

SMG Rapid-Edge 8G Gear Type Plate Beveling Machine



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1. Overview

1.1 Machine Overview

The SMG Rapid-Edge 8G is designed for efficient, high-precision plate preparation. It operates at a working speed of 1.2 to 1.8 metres per minute and is suitable for clamping plate thicknesses between 4 mm and 16 mm.

The machine provides:

- Single-pass bevel width: 12 mm
- Second-pass bevel width: up to 18 mm
- Adjustable bevel angles: 25°, 30°, 35°, 40°, and 45°

This makes the SMG Rapid-Edge 8G ideal for consistent, high-quality edge preparation before welding.

1.2 Application

The SMG Rapid-Edge 8G is widely used across industries where precision beveling is essential. Typical applications include:

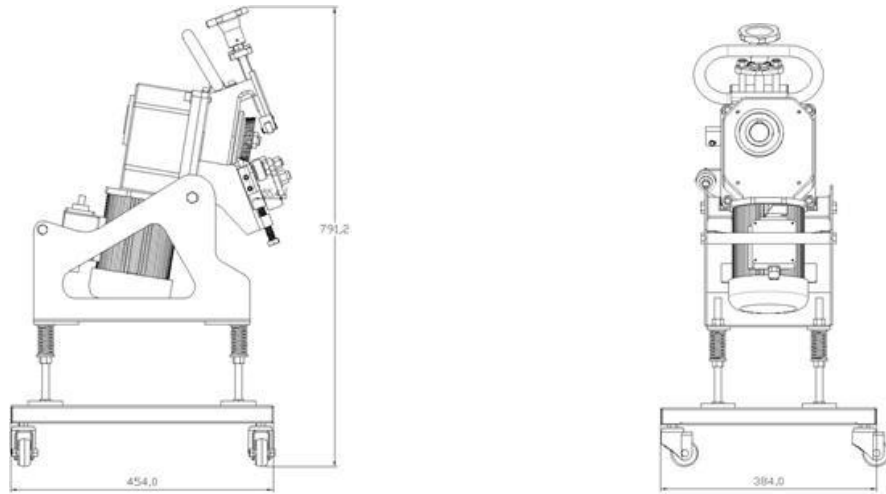
- Aerospace component manufacturing
- Petrochemical and refinery equipment
- Pressure vessel production
- Shipbuilding and marine fabrication
- Metallurgy and heavy-steel processing
- Welding workshops and metal-processing facilities

Its robust design and reliable performance make it suitable for both workshop environments and high-demand fabrication settings.

1.3 Machine Specifications

Power Supply:	AC 415V 50HZ
Motor speed:	1450r/min
Single bevel width:	6mm
Process plate thickness	4 - 16mm
Process pipe-line	> Φ260mm
Process tube	> Φ110mm
Bevel feed speed:	1.2 - 1.8m/min
Bevel Angle	25°, 30°, 35°, 40°, 45 °
Min. clamping plate width	≥55mm
Net Weight	45 kgs (not including Stand)

1.4 Machine Diagram



Working safety is the most basic and important requirement for any worker, so please take care for safety, for the safety of the factory, please pay attention for each tips

2. Safety and Warning

2.1 Safety instructions

Please read this operation manual carefully before installing, using, or servicing the machine.

Electrical components and rotating parts can pose a significant risk of serious personal injury or property damage if handled incorrectly.

This machine operates on a 415 V power supply. Before carrying out any installation, wiring, start-up, operation, or adjustments, refer to this manual to correctly identify all components of the beveling machine.

All electrical wiring, installation, and maintenance work must be performed by qualified personnel who meet the required regulatory standards. This is essential to ensure personal safety and to prevent equipment damage or loss of property.

2.2 Safety Precautions

1. Use the machine only for its intended purpose.
Operating the machine outside its designed application may cause equipment damage or create safety hazards.
2. Electrical work must be carried out by qualified personnel.
Anyone performing wiring or electrical connections must hold the appropriate electrical certification.
The power supply must be properly earthed to ensure safe operation.
3. Only process materials specified in this manual.
Do not use the machine on materials outside the stated capacity or specification, as this may damage the machine, reduce tool life, or cause unsafe operation.

4. Do not leave the machine unattended while it is running.
The operator must remain at the machine during all operating cycles.
5. Disconnect the power when the machine is stopped.
Always switch off and isolate the power supply before leaving the machine.
6. Power must be disconnected before replacing tools, cleaning, or performing maintenance.
Use appropriate tools and wear protective gloves when handling cutters or removing chips.
Metal chips may be sharp or hot—cleaning must never be done while the machine is operating.
7. Stand only at the rear of the machine during operation.
Do not stand on either side. This prevents the risk of clothing, gloves, or body parts becoming entangled in the rotating tool, which can cause severe injuries.

