



SMG Rapid-Edge 28DG Double Sided Gear Type Plate Beveling Machine



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Disclaimer of Liability

- ❖ Please ensure to read this manual before operating the machine.
- ❖ We recommend using parts from our factory; other parts may not be compatible.
- ❖ Avoid working continuously for more than 4 hours at full capacity. Refrain from operating the machine at its maximum performance level.

1. Summary

1.1 Introduction

SMG Rapid-Edge 28DG Double Sided Gear Type has a speed range of 1.2 to 1.6m/min, can handle clamping plate thicknesses from 9 to 40mm, and materials with a tensile strength of 40 kg/mm. It processes a single feed with a slope width of 16mm and can process up to 28mm four times. The bevel angle ranges from 25° to 45°..

1.2 Range of Application

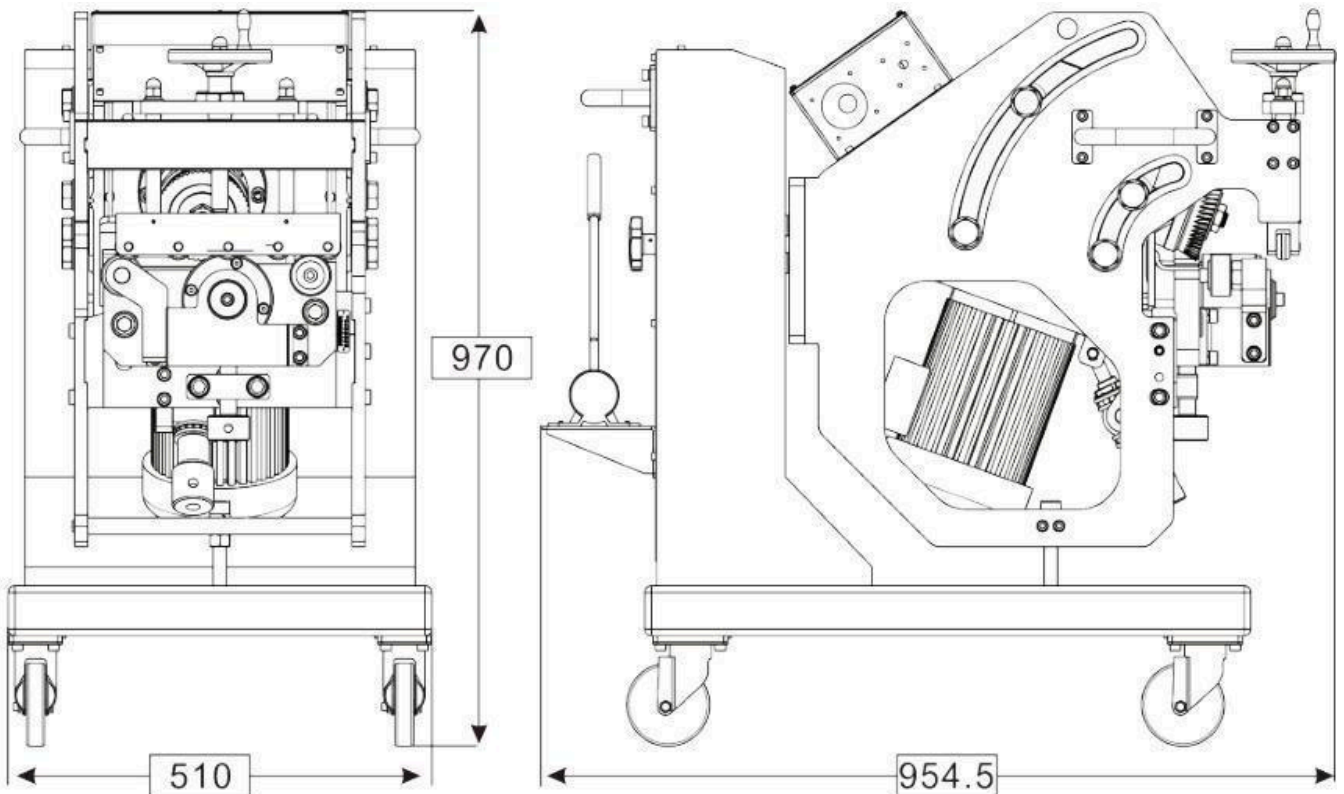
Products used in aerospace, petrochemical industry, pressure vessels, shipbuilding, metallurgy, and welding manufacturing for low carbon steel, stainless steel, aluminum alloy, and other materials for bevel assignments.

