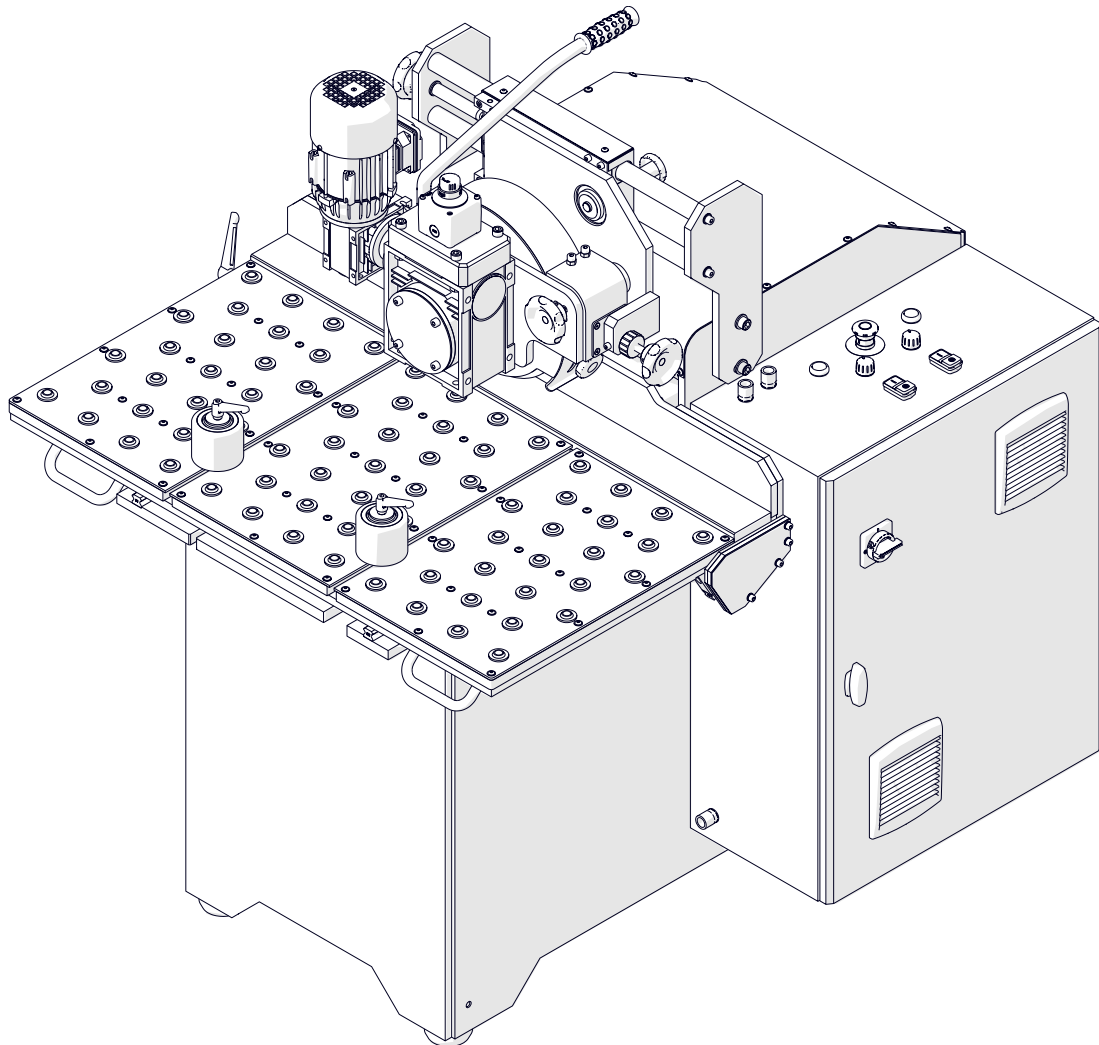


# OPERATOR'S MANUAL

## **SBM-500**

### **STATIONARY BEVELLING MACHINE**



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# Contents

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1. GENERAL INFORMATION .....	3
1.1. Application .....	3
1.2. Technical data.....	3
1.3. Equipment included .....	4
1.4. Dimensions .....	5
1.5. Design .....	6
2. SAFETY PRECAUTIONS.....	7
3. STARTUP AND OPERATION .....	9
3.1. Preparing .....	9
3.2. Setting the table and the feed unit.....	12
3.3. Setting the bevel angle and milling head penetration .....	13
3.4. Setting the feed wheel height .....	16
3.5. Tilting the feed unit.....	17
3.6. Adjusting the feed wheel .....	18
3.7. Operating .....	19
3.8. Removing and installing the milling head .....	21
3.9. Replacing the cutting inserts .....	22
4. ACCESSORIES .....	23
4.1. Pipe attachment .....	23
4.2. Cutting tools .....	25
4.3. Table.....	26
5. DECLARATION OF CONFORMITY .....	28
6. WARRANTY CARD.....	29
APPENDIX – WIRING DIAGRAM	

## 1. GENERAL INFORMATION

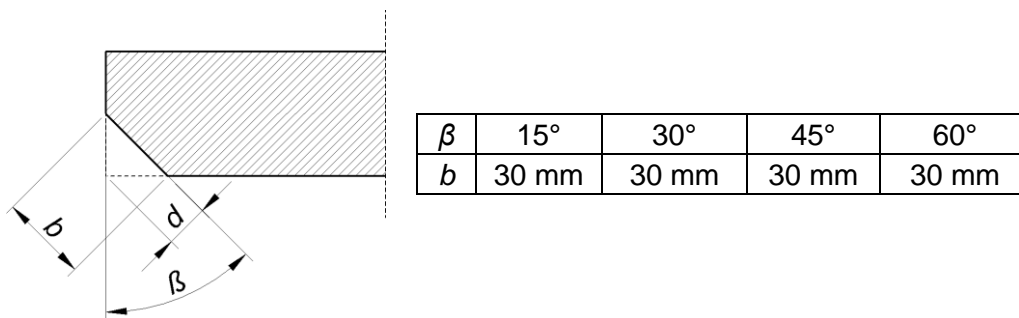
### 1.1. Application

The SBM-500 is a stationary machine designed to bevel plates made of carbon steel, stainless steel, or aluminum alloys. The workpieces can be machined at an angle of 15–60° and to the bevel width of up to 30 mm (1-3/16").

Accessories allow bevelling pipes with outer diameters of 50–150 mm (2–6") and bevelling longer plates.

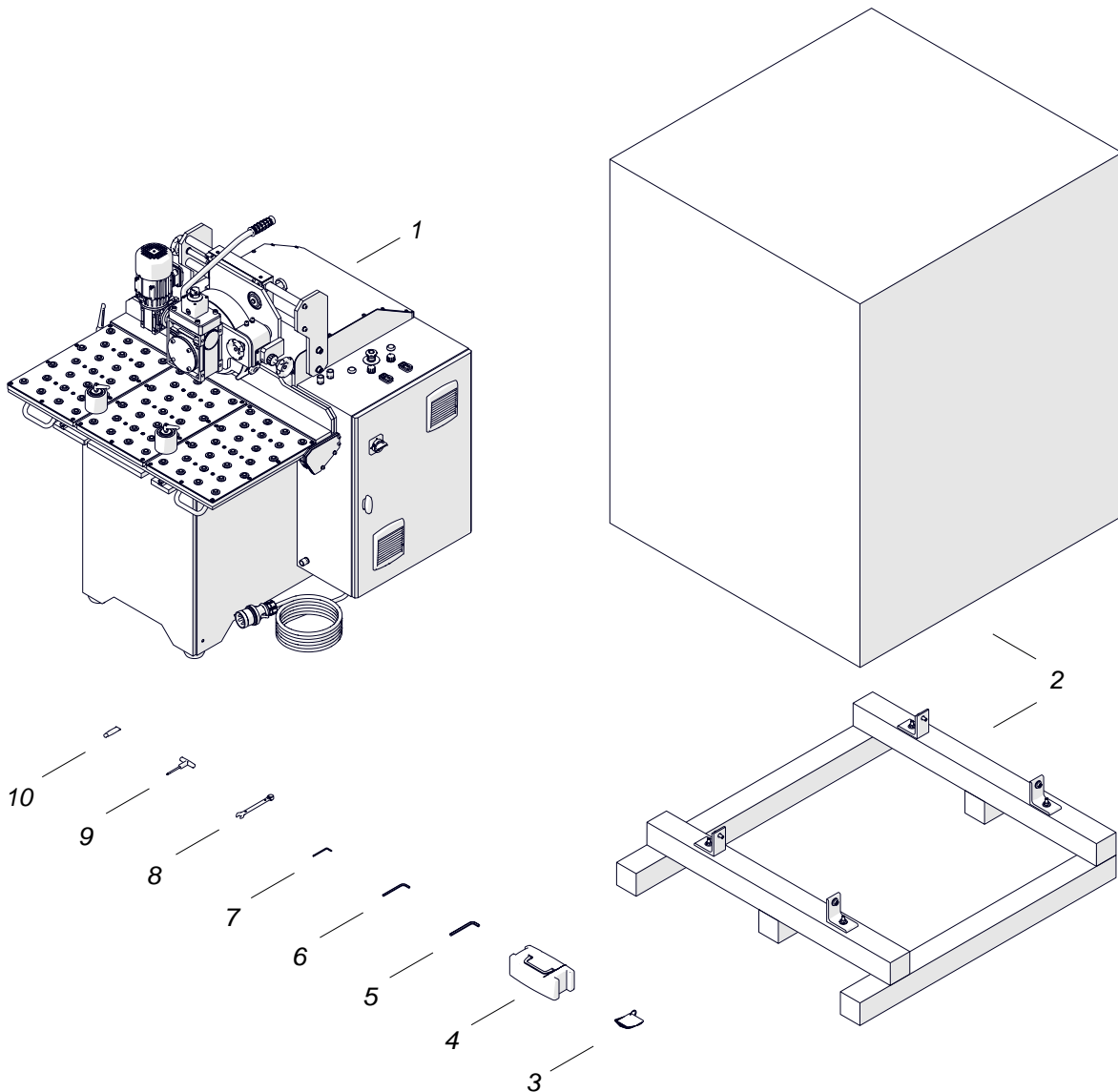
### 1.2. Technical data

Voltage	3~ 400V + PE, 50/60 Hz
Power	8 kVA
Spindle rotational speed (without load)	500–2920 rpm
Feed wheel rotational speed	0.2–3.5 rpm
Feed speed	0.2–3.3 m/min
Table load capacity	100 kg (220 lbs)
Bevel angle ( $\beta$ , Fig. 1)	15–60°
Maximum bevel width ( $b$ , Fig. 1)	30 mm (1-3/16")
Maximum milling head penetration ( $d$ , Fig. 1) allowed per a single pass	4 mm (5/32")
Workpiece thickness	3–100 mm (1/8–4")
Minimum workpiece length	150 mm (6")
Minimum workpiece width	50 mm (2")
Protection level	IP 20
Protection class	I
Required ambient temperature	0–40 °C (34–104°F)
Weight	865 kg (1910 lbs)