	Warning: Hot Surfaces After processing steel plates, both the material and the cutting tool may be extremely hot. Do not touch these surfaces to avoid burns.
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2.3 Safety Sign Analysis

	Mind Your Hands This label is typically placed on the feed side of the machine, where there is a risk of hand entrapment. Always keep your hands at least 1 cm away from any rotating parts. Never attempt to guide material with your hands near moving components.
	Handle With Care This warning usually appears at the feeding end of the machine. It indicates the presence of sharp edges or protruding metal. Processed plates and metal pins may cause cuts or punctures. Avoid touching these areas directly—always use tools or wear protective gloves when handling material.

3. Installation

3.1 Electrical Installation

1. All electrical connections and protective devices must comply with relevant local regulations and safety standards.
2. Connect the electrical switch box to the main power supply using a suitable cable.
The cable cross-section must be no smaller than 2.5 mm² (3-core) to ensure safe and reliable operation.
3. After wiring, check the rotation direction of the cutting tool.
If the rotation is incorrect, adjust it using the reversing switch located on the left side of the machine.

Rotation Direction Control

	• “L” – Cutter rotates to the left • “R” – Cutter rotates to the right • “O” – STOP
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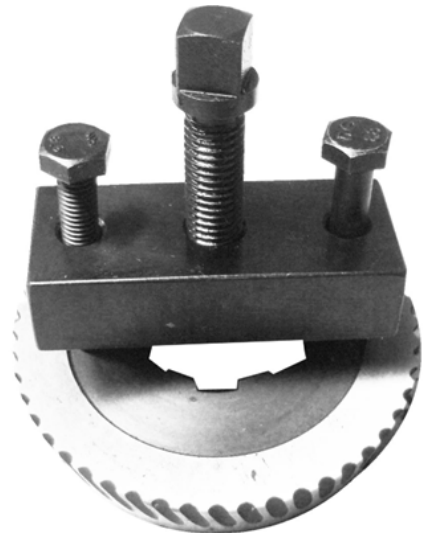
Ensure the rotation direction is correct before starting any cutting operation.

3.2 Cutter Installation & Disassembly

	• When installing or removing the cutting tool, use extreme caution. • Cutters may have sharp edges and may also be hot after operation, which can cause serious hand injuries.
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Procedure

1. Switch off and isolate the power supply.
2. Ensure the machine is fully powered down before starting any work.
3. Raise the upper pressing wheel to its highest position.
4. Loosen the lower support adjustment plate, remove the fixing nut, and take off the lower support plate.
5. Use the locking nut wrench/tool to secure and loosen the cutter retaining nut.
6. Remove the cutter lamina in sequence and pull out the rotary cutter assembly.
7. Install the new cutter, then reassemble all components in the reverse order.
8. All nuts must be fully tightened to ensure safe operation.



Important Notes

- Please refer to the cutter head diagram provided in the manual for correct cutter lamina placement.
- Removing the cutter should be a smooth process. If removal feels difficult or forced, it may be caused by:
 - Incorrect bevel angle
 - Misadjusted pressure wheel
 - Blocking from the support wheel
 - Resolve the obstruction first.
- Never use excessive force to remove the cutter, as this can damage machine components or cause personal injury.

4. Preparation

Before beginning any beveling work, ensure that all settings match the requirements of the material being processed.

Operating the machine outside its rated capacity may lead to gear wear, cutter tooth damage, spindle fracture, or other serious equipment failures.

Materials that have been oxygen-cut at high temperatures may have increased surface hardness.

When working with these materials, carefully consider this factor and adjust the beveling parameters accordingly to avoid excessive tool wear or machine overload.

4.1 Plate Placement & Travel Route

1. Lightweight or easy-to-move plates may be placed directly onto the beveling machine.
2. For heavy plates, follow the steps below:

Step 1:

Prepare two or more auxiliary stands.

Adjust their height according to the actual plate thickness and working conditions.

Step 2:

Position the plate securely on the auxiliary stands and ensure it is properly stabilised.

Step 3:

Begin the beveling operation once the plate is safely supported.

Note:

When using a beveling machine equipped with a walking frame, ensure the support wheel height matches the auxiliary stand height.

