

J E DRILLING AND CUTTING **SOLUTIONS**

OPERATOR'S MANUAL

BEVELING MACHINE

BM-25



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1. GENERAL INFORMATION

1.1. Application

The BM-25 is a beveling machine designed to bevel plates made of non-alloy steels. It allows for beveling at the angle from 0° to 90° and with the maximum bevel width of 25 mm, however, the recommended range is from 15° to 75°.

It is equipped with the ergonomic handle allowing for positioning the machine in a comfortable position according to the machining angle, workbench height, and operator's body type, as well as optimal load distribution between the operator's hands. The rollers on the horizontal guide may be set in position suitable for the width of workpiece.

The machine is designed for professional use only.

1.2. Technical data

Voltage	1~ 220-240 V, 50-60 Hz
Power	2200 W
Rotational speed with no load	1800-5850 rpm
Protection level	IP 20
Protection class	II
Maximum bevel width (<i>b</i> , Fig. 1)	25 mm (63/64")
Maximum milling head depth (<i>d</i> , Fig. 1)	12.5 mm (31/64")
Bevel angle (β , Fig. 1)	0°-90°
Minimum workpiece thickness	2 mm (5/64")
Noise level	More than 70 dB
Vibration level	2.3 m/s ² (7.5 ft/s ²) Machine harmful for health. Take periodic breaks during work.
Weight	12.5 kg
Required ambient temperature	0-40°C

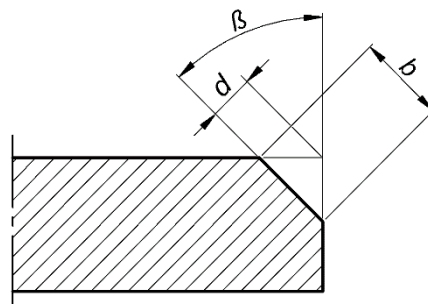
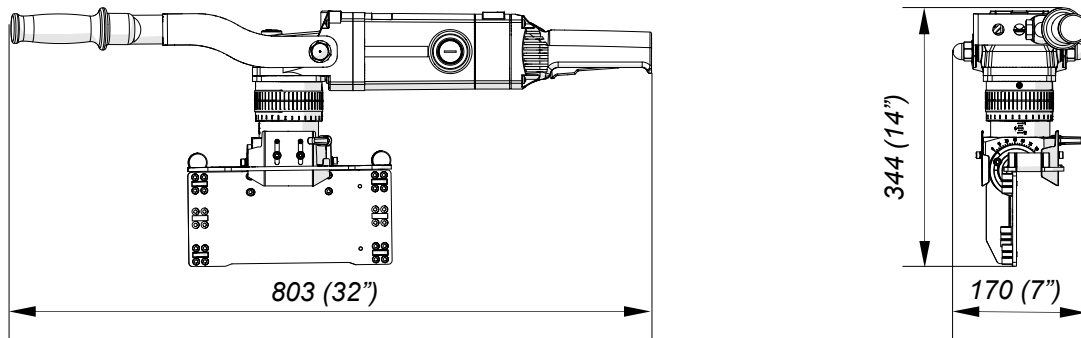
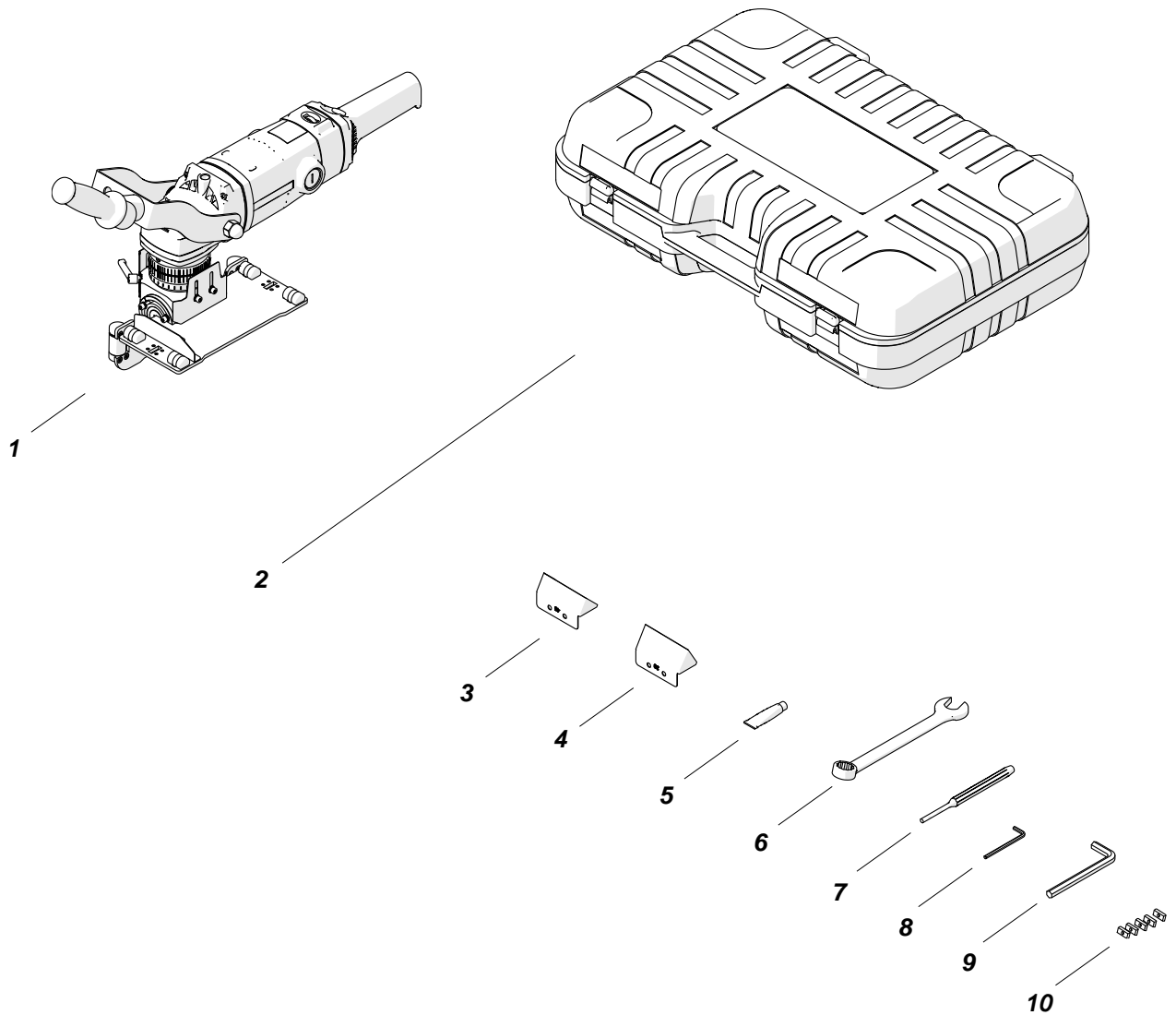


Fig. 1. Bevel dimensions

1.3. Dimensions

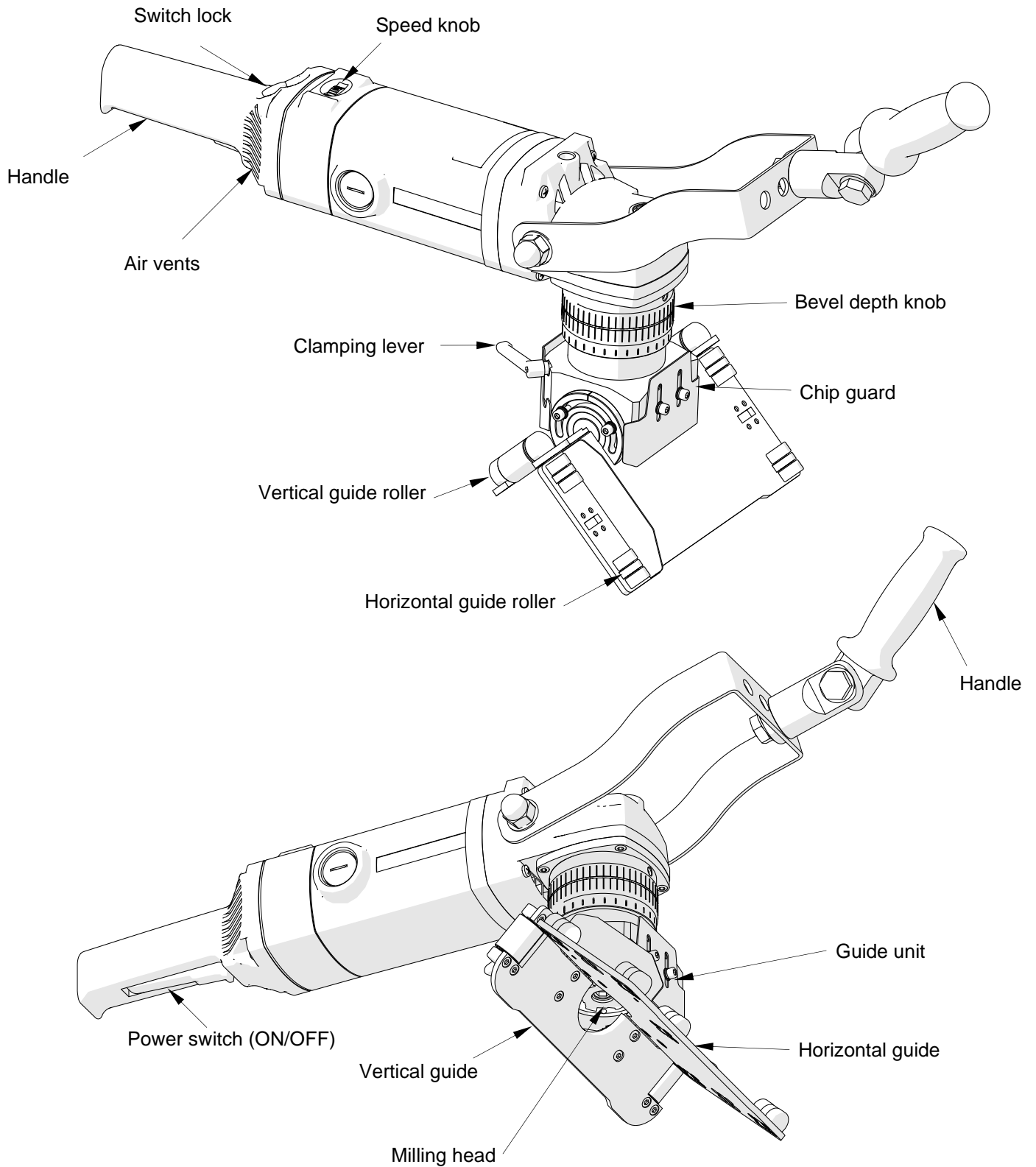


1.4. Equipment included



1	Beveling machine	1 unit
2	Plastic box	1 unit
3	Guard 45°	1 unit
4	Guard 30°	1 unit
5	Grease	1 unit
6	Combination wrench 22 mm	1 unit
7	Drift	1 unit
8	Hex wrench 4 mm	1 unit
9	10 mm hex wrench	1 unit
10	Cutting inserts	5 units
-	Operator's Manual	1 unit

