

# Auto Self-moving plate bevel machine

## DMM-900



## Operation Manual

**CATALOG**

<b>1. Statement</b>	2	<b>7. Preparation</b>	10
<b>2. Preface</b>	2	7.1 Big plate placement	
		7.2 Clear plate	
		7.3 Adjust plate angle	
		7.4 composite board surface setting	
		7.5 0degree/U type bevel setting	
		7.6 Clamping plate thickness and equipment height adjustment	
		7.7 Feed Route	
<b>3. Summary</b>	3	<b>8. Operation</b>	15
3.1 Introduction		8.1 Parts production	
3.2 Application fields		8.2 Speed reference	
3.3 Technical parameters		8.3 Basic operation	
3.4 Machine diagram		8.4 Operation steps	
<b>4. Safety and notice</b>	4	<b>9. Lubrication and cleaning</b>	16
4.1 Safety instructions			
4.2 Safety clothing and protective equipment use way			
4.2 Prohibit remove protective equipment		<b>10 Common trouble repair and maintenance</b>	17
4.4 Start/stop Precautions			
4.5 Safety Precautions			
4.6 Security identification analysis			
<b>5. Equipment acceptance</b>	6	<b>11. Packing list</b>	19
5.1 Hoisting			
5.2 Install walking wheel			
5.3 checking goods			
<b>6. Installation and Schematic diagram</b>	7		
6.1 Electrical installation			
6.2 Electrical symbols			
6.3 Schematic diagram of electrical box			
6.4 Schematic diagram of the control box			
6.5 Common protection measures			
6.6 Tool installation and removal			

## 1. Disclaimer of liability

- ✧ Must read the manual operation before operating, we'll not bear the loss if any Unreasonable operation.
- ✧ Please use the accessories supplied by our company, Without the consent of our company, all the loss cause by unauthorized demolition and replace the accessories not belong to ours , we will not responsible for it.
- ✧ Don't let the machine work more than 2 hours continuously in full load, its working time is 8 hours one day.
- ✧ We'll not responsible for any loss cause by working on the others out of its design performance.
- ✧ We'll not responsible for any loss cause by working overload.

Please keep this "Operation Manual" in a safe place, so that you can replace the corresponding parts later, and don't reissue them if they are lost.

## 2. Preface

Dear customer, we are appreciate that your support for our products! The PB Series beveling machine mainly for bevel work before welding, aim to Improve the welding strength.

For your vital interests, please read this manual and the relevant instructions on the machine carefully before use. Any operation that does not follow the requirements will cause equipment damage or personal injury, and our company will not bear any responsibility. If there is any disagreement with the materials and products, please raise them within 3 days after receiving the goods, otherwise it will be deemed as full approval of the materials.

Our company has the final right of interpretation of this information, if there is any change or change without notice;

Our company owns the copyright of this material, and no unit or individual is allowed to copy or modify it without permission

The pictures, text and data in this information are for reference only. The actual product will be changed due to the continuous update of the product. The specific parameters are subject to the actual product.

Thanks!

## 3. Summary

### 3.1 Introduction

Our machine is an automatic traveling edge beveling machine, which automatically performs milling during the processing of the groove, which reduces the use cost and labor intensity; adopts cold cutting operations, and the processed groove surface is free of oxidation. The slope surface finish reaches Ra3.2-6.3, which fully meets the requirements of the welding industry. It can be welded and used immediately without deburring; this product is pollution-free and the operation is simpler.

### 3.2 Range of application

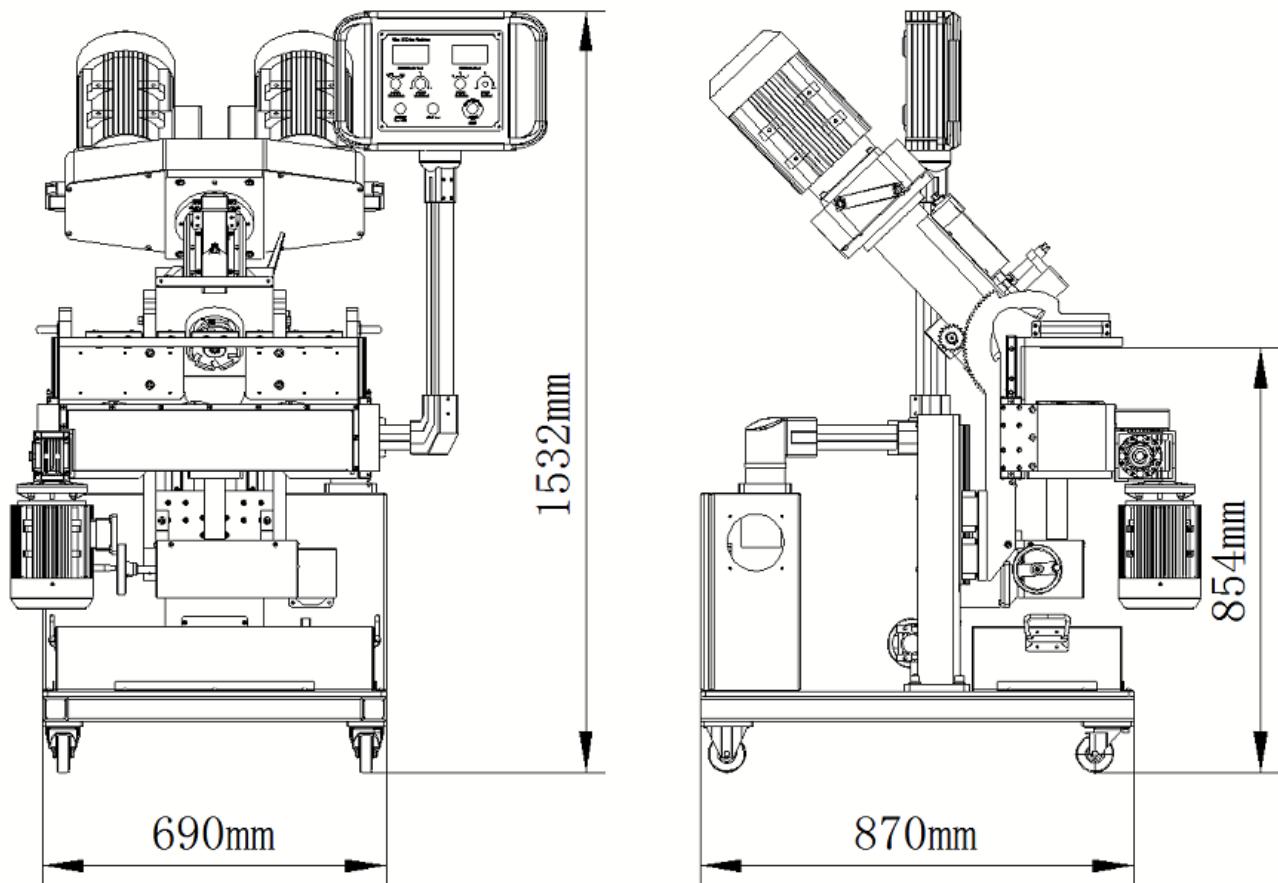
- ✧ Can be used to process iron, chromium iron, fine-grained steel, aluminum products, copper and aluminum alloy.
- ✧ Can be processed into "K", "V", "X" or "Y" -shaped bevel.

