

## SELF-PROPELLED EDGE MILLING MACHINE

### GL-880      MANUAL    OPERATION



**DON'T OPERATE THE MACHINE BEFORE READING THE MANUAL!**

**CATALOG**

<b>Statement</b>	.....	1
<b>Preface</b>	.....	2
<b>1. Summary</b>	.....	2
1.1 Introduction		
1.2 Application fields		
1.3 Technical parameters		
<b>2. Safety &amp; warning</b>	.....	3
2.1 Safety instruction		
2.2 Safety caution		
<b>3. Inspection machine</b>	.....	4
3.1 Hoisting		
3.2 Installation walking wheel		
3.3 Nameplate		
3.4 Checking		
<b>4. Installation</b>	.....	5
4.1 Put plate		
4.2 Cleaning the plate		
4.3 Adjust thickness & bevel depth		
<b>5. Preparation</b>	.....	8
5.1 Put plate		
5.2 Cleaning the plate		
5.3 Adjust thickness & bevel depth		
5.4 Adjust bevel angle		
5.5 Adjust machine high		
5.6 Adjust speed		
5.7 Feed path		
<b>6. Operation</b>	.....	11
6.1 Parts production		
6.2 Speed reference		
6.3 Basic operation		
<b>7. Lubrication and cleaning</b>	.....	13
<b>8. Common trouble repair and maintenance</b>	.....	14
<b>9. Packing list</b>	.....	15

**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(reduce the time to 4 hours one day at 30 °C).
- ✧ We'll not responsible for any loss cause by working on the others out of its design performance.

## Preface

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

## 1. Summary

### 1.1 Introduction

automatic milling machine, this machine process plate automatically with high efficiency; completely cold cutting, non-oxidation on the surface; for the milling cutter, the finish on the surface is satisfy with the requirement in welding industry; easily operate and non-pollution.

### 1.2 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.

### 1.3 Parameters

Power supply: AC 380V 50HZ	Total power: 6400W
Cutting power: 2*3000W	Feeding power: 400W
Cutting speed: 0~1500r/min (adjustable)	Bevel angle: 0°~ 60°(choose the angle wheel)
Single bevel width: 15mm-20 mm(refer to sample Q235)	Plate thickness: 6~80mm
Max. bevel width: 70mm	Cutter blade: 8pieces
Min. plate width: ≥ 200mm	N.W.: 250kg

## 2. Safety & Warning

### 2.1 Safety instructions



Read operation instruction carefully before installation, use and maintenance, especially the part of electrical and rotation exist potential dangerous.

The machine use 380V power supply, Please make the manual as a guide before installation, wiring, start, run or any adjustment; The electrical wiring installation and maintenance personnel must possess the qualifications.

### 2.2 Safety precautions

◊ The final interpretation and modify right is reserved by HUAKAI FACTORY.

◊ We do not take any responsibility in the case of changing spare parts!

◊ We do not take any responsibility for illegal operation!

◊ Can not dismantle the machine without consent.

◊ Cut off the power when repair the machine!

◊ Check the socket, wire and machine before use!

◊ Keep the machine dry, not operating in humid environment!

◊ Please use the interrupter to protect the machine outdoors!

◊ Prohibit wearing gloves while operat the machine.

◊ Put on protective goggles, ear plugs!

◊ Cut off power and put on gloves when cleaning the iron dust!

◊ Plug in socket in switch-off state, and pull out power wire after use!

◊ Non-electrician license workers can not do electric install and maintenance.

◊ Do not use the power cable to move the machine!

◊ Put the power cord behind the machine, not sharp objects!

◊ Inspect and maintain by professional person!

◊ Operator shall not leave the scene!

Reject the machine when you find packing broken and obtain deliveryman signature for insurance claim.

Our factory will help you to get missing and broken parts when the machines broken.



### 3. Equipment acceptance

#### 3.1 Hoisting

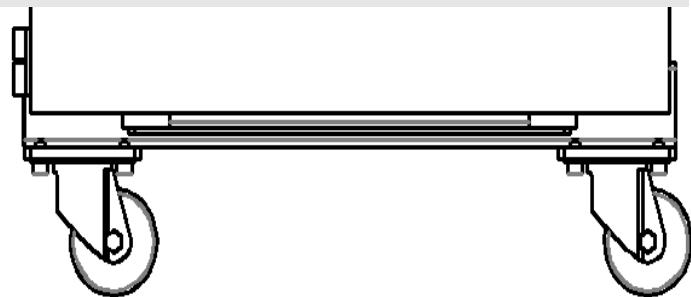
**The first step:** to remove the wooden box.