1.5. Design



2. SAFETY PRECAUTIONS

1. Before use, read this Operator's Manual and complete a training in occupational health and safety.
2. Use only in applications specified in this Operator's Manual.
3. Make sure that the machine has all parts and they are genuine and not damaged.
4. Make sure that the specifications of the power source are the same as those specified on the rating plate.
5. Do not carry the machine by the power cord and do not pull the power cord. This may cause damage and electric shock.
6. Keep untrained persons away from the machine.
7. Before each use, ensure the correct condition of the machine, power source, power cord, plug, control parts, and tools.
8. Before each use, make sure that no part is cracked or loose. Make sure to maintain correct conditions that may influence the operation of the machine.
9. Keep the machine dry. Do not expose the machine to rain, snow, or frost.
10. Keep the work area well-lit, clean, and free of obstacles.
11. Do not use in explosive environments or near flammable materials.
12. Use only tools specified in this Operator's Manual.
13. Do not use tools that are dull or damaged.
14. Make sure that the cutting inserts and the milling head are correctly attached. Remove wrenches from the work area before you connect the machine to the air source.
15. Do not use the machine with the milling head pointing up.
16. Do not carry the machine with rotating head. Before carrying unplug the machine from the power source.
17. If the cutting edge of an insert is worn, turn all inserts by 180°. If all cutting edges are worn, replace all inserts with new ones specified in this Operator's Manual.
18. Use eye and ear protection, work boots, protective clothing, and heat-resistant gloves. The clothing must not be loose.
19. Due to high level of vibrations it is recommended to use the anti-vibration gloves.
20. Do not touch chips or moving parts with bare hands. Do not let anything catch in moving parts.

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21. After use, clean the machine and the milling head with a dry cotton cloth and without any chemical agents. Do not remove chips with bare hands.
 22. Maintain the machine and attach/remove parts and tool only after you unplug the machine from the power source.
 23. Repair only in a service center appointed by the seller.
 24. If the machine falls, is wet, or has any damage, stop the work and promptly send the machine to the service center for check and repair.
 25. If you are not going to use the machine, remove it from the work area and keep it in a safe and dry place.
 26. If you are not going to use the machine for an extended period, put anti-corrosion agent on steel parts.

3. SYMBOLS

Before using the machine, familiarize yourself with the following symbols (tab. 1).



Use eyes protection



Use hearing protection



Read the Operator's Manual



Warning against electric voltage

Tab. 1. Explanation of symbols

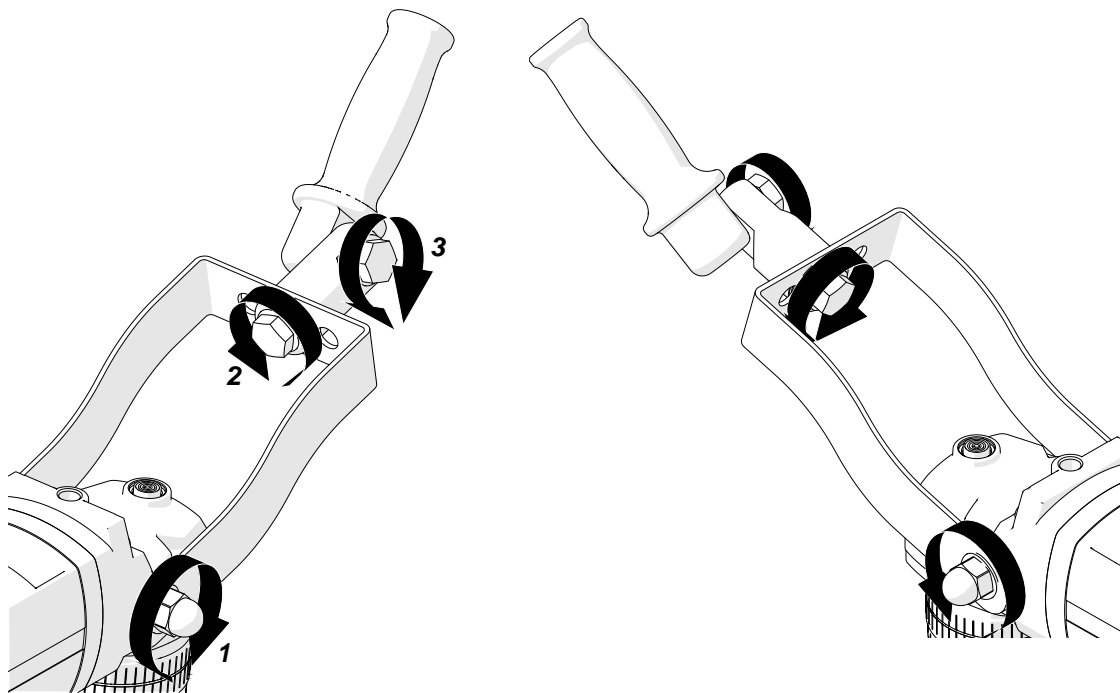
4. STARTUP AND OPERATION

4.1. Handle adjustment

The beveling machine handle may be adjusted in three axes so the operator may adapt it to their needs. To adjust, loosen the domed nuts (1) and screws (2) and (3) using 22 mm flat wrench. Perform adjustment and tighten the loosened elements.

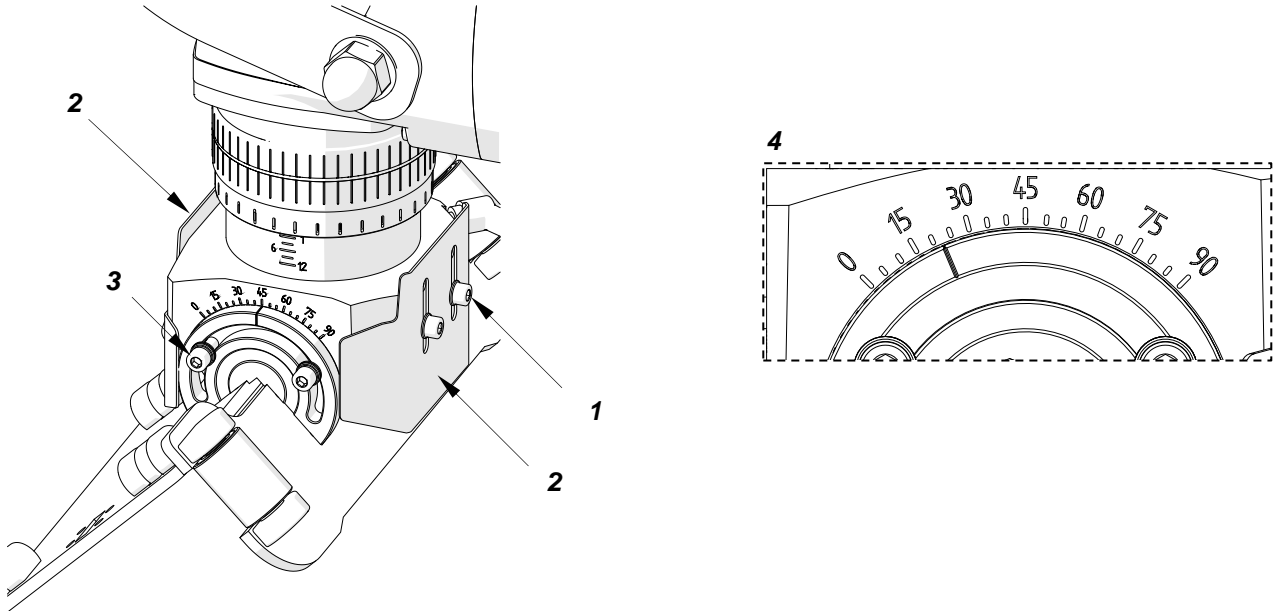


Before work make sure that the handle is tightened correctly.

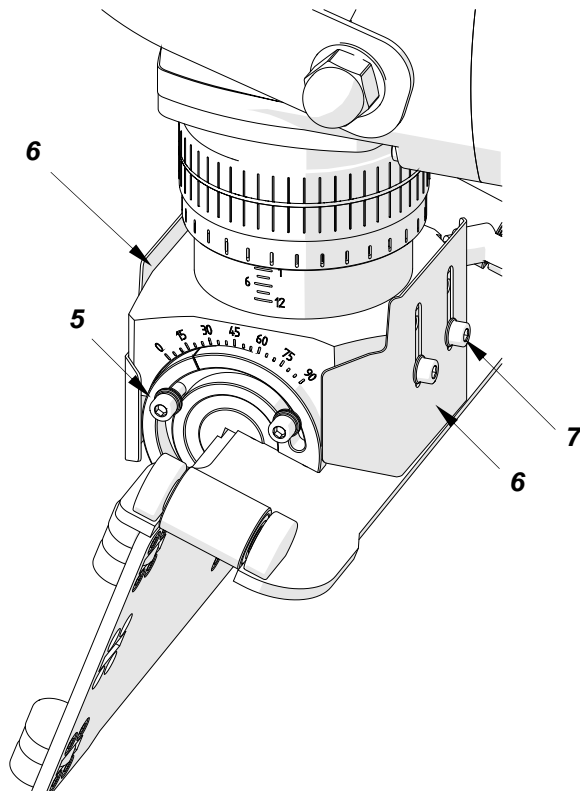


4.1. Beveling angle adjustment

Unplug the power cord. Loosen the screws (1) on both sides of the guide unit and lift the guards (2). Then loosen the screws (3) on both sides of the scale and guide unit and set the required bevel angle (4).



