DZ-20-type Bevelling Machine Operation Manual

# SHENZHEN KEDES MACHERY &EQUIPMENT CO.,LTD.

## Notice!

Please read this instruction carefully before operating this machine!

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## Disclaimer

Be sure to read this manual before use. If you violate the regulations, our factory will not bear any losses.

It is recommended to use the machine parts provided by our factory. If you replace the non-factory parts or disassemble the machine without the technical consent of our factory, causing unnecessary losses, our factory will not be responsible.

Do not let the machine operate continuously for more than 4 hours when fully loaded, and do not use the machine for operations beyond its design performance, otherwise our factory will not bear any losses caused by this.

## 前言：Preface

First of all, thank you for choosing the products provided by our company. We look forward to our products bringing you convenience. DZ series edge milling machine is mainly used for groove operation before flat plate welding. The groove processed by the equipment is convenient for fusion welding, thereby improving the welding strength.

## 1. 概述 Summary

### 1.1 本机介绍 Introduction

The DZ-20 edge milling machine has a processing speed between 0 and 1000 mm/min, a clamping thickness between 3 and 30 mm, a groove width of 0-30 mm, and a groove angle that can be adjusted arbitrarily between 30° and 80°.

### 1.2 应用领域 Range of application

It can be used for processing steel, ferrochrome, fine grain steel, aluminum products, copper and aluminum alloys.

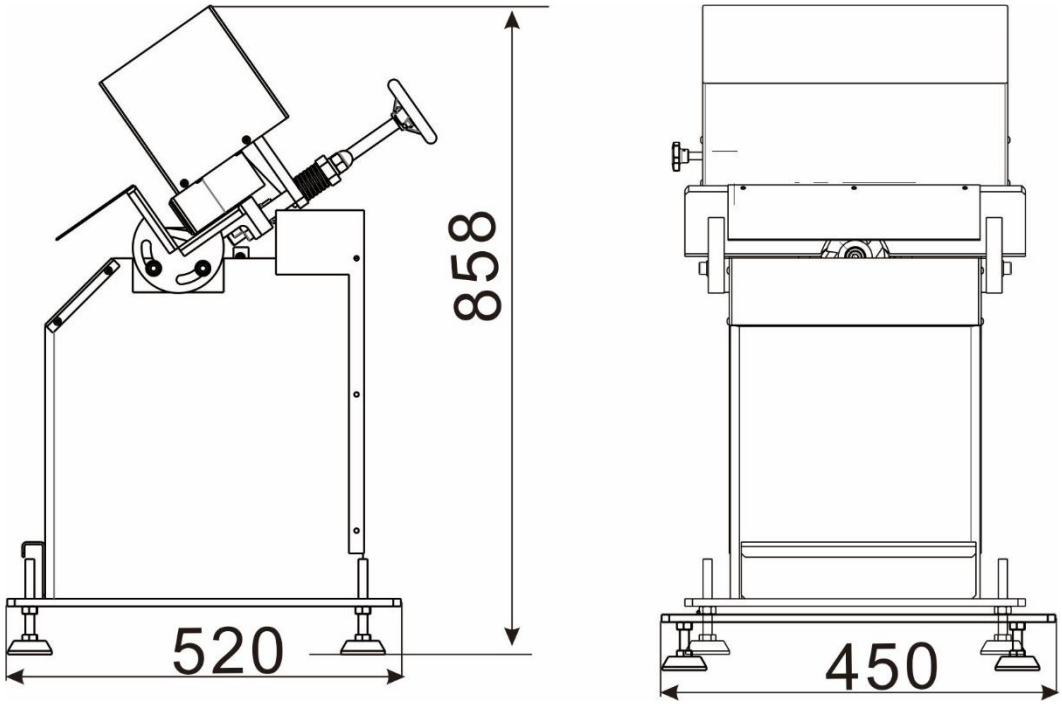
It can be processed into "K", "V", "X" or "Y" type grooves.

### 1.3 机器参数 1.3 Machine parameters

1.3.1Technical Parameters

| | |
|---|---|
| Voltage: AC380V | Frequency: 50HZ |
| Motor speed: 1450r/min | Total power: 1620W |
| Single travel slope width: 0-12mm | Groove travel speed: 0~1000mm/min |
| Steel plate groove angle: 30°~80° (adjustable at will) | Groove width: 0-30mm |
| Groove steel plate thickness: 3~50mm | Minimum clamping plate width: >3mm |
| Processing plate length: ≥100mm | Net weight: 155Kg |

1.3.2 外形参数 Appearance parameters




## 2. 安全和警告 Safety and Warnings

### 2.1 安全指示 2.1 Safety Instructions

Before installing, using and repairing the product, you must read this manual carefully. The electrical and rotating parts have the potential to cause serious personal injury or property damage.