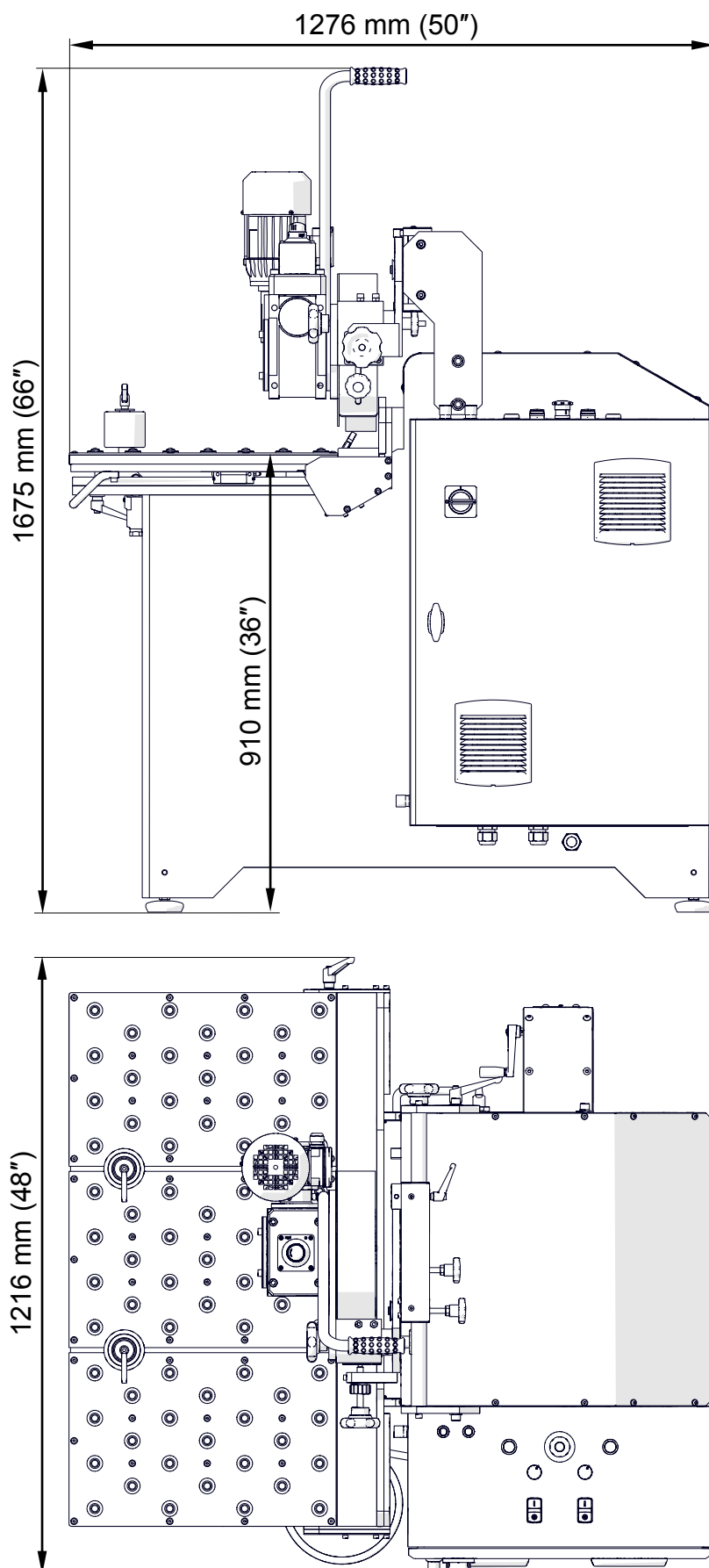


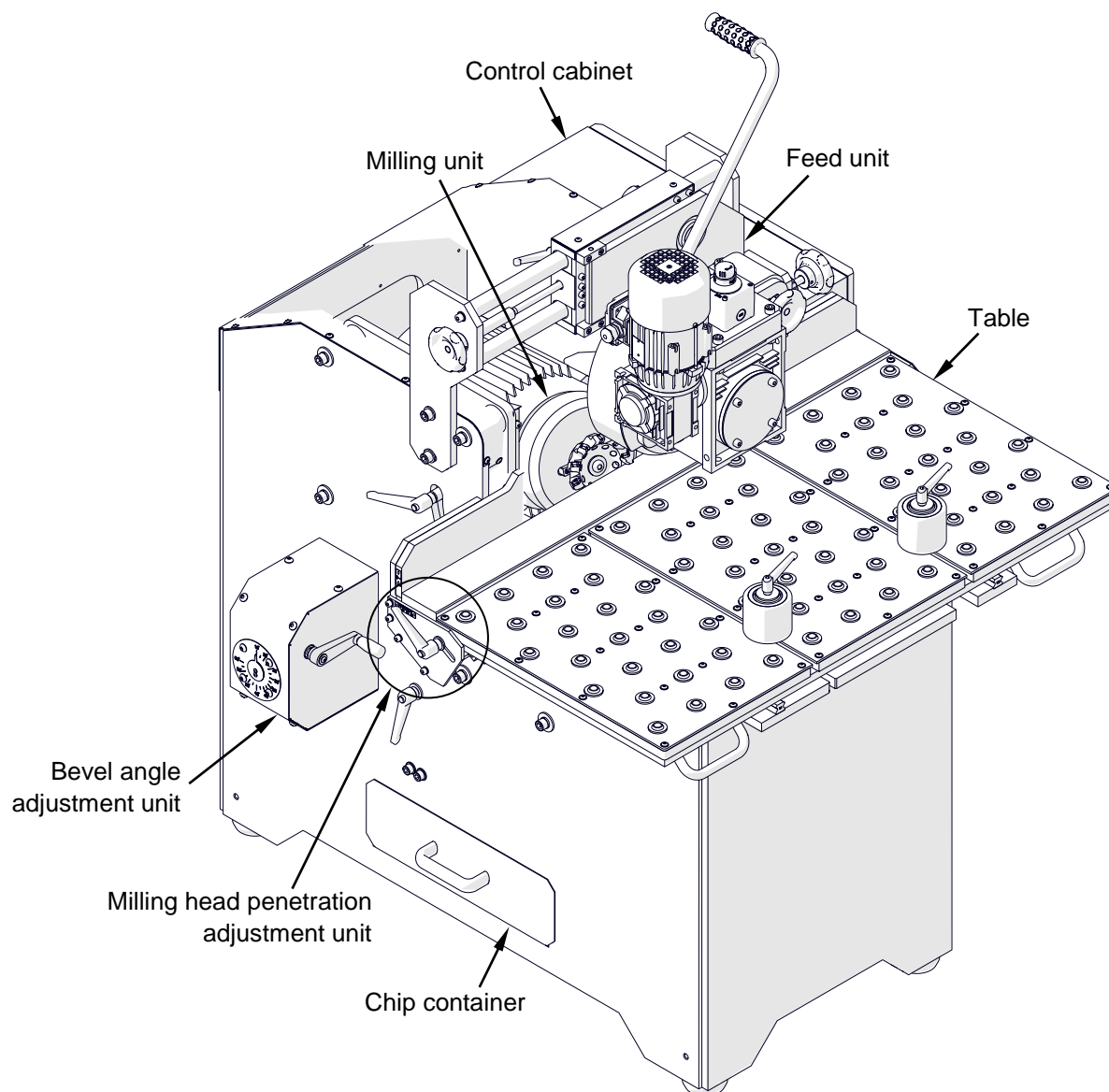
**Fig. 1.** Bevel dimensions; maximum bevel width depending on the angle

**1.3. Equipment included**



1	Stationary beveling machine (includes milling head with 10 cutting inserts)	1 unit
2	Wooden box with base and mounting brackets	1 unit
3	Bevel height gauges	1 set
4	Tool box	1 unit
5	8 mm hex wrench	1 unit
6	6 mm hex wrench	1 unit
7	3.5 mm hex wrench	1 unit
8	14 mm combination wrench	1 unit
9	T15 torx screwdriver	1 unit
10	Grease for screws	1 unit
–	Operator’s manual	1 unit

**1.4. Dimensions**

**1.5. Design**

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## **2. SAFETY PRECAUTIONS**

1. Before starting, read this Operator's Manual and complete occupational safety and health training.
2. Use the machine only in applications specified in this Operator's Manual.
3. The machine must be complete and all parts must be genuine and fully functional.
4. The specifications of the power source must conform to those specified on the rating plate.
5. Connect the machine to a 3x400 V + PE power system. The supply line must be equipped with at a three-phase slow-blow fuse with rating of at least 25 A.
6. Never pull the cord because this may damage it and result in electric shock.
7. Keep the machine in vertical position during transport and work.
8. Place the machine on a surface that ensures balance and efficiently transfers the loads of the machine and workpiece. An incorrectly prepared surface may lead to damage, incorrect machine work, and injuries to persons nearby.
9. Untrained bystanders must not be present near the machine.
10. Before starting, ensure the correct condition of the machine, power source, power cord, plug, control panel components, and tools.
11. Wait at least 3 minutes before you do work near inverters in the control cabinet. Make sure that there is no voltage on the connections of the inverters.
12. After the power is off, always wait 60 seconds before you turn the power on.
13. Keep the machine dry, and never expose it to rain, snow, or frost.
14. Keep the worksite well lit, clean, and free of obstacles.
15. Install the cutting inserts securely by tightening the set screws. Remove adjusting keys and wrenches from the work area before connecting the machine to the power source.
16. Never use cutting inserts that are dull or damaged.
17. If the cutting edge of the insert is worn, rotate the insert by 90° or, if all four edges are worn, replace with a new insert specified in this Operator's Manual.
18. Do not make bevels or use workpieces whose parameters differ from those specified in the technical data.
19. Never use near flammable liquids or gases, or in explosive environments.
20. Always use the feed wheel during work.

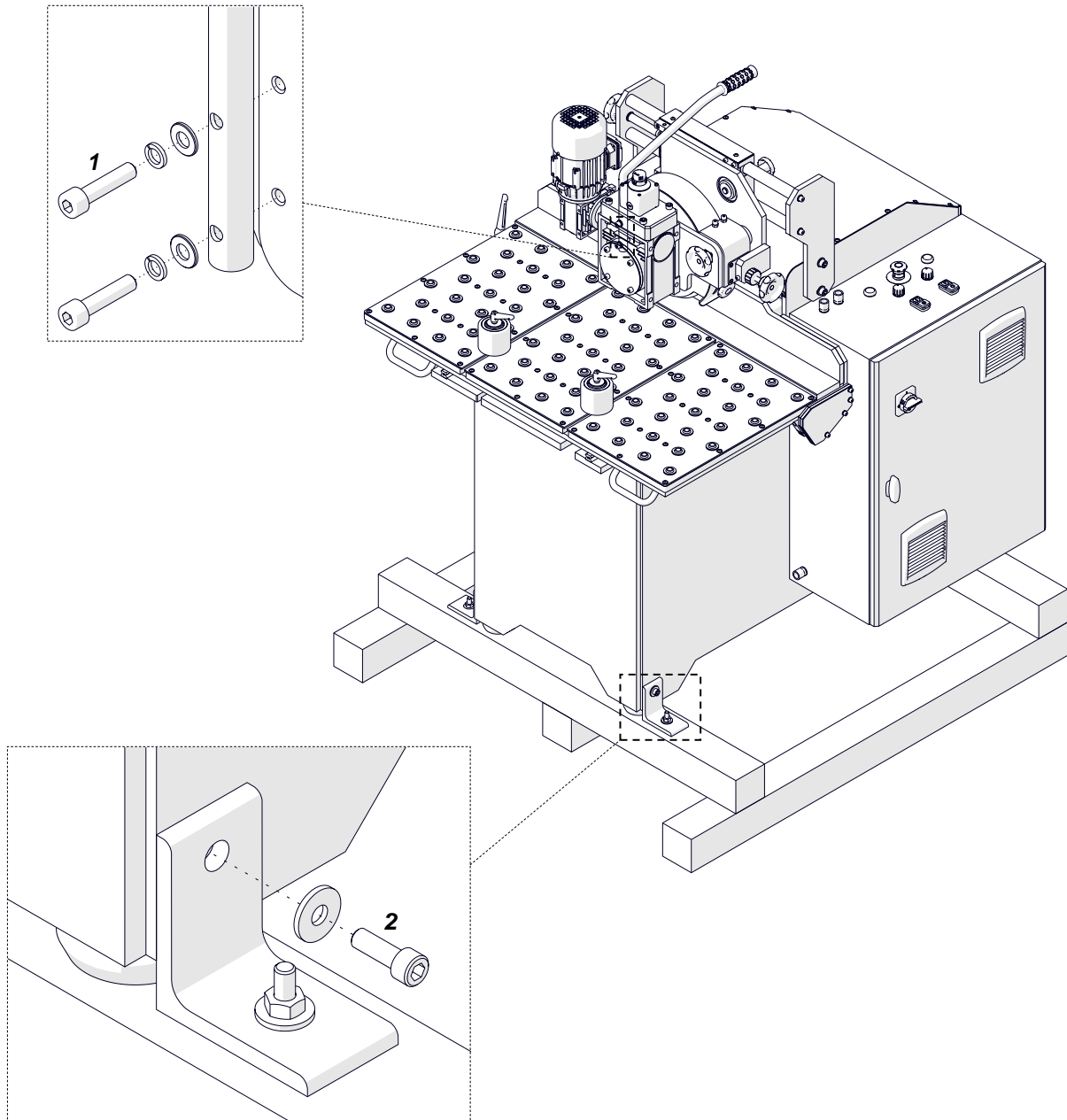
21. Before every use, inspect the machine to ensure it is not damaged. Check whether any part is cracked or loose. Make sure to maintain correct conditions that may affect the operation of the machine.
22. Always use eye and hearing protection, gloves, and protective clothing during work. Do not wear loose clothing.
23. Do not touch moving parts or metal chips formed during milling. Prevent anything from being caught in moving parts. Never put hands under the feed wheel.
24. After every use, remove metal chips from the machine and milling head. Never remove chips with bare hands. Clean the machine with a cotton cloth without using any chemical agents.
25. Cover steel parts with a thin anti-corrosion coating to protect the machine from rust when not in use for any extended period.
26. Maintain the machine and install/remove parts and tools only when the machine is unplugged from the power source.
27. Repair only in a service center appointed by the seller.
28. If the machine is wet or has any other damage that could affect the technical state of the machine, stop the work and promptly send the machine to the service center for inspection and repair.
29. Never leave the machine unattended during work.