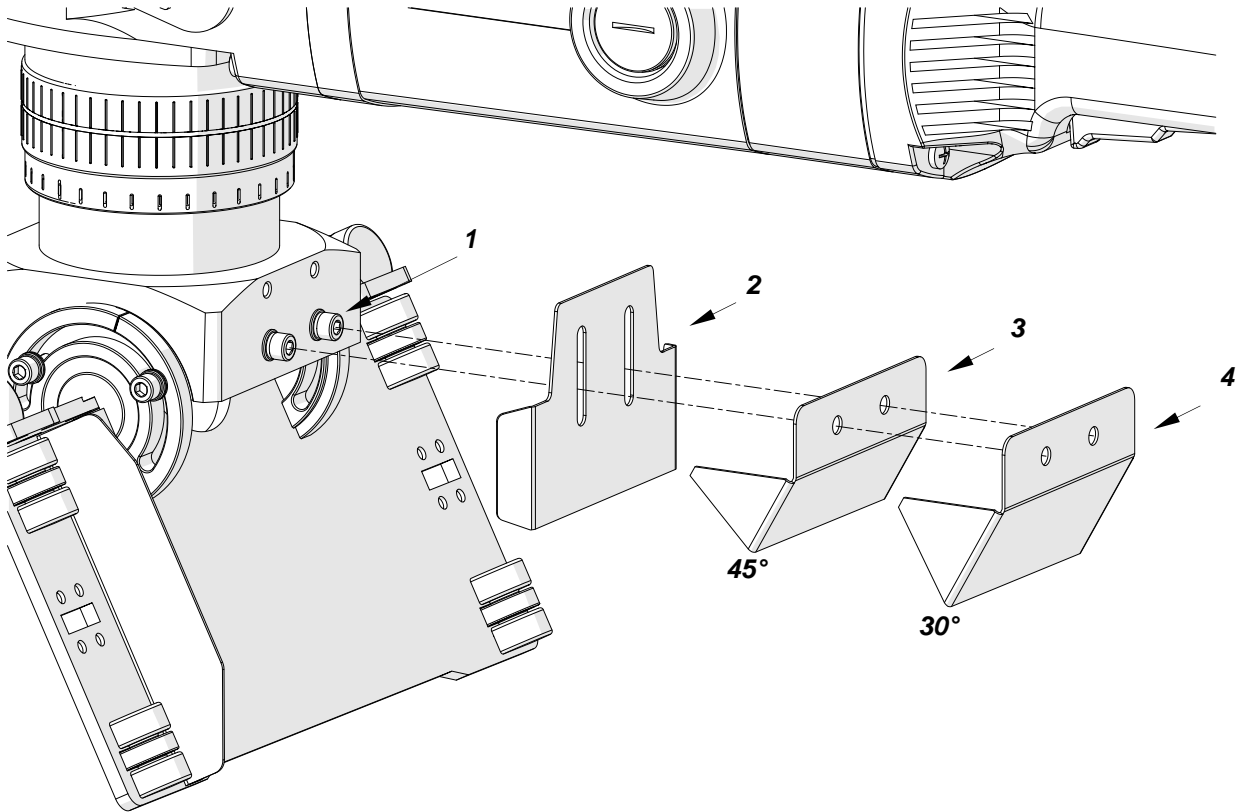
Tighten the screws (5) on both sides of the scale, lower the guards (6) completely, and tighten the all screws of the guide unit (7).



4.2. Horizontal guide guards

During operation with beveling angles of 30° and 45° it is required to use the horizontal guide guards dedicated for those angles. To replace the guard proceed as below.

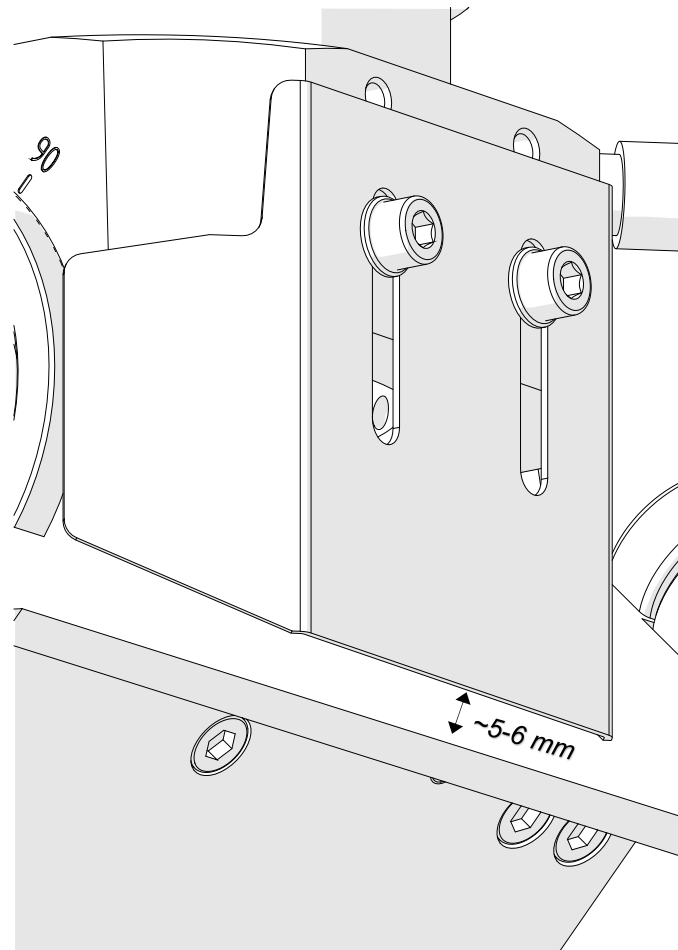
Remove the hexagon socket head screws (1). Remove the basic guard (2). Install guard (3) or (4) according to the machining angle. Tighten the hexagon socket head screws.



The guard should touch the guide so the chips are not ejected onto the workpiece surface.

4.3. Vertical guide guard

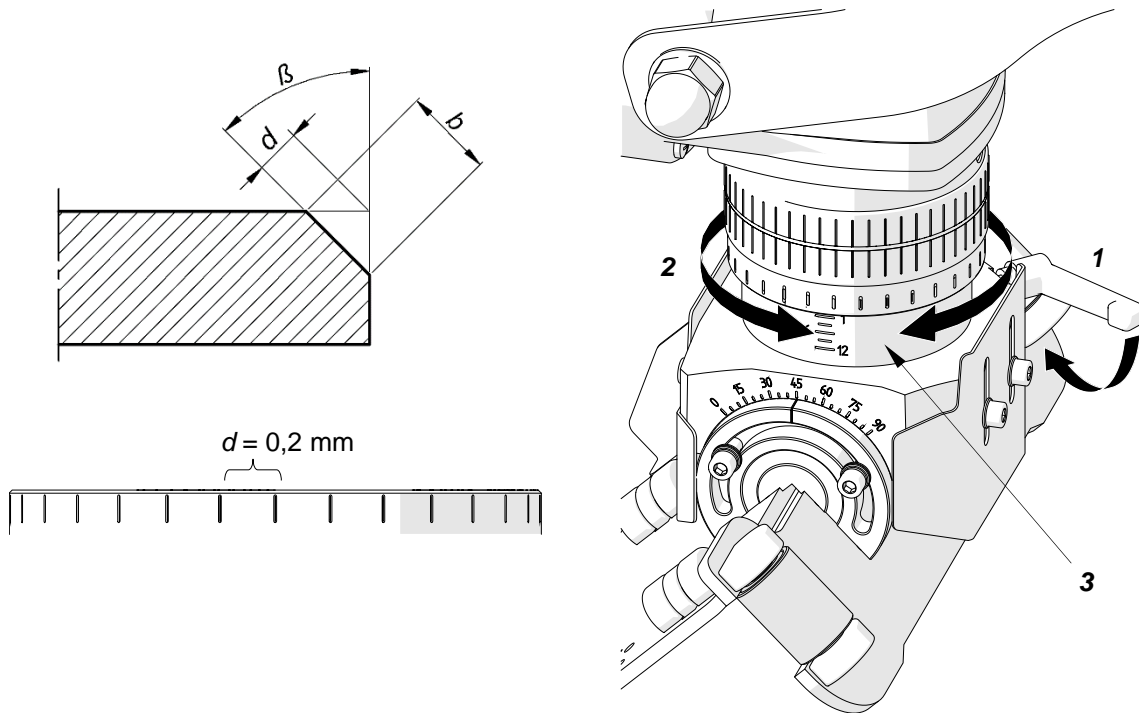
Pay attention during adjustment of the vertical guide guard that the distance between the guide and the guard should be approx. 5-6 mm (13/64-15/64"). It allows for free falling of chips without their accumulation behind the guard.



4.4. Beveling depth adjustment

Unplug the power cord. Release the lever (1). Rotate the knob (2) so that the scale (3) shows the bevel depth “d” (max. 12.5 mm / 31/64”) related to the required bevel width “b” (max. 25 mm / 63/64”). Lock the lever.

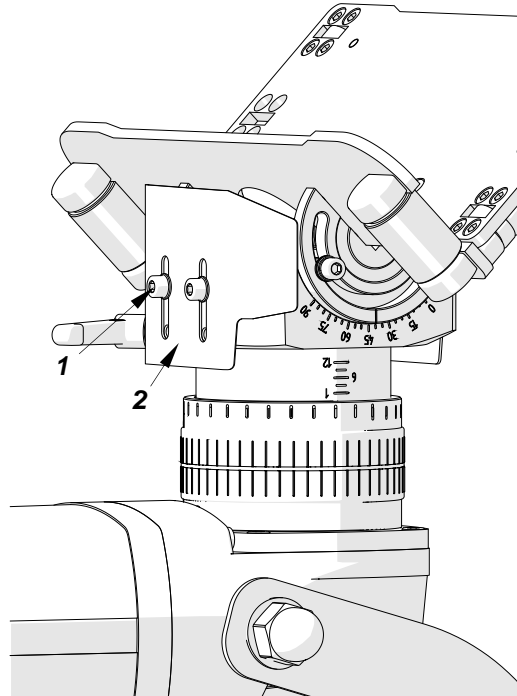
The depth change is 0.2 mm (1/64”) per graduation or 3 mm (1/8”) per one full turn of the knob.