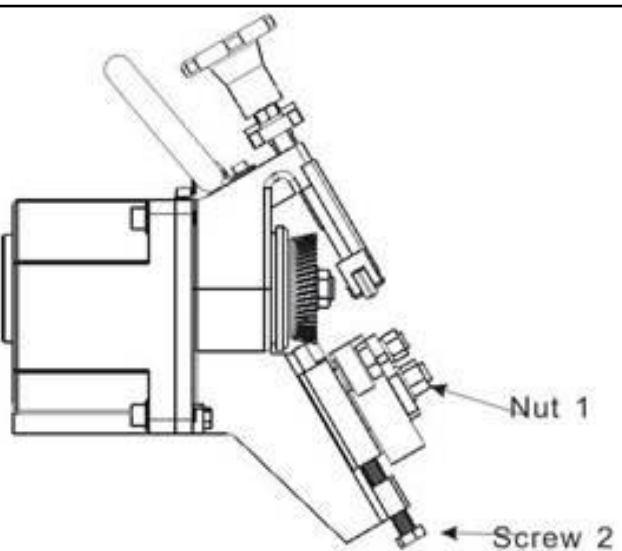
Refer to Section 6 for the basic operation diagrams and workflow guidance.

4.2 Plate Cleaning

1. Ensure the beveling surface is free from welding slag before processing.
2. Welding slag, burrs, and debris can damage the cutting tools and significantly reduce the service life of the machine.

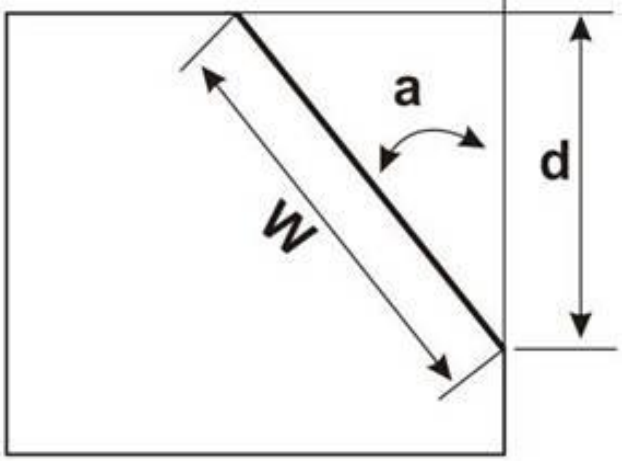
Always clean the plate thoroughly before starting any beveling work.

4.3 Adjusting Plate Thickness & Bevel Width



Thickness Adjustment Procedure

1. Loosen "Nut 1".
2. Rotate Adjustment Handle "2" to set the machine to the required plate thickness.
3. Re-tighten "Nut 1" to lock the setting in place.



Parameter Definitions

- a – Bevel Angle
The angle at which the edge of the plate is cut.
- d – Bevel Depth
The vertical depth of material removed to form the bevel.
- H – Plate Thickness
The total thickness of the plate being processed.

SMG Rapid-Edge 8G Type Single Run Processing Table

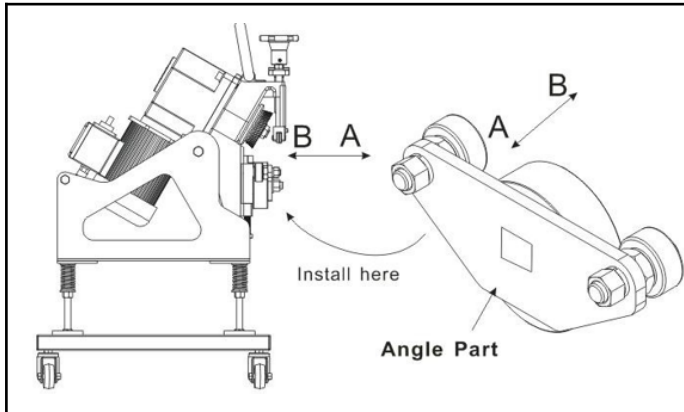
Tensile strength	Carbon steel Kg/mm²						Tensile strength	Stainless steel Kg/mm²					
	40		50		60			50		60		70	
a	W	D	W	D	W	D	a	W	D	W	D	W	D
25°	6	5.5	5	4.5	4	3.5	25°	4	3.5	3	2.5	2.5	2
30°	6	5.2	5	4.2	4	3.2	30°	4	3.2	3	2.2	2.5	2
35°	6	4.8	5	4	4	3	35°	4	3	3	2	2.5	1.8
40°	6	4.5	5	3.8	4	2.8	40°	4	2.8	3	1.8	2.5	1.8
45°	6	4	5	3.5	4	2.5	45°	4	2.5	3	1.5	2.5	1.5

To determine the tensile strength of the workpiece material, select the material's bevel depth (d) based on single-bevel parameters or by referring to the specifications on the equipment nameplate.

