

FORMAX[®]

Cut-True 29A & 29H
Guillotine Cutters

1. GENERAL INFORMATION

This operator manual was written to enable safe operation of machine and comfortable usage.

Please read information carefully before operating the cutter, with special notes for safety precautions.

The operator manual must always be available to the person operating the machine!

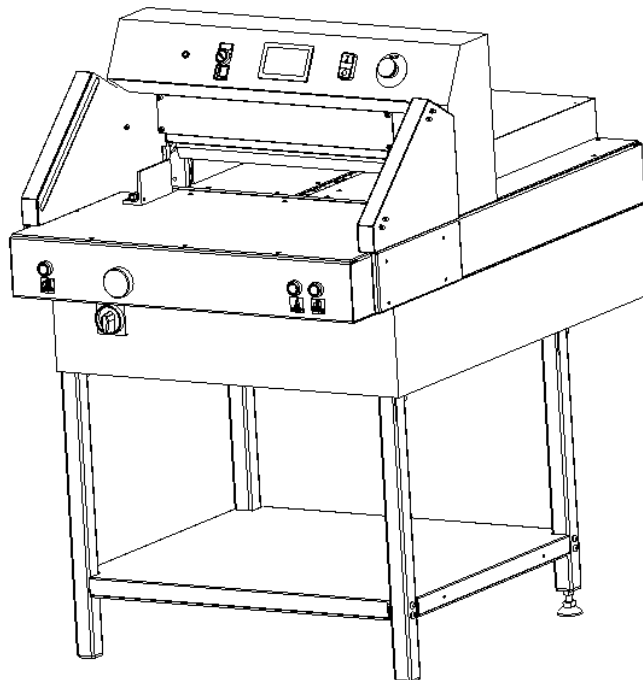
The cutter should be operated by one person only!

2. TRANSPORT AND STORING

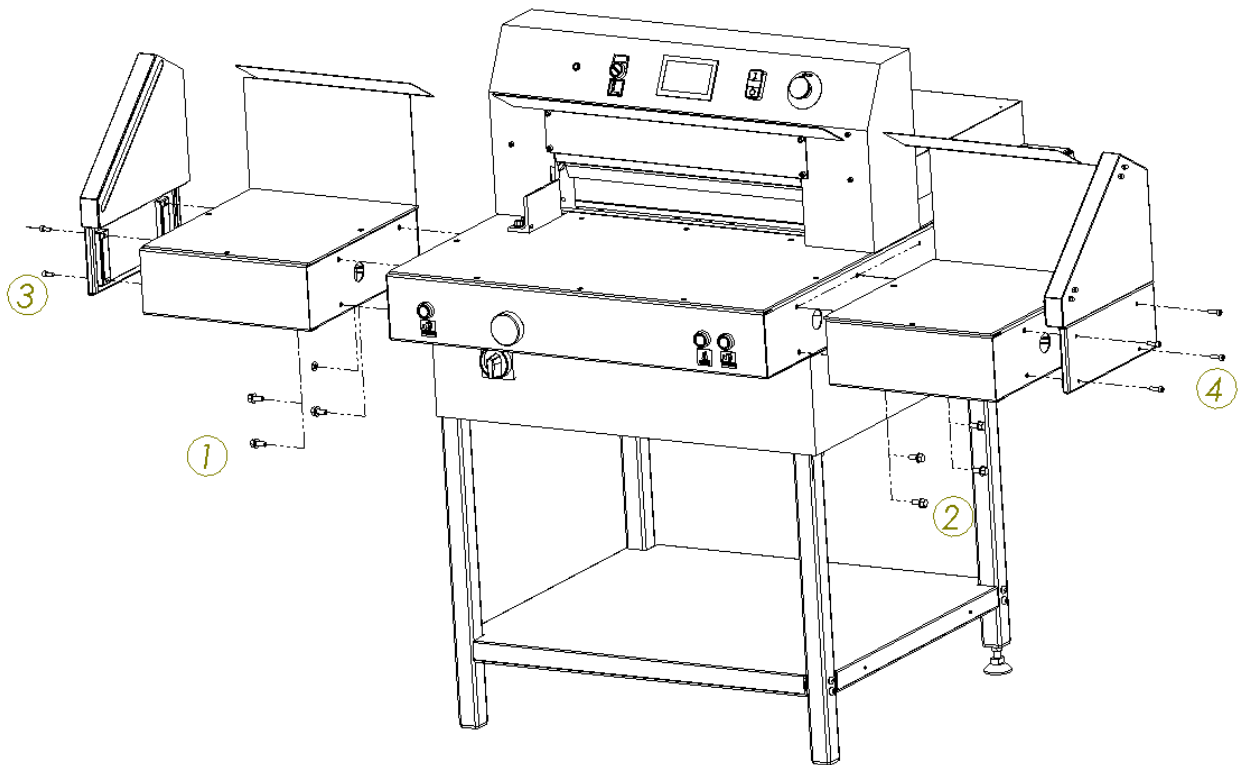
2.1. Delivery conditions

The cutter will be delivered by manufacturer:

with disassembled base and optional side tables,
assemble according to drawings 1b and 1c

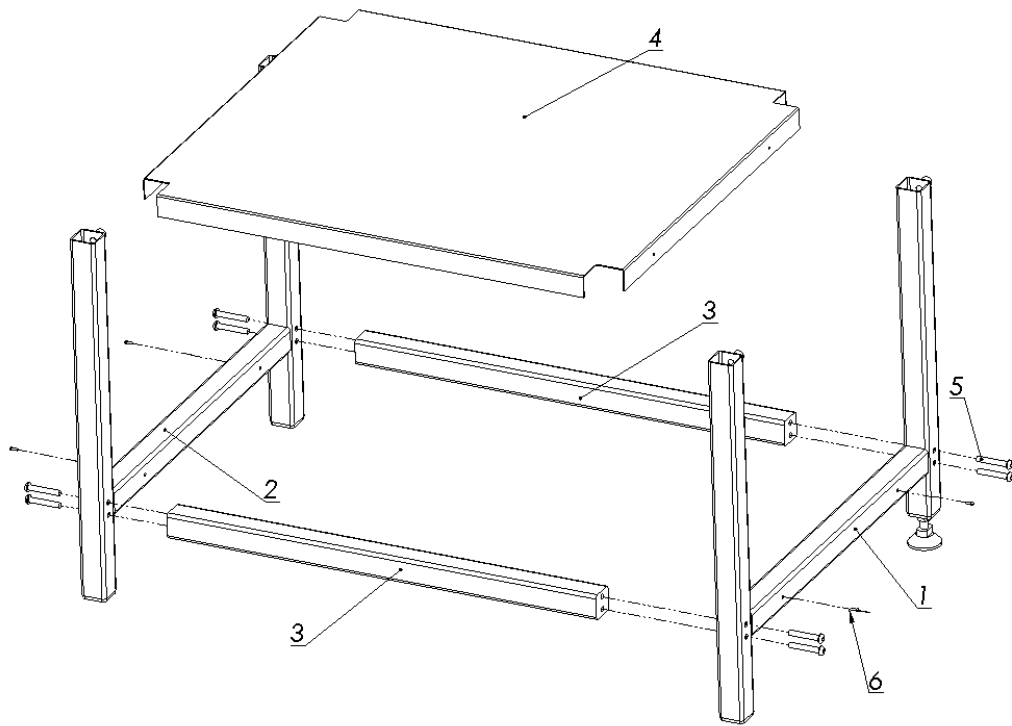


drawing1a. Cutter without side tables



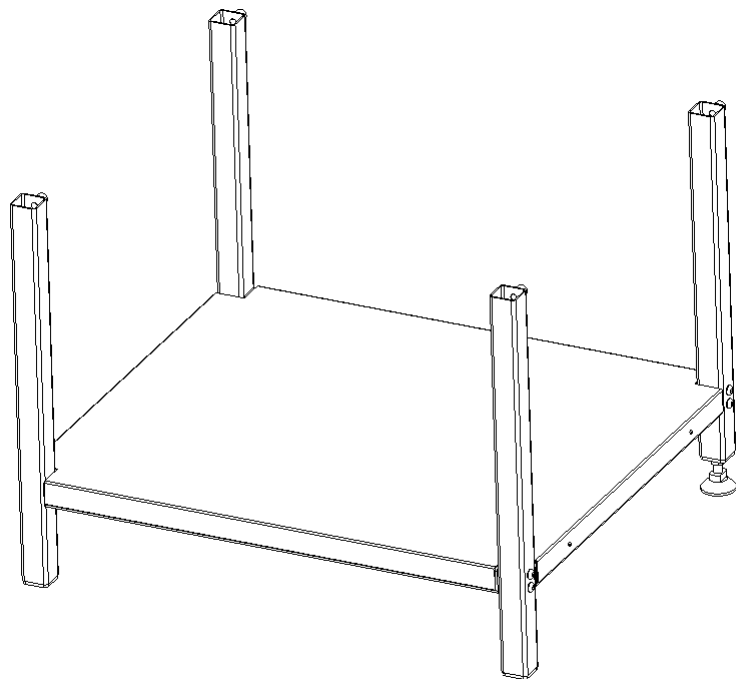
drawing 1b. Assembly of side tables

1. side table left + screw M8x25 (4 pcs) + washer 8 (4 pcs)
2. side table right + screw M8x25 (4 pcs) + washer 8 (4 pcs)
3. safety curtain left + screw M8x25 (4 pcs) + washer 8 (4 pcs)+ nut M8 (4 pcs)
4. safety curtain right + screw M8x25 (4 pcs) + washer 8 (4 pcs)+ nut M8 (4 pcs)

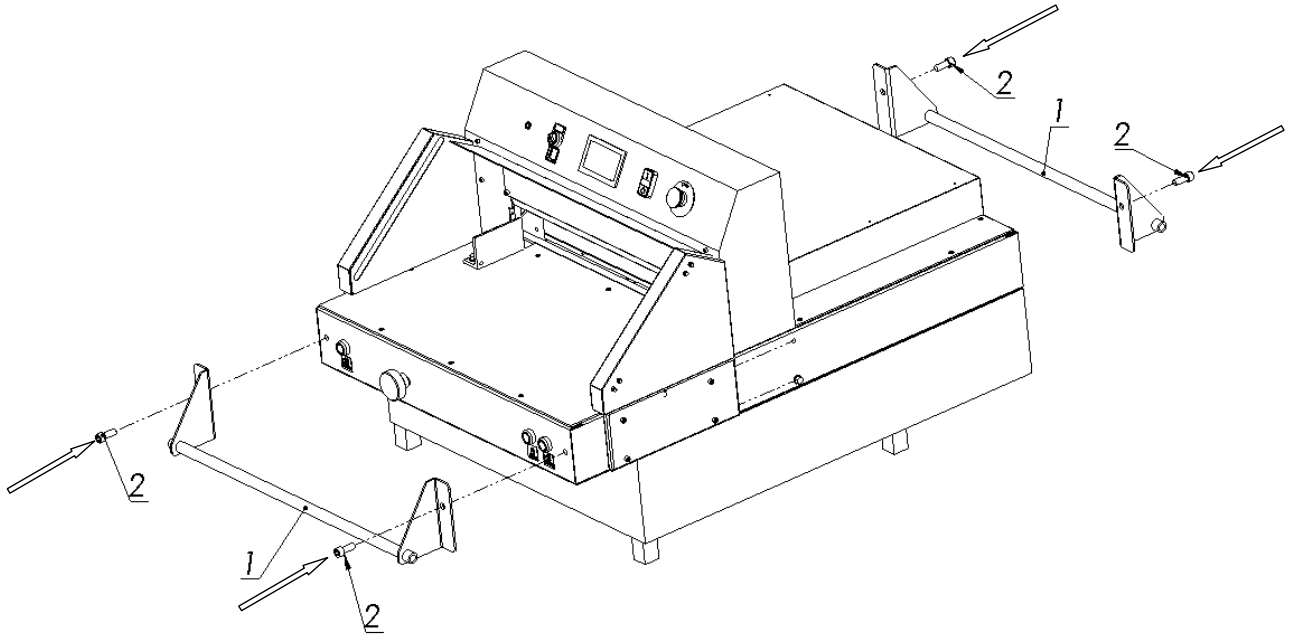


drawing 1c. Machine base assembly

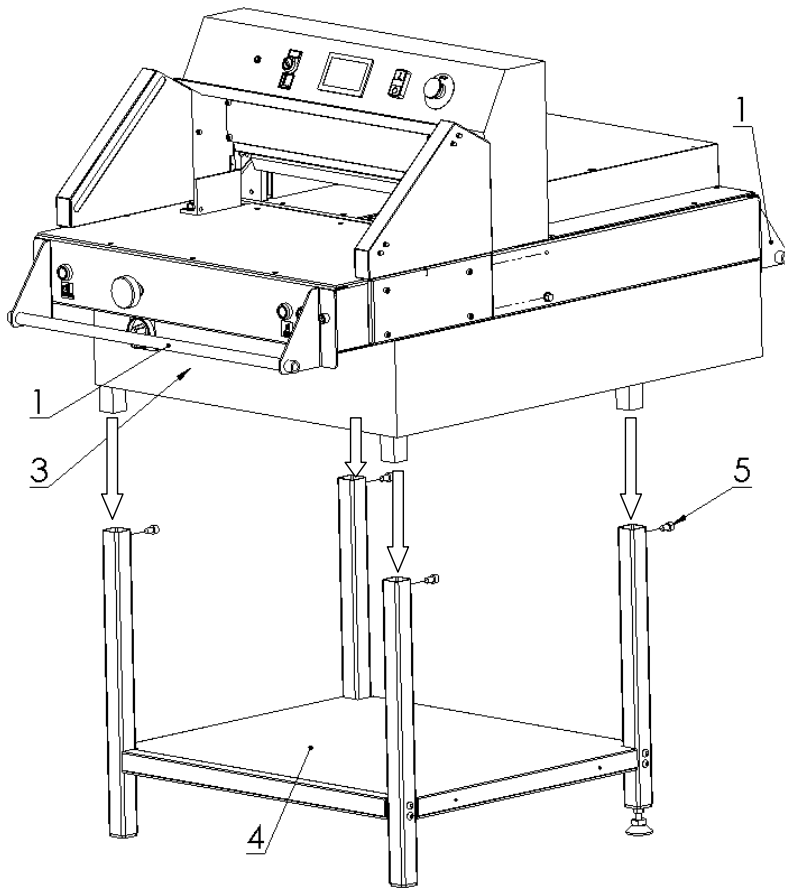
- 1. Right leg 1 pcs
- 2. Left leg 1 pcs
- 3. Bracket 1 pcs
- 4. Shelf 1 pcs.
- 5. Screw M 8x50 8 pcs
- 6. Screw M 5x16 4 pcs



drawing 1d. Assembled base



drawing 1e.



drawing 1f. Placing the cutter on the base

1. Transport holder 2 pcs
2. Screw M12x30 4 pcs
3. Guillotine
4. Base
5. Screw M10x16 4 pcs

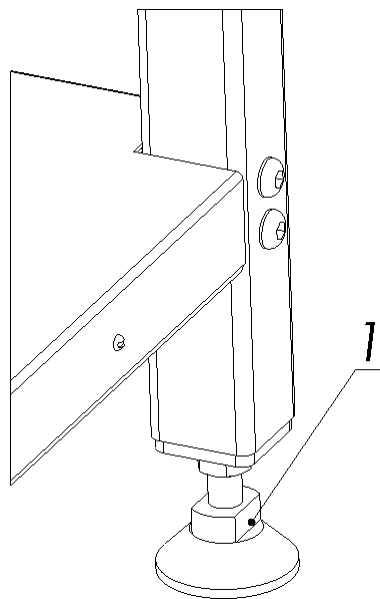
The machine should be carried and placed on the base by 4 strong persons.