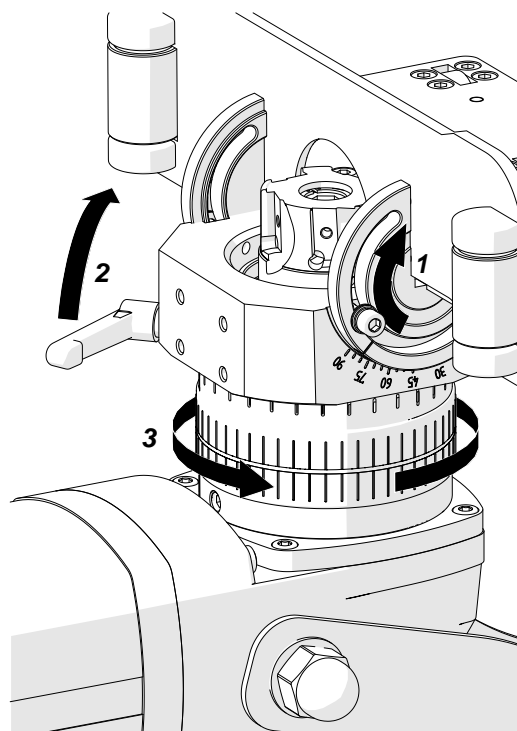
After adjusting the depth perform the test machining and correct the setting as required.

4.5. Cutting inserts installation

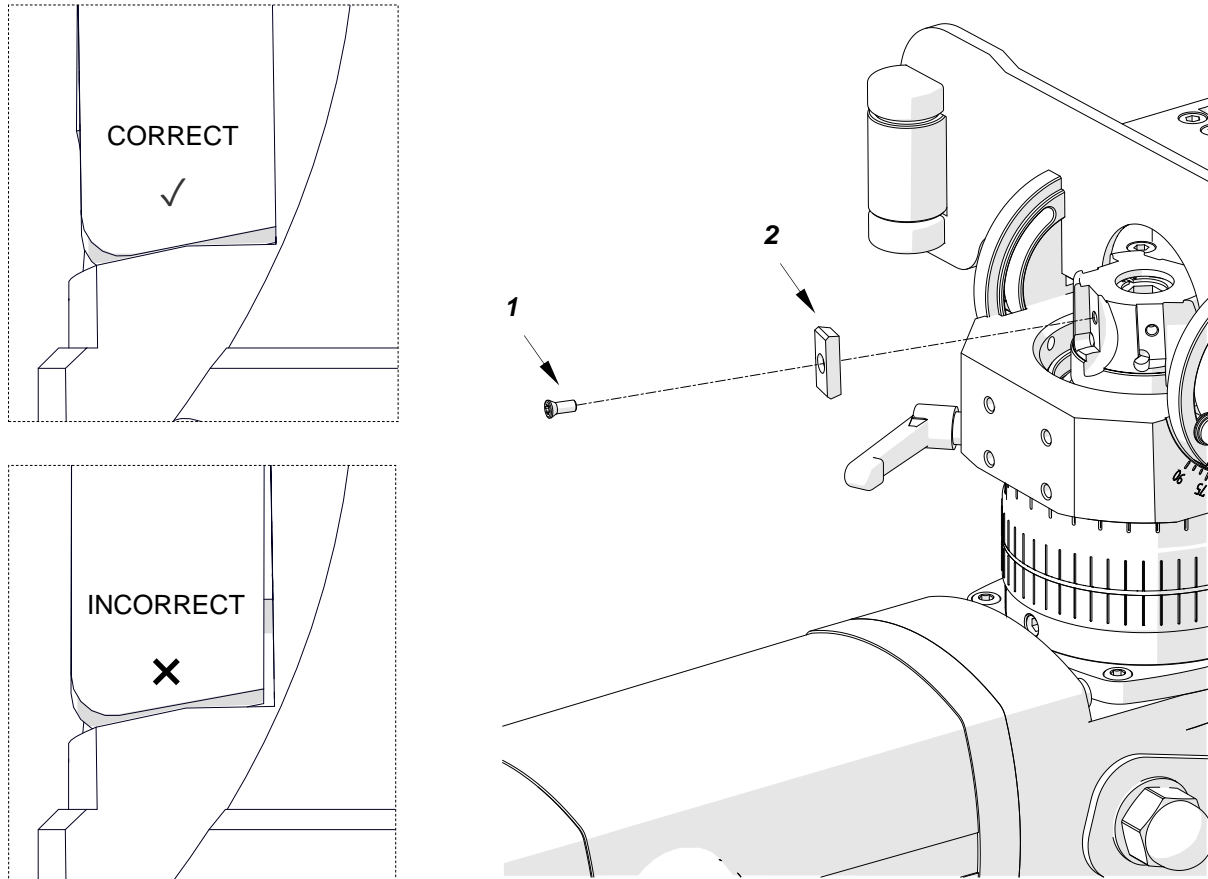
Unplug the power cord. Remove the screws (1) and guards (2) on both sides of the guide unit.



Position the guides in such way that the horizontal guide is parallel to the machine body (1) (value of 90° on the scale). Release the lever (2). Hold the guides by hand and rotate the bevel depth knob (3) until the head protrudes fully.



Prepare screws (1) covered with delivered grease. Put the insert (2) in the socket, press it down and fix with screw, using T15 torx screwdriver. Make sure that the whole bottom of the insert touches the socket.



At the end reinstall the guards and set the guides at appropriate angle.

4.6. Replacing the cutting inserts

When inserts become dull, they should be rotated or replaced.

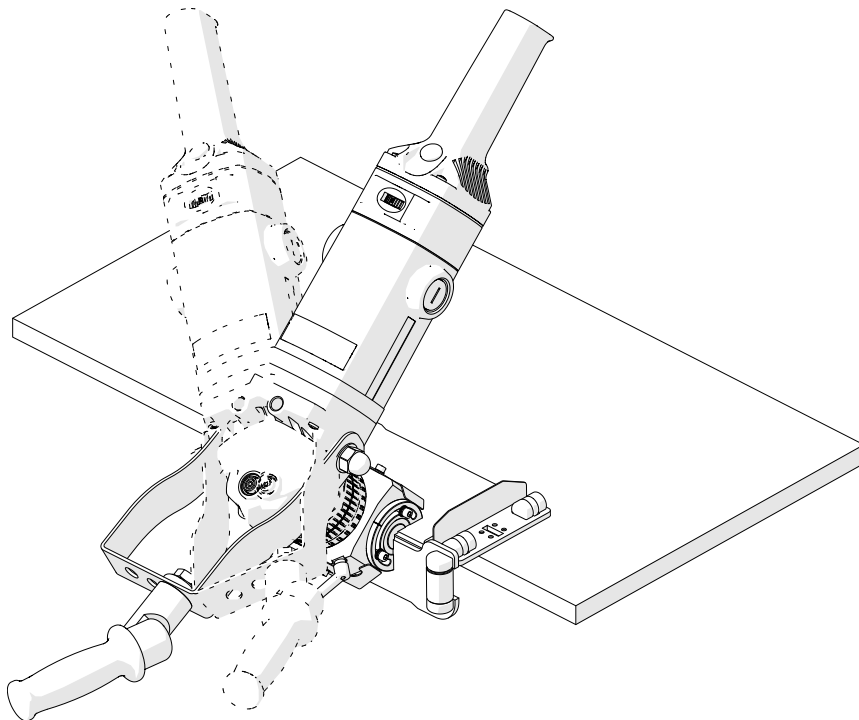
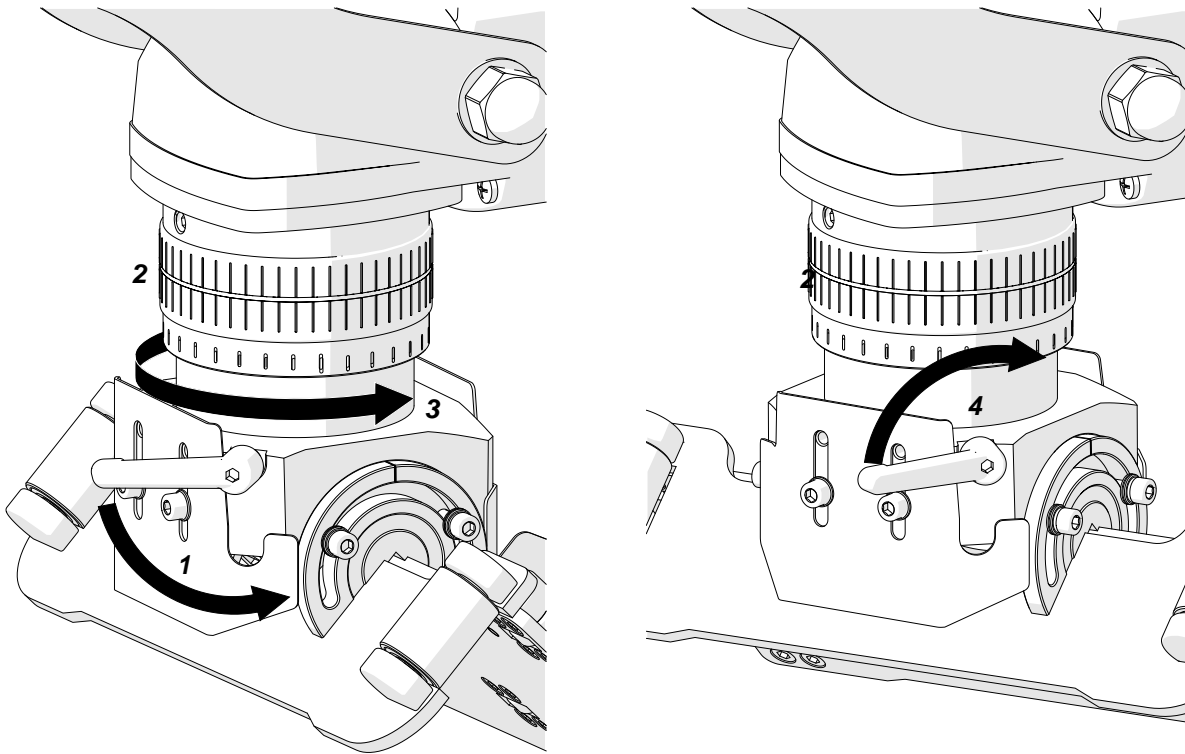
Unplug the power cord. Set the guides and head like during installation of new inserts.