1.3 Machine Parameters

1) Machine Parameters

Motor voltage: 415V 50Hz	Motor power: 1500W
Motor speed: 1450r/min	Bevel speed: 1.5~2.6m/min
Single travel slope width: 16mm	Plate bevel angle : 25°~ 45 ° (Arbitrary regulation)
The thickness of the steel plate bevel: 9~40mm	Minimum clamping plate width: ≥115mm
Diameter of tube: >Φ150mm	Net weight of machine: 315Kg

1.4 Machine Diagram



2. Security and Warning

2.1 Safety Instructions

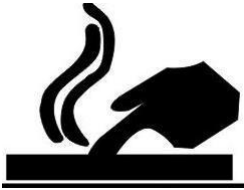


Prior to installing, using, or maintaining the product, make sure to read the manual. It outlines potential risks to personal safety and property from electrical and moving parts.

The machine's power supply is rated at 380 V. Before installation, wiring, starting, running, or making any adjustments, please refer to this manual as a guide to identify the components of the beveling machine. Electrical wiring installation and maintenance personnel should possess the qualifications as prescribed by laws and regulations to safeguard life and property from potential damage or loss.

2.2 Safety Precautions

- 1) The machine should only be used for its intended purpose.
- 2) The operator must hold an electrical operation qualification certificate, ensure good grounding protection for power supply connection.
- 3) Follow the materials processing guidelines in the operation handbook to prevent damage.
- 4) The operator must remain on-site during machine operation.
- 5) Power supply should be disconnected when the machine is stopped.
- 6) When replacing tools, performing maintenance, or cleaning, always disconnect the power. Use protective gloves and a special tool to avoid injury from heat or sharp chips.
- 7) Do not clean the machine during operation.
- 8) While the machine is running, the operator should stand at the back to prevent injuries from tool rotation.



Caution: Hot Surface

After working with the steel plate, the iron and blade are at a high temperature. Do not touch.

2.3 Security Identification Analysis



This label is typically found on the feed side to warn against hand clamping and ensure a safe distance of 1 cm from the rotating part.



Handle with care

This identification often appears at the feeding end, indicating the presence of a sharp risk. Ensure proper processing with a bevel, as an iron pin may cause a prick if not handled carefully.

4 Install



CE Standard

The external ground wire diameter size must meet the specified requirement.

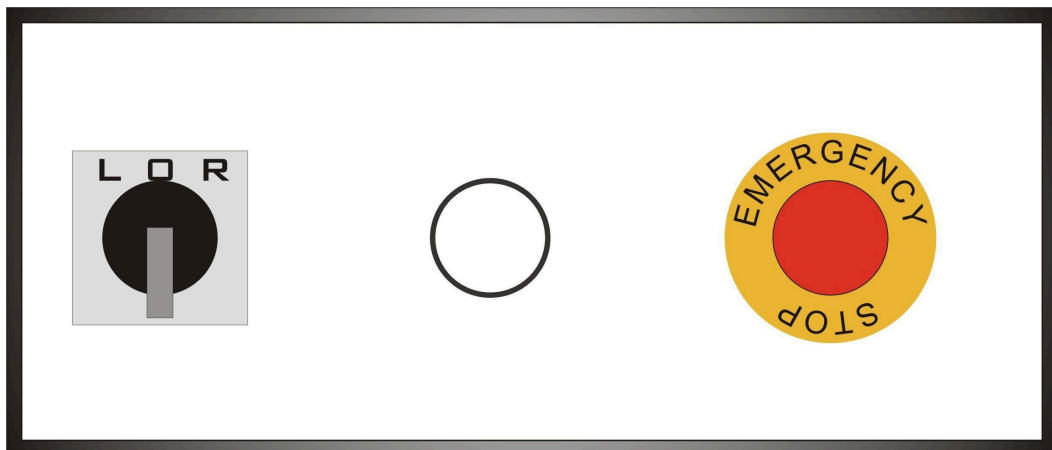
(Copper wire)

Phase wire diameter S (mm ²)	Ground wire diameter Sd (mm ²)
$S \leq 16$	S
$16 < S \leq 35$	16
$S > 35$	S/2

4.1 Electrical Installation

- 1) Electrical connections and protection must comply with local regulations.
- 2) Ensure the main power cable for the electrical switch box and machine workplace meets specifications of 2.5mm² or more.
- 3) Verify the tool's rotation direction; if incorrect, adjust using the reversing knob on the left side of the machine.