Danger!

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

2.2. Cutter positioning



drawing 2. Leg adjustment

The machine doesn't need to be fixed to the ground. Correct and safe machine positioning can be reached by the leg 1 adjustment as shown on the drawing 2.



Danger!

The cutter cannot be used without safety curtain!

3. TECHNICAL PROFILE

3.1. Intended use

The machine can be used for cutting paper, cardboard and other materials: plastic, foil, laminate, rubber etc - mainly in printing houses, bookbinding workshops and offices.

CAUTION! Staples or other hard materials can damage the knife blade!

3.2. Basic data

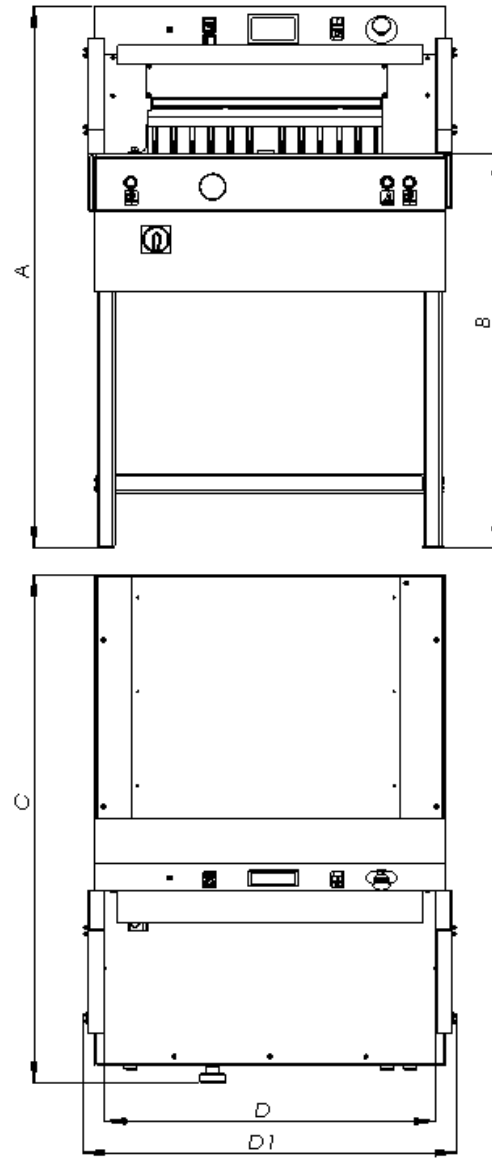
3.2.1. Technical data

chart 1.

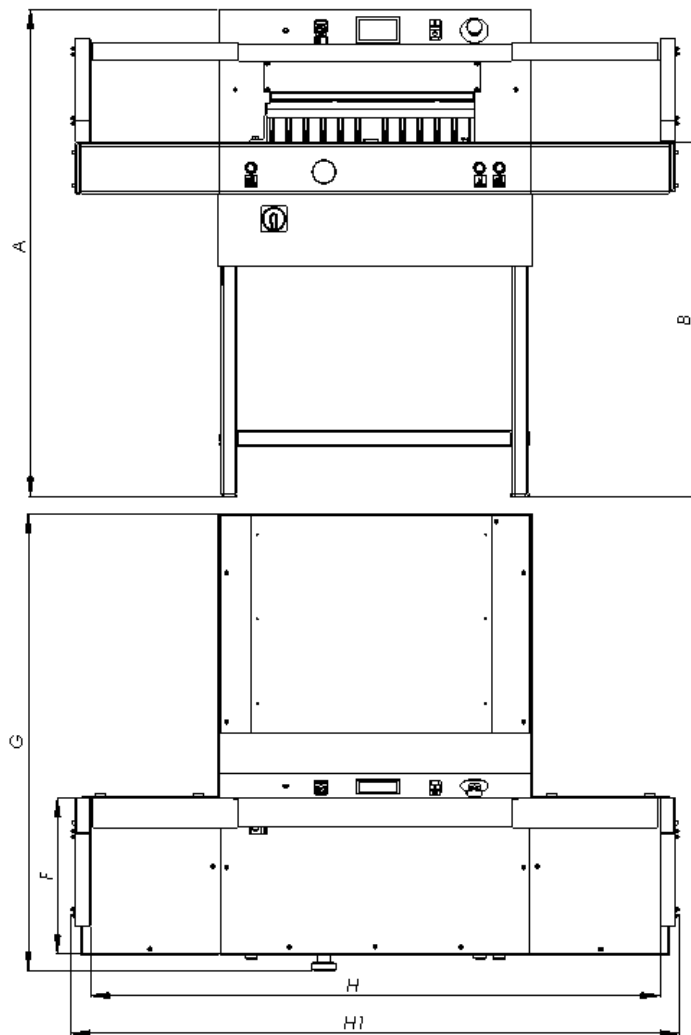
PARAMETER		Cut-True 29A / 29H
Maximum pile width (mm)		520
Maximum pile height (mm)		80
Functional depth of back part of pile (mm)		530
Narrow cut (mm)	With false clamp	40
	Without false clamp	25
Power of knife motor drive (kW)		1.5
Power of clamp motor drive (kW)		0.37
Power of backgauge motor drive (kW)		0.18
Power supply		230V
Frequency		60Hz
Power		2 kW
Fuse protection		20A
Noise level (dB)		63.9dB
Net weight(kg)		310

3.2.2 Exterior dimensions

Drawings 3a,3b and chart 2 show dimensions of different versions of machines.



drawing 3a. Dimensions of cutter without side tables.



drawing 3b. Dimensions of cutter with side tables.

chart 2.

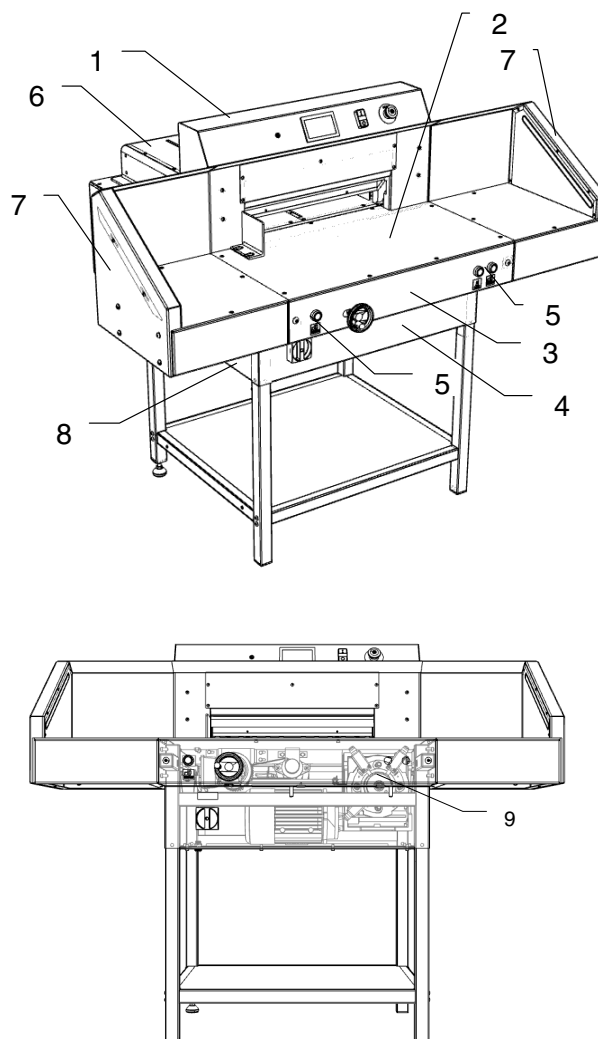
DIMENSION	VALUE (mm)
A	1245
B	900
C	1215
D	780
D1	876
F	400
G	1215
H	1480
H1	1576

4. SAFETY SYSTEMS

4.1 Safety systems installed in the machine:

- **Simultaneous two-hand cutting buttons** – blade is engaged / released by pressing two buttons simultaneously
- **LED Safety Curtain** – photoelectric protective safety barrier
- **Cam device** – controlling knife upper position.

4.2. Safety Elements



drawing 4. Location of protective covers and elements

chart 2. Safety Features

	Dangerous areas and/or factors	Safety equipment	Identification	
			Position	Drawing
I	MECHANICAL			
1.	Worm gear, lever system of clamping beam	- fixed cover	1,3,4	GM2.2402 GM1.2383-1
2.	Motor, belt transmission of clamping beam drive	- fixed cover	3,4	GM1.2383-1
3.	Belt gear box of the back gauge drive mechanism	- fixed cover	3,4	GM1.2383-1
		- front table	2	GM2.2409-1
4.	Motor, lever system of the blade drive mechanism	- fixed cover	3,4	GM1.2383-1
			1	GM2.2402
		- front table	2	GM2.2409-1
5.	Movement of the clamping beam	- fixed cover	1	GM2.2402
		- LED curtain	7	GM2.2640-0
6.	Movement of the back gauge	- fixed cover	6	GM2.2640-0
7.	Cutting zone	- both hands protecting device	5	GM2.2640-0
		- LED curtain	7	
		- cam mechanism, controlling the blade stop in the top position	9	
8.	Blade change process	- transport carrier		
		- special protective package		

9.	Sharp edges and corners of the guillotine elements	- dulls and rounding		
10.	Rough, unequal surfaces	-precise processing of details -varnish coat		
II ELECTRICAL				
1.	Direct touching of electrical elements	-basic protection -electric equipment in housing	3,4	GM1.2383-1
2.	Indirect touching	- additional protection - continuity of protecting wire		

4.3. Work safety rules

1. Operator training :

- user must be made aware of potential dangers
- clearly identify the operator's duties, and restrict use to only those who have been trained and authorized

2. Do not use cutter if:

- machine is used contrary to the use or/and cutting dimensions set in manual guide are exceeded
- the machine is broken
- at least one of the shields has been removed

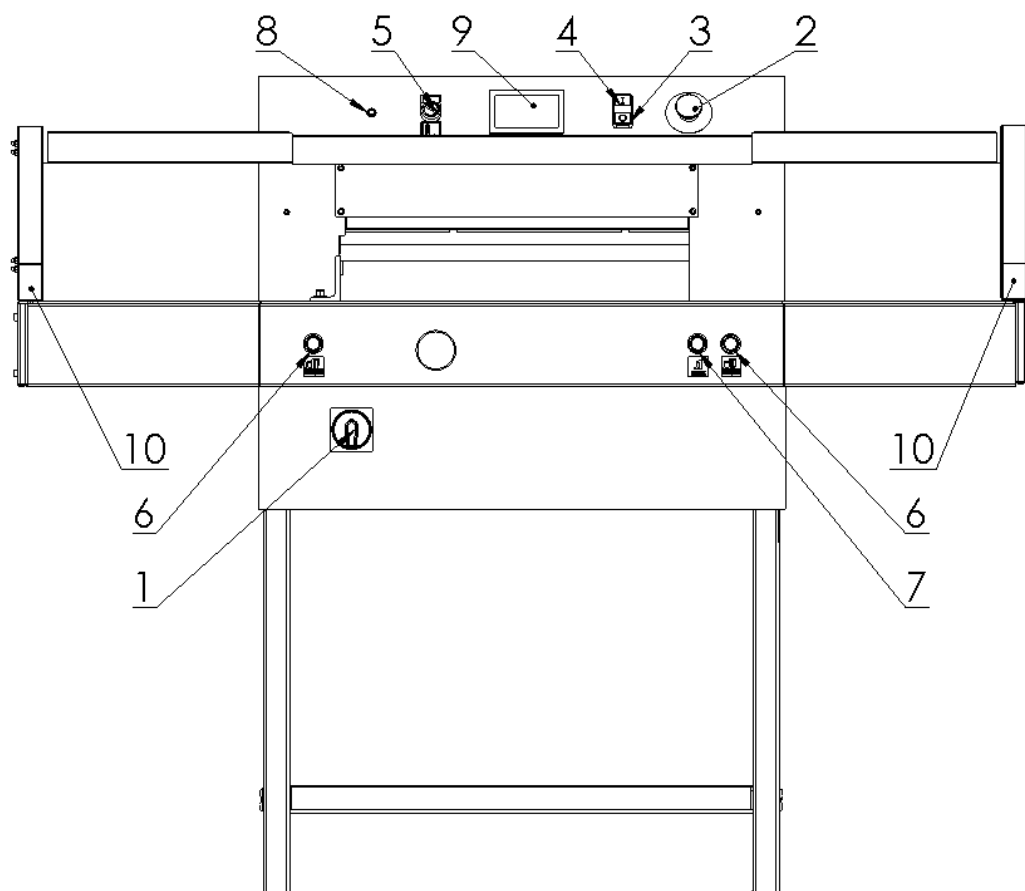
3. Operators must:

Check the functionality of protective devices:

- two-hand simultaneous cutting buttons (*any time before operating the machine*)
- LED safety curtain (*any time before operating the machine*)
- conduct maintenance and repairs only when the power supply is off

5. OPERATION

5.1. Control panel



drawing 5. Controls

1. main power switch
2. safety stop button
3. button locking control system
4. button turning on control system
5. Rotary knife change button, two-position (in some software versions this button is only on touch screen)
 - position 0- working cycle (cutting)
 - position 1 - knife change mode active
6. Cutting buttons (simultaneous two-hand operation system)
7. Clamp only button
8. Signaling diodes.

- red - control system off
- green - control system on

9. LCD control panel

10. LED safety curtain

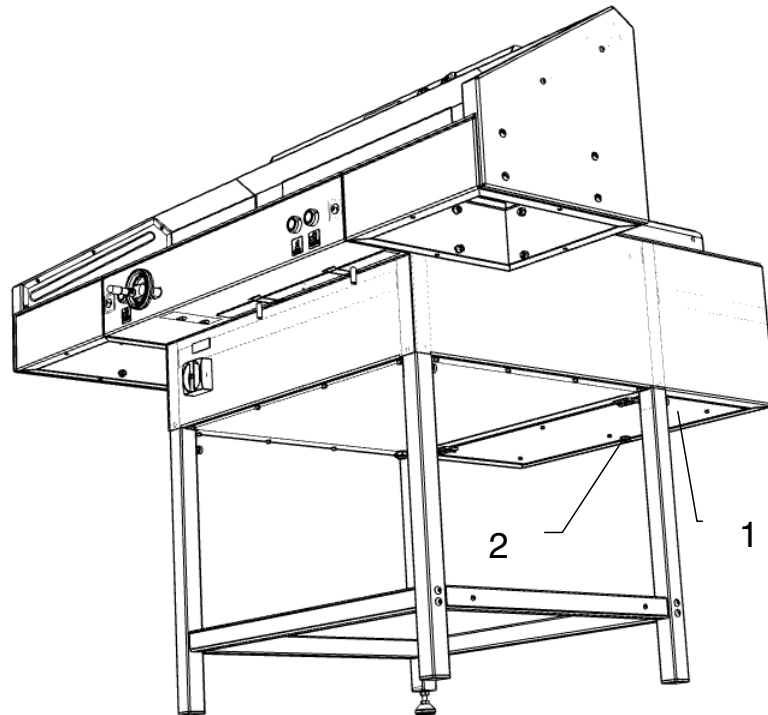
5.2 Electric equipment (drawing 6)



Danger!

