Automatic Walking Edge Milling Machine

DMM-YG-80 User Manual

It is essential to read this operating manual carefully, otherwise unnecessary damage may occur!

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Disclaimer

Please read this operating manual carefully before use. The manufacturer shall not be liable for any losses resulting from improper operation.

It is recommended to use machine parts provided by the manufacturer. If you replace non-manufacturer parts or disassemble the machine without the manufacturer's technical approval, causing unnecessary losses, the manufacturer shall not be liable.

Do not allow the machine to operate continuously for more than 4 hours when fully loaded. Do not use the machine for tasks beyond its designed performance capabilities. The manufacturer shall not be liable for any losses resulting from such use.

Preface:

First of all, thank you for choosing our company's products. We hope that our products will bring you convenience. The YG series of milling machines are mainly used for beveling steel plates before welding. After processing with this equipment, the beveled edges are easier to weld, thereby improving the strength of the weld.

1. Overview

1.1 Product Introduction

This product is an automatic travelling edge milling machine that fully automates beveling operations, reducing labour costs. It uses a completely cold cutting process, leaving the bevel surface free of oxidation. Since the bevel is processed using a milling cutter, the surface finish of the bevel fully meets the requirements of the welding industry and can be welded immediately without deburring. This product is pollution-free and easy to operate.

1.2 Application Areas

Can be used for processing steel, chrome iron, fine-grained steel, aluminium products, copper, and aluminium alloys.

Can be processed into V-type and I-type bevels.

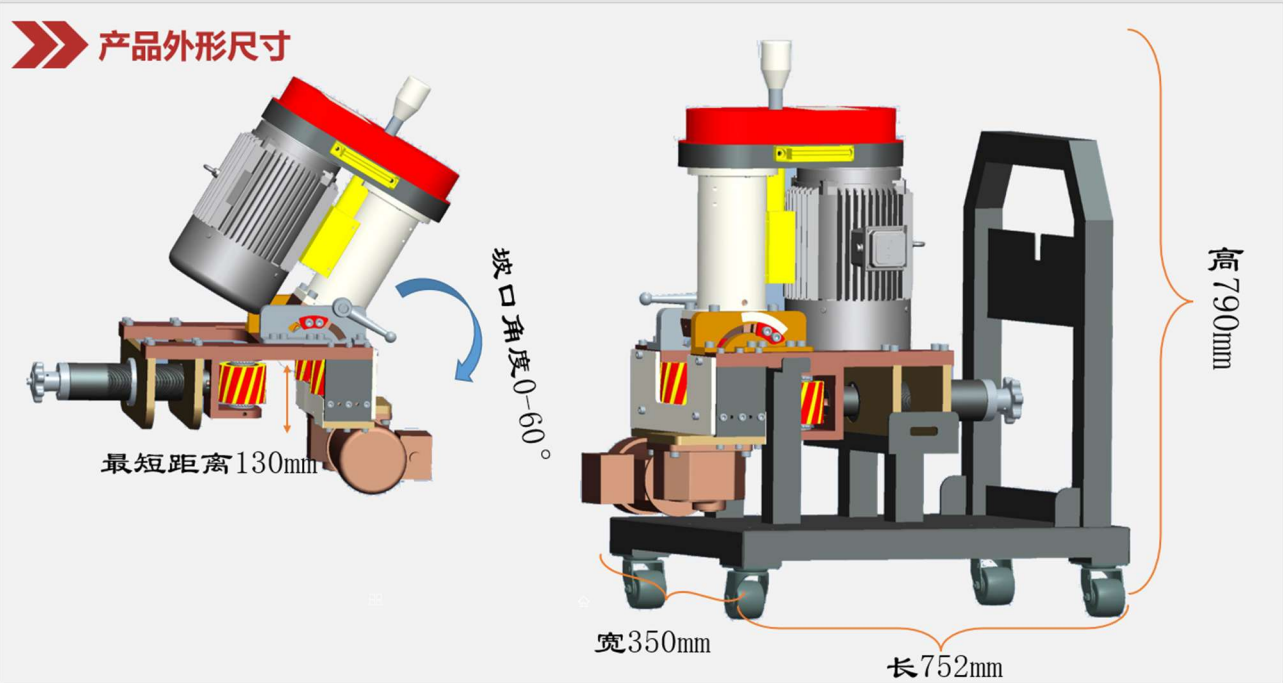
Can be used for beveling operations in construction machinery, steel structures, pressure vessels, shipyards, and the aerospace industry.