### 3. STARTUP AND OPERATION

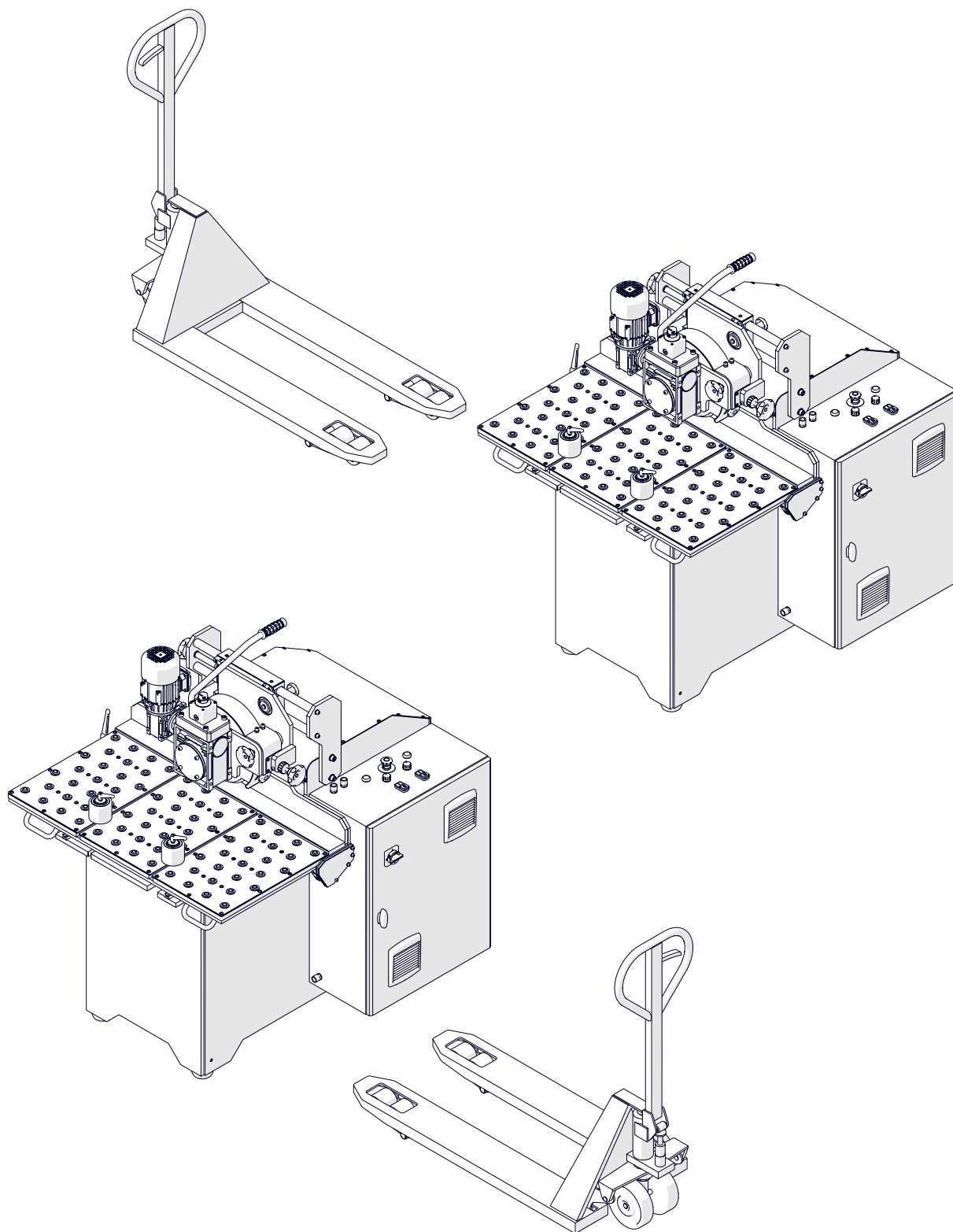
#### 3.1. Preparing

Use the 6 mm hex wrench to tighten the handle (1, Fig. 2), and then use the 8 mm hex wrench to detach the machine from the brackets (2).



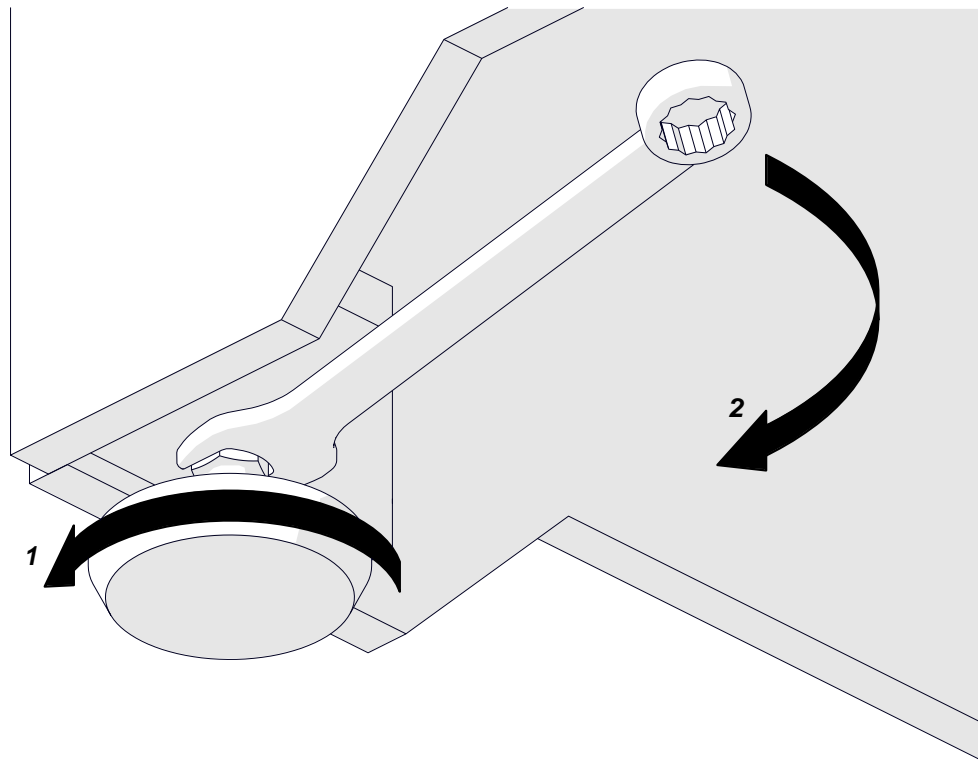
**Fig. 2.** Installing the handle and detaching the machine from the base

Use a pallet jack to lift the machine from left or right (Fig. 3), and then transport it to the worksite.



**Fig. 3.** Transporting the machine to the worksite

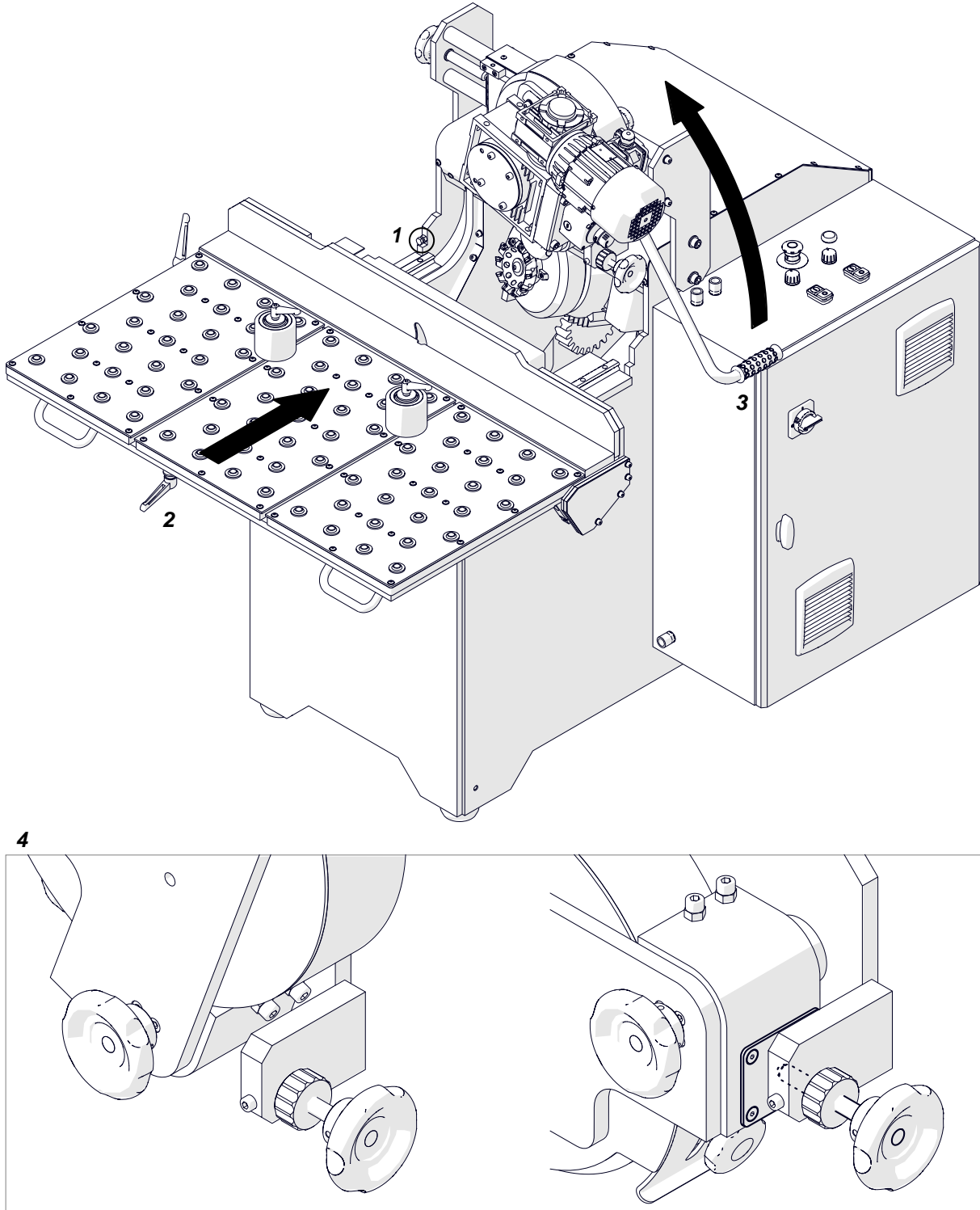
Place the machine on a surface that ensures balance and efficiently transfers the loads of the machine and workpiece. Rotate the feet that are not in contact with the surface so that they rest on it (1, Fig. 4), and then use the 18 mm flat wrench to tighten the nuts, which will lock the feet in this position.



