indicator. A thin light line indicates the cutting line on the material to be cut.

7.7 Cutting (clamping and cutting)

	Danger!
	Do not put hands into cutting zone!

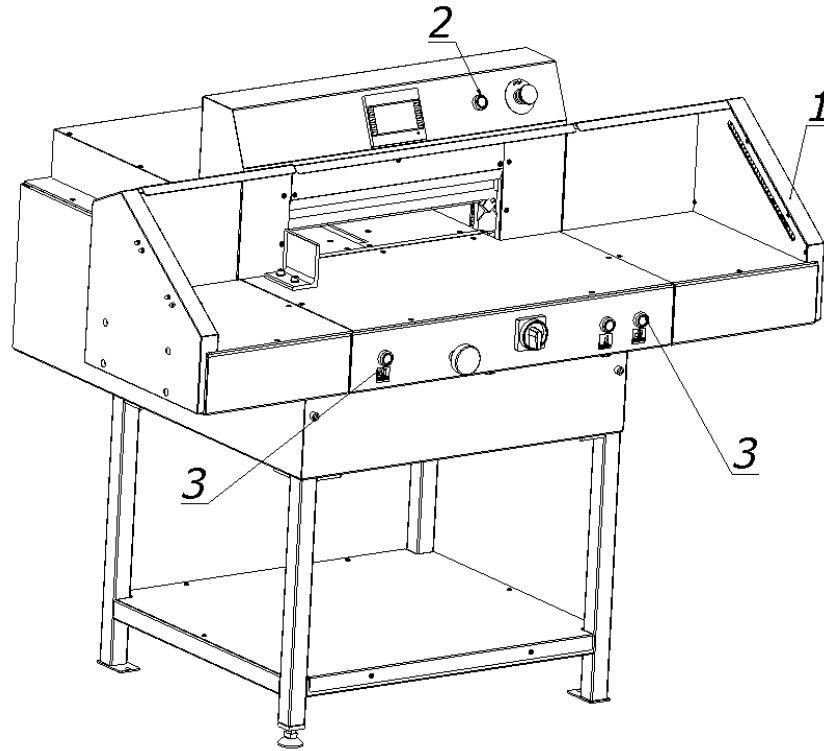


Fig. 19. Operating and signaling elements used during cutting.

Cutting can be done if:

1. There is no object in the work area of the light barrier - the green OSSD 1 LED lights up (Fig.11) on the receiver 1 (Fig.19).
2. The green push button switch 2 is pressed.
3. The two buttons 3 are pressed simultaneously.

Keep both buttons 3 pressed until the material is cut.

The return of the knife and its stop in the upper returnable position and the movement of the clamp bar upwards is automatic.

Releasing the buttons 3 during the movement of the pressure bar and the knife downwards interrupts this movement. If an object enters the light barrier during cutting, the clamp bar and the knife move down will be cancelled. To continue cutting, remove the unauthorized item and simultaneously restart both buttons 3.

Paper clips or other hard objects can damage the blade!

8. OPERATIONAL ACTIVITIES

8.1 Replacing the knife in the cutter

It is recommended, on the basis of experience, to change the knife after about 8 hours of effective, continuous work.



- Danger of injury to the operator and auxiliary personnel
- Danger of injury to hands and hands in the knife area through cutting
- The edge of the knife is sharp - do not touch
- Do not handle the knife without the handle
- The blade may only be changed when the tools for replacing it are undamaged
- Blunt knives should be put in cassettes immediately
- Knives intended for scrapping must be deliberately blunted
- Worn and blunt knives should be sent to the scrap yard

8.1.1 Removing the knife

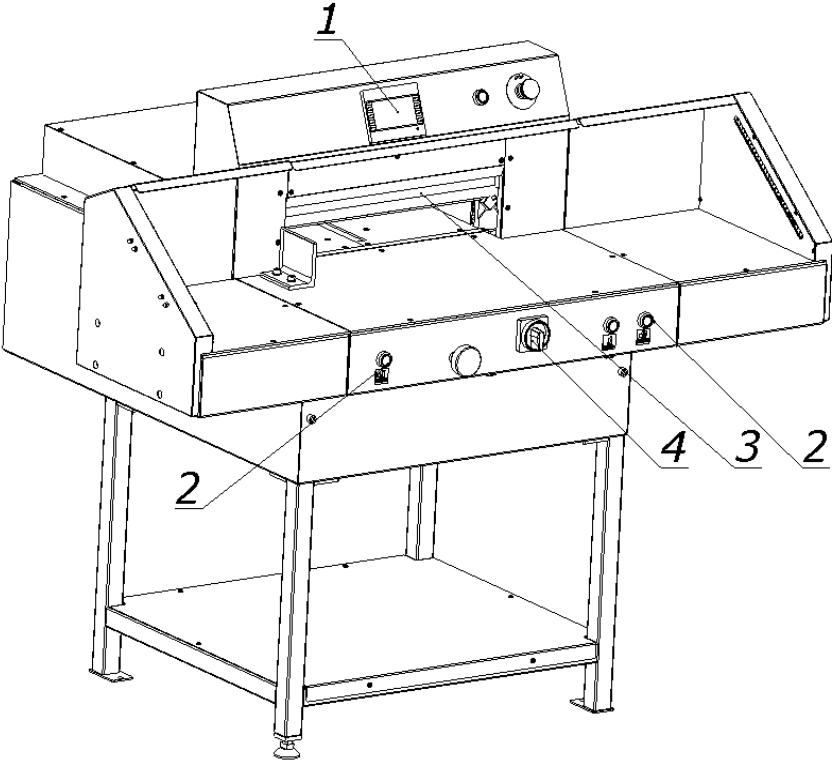


Figure 20.

8.1.1.1 Select the "Change knife" function on the programmer 1 screen (Fig.20) ("Programmer's manual").

8.1.1.2 Pressing the push buttons 2  (fig.20) at the same time, start the cutting cycle. The knife 3 is held in the lower position.

8.1.1.3. Turn off the power supply of the electrical system by turning the main switch knob 4 (fig.20) to the "0" position

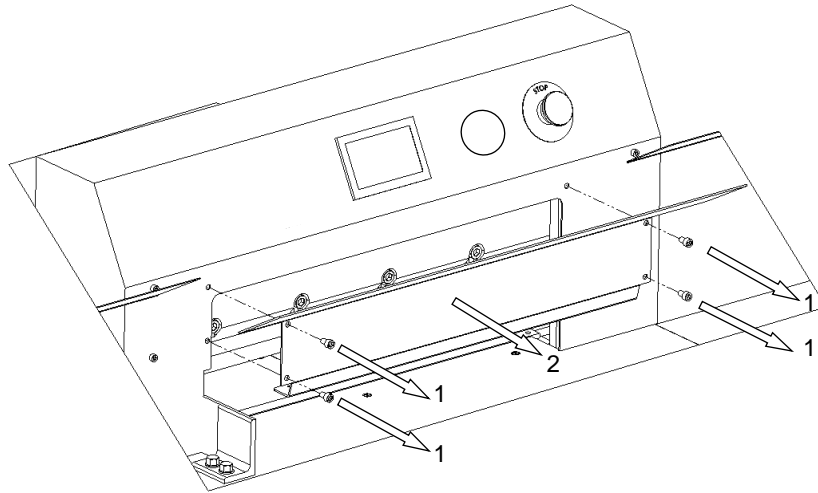


Figure.21

8.1.1.4 Remove the four screws 1 (fig.21) securing the cover 2 and remove cover 2.

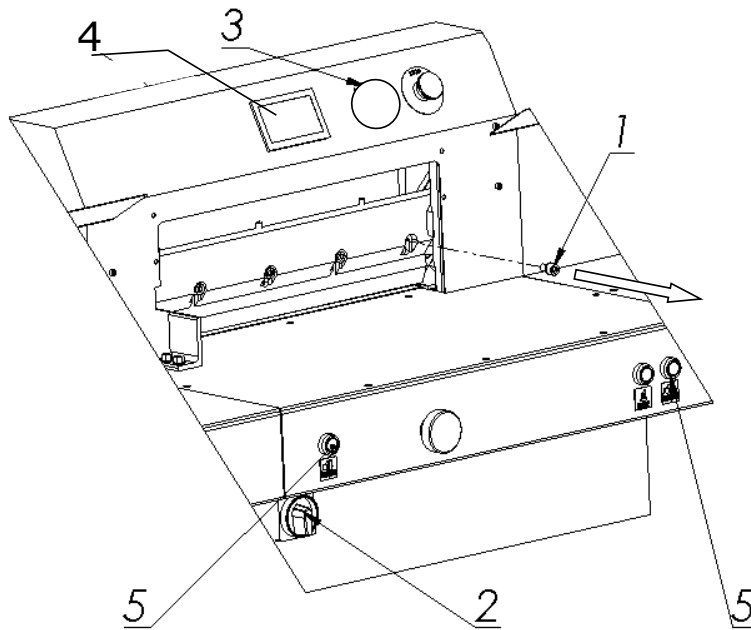


Figure.22

Unscrew and remove the first fastening screw 1 from the right side of the cutter bar (Fig. 22).