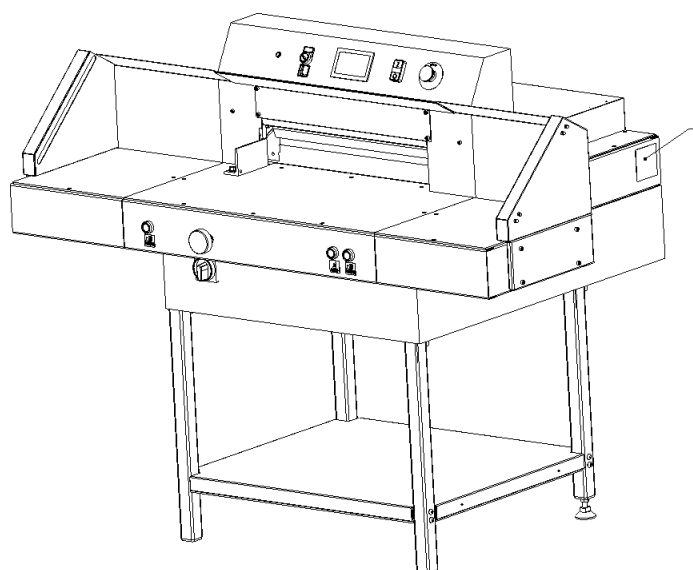
Turn off power supply with main switch before opening covers!

1. Hinged cover of electric board
2. keylock



drawing 6. Electric board location

6. Power supply



Drawing 7 Nameplate location

Data on the nameplate:

- power supply 230V
- frequency 60 Hz
- power installed kW
- fuse protection 20 A

The data presented on the plate must correspond to the voltage of power supply network!

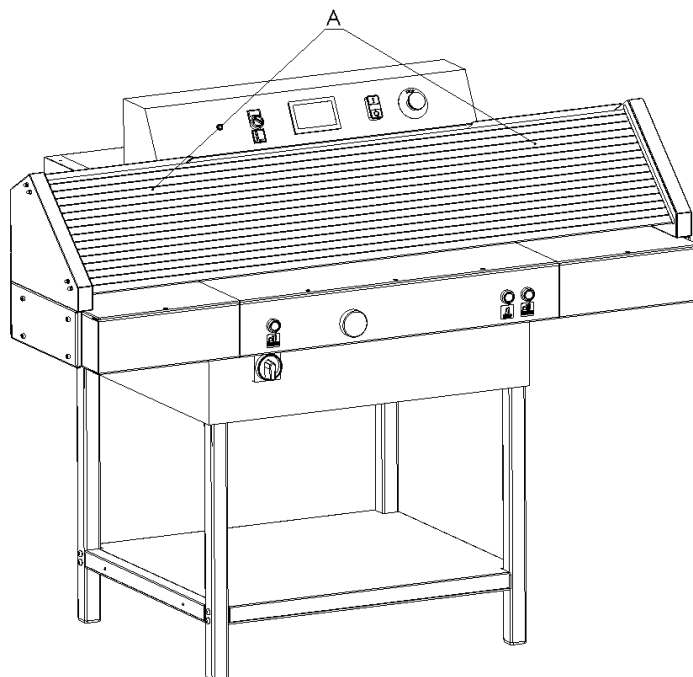
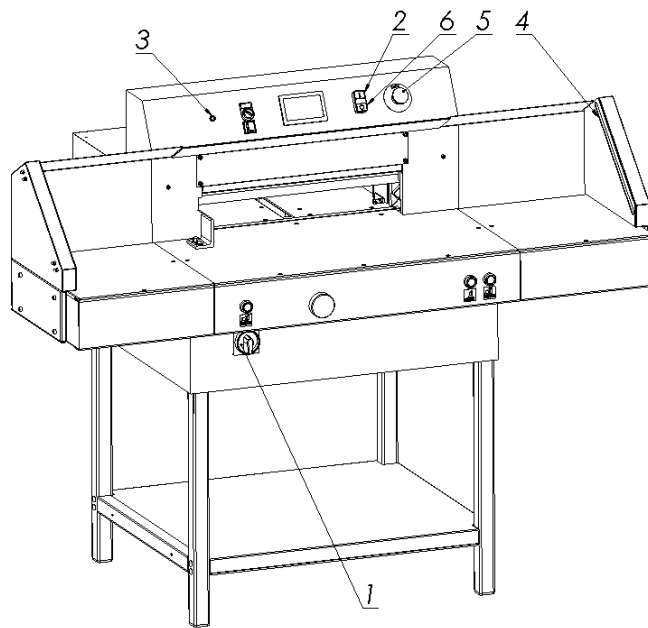
Cutter must be grounded!

7. PREPARATION FOR USE

Be sure to assemble and place the cutter and stand in a location which will not cause a safety hazard due to location, power cables or an ungrounded power source.

7.1 Using the cutter

7.1.1 Start-up.



drawing 8. Elements used to power on the cutter.

1. Turn the main switch 1 into position on "1"
2. Press green button (2) to the ON position
 - LED 3 lights green
 - LED 4 lights green
 - **LED 4 lights red (obstacle *inside the protective area of curtain A*;
remove obstacle –LED 4 lights green)**

7.1.2 Emergency stop of the machine

1. Press button 5

7.1.3 Starting up after emergency stop

1. Unlock button 5 (turn)

7.2 Backgauge positioning



Danger!



Do not put your hands in the cutting area when the back gauge is moving!

Back gauge can be positioned by program module 1 or manual crank 2 (drawing 9)
Detailed description of settings can be found in separate Programming Manual

7.2.1 Positioning by manual crank 2

1. press crank 2
2. By rotating the crank move gauge forwards or backwards- the dimension value changes on the touch panel.

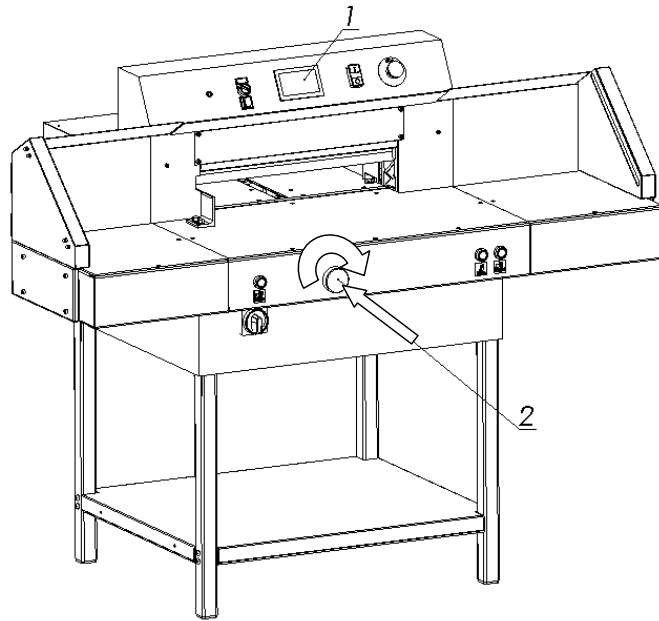


diagram 9. Elements controlling back gauge

7.3 Clamping




Danger!





Do not put your hands in the cutting area when clamping!



7.3.1 Pressing the material (before cutting)


1. Press simultaneously cut buttons 1  (drawing 10)
- material is clamped automatically

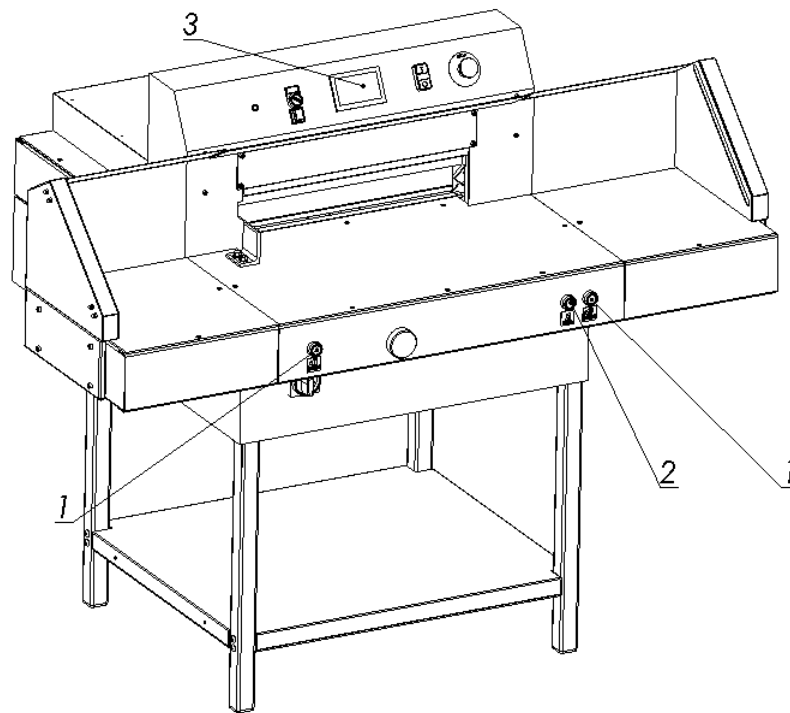
7.3.2 Pressing the material without cutting

1. Press left cut button 1  and clamp button 2  (drawing 10)

7.3.3 Pressing and keeping the material pressed.

1. Press simultaneously left cut button 1  and clamp button 2  (drawing.10)
2. release button 2 

3. release button 1  – clamp bar returns to upper position



drawing 10. Elements used during clamping.

7.3.4 Clamp force adjustment

The clamp force can be adjusted on the touch panel 3 (drawing 10)

Detailed description of settings can be found in separate Programming Manual

7.3.5 Rules of clamp force adjustment

Clamp force is determined by the type, width and the height of the material to be cut.

Basic rules to follow:

- the taller the pile, the bigger the clamping force
- the wider the cutting width, the bigger the clamping force
- the hardness of a material, the bigger clamping force

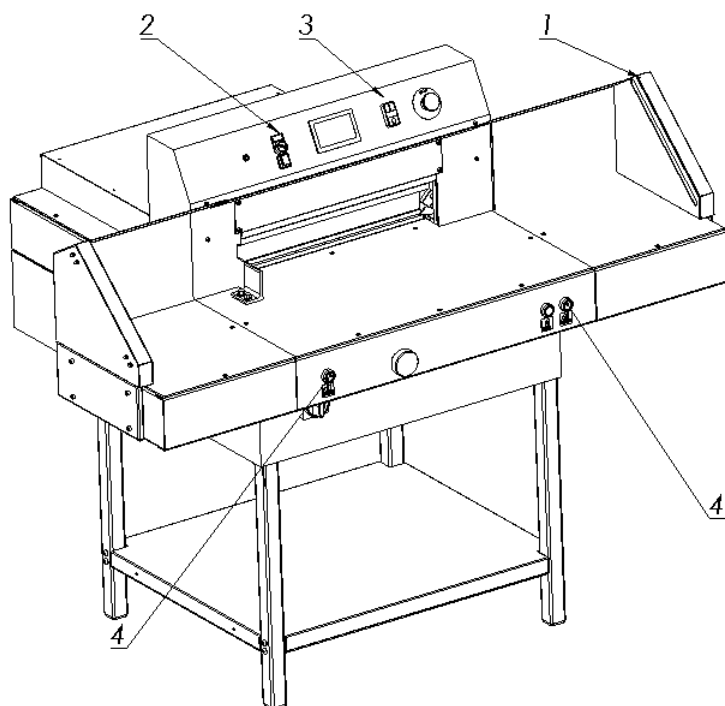
7.4 Cutting



Danger!



Do not put your hands in the knife area when cutting!



drawing 11. Handling and notification elements during cutting

The cutter may be used if:

1. there is no obstacle in working area of safety barrier- LED 1 lights green
2. green button (3)
3. 2 buttons (4) are pressed simultaneously

Both cutting buttons (4) should be held until the material has been cut. The blade and clamp bar will return to the top center position automatically.

Releasing these buttons (4) while moving the clamping beam and blade down will stop the movement. If, during cutting an object enters the field of the LED safety curtain the clamp and blade will return to their UP position. In order to continue cutting, remove the unauthorized object and then simultaneously push both buttons (4).

8. OPERATION

8.1 Blade change

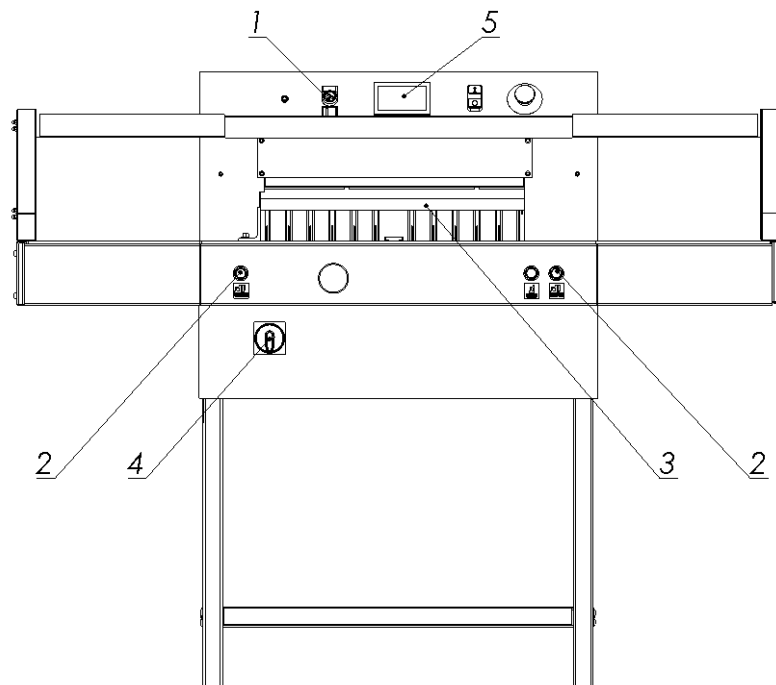


Danger!




Risk of injury!