Note: The values provided are for reference only.

Exact settings must be measured and adjusted according to the actual material and machining conditions.

4.4 Bevel Angle Adjustment

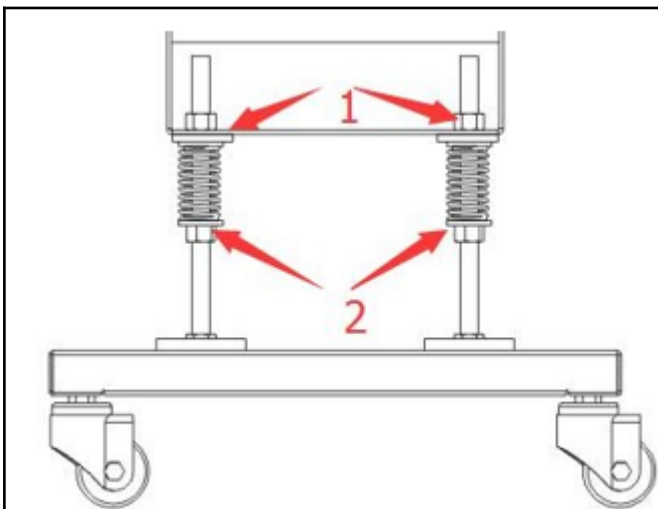


The machine is equipped with five selectable bevel angles: 25°, 30°, 35°, 40°, and 45°.

To adjust the bevel angle:

1. Install the adjustment wheel.
2. Lower Nut 1.
3. Set the desired bevel angle.
4. Re-tighten Nut 1 to secure the setting.