- ◆ Can be used in engineering machinery, steel structures, pressure vessels, shipbuilding, and the aerospace industry.

### 3.3 Parameters

Motor Voltage: AC380V 50HZ	Total power: 6400W
Cut power: 2 * 3000W	Feed power: 400W
Cut speed: 0~1500r/min (adjustable)	Bevel angle : 0° ~ 90° (adjustable)
Single bevel width: 0~30mm (sample Q235)	Clamp thickness: 8~100mm (other thickness suit)
Max. bevel width: 100mm	Cutter diameter: Φ100mm
Plate length: >300mm	Desk height: 800-860mm
Plate clamp width: >200mm	N.W: 450kg

### 3.4 Machine Schematic diagram



## 4. Safety & Warning

### 4. 1 Safety instructions

	<p>Electrical and rotating parts have the potential to cause serious personal injury or property damage.</p> <p>This machine has a power supply of 380 volts. Before installing, wiring, starting, running or making any adjustments, please use this manual as a guide to identify the various parts of the beveling machine. Electrical wiring installation and maintenance personnel must have the qualifications required by laws and regulations to ensure that life and property are not injured or lost</p>
	<p>DANGER: If used improperly, it may cause danger and cause death!</p>
	<p>WARNING: If used improperly, it may cause danger and cause serious injury!</p>
	<p>NOTICE: If used improperly, it may cause moderate damage or emotional intelligence, as well as financial damage!</p>

#### 4.2 Wearing safety clothing and protective



#### NOTICE

Be sure to check the clothing before work;

Work clothes should fit and be comfortable, wear long-sleeved work clothes;

Sandals, high heels, shoelaces falling off, and smooth soles are all dangerous;

Please wear a safety helmet when working;

Please wear protective glasses when working;

Please wear leather gloves.

#### 4.3 It is forbidden to remove the protective



#### Warning

Do not remove the protective cover on the device.

Do not modify the equipment without permission.

#### 4.4 Notes for operation and termination:

Before the machine is running, confirm the safety of the surroundings before running.

When the machine is running, do not touch any rotating parts of the machine with your hands.

After the machine finishes working, immediately cut off the power supply, and all parts return to their original positions.

No flammable and explosive materials should be placed around the machine.

Please use it in an environment of 0~40°C.

#### 4.4 Safety Notification



- ❖ Our factory has the final right of interpretation and modification of all related materials of this machine!
- ❖ Accessories not sold by our factory are used for this machine, our

<b>danger</b>	factory does not assume any responsibility! ◆ Please disconnect the power before repairing the machine! ◆ Please check the socket, wire and machine for signs of damage before each use!
 <b>warning</b>	◆ Do not use the power cord to move the machine! ◆ Please keep the machine dry and do not use the machine in a humid environment! ◆ If you use this machine outdoors, please use a tripped circuit breaker to protect the machine! ◆ Must be inspected and repaired by professional technicians!
 <b>NOTICE</b>	◆ When cleaning the iron pins, you must stop the machine and wear gloves for cleaning to avoid high temperature and sharp iron pins damage! ◆ Please always place the power cord behind the machine body, and do not place the power cord on sharp objects!
 <b>POINT</b>	When receiving the equipment, if you find that the packaging is damaged and the equipment is damaged, please refuse to sign for it and obtain the signature of the delivery person. This will facilitate your future insurance claims. Afterwards, please as soon as possible if you encounter equipment damage, our factory will promptly help you get the replacement of the missing or damaged parts.