1.1 Machine parameters

Motor voltage: AC 380V 50Hz	Total power: 6.4 kW
Cutting power: 6000W	Feed power: 400W
Cutting speed: 800 r/min	Steel plate bevel angle: 0° to 60º
Maximum single feed: 10-15 mm	Steel pipe diameter: ≥700 mm
Processing wall thickness: ≥5mm	Cutter disc blades: 6 pieces
Cutter head diameter: ≥80 mm	Machine net weight: 230 kg

1.1 Machine diagram

1) General view of the machine



1. Safety and warnings

Safety instructions

Before installing, using, or repairing the product, you must carefully read this operating manual. Electrical and rotating parts pose potential hazards that could cause serious personal injury or property damage.

This machine operates on 380 volts. Before installation, wiring, start-up, operation, or any adjustments, use this manual as a guide to identify the various components of the beveling machine. Electrical wiring installation and maintenance personnel must meet the qualifications specified by law to ensure that no harm or damage is caused to persons or property.

1.1 Safety Precautions

Titanium Easy Factory reserves the final right to interpret and modify all relevant information about this machine!

The factory shall not be held liable for any damage caused by the use of non-factory-sold parts in this machine!

Any operation not in accordance with the operating manual shall be deemed as improper operation, and the user shall bear all risks and consequences!

The machine shall not be disassembled without the prior consent of the factory, otherwise it will no longer be covered by the warranty!

Disconnect the power supply before repairing the machine!

Check the socket, wires and machine for signs of damage before each use!

Keep the machine dry and do not use it in a damp environment!

If using the machine outdoors, use a circuit breaker to protect it!

Do not operate the equipment while wearing gloves!

Be sure to wear protective eyewear and earplugs when using this machine!

When cleaning iron filings, stop the machine and wear gloves to avoid injury

from high temperatures and sharp iron filings!

Please plug in the power cord when the device is turned off, and unplug it after use!

Electrical installation and maintenance must be performed by personnel with the qualifications specified by law.

Do not move this machine using the power cord!

Always place the power cord behind the machine body. Do not place the power cord on sharp objects!

Inspection and repair must be performed by a professional technician!

The operator must not leave the site during operation!

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 delivery person's signature for confirmation. This will facilitate your insurance claim in the future. Please contact us as soon as possible.

If you encounter equipment damage, our Titanium Easy factory will promptly help you obtain replacement parts for any missing or damaged parts.

2. Equipment acceptance

3.1 Lifting

Step 1: Remove the wooden box first.

Step 2: Cut the steel straps securing the machine.

Step 3: Lift slowly during lifting; when installing the wheels, the equipment should be 200-250 mm above the ground; when moving in the air, the height should not exceed 100 mm, except when crossing obstacles.

Note: The lifting points can be used for lifting the equipment. During the lifting process, the operator must raise the equipment slowly. Use intact lifting straps during the equipment lifting process, and the lifting weight of the equipment should be >500 kg.

3.2 Installing the wheels

After the equipment has been hoisted up, it can be installed on wheels when it is 200-250 mm above the ground. Operators must pay attention to safety and ensure that someone is holding the equipment steady before installing the wheels.

Note: Do not touch the hoisting device during this process. The equipment must be stable to avoid injury to the installation personnel.

2. Electrical installation

CE 认证接地线规定

The diameter of the external grounding wire must be selected in accordance with regulations (copper conductor).	
Phase wire diameter S (mm2)	Grounding wire diameter Sd (mm^2)
S≤16	S
16＜S≤35	16
S＞35	S/2