8.1.1.5 Switch on the power supply of the electrical system by turning the main switch knob 2 (fig.22) to position "I"

8.1.1.6 Turn on the power supply to the control system by pressing the green push button 3.

8.1.1.7 On the program screen 4 (fig.22), deactivate the "knife change" function

8.1.1.8 Press simultaneously on the push buttons 5. The knife will return to its upper position

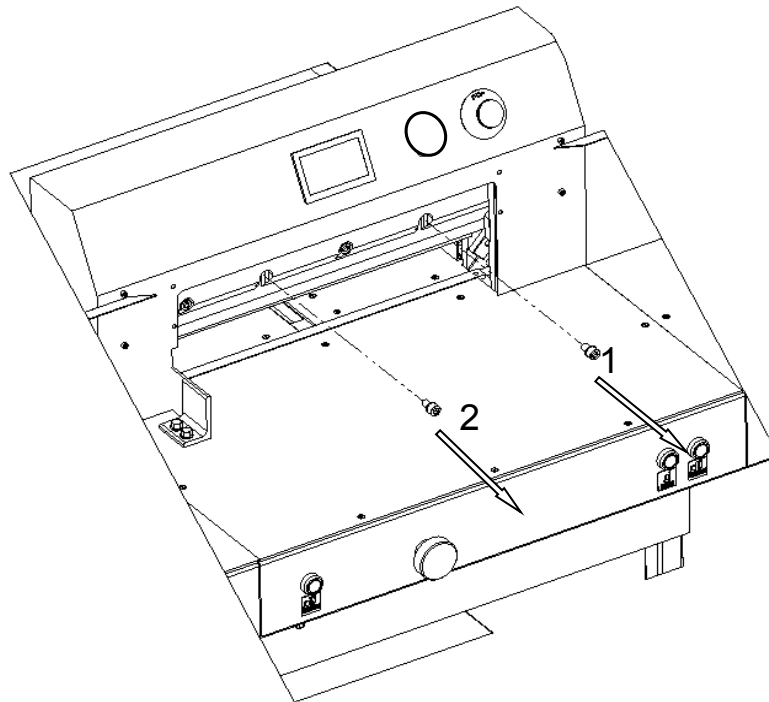


Figure 23.

8.1.1.9 Unscrew and remove the fastening screws 1 and 2 (Fig. 23).

8.1.1.10 In the place of removed screws 1 and 2 (fig.23), screw in the transport handle 1 (fig.24).

8.1.1.11 Unscrew and remove the screws 2 (fig.25)

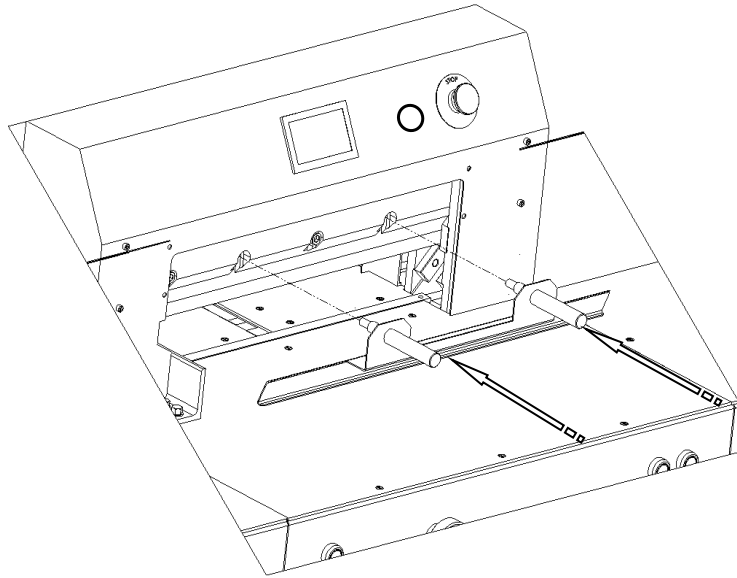


Figure 24.

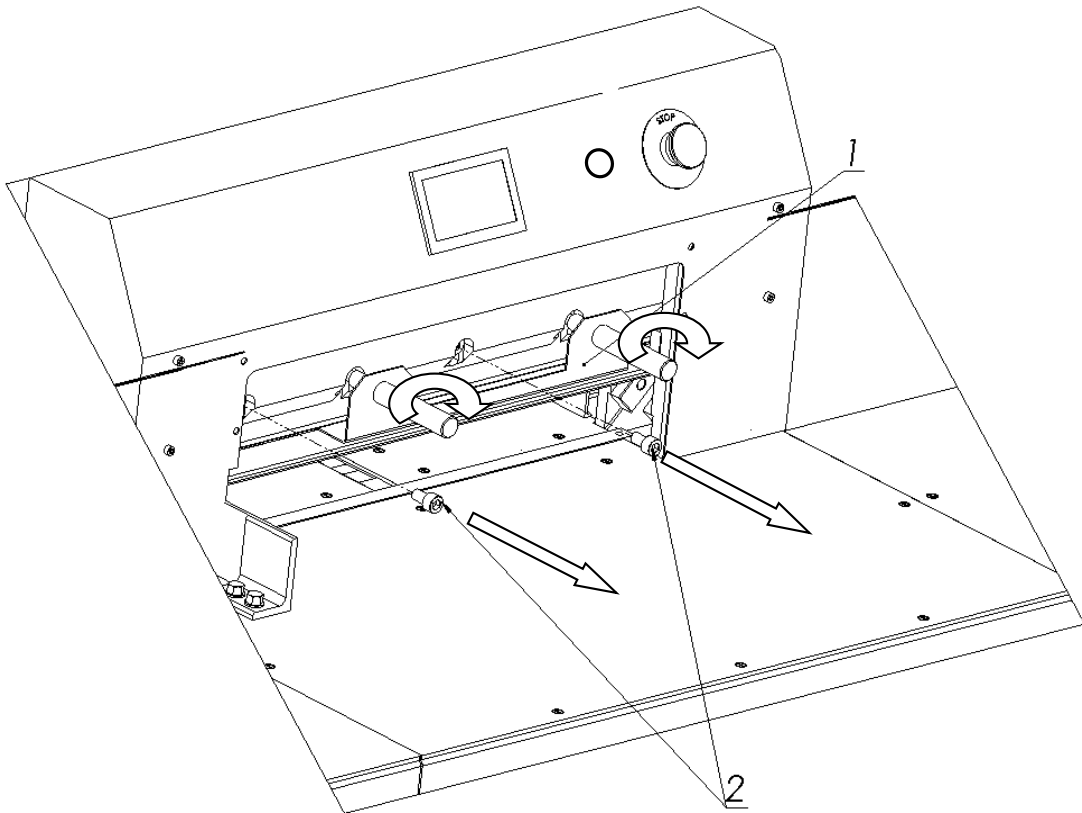


Figure 25.

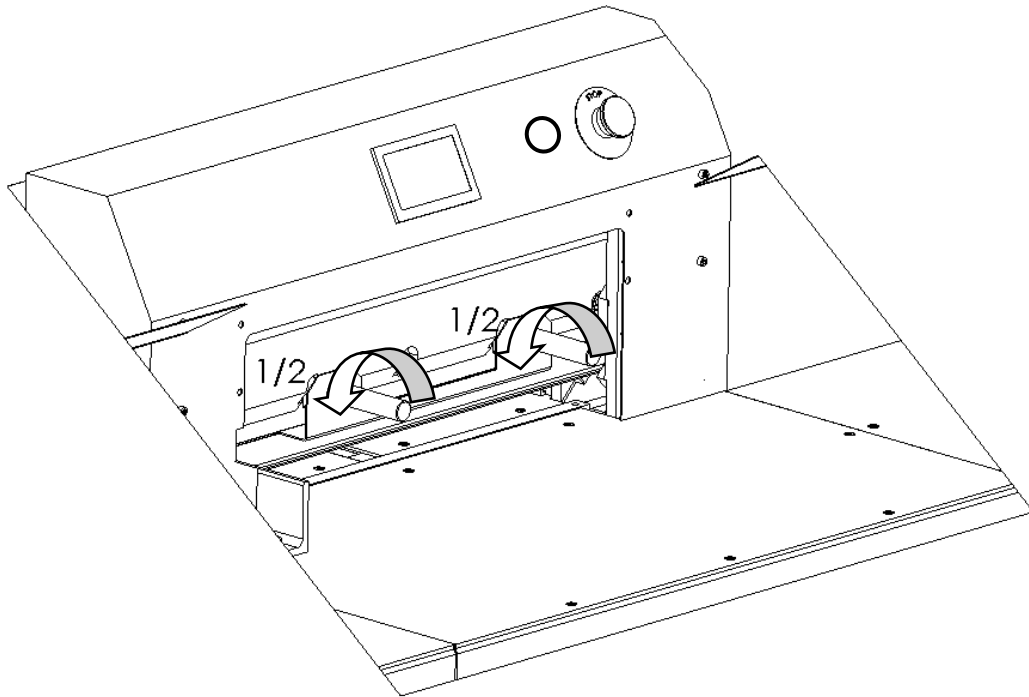


Figure 26.

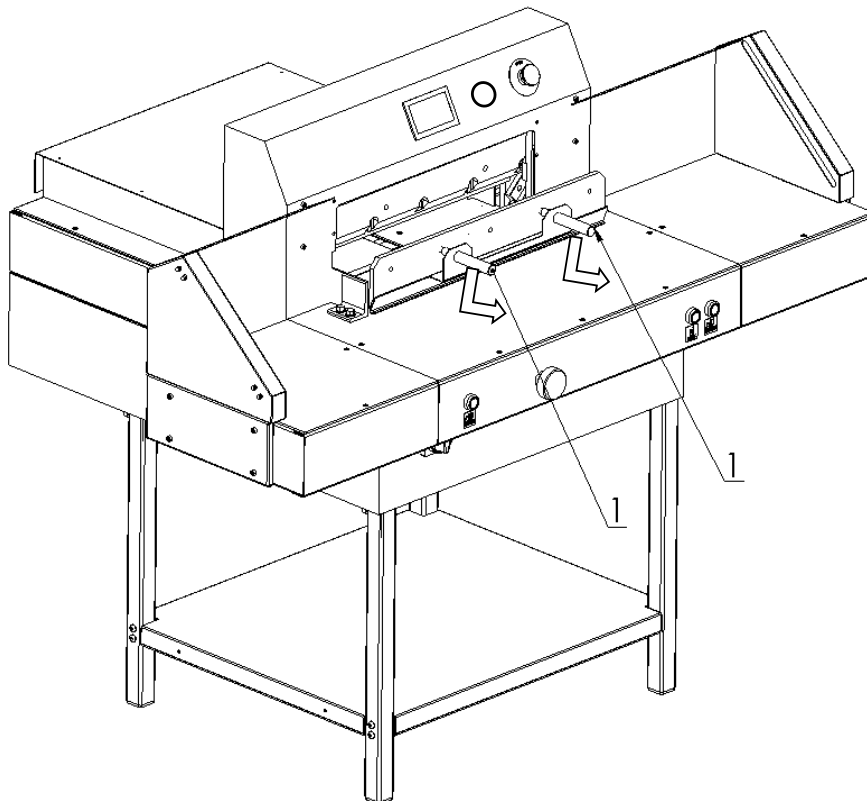


Figure 27.