#### 4.5 5 Security identification analysis

	<b>Beware of burns</b>  <b>After the steel plate is processed, the iron filings and the blade are high in temperature, please do not touch it with your hands;</b>
	<b>Risk of electric shock</b>  <b>This sign often appears on the electrical box, which means that a professional electrician is required to check and repair, and pay attention to the danger of electric shock.</b>
	<b>Lifting tips</b>  <b>When hoisting, do not stand under the machine to avoid casualties.</b>

## Watch out for your hands



**This mark often appears on the feed end, which means there is a risk of pinching hands. Keep a distance of 1cm from the rotating parts.**

## Beware



**This mark often appears at the feed end, which means there is a danger of hand puncture. The processed grooves and iron pins may be punctured and cannot be touched directly.**

## 5. Equipment acceptance

### 5.1 Hoisting

**The first step:** to remove the wooden box.

**Second step:** cut off the steel strip of the fixed machine.

**The third step:** Lifting the machine from the ground 200-250mm can be; the height should not exceed 100mm, except when moving across obstacles.

**The fourth step:** the packing box is the non recycling product, can handle properly.

Note: the lifting position can be used for lifting equipment, lifting process operator need rise slowly. Please use the equipment in the process of lifting lifting belt intact, lifting equipment lifting weight should be more than 500kg.

### 5.2 Installation walking wheel



Equipment lifting up, that is, just needs 200-250mm from the ground for installing travel wheel, operator should be careful, it is necessary someone fix equipment, then install the walking wheel.

Note: do not touch the lifting device while lifting, the equipment must be stable, to prevent any damage for workers.

### 5.3 Checking the products:

please check the products including the parts according the packing list, please contact us if any questions.

## 6. Installation

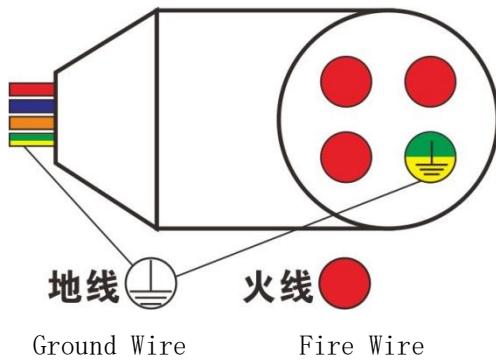


**CE Standard**

External ground wire diameter size should follow regulations t  
(Copper wire)

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

### 6.1: Electrical installation



#### Install the power cord

◆ In order to ensure the normal operation of the inverter, this machine adopts the "three fires and one ground" connection method (the neutral line will cause damage to the inverter)

The power cord specification is a three-phase cable larger than  $1.5\text{mm}^2$ .

*Voltage AC380V 50HZ, electrical connection and protection should be carried out in accordance with local regulations.*



#### Cutter head steering

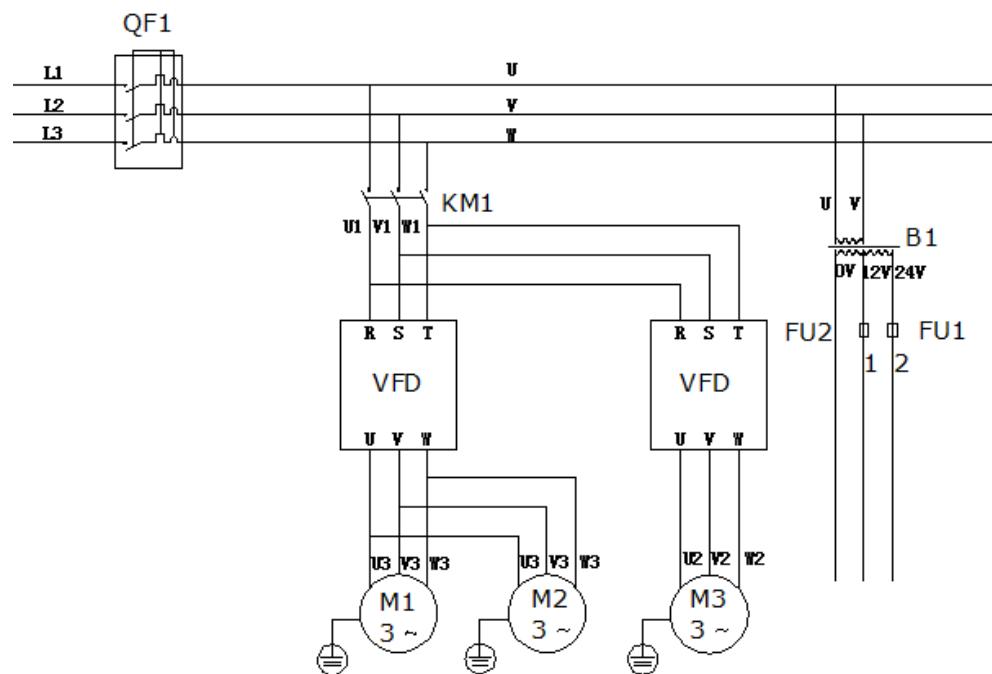
*Check the direction of rotation of the tool. If the direction of rotation is not correct, you can change the direction of rotation by changing the positions of any two live wires.*