Use T15 torx screwdriver to remove the cutting inserts. Clean the sockets.

To change the cutting edge rotate the inserts by 180°. Press the inserts towards the sockets and tighten them. If all cutting edges are worn, replace the inserts with new ones. Make sure that the whole bottom of the insert touches the socket.

4.7. Turning the guide unit

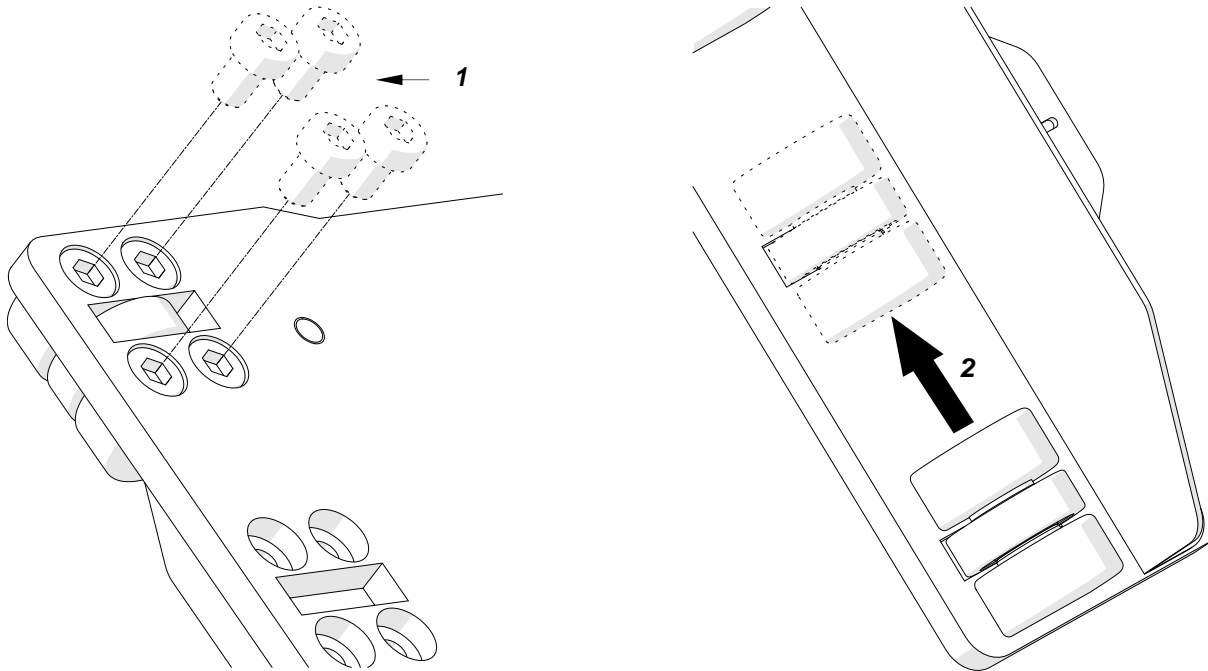
Unplug the power cord. Release the lever (1). Hold the bevel depth knob (2) so it does not rotate in relation to the guide unit and turn the guide unit to the desired position (3). Correct the bevel depth when required. Lock the lever (4).



4.8. Positioning the horizontal guide rollers

When width of the workpiece is below 110 mm, the rollers on the horizontal guide may be set in position suitable for that width.

Remove four hexagon socket head screws (1) of the roller to be moved. Move the roller (2) to desired position. Fix the roller with use of hexagon socket head screws.



4.9. Preparation for machining

Set the required bevel width. Then use the speed knob to set the rotational speed.

Material	Rotational speed
Structural steel of standard quality, quality steel	Setting 3-6 (3100-5850 rpm)

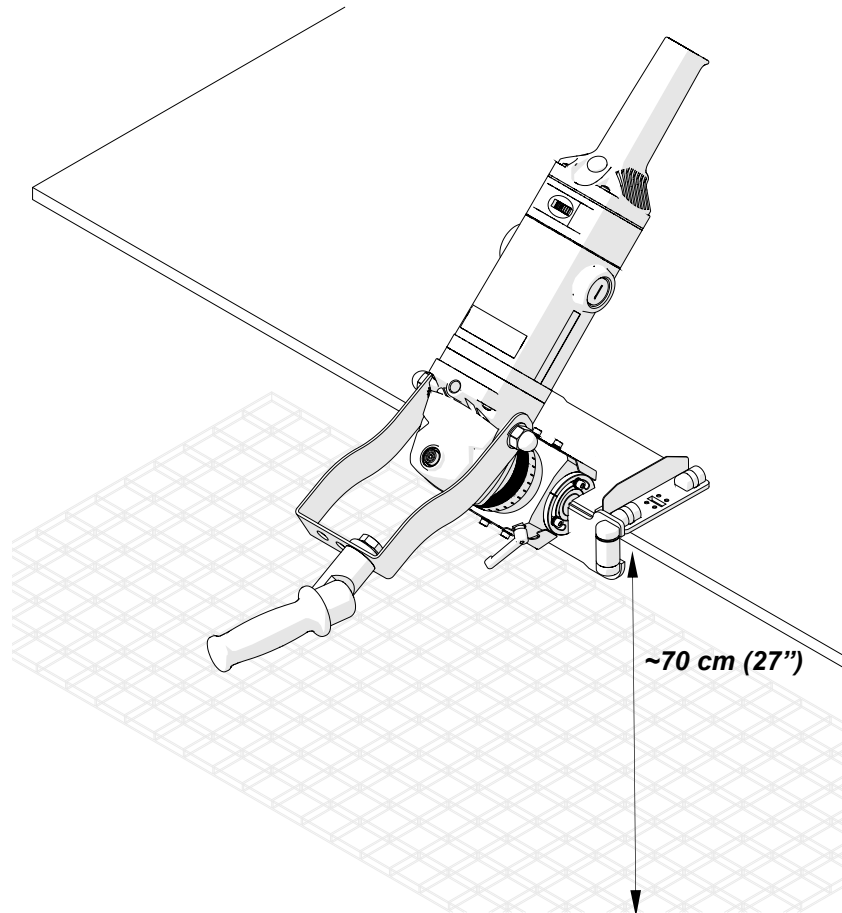
The speed knob allows for control of the rotational speed in the range of 1800-5850 rpm.

Setting	1	2	3	4	5	6
Speed	1800 rpm	2400 rpm	3100 rpm	3800 rpm	4500 rpm	5850 rpm

To machine the structural steel of standard quality or quality steel, set the speed to 6 and decrease the speed if much sparking occurs.

4.10. Operating

For the best results and optimum work, height of the workpiece above the surface on which the operator stands should be approx. 70 cm (27"), however, it depends on the operator's height. It allows the operator to work with slightly bent arms for lower tiredness and better pressing force.



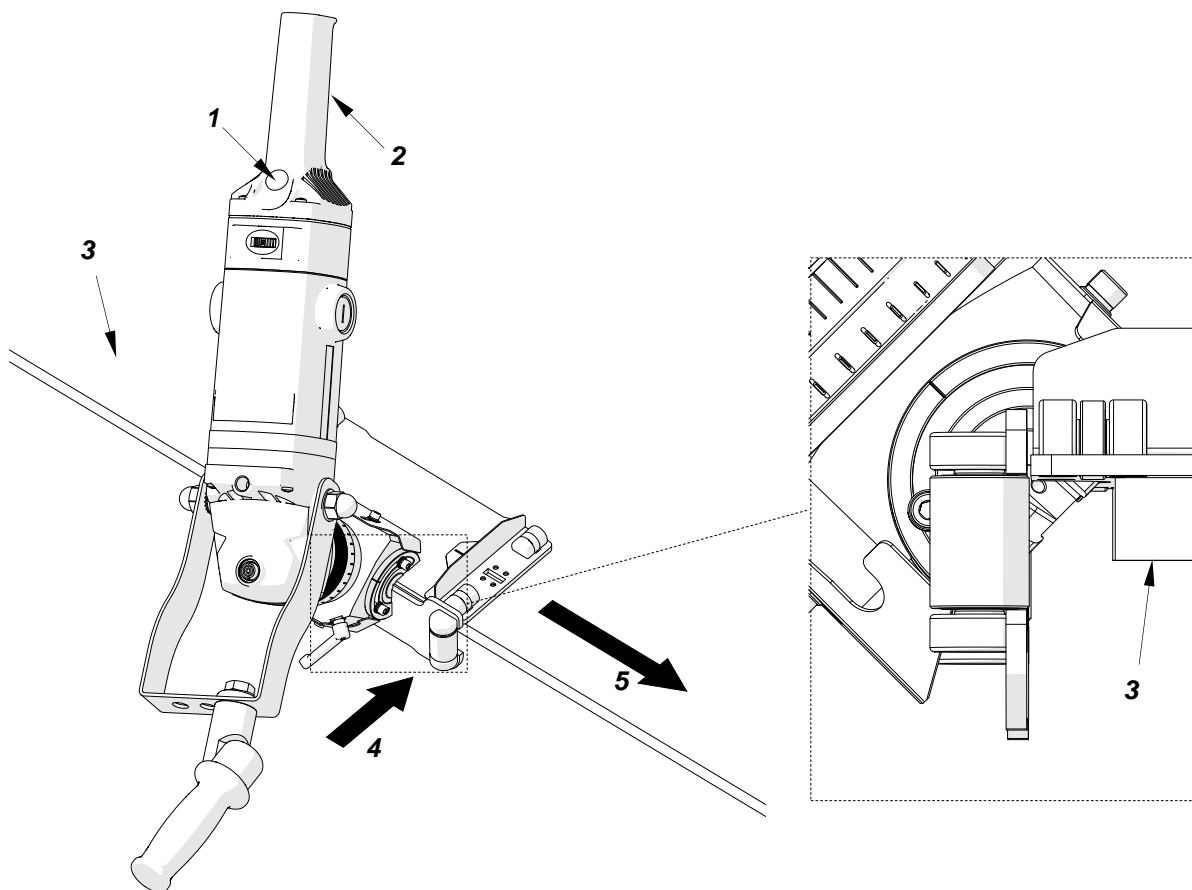
It is good to place the anti-slip mats on the floor in order to eliminate skid of operator's feet during stronger pressing. It is also favorable to use the perforated base to avoid operator's feet sliding on the chips.