8.1.1.12 holding the transport handles release the clamp by turning them 1/2 turn at a time to the left (fig 26) and carefully pull the knife down (fig 27). Take the removed knife

into the special protective packaging (Fig. 28a - 28d.) With the blade inwards and fasten it with two screws. To unscrew the bolts fixing the blade knife, use the RWTg 8 wrench provided on the cutter.

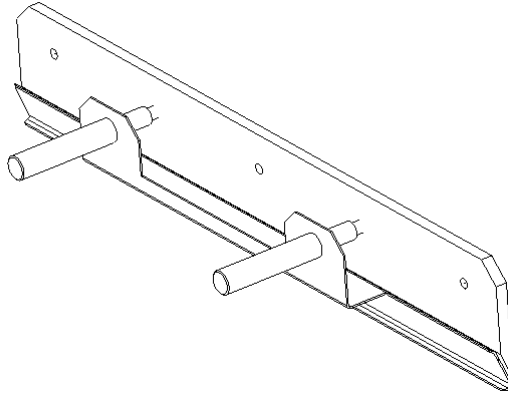


Figure. 28a. Knife in the transport handle

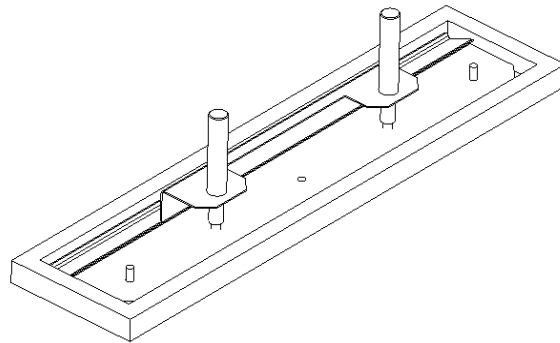


Figure 28b. Knife in the package

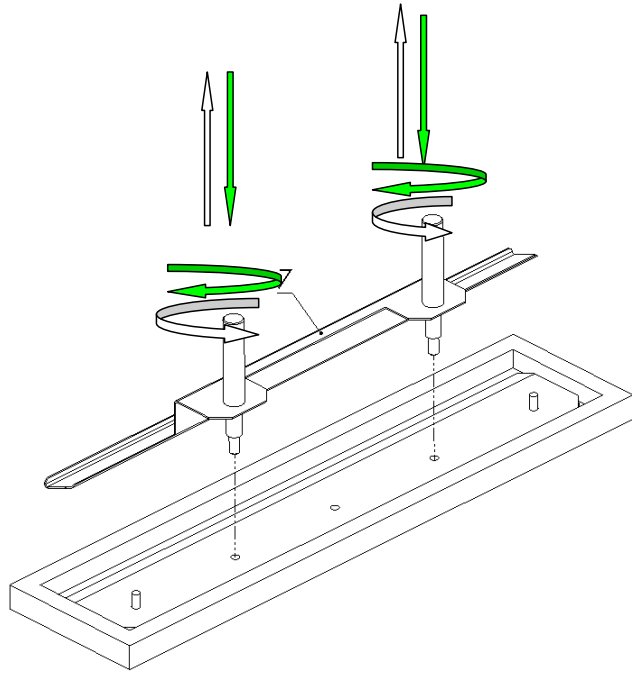


Figure 28 c. Unscrewing / securing the transport handles

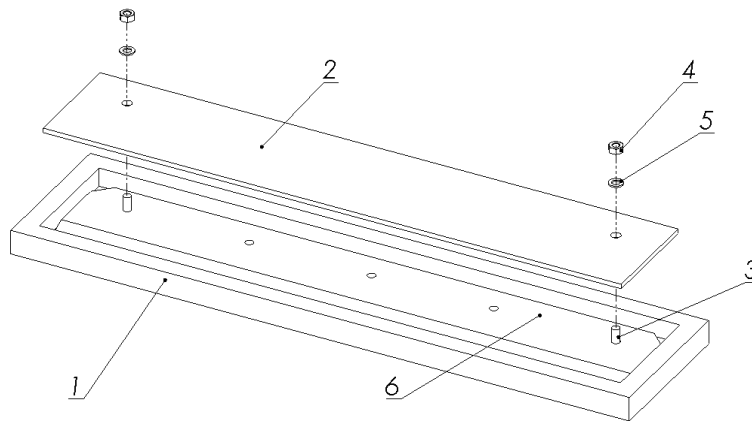


Figure 28d. Fixing the knife in the package

1. Packaging
2. Cover
3. Screw
4. Nut
5. Washer
6. Knife
7. Knife change holder



**OSTRZEŻENIE
WARNING**

The assumed knife must be able to support its upper surface with the projection of the cutter bar. Failure to comply with this condition may result in a situation when the assumed knife is higher than removed, serious overloading and even damage to the machine.

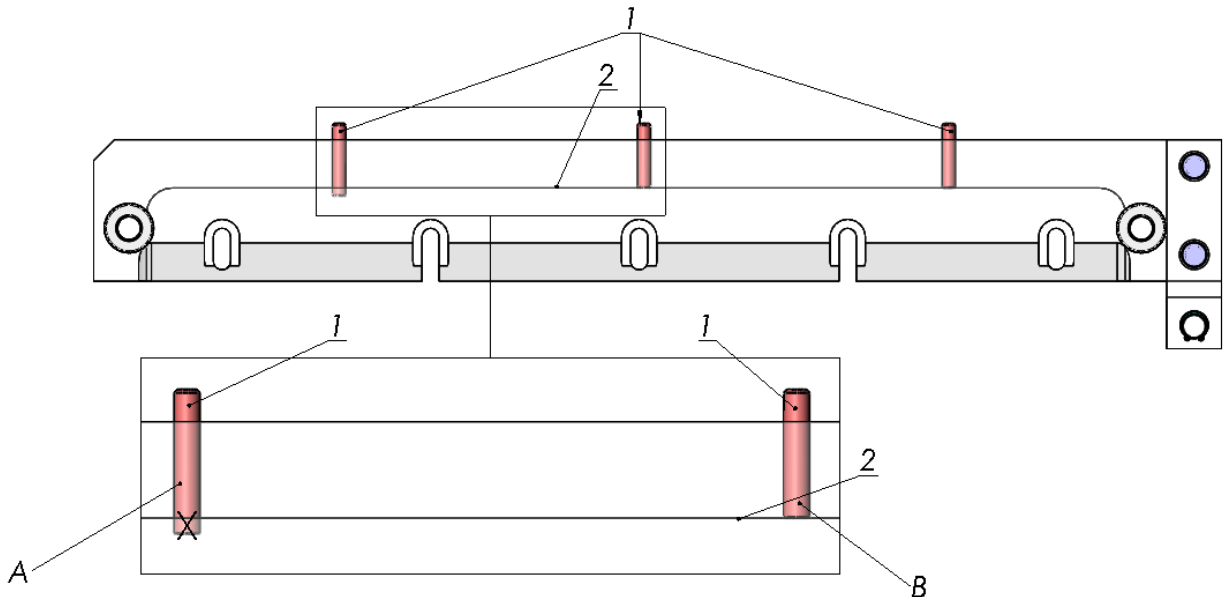


Figure 29. Position of adjustment screws.

8.1.2.2. Remove the knife from the packaging (Fig.28a - 28d)

8.1.2.3. Holding the transport handles 1, insert the knife 2 into the cutter so that the transport handles screwed into the knife hit the cutouts in the cutter bar 3. (fig.30)

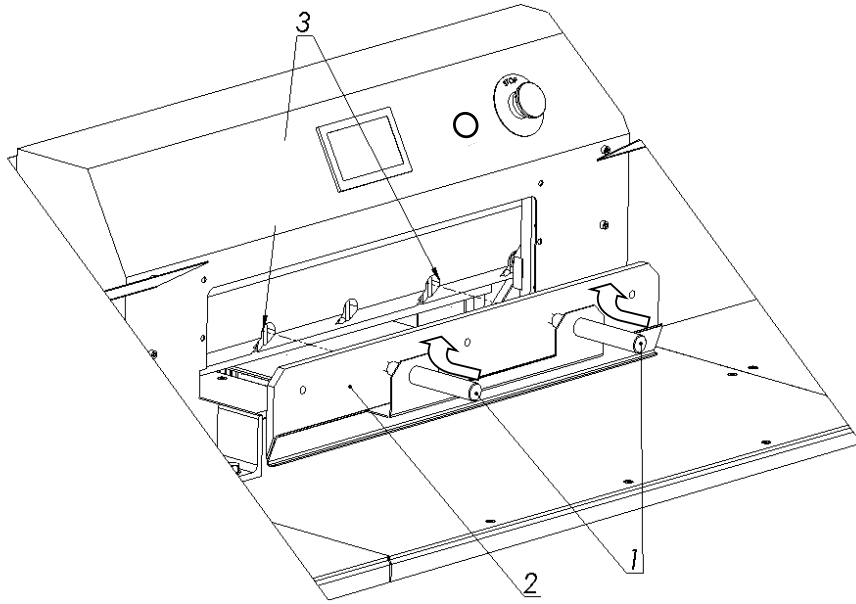


Figure 30.