4.5 Height Adjustment of the Traveling Trolley

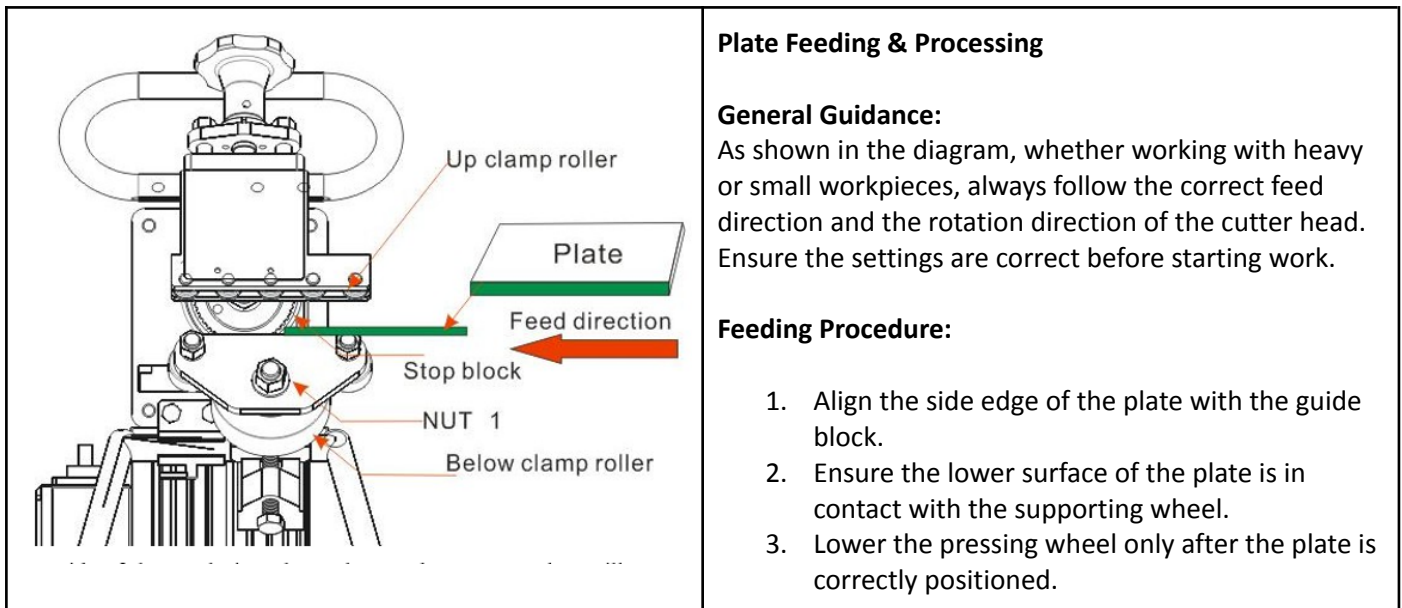


1. Loosen "Nut 1".
2. Rotate "Nut 2" to make the required adjustment.
3. Tighten "Nut 1" to secure the setting.

5. Basic Information

- Continuous Operation: The machine should not be operated continuously for more than 4 hours to prevent overheating and excessive wear.
- Gearbox Temperature: During operation, the temperature of the reducing gearbox will rise. This causes the lubricating grease to become more fluid, which improves heat dissipation and helps the transmission system reach thermal equilibrium.
- Overload Protection: If the machine experiences overload, the current will increase. The thermal protection element inside the electrical switch box will automatically cut the power to prevent damage.
 - After the thermal element has cooled sufficiently, the machine can be restarted.

- If the element has not cooled properly, the machine may run a short distance and then shut down automatically again.



5.1 Small Plate Processing

1. For small bevel plates, ensure the machine is stable and the plate is securely positioned.
2. Gently feed the plate from the right side, pushing it into the undercut position.
3. The plate will automatically advance through the machine to complete the beveling operation.

5.2 Processing Large Plates

- **Plate Setup:**
Place the large plate on auxiliary stands and secure it properly. Adjust the machine according to the plate thickness, bevel depth, and bevel angle.
- **Feeding the Plate:**
Push the machine gently from the right side of the plate into the undercut position. The machine will automatically move and complete the beveling operation.
- **Special Considerations:**
 - For curved or round plates, avoid pressing the plate too tightly, as this may interfere with the automatic movement.
 - If the plate becomes stuck during operation:
 - Stop the spindle.
 - Use the rotation reversing knob to disengage the cutter from the plate.
- **Cutting Parameters:**
 - For the first pass, use a moderate cutting volume within the equipment's recommended parameters.
 - In the second pass, bevel width can be increased slightly (up to 3 mm), with a maximum width of 18 mm.
- **Maintenance During Operation:**
 - Regularly remove metal chips from between the block and the support wheel.
 - Ensure the support wheel rotates freely (clean only when the machine is stopped).

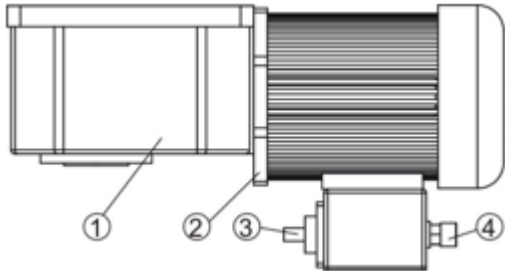
- After processing large plates, clean the machine travel path to remove debris.

5.3 Auxiliary Function – Pipe Beveling

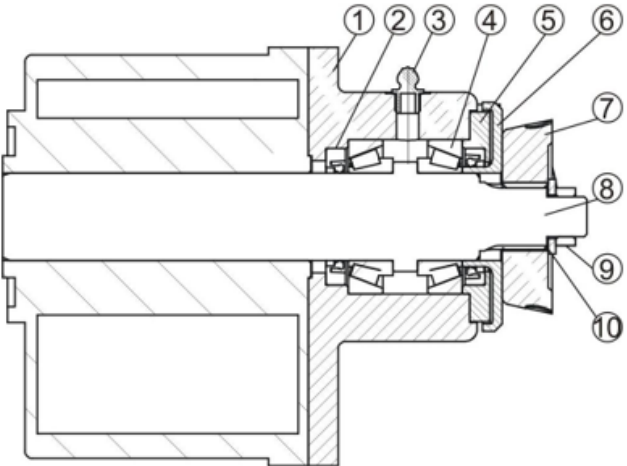
- This machine can bevel pipe edges at angles between 25° and 45°.
- Pipe requirements:
 - Outer diameter: ≤ 100 mm
 - Inner diameter: ≥ 100 mm
- Important: Remove the auxiliary support wheel before operating on pipes to ensure proper alignment and prevent damage.