As displayed in the above image, the L beveling machine is equipped with a control unit featuring positive inversion, start, and emergency stop buttons. This section of the line is interconnected, and the connection remains unchanged.

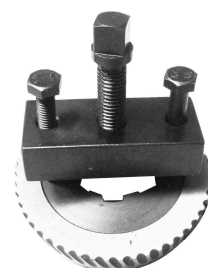


4.2 Cutting Tool Installation and Disassembly



When removing a sharp cutting tool, be cautious of potential opponents like sharp edges and hot cutting chips. Before replacing, use a gun to blow away the chips, then wear protective gloves.

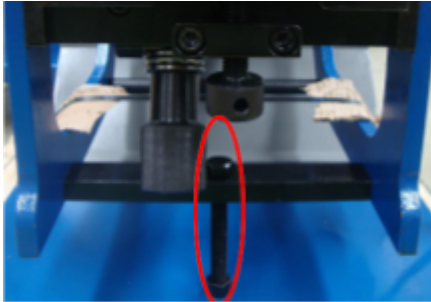
- Switch off the machine's power supply.
- Raise the pressing wheel to its highest position.
- Loosen the lower support adjusting plate, secure the nut, and take out the lower support plate.
- Use the lock nut screw tool.
- Take out the random knife Lamar, then pull out the roll cutter.
- When loading the new tool, remove and loosen the parts one by



one (ensure all nuts are tightened).

Note: Refer to the sketch map of the Lamar installed on a cutter head. The cutter can be taken out gradually. If taking out a cutting tool feels like hard work, it might be due to issues like the bevel angle, pressure wheel, or supporting wheel obstructing the removal. Exclude rows when removing and avoid using force to disassemble the cutter.

4.3 Removing and fixing device



Left the red circle on certain parts to ensure reliable machine transportation. On the R series of beveling machines, fixed plastic components are installed. Please note the red circle on the components after removing the bevel assignment when starting work.

5 Preparation

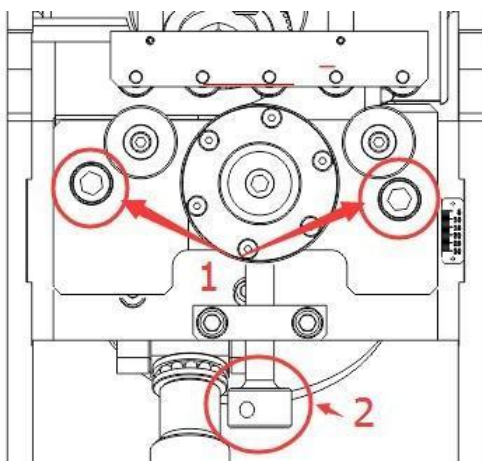


5.1 Feed Direction

According to the plate material specifications, exceeding the bevel depth or machine performance capacity can lead to gear wear, cutter teeth damage, spindle fractures, and other equipment failures. When processing high-temperature oxygen cutting, it is crucial to thoroughly assess the factors when setting groove process parameters.

- 1) Lighter steel plates can be placed directly in the plate bevel machine for bevel assignment.
- 2) For heavier plates:
 - Step 1: Produce two or more auxiliary supports at a height based on the actual situation.
 - Step 2: Securely place the plate on the supports.
 - Step 3: Commence with the bevel assignment.

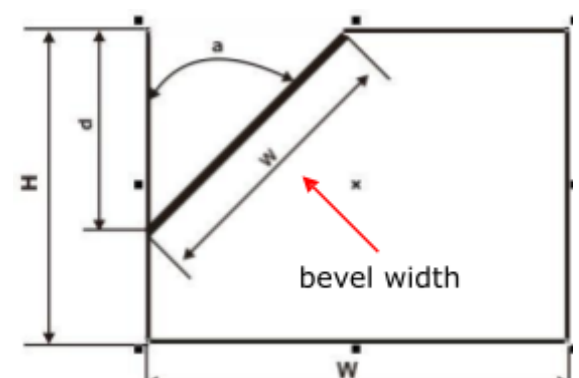
5.2 Adjust to Thickness



1. Loosen bolt by 1 inch.
2. Rotate to adjust "2" to the desired plate thickness.
3. Secure with bolt 1.

5.3 Steel Plate Cleaning

- 1) There should be no burr on the steel surface bevel.
- 2) Overlapping will impact the burr, cutting tools, and the machine's lifespan.



a: Bevel Angle

d: Bevel Depth

H: Steel Plate Thickness

SMG 28DG Automatic Plate Bevel Machine with a Comprehensive Bevel Inquiry Table.