8.1.1 Removing the blade

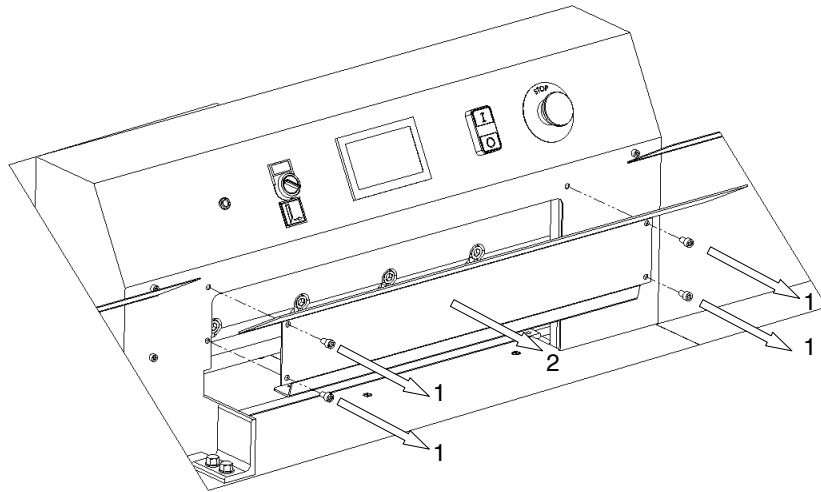


drawing 12.

8.1.1.1 Select Blade Change on the control panel. Details are described in the separate *Programming Manual*.

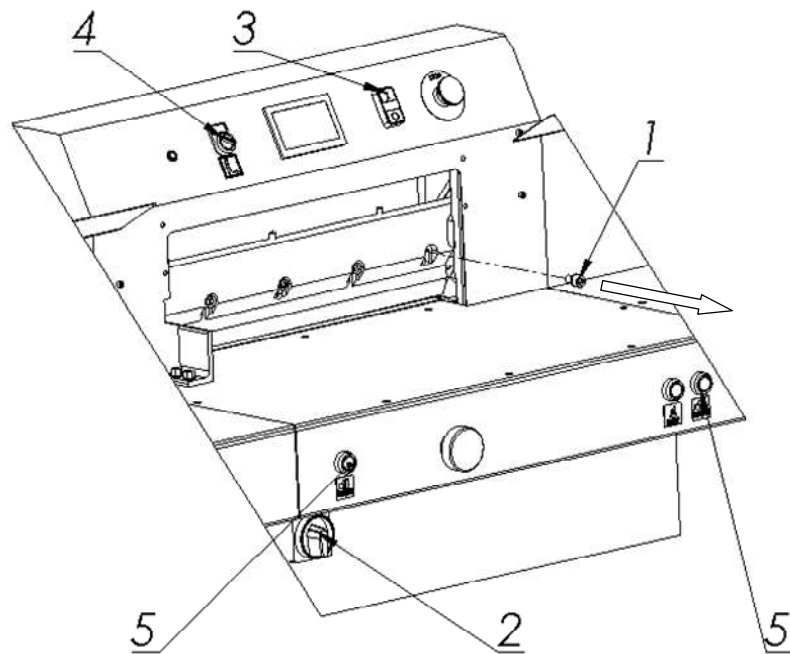
8.1.1.2 Simultaneously press both push-buttons 2  (drawing 12), to start the cutting cycle. The blade will stop in its lower position.

8.1.1.3 Switch-off the electric supply by rotating the main switch 4 (drawing 12) to “O” position.



drawing.13

8.1.1.4 Unscrew screws 1 (drawing 13) mounting the cover 2 and remove the cover 2.



drawing.14

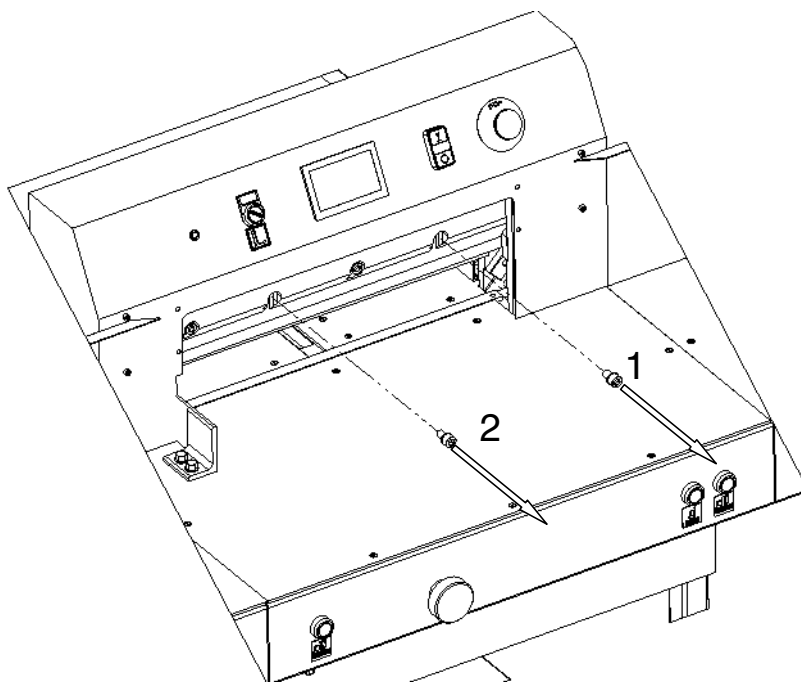
8.1.1.5 Unscrew and remove the screw 1, the first one to right side of the knife bar (drawing 14)

8.1.1.6 Turn on electric system selecting Blade Change Mode on the control panel

Details are described in the separate Programming Manual program module manual.

8.1.1.7 Turn on cutter system by pressing the green button 3.

8.1.1.8 Simultaneously press buttons 5. Blade move to its upper position.

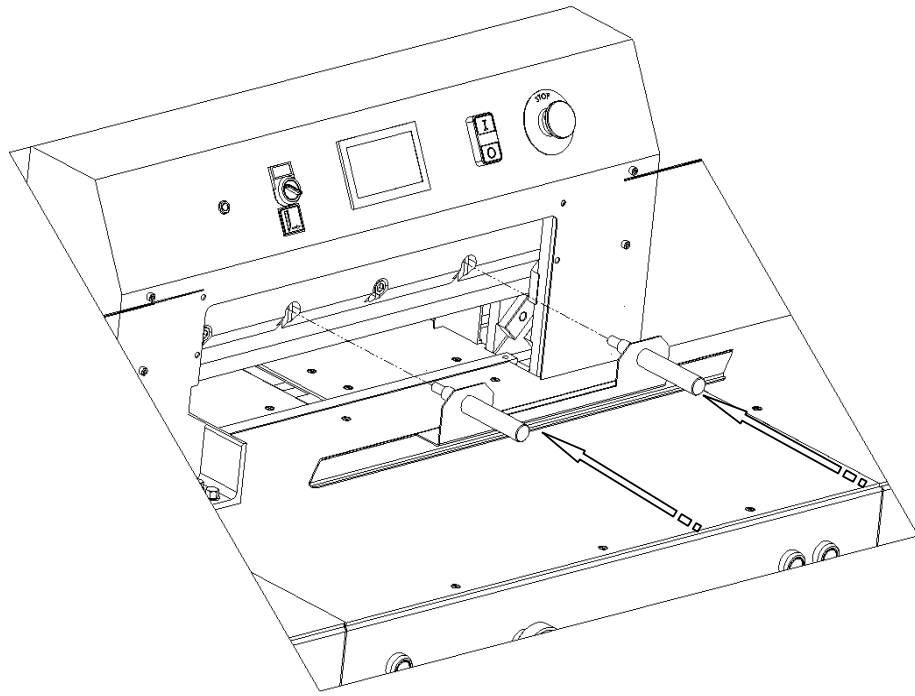


drawing 15.

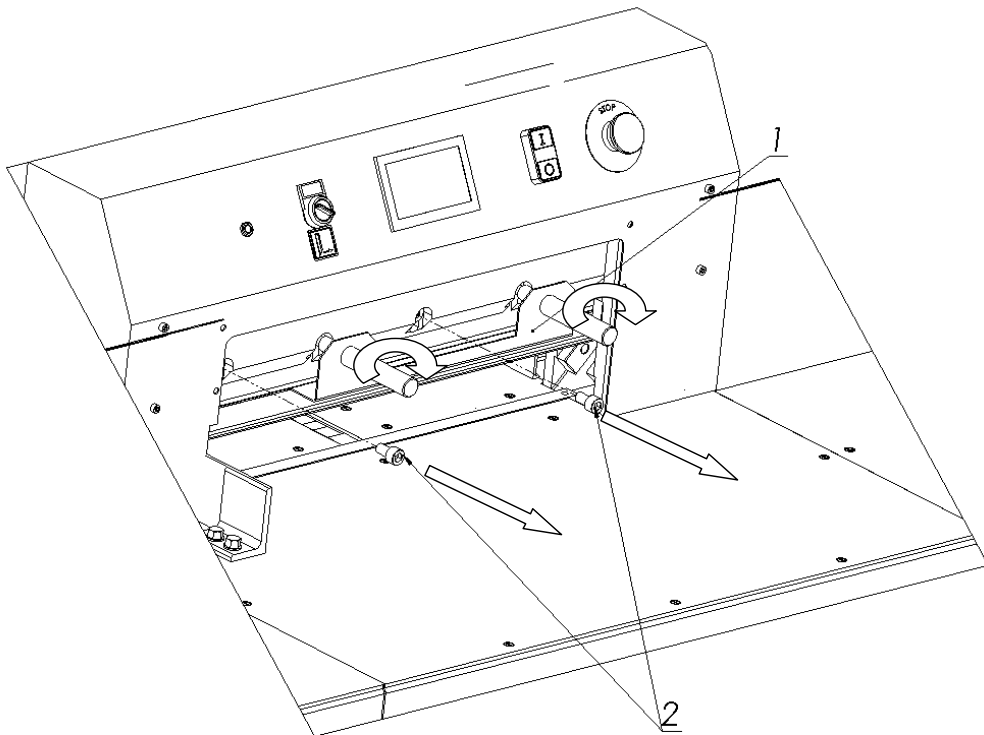
8.1.1.9 Unscrew and remove screws 1,2 (drawing 15).

8.1.1.10 Into the holes from which the screws 1 and 2 were unscrewed, 1 and 2, screw the transporting clamps 1 (drawing 16) which are an equipment of the cutter, so as to fix the knife to the knife bar

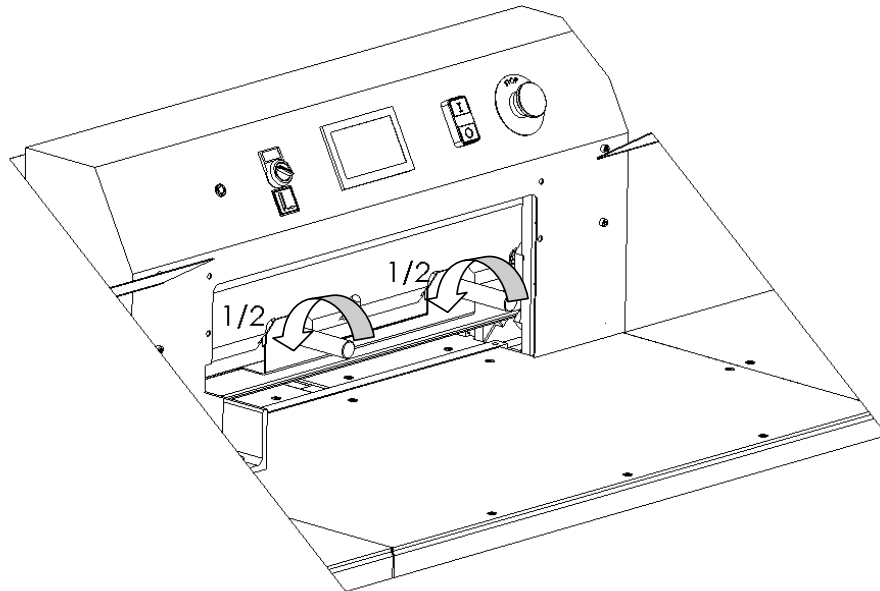
8.1.1.11 Unscrew and remove the remaining clamping screws 2 of the knife bar (drawing.17)



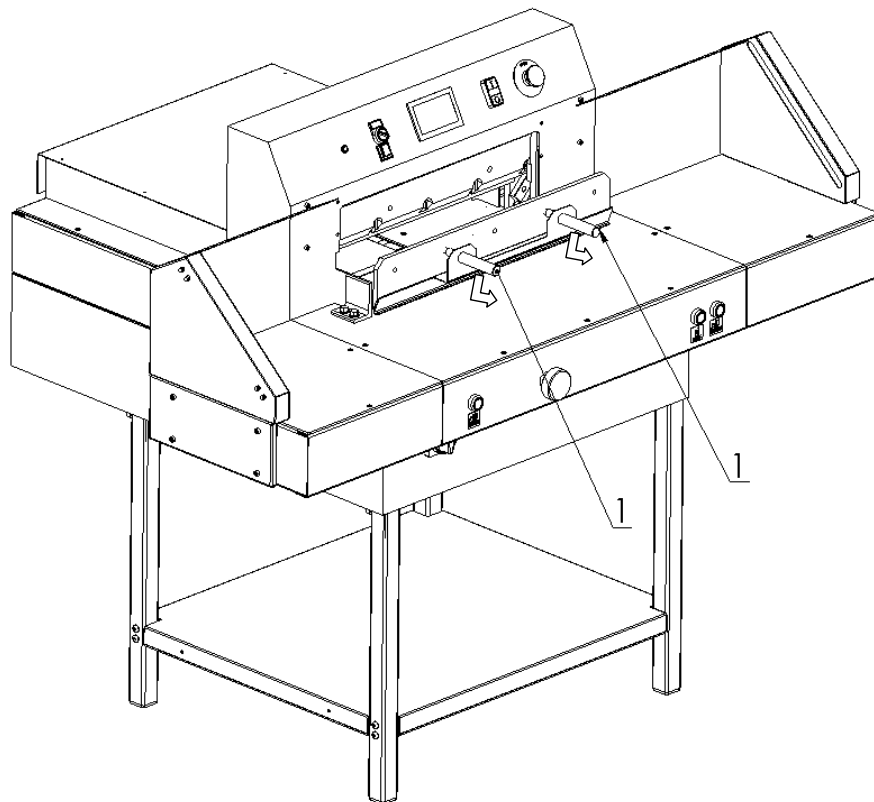
drawing. 16



drawing 17.

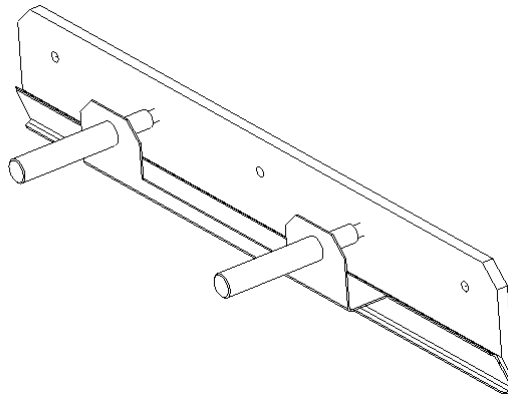


drawing 18.

