

# GBM-16C-R Type Operation Manual



Read the Manual carefully before use!

Shanghai GIRET Machinery and Equipment Co., Ltd.

# Catalog

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## Disclaimer

- ✧ Read this manual carefully before operation, we are not liable for the loss caused by illegal operation.
- ✧ Advise using the machine parts we provide, we don not take any responsibility in the case of changing original accessories or dismantling the machine.
- ✧ Can not continuously work over 4 hours in the full loaded. Not liable for any loss in operations, which transcend the design capability.

## 1. Summary

### 1.1 Introduction

GBM-16C-R type beveling machine is expansion model of GBM-16C type. It is convenient to bevel two sides of the plate, especially for large plate and double bevel(X type). The GBM-16C-R type can bevel 16mm one time in 1.2~1.6m/min speed, the plate thickness is 9~40mm and intensity strength is 40kg/mm<sup>2</sup>. Also can get 28mm by several times. The bevel angle can be adjusted arbitrarily in the range of 25°~45°.

### 1.2 Technical Parameters

Power supply: AC 380V 50Hz	Motor power: 2200W
Motor speed: 1400r/min	Bevel speed: 1.2~1.6m/min
Single bevel width: 16mm	Bevel angle: 25° ~ 45° (Arbitrarily)
Max. bevel width: 28mm	Min. plate width: 115mm
Processing plate thickness: 9-40mm	N.W.: 310Kg

## 2. Safety and Warning

### 2.1 Safety Instruction

Read the operation instruction carefully before installation, use and maintenance, especially the parts of electrical and rotation exist potential dangerous for life injury and property damages.

The machine use 380v power supply. Please make the manual as a guide before installation, wiring, start, run and adjustment; the operator should know every part of the machine. The electrical wiring installation and maintenance personnel must possess the qualifications to ensure life and property safety.

### 2.2 Safety Caution

- 1) Only be used in the scope of designed purpose;
- 2) The electrical wiring installation personnel must possess Electrician Certificate; power wiring must have a good ground protection;
- 3) Not allowed to process the materials which beyond the provision;
- 4) Operator stays when the machine is working;
- 5) Turn off the power supply when stop beveling;
- 6) Turn off the power supply when replace, maintain and clear the tools;
- 7) Using tools, protective gloves to clean welding slag to avoid hurt from high temperatures and sharp cutting. Do not clean the machine when it is still working.
- 8) When the machine is working, the operator must stand behind the machine; Can not stand left or right side. Otherwise the machine will twist the clothing and gloves.

## 3. Equipment Confirmation

### 3.1. Inspection

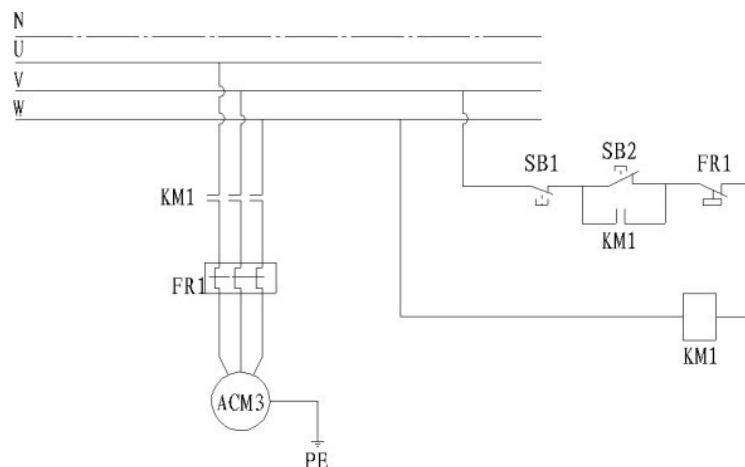
Please check carefully as received the machine, and any signs caused by carrier. And one thing must remember: Obtain signature of the delivery person, so you can claim for insurance for damage.

**Responsibility of lost and damage**

- ✧ Do not sign once found any packing damaged, and timely contact the Express Company to claim and replace a new one.
- ✧ If articles do not match with the packing list, please contact us.
- ✧ Our company will try our best to help you to get the compensation of the loss or damaged articles. But it not means we act for your claims. You should fill the form and claim procedure by yourself.

**3.2 Unpacking and Carry**

Under normal circumstances, the machine use the wooden box carried and specify the lifting and forklift loading and unloading position. Incorrect lifting and shoveling fork may cause a rollover, injury to people and goods loss, for the weight center of the machine rely more on the top.

**4. Installation****4.1 Electrical installation****Circuit Diagram**

- 1) Electrical connection and protection should follow the local regulations;
- 2) Please verify power supply equipment, the machine is 380v;
- 3) Connect the electrical switch box of the machine and the power, which specification greater than 2.5mm<sup>2</sup> three-phase cable.
- 4) The set of electrical switch box:
  - The button of start and stop
  - Low-voltage protection
  - Overload protection
- 5) Check the cutter rotation direction: The red mark indicates the correct direction; otherwise you should rotate the reversing button on the left hand of the machine. "0" means stop, "1" and "2" were reversible (It depends on the wiring connection).