**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.



#### 3.2 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.

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

### 4. Installation



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

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

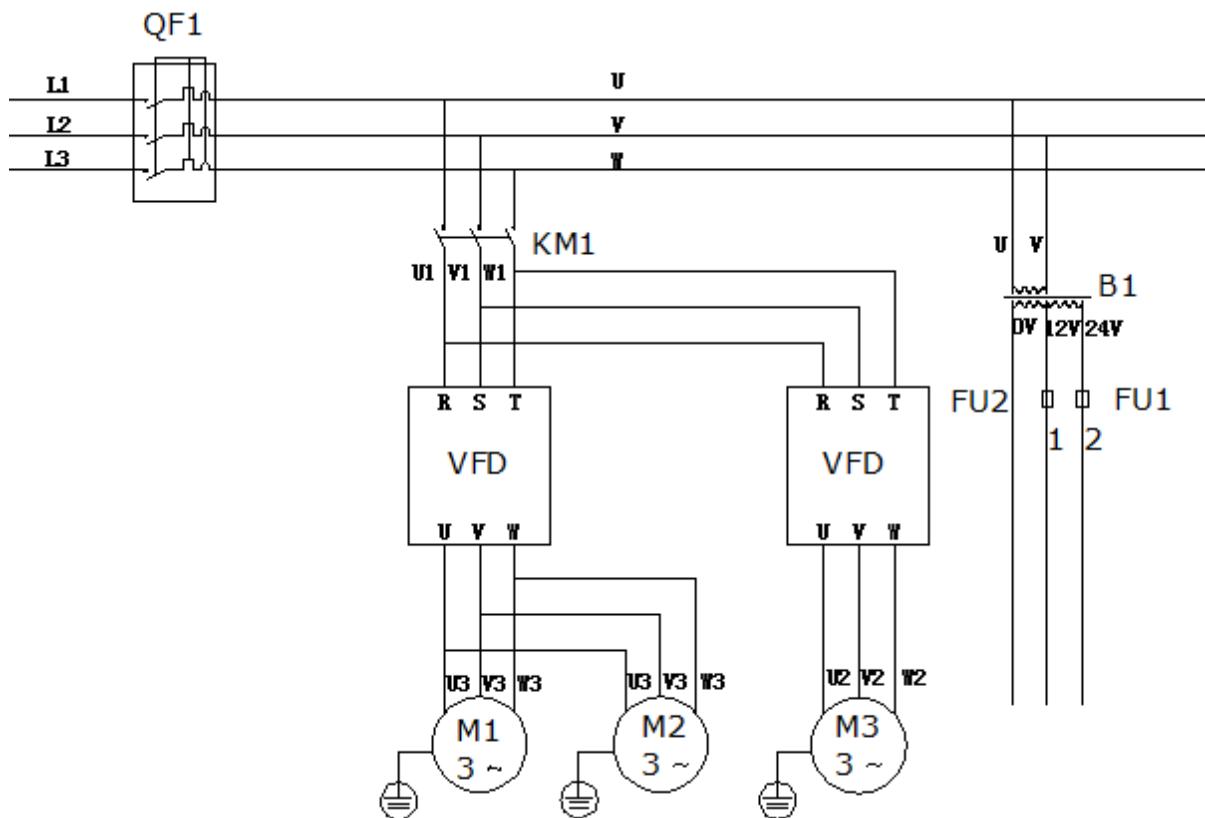
#### 4.1 Electrical installation

##### 1) Electrical symbol description

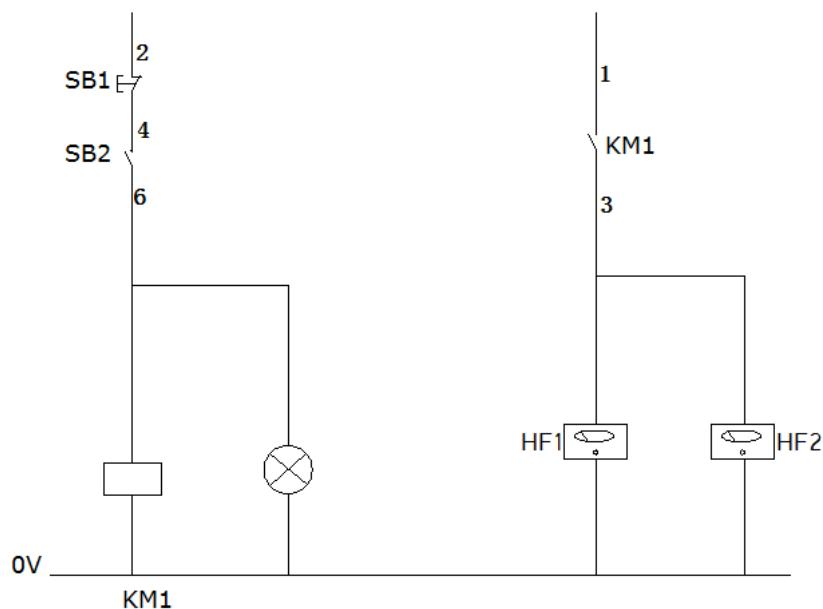
QF: Power on-off	SB1: Stop	KM: Alternating current contactor	VFD: Converter
B: Transformer	SB2: Power on-off	FU: Fuse	HF: Tachometer

## 2) Electric theory diagram

Electric box wiring diagram



Control box wiring diagram


**4.2 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.

**4.3 Cutter installation and dismantlement**

- 1) Cut off the power supply;
- 2) loosen the angle adjusting bolt, let the bevel angle to the minimum;