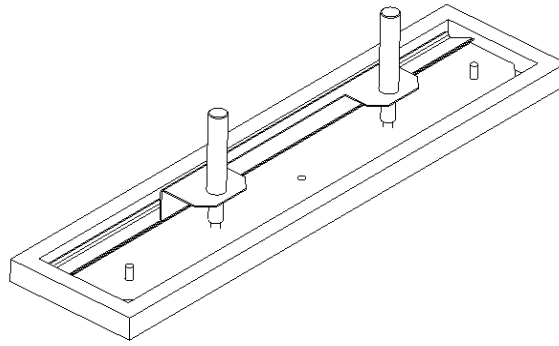


drawing 19.

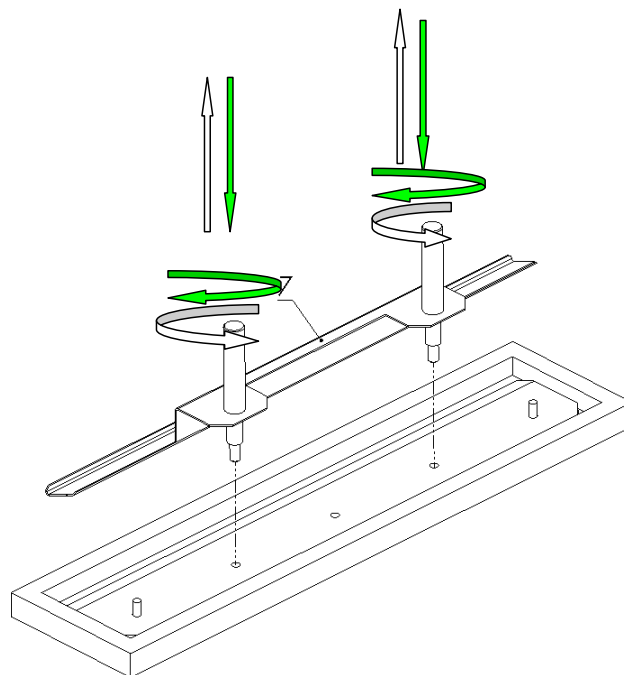
8.1.1.12 Holding with the transporting clamps (1), release a clip, by rotating them by $\frac{1}{2}$ turn to left simultaneously (drawing 18), and pull out the blade downward with care (drawing 19). Place the removed blade into the special protective package (drawing 20a-20d), with the cutting edge to the inside, fix with two bolts, and unscrew the transporting clamps 1. For unscrewing the clamping screws of the blade to the blade bar, use Allen key (an accessory of the cutter)



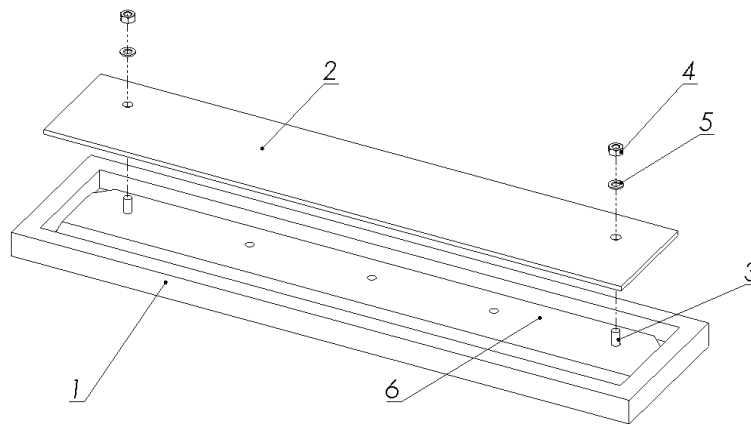
drawing. 20a. Knife protective carrier



drawing 20b. Knife in package



drawing 20 c. Screw/unscrew transporting bolts



drawing 20d. Placing the knife inside package

1. Package
2. cover
3. screw
4. nut
5. washer
6. knife

8.1.2. Knife installation

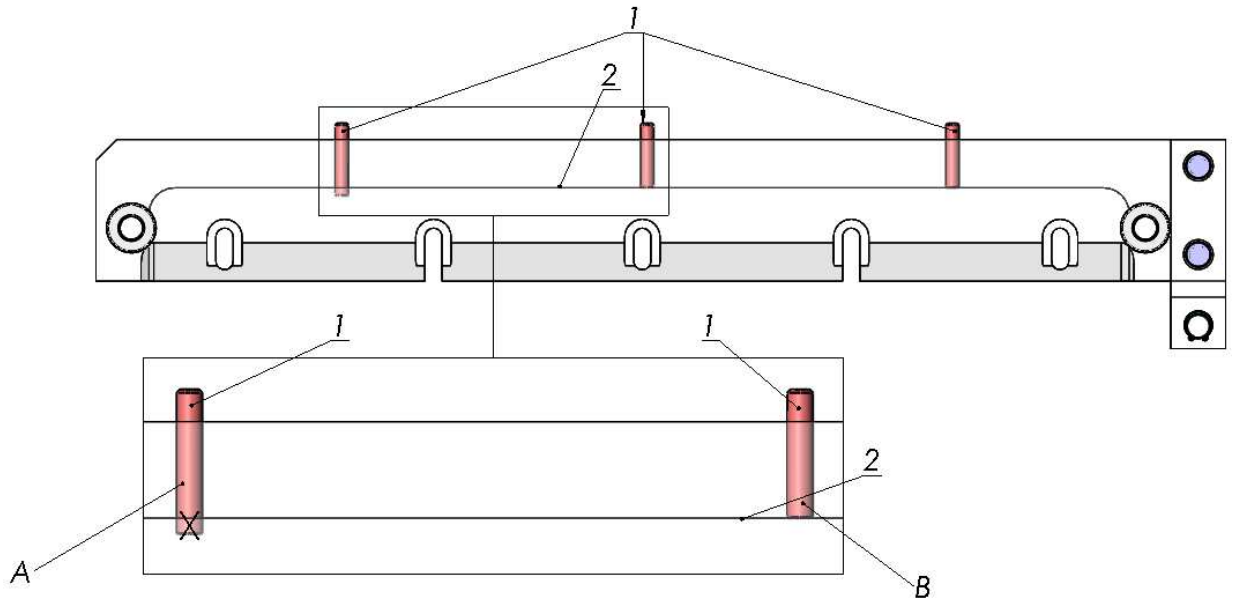
8.1.2.1. Unscrew all adjusting screws 1 (drawing 21), so that their faces are hidden into the knife bar body.

Drawing 21 B - adjusting screw 1 is lower than blade bar lobe 2 – **correct position**

Drawing 21 A - adjusting screw 1 is higher than blade bar lobe 2 – **incorrect position, screw must be unscrewed.**

WARNING: The new blade must be supported by its upper edge on the blade bar. Not obeying this rule may cause machine overload and possible damage if new blade is higher than the old one.

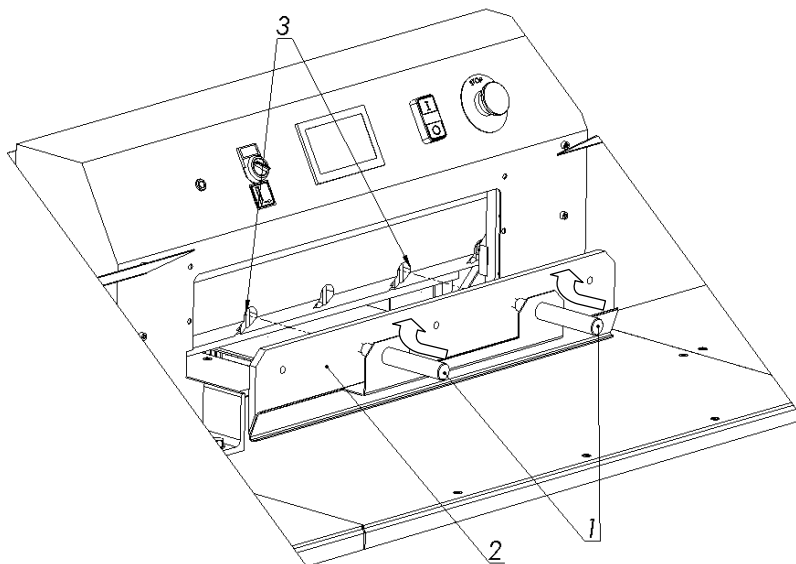
Note: to prevent the blade cutting edge denting the table surface, put down a strip of cardboard or similar material.



drawing 21. Adjusting screws position.

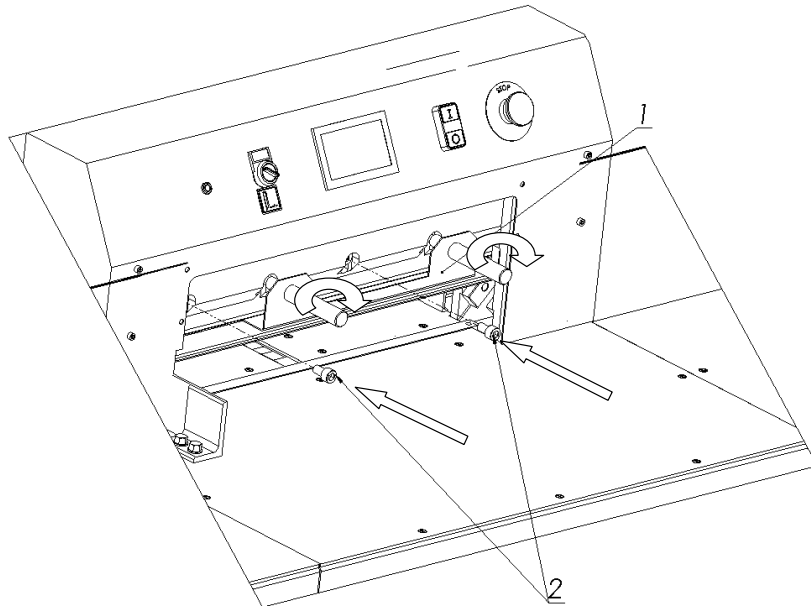
8.1.2.2. Remove blade from protective package (drawings.20a – 20d)

8.1.2.3. Holding the carrier bolts 1, put blade 2 to the machine, so the bolts can match blade bar holes 3. (drawing 22)



drawing 22.

Put the blade to Upper position until its up edge touches the bar lobe 2 (drawing 21)

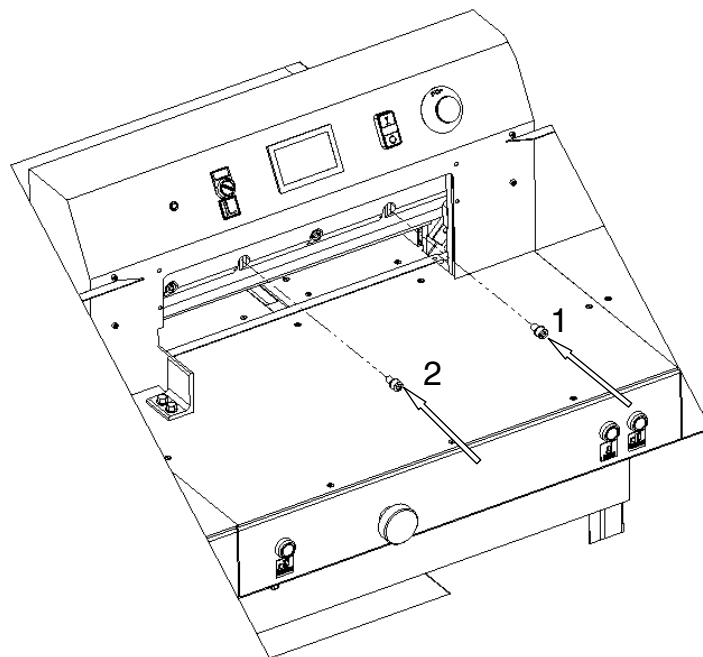


drawing 23.

8.1.2.4 Mount the blade in the beam by rotating with force both bolts 1 to the right (drawing 23)

8.1.2.5 Tighten bolts 2 (drawing.23).

8.1.2.6 Unscrew both bolts 1 (drawing 23) and put into its position mounting screws 1,2 (drawing 24)



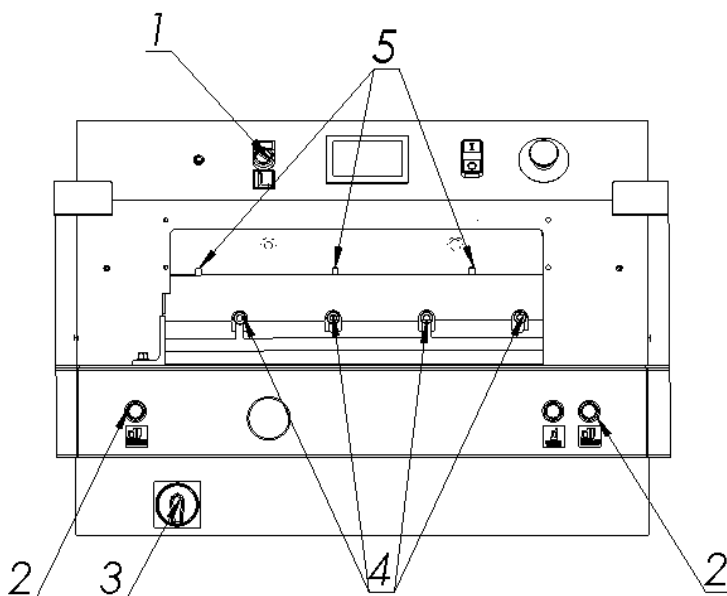
drawing 24.

8.1.2.7 Unscrew gently first screw 2 from the left (drawing 23) paying attention that the head of screw does not stick out the blade bar slide.

8.1.2.8 Press Text Frame on the control panel

8.1.2.9 Press simultaneously cutting buttons 2  (drawing 25) start cut. Blade will stop in lower position.

8.1.2.10. Turn off the Power supply by rotating the main switch 3 (drawing. 25) to O position.



drawing 25.