Connect the machine to the power source. Make sure that the workpiece is stable. Remove all contamination from the workpiece surface. Put the machine on the left side of workpiece as shown in the figure.



Place the power cord in such way that it does not rub against the workpiece edge during work, as it may lead to its damage and electric shock.

To start the motor press and hold the switch lock (1) and the power switch (2), then release the lock (1). Wait a few seconds until the speed reaches the set value. Use both hands press to press the machine to the workpiece (3). Then slowly move the machine to the edge (4) until the tool starts cutting. Move the machine from left to right (5). Correct machining direction is indicated by the arrow on the horizontal guide.



Start with making small widths (3-4 mm, 1/8-5/32") and increase them with experience. Refer to the table for the recommended maximum number of passes to do depending on the bevel width.

Bevel width 'b'	Number of passes
14 mm (35/64")	1
21 mm (53/64")	2
25 mm (1")	3

If an overload occurs, the motor shuts off. This may occur when the bevel width is too large for the hardness of material or when the cutting inserts are dull. Therefore, to prevent overload, machine hard materials in multiple passes and replace the inserts before they become dull. Also, take periodic breaks during work and keep the air vents unclogged. This prevents motor overheating and damage to the windings.

After the work is finished, release the power switch to turn off the motor. Then, wait until the rotation stops and unplug the power cord.

Clean the machine with soft, lint-free cloth, without any chemical agents. Chips may be removed with use of soft brush.



Be careful during operation using bevel angle below 15° and above 75°. The beveling machine is then more susceptible to strong vibrations and kickback.

Kickback is a sudden reaction caused by catching or locking of rotating tool. Catching or locking causes the work tool to stop abruptly. As a result, the uncontrolled power tool gains acceleration in the direction opposite to the direction of rotation of the locked work tool.

If the milling head becomes jammed or blocked in the workpiece, the blocked edge of the cutting insert, when recessed into the workpiece, may cause it to break off or eject. The machine then moves in the direction of the operator or opposite direction, depending on the direction of rotation of the blocked insert. In such case the insert may also break.

Kickback is a consequence of incorrect or improper use of the power tool. By taking the appropriate precautions described below, one can prevent this from happening.

-
- a) Hold the machine firmly and keep your body and arms in a position to absorb the kickback force. By following the suitable safety measures the operator may control the kickback force.
 - b) Maintain special caution when working in the area of corners, sharp edges, etc. Avoid situations in which the head jumps off the workpiece or becomes jammed. The rotating head easily becomes jammed in the workpiece in corners, on sharp edges, or in case of impact. It causes loss of control or kickback.
 - c) Always insert the cutting head into the workpiece in the same direction in which the cutting edge exits the workpiece (the same direction the chips are ejected). Incorrect direction causes the cutting edge to break away from the workpiece, leading to the machine to be pulled in the direction of travel.
 - d) Avoid locking the head or applying too much pressure. Do not set the bevel height above the maximum allowable value. Overloading the inserts increases their stress and susceptibility to jamming or locking, and thus the possibility of kickback or breaking.
 - e) Avoid touching the area around the rotating head with your hands.

Rotate or replace dull cutting inserts and those with worn coatings in a timely manner. Dull cutting inserts increase risk of jamming and breaking.

4.11. Bevel width

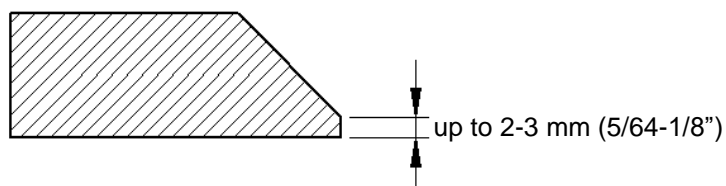
The following tables show the calculated bevel widths (in mm and inches) obtained for the individual angle of inclination and depth values. To determine the exact width, perform a test machining and correct the setting if necessary.

		Angle [°]													
		15	20	25	30	35	40	45	50	55	60	65	70	75	
Depth [mm]	0.5	2	1.6	1.3	1.2	1.1	1	1	1	1.1	1.2	1.3	1.6	2	
	1.0	4	3.1	2.6	2.3	2.1	2	2	2	2.1	2.3	2.6	3.1	4	
	1.5	6	4.7	3.9	3.5	3.2	3	3	3	3.2	3.5	3.9	4.7	6	
	2.0	8	6.2	5.2	4.6	4.3	4.1	4	4.1	4.3	4.6	5.2	6.2	8	
	2.5	10	7.8	6.5	5.8	5.3	5.1	5	5.1	5.3	5.8	6.5	7.8	10	
	3.0	12	9.3	7.8	6.9	6.4	6.1	6	6.1	6.4	6.9	7.8	9.3	12	
	3.5	14	11	9.1	8.1	7.4	7.1	7	7.1	7.4	8.1	9.1	11	14	
	4.0	16	12	10	9.2	8.5	8.1	8	8.1	8.5	9.2	10	12	16	
	4.5	18	14	12	10	9.6	9.1	9	9.1	9.6	10	12	14		
	5.0	20	16	13	12	11	10	10	10	11	12	13	16		
	5.5	22	17	14	13	12	11	11	11	12	13	14	17		
	6.0	24	19	16	14	13	12	12	12	13	14	16			
	6.5	26	20	17	15	14	13	13	13	14	15	17			
	7.0	28	22	18	16	15	14	14	14	15	16	18			
	7.5	30	23	20	17	16	15	15	15	16	17				
	8.0		25	21	19	17	16	16	16	17	19				
	8.5		26	22	20	18	17	17	17	18	20				
	9.0		28	24	21	19	18	18	18	19					
	9.5		30	25	22	20	19	19	19	20					
	10.0		31	26	23	21	20	20	20	21					
10.5		33	27	24	22	21	21	21	22						
11.0			29	25	23	22	22	22							
11.5			30	27	25	23	23	23							
12.0			31	28	26	24	24	24							
12.5			33	29	27	25	25	25							

		Angle [°]												
		15	20	25	30	35	40	45	50	55	60	65	70	75
Depth [mm]	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
	1.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
	1.5	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
	2.0	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
	2.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
	3.0	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4
	3.5	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
	4.0	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5
	4.5	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6
	5.0	0.8	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6
	5.5	0.9	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7
	6.0	0.9	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	
	6.5	1.0	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.7	
	7.0	1.1	0.9	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	
	7.5	1.2	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7		
	8.0		1.0	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.7		
	8.5		1.0	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.8		
	9.0		1.1	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.7			
	9.5		1.2	1.0	0.9	0.8	0.7	0.7	0.7	0.7	0.8			
	10.0		1.2	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8			
10.5		1.3	1.1	0.9	0.9	0.8	0.8	0.8	0.8	0.9				
11.0			1.1	1.0	0.9	0.9	0.9	0.9	0.9					
11.5			1.2	1.1	1.0	0.9	0.9	0.9	0.9					
12.0			1.2	1.1	1.0	0.9	0.9	0.9	0.9					
12.5			1.3	1.1	1.1	1.0	1.0	1.0	1.0					