Insert the knife so high that its upper surface will rest against the protrusion in the knife bar 2 (Fig. 29).

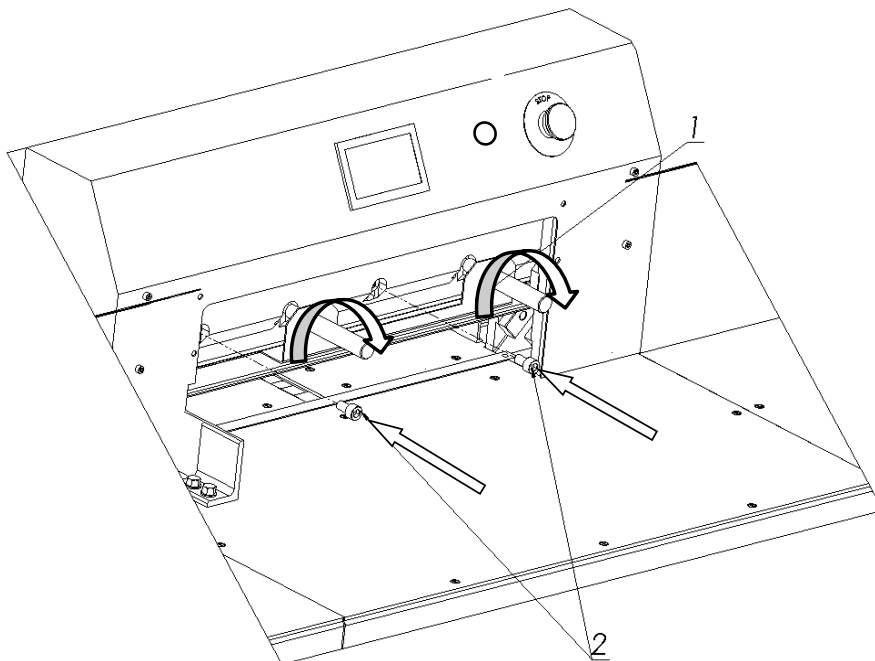


Figure 31.

8.1.2.4 Pre-attach the knife to the cutter bar by turning both transporting handles 1 to the right (fig. 31).

8.1.2.5 Install the fastening screws 2 (fig. 31).

8.1.2.6 Unscrew both transport lugs 1 (figure 31) and replace them with the mounting

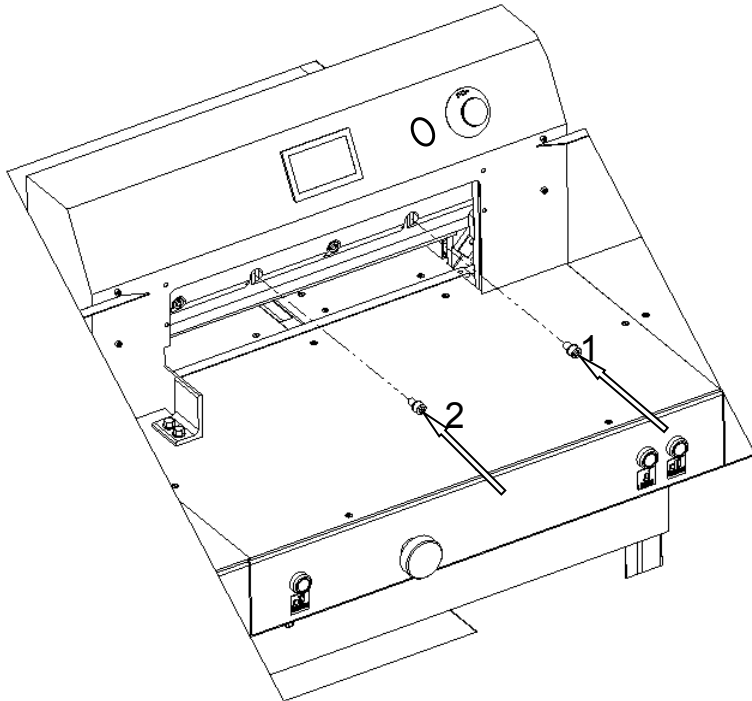


Figure 32.

8.1.2.7 Slightly unscrew the first screw on the left side of the clamping screw 2 (Fig. 31), taking care that the screw head does not protrude above the knife beam sliding plane.

8.1.2.8 Press the "Change knife" function on the programmer 4 (Fig.22)

8.1.2.9 Pressing the push buttons 2  (Fig. 33) at the same time, start the cutting cycle. The knife will stop in the lower position.

8.1.2.10. Switch off the power supply of the electrical system by turning the main switch knob 3 (fig. 33) to the "0" position

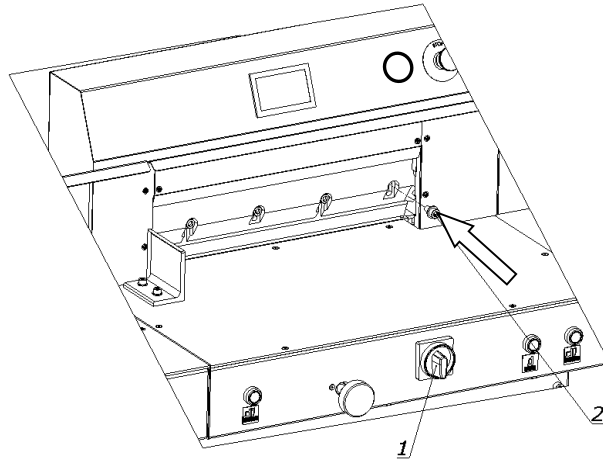
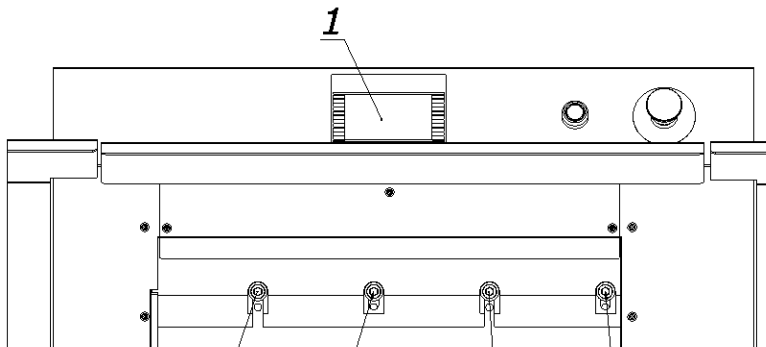


Figure 32a.

8.1.2.11. Screw in the bolt 2 lightly (fig.32a)



OSTRZEŻENIE
WARNING

Performing cuts that are too deep may result in shortened blade life!

- 8.1.2.13. Tighten the fixing screws 4 (figure 33)
- 8.1.2.14. Switch on the power supply of the electrical system by turning the main switch knob 3 (fig. 33) to position "I".
- 8.1.2.15. Turn off the "knife change" function on the programmer 1 (fig.33)
- 8.1.2.16. Press simultaneously the push buttons 2. The knife will return to its upper position.
- 8.1.2.17. Turn off the power supply of the electrical system by turning the main switch knob 3 (fig. 33) to the "0" position
- 8.1.2.18. Firmly tighten the first screw on the left side of the knife. 2 (Fig. 31).
- 8.1.2.19. Turn on the power supply of the electrical system by turning the knob of the main switch 3 (fig.33) to position "I"
- 8.1.2.20 Switch on the power supply to the control system by pressing the green push button 3 (fig.22).
- 8.1.2.21 Carry out a cutting test.

If the knife does not cut the pile to the last sheet, repeat steps 8.1.2.7

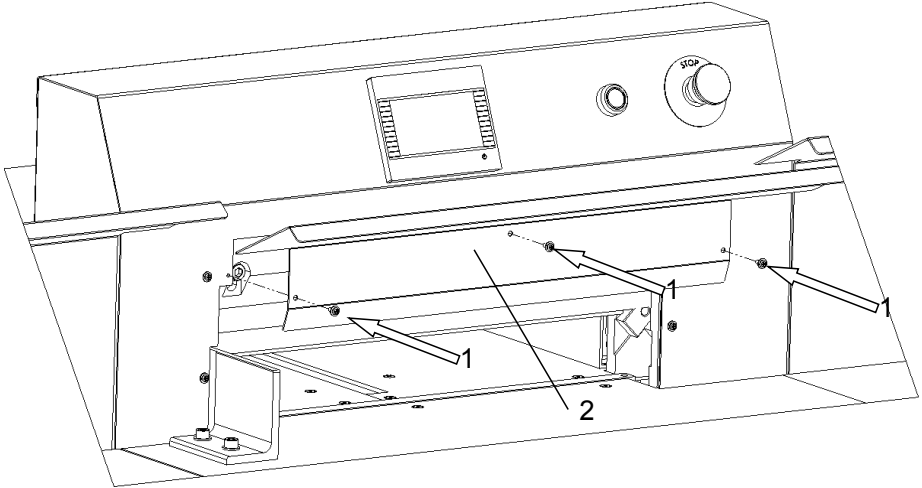


Figure 34.



OSTRZEŻENIE
WARNING

The channel between the tables into which the cutting stick is inserted must always be clean.