### Electrical installation

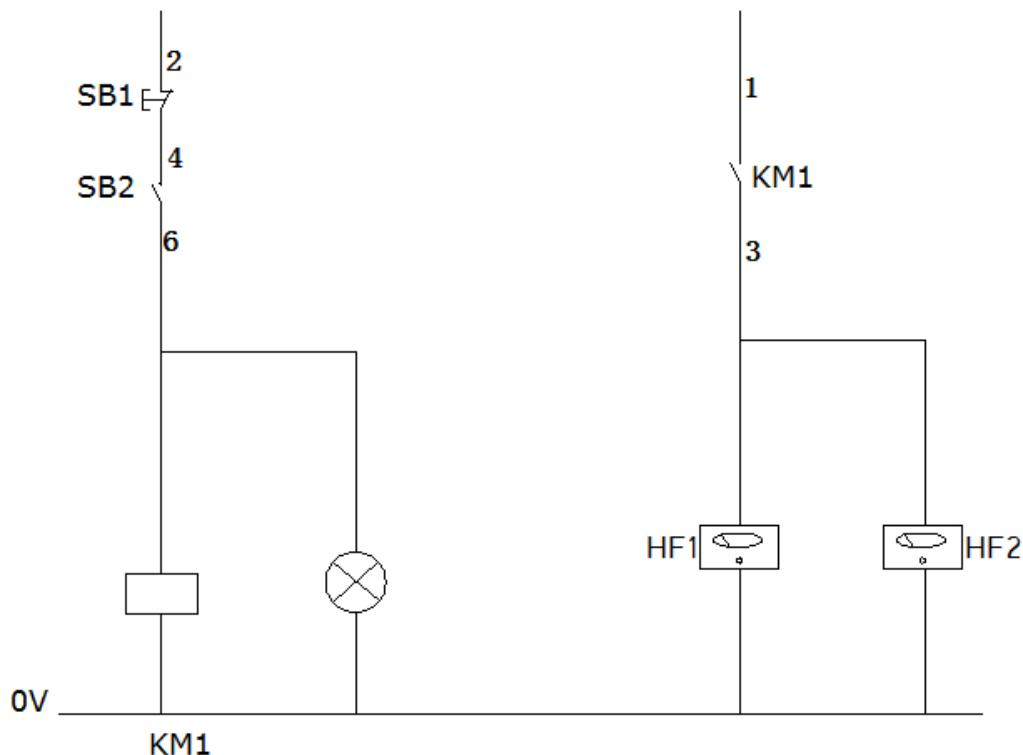
#### 1) Electrical symbol description

QF: Power on-off	SB1: Stop	KM: Alternating current contactor	VFD: Converter
B: Transformer	SB2: Power on-off	FU: Fuse	HF: Tachometer

**Electric theory diagram:** The inverter and digital meter have been parameterized, please do not change the parameters without authorization to avoid damage to the equipment.



6. 1 Control box wiring diagram



6. 2

#### Protection measures

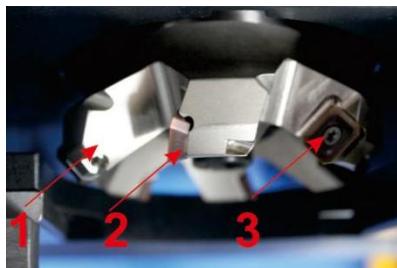
- 1) Electrical connection and protection should Consistent with local regulations.
- 2) Please verify power supply equipment, our machine is AC 380V.
- 3) Connect the air plug ( the attachment with the machine ) with one end of cable, the another end connect with the power supply.
- 4) Dangerous in the humid environment.
- 5) According to direction on the machine to feed plate, process work piece after cutter rotate.

### 6.3 Cutter installation and dismantlement:



**While change cutter or inserts,do** Cut off the power supply.

When disassembling and installing the tool, please be aware that sharp edges and high-temperature chips will cause scratches and burns to your hands. It is recommended to blow the chips clean with an air gun before replacement, and then wear protective gloves.

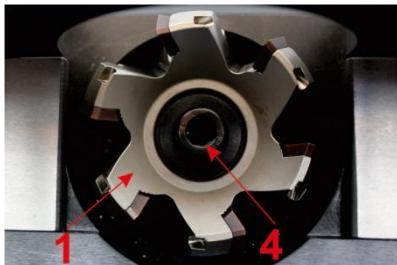


**Change inserts:** 1. Adjust the cutter head to a proper angle to replace the blade (right picture: "1" cutter head, "2" blade, "3" screw).



**Change inserts**

2. Using the "T15" screwdriver provided with the machine, remove the screw "3" to replace the blade.



**Change cutter**

1. Adjust the cutter head to an appropriate angle, and use a wooden stick to hold the cutter head "1" to make it unable to rotate.



**Change cutter**

2. Remove the screw by turning the screw "4" in the direction shown by the arrow of the hexagonal eye mask, and the cutter head can be taken out (if you can't take it out, you can tap the cutter head slightly with a wooden stick, and then take it off by hand)

## 7. Bevel Preparation

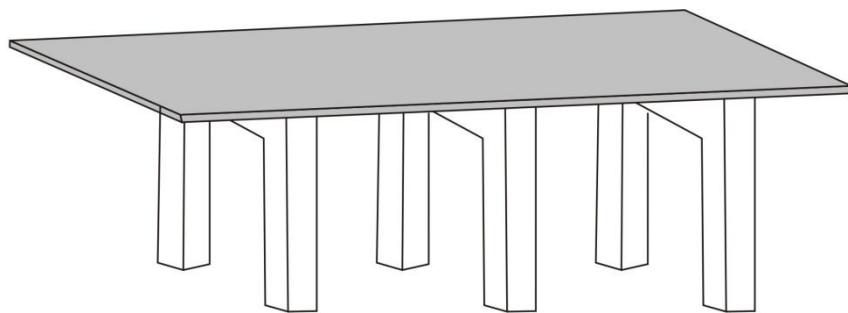


Set single bevel depth based on different materials.