6. Drawing

Assembly Body 1

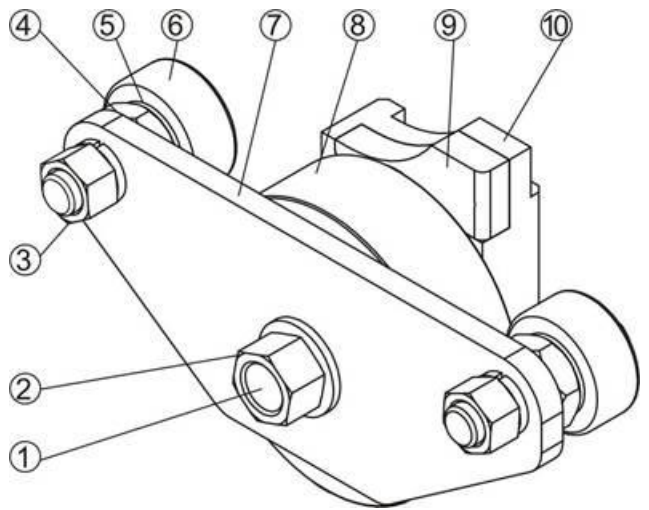
No.	Name	Order No.	Qty	Drawing
1	Gear box	6D01-001	1	
2	Motor	6D01-002	1	
3	Witch	6D01-003	1	
4	Plug	6D01-004	1	

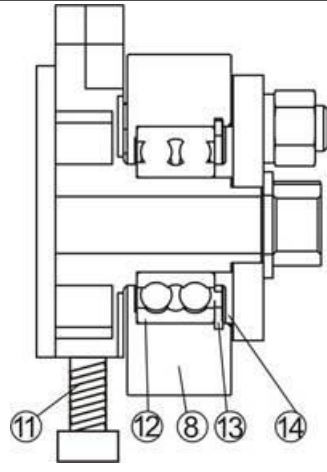
Assembly Body 2

No.	Name	Order No.	Qty	Drawing
1	Casting	6D02-001	1	
2	Seal ring	6D02-002	1	
3	Oil hole	6D02-003	1	
4	Bearing	6D02-004	1	
5	Seal ring	6D02-005	1	
6	Spacer	6D02-006	1	
7	Cutter	6D02-007	1	

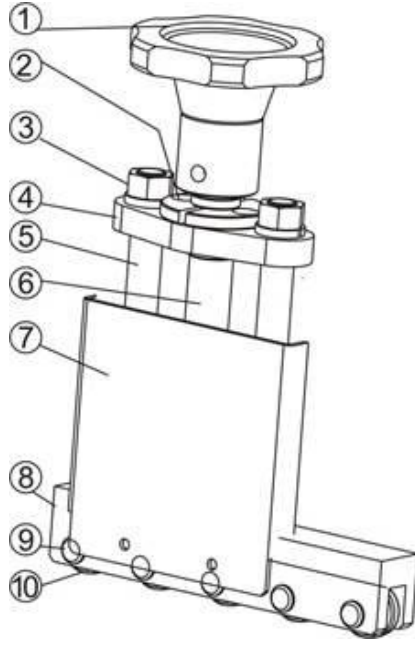
8	Spindle	6D02-008	1	
9	Nut	6D02-009	1	
10	Shim	6D02-010	1	

Assembly Body 3

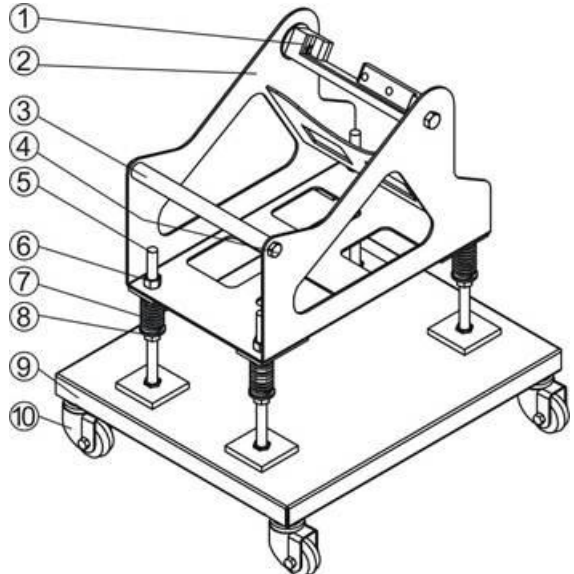
No.	Name	Order No.	Qty	Drawing
1	Screw	6D03-001	1	 The drawing is an exploded view of a mechanical assembly. It shows a main body with various components being assembled onto it. The components are numbered 1 through 14. 1 is a screw at the bottom left. 2 is a nut on a vertical shaft. 3 is a nut on a horizontal shaft. 4 is a screw on a horizontal shaft. 5 is a nut on a horizontal shaft. 6 is a wheel on a horizontal shaft. 7 is a link plate. 8 is a big wheel. 9 is a limit part. 10 is a supporting plate. 11 is a screw. 12 is a bearing. 13 is a hole ring. 14 is a shim.
2	Nut	6D03-002	1	
3	Nut	6D03-003	2	
4	Supporting axle	6D03-004	2	
5	Copper sleeve	6D03-005	2	
6	Wheel	6D03-006	2	
7	Link plate	6D03-007	1	
8	Big wheel	6D03-008	1	
9	Limit part	6D03-009	1	
10	Supporting plate	6D03-010	1	
11	Screw	6D03-011	1	
12	Bearing	6D03-012	1	
13	Hole ring	6D03-013	1	
14	Shim	6D03-014	1	