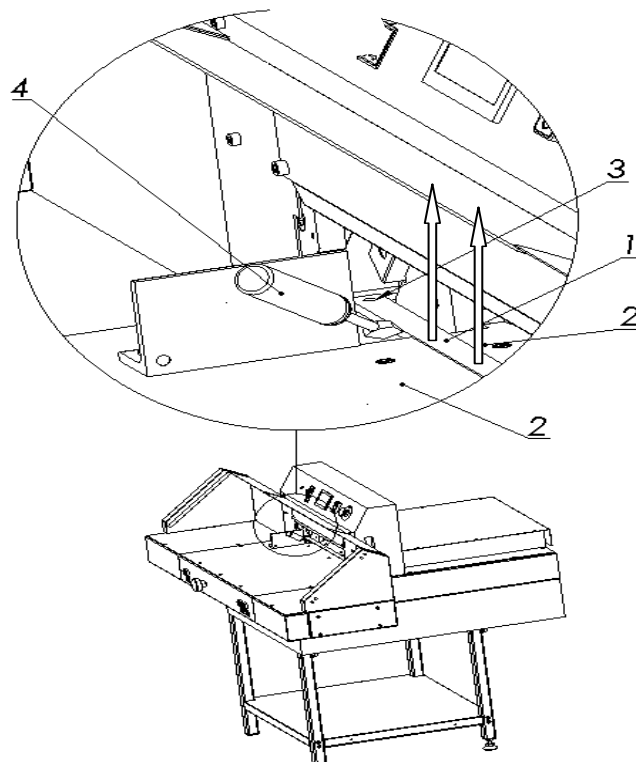


Figure 35. Removing the cutting stick.

1. Cutting stick 1

2. Tables 2

3. Fixing pin

4. Screwdriver

8.2.1 Lift (lift) the cutting stick 1 with a screwdriver 4 (fig. 35)

8.2.2 Rotate or replace the cutting stick

8.2.3. Insert the replaced stick into the channel between the tables 2 and place it on the dowel 3 (Fig. 35)

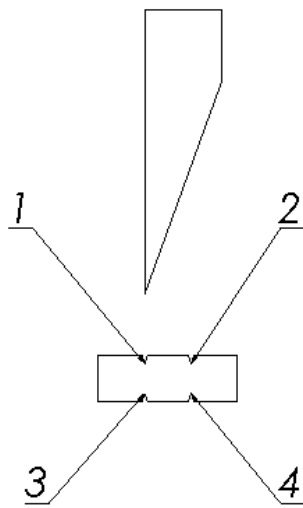


Figure 36. Diagram of using the cutting stick

Rotation of the cutting stick in both planes gives the possibility of obtaining four lines of contact with the knife, marked in Figure 36 as 1, 2, 3, 4.

8.3 False clamp

The use of the insert under the pressure bar prevents creation of marking made by the lower part of the clamp on the material to be cut.

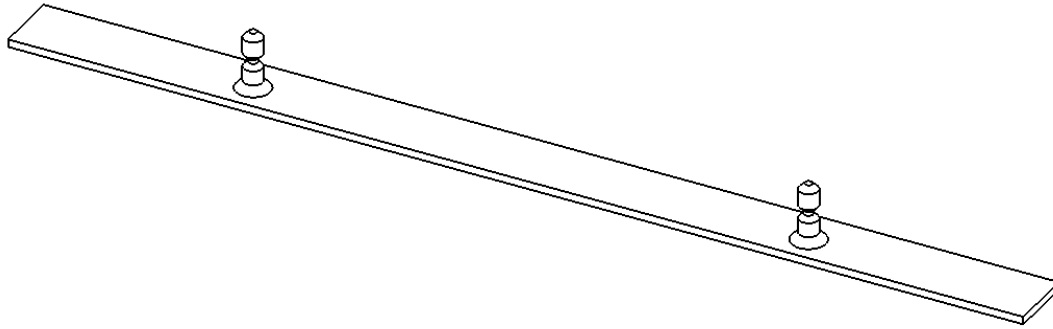


Figure 37. False clamp plate (insert)

The clamp bar insert (fig. 37) is attached under the front table in the place shown in figure 38.

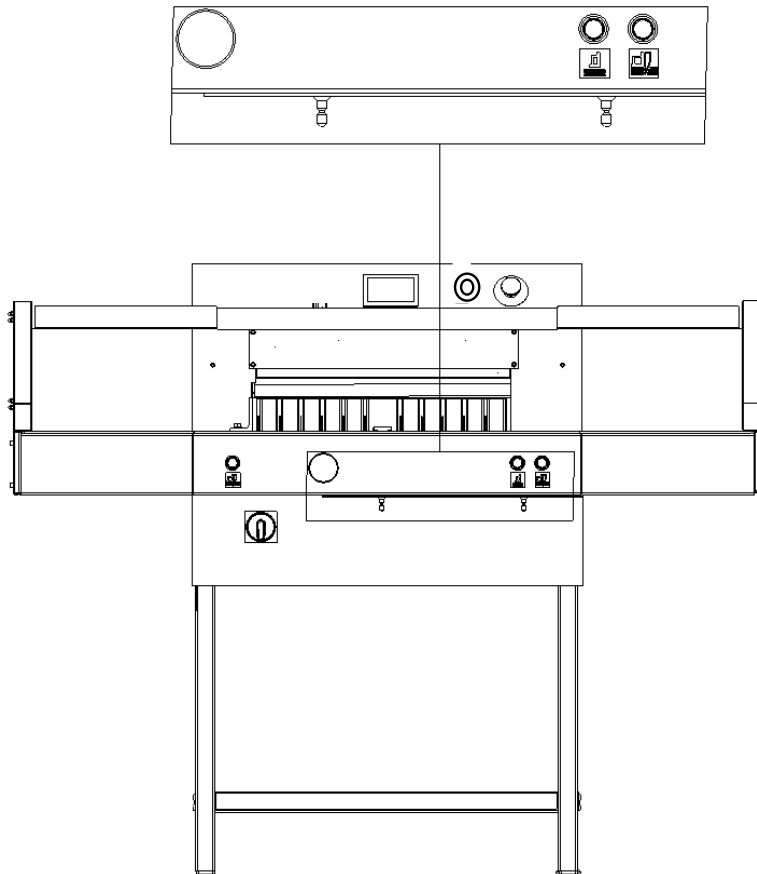


Figure 38. Placement of the insert before attachment in the pressure bar



Danger!



Risk of injury!

In order to mount the insert in the pressure bar:

8.3.1 Pressing buttons 1 (fig. 39) cause the clamp bar 5 to move down.

8.3.2 When the pressure bar 5 lowers by approx. 2 cm, revealing the holes for the screws 4, release the right button 1 (left button 1 still pressed)

8.3.3 Press the 2 "O" button to deactivate the control.

8.3.4 Insert the insert into the pressure bar so that the insert pins hit the holes in the clamp and the insert adheres the entire surface to the bottom surface of the clamp.

8.3.5 Use a 3-mm hexagonal wrench to screw in the 4 threaded screws firmly holes in the pressure bar, causing the insert to be blocked in the clamp.

8.3.6 Press button 2 "I" activating the control system

8.3.7 Press buttons 1 to bring the pressure bar back up

**The removable insert must be attached under the front table!
(Fig. 38).**

INFO

The lack of the insert in the place of attachment is treated by the programmer as if it was mounted in the clamp and narrow cut (waste) is greater.

**Mounting the insert into the pressure bar causes;
the minimum narrow cut (waste) is 40mm (without insert 22mm),
maximum stack height is 76mm (without 80mm insert).**

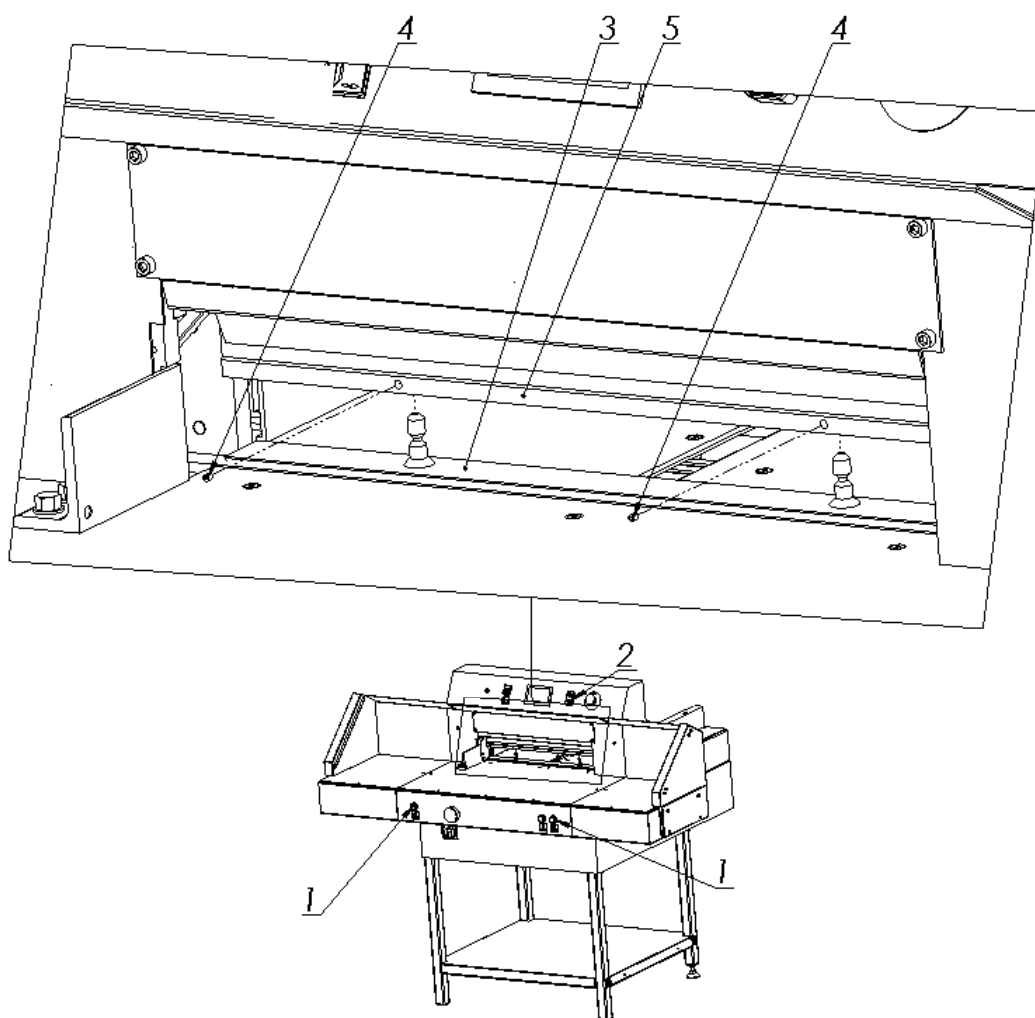
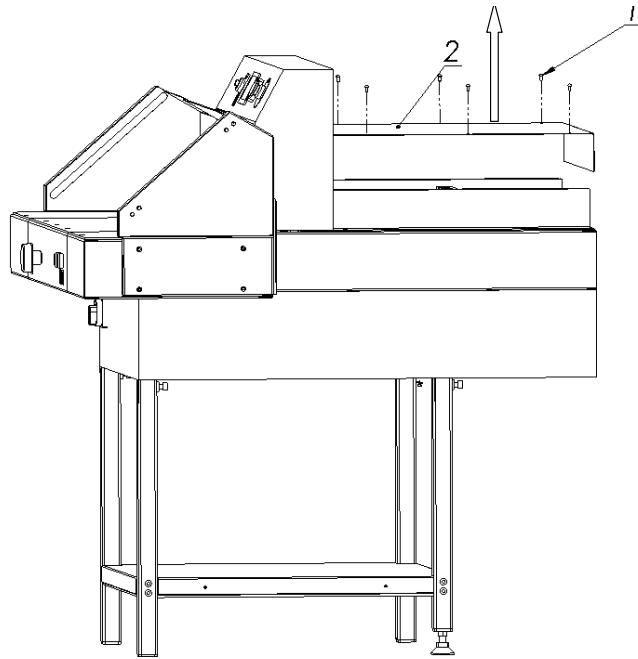