**Fig. 4.** Levelling the machine on the surface

### 3.2. Setting the table and the feed unit

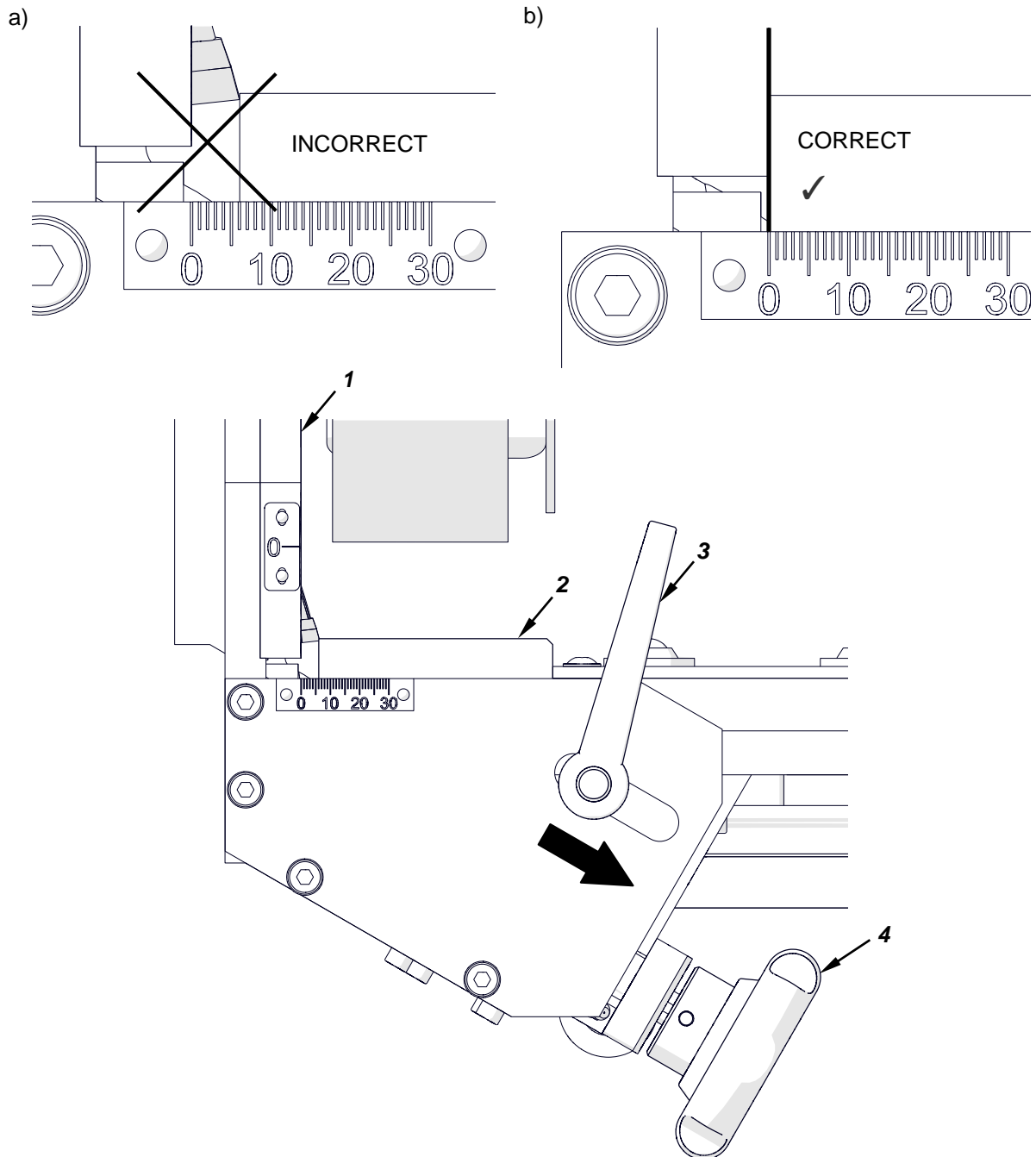
Move the table forward so that it makes contact with the bolt 1 (Fig. 5), and then use the lever 2 to lock the table in this position. Next, use the handle 3 to rotate the feed unit so that the screw makes contact with the bumper (4).



**Fig. 5.** Moving the table and lowering the feed unit

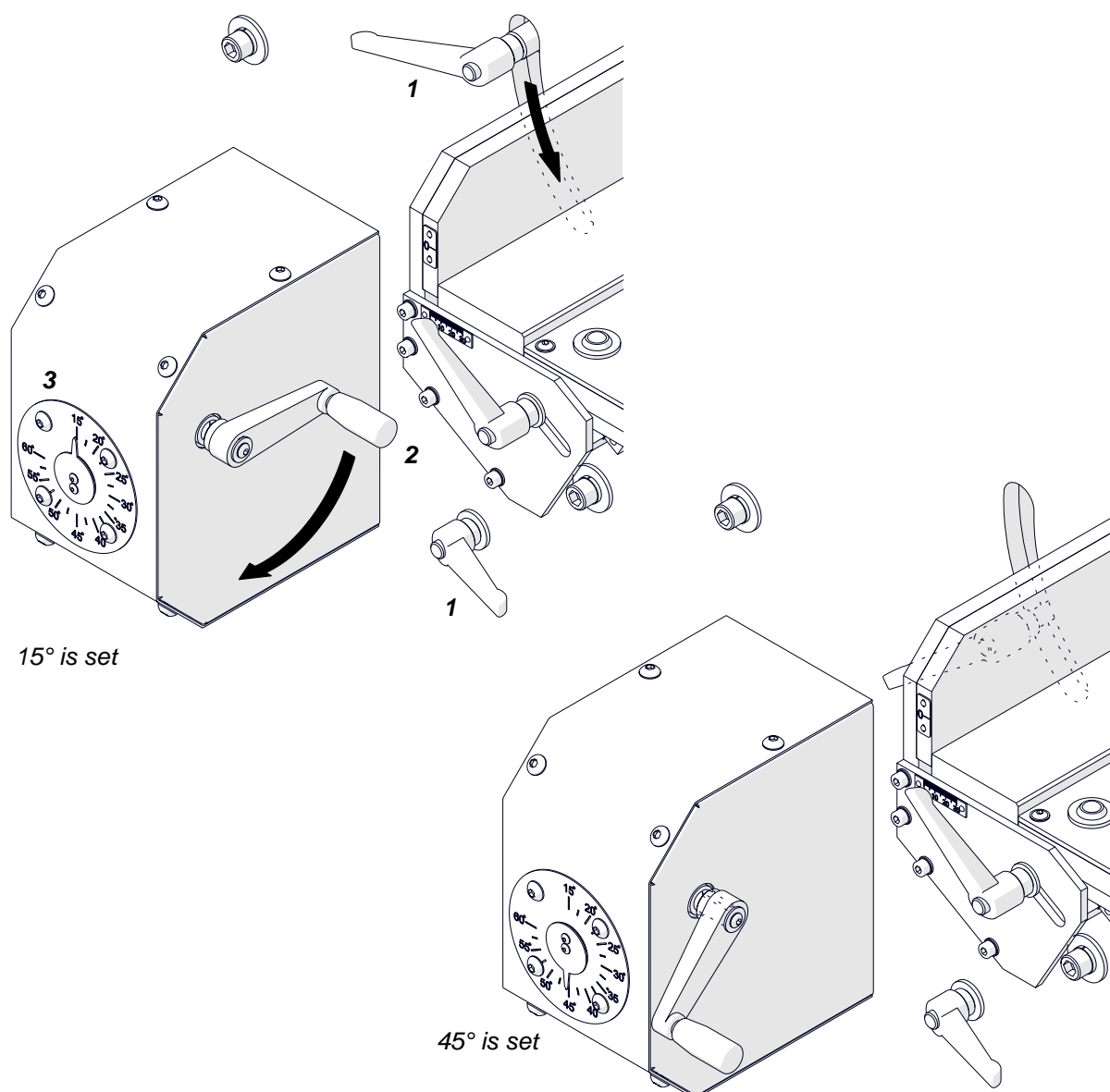
**3.3. Setting the bevel angle and milling head penetration**

Start with penetration of the milling head set to zero. If there is a gap between the vertical base 1 and horizontal base 2 (Fig. 6a), unlock the lever 3 and rotate the knob 4 so that the vertical base comes in contact with the horizontal base (Fig. 6b), and then lock the lever in this position.




**Fig. 6.** Setting the milling head penetration to zero: incorrect (a), correct (b)

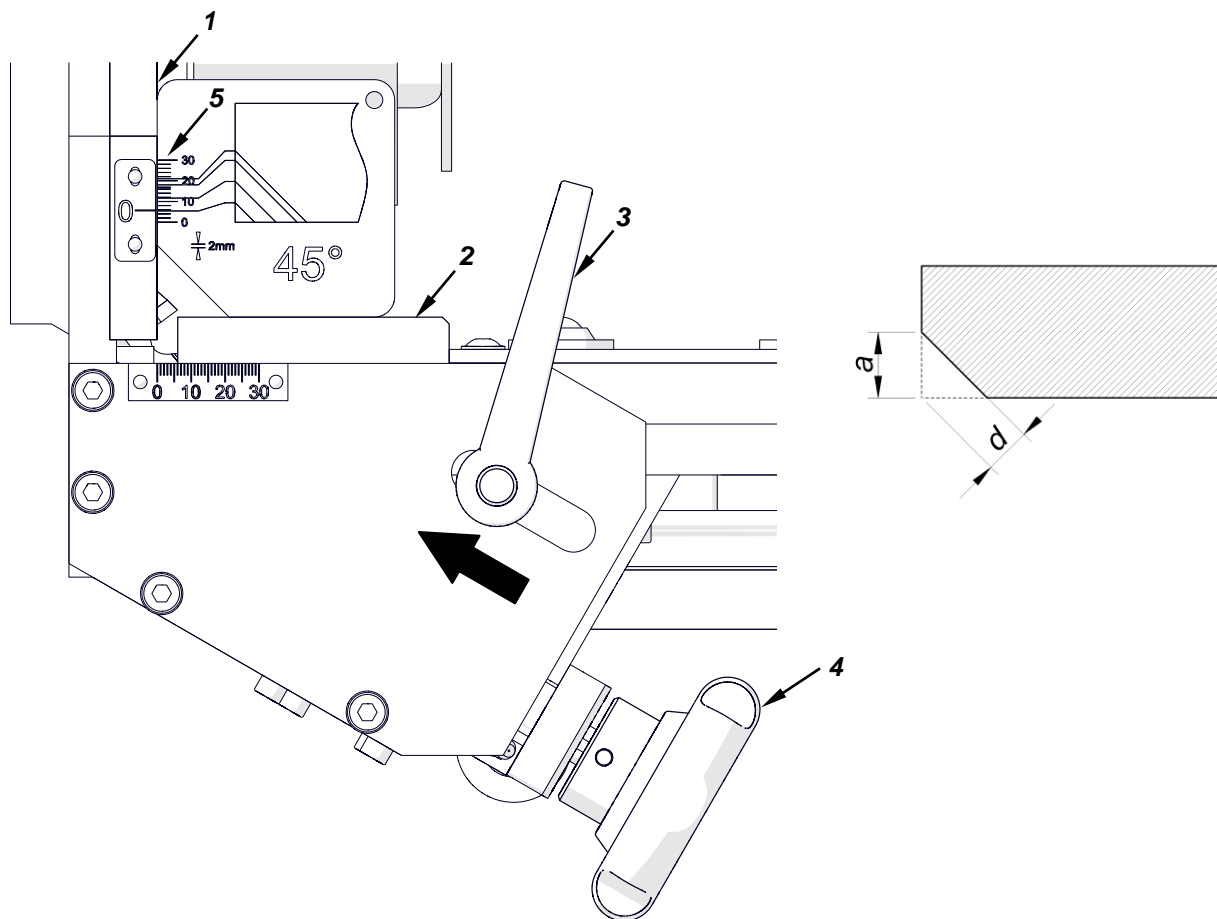
To set the bevel angle (Fig. 7), unlock the levers 1, use the crank 2 to rotate the milling unit so that the scale 3 shows the required angle, and then lock the levers in this position.