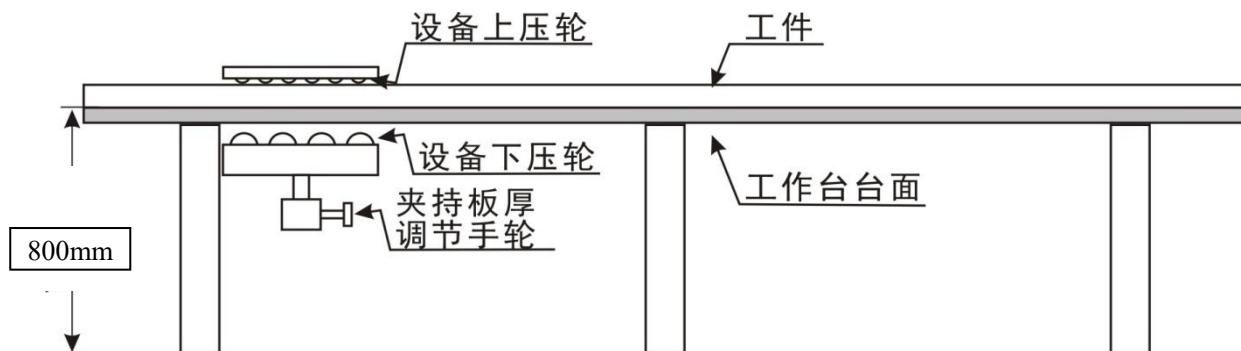
Any operating beyond the scope of machine performance will cause the damage of turbo, cutter and spindle. During the oxygen cutting, one thing should take account in the setting of parameters: The hardness of the plate edge will be improved after high temperature.

### 7.1 Steel plate placement

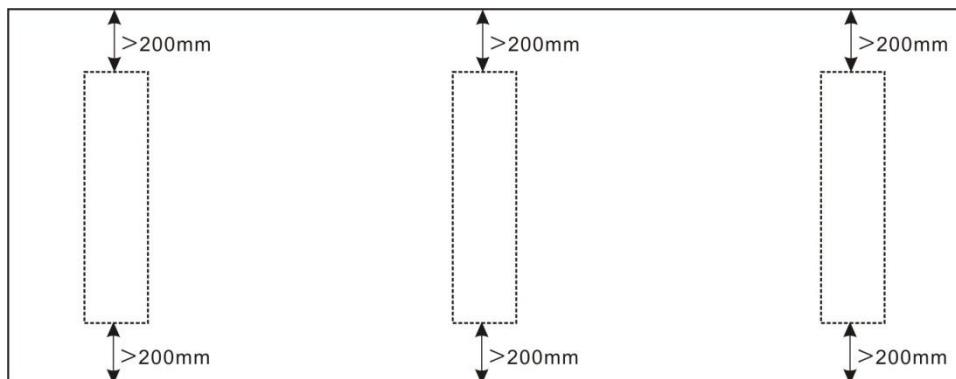
- 1) When processing large plate, you can refer to the following picture to do a simple support to support the sheet needs processed.



2) The bracket plate is recommended to be 800mm



2) 3) Place steel plate, put the plate needs processed on the platform, keep 200-250mm distance between the Plate edge and support stand.



## 7.2 Plate cleaning

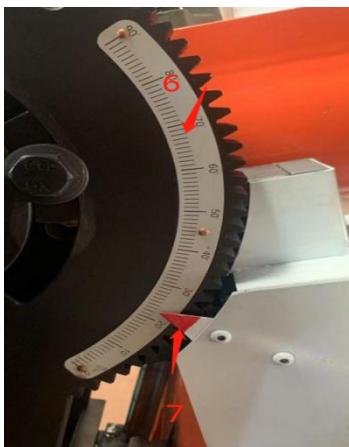
- 1) No welding salg on the bevel surface.
- 2) Welding slag and bur will affect the cutter tools and reduce machine service life.

## 7.3 Bevel angel adjustment:



### **Bevel angle adjust**

- 1.loose screw “5”

**Bevel angle adjust**

“6” Angle ruler, “7” Angle indicator arrow

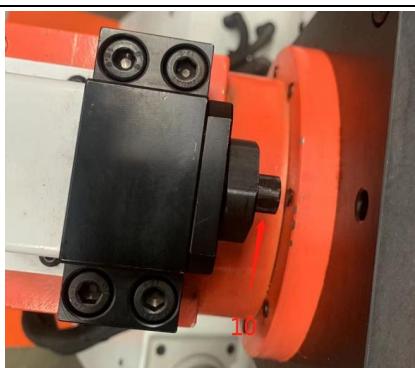
**Bevel angle adjust**

2. Rotate the ratchet wrench "8", adjust to the required angle and then tighten the bolt "5".

Note: Move the "b" on the [ratchet wrench] to change the direction of angle rotation.

**Bevel depth adjust**

1. loose screw nut “9” .

**Bevel depth adjust**

2. Rotate the handwheel "10", and adjust to the required groove depth according to the required groove size and the scale parameter table.

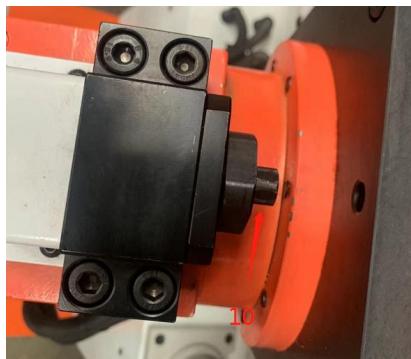
Note: The parameter table is for reference only, and the actual processing shall prevail.

**7.4 Composite board plane processing settings:**

### Adjust feeding depth **[d]**

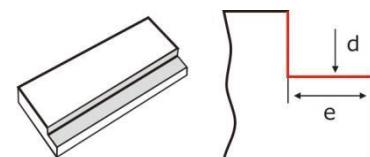
1. Adjust the bevel angle of the equipment to 90 degrees (as shown in the picture)

Note: This step is also applicable to 0 degree vertical milling.