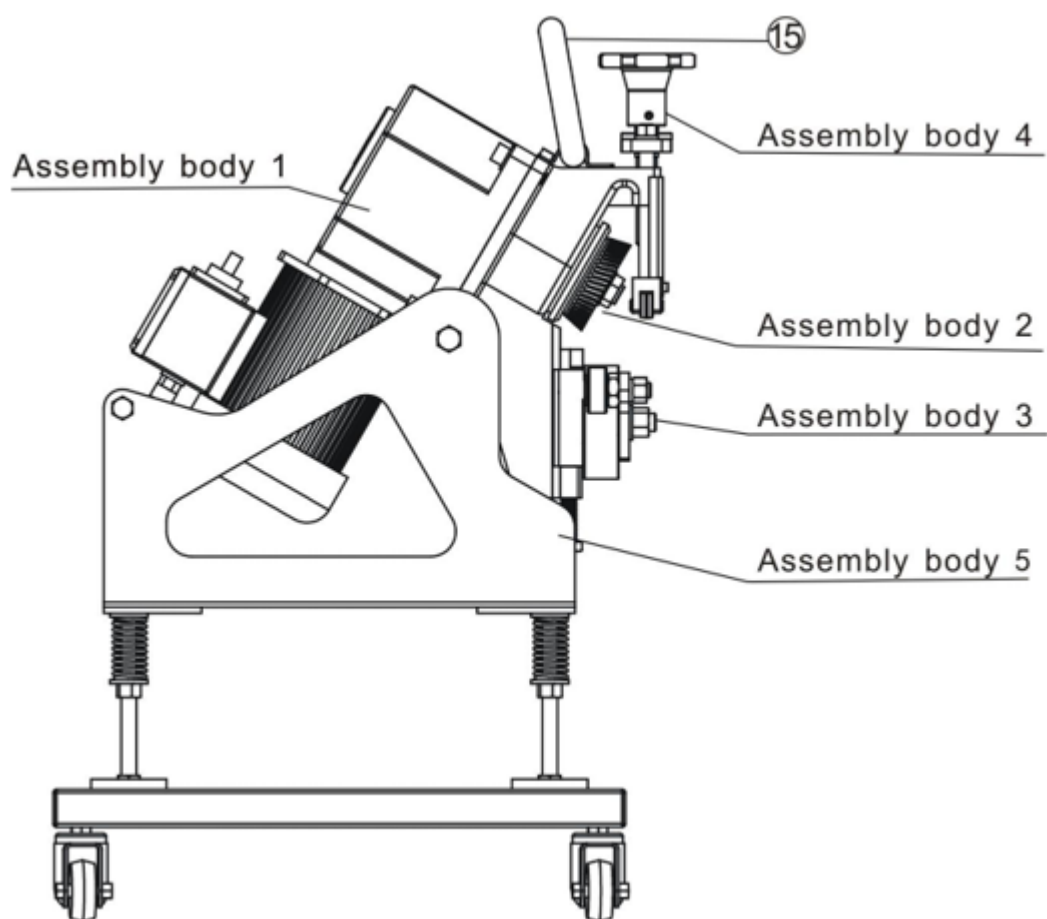
15	Handle	6D03-015	1	
No.15 in Total Assembling				

Assembly Body 4

No.	Name	Order No.	Qty	Drawing
1	handwheel	6D04-001	1	
2	Cu part	6D04-002	1	
3	Nut	6D04-003	2	
4	Plate	6D04-004	1	
5	Rod	6D04-005	2	
6	Screw rod	6D04-006	1	
7	Nameplate	6D04-007	1	
8	Ling plate	6D04-008	1	
9	Cylindrical pin	6D04-009	5	
10	Pressure wheel	6D04-010	5	

Assembly Body 5

No.	Name	Order No.	Qty	Drawing
1	Link plate	6D05-001	1	
2	Shift part	6D05-002	1	
3	Rod	6D05-003	1	
4	Screw rod	6D05-004	4	
5	Screw	6D05-005	4	
6	Nut	6D05-006	8	
7	Spring	6D05-007	4	
8	Spacer	6D05-008	4	
9	Chassis	6D05-009	1	
10	Walking wheel	6D05-010	4	



7. Lubrication

- **The gearbox is maintenance-free and should not be disassembled.**
No additional lubrication is required under normal operating conditions.