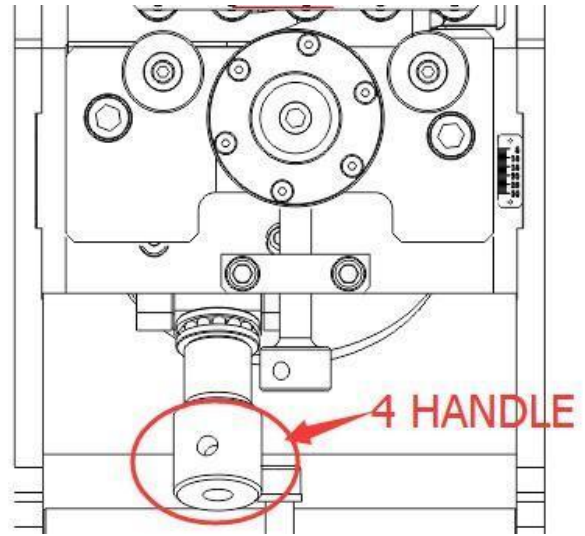
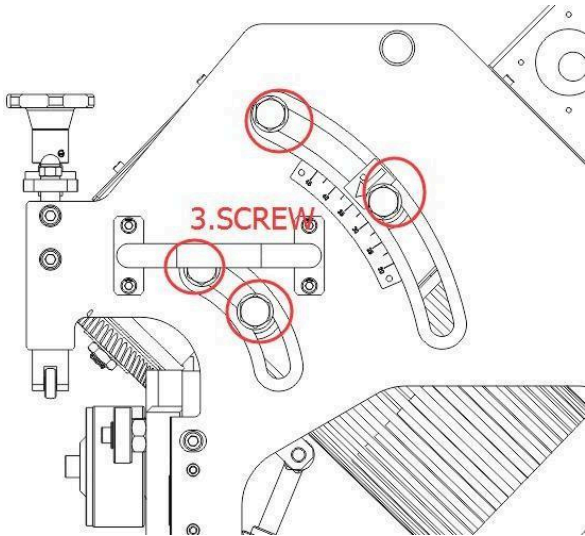
Tensile Strength	Carbon Steel kg/mm ²						Tensile Strength	Stainless Steel kg/mm ²					
	40		50		60			50		60		70	
a	W	D	W	D	W	D	a	W	D	W	D	W	D
25°	16	14.5	14	12.5	12	11	25°	8	7	6	5.5	5	4.5
30°	16	14	14	12	12	10	30°	8	6.5	6	5.2	5	4.2
35°	16	13	14	11.5	12	9.5	35°	8	6	6	5	5	4
40°	16	12	14	11	12	9	40°	8	5.5	6	4.5	5	3.8
45°	16	11	14	10	12	8.5	45°	8	5	6	4	5	3.5

To find out the tensile strength of the workpiece material, refer to the chosen bevel parameters for the material's bevel height (d) or the equipment nameplate.

Note: The parameter above serves as a reference only. To determine the precise parameters for the operator, conduct trial cuts on the board to obtain actual measurements and make adjustments accordingly.

5.4 Bevel Angle Adjustment

- 1) Loosen the 4 bolts marked "3" on each side of the device.
- 2) Turn the handle identified as "4" to adjust it to the angle you want.
- 3) There are 4 bolts on each side of the locking device marked as "3".
- 4) Ensure all 8 bolts are securely locked before starting work.



5.5 Height Adjustment of Traveling Trolley

Auxiliary scaffolding can be challenging but is highly suitable. In the beveling machines, we have included a hydraulic lifting device to adjust the height of the equipment cover.



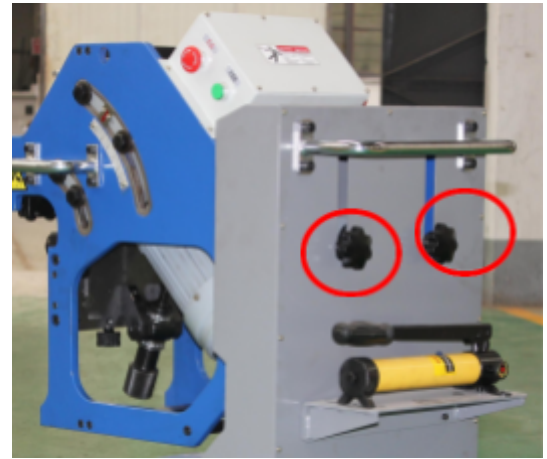
Machine can be adjusted using a manual hydraulic pump to control the equipment level.