- 3) "loosen lock bolt", "rotary feed wheel" to facilitate the removal of the blade position, then tighten the bolt indent";
- 4) stuck cutter with a wooden stick, so that it can not rotate;
- 5) using "special spanner" to replace the tool ;
- 6) locking all the bolts after replace the tool



Inside the box is a milling cutter.

Special purpose tool changing wrench (To prevail in kind)



Advise to clean the crap by air gun, and then wear the gloves to operate the cutter.

## 5. Preparation



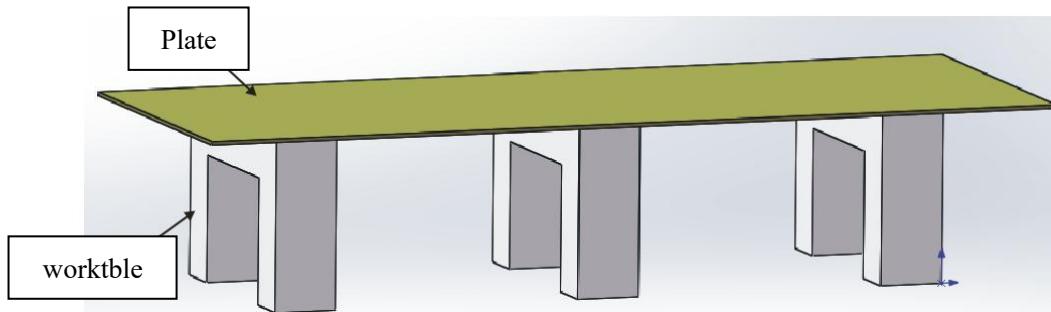
Set single bevel depth based on different materials.

Any operating beyond the scope of machine performance will cause the damage of turbo, cutter and spindle.

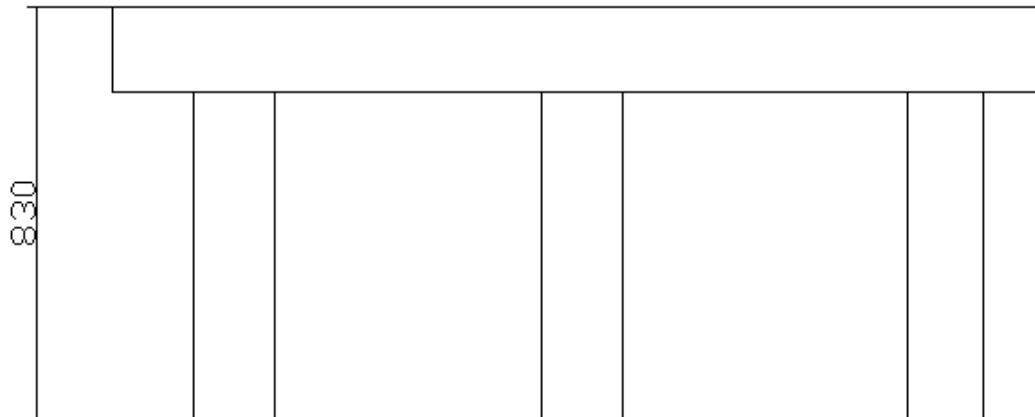
During the oxygen cutting, one thing should take account in the setting of parameters: The hardness of the plate edge will be improved after high temperature.