**4.2 Cutter installation and dismantlement**

- 1) Turn off the power supply;
- 2) Promote the upper pinch roller to the top position;
- 3) Loosen the fixed nuts (M16) , under regulation board, and the screws of the under regulation board to the lowest position;
- 4) Loosen the nuts of the cutter, use the dismantlement device, and pull the cutter out;

- 5) Install the components in turn after fitting the new cutter (Keep all nuts tight);
- 6) Regulate the position of the under skateboard based on the steel thickness.

**Note!!!**

Advise putting on gloves to against scratch and burn from cutter and high temperature, when install and detach the cutters.

## 5. Preparation

### 5.1 The plate and the route of trolley

- 1) The plate, which is light and be able to move, can be directly beveled;
- 2) For the heavy plate, you need to make two or more auxiliary support. The height better the 700mm, and then fix the plate on the support.

**Warning**

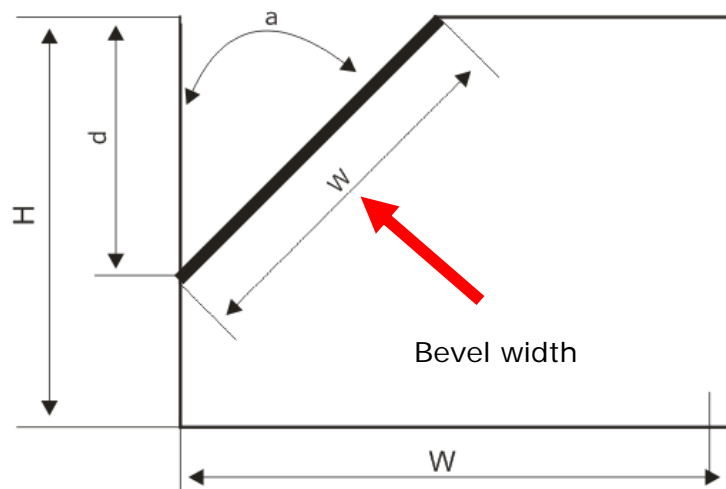
The plate support is made by yourself, so need to pay attention to the stability in order to avoid the loose and shake, which turns out to the steel sliding, tilting, rolling and other accidents likely to cause personal injury and equipment damage.

- 3) Clean the welding slag on the ground, and keep neat. One special plate on the ground is better. The uneven road would cause the unstable of the trolley, and in turn affect the cutters service life.

### 5.2 Plate cleaning

- 1) No welding slag on the groove surface.
- 2) Clean the welding slag before beveling. The uneven surface and broken bits will cause uneven size of the surface, and the bottom broken bits of the steel will affect the cutter and machine service life.

### 5.3 Adjustment of plate thickness and set of the bevel depth

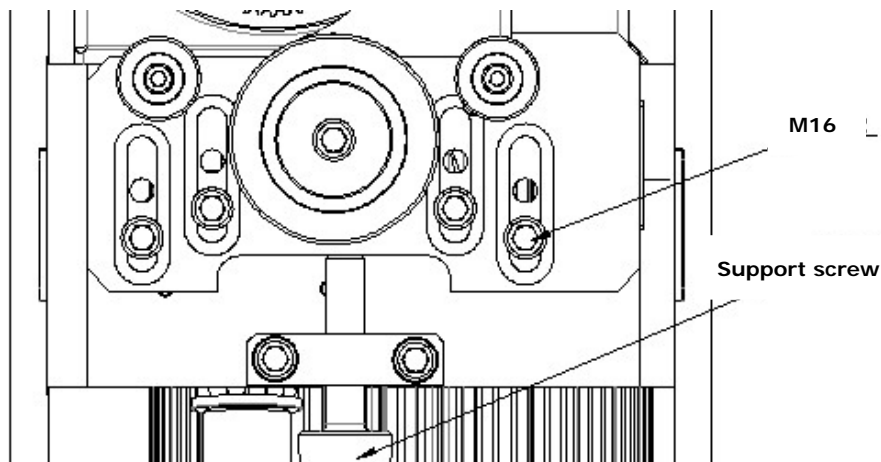


a: Bevel angle      d: Bevel depth      H: Plate thickness

### GBM-16C-R type Bevel diagram

Tensile strength	CARBON STEEL Kg/m <sup>2</sup>						Tensile strength	STAINLESS STEEL Kg/m <sup>2</sup>					
	40		50		60			50		60		70	
a	W	D	W	D	W	D	a	W	D	W	D	W	D
25°	16	14.5	13	11.5	10	9	25°	8	7	6	5.5	5	4.5
30°	16	14	13	11	10	8.5	30°	8	6.5	6	5.2	5	4.2
35°	16	13	13	10.5	10	8	35°	8	6	6	5	5	4
40°	16	12	13	9.5	10	7.5	40°	8	5.5	6	4.5	5	3.8
45°	16	11	13	9	10	7	45°	8	5	6	4	5	3.5

- 1) First make sure the tensile strength of the material, and choose the bevel height (d) according to single beveling parameters; You can make reference to the figure or the machine nameplate.
- 2) Loosen the above M16 bolts, rotate support screw. Check the corresponding number based on the groove depth, adjust the under regulation board marks and the scale escutcheon to corresponding position



Only for reference, the parameters should be gotten by processing thin plate and the actual test.