- 1 rise: tighten the locking bolt, then press the handle repeatedly.
- 2 drop: release the lock bolt slowly (avoid releasing too quickly)

5.6 Machine Rotation

Note: Before turning, ask someone to hold the nose to prevent a sudden head movement.

1. Turn off the power supply and unplug the power cord.
2. Then, rotate the "bolt" on the back of the stander 90 degrees as shown in the red circle. Slowly turn the machine frame 180 degrees and reconnect the power plug.
3. Next, adjust the hydraulic lifting device to position the roller and plate on a sloped surface. Test the bevel plate after completing these steps.

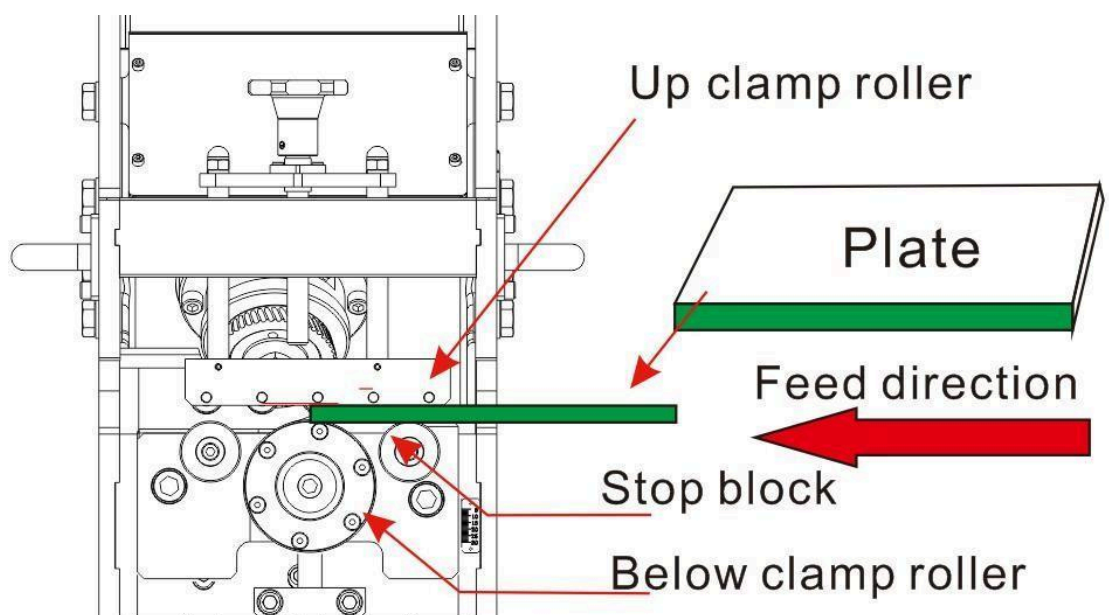


6 Basic Operation



- ❖ Equipment should not be used continuously for more than 4 hours.
- ❖ After operating for a while, cooling down the gearbox significantly enhances its performance. Boiling of the lubricating grease helps in dissipating heat from the machine, bringing the transmission mechanism into a state of thermal equilibrium.
- ❖ During machine operation, an overload may trigger the thermal sensitive element in the electric switch box to activate. This leads to an automatic power off. The power is then needed to cool the thermosensitive element before resetting to resume. If insufficient cooling occurs, the machine will briefly restart before automatically shutting down again.

As shown on the right, both heavy and small workpieces must follow the feed and cutter head direction before starting work. When feeding, keep the side edge close to the block, ensure contact with the lower surface and supporting wheel, then lower the pressing wheel upon entry.



6.1 Small Plate Processing

Small size of bevel plate, machine stable placement, hand-held plate from the right side of the gently into the push to undercut state, plate will automatically advance to complete the bevel

6.2 Processing Large Plates

- ◆ In the bevel gauge plate, place the sheet on top of the stent and fix it based on the plate's thickness. Adjust the bevel depth and angle on the machine, then gently push the plate to create an undercut. The machine will automatically move to complete the beveling process.
- ◆ -Ensure the round plate has slight contact without being pressed too tightly to avoid affecting the machine's movement.
- ◆ -During operation, if the machine gets stuck on the steel sheet, stop the spindle and rotate the reversing knob to disengage the machine.
- ◆ The initial machining process volume should be kept moderate, not exceeding the cutting parameter limits. If needed, a slightly larger bevel size can be achieved through secondary processing. Initially, the second slope processing may involve widening by 3mm, with a maximum slope width of up to 18mm.
- ◆ Maintain the support wheel's flexibility by regularly cleaning between the wheel and iron (clean when the machine is stopped).
- ◆ After finishing beveling on large plates, clean the machine's travel route.