## 5.1 Steel plate placement

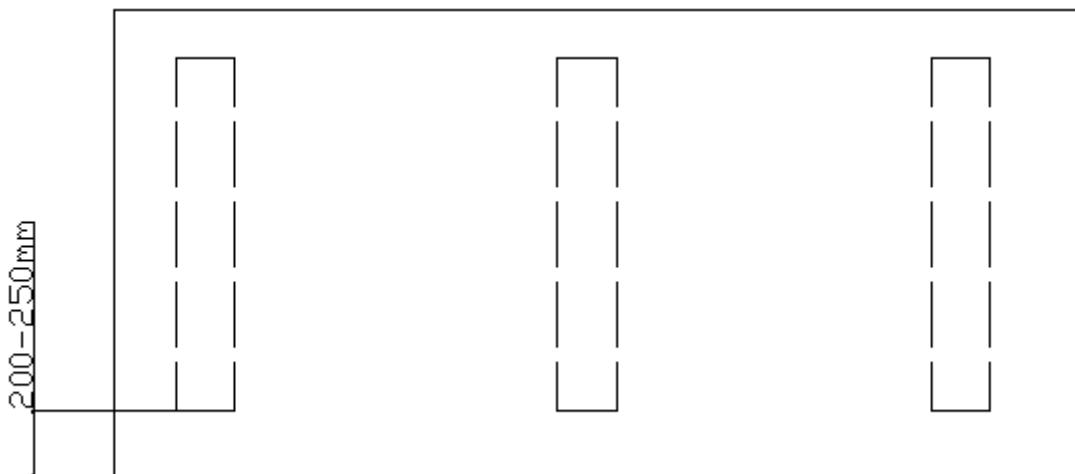
- 1) When processing large plate, you can refer to the following picture to do a simple support to support the sheet needs processed.