This machine has a power supply of 380 volts. Before installing, wiring, starting, operating 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 harmed or lost.

### 2.2 安全注意事项 2.2 Safety precautions

- ✧ Our factory has the final right of interpretation and modification for all relevant information of this machine!
- ✧ Our factory does not assume any responsibility for the use of accessories not sold by our factory in this machine!
- ✧ Failure to operate in accordance with the provisions of the operating manual is considered as illegal operation, and the danger of this phenomenon is borne by the user!
- ✧ The machine shall not be disassembled without the consent of our factory, otherwise it will no longer be covered by the warranty!

- ✧ Please disconnect the power supply before repairing the machine!
- ✧ Please check the socket, wires and machine for signs of damage before each use!
- ✧ Please keep the machine dry and do not use the machine in a humid environment!

✧ If you use the machine outdoors, please use a tripped circuit breaker to protect the machine!

✧ It is forbidden to wear gloves when the equipment is working!

✧ Please be sure to wear protective glasses and earplugs when using this machine!

✧ When cleaning the iron pins, you must stop the machine and wear gloves to clean them to avoid high temperature and sharp iron pins!

✧ Please plug in the power supply when the machine is turned off, and unplug the power supply after use!

✧ Electrical installation and maintenance must be performed by qualified personnel who meet the requirements of regulations.

✧ Do not move the machine with the power cord!

✧ Always place the power cord behind the machine body and do not place the power cord on sharp objects!

✧ Testing and maintenance must be performed by professional technicians!

✧ During operation, the operator must not leave the site!

## 3. Electrical Installation

**CECertified grounding wire regulations**

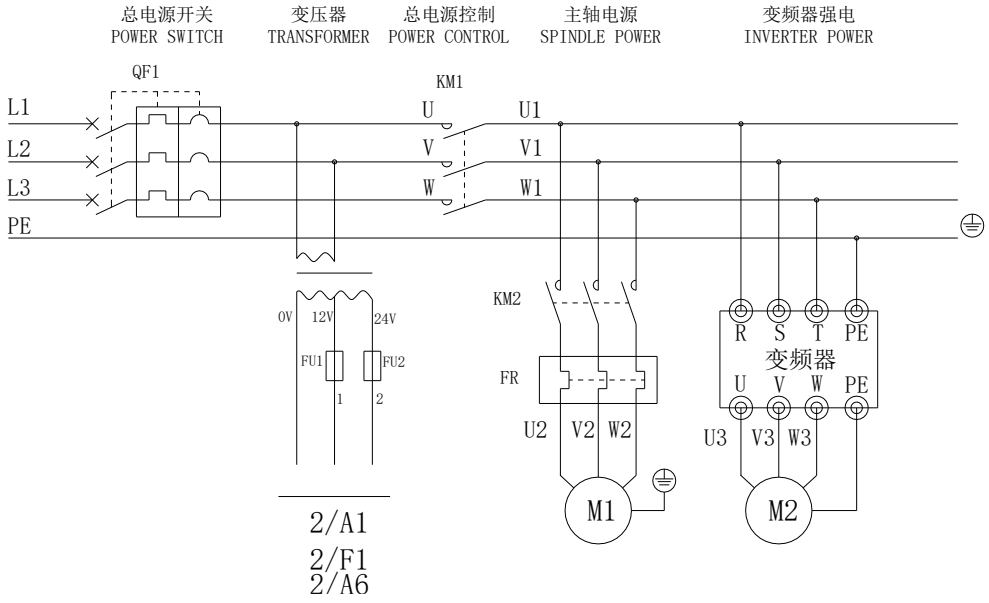
| The diameter of the external grounding wire must be selected according to regulations (copper wire) | |
|---|---|
| Phase line diameter S (mm2) | Ground wire diameter Sd (mm2) |
| S≤16 | S |
| 16＜S≤35 | 16 |
| S＞35 | S/2 |

**4.1 Electrical installation**

**4.1.1 Explanation of electrical symbols**

**QF: power switch SB1: emergency stop KM: AC contactor VFD: frequency converter**

**B: transformer SB2: power switch FU: fuse HF: tachometer**



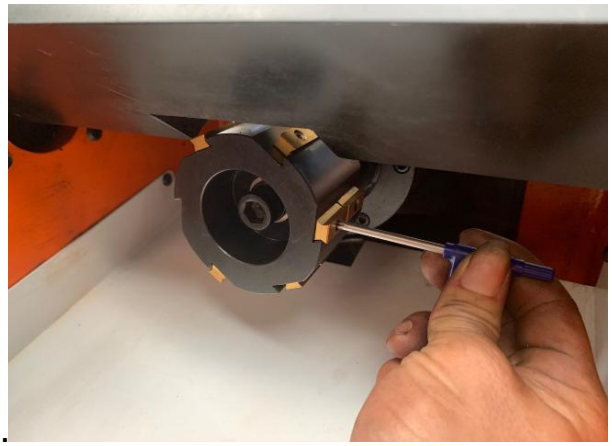

**4.2 General protection measures**

**1) Electrical connection and protection should be carried out in accordance with local regulations; This machine uses AC 380V voltage, please confirm that it is the same as your company's power supply; Connect one end of the cable to the aviation plug (random accessories) and the other end to the power supply. Do not use it in a humid environment to avoid danger.**