**Fig. 7.** Setting the bevel angle

Before the first pass, move the vertical base 1 away from horizontal base 2 (Fig. 8). To do this, unlock the lever 3, and then use the knob 4 to obtain a correct gap for a single pass. Put the bevel height gauge related to the set angle between the vertical base and the horizontal base. On the scale 5, read the bevel height 'a' related to the gap. Make sure that the vertical base is not in contact with the milling head, and then lock the lever in this position.

 **If the vertical base is moved away too far, it may come in contact with the milling head and thus damage the machine. Never exceed 4 mm (5/32") of the milling head penetration 'd' (Fig. 8) per a single pass. The table shows how far you can move the vertical base per a single pass not to exceed the penetration 'd' of 4 mm.**

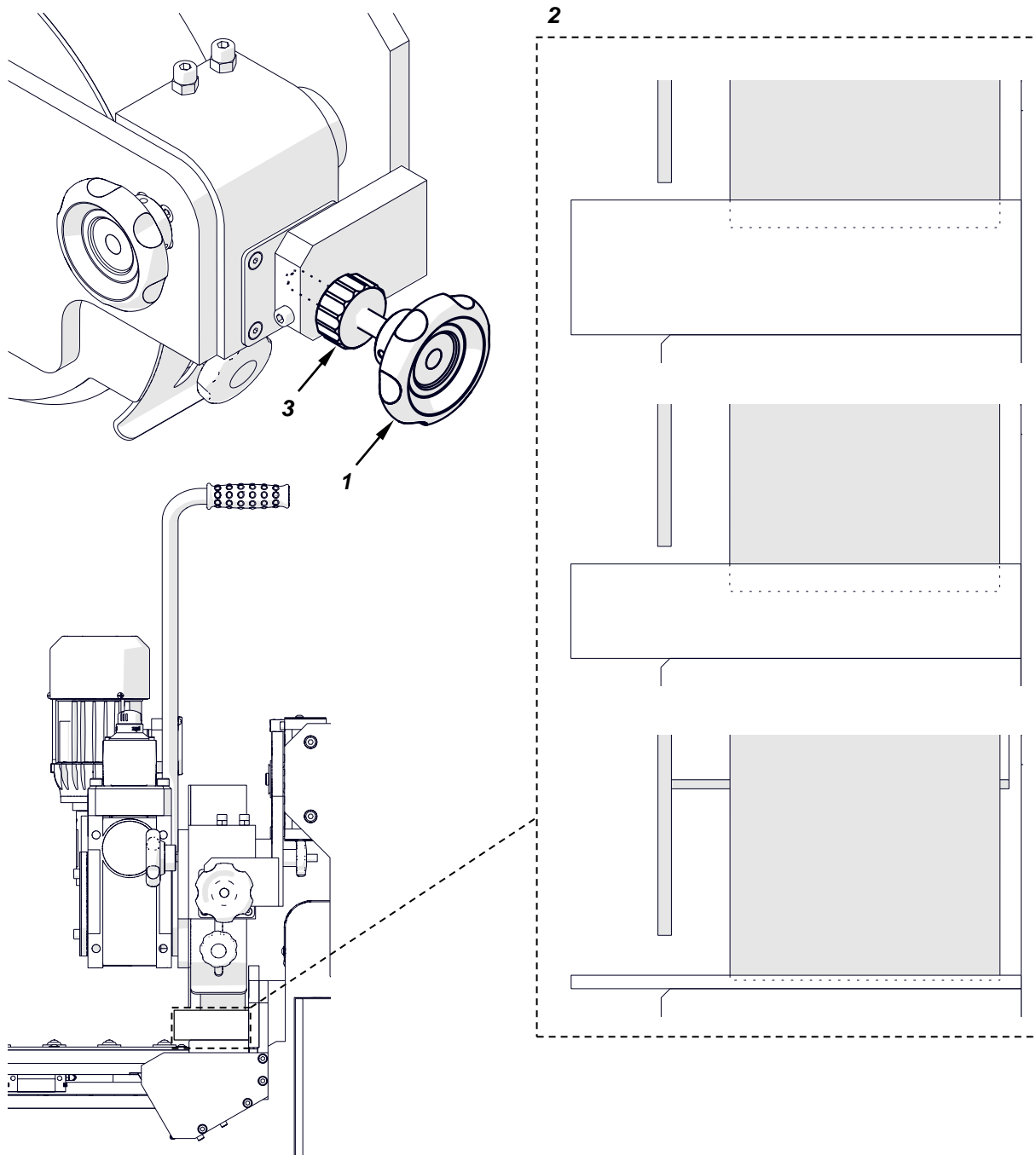


Angle	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°
<b>Maximum allowed gap-increase per a single pass [mm]</b>	4	4	5	5	5	5	6	6	7	8

**Fig. 8.** Setting the milling head penetration before the first pass

### 3.4. Setting the feed wheel height

Use the knob 1 (Fig. 9) to set the feed wheel at such a height so that the workpiece is firmly pressed to the horizontal base (2) during rotation of the feed wheel. Then, use the nut 3 to lock the knob in this position.

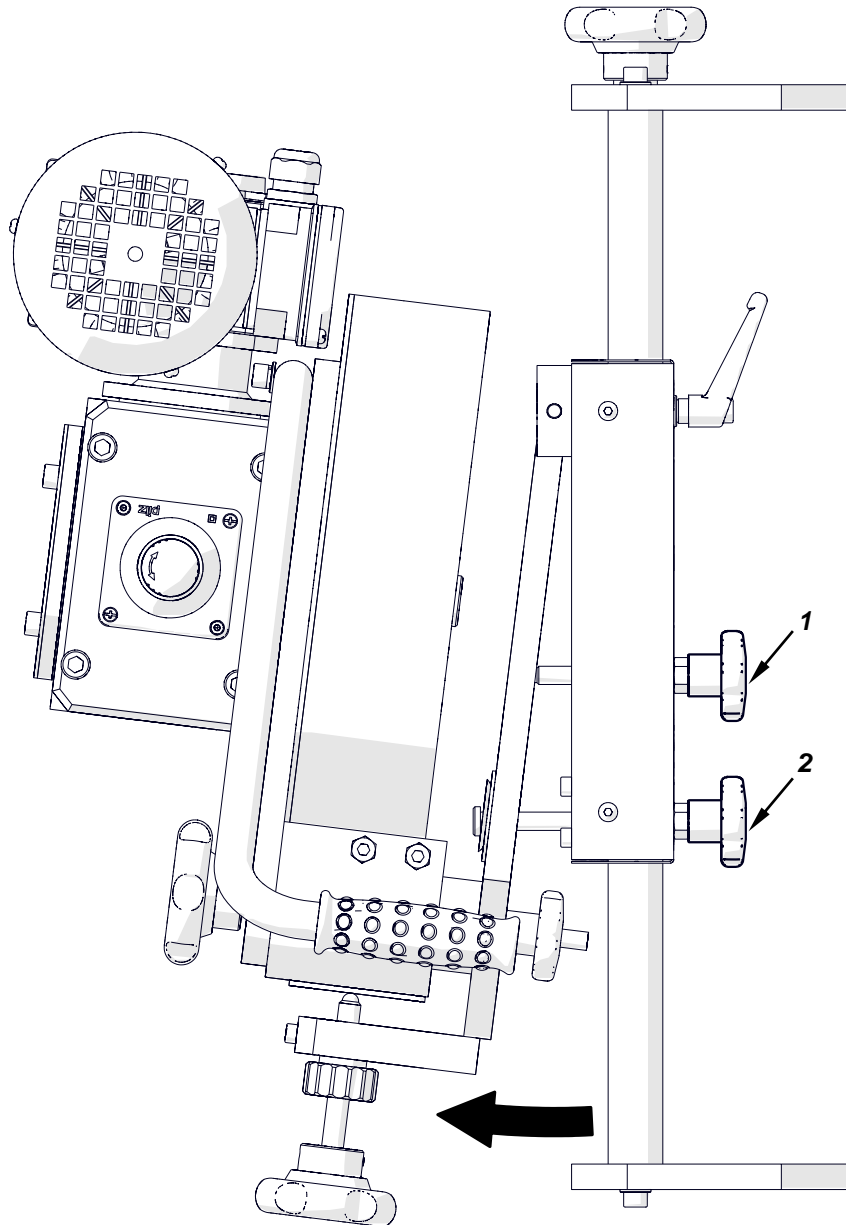


**Fig. 9.** Setting the feed wheel height



### 3.5. Tilting the feed unit

To ensure that the workpiece is sufficiently pressed to the vertical base, use the knobs 1 and 2 (Fig. 10) to tilt the feed unit. Do this when milling narrow workpieces or after moving the vertical base away from the horizontal base.

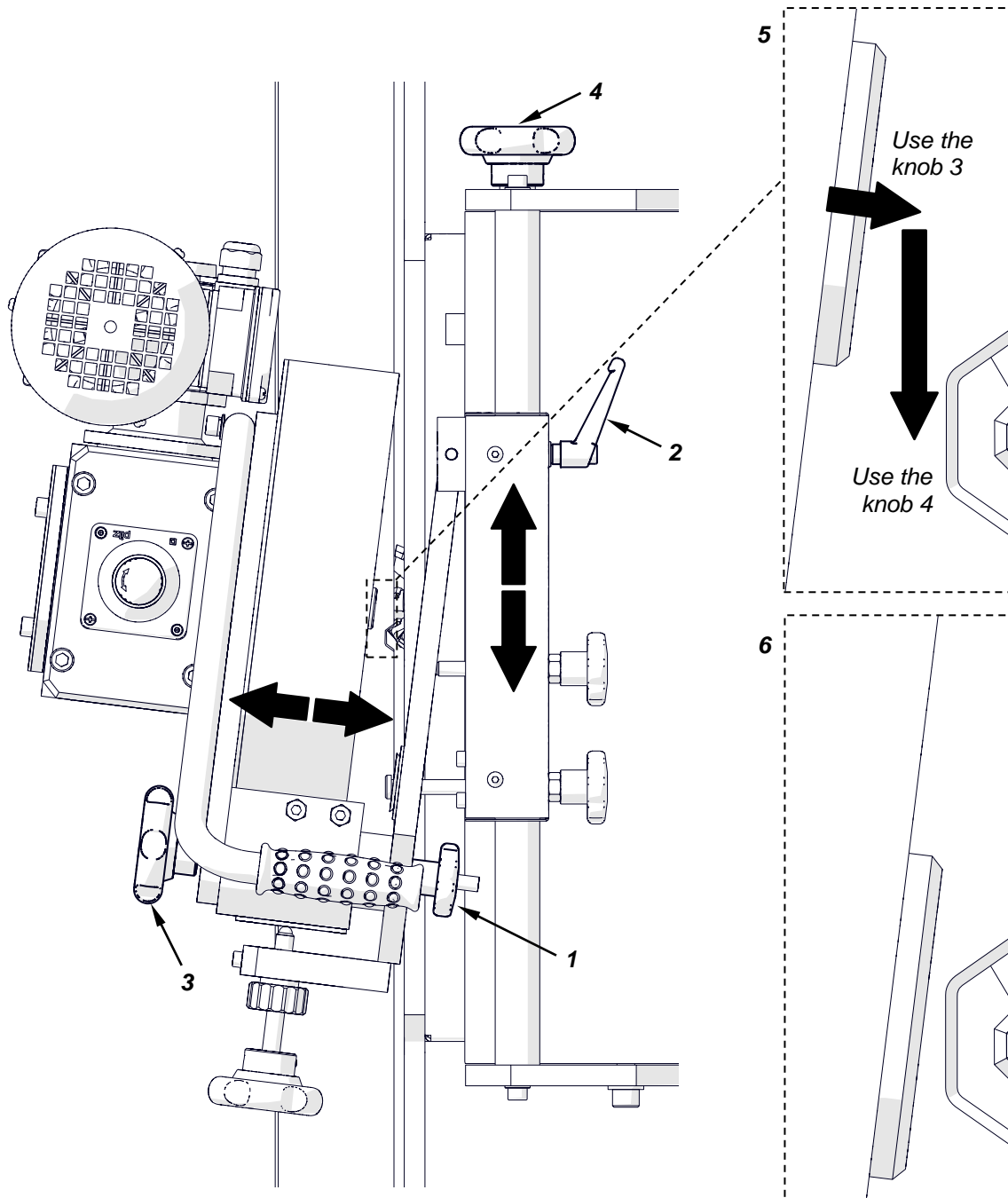


**Fig. 10.** Tilting the feed unit

Then, adjust the feed wheel.