- 2) Make stand: support size: adjustable height range from 830 to 890mm,



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

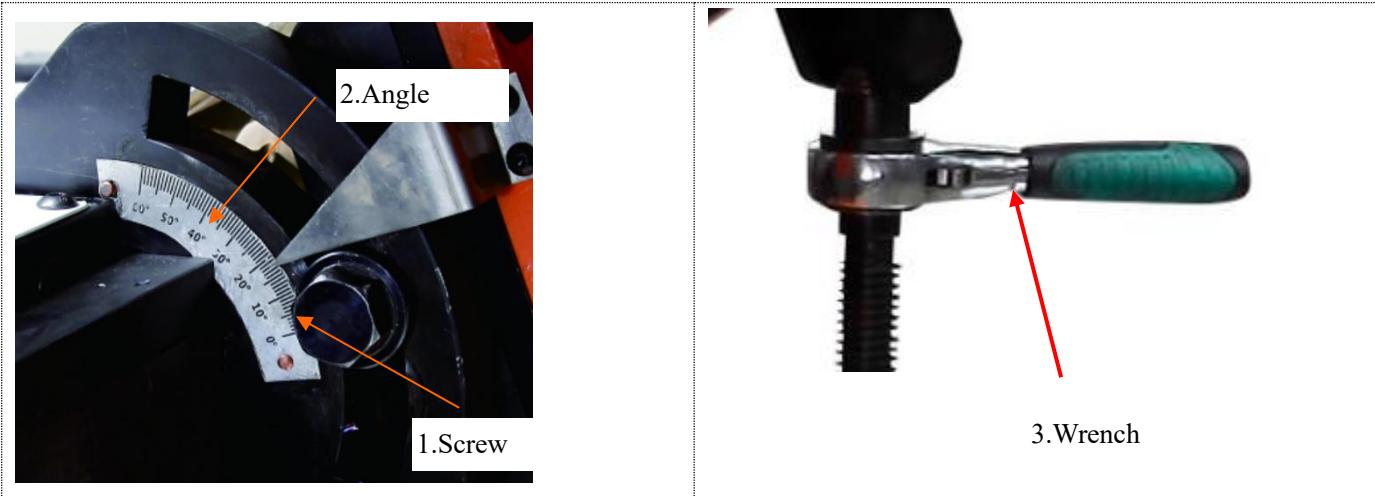


## 5.2 Plate cleaning

- 1) No welding slag on the bevel surface.

2) Welding slag and bur will affect the cutter tools and reduce machine service life.

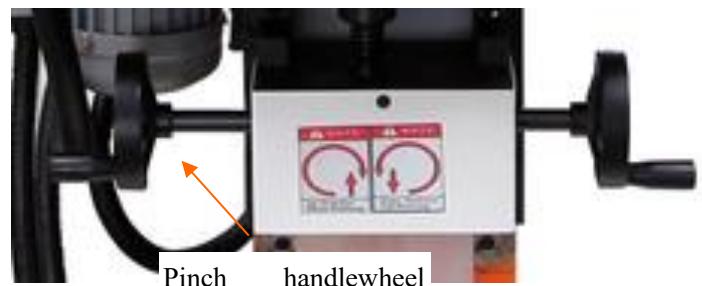
### 5.3 Bevel angel adjustment



After loosen "screw 1", rotate "Handle 3" based on "Angle ruler 2", then screwed "screw 1". As showed in the above picture.

### 5.4 Plate thickness and bevel depth adjustment

1).Adjust the plate thick: Stop rotate the "Pinch handlewheel" when the support wheel and pressure wheel pressed the plate.

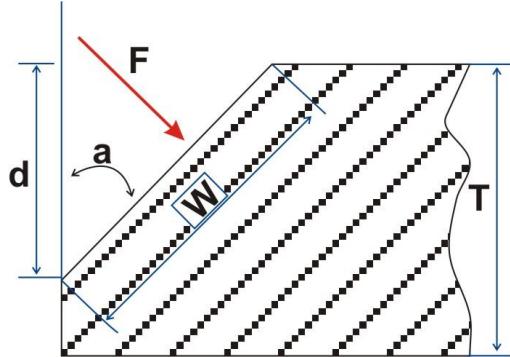


2) Adjust bevel depth: loosen the lock bolt"; according to the table below to adjust the feed hand wheel to the corresponding scale; tighten the lock bolt"


**GL-880 spindle feed reference table**
**(F: handwheel parameters)**

d: Processing depth、T: Clamp plate thickness、

w: Bevel width、a: Bevel angle、F: Spindle feed

 Note: 1. this parameter list for reference, with the actual processing as the standard.  
 2. different colors represent maximum amount of feed.  
 3. single feed maximum value can be adjusted according to different materials(increase or decrease the amount of feed)