8.1.2.11. Loose screws 4 (drawing 25) so the blade drops down with its weight into the cutting stick of full length.


8.1.2.12. Mount the screws 5 (drawing 25) to maximum, until the blade cuts the stick by 0.3 mm.

Positioning the blade too deep may reduce blade and cutting stick lifetime

8.1.2.13. Fasten the screws 4 (drawing 25)

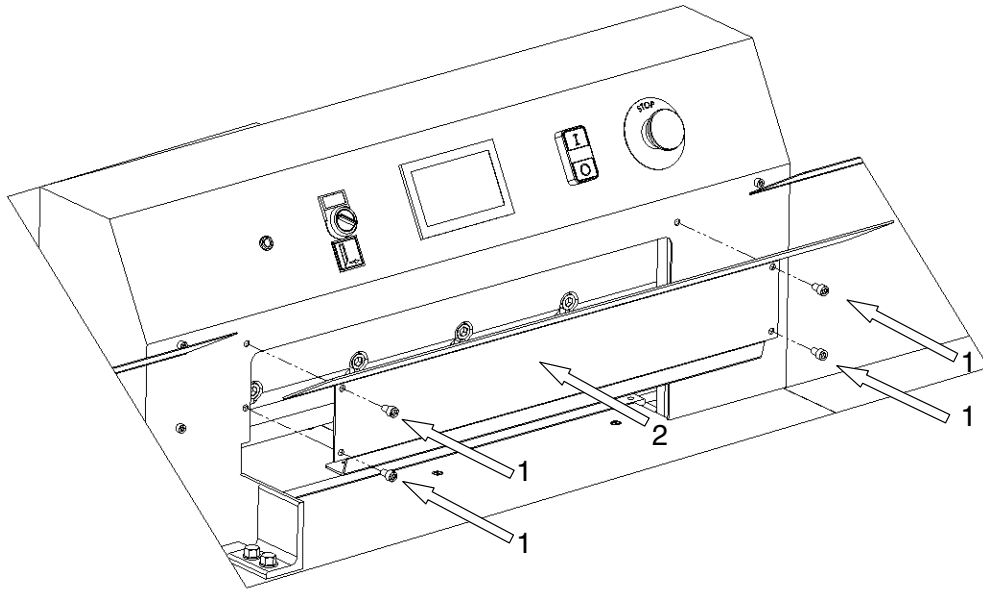
8.1.2.14. Turn on power supply by rotating button 3 (drawing 25) into position I

8.1.2.15. Press Text Frame on the control panel

- 8.1.2.16. Simultaneously press buttons 2  Blade will move into its upper position.
- 8.1.2.17. Turn off Power supply by rotating button 3 into O (drawing 25)
- 8.1.2.18. Strongly fasten the first screw from the left side 2 (drawing 23)
- 8.1.2.19. Turn on Power supply by rotating button 3 into position I
- 8.1.2.20 Turn on electric system by pressing green button 3 (drawing 1
- 8.1.2.21 Make trial cut.

If blade does not cut correctly through to the last page of the pile, repeat point 8.1.2.7.

- 8.1.2.22 Mount cover 2, screws 1 (drawing 26)



drawing 26

8.2 Cutting stick change

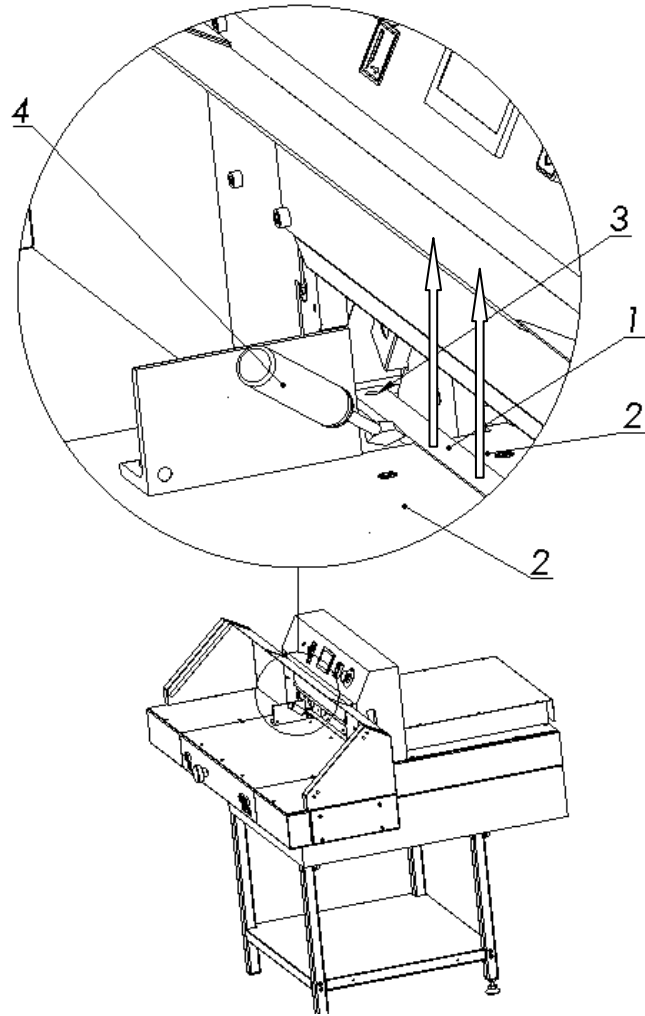


Danger!



Risk of injury!

The cutting quality of the bottom sheets in a stack, and how quickly the blade dulls, depends on the cutting stick. Changing or rotating the stick is recommended after each change of the blade, or when bottom sheets are not completely cut.



drawing 27. Changing the cutting stick

1. cutting stick

2. table

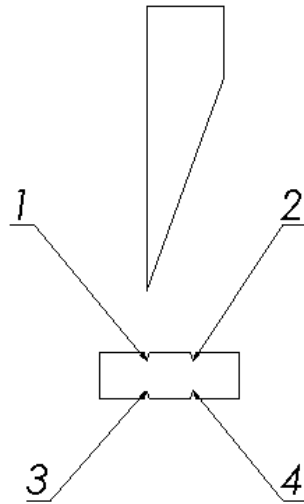
3. positioning bolt

4. screwdriver

8.2.1 Lift cutting stick (1) using a screwdriver (4)

8.2.2 Rotate or replace the cutting stick

8.2.3 Put the new cutting stick into channel between tables and hang it on positioning bolt 3



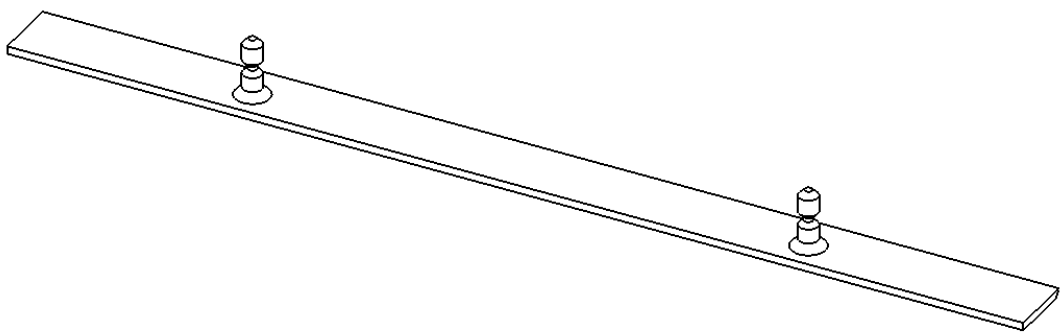
drawing 28. Stick usage scheme

The stick can be rotated 4 times in both planes to achieve 4 lines 1,2,3,4. (drawing 28)

Note: The gap between the tables, where the stick rests, must be always clean.

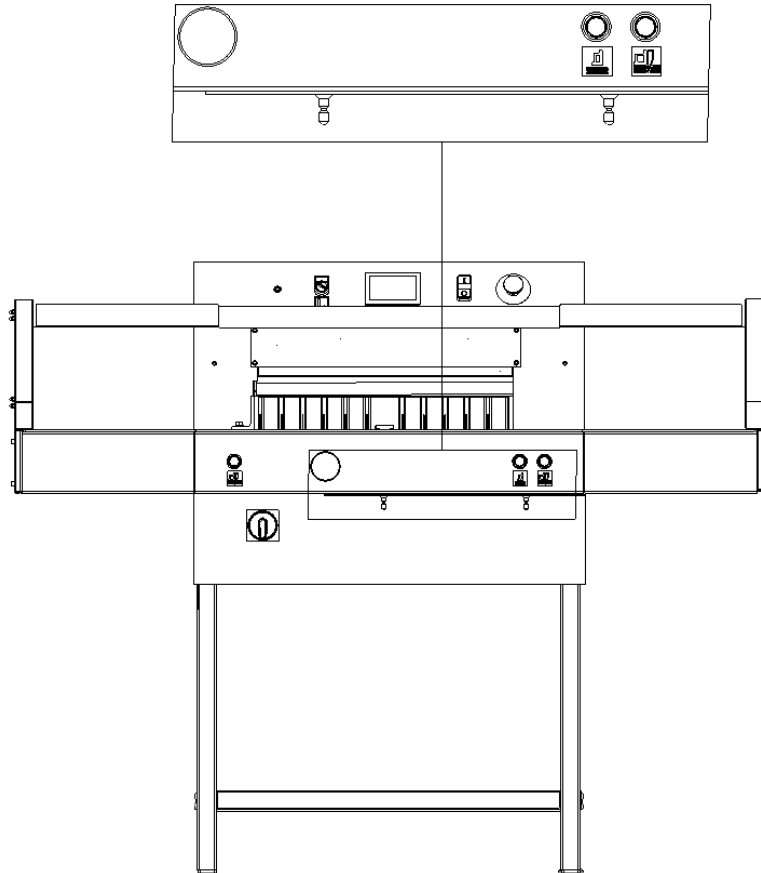
8.3 False clamp

The false clamp can be installed in order to avoid creating marks by the clamp beam on sensitive material.



drawing 29. False clamp

False clamp is fixed under the front table (drawing 30).



drawing 30. Location of false clamp plate under the table.

To install the false clamp onto the clamping beam:

8.3.1 Press the buttons (1) (drawing 31) to move clamping beam (5) down

8.3.2 When the clamping beam (5) will go down about 2 cm and uncover the holes for screws (4), release only the right button (1) - left button 1 should be still pressed

8.3.3 Press the button (2) to O to turn off control system

8.3.4 Put the false clamp into the clamping beam – rods of the false clamp should be inserted into the holes on the beam. The false clamp should completely stick to the bottom surface of the beam.

8.3.5 Strongly screw the screws (4) into tapped holes in the beam using Allen key to lock the false clamp onto the clamping beam

8.3.6 Press the button (2) to I to switch on the control system

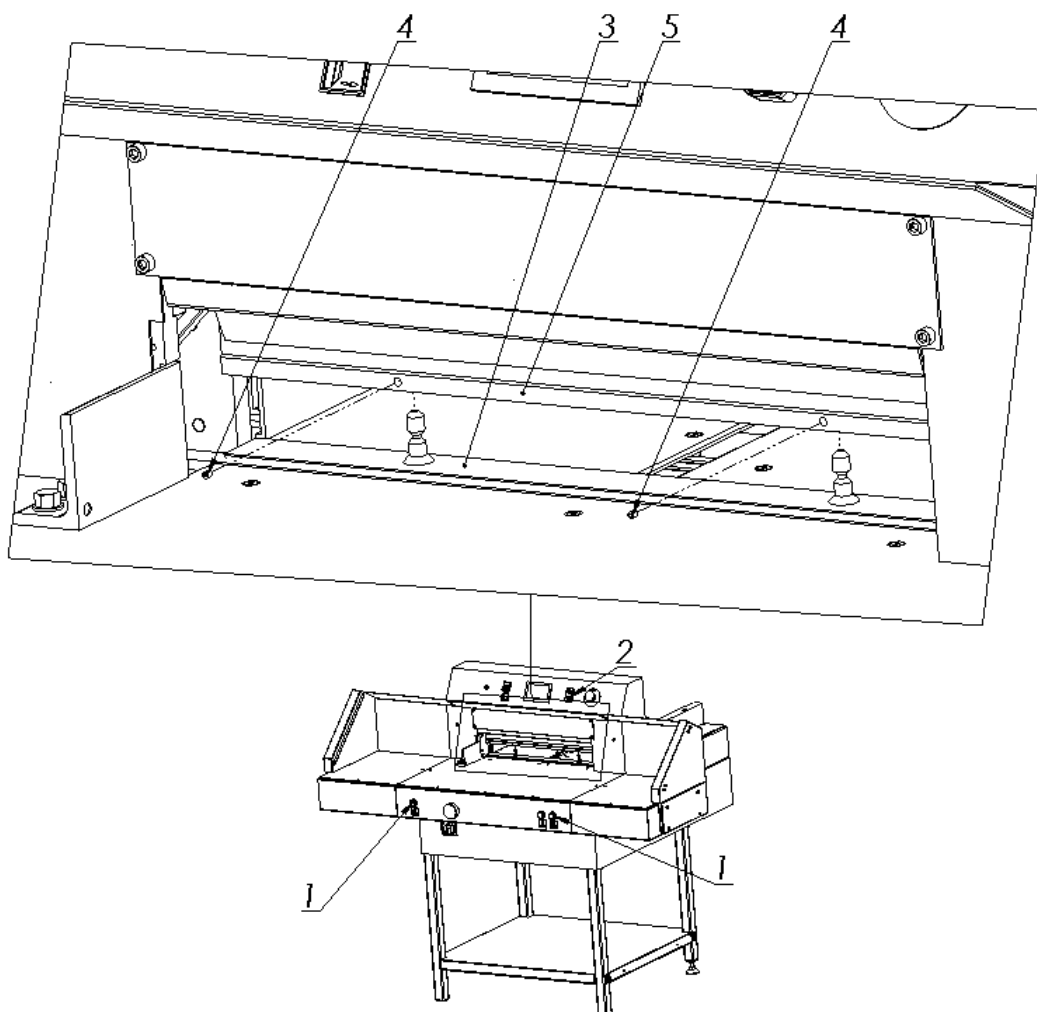
8.3.7 Press the button (1) to move clamping beam up again

Keep in mind, when the false clamp plate is installed:

- The narrow cut increases to 40mm (without plate 20mm),
- The maximum clamp opening is 76mm (without plate 80mm).

**When the false clamp is removed it should be placed under the front table!
(drawing 30).**

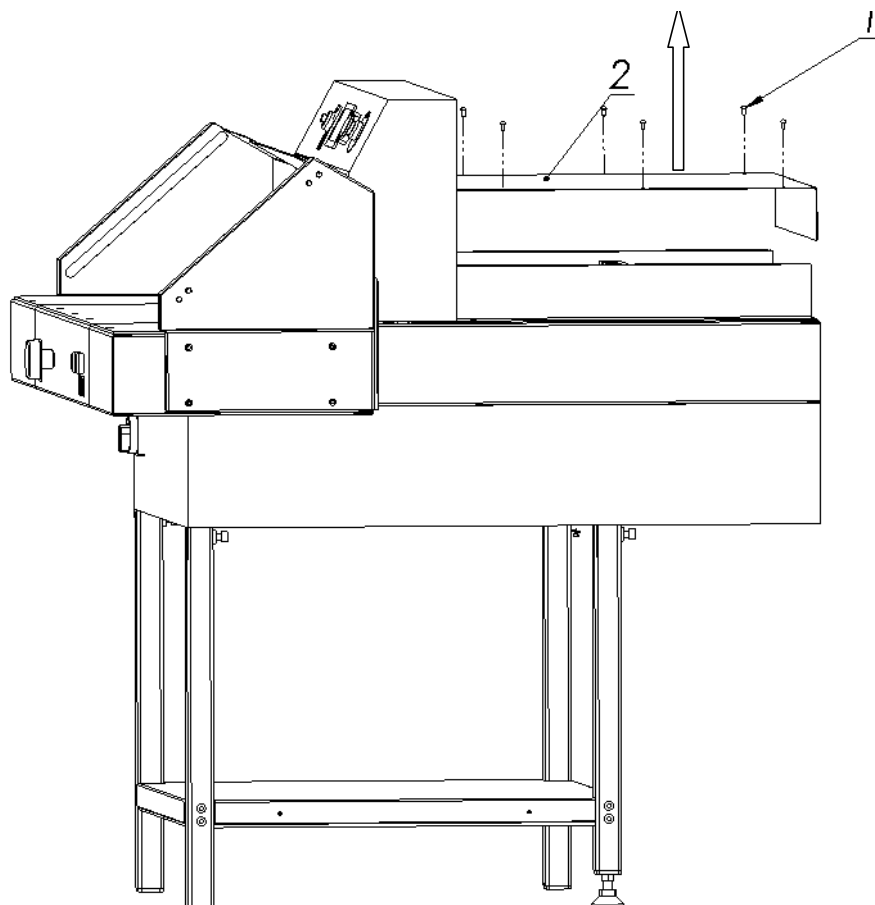
No clamp plate under the table is treated by the program module as if it was mounted in clamp beam and minimal narrow cut is greater.



drawing 31. Installing the false clamp in the clamping beam

8.4 Parallelism of back gauge

To adjust the back gauge, use directions and drawings 32 and 33.