**2) Feed according to the arrow instructions, and the workpiece can only be touched after the tool rotates.**

**4.3 Tool installation and removal**

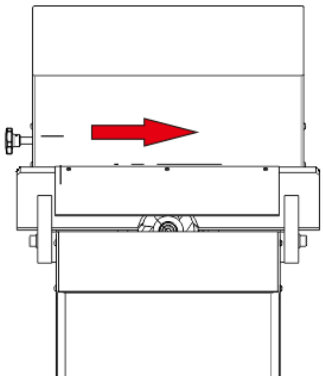
**1) Cut off the power supply of the whole machine; 2) Raise the pressure wheel; 3) Use a special wrench to replace the blade.**



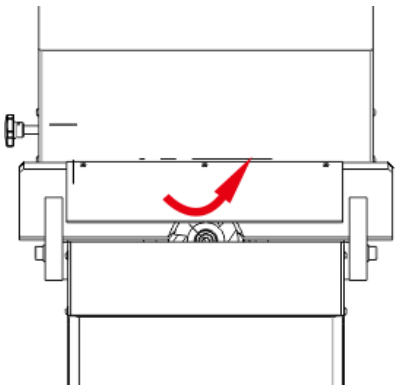
## 4. Bevel preparation

**Note: The hardness of the workpiece cut by oxygen increases after being heated to high temperature. This factor needs to be fully considered when setting the groove process parameters.**

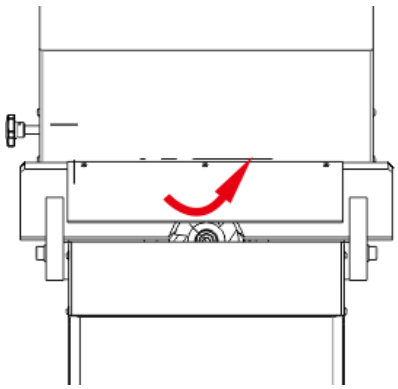
**4.1 Correct feeding, cutter rotation, and pressure wheel rotation direction**



Feed direction

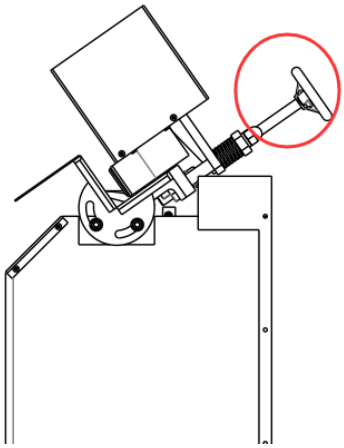


Cutter head steering



Compound wheel steering

5.4 Adjustment of clamping plate thickness 5.5 Adjustment of groove width



Rotate the handwheel to adjust the clamping plate thickness (as shown in the left picture)

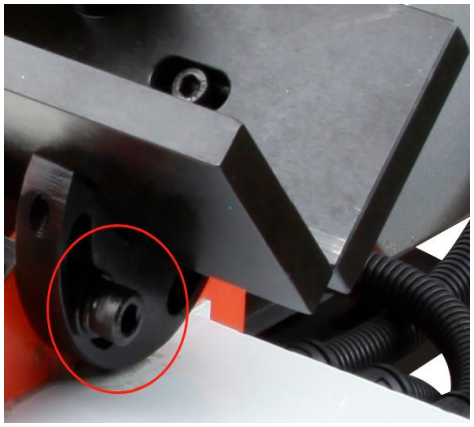
1. Loosen clockwise
2. Tighten counterclockwise

Loosen the four bolts on both sides of the machine (as shown in the right picture)

Rotate the hexagonal nut 1 to adjust the groove size.

Note: The groove becomes larger when the cutter head moves upward, and smaller when it moves downward.

5.6 Bevel Angle Adjustment 5.7 Control Panel

| | | |
|---|---|---|
|  | Loosen the four bolts on both sides of the machine, move the machine head to the desired angle according to the arrows, and tighten the bolts. (As shown in the left picture)<br><br>Control box (as shown in the right picture)<br><br>1. Spindle switch (spindle direction can be achieved by changing the line sequence)<br><br>2. Feed speed control<br><br>3. Feed reducer switch. |  |

## 5. 基本操作 Operation

- ✧ The equipment should not work continuously for more than 8 hours
- ✧ After the equipment has worked for a period of time, the temperature of the reduction box will increase significantly. The boiling of grease is conducive to the heat dissipation of the machine, and the transmission mechanism is in a state of thermal equilibrium as a whole.
- ✧ If the equipment is overloaded during the operation of the machine, due to the increase in the current value, the thermistor in the electrical switch box will start and automatically cut off the power. After the power is cut off, it is necessary to wait for the thermistor to cool down and reset before restarting. If the cooling is not sufficient, it will automatically stop again after working for a short distance.