### 3.6. Adjusting the feed wheel

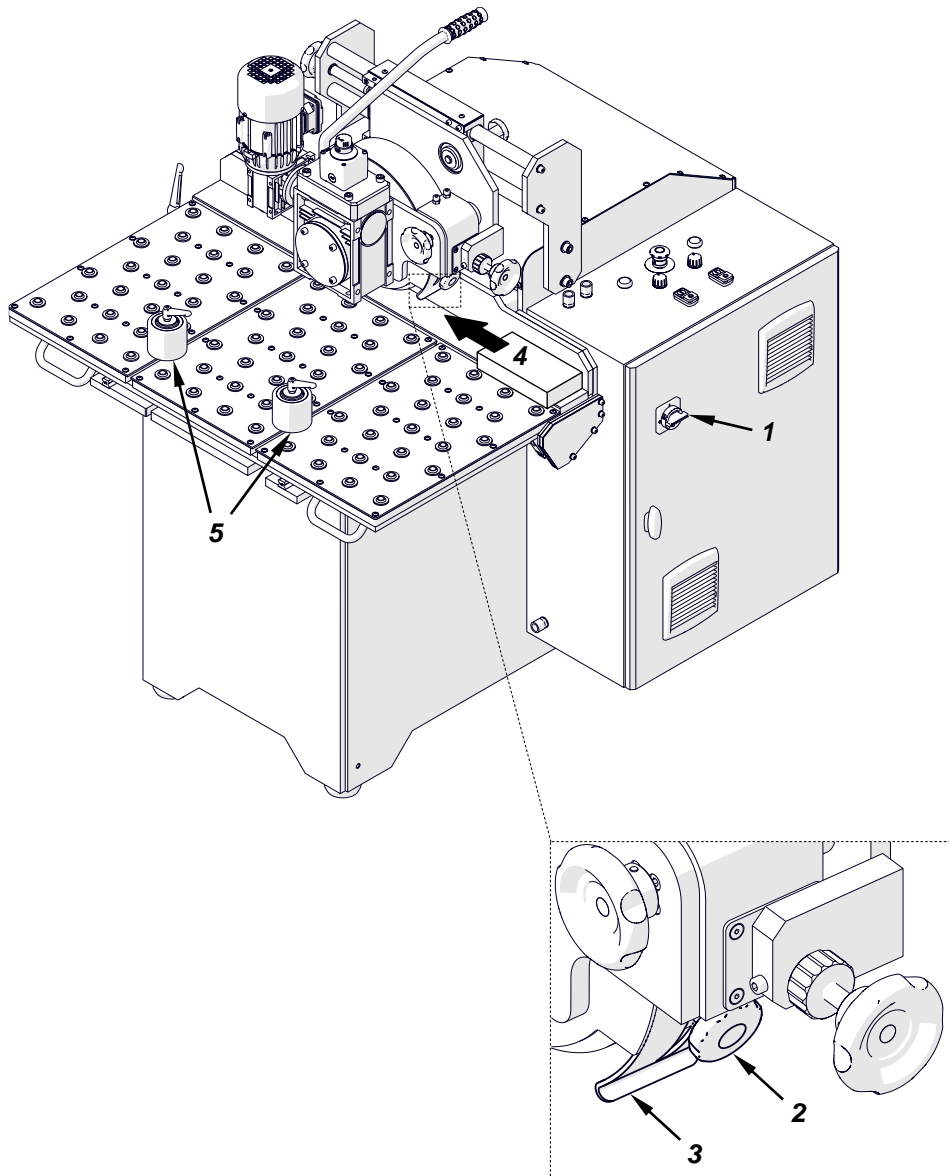
Loosen the knob 1 and lever 2 (Fig. 11), and then use the knobs 3 and 4 to move the feed unit so that (5) the wheel comes as close to the milling spot as possible (6). Next, lock the knob 1 and lever 2 in this position. Pay close attention to prevent the feed wheel or its cover from coming in contact with the milling head or vertical base.



**Fig. 11.** Adjusting the feed wheel

**3.7. Operating**

Connect the machine to the power source and use the switch 1 (Fig. 12) to turn on the power. On the control panel, press START, and then start the SPINDLE and FEED. Use knobs to set the required spindle speed and feed speed. Next, loosen the knob 2 (Fig. 12), lower the chip guard 3, and then tighten the knob in this position.



**Fig. 12.** Starting the work

Place the workpiece on the right side. Press the workpiece to the vertical and horizontal base and move it to the direction 4 (Fig. 12) to put it under the feed wheel. After the first pass, move the vertical base away to obtain the correct gap for the next pass. Put the bevel height gauge related to the set angle between the vertical base and the horizontal base. On the gauge scale, read the bevel height related to the gap. Make sure that the vertical base is not in contact with the milling head.



If the vertical base is moved away too far, it may come in contact with the milling head and thus damage the machine. Never exceed 4 mm (5/32") of the milling head penetration per a single pass. The table that follows shows how far you can move the vertical base per a single pass not to exceed the penetration of 4 mm.

Angle	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°
Maximum allowed gap-increase per a single pass [mm]	4	4	5	5	5	5	6	6	7	8

To obtain better contact between the workpiece and the vertical base, you may use the rollers 5 (Fig. 12) to press the workpiece.

Make several passes to obtain the required bevel parameters. Never move the vertical base away so that the gap is larger than specified in the table that follows.

Angle	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°
Maximum allowed gap	9 mm	11 mm	14 mm	16 mm	18 mm	20 mm	22 mm	24 mm	25 mm	27 mm

If the maximum allowed motor load is exceeded, the OVERLOAD button will light. When this happens, lower the feed speed. If you continue operating when the motor is overloaded, the safety circuit will shut down the motor. To restart the machine in such a case, raise the feed unit, remove the workpiece, press the OVERLOAD, and then press START.

In an emergency, press one of the emergency switches. To restart the machine, remove the cause of the emergency. Then, wait 60 seconds, unlock the switch, and press START.

After the power is off, always wait 60 seconds before you turn the power on.

If the table is moved backward during work, the machine will be shut down. To restart the operation, move the table forward as far as possible and press START.

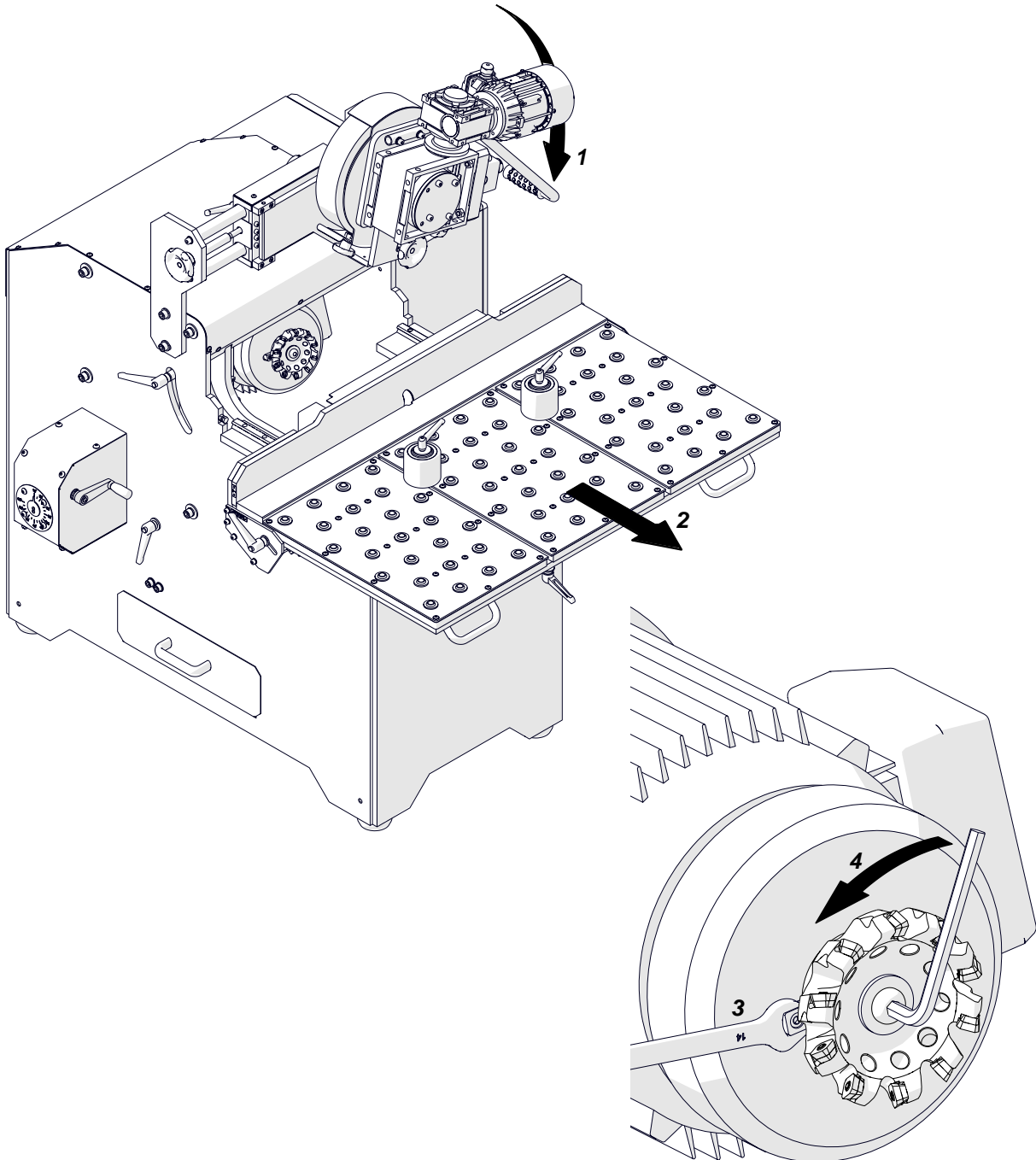
Set the angle as described before only when the machine is unplugged from the power source. Always start from penetration of the milling head set to zero. If needed, tilt the feed unit and adjust the feed wheel.

Clean the machine with a cotton cloth without using any chemical agents.