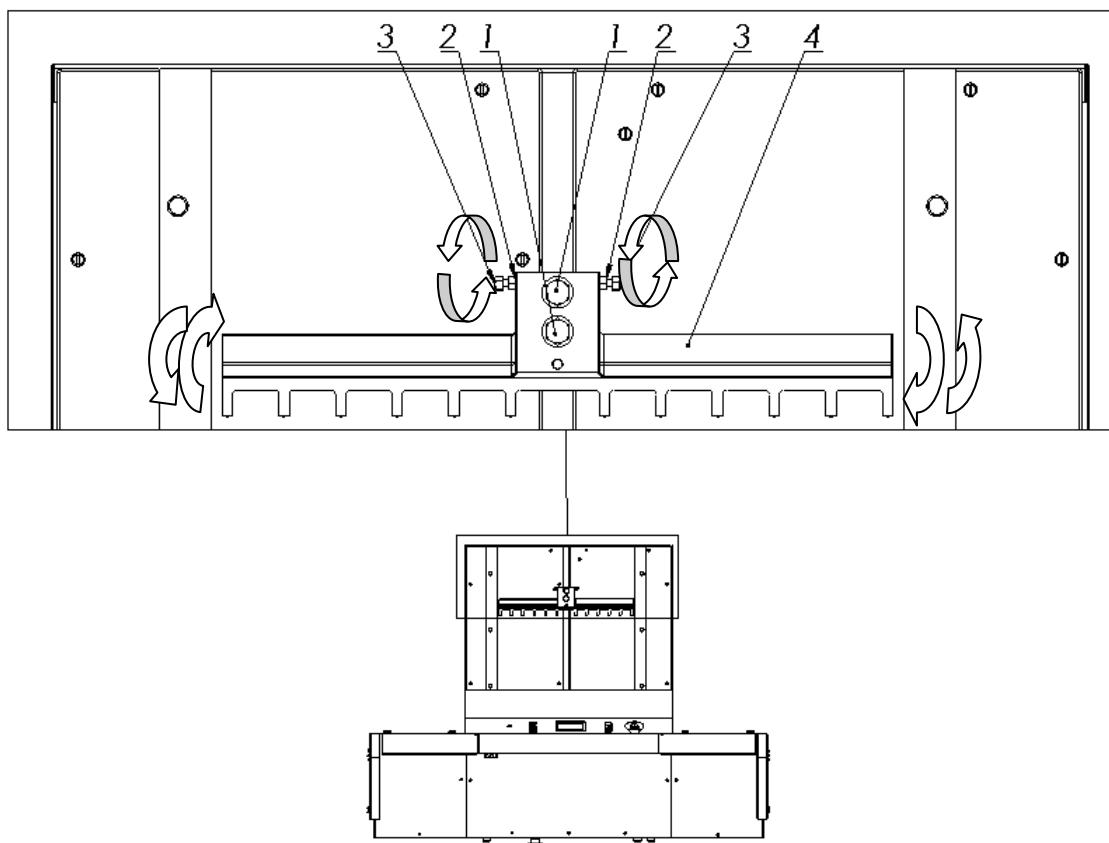


drawing. 32 Back table cover removal

To adjust the bar, it is necessary:

- 8.4.1 to loosen both screws (1), fastening the pushing bar (4) to a slide; drawing 32
- 8.4.2 remove cover 2 (drawing 32)
- 8.4.3 loosen screws 1 (drawing 33)
- 8.4.4 to loosen nuts 2 (drawing 33)
- 8.4.5 to set the pushing bar 4 at appropriate angle (drawing 33) by turning with adjusting screws (3)
- 8.4.6 to lock the adjusting screws (3) with nuts (2);
- 8.4.7 to tighten strongly screws (1).

After a trial cutting, repeat adjusting, if it is necessary, till the cutting parallelism is obtained.



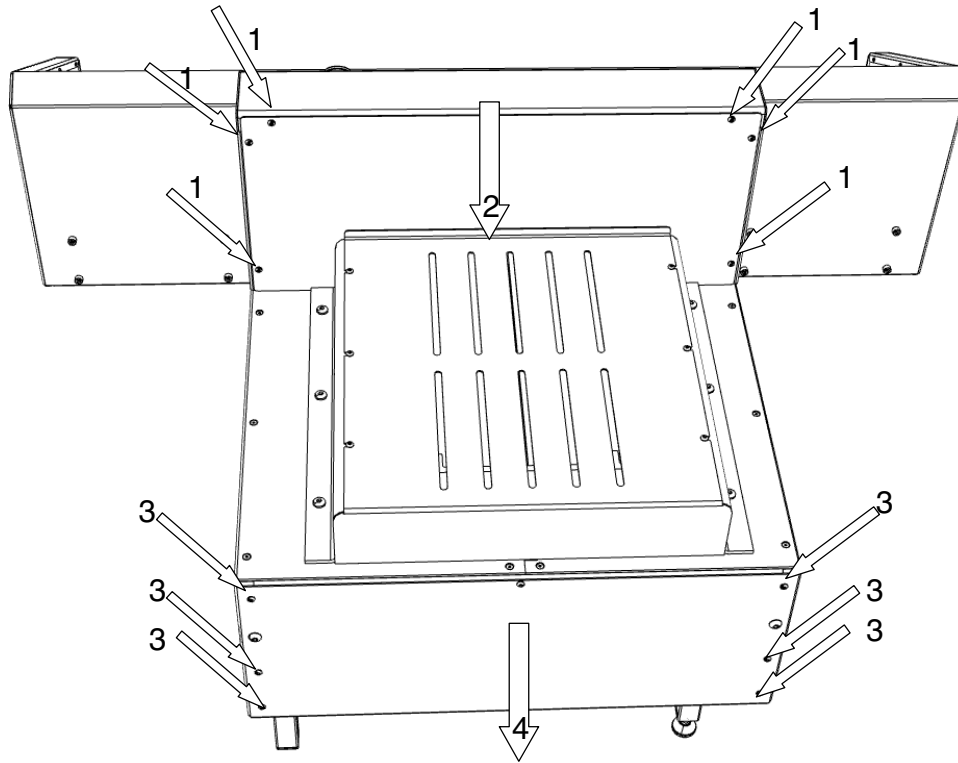
drawing 33 Adjustment of backgauge parallelism

9. MAINTENANCE

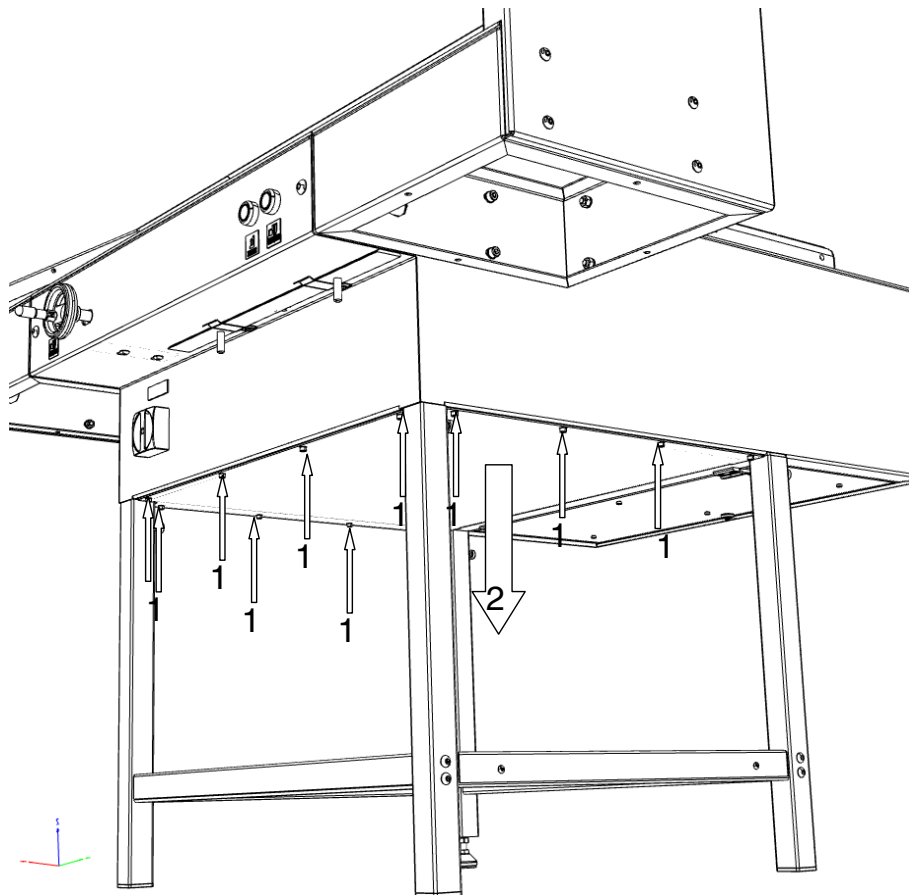
9.1 Lubrication

Location of lubrication points to be greased **every week** is shown on drawings 36,37,38. Access to the stated lubrication points is possible after disassembling the shield shown on the drawing 34,35

- Knife cover
- Backgauge cover
- Stand cover



drawing 34. Removal of top cover (2) and back cover (4)



drawing 35 removal of lower cover (2)

9.1.1 Knife unit lubrication

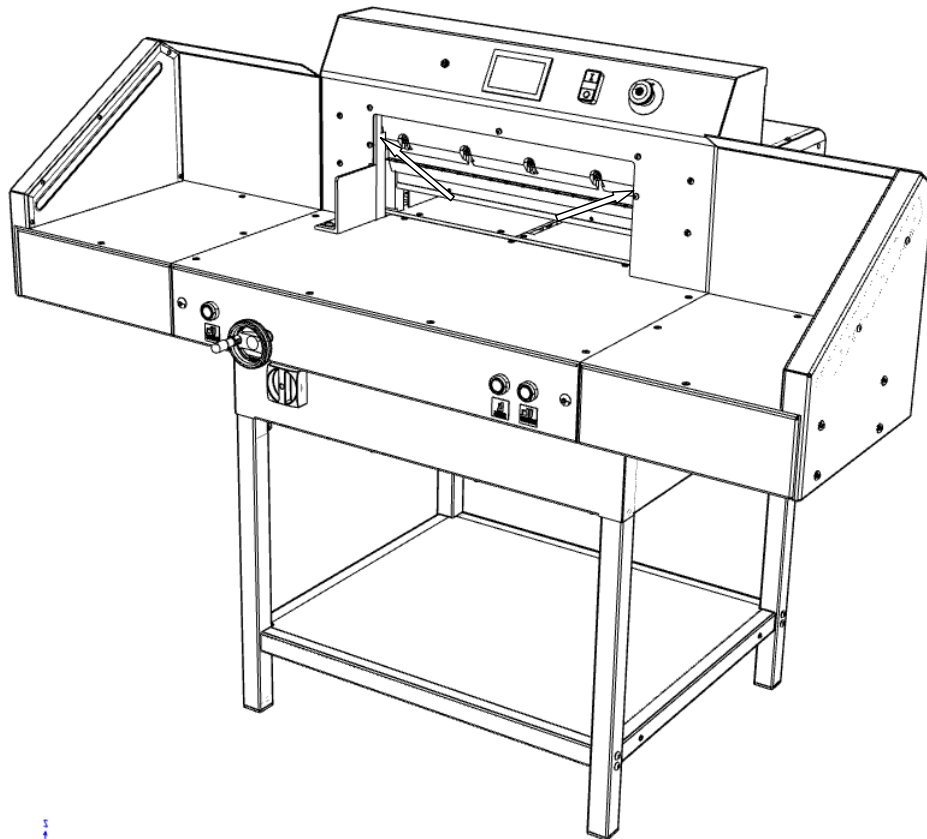
For the knife unit lubrication non-liquid grease must be used.