Step 1: Confirm that the cutter head and the pressure wheel are turning correctly;
Step 2: Adjust to the required groove angle,
Step 3: Place the workpiece against the limit plate and put it in along the feed direction;
Step 4: Press the workpiece tightly with the pressure wheel;
Before operating steps 2-4, cut off the power supply:
The following operations are performed on the control box (Figure 2 on the right is the control box)
Step 5: Turn on the spindle (confirm that the feed speed is zero before powering on)
Step 6: Turn on the feed motor
Step 7: Adjust the feed speed, and the cutter head starts processing;
Step 8: Complete the processing.

## 6. 润滑 lubrication

| Lubrication location | Lubrication method | Cycle |
|---|---|---|
| Complete machine | Spray anti-corrosion oil, clean iron pins, cover with dustproof cover, and place in a dry place | 12 months or long-term non-use |
| Tightening guide rail | Use compressed air to clean iron pins | After each walk |
| | Add guide rail oil or lubricating oil | 9 months (maintenance is required in wet and dry environments) |
| Screw | Use compressed air to clean iron pins | After each walk |
| | Add guide rail oil or lubricating oil | 9 months (maintenance is required in wet and dry environments) |
| Machine surroundings | Clean up in time with a broom to avoid excessive accumulation affecting equipment operation | Clean according to actual conditions |
| Reducer | Use compressed air to clean iron pins | When iron pins are found |
| | Add gear oil | 12 months |
| Control box | Add dustproof and rainproof cover | Long-term non-use |
| Electrical box | Add dustproof and rainproof cover | Long-term non-use |
| Blade | Replace blades and screws in time if damage is found | |
| Blade screw | If broken in the cutter head, use a bench drill to remove | |

## 7. Common fault repair and maintenance

| No. | Faults | Repair and maintenance |
|---|---|---|
| 1 | Equipment does not respond when powered | Check whether the circuit has electricity |
| 2 | Electricity is present but the equipment still does not respond | Check whether the "emergency stop" button is pressed, or the circuit breaker in the control box is tripped |
| 3 | Feed gear makes unusual noises | Add gear lubricating oil, generally the gear will not break |
| 4 | Pinch wheel cannot be tightened | Check whether there are iron pins attached to the pressure wheel or steel plate |
| 5 | Steel plate is ejected | Check whether the feeding direction is consistent with the equipment regulations |
| 6 | Blade is crushed when processing steel plate | Check whether the tool has contacted the workpiece when it is not rotating |
| 7 | Blade breaks after milling begins | Reduce the cutting amount |
| 8 | Electrical control part fails or other reasons | Communicate with the manufacturer in time |
| 9 | Difficulty descending | Carefully check whether the connection between the travel motor and the chip collection groove |

| 注 意 Be careful | |
|---|---|
|  | Depending on the processing material, feed depth, cutting speed and other factors, it is recommended to change the blade direction and fixing screws in time.<br>Generally, the blade angle should be changed every 100 meters to avoid damage to the blade;<br>Generally, the blade fixing screw should be changed every 100 meters. The strength of the screw will decrease after long-term use, and there is a risk of breaking. Once the screw is damaged, it is difficult to remove;<br>Note: If the screw is broken, please consult a professional fitter (drilling) master to determine whether it can be removed depending on the situation. Severe cases may cause the cutter disc to be unable to use normally. |

## 8. 装箱清单 Packing List

| No. | Item | Model | Quantity | Unit | Remarks |
|---|---|---|---|---|---|
| 1 | Edge milling machine | DZ-20 | 1 | set | |
| 2 | Cutter head | | 1 | pieces | Placed on the cutting spindle |
| 3 | Blade | | 6 | pieces | One set is already installed on the cutter head |
| 4 | Hexagonal wrench | | 2 | pieces | |
| 5 | Cutter wrench | T15 | 1 | pieces | For blade replacement |
| 6 | Industrial socket | | 1 | sets | Imported (socket on the electrical box) |
| 7 | Tool box | | 1 | pieces | |
| 8 | Screws | M4*12 | 12 | pieces | 1 set on the cutter head |
| 9 | Foot | | 4 | pieces | |
| 10 | Packing box | | 1 | pieces | Export packaging without fumigation |
| 11 | Operation manual | | 1 | pieces | |