### 3.8. Removing and installing the milling head

Unplug the machine from the power source, raise the feed unit (1, Fig. 13), and move the table backward (2) to access the milling head. Use a 14 mm flat wrench to lock the spindle rotation (3), and then use the 8 mm hex wrench to unscrew the milling head (4).

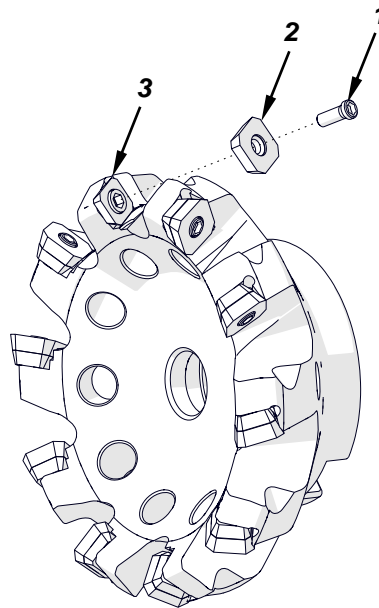
To install, place the milling head on the spindle, lock the spindle rotation, and then use the removed screw and washer to tighten the milling head.



**Fig. 13.** Removing the milling head

### 3.9. Replacing the cutting inserts

Remove the milling head as described before, use the supplied screwdriver to unscrew the fixing screw (1, Fig. 14), and then remove the cutting insert (2) and clean the shim (3). Rotate the cutting insert by 90° and reinstall it or replace with a new insert if all four edges are worn. Press the cutting insert so that its bottom is in full contact with the shim, and then tighten with the fixing screw.



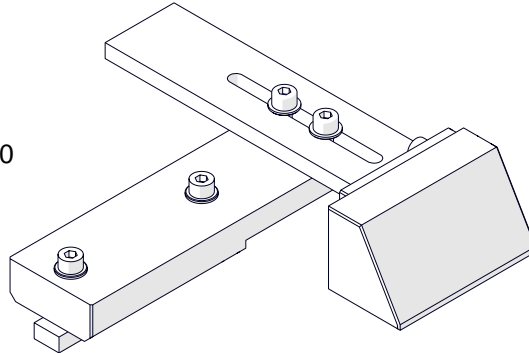
**Fig. 14.** Replacing the cutting inserts

## 4. ACCESSORIES

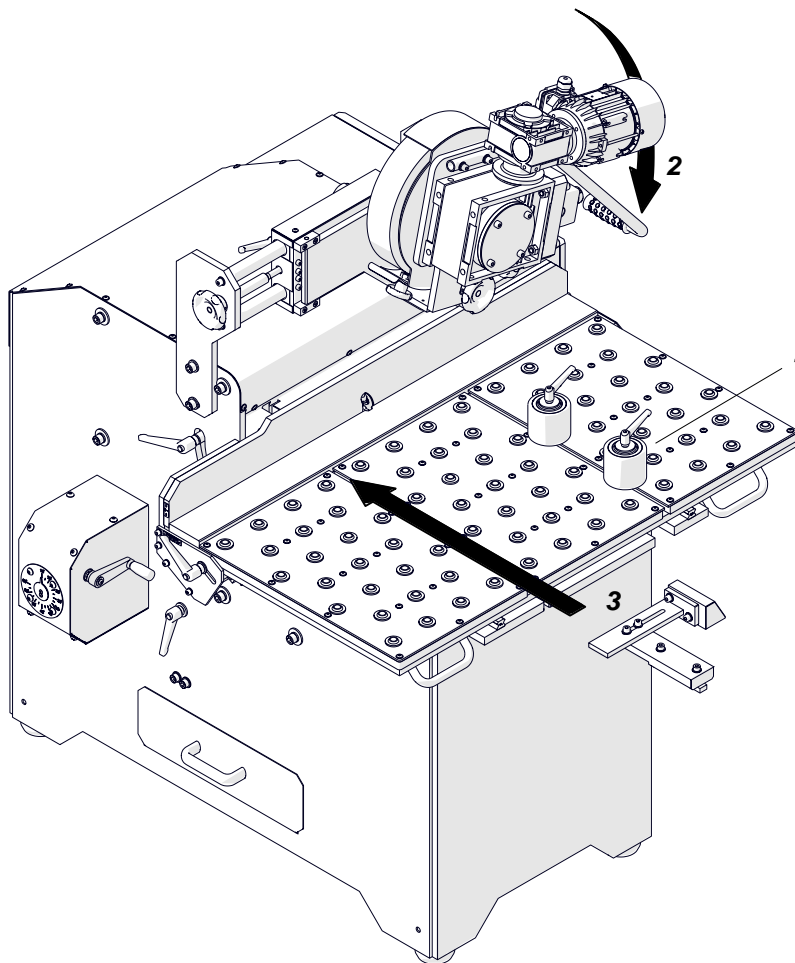
### 4.1. Pipe attachment

Allows the machine to bevel pipes with outer diameters of 50–150 mm (2–6").

Part number:  
PRK-0573-36-00-00-0

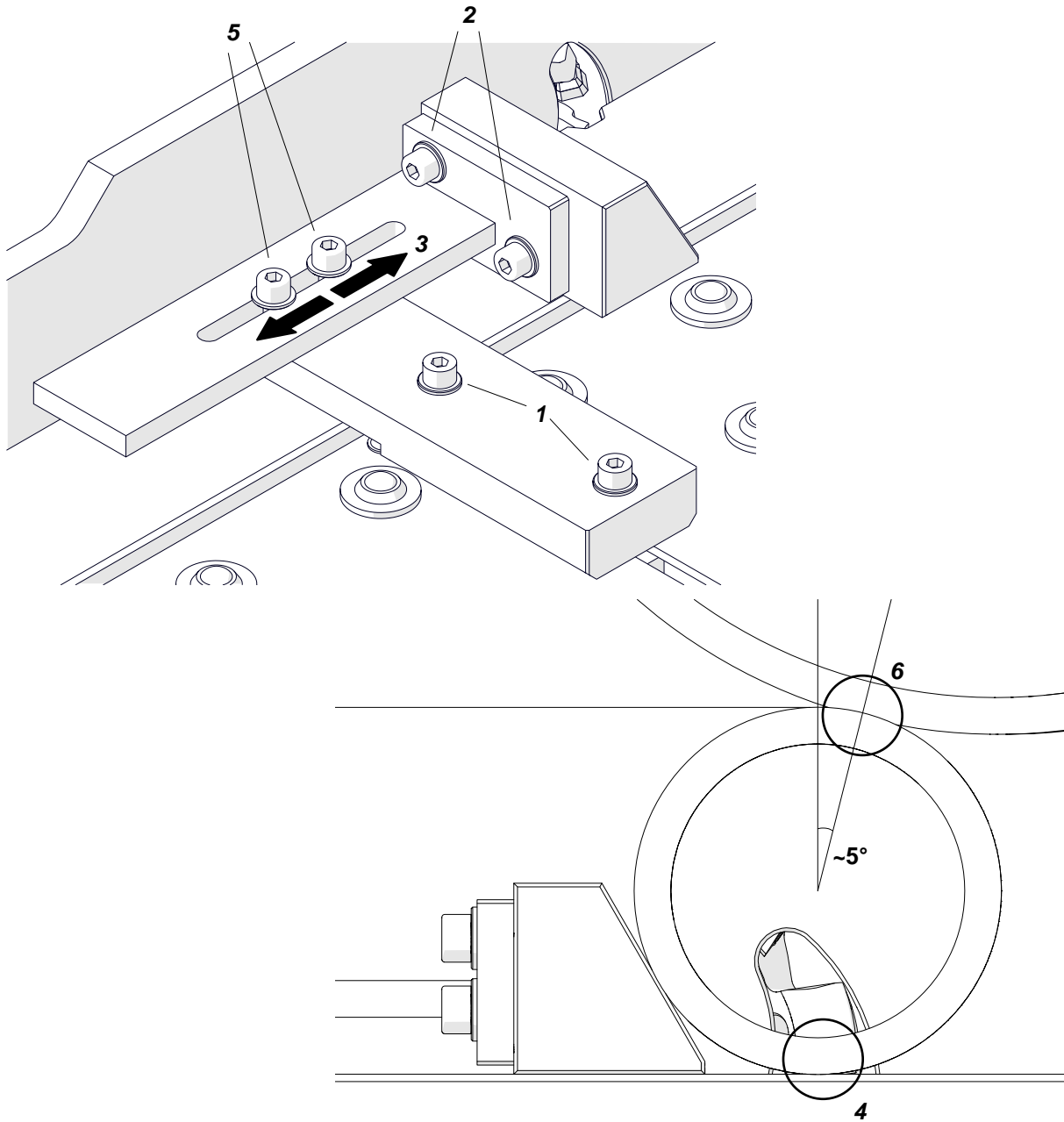


To install the attachment, set the milling head penetration to zero (Fig. 6b), move the roller from the left groove to right groove (1, Fig. 15), and then raise the feed unit (2) and slide the attachment into the left groove (3).



**Fig. 15.** Installing the pipe attachment

Make sure that the attachment is in contact with the vertical base and horizontal base, and then use the 6 mm hex wrench to tighten the screws 1 and 2 (Fig. 16). Next, adjust the attachment so that (3) the bottom of the pipe is as close to the milling spot as possible (4) and tighten the screws 5.

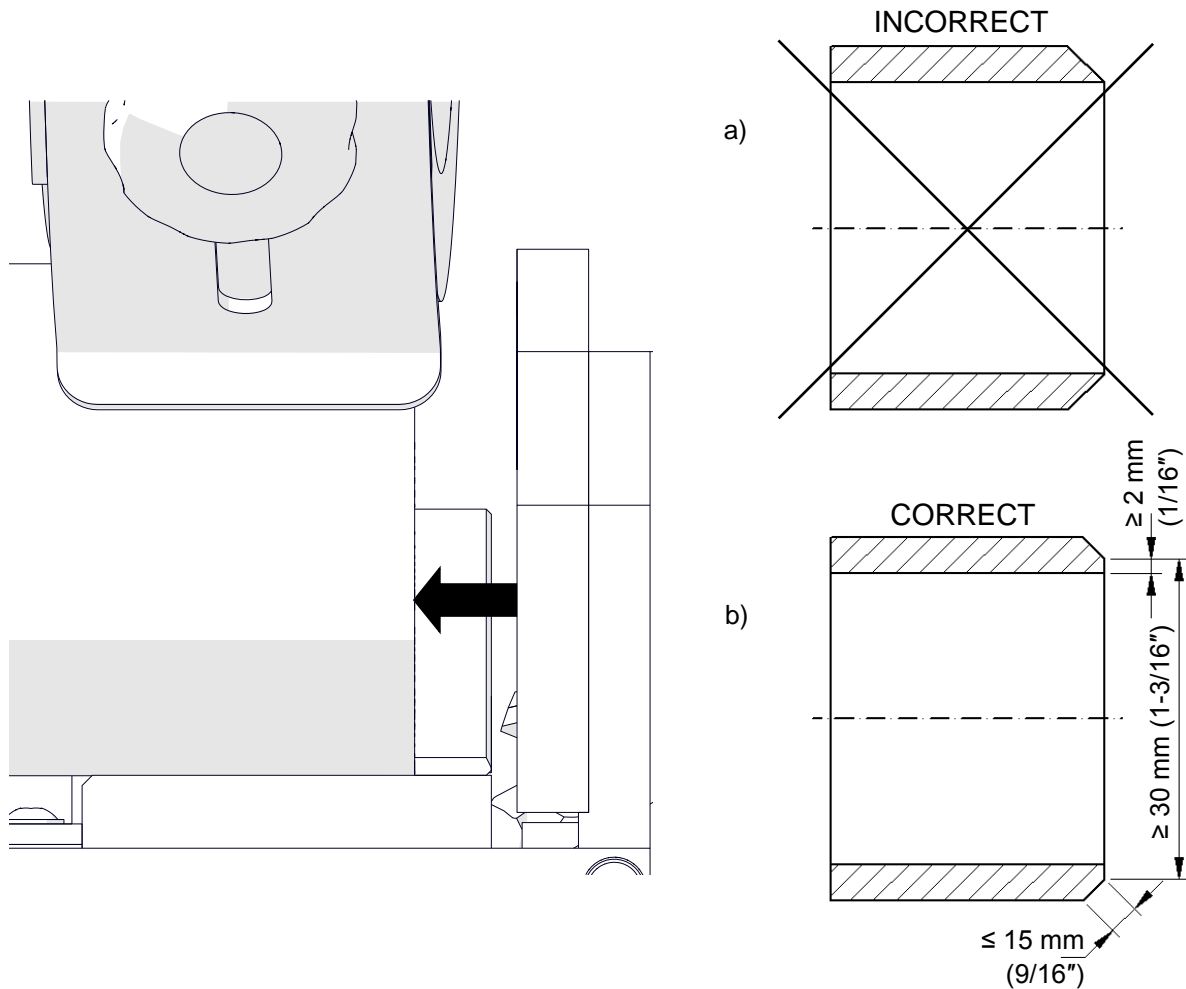


**Fig. 16.** Adjusting the attachment

Set the required bevel angle and milling head penetration (Fig. 6, 7, 8), and tilt the feed unit by about 2° (Fig. 10). Next, set the height feed wheel height and adjust the wheel (Fig. 9, 11) so that the pipe is pressed to the attachment and horizontal base when the feed wheel rotates (6, Fig. 16).