During lubrication please use control elements as for knife change (8.1)

9.1.1.1 Move knife to down position.

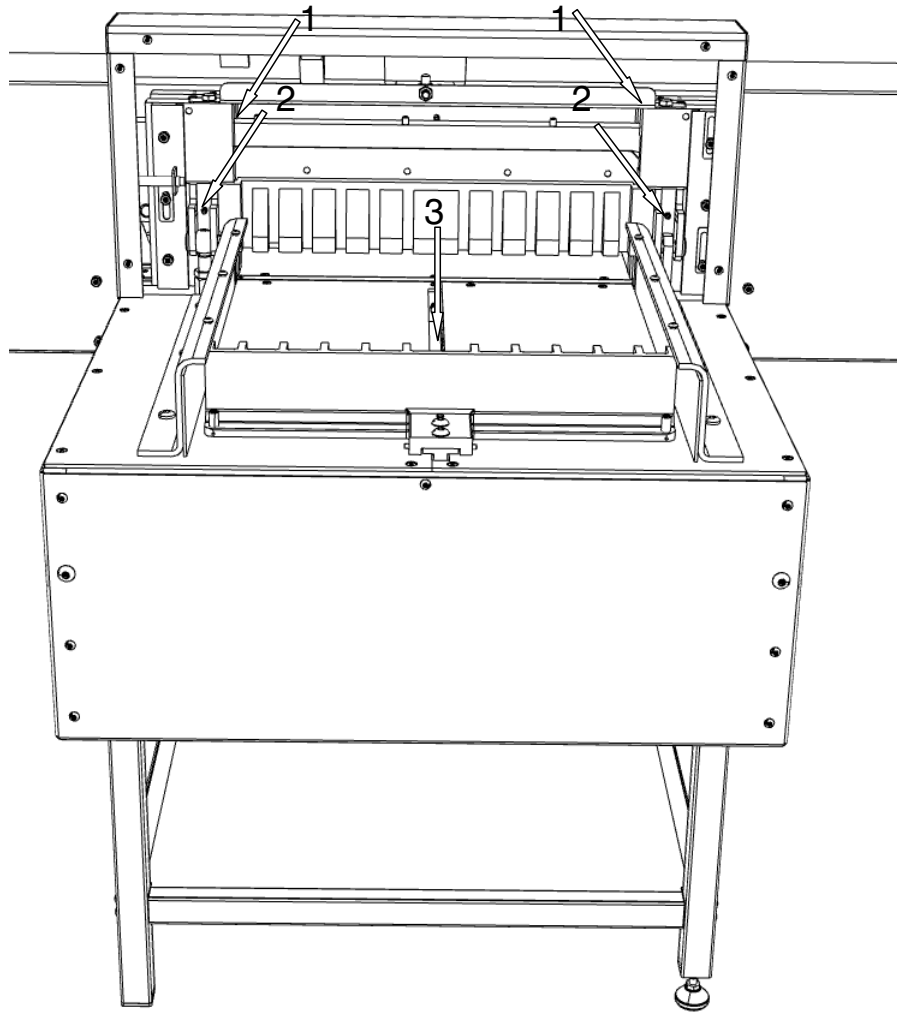
9.1.1.2 Place grease in points indicated by arrows (drawing 36)

- Side surfaces of the guides (touching knife bar body)
- Inside surfaces of the guides (touching the rollers)
- Side surfaces of the knife body



drawing 36 Points of knife lubrication

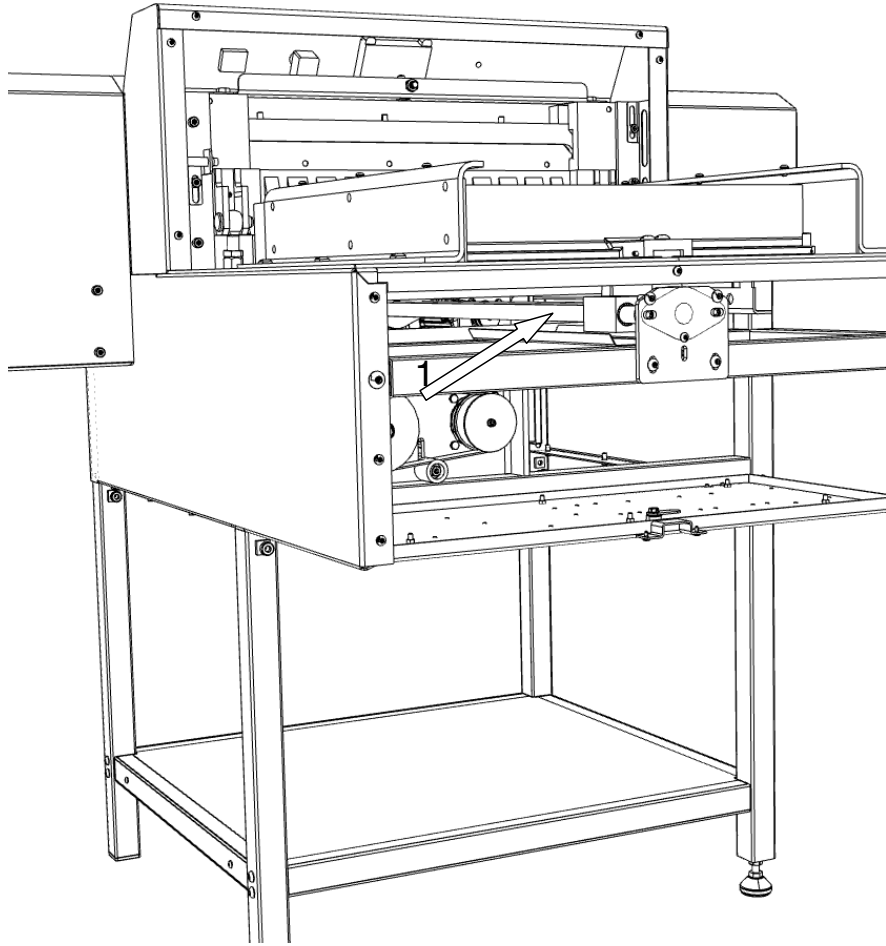
9.1.1.3 Unscrew bolts 1 and remove cover 2 (drawing 37)



drawing 37 Lubrication points of knife (1), clamp (2), backgauge (3)

9.1.2 Backgauge lubrication

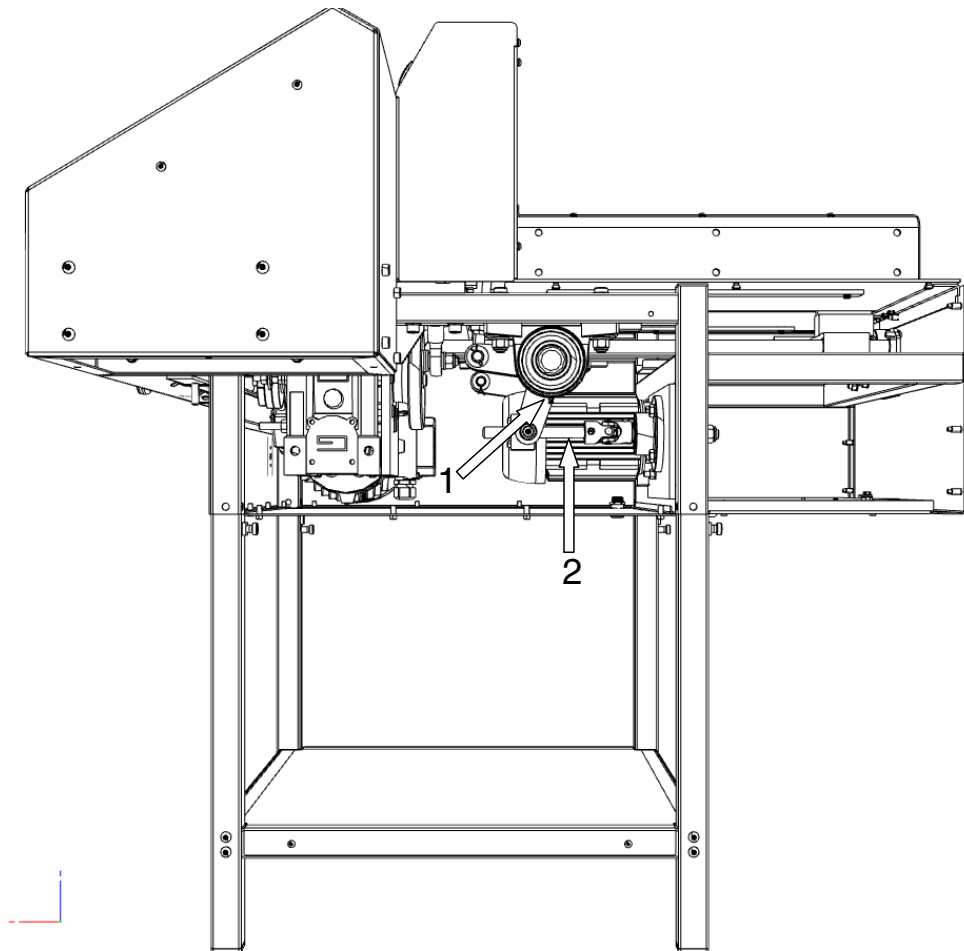
In the backgauge mechanism the following parts must be lubricated: guiding roller 1 (drawing 38) and located under the roller lead screw (drawing 37). This screw should be lubricated with the non-liquid grease, on the guiding roller, place a thin coat of the grease



drawing 38 Location of backgauge elements to be lubricated

9.1.3 Clamping mechanism lubrication

The parts of the clamping mechanism must be lubricated with non-liquid grease. In the clamping mechanism the following parts should be lubricated: clamp bar runners 2 (drawing 37), lead bearing 1 (drawing 39), lead screw surface 2 (drawing 39) .



drawing 39 Clamp mechanism lubrication points

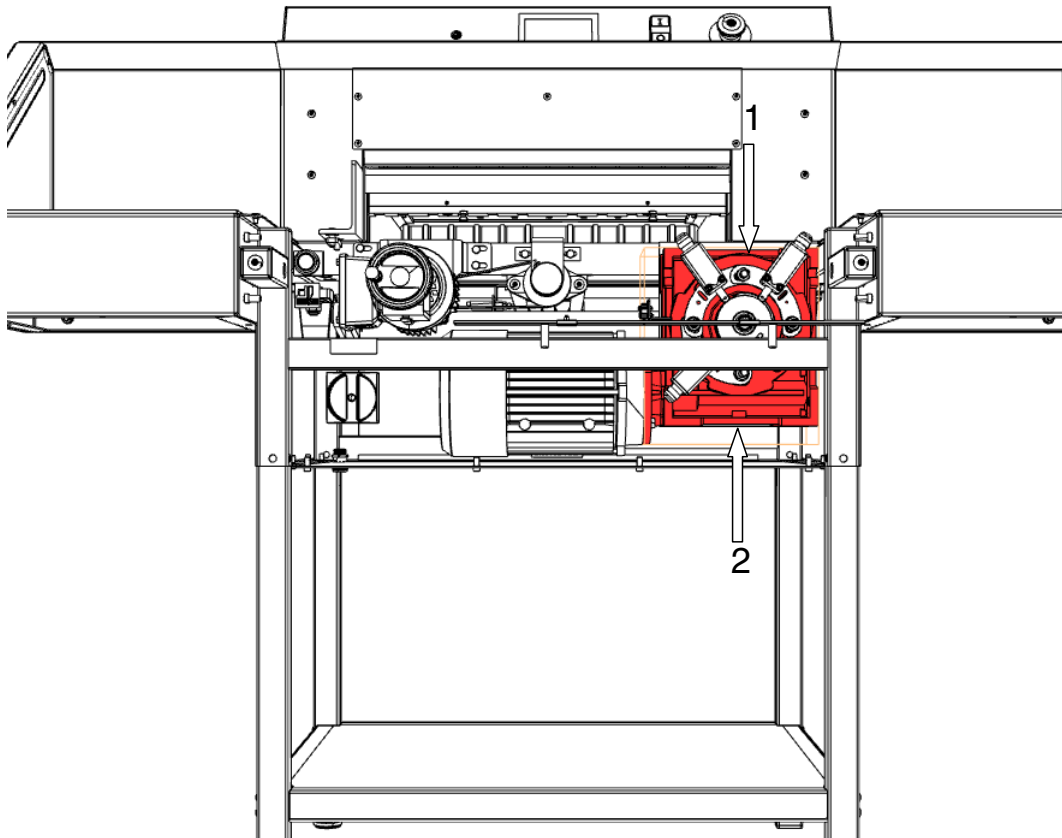
9.1.4 Oil change in the gearbox

The gearbox of the knife driving mechanism, shown on drawing 40, is filled with an oil, and this oil should be changed.

The change should be made after 5 years of intensive working.

It is recommended to use the oil (class GL-5 or MIL-L-2105D). If the other greasing substance would be used it is necessary to observe the time of change. The oil should be removed when it is still hot.

- 9.1.4.1** Remove front table
- 9.1.4.2** Remove down cover 2 (drawing 35)
- 9.1.4.3** Remove drain plug 2 (drawing 40) and drain down oil
- 9.1.4.4** Close the drain plug
- 9.1.4.5** Remove the oil filler cap 1 (drawing 40) and put new oil (approx. 0,5 litre)
- 9.1.4.6** Close the filler cap



drawing 40. Oil change in the gearbox.

9.2. Inspections

9.2.1. General recommendations

- Carefully clean the machine after each work-shift /paper dust.
- Pay attention to cleanliness of the control element contacts /contractors, switches.
- Check the cutter screw connections, and tighten them, if necessary.

9.3. Regeneration of knife

The quality and accuracy of cutting depend mainly on the sharpness of the knife and properly chosen angle of the blade.

9.3.1. The characteristics of a blunt knife:

- rough and uneven plane of stack to be cut;
- edges seizing of material to be cut;
- inaccurate cutting;
- increased accumulation of the paper dust;

8. ELECTRIC DOCUMENTATION

8.1 Electrical equipment

8.1.1 Electric board

Nr	Symbol	Quantity	Name	Type	Manufacturer
01	F3 F4 F5	3	circuit breaker	C60N 20A S301 10A S301 6A	Schneider / Legrand
02	FX	1	PLC	FX3G-40MT/ESS	mitsubishi
03	INV1	1	Inverter	FR-D720S-070-EC	mitsubishi
04	INV2	1	Inverter	FR-D720S-025-EC	mitsubishi
05	INV3	1	Falownik	FR-D720S-025-EC	mitsubishi

8.1.2 Cutter

Nr	Symbol	Quantity	Name	Type	Manufacturer
01	Q1	1	Cam switch 25A	4G25-10-US25	Apator
02	S1F S2F	2		L61QA21 Adapter Z33E Zestyk zw. 33E01 Zestyk Roz.33E10	BACO
03	S3B S4B S5B	3	Push button	L21AA03 Adapter 33E01 Zestyk zw. 33E01 – 1szt. Zestyk Roz. 33E10 – 2szt.	BACO
04	S7M	1	Rotary switch	LZ1KA03 Adapter 333E Zestyk Roz. 33E10 – 2szt	BACO
05	S8B S9B S15B	3	Limit switch	XCKP2102G11	Schneider
06	S11N S16N S18N	3	Limit switch	MAC6C	Hartmann
07	CZ1 CZ4 CZ5	3	Inductive sensor	PCID – 4ZP	SELS
08	M1	1	Electric motor 1,5kW/1400 rev/min	Skg 90 L4 PC	Indukta

09	M2	1	Electric motor 0,37kW/1400 rev/min	Sg 71 – 4B	Tamel
10	M3	1	Electric motor 0,18kW/1400 obr/min	Sg63 – 4B	Tamel
11	H1	1	LED diode red		PL
12	H3	1	LED diode green		PL
13	LS	1	Laser line indicator	LLM635003- D11L32AM20	PL
14	ZSF	1	Photocell Power supply	CMP 07 Z - 4	KRONOS
15	GOT 1	1	Touch pad	GT 1020 - LBLW	mitsubishi

8.1.3 Inverter parameters (factory settings)

INVERTER 1 FR-D720S-070-EC knife drive		INVERTER 2 FR-D720S-025-EC clamping beam drive		INVERTER 3 FR-D720S-025-EC backgauge drive	
Parameter	Value	Parameter	Value	Parameter	Value
P-0	4	P-0	6	P-0	6
P-6	50	P-6	50	P-5	10
P-7	0,3	P-7	0,3	P-7	0
P-8	0,0	P-8	0,0	P-8	0
P-9	6	P-9	2	P-9	1,1
P-40	1	P-40	0	P-40	1
P-71	3	P-71	3	P-71	3
P-80	1,5	P-80	0,37	P-80	0,18
P-90	1,419	P-90	8,923	P-90	20,39
P-96	11 → 13	P-96	11 → 13	P-96	11 → 13
P-161	1	P-161	1	P-161	0
P-298	134	P-298	255	P-298	347
		P-117	0	P-0	
		P-118	384	P-6	
		P-119	10	P-7	
		P-122	9999	P-8	