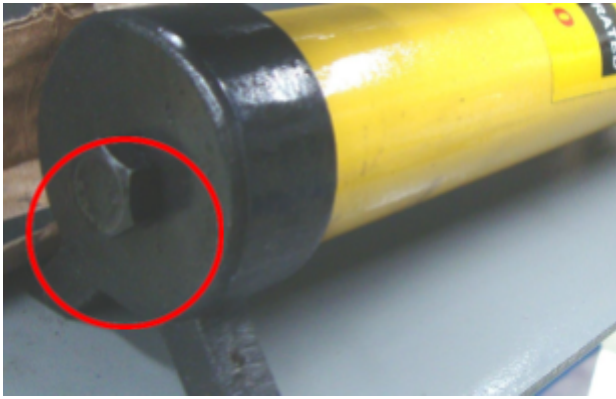
6.3 Auxiliary function

This machine can be used for beveling angles between 25 and 45 degrees from the pipe opening, with a minimum pipe inner diameter of 100 mm. Remove the auxiliary support wheel before beveling.

7 Lubrication: Gearbox for maintenance free type, please do not disassemble

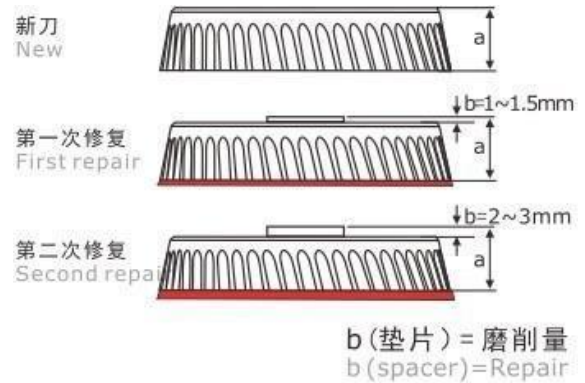
8 Common Trouble Repair and Maintenance

No.	Faut	Maintenance and Repair
1	Energized equipment, no response.	Check if there is an electricity line.
2	The line has electricity, but the device is still unresponsive.	Check if the "emergency stop" button is pressed or if the control box breaker has tripped.
3	Feed gear is making an unusual sound.	Top up the gear oil to prevent damage to the gear mechanism.
4	The pressing will cannot be operated	To verify if an iron pin is connected to the press wheel or steel plate.
5	Steel plate is ejected	Check the feed direction for consistency.
6	Processing steel plates may lead to blade breakage.	Check if the tool touches the machined parts. Processing steel plates can cause blade breakage without rotation.
7	After the steel plate starts milling, the blade breaks	Due to reduced engagement.
8	Electrical control part of failure or other reasons	Keep in touch with manufacturers promptly.

9	<p>Filling the hydraulic oil / hydraulic pump can not lift.</p> <p>Long time use, the hydraulic cylinder in the lifting of the state too long, hot summer will cause the lack of hydraulic oil, so when the hydraulic pump can not be lifted when the hydraulic oil is sufficient to check.</p> <p>Methods: hydraulic pump remove tail upward, unscrewing the bolts red circle, and then add the hydraulic oil can。</p>	
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9 Repair the cutter

- 1) the large end face of the grinding roller cutter is directly adsorbed on the working table by the common plane grinder, and the whole tool is worn thin;
- 2) each of the grinding amount of 1-1.5 mm, the installation, the need to increase the flank of the tool with the same thickness of the gasket, to ensure that the use of new and old tools to calculate the consistency of the degree of consistency; (see figure below)
- 3) the thickness of the heat treatment layer is about 2-3 mm, and the grinding times are usually about two times;



10 Packing list

NO.	Name	规格/型号 Type	Qty	Remark
1	Beveling machine	GBM-16D-R	1SET	
2	Cutter	16 type	3PCS	One is on the machine
3	Special tool	16 type	1SET	
4	Six angle wrench	V6	1PCS	
5	Six angle wrench	V14	1PCS	
6	Open end wrench	12~13	1PCS	
7	Operation manual	GBM-16D-R use	1PCS	
8	Industrial socket		1 PCS	
9	Certificate of qualification		1PCS	

11 After-sale service

Capital Machinery Sales

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