Before starting the machine, move the pipe away from the milling head (Fig. 17). Never make bevels without a root face (Fig. 17a). The root face must be at least 2 mm (1/16", Fig. 17b), and the bevel width must never be more than 15 mm (9/16").



**Fig. 17.** Placing the pipe

After the machine starts, the feed wheel moves the pipe toward the milling head.

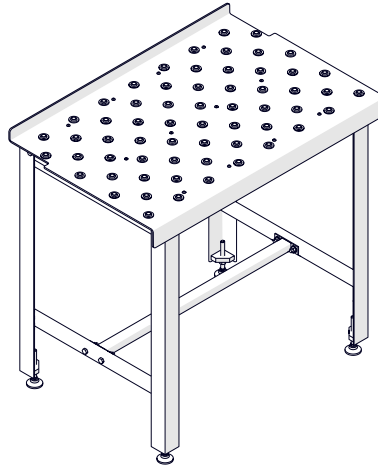
## 4.2. Cutting tools

Part number	Part name
SBM500-IS	Cutting insert for steel (10 required, sold 10 per box)
SMB500-IA	Cutting insert for aluminum (10 required, sold 10 per box)

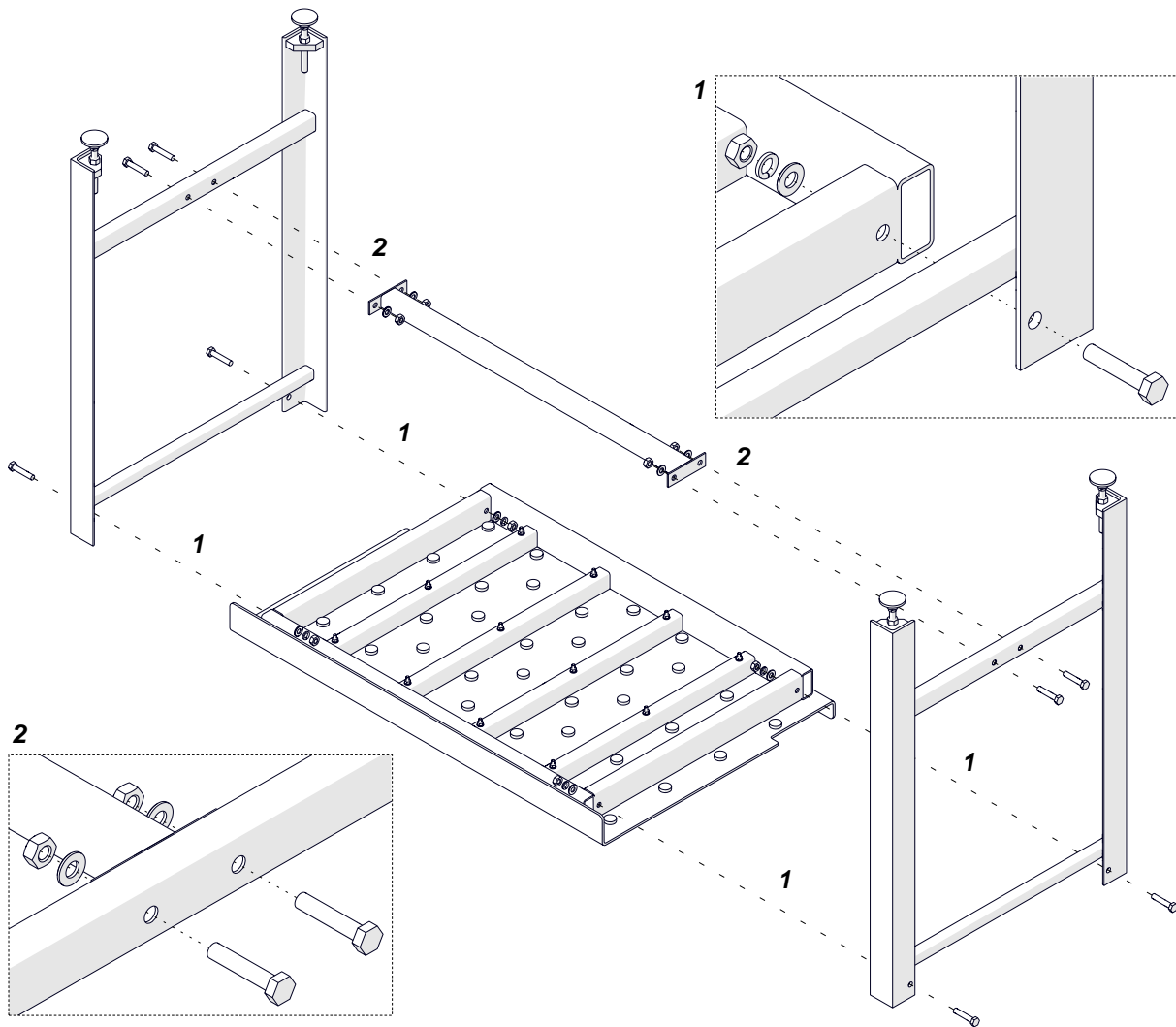
### 4.3. Table

Allows the machine to bevel longer plates.

Part number:  
STL-0573-37-00-00-0

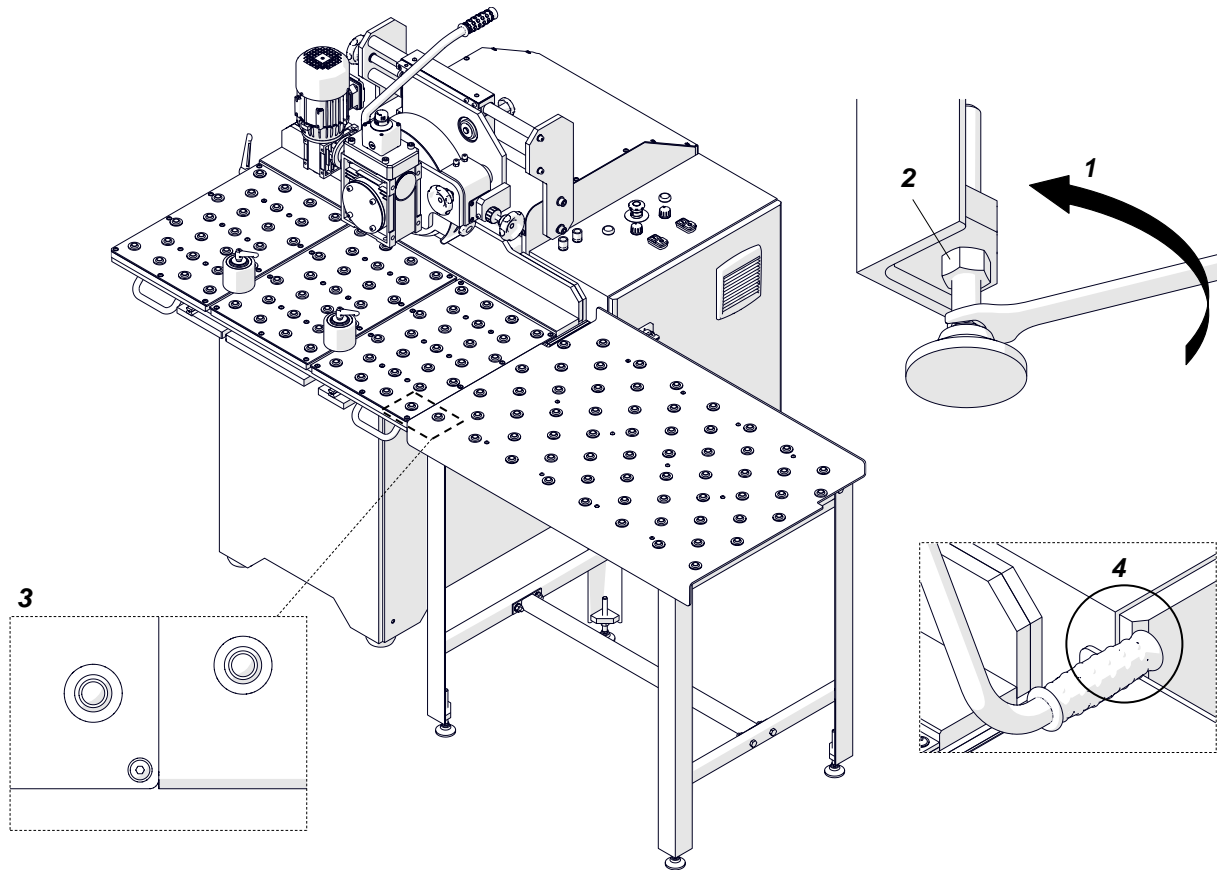


To assemble the table, place it upside down (Fig. 18). Use the 16 mm and 17 mm flat wrenches to attach the legs (1) and bracket (2).



**Fig. 18.** Assembling the table

Use the 14 mm flat wrench to rotate the feet (1, Fig. 18) so that the height of the tables is the same. Next, use the 18 mm flat wrench to tighten the nuts (2) to lock the feet in this position, and then align the faces of the tables (3). Be careful not to catch your hands between the handle and table (4).



**Fig. 19.** Using the table

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**5. DECLARATION OF CONFORMITY*****EC Declaration of Conformity***

We

***JEI GROUP LTD  
UNIT 21 EMPIRE BUSINESS PARK  
ENTERPRISE WAY, BURNLEY  
LANCS, BB12 6LT***

declare with full responsibility that:

**SBM-500 Stationary Beveling Machine**

is manufactured in accordance with the following standards:

- EN 60204-1
- EN ISO 12100
- EN ISO 14120
- EN ISO 13849-1

and satisfies safety regulations of the guidelines: 2014/35/EC, 2006/42/EC, 2014/30/EC.

Person authorized to compile the technical file:

David McFadden, JEI Group Ltd

Managing Director



Burnley, 29 October 2018

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David McFadden

**6. WARRANTY CARD****WARRANTY CARD No.....**

..... in the name of Manufacturer warrants the SBM-500 Stationary Bevelling Machine to be free of defects in material and workmanship under normal use for a period of 12 months from the date of sale.

This warranty does not cover cutting inserts as well as damage or wear that arise from misuse, accident, tempering, or any other causes not related to defects in workmanship or material.

Date of production .....

Serial number .....

Date of sale .....

Signature of seller.....

**1.09 / 20 March 2019*****WE RESERVE THE RIGHT TO MAKE CHANGES IN THIS MANUAL WITHOUT NOTICE***