Figure 39. Operating elements used when mounting the insert into the pressure bar

8.4 Adjusting the parallelism of backgauge

Depending on the required inclination of backgauge, its adjustment should be carried out using drawings 40 and 41,



Drawing. 40 Removing the cover

To adjust backgauge:

- 8.4.1 unscrew the screws 1 (fig.40)
- 8.4.2 remove the cover 2 (fig.40)
- 8.4.3 loosen the screws 1 (fig.41)
- 8.4.4 loosen the nuts 2 (fig.41)
- 8.4.5 by turning the screws 3, place the approaching backgauge 4 (Fig. 41) at the right angle
- 8.4.6 lock the adjustment screws with 3 nuts 2 (fig.41)
- 8.4.7 firmly tighten the screws 1 (fig.41)

After the cutting attempt, repeat the adjustment until the parallel cutting is achieved.

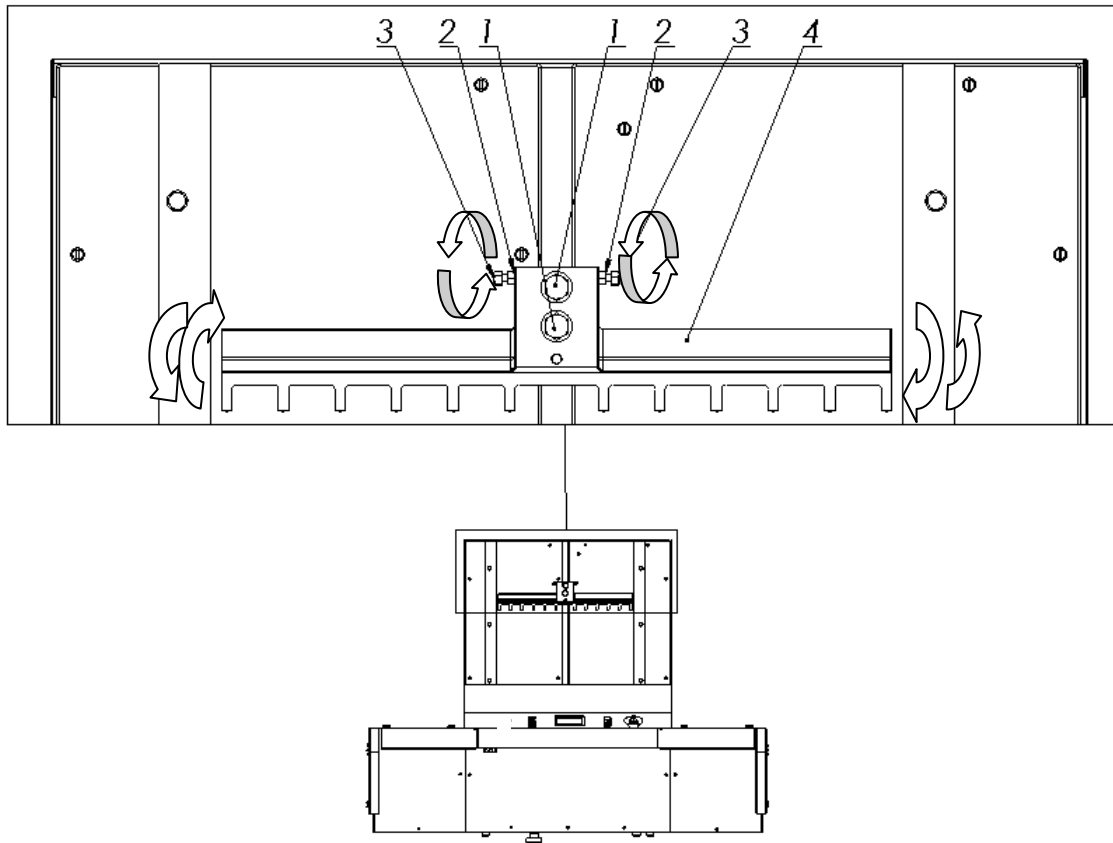


Figure 41. Adjusting the backgauge

9. MAINTENANCE



Danger

Maintenance and lubrication work should be carried out after turning off the machine (main switch in position "0")

9.1 Daily maintenance


Every day, remove all waste from the cutter and the operator's working space.

9.2 Maintenance that should be performed regularly

At regular intervals, waste and dirt should be removed from hard to reach machine and surrounding areas:

- Regularly remove paper waste from the press and knife drive holes

- Air intakes for motors must be kept free of dust and debris.



Danger

Caution- fire hazard with insufficient ventilation.

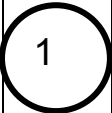
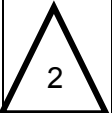

The machine guards must be put back into place immediately after maintenance work has been completed!

9.3 Lubrication

The list of lubrication points is shown in Figures 44, 45, 46, 47, 48 and described in table 10. Access to lubrication points is possible after removing the covers shown in Figs. 42, 43, 46, 48. When lubricating the knife assembly, use the controls as when changing the knife (Chapter 8.1). In places requiring lubrication with a grease, apply grease with a grease gun. It is enough to press the trigger of the lubricator 2-3 times.

The indicated points should be lubricated once a week!

Table 10. List of lubrication points of the cutter mechanisms

Mark	Cutter mechanism	Type of lubricant	Lubrication point	Figure
	Knife	Grease	<ul style="list-style-type: none"> • Side surfaces of the guides (in contact with the knife body) • Internal surfaces of guides (in contact with rollers) • Side surfaces of the knife body 	44,45
	Backgauge	Oil	<ul style="list-style-type: none"> • guide roller (apply a thin layer of oil.) • lead screw (apply a thin layer of grease) 	45 46
	Clamp	Grease	<ul style="list-style-type: none"> • the clamp bar slides • shaft bearings • the surface of the gears • tie rod - pin • gear bearings 2 (fig.47) 	45 47 47 47 48

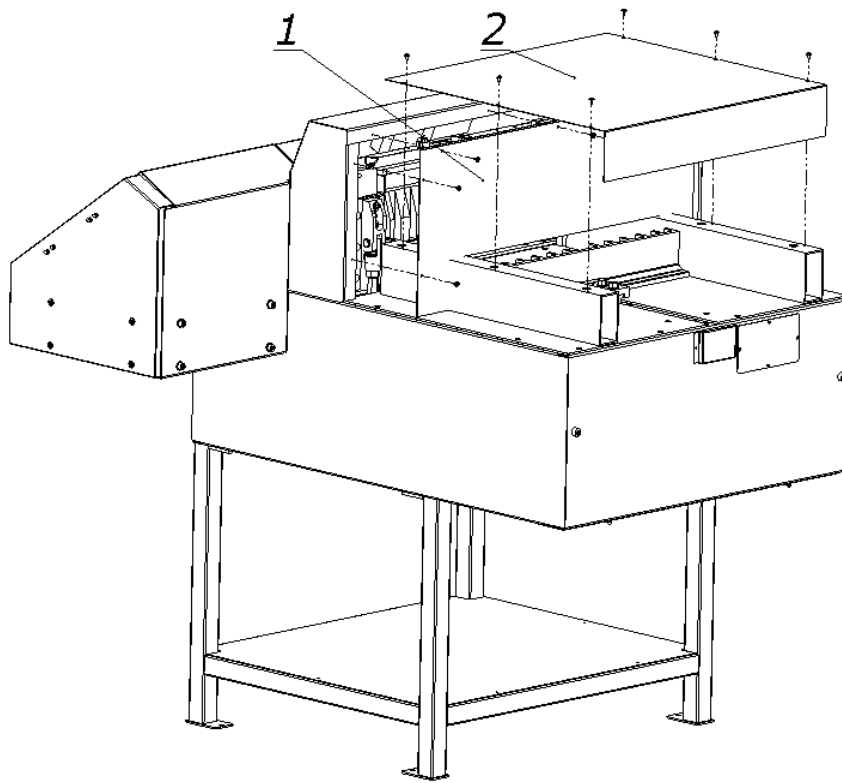


Figure 42. Removing the upper cover (2) and back (1)