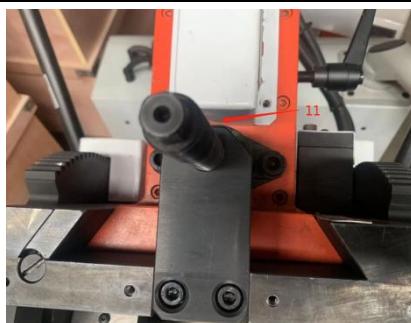


### Adjust feeding dept **[d]**

2. Adjust the handwheel "10" to feed 1~3mm (stainless steel is



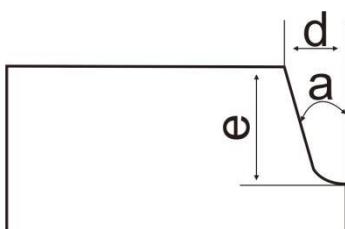
1~1.5mm), and adjust the scale value of the feed handwheel to: 18 for  $d=0$  (for reference only, subject to the actual processing parameters.)



### Adjust feeding width **[e]**

3. Rotate the bolt [11], the scale moves in the "-" direction [e] becomes smaller, and "+" becomes larger.

#### 7.5 Process 0degree and U type bevel setting:



1. Adjust to the required bevel angle  $a$  of U shape (refer to section 9.3 Bevel angle adjustment)
2. Adjust the width [e] (refer to item 9.4)
3. Adjust the feed depth [d] (refer to item 9.3)



Note: When processing U-shaped grooves, the cutter head must be higher than the lower plane of the workpiece. The depth of the U-shaped root in a single feed is controlled at 2~5mm.

#### 7. 6 7. 6 Adjustment of clamping plate thickness and equipment height::



### Clamping plate thickness adjustment

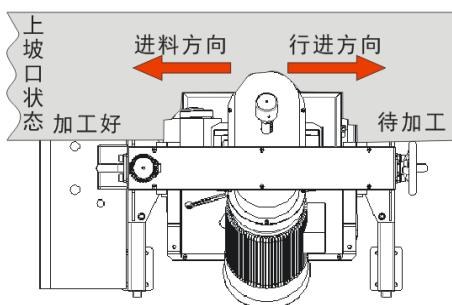
**Rotate the handwheel "11" to compress the workpiece.**



### Equipment height adjustment

**Rotate the lifting turbine handwheel to adjust the height.**

#### 7.7 Route:



1. If the ground is uneven, a steel plate can be laid for walking.

2. Feed in the correct feeding direction.

Note: Before feeding, make sure that the rotation direction of the cutter head is consistent with the specified direction, and the blade cannot touch the steel plate.

## 8. Basic Operation



- ❖ The continuous working time of the equipment shall not exceed 4 hours
- ❖ After the equipment has been working for a period of time, the temperature of the gearbox will increase significantly, and the boiling of the grease is beneficial to the heat dissipation of the machine, and the transmission mechanism as a whole is in a state of thermal equilibrium.
- ❖ If the equipment is overloaded during the working process of the machine, due to the increase of the current value, the thermal element in the electrical switch box will start and automatically cut off the power. After the power is cut off, wait for the thermal element to cool down and reset before restarting. If the cooling is insufficient It will automatically stop again after working a short distance.

### 8.1 Description of each part of the machine

#### 1) Control panel

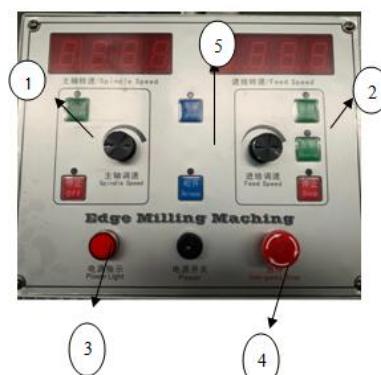
"1" spindle switch: start stop button and spindle speed button  
"2" Feed switch: forward (forward), reverse (backward), travel speed adjustment, please press the stop button when shutting down