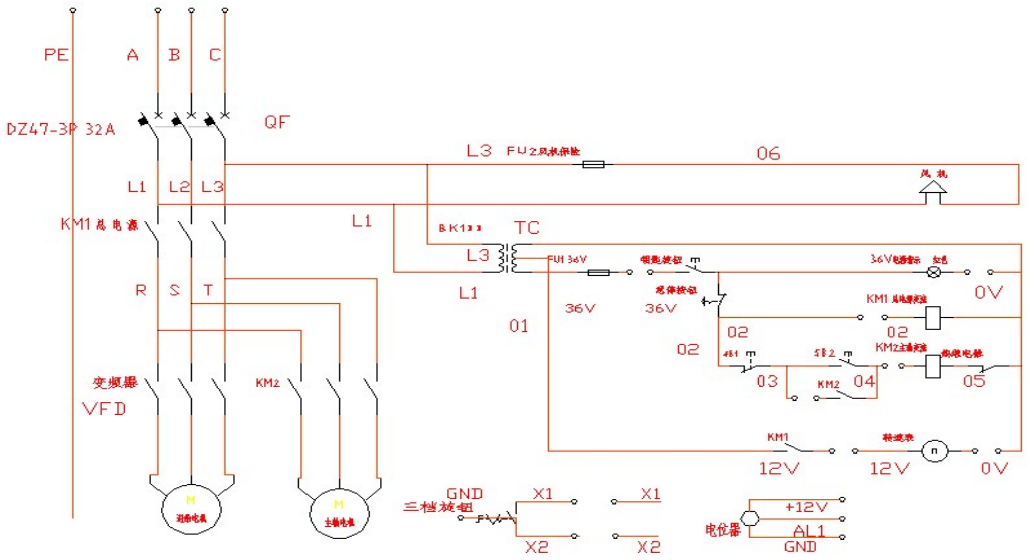
3.1 electrical installation

1）Explanation of electrical symbols

QF：Power switch	SB1：Emergency stop	KM：AC contactor	VFD ： Variable frequency drive
B：Transformer	SB2：Power switch	FU： Fuse	HF：Tachometer

2）electrical schematic diagram

Electrical box connection



PB-60自动行进铣边机															
12V	0V	36V	02	03	04	GND	X1	X2	GND	+12V	ALI	GND	A0		06
变压器电源输出			主交流	主轴电机		变频器正反转			变频器调速			变频器速度显示			风机

3.2 Standard safety precautions

1) Electrical connections and protection should be carried out in accordance with local regulations;

2) This machine operates on AC 380V voltage; please confirm that it matches your company's power supply;

3) Connect one end of the cable to the aviation connector (included as a standard accessory) and the other end to the power source;

4) Do not use in damp environments to avoid hazards.

5) Feed material according to the arrow indication; only touch the workpiece after the cutting tool has started rotating.

3.3 Tool Installation and Removal

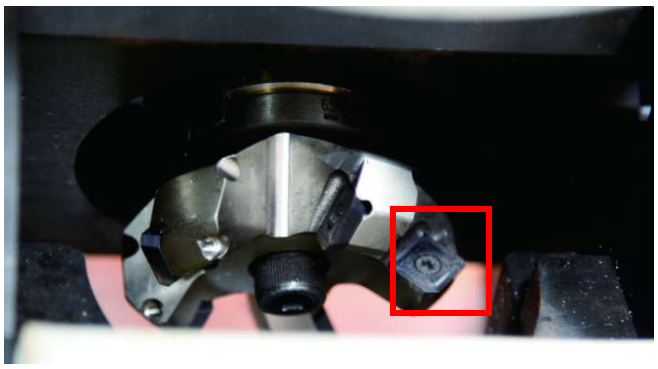
1) Turn off the power to the entire machine.

2) Loosen the angle adjustment bolts and adjust the bevel angle to the minimum.

3) Tighten the blade disc locking bolts.

4) Use a special wrench to replace the blade.

5) After replacing the blade, perform the opposite operation of the previous adjustment (all nuts must be tightened).

	
The square box contains the milling cutter blade.	Specialised tool change wrench

When removing or installing cutting tools, please be aware that sharp edges and high-temperature chips may cause cuts and burns to your hands. It is recommended to use an air gun to blow away the chips before replacement, and then wear protective gloves.

2. Groove preparation

During operation, the bevel depth for each pass must be strictly set according to the different steel plate materials. Any operation exceeding the performance range of this machine will cause serious damage to the equipment, such as gear wear, tool chipping, and spindle breakage.

After being heated to high temperatures during oxygen cutting, the hardness of the processed parts increases. This factor must be fully considered when setting the beveling process parameters.

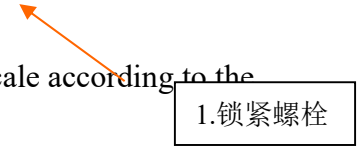
1.2 Adjusting the bevel angle

1. Loosen the ‘locking bolts 1’ on both sides of the equipment.

2. Rotate the ‘adjustment wrench 3’ according to the ‘angle gauge 2’ indication.

3. After adjusting to the desired angle, tighten the ‘locking bolts 1’.

Adjusting the chamfer depth: Adjust the feed handwheel to the corresponding scale according to the table below. Tighten the 'locking bolt'.