8. Common Troubleshooting & Maintenance

No.	Fault	Maintenance & Repair
1	Machine is powered but does not respond	Check that the power supply is connected and electricity is present in the lines.
2	Power is on, but machine still does not respond	Verify that the emergency stop button is not engaged and that the control box breaker has not tripped.
3	Abnormal noise from feed gears	Check the gear lubrication . Fill with gear oil if needed. Normally, gears will not break easily if properly lubricated.
4	Pressing wheel cannot be compressed	Inspect for metal pins or debris attached to the pressing wheel or steel plate. Remove any obstruction.
5	Steel plate is ejected during operation	Ensure the feed direction matches the machine specifications and plate placement rules.
6	Cutter blade breaks while processing steel plate	Check whether the tool was in contact with the workpiece without rotation . Adjust accordingly.
7	Blade breaks after milling begins	Reduce the engagement depth or cutting load.
8	Electrical control failure or other issues	Contact the manufacturer or authorised service centre immediately for assistance.

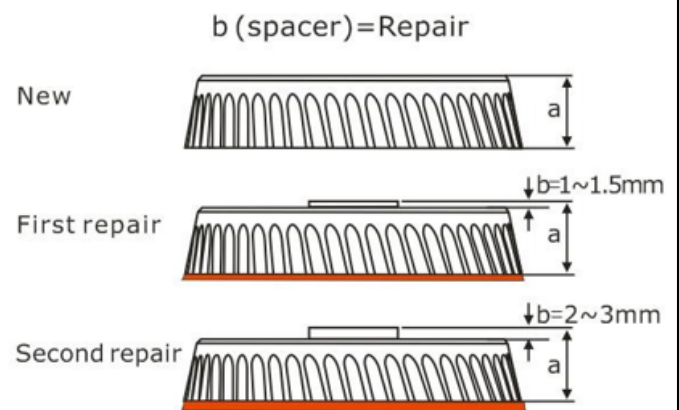
9. Packing List

No.	Item Name	Type / Model	Quantity	Remarks
1	Beveling Machine	SMG 8G	1 set	Machine fitted with 30° angle wheel
2	Tool	6 types	3 pcs	One tool pre-installed on the machine

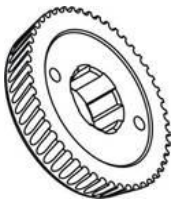
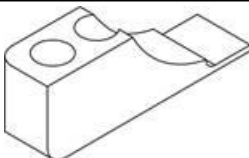
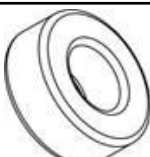
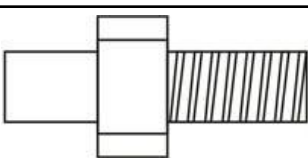
3	Cutter Lamina	6 types	1 set	Special tools for the cutter
4	Wrench	21 mm	1 pc	–
5	Wrench	24 mm	1 pc	–
6	Wrench	12–13 mm	1 pc	–
7	Operation Manual	SMG 8G	1 pc	–
8	Power Plug	–	1 pc	–
9	Certificate of Qualification	–	1 pc	–

10. Cutter Repair

1. Place the large end face of the rotary cutter directly on the working surface of a standard surface grinder. Grind the cutter evenly if it has worn thin.
2. Grind 1–1.5 mm at a time. During reinstallation, use the appropriate spacers to ensure that the new and existing cutters maintain the same size and thickness.
(Refer to the figure below for spacer placement.)
3. The heat-treated layer of the cutter is typically 2–3 mm thick. In most cases, grinding can be performed twice before the tool reaches the limit of its serviceable thickness.



11. Vulnerable Parts List

No.	Order No.	Name	Drawing	Remarks
1	6D02-005	Cutter		Assembly body 2
2	6D04-021	Limit Part		Assembly body 3
3	6D04-017	copper sleeve		Assembly body 3
4	6D04-019	Bearing		Assembly body 3
5	6D04-003	Supporting axle		Assembly body 3

Note: Replace parts as required based on actual usage. Using the correct replacement components will help maintain performance and improve equipment efficiency.