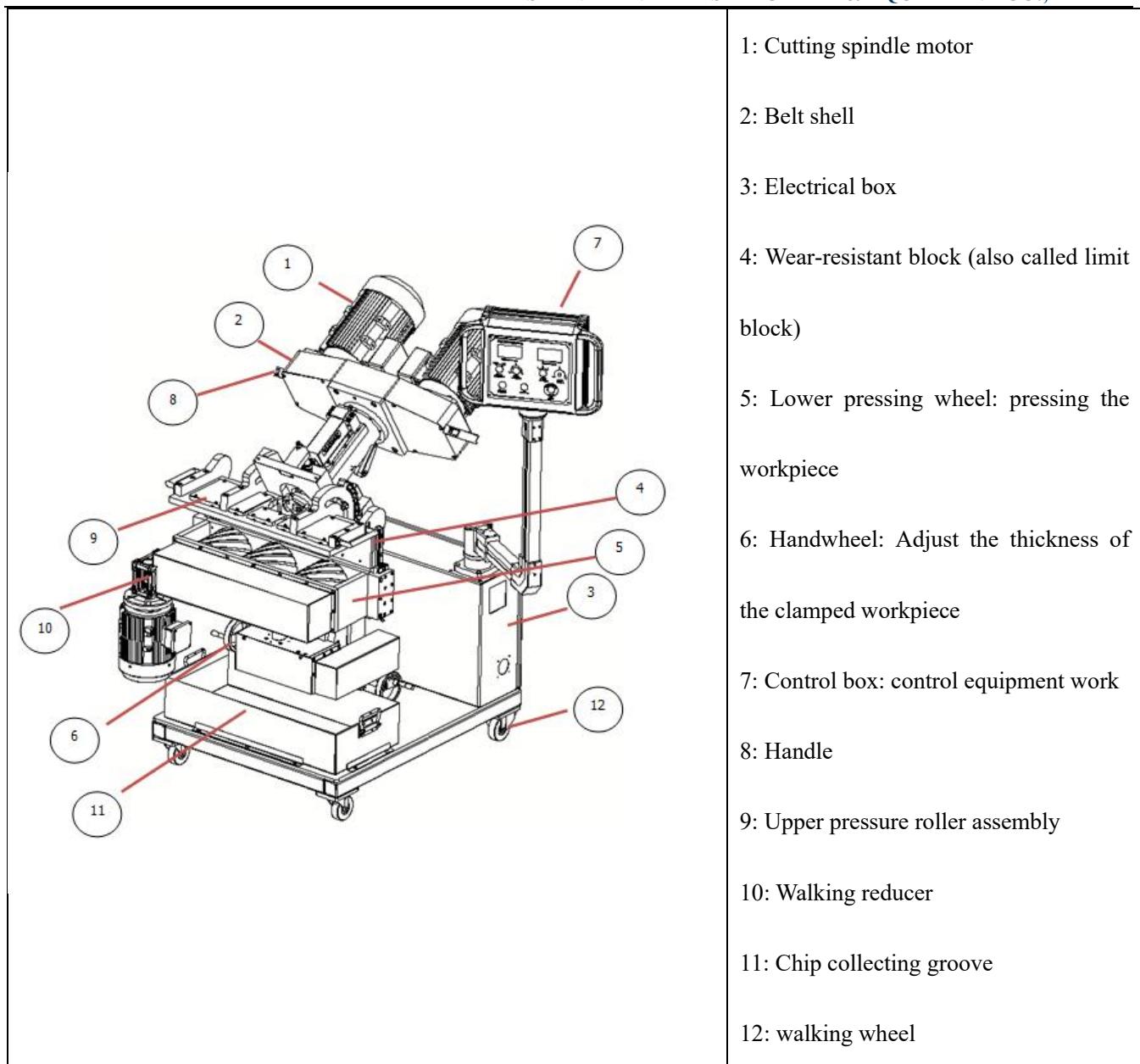
"3" power indicator light: on when the device is powered on (red)

"4" Emergency stop: When the equipment encounters an emergency, the emergency stop is quickly photographed, and the power will be completely cut off.

"5" Automatic clamping button: automatic clamping loosening

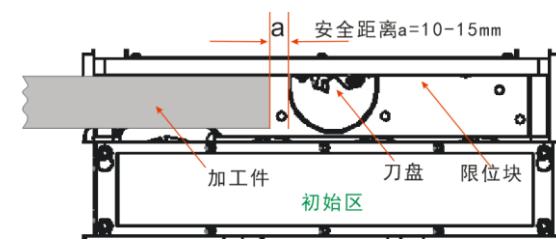
#### 2) Machine

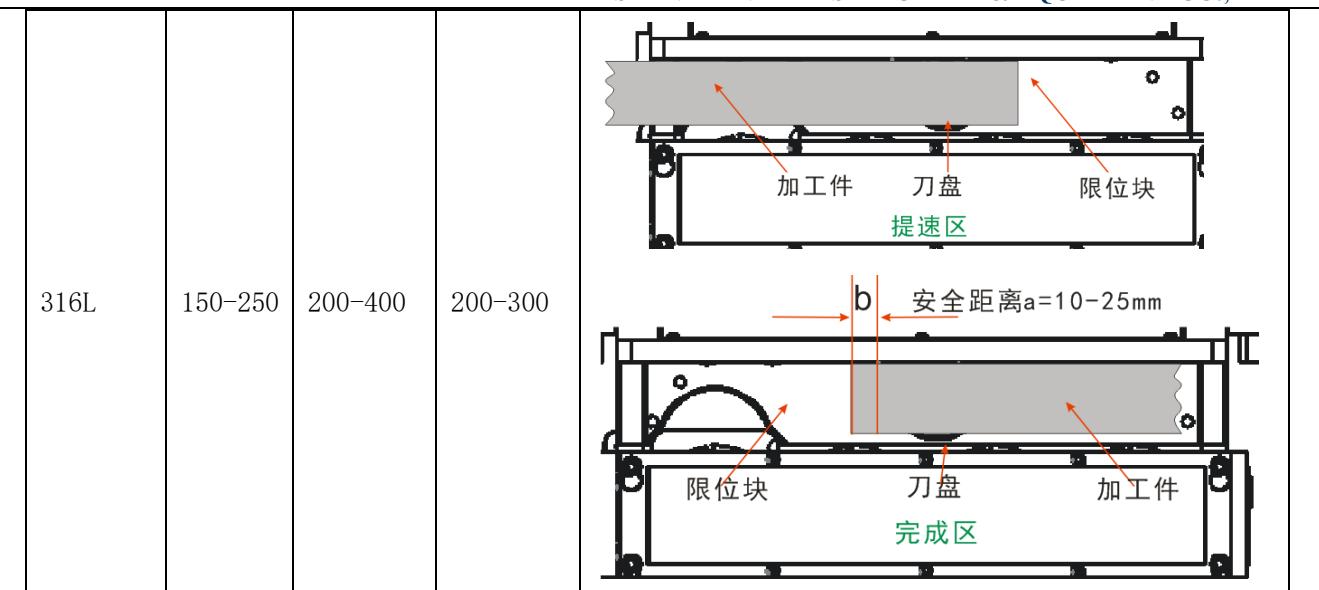




8.2 Speed setting reference table (the parameters in the following table are for reference only, the larger the processing groove, the lower the speed, the actual operation shall prevail)