The milling depth can be adjusted according to the table below (the same table is printed on the machine nameplate).

DMM-YG Spindle Feed Reference Table (F: Handwheel Parameters)

d: Machining depth T: Clamping plate thickness

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

Note: 1. This parameter table is for reference only; actual machining conditions prevail.

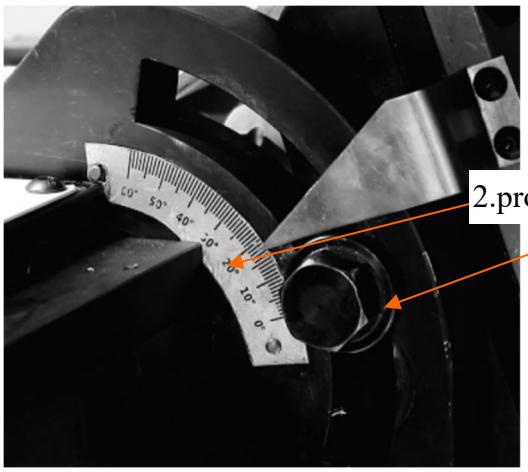
2. Different colours represent the maximum feed rate for each pass.

3. The maximum feed rate per pass may be adjusted appropriately based on the material type.

F / d	a										
	10°	15°	20°	25	30	35	40	45	50	55	60
0	6.5	5.3	4.3	3.4	2.6	1.9	1.4	1.0	0.7	0.6	0.6
4	7.2	6.4	5.7	5.1	4.6	4.2	4.0	3.8	3.8	3.8	4.0
6	7.5	6.9	6.4	5.9	5.6	5.4	5.2	5.2	5.3	5.5	5.8
8	7.8	7.4	7.0	6.8	6.6	6.5	6.5	6.6	6.8	7.1	7.5
10	8.2	7.9	7.7	7.6	7.6	7.7	7.8	8.0	8.4	8.8	9.2
12	8.5	8.4	8.4	8.5	8.6	8.8	9.1	9.4	9.9	10.4	11.0
14	8.9	9.0	9.1	9.3	9.6	10.0	10.4	10.9	11.4	12.0	12.7
16	9.2	9.5	9.8	10.2	10.6	11.1	11.7	12.3	13.0	13.7	14.4
18	9.6	10.0	10.5	11.0	11.6	12.2	13.0	13.7	14.5	15.3	16.2
20	9.9	10.5	11.1	11.8	12.6	13.4	14.2	15.1	16.0	17.0	17.9
22	10.3	11.0	11.8	12.7	13.6	14.5	15.5	16.5	17.6	18.6	
24	10.6	11.5	12.5	13.5	14.6	15.7	16.8	17.9	19.1	20.2	
26	11.0	12.1	13.2	14.4	15.6	16.8	18.1	19.3	20.6	21.9	
28	11.3	12.6	13.9	15.2	16.6	18.0	19.4	20.8	22.1		
30	11.7	13.1	14.6	16.1	17.6	19.1	20.7	22.2	23.7		
32	12.0	13.6	15.2	16.9	18.6	20.3	21.9	23.6	25.2		
34	12.4	14.1	15.9	17.8	19.6	21.4	23.2	25.0			
36	12.7	14.6	16.6	18.6	20.6	22.6	24.5	26.4			
38	13.1	15.2	17.3	19.4	21.6	23.7	25.8	27.8			

40	13.4	15.7	18.0	20.3	22.6	24.9	27.1				
42	13.8	16.2	18.7	21.1	23.6						
44	14.1	16.7									
45	14.3	17.0									

Adjustment of bevel angle



As shown in the figure, after loosening ‘locking bolt 1’, rotate ‘adjustment wrench 3’ according to the indication of ‘angle gauge 2’. Stop rotating when the desired angle is reached, and finally tighten ‘locking bolt 1’.

1.2 Speed control

The cutting spindle speed of this equipment is adjustable. Before cutting, adjust the required speed on the control panel according to the material. The control panel is equipped with a speedometer that displays the cutting spindle speed.

The feed speed of this equipment is adjustable. During cutting, adjust the feed speed appropriately on the control panel according to the material and cutting depth. The control panel is equipped with a feed speedometer that displays the feed speed.