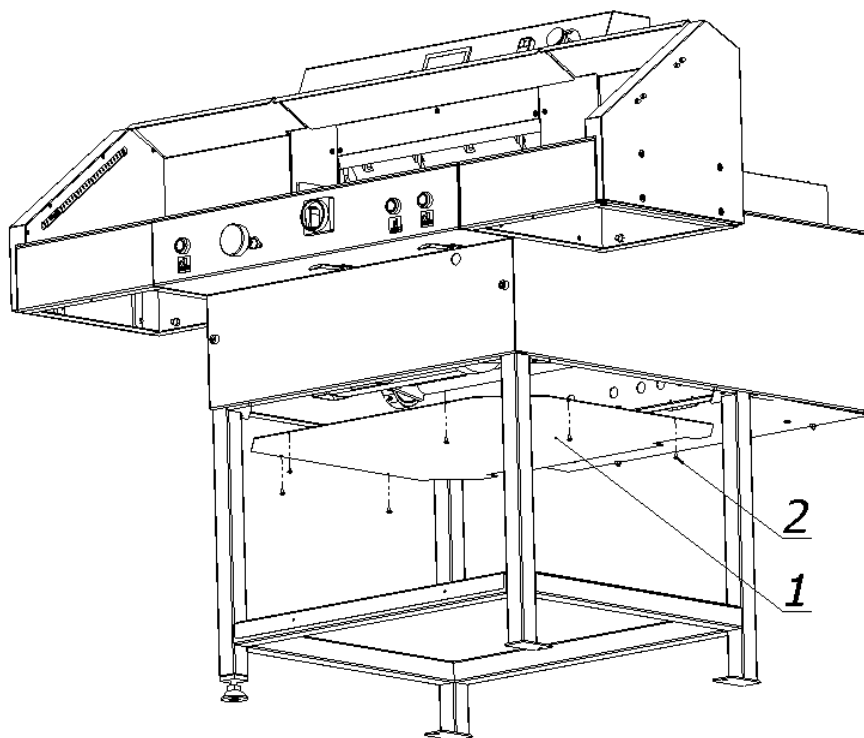


Figure 43. Removing the bottom cover (1)

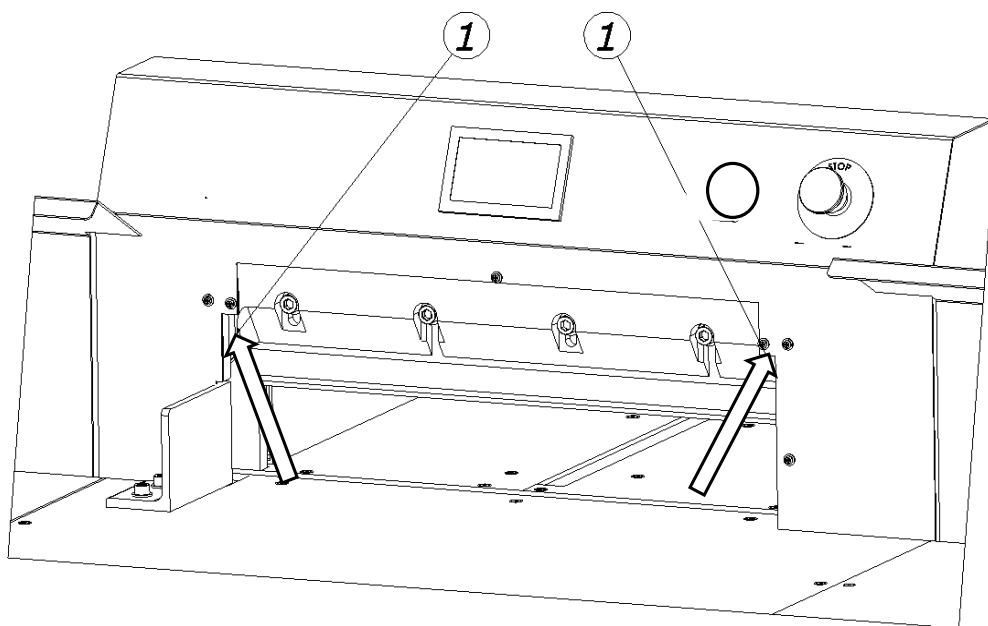


Figure 44 Lubrication locations of the knife assembly.

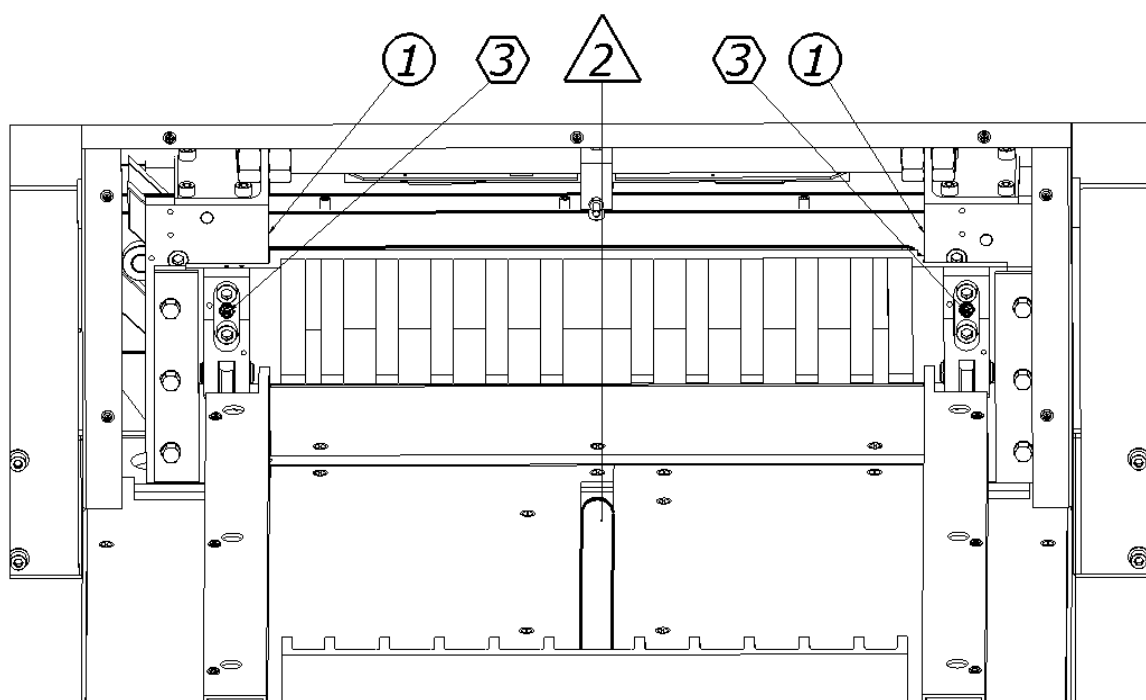


Figure 45. Lubrication points of the knife assembly (1), the clamp bar (2), the guide shaft of the feed mechanism (3)

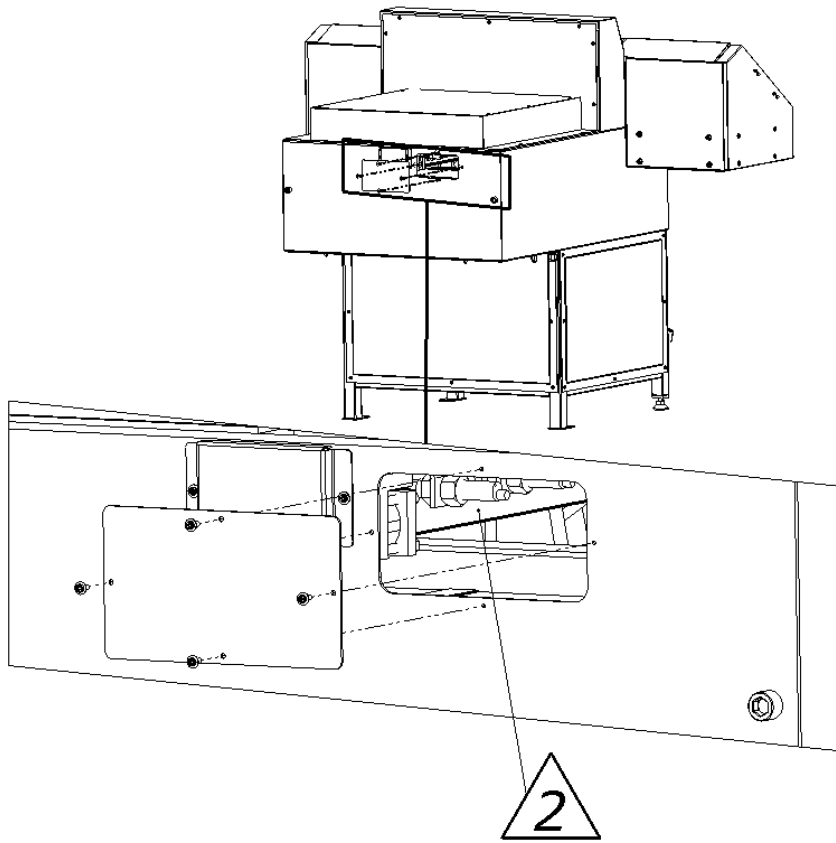


Figure 46. Grease location of the lead screw.

ould be made
mended.