depth d	a Angle/°											
	5	10	15	20	25	30	35	40	45	50	55	60
0	11.1	9.4	7.8	6.3	4.9	3.7	2.7	1.9	1.3	0.8	0.5	0.4
4	11.5	10.1	8.8	7.6	6.6	5.7	5.0	4.5	4.1	3.9	3.8	3.9
6	11.7	10.4	9.3	8.3	7.5	6.7	6.2	5.8	5.5	5.4	5.4	5.6
8	11.8	10.8	9.8	9.0	8.3	7.7	7.3	7.0	6.9	6.9	7.1	7.4
10	12.0	11.1	10.3	9.7	9.1	8.7	8.5	8.3	8.3	8.5	8.7	9.1
12	12.2	11.5	10.9	10.4	10.0	9.7	9.6	9.6	9.7	10.0	10.3	10.8
14	12.4	11.8	11.4	11.0	10.8	10.7	10.8	10.9	11.1	11.5	12.0	12.6
16	12.5	12.2	11.9	11.7	11.7	11.7	11.9	12.2	12.6	13.0	13.6	14.3
18	12.7	12.5	12.4	12.4	12.5	12.7	13.1	13.5	14.0	14.6	15.3	16.0
20	12.9	12.9	12.9	13.1	13.4	13.7	14.2	14.8	15.4	16.1	16.9	17.8
22	13.0	13.2	13.4	13.8	14.2	14.7	15.3	16.0	16.8	17.6	18.5	19.5
24	13.2	13.5	14.0	14.5	15.1	15.7	16.5	17.3	18.2	19.2	20.2	21.2
26	13.4	13.9	14.5	15.2	15.9	16.7	17.6	18.6	19.6	20.7	21.8	23.0
28	13.6	14.2	15.0	15.8	16.8	17.7	18.8	19.9	21.0	22.2	23.5	
30	13.7	14.6	15.5	16.5	17.6	18.7	19.9	21.2	22.5	23.8	25.1	
32	13.9	14.9	16.0	17.2	18.4	19.7	21.1	22.5	23.9	25.3	26.7	
34	14.1	15.3	16.5	17.9	19.3	20.7	22.2	23.8	25.3	26.8		
36	14.3	15.6	17.1	18.6	20.1	21.7	23.4	25.0	26.7	28.4		
38	14.4	16.0	17.6	19.3	21.0	22.7	24.5	26.3	28.1	29.9		

40	14.6	16.3	18.1	19.9	21.8	23.7	25.7	27.6	29.5			
42	14.8	16.7	18.6	20.6	22.7	24.7	26.8	28.9	30.9			
44	15.0	17.0	19.1	21.3	23.5	25.7	28.0	30.2	32.4			
46	15.1	17.4	19.7	22.0	24.4	26.7	29.1	31.5	33.8			
48	15.3	17.7	20.2	22.7	25.2	27.7	30.3	32.8				
50	15.5	18.1	20.7	23.4	26.1	28.7	31.4	34.0				
52	15.7	18.4	21.2	24.0	26.9	29.7	32.6	35.3				
54	15.8	18.8	21.7	24.7	27.7							
56	16.0	19.1	22.2	25.4	28.6							
58	16.2	19.5	22.8									
60	16.4	19.8										

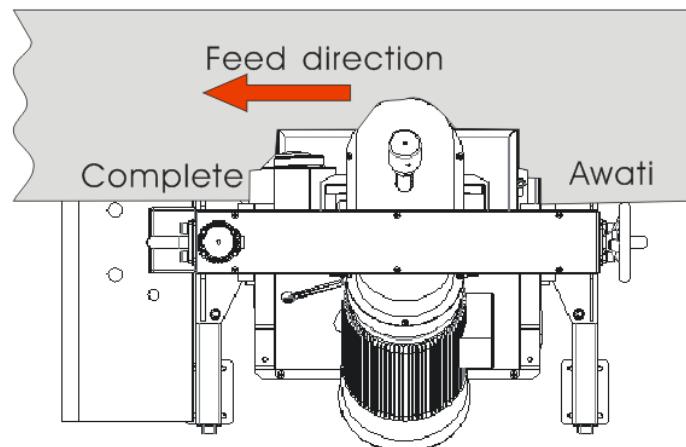
## 5.5 Adjust the height of the machine

Rotate turbine handle wheel to adjust the height



## 5.6 Adjust speed

- ❖ The spindle speed cutting is not adjustable;
- ❖ The purpose of this equipment feeding speed can be adjusted according to the material and cutting depth on the control panel, the control panel is equipped with a feed speed meter, can display the first to speed.



## 5.7 Route:

Clean the the travel route, ifthe ground is not flat, please laid on plate on ground.

**Note:** be sure to confirm therotation direction of cutter and the feeding directionconsistent with regulations, the blade cannot contact plate.



## 6. Basic operation

- ❖ Do not work more than 4 hours continuously.
- ❖ Temperature of gear box grows fast after work fro some time, but boiling grease benefit to abstract heat to a heat balance situation.
- ❖ If over loaded, the thermal element in electric box will start and cut off power supply. Reset thermal element when it cold enough, otherwise the machine will be stopped again.

## 6.1 Machine parts description

### 1) control panel

“1” Spindle speed: display the spindle rotation.