5.7 Route:

The route should be cleared. If the ground is uneven, steel plates can be laid on the ground for walking.

Note: Before feeding, make sure that the rotation direction of the cutter head is consistent with the specified direction, and that the blades do not come into contact with the steel plate.

2. Basic operations

The continuous operating time of the equipment shall not exceed 4 hours.

After the equipment has been operating for a period of time, the temperature of the gearbox increases significantly. The boiling of the lubricating grease facilitates heat dissipation, ensuring that the entire transmission mechanism remains in a state of thermal equilibrium.

If the equipment becomes overloaded during operation, the increase in current causes the thermosensitive elements inside the electrical switchbox to activate, automatically shutting off the power. After the power is shut off, the thermosensitive elements must cool down and reset before the equipment can be restarted. If cooling is insufficient, the equipment will automatically shut down again after operating for a short distance.

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Lubrication and Maintenance

Lubrication location	Lubrication method	Cycle
complete machine	Spray anti-corrosion oil, clean iron filings, add dust cover, and place in a dry place.	Not used for 3 months or longer
Pressure rail	Use compressed air to clean iron filings.	After each walk
	Add guide rail oil or lubricating oil.	3-6 months (maintenance required in humid or dry environments)
elevator screw	Use compressed air to clean iron filings.	After each walk
	Add guide rail oil or lubricating oil.	3-6 months (maintenance required in humid or dry environments)
Around the machine	Clean up promptly with a broom to prevent accumulation from affecting equipment operation.	Clean up according to the actual situation.
speed reducer	Use compressed air to clean iron filings	When iron filings are found
	Add gear oil	Lifetime maintenance-free

Control box/electrical box	Cover with dustproof and rainproof cover	Not used for a long time
blade	Replace damaged blades and screws immediately upon discovery.	See item 8.
blade screw		

Common Troubleshooting and Maintenance

serial number	malfunction	Repair and maintenance
1	Powered equipment does not respond	Check whether the circuit is live.
2	The line is live, but the equipment still does not respond.	Check whether the 'emergency stop' button has been pressed or whether the circuit breaker in the control box has tripped.
3	The feed gear makes a strange noise.	Add gear lubricant; generally, gears will not break.
4	The pressure wheel cannot be tightened.	Check whether there are iron filings attached to the pressure roller or steel plate.
5	The steel plate was ejected.	Check whether the feed direction is consistent with the equipment specifications.
6	Processing steel plate blades broken	Check whether the cutting tool is already in contact with the workpiece when it is not rotating.
7	The cutting edge of the tool broke after milling the steel plate began.	Reduce knife consumption
8	Electrical control failure or other causes	Communicate with the manufacturer in a timely manner
9	Difficulties in decline	Carefully check whether the drive motor is connected to the chip collection tray.
10	Difficulty rotating	Check whether the locking bolts have been removed.

packing list

serial number	project	Model	Quantity	Unit	Note
1	Milling machine	**DMM-YG-80**	1	Platform	
2	Cutter head		1	Piece	Placed on the cutting spindle
3	Cutter blade		12	Set	Placed on the machine cutter head 6 pieces
4	Control box		1	Set	

5	Electrical box		1	Set	
6	Hexagon socket wrench		1	Set	
8	Pry bar	T15	1	Set	Replace the blade
9	Industrial socket	4075	1	Set	(socket on the electrical box)
10	Toolbox	4111	1	Set	
11	Swivel castors	5001	4	Set	Place the castors at the bottom of the equipment
12	Screws	M8*16	16	Set	Place the fixed swivel castors at the bottom of the equipment
13	Operating instructions		1	share	

after-sales service

1. We guarantee to end users that our new machines are free from any defects in materials or workmanship. Under normal use in accordance with our manual, this machine is warranted for one year from the date of sale. (Excluding damage caused by improper operation.)

2. The warranty period is based on the date shown on the invoice.

3. This warranty applies only to normal use of the machine. We are not responsible for repairs in the following cases: normal wear and tear, improper operation, disassembly of the machine by the user, damage caused by overloading the machine or improper use of the milling cutter head, intentional damage, use of unqualified or defective milling cutter heads, damage caused by the processed object or the milling cutter head during processing, excessive use of the machine, indirect damage to the machine caused by improper maintenance by a third party or the consumer, damage caused by unauthorised third parties or other contaminants, and damage caused by failure to operate the machine in accordance with the manufacturer's manual (such as incorrect power connection, etc.).