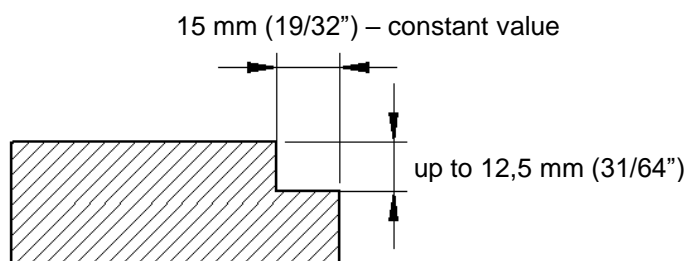
4.12. Working at angle of 0°

- Levelling in order to obtain the even surface



4.13. Working at angle of 90°

- Removing coatings from the surface
- Decreasing the sheet edge height

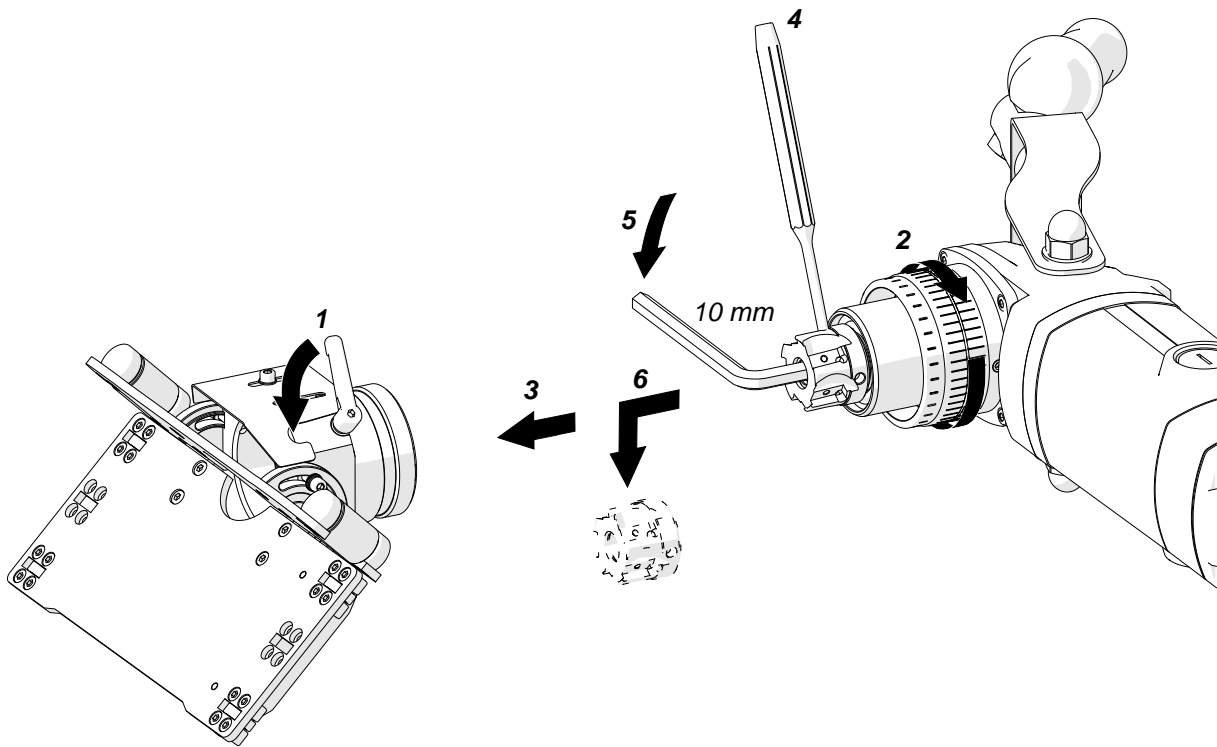


4.14. Head disassembly

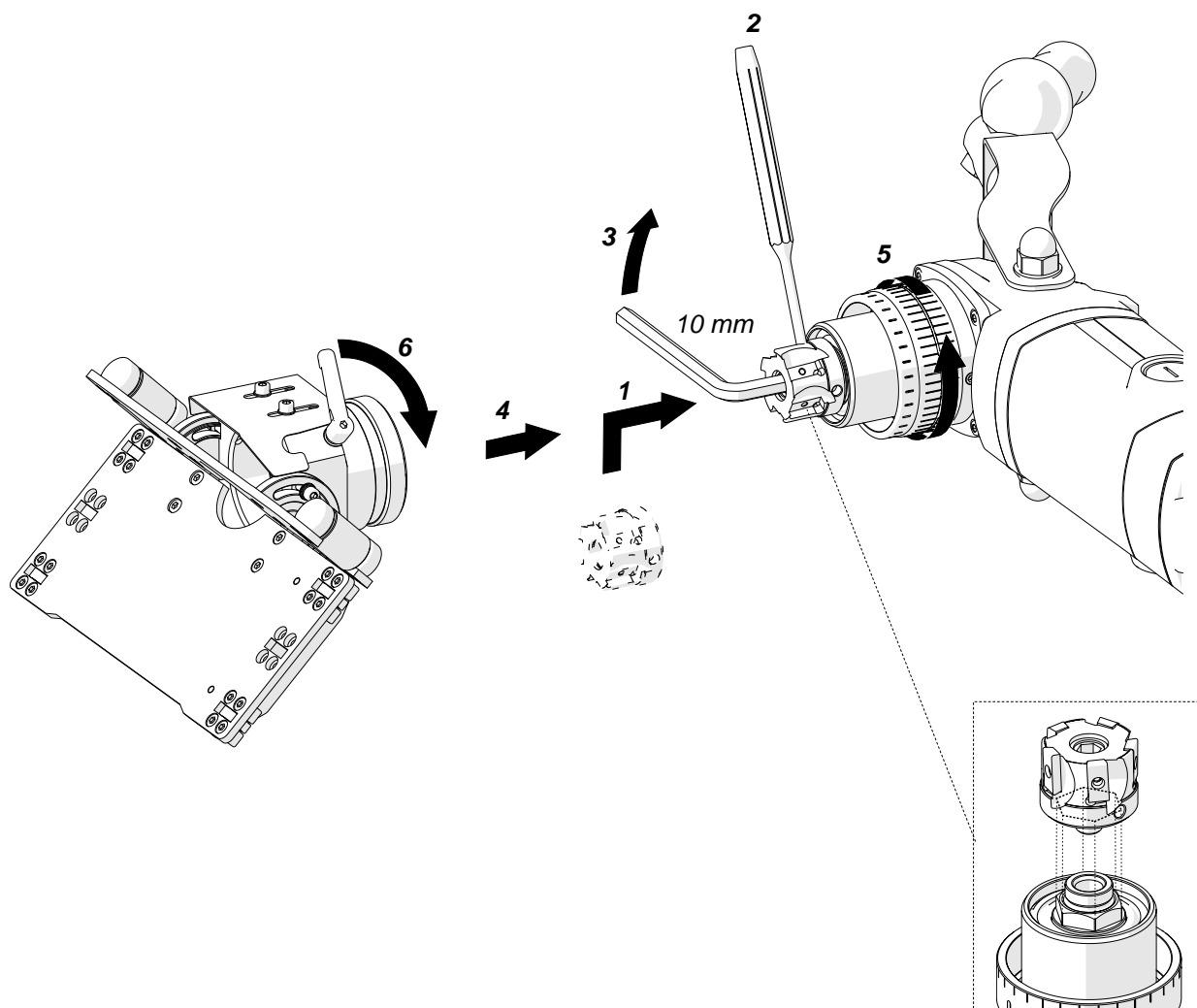
Before disassembly remove chips from the guides. Failure to do so may result in contamination of thread in the guide unit.

When it is required to disassemble the guide unit proceed as below.

Unplug the power cord. Position the machine in such way that the head is horizontal. Release the lever (1). Turn the bevel depth knob (2) to extend the guide assembly as far as it will go. Remove the guide unit (3). Insert the tip of MT3 drift (4) into the milling head hole to stabilize it. Use 10 mm wrench to unscrew the milling head fixing screw (5). Remove the milling head from the spindle (6).



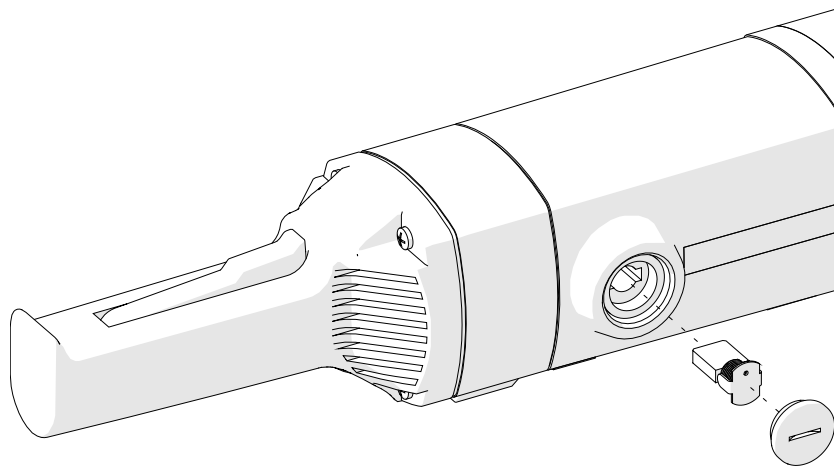
To assemble the head proceed in the opposite sequence as during the disassembly. Make sure that the milling head is aligned with the spindle.



4.15. Replacing the brushes

Every 200 work hours check the condition of the brushes. To do this, unplug the power cord and then remove the cap and the brush. If the brush is shorter than 10 mm (25/64"), replace both brushes with new ones.

Perform assembly in the opposite sequence. Then let the motor operate with no load for 20 minutes.



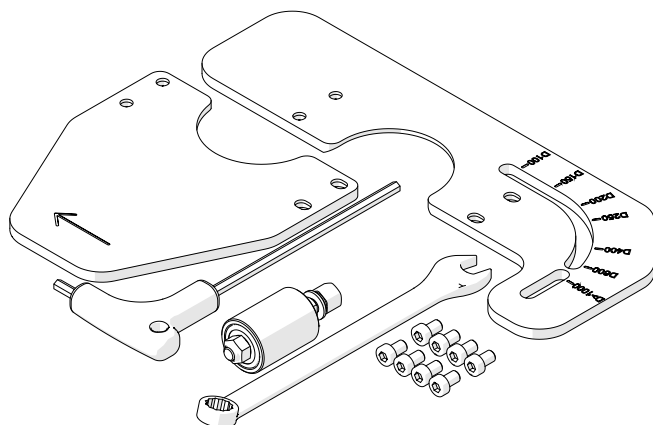
4.16. Cleaning

Clean the beveling machine after work. Position the machine in such way that the head is horizontal and remove chips with use of soft brush.

Clean the machine body with soft, lint-free cloth, without any chemical agents.