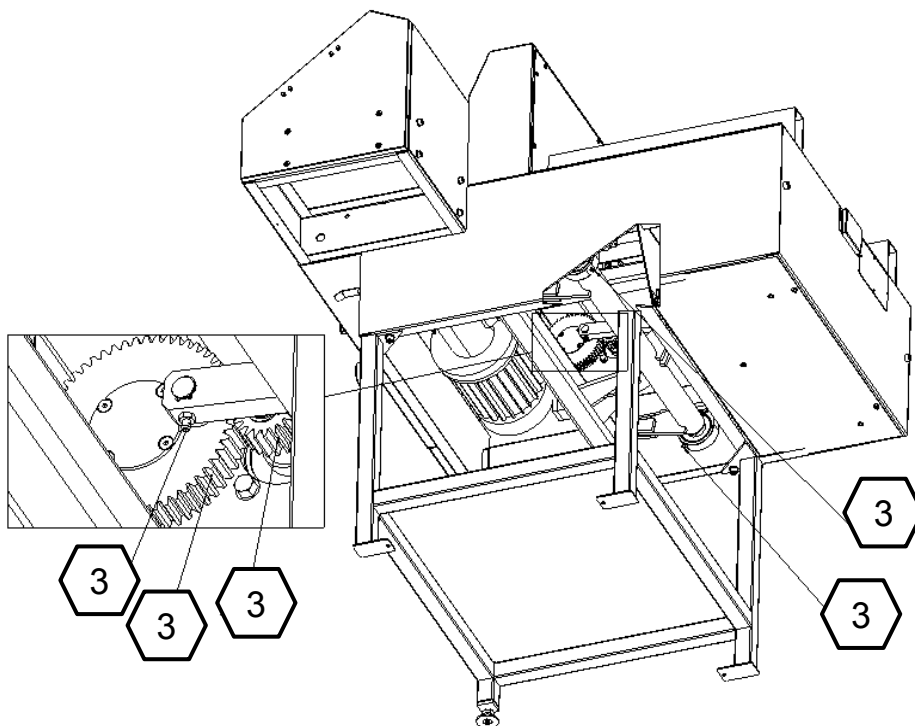


Figure 47. Arrangement of lubrication points of the pressure mechanism

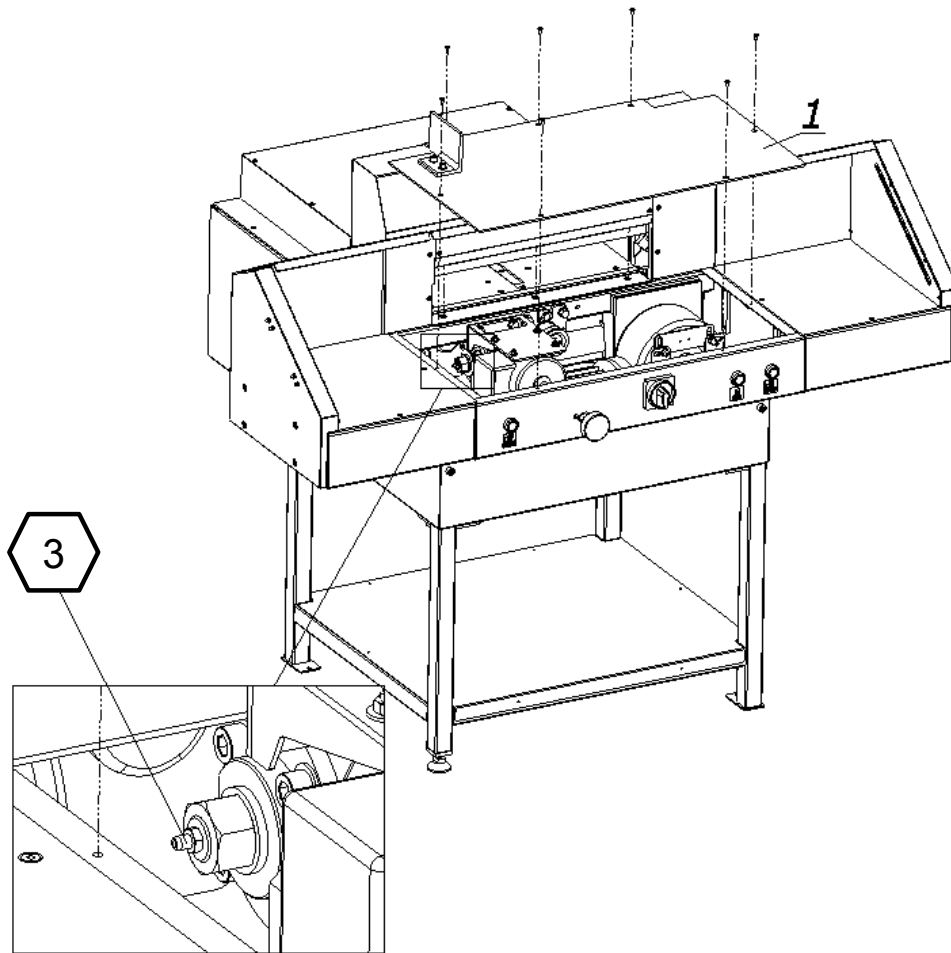


Figure.48. Grease location of the pinion bearings

9.3.1 Oil change in gearboxes

The worm gear reducers (Fig.49) and the pressure drive are filled with an exchangeable oil. The exchange should be made after 5 years of work. The use of GL-5 and / or MIL-L-2105D gear oil is recommended.

If a lubricant other than the one recommended is used in the reducer, the dates of its replacement must be observed. The old lubricant must be drained while it is still warm.

9.3.1.1 Remove the front table

9.3.1.2 Remove the lower cover 2 (fig. 43)

9.3.1.3 Unscrew the drain plug 2 (Fig. 39) and let the oil drain out

9.3.1.4 Close the drain plug

9.3.1.5 Unscrew the filler cap 1 (fig.49) and pour new oil (about 0.5 liters)

9.3.1.6 Close the filler cap

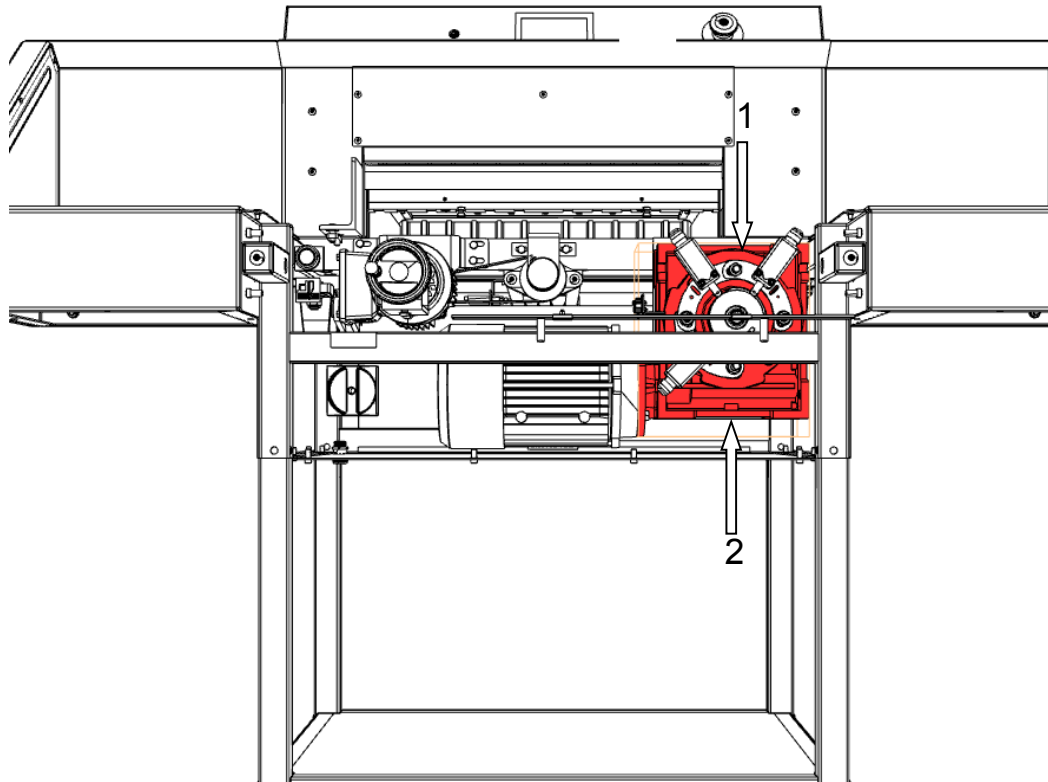


Figure 49. Oil change in the gear unit.



Danger!



Risk of injury!

After lubrication: Using a cloth, completely remove any excess lubricant (grease, oil), in particular from the table surface on which the cutting material is laid and the work pieces in contact with the cut material, ie the knife body and the clamp bar.

9.4 Inspections

9.4.1 General recommendations

- After each change, clean the machine (mainly from paper dust)
- Pay attention to the cleanliness of contacts of control elements (contactors, connectors)
- Check the screw connections of the cutter elements and if necessary, tighten the screws.

9.4.2 Knife regeneration

The quality and accuracy of cutting depends primarily on the sharpness of the knife and the right angle of its blade.

9.4.2.1 Features of a blunt knife

- rough and uneven surface of the cut ream
- ticking the edge of the cut material
- inaccurate cutting
- increased formation of paper dust.

10.FAILURES



Danger!

- Each fault carries a risk of injury to the operator or his assistant.
- If the cutter knife jams in the cut material during cutting, do not attempt to pull the material out from under the knife.
- Defects can be eliminated only by personnel with appropriate permissions.
- After completing the fault rectification, fit all covers and check that the individual protection devices are working properly.
- Performing repairs by persons who do not have the proper qualifications and proper training results in an immediate loss of the cutter warranty, and also releases the manufacturer and the machine supplier from liability for damage caused.

10.1 Determining the causes of the fault

Determine if the vulnerability affects the elements:

- electric,
- mechanical
- programmer

10.2 Basic procedures for removing various types of defects

Electrical faults:

- check the compatibility of the direction the motor is turning
- check the fuses in the machine
- measure the voltage
- check that all connectors are tightened securely
- check if there are any failures at the same time in other machines in the plant

Mechanical faults:

- look closely at all moving parts
- check if abnormal noises occur during operation
- check if the machine has been damaged, no cracks or iron filings appeared on it