#### Warning

The single bevel depth must base on the material feature during the operation. Any operating beyond the scope of the 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.

MUST gain some experience through processing thin plate, then operate the machine.

#### 5.4 Angle adjustment

- 1) The bevel angle can be adjusted arbitrarily in the range of 25-45 degree.
- 2) Loosen the eight M16 bolts both the left and right sides of the machine, then twist the side adjustment screw under the box, you can freely adjust the cutter angle. Tighten the bolt after the adjustment is completed.

## 5.5 Height and angle adjustment of the trolley

- 1) Push the hydraulic handle to lift the machine, keep the under support wheels basically the same height by the four hydraulic cylinder.
- 2) After work, open the oil drain valve of the hydraulic equipment, let the hydraulic cylinder be in a maximum relaxation state.
- 3) Four lower springs of the trolley must be in a maximum relaxation state.

## 5.6 Rotate machine

- 1) Cut down the power supply, pull out the wire;
- 2) Pull out and rotate the two pin rolls for 90 degree, which behind the machine, then rotate the machine 180 degree, recover the pin rolls, and connect the power plug;
- 3) Make the bottom of support the same height with the upper side of the steel by the hydraulic lifting device, then bevelling the small size steel.

## 6. Operation

### 6.1 Use introduction

- 1) Bevelling small size steel, fix the machine, put the steel into the machine from the right side to an undercut state, the machine will automatically complete the groove;
- 2) Bevelling large size steel, place the steel on the support as the above from 5.1-2, and then fix it. Depending on the thickness, depth and angle to adjust the machine, push the machine to the right side of the steel to a undercut state, the machine will automatically complete the groove;
- 3) Bevelling large size steel with double sides, turn over the machine to complete the under side groove;
- 4) The upper pinch roller slightly contact with the steel, not too tight, otherwise will affect the machine running automatically;
- 5) If the steel stuck, spindle stop and can not move forward, turn off the motor, rotate reverse button and separate the plate form machine;
- 6) The first processing amount should be less than the cutting parameters, large-sized groove can be obtained by the second processing, finally you can get 28mm groove by three times, every time could widen 3mm groove on the basis of last time.
- 7) Pay attention to clean up the welding slag between baffle and the under support wheels to keep the flexible rotation (In the power turn off state);
- 8) Clean the welding slag left on the ground after large plate be beveled each time;
- 9) This type machine can process the external groove of tube, bevel angle 25 degree to 45 degree, the inside diameter must bigger than 100 mm; Dismantle the deputy support wheel before bevel.

### Note!!!

After a period processing time, the temperature of the reduction gear box greatly improved, for high concentrations grease in the boiling state in the box, it is good for abstraction of heat to make reduction gear box in a heat balance state.

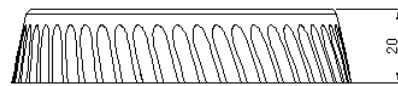
If equipment overload, for the increase of electric current, the thermal element in the electrical switch box will start and cause the automatic power off. Restart the power supply after totally cooling, otherwise it will stop again.

## 7. Lubrication

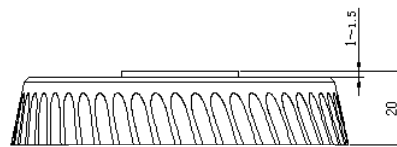
- 1) Use the lubrication, the machine has 2.5 liter liquid grease. In principle, replaces the grease once every 2000 hours.
- 2) The gearbox uses the Great Wall 7412 grease. Consistency grade No.000, suitable temperature: -40~150°C;
- 3) Prohibit the use of convention oil or any other type of lubricant.

## 8. Recycle tool method and note

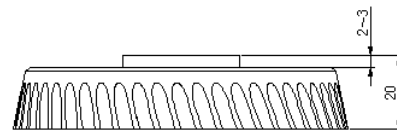
- 1) Use the plane-grinder directly absorbed on the rolling cutter, make the cutter thinner;
- 2) Each grinding amount is 1-1.5mm, and increase the same thickness gasket in the back side of the cutter to make sure the consistency of the calibration between the new and old cutters;
- 3) The thickness of heat treatment is approximately 2-3mm, so twice grinding is better.



Initial form



The form after first grinding



The form after second grinding

## 9. After-sales service

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