5. ACCESSORIES

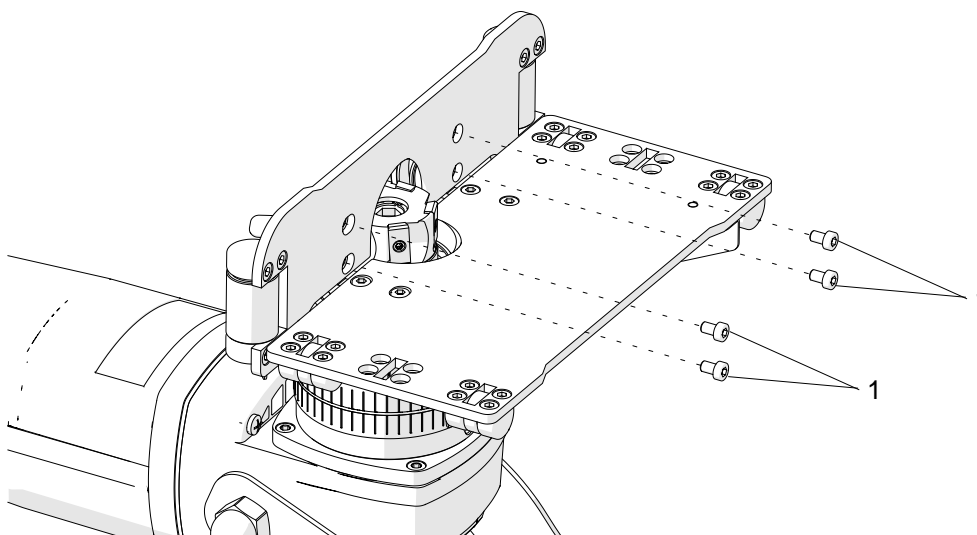
5.1. Pipe beveling set



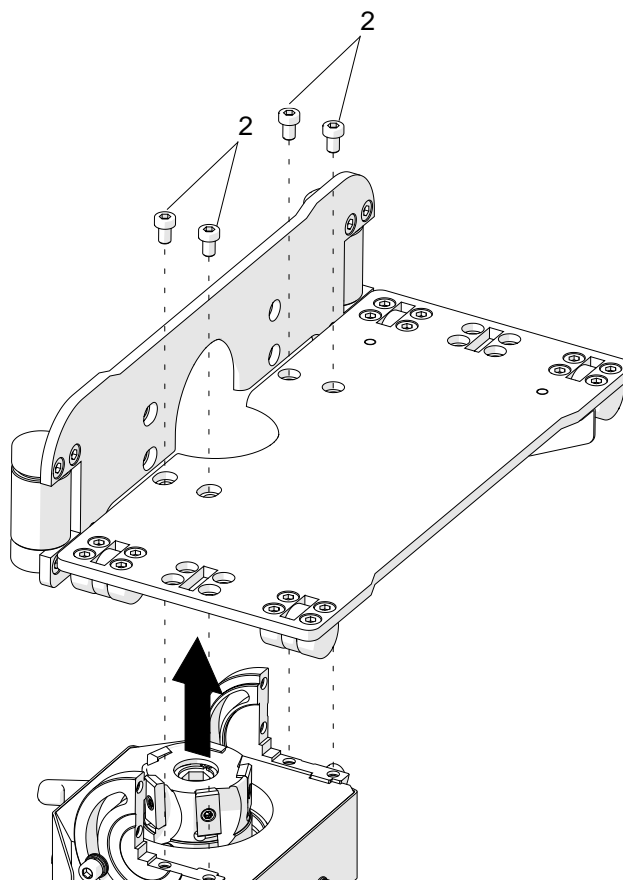
Part number:
BM25PA

5.1.1. Installing

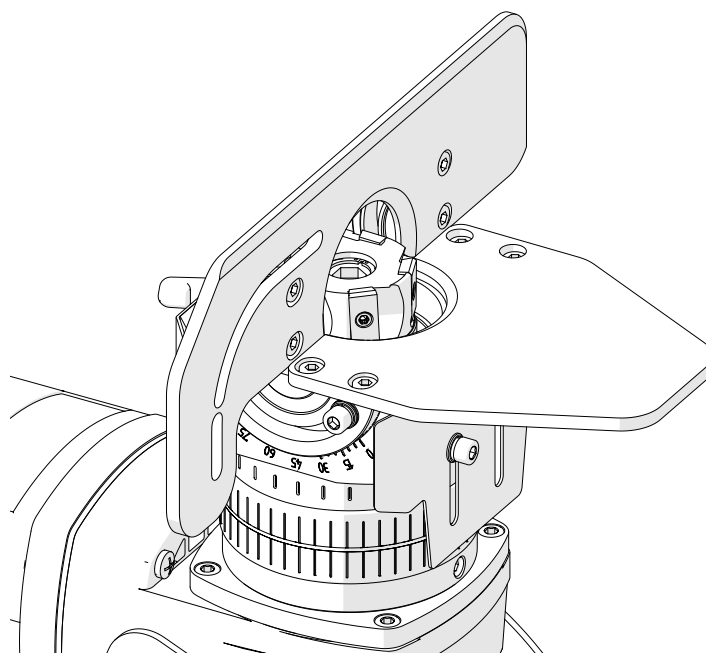
Remove 4 fixing screws of the vertical guide (1).



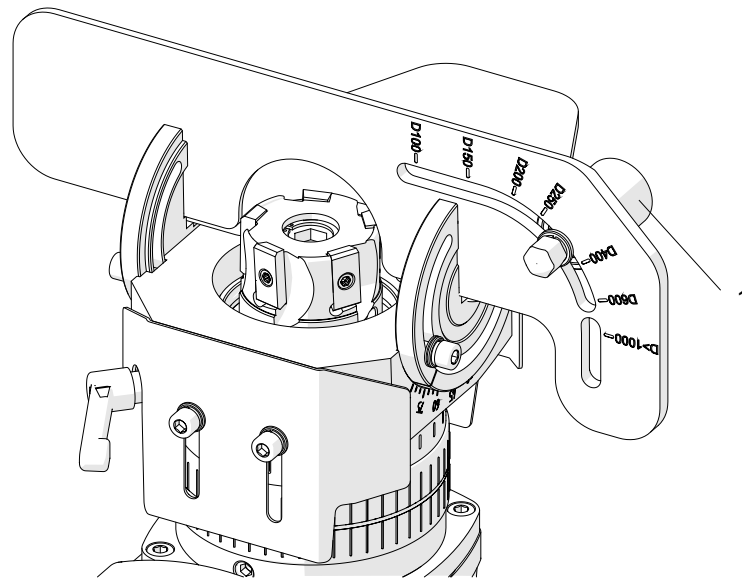
Remove 4 fixing screws of the horizontal guide (2) and remove the guides.



Install the pipe beveling guides as shown below. Use screws removed previously.



Install the pipe diameter adjustment roller (1).



5.1.2. Operating

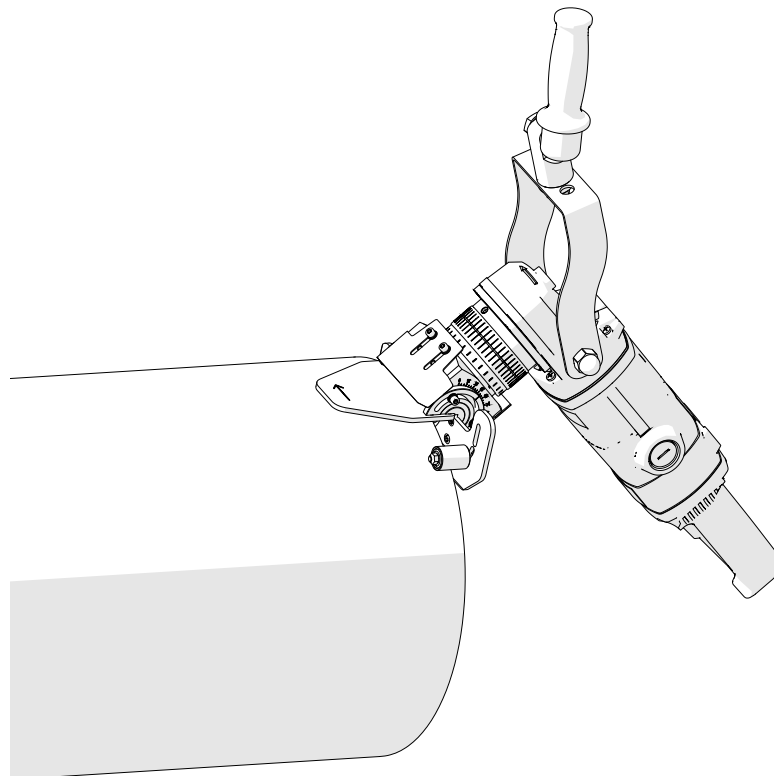
Position the pipe to be machined **horizontally** in a way assuring its stability.

Adjust the bevel angle and depth as described in sections 4.3 and 4.6.

Set the pipe diameter adjustment roller in position corresponding to the pipe external diameter. For diameters above 1000 mm (39 3/8") set the roller in maximum position.

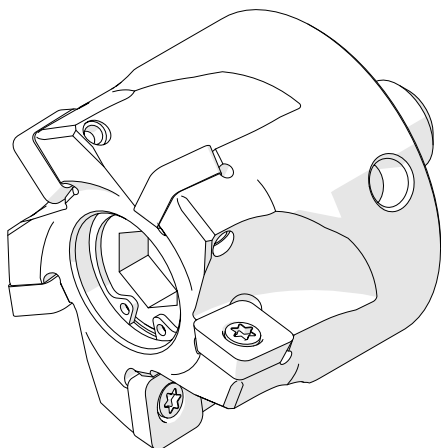
Start the head, press the beveling machine to the pipe and start machining according to direction of the arrow.

After machining of a certain perimeter segment rotate the pipe to work in a comfortable position.



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5.2. Head for stainless steel

Part number:
ZST-0715-23-00-00-0

Part number	Part name
PLY-000849	Cutting insert for stainless steel (required 5, sold 10 per box)
WKR-000592	Screw for cutting inserts
SRB-000546	Screw for head fixing

6. DECLARATION OF CONFORMITY***Declaration of conformity***

***JEI DRILLING & CUTTING SOLUTIONS LTD
Unit 21 Empire Business Park
Enterprise Way, Burnley
BB12 6LT, Lancashire***

We declare with full responsibility that:

BM-25 Beveling Machine

is manufactured in accordance with the following standards:

- EN ISO 12100: 2010,
- EN 62841-1: 2015,
- EN 55014-1: 2017

and satisfies safety regulations of guidelines: 2014/30/EU, 2006/42/EC, 2011/65/EU.

The person authorized to compile the technical file:

David McFadden, Burnley

Burnley 13 May 2022



Managing Director
David McFadden

7. ENVIRONMENTAL PROTECTION



In accordance with the European Directive 2012/19/EU, this device is marked with the symbol of the crossed-out waste bin. This marking means that the equipment must not be disposed of with other household waste after the service life. The user must return the product to a collection point for used electrical and electronic equipment. The collectors of used equipment, including local collection points, shops and municipal units create an appropriate system for returning such equipment. Correct handling of used electrical and electronic equipment helps in avoiding damage to health and the environment, which may result from the presence of dangerous components and incorrect storage and processing of such equipment.

8. WARRANTY CARD**WARRANTY CARD No.....**

..... in the name of Manufacturer warrants the BM-25 beveling 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 tools as well as damage or wear that arise from misuse, accident, tampering or any other causes not related to defects in workmanship or material.

Serial number

Date of sale

Signature and stamp of the seller

0.08 / 19 December 2023***WE RESERVE THE RIGHT TO MAKE CHANGES IN THIS MANUAL WITHOUT NOTICE***

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