“2”Feeding speed: display feeding speed

“3” Spindle switch: ON-OFF

“4”Adjust spindle speed::750-1050r/min

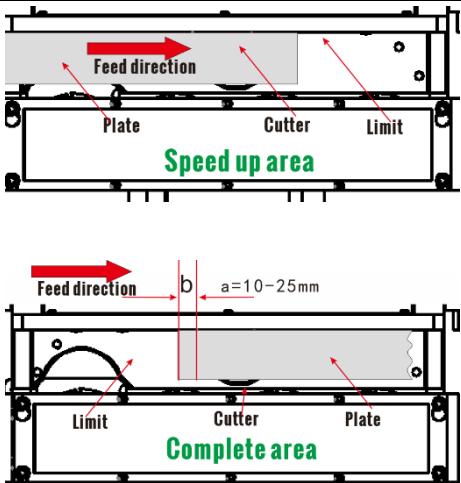
- “5”Feed motor: change the feed direction
- “6” Adjust feed speed: f 0-1500mm/min
- “7”Power light: white light when the machine electrify
- “8” Key: lock the machine, kept by operator
- “9” STOP

- 2) machine “1” control box: operation panel
- “2” motor: power source for milling
- “3” overdraught: press the plate
- “4” underdraught: wheel: support and clamp
- “5” gear set: driving
- “6” press handle wheel: clamp the workpiece
- “7” case: collect the scrap
- “8” base
- “9” handle: pull and push the machine
- handle: pull and push the machine
- “10” spanner: Adjust angle
- “11” electrical box: do not open it at will “12” outlet: air plug AC380V
- “13” walking wheel: travel the machine
- “14” press handle wheel: adjust the height of the machine
- “15” stand: support the machine



## 6.2 Feed Speed table (the below parameter just for reference, the enlarger beveling surface shall reduce the milling speed, please take the actual operation as standard )

start area --- the head located a Speed up area--- touch with Wearable pieces Complete area --- the end located b				
Slowly change the speed (mm/min) thick: mm				
material	thick	start	Speed up	complete
Q235	3-6	150-250	300-800	300-500
	>6	150-250	300-800	300-800
45#	3-6	150-250	300-800	300-800

	>6	150-250	300-700	300-700	
16Mn	3-6	150-250	300-800	300-500	
	>6	150-250	300-700	300-700	
AL	3-8	150-250	300-1000	300-800	
	>8	200-300	300-1000	300-1000	
306	3-8	150-250	300-800	300-500	
	>8	150-250	300-800	300-800	
316L	3-8	150-250	300-800	300-500	
	>8	150-250	300-800	300-800	

### 6.3 Basic operation

Small plate bevel..... In processing can move the small plate, in accordance with the fifth in the method of adjusting to the desired: bevel angle, bevel depth, cutting speed (only GL-880 ), feed rate, bevel began operations.

Large plate bevel..... In the bevel gauge plate. These plates need placed in stent assisted and then transferred to the equipment required: bevel angle, bevel depth, feed rate, cutting speed (only GL-880 ) adjustable and bevel assignment can be completed.

#### Operation steps:

- 1) Steering wheel..... In addition to GL-880 all devices are required to confirm the steering wheel;
- 2) Workpiece placement 1..... The side edge of the workpiece is close to the feed end limit block.
- 3) Workpiece placement 2..... The front end of the workpiece and the cutter head to maintain the 10-15mm distance (as shown in the "initial zone" for the clamping state);
- 4) Workpiece placement 3..... The workpiece in accordance with the operation of the fifth;
- 5) Start milling..... First open spindle 10-15 seconds after the spindle speed is stable, with the feed speed control on the switch according to the provisions of the speed.
- 6) Finish milling..... Turn off the feed, close the main shaft, loosen the pressing wheel, remove the equipment from the processing area.

	<ul style="list-style-type: none"> <li>● Do not have electricity when clamping;</li> <li>● The workpiece side must be close to the limit block, and to ensure that the end of the distance between the blade and the cutter head;</li> <li>● Please open the feed button, will feed speed to 0</li> <li>● After finishing, please feed speed to 0.</li> </ul>
---	---

## 7. 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	After each walk
	Filling the guide rail oil or lubricating oil	3-6 months
Around the	Use a broom to clean up in time, so as to avoid	Clean up according to the actual

machine	excessive accumulation of equipment.	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

## 8. 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.

## 9. Packing list