When the workpiece head is placed, it cannot exceed the red line. The area from the red line to the green line is the "low speed zone"; when the end of the workpiece exceeds the green line (passing the cutter head), it is the "speed up zone"; when the end of the workpiece is close to the red line, it is the "finished zone"

Material	Lower speed	Higher speed	finish	Schematic diagram
Q235	150-250	300-800	300-500	
45#	150-250	300-700	300-500	
16Mn	150-250	300-600	300-500	
AL	150-250	300-1000	300-800	
306	150-200	200-500	200-300	



### 8.3 Basic Operation

Small plate bevel.....When processing small plates that can be moved, adjust to the required according to the method in item 5: bevel angle, bevel depth, cutting speed adjustable, feed speed, and then bevel operation can be started.

Big plate bevel.....When beveling large-size steel plates, these plates need to be placed on the auxiliary support, and then the equipment is adjusted to the required: bevel angle, bevel depth, feed speed, and cutting speed to complete the beveling operation.

### 8.4 Operation Steps:

- 1) 1) Work piece placement.....The side of the work piece is in close contact with the limit block of the feed end, and the front end is kept at a distance of 10~15mm from the cutter head;;
- 2) 2) Clamping the work piece... See item 9 operation;;
- 3) Start milling.....Turn on the power and turn on the spindle for 5-10 seconds, and the spindle speed will stabilize, feed, and adjust the feed rate.



#### Bevel finish

Turn off the feed, turn off the spindle, loosen the pinch wheel, and adjust the feed speed to "0".

### 9. lubrication

Item	Lubrication method	cycle
complete machine	Spray anti-corrosion oil, remove iron pin, and a dustproof cover, straight in a dry place	3 months or a long time not to use
Compaction guide rail	The use of compressed air cleaning iron pin	After each walk
	Filling the guide rail oil or lubricating oil	3-6 months

Lifting screw (compression)	The use of compressed air cleaning iron pin Filling the guide rail oil or lubricating oil	After each walk 3-6 months
Around the machine	Use a broom to clean up in time, so as to avoid excessive accumulation of equipment.	Clean up according to the actual situation
Reducer	Filling gear oil	Lifelong maintenance free
Control box,	Cover dustproof and rainproof cover	Long time no use(include electric box)
Cutter	Camaged the cutter and screw	See eighth items
Cutter screw	If it's broken in the tray, please use the drill out	See eighth items

## 10. Common trouble repair and maintenance

NO.	fault	Maintenance and repair
1	Energized equipment, no reaction	Check whether there is electricity line
2	Line has electricity, the device is still no response	Check whether the "emergency stop" button is pressed, or the control box breaker trip
3	Feed gear has abnormal sound	Fill the gear oil, the general gear will not be broken
4	The pressing wheel can not be compressed	To check whether an iron pin is attached to the press wheel or steel plate
5	Steel plate is ejected	Look at the feed direction is consistent with the provisions of the equipment
6	Processing of steel plate, blade break	Check if the tool is in contact with the machined parts without rotation
7	After the steel plate begins milling, the blade is broken	Reduce the engagement
8	Electrical control part of failure or other reasons	Communicate with manufacturers in a timely manner
9	culty falling	Carefully check whether the motor is connected to the chip collector.
10	Difficulties in rotation	Check whether the locking bolt is removed.

### Be careful



- ❖ According to the different processing materials, feed depth, cutting speed and other factors, it is recommended to change the direction of the blade in a timely manner and the fixed screw.
- ❖ General 30-100 meters to replace a blade angle, blade to avoid damage;
- ❖ Generally 30-100 meters to replace a blade fixed screw, long time to use the screw to reduce the intensity, there is a risk of breakage, screw once the damage is difficult to be removed;

Note: if the broken screw, please consult a professional fitter (drilling)master, depending on the situation can be removed, serious may lead to the cutter head can not be normal use.

**11. Packing list**

No.	Name	Type	Qty	Unit	Remark
1	Edge milling machine	DMM-100L	1	set	
2	cutter	Φ 100mm	1	pcs	Install on the milling spindle
3	inserts	100用	2	set	A set of blades is mounted on the cutter
4	Insert screw		2	set	Installed on the machine
5	Six angle wrench		1	set	Installed on the machine
6	Open wrench		1	pcs	
7	Ratchet wrench		1	pcs	
8	Wrench for inserts		1	pcs	For Replace cutter
9	plug		1	set	Inlet (outlet in electric box)
10	Tool box		1	pcs	
11	Travel wheel		4	pcs	Walking wheel
12	screw		16	pcs	Fixed universal wheel
13	Operation Manual		1	pcs	custom suffocating free
14	Packing box	Wooden box	1	pcs	Remark

## warranty card

Client			
Address			
contact		tel	
Machine model			
Serial no.		date	
Warranty period	One year		

inspector (stamp)

公 signature (stamp)

## Maintenance rules

- 一、1. Since the date of purchase, a free warranty for one year, verified by the warranty card;;
- 二、2. If parts need to be replaced after the time limit specified in the previous item, the maintenance fee will be charged accordingly;;
- 三、3. During the warranty period, if one of the following situations occurs,

it is not covered by the free warranty;;

1、Failures caused by failure to follow the instructions in the manual  
or improper storage;;

2、Loss caused by self-disassembly  
and maintenance;;

3、Damage caused by external factors such as natural causes;;

4、Those who fail to show the  
warranty card. .