

Automatic travelling edge milling machine DMM-900X User's Manual



This operating manual must be read carefully or unnecessary damage will occur!

SHENZHEN KEDES MACHERY &EQUIPMENT CO.,LTD.

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1. Disclaimer

- ✧ Before use, you must read the machine's "Operation Manual", such as violation of the operation of the factory will not be liable for any loss;
- ✧ Because of the size, precision, material and other deviations of non-factory parts, there is a risk of causing the equipment and its matching parts village bad, so you must use the equipment parts provided by the factory, without consent to replace non-factory parts or disassemble the machine, the factory does not assume any responsibility;
- ✧ When the machine is fully loaded, it cannot be operated continuously for more than 2 hours, and the machine is an 8-hour working system (shortened to 4 hours when the ambient temperature is above 30°C);
- ✧ The factory is not responsible for any damage caused by overloading the machine;
- ✧ Please keep this Operator's Manual in a safe place so that you can replace the corresponding parts at a later stage, and it will not be reissued if it is lost;
- ✧ The machine must not be allowed to engage in operations other than those for which it is designed to perform, or the factory will not be liable for any damages resulting therefrom.

2. Preface

First of all, thank you for choosing our products, looking forward to our products for you to enhance the efficiency of chamfer at the same time, more you save labour and electricity costs DMM series of milling machine products are mainly used for flat plate welding before the beveling operation, after the equipment processed by the bevel to facilitate welding, welding strength can be greatly improved.

For your personal interests, please be sure to carefully read this manual and the relevant instruction signs on the machine before use, any operation not in accordance with the requirements, if it leads to equipment damage or personal injury, our company does not assume any responsibility. If there is any objection to the information and the product, please raise it within 3 days after receiving the goods, otherwise it is regarded as a full recognition of the content of the information.

- Our company enjoys the right of final interpretation of this material, and is subject to change or alteration without prior notice;
- Our company enjoys the copyright of this material, without permission any unit or individual

may not be copied, modified;

- The picture, text and data of this information is for reference only, because the product is constantly updated in kind will change, the specific parameters to the actual product shall prevail.

Acknowledgments!

3. Overview

3.1 Introduction of the machine

This product is an automatic marching edge milling machine, milling automatically in the process of processing bevel, reduce the cost of use, reduce labour intensity; the use of cold cutting operation, the surface of the processed bevel without oxidation. The bevel surface finish reaches Ra3.2-6.3, in full compliance with the requirements of the welding industry, no need to deburring treatment can be immediately welded to use; this product is non-polluting, the operation is more simple.

3.2 Fields of application

- ✧ It can be used for steel, ferrochrome, fine grain steel, aluminium products, copper and aluminium alloys.
- ✧ Can be machined into "K", "V", "X" or "Y" bevels.
- ✧ It can be used for chamfer operations in construction machinery, steel structures, pressure vessels, shipyards and aerospace industries.

3.3 Machine parameters

1) Machine parameters

Motor voltage: AC380V 50HZ	Total power: 8400W
Feeding speed: 0~1500r/min(any adjustment)	Bevelling angle of steel plate : 0° ~ 90 °
Single bevelling width: 1mm-35mm (in Q235 for example)	Thickness of bevelled steel plate: 5~80mm
Maximum bevelling width: 80mm	Diameter of cutter plate: 63*2
Minimum clamping plate width: ≥100mm	Net weight of machine: 370kg

4. Safety and warning

4.1 Safety instructions



You must read this operator's manual carefully before installing, using, or servicing the product. electrical and rotating parts present a potential hazard of serious personal injury or property damage.

This machine is powered by 380 volts, use this manual as a guide to identify the parts of the chamfer before installing, wiring, starting, operating or making any adjustments. Electrical wiring installers and maintenance personnel must be qualified under the regulations to ensure that life and property are not damaged by injury.

4.2 Safety precautions



- ✧ The factory has the final right of interpretation and modification of all relevant information of this machine!
- ✧ The factory will not be responsible for non-factory sales parts used for this machine!
- ✧ Failure to comply with the operation manual is considered a violation of the law, and the risk of this phenomenon will be borne by you!
- ✧ Do not dismantle the machine without the factory's consent, or it will no longer be covered by the warranty!



- ✧ Disconnect the power supply before servicing the machine!
- ✧ Check the socket, cord 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 the unit is used outdoors, protect the unit with a tripped current breaker!
- ✧ Gloves are not permitted when the equipment is in operation!
- ✧ Always wear protective eyewear and earplugs when using this machine!
- ✧ When cleaning the iron pin must stop wearing gloves to clean up, so as to avoid high temperature, sharp iron pin injury!
- ✧ Please plug in the power supply in the off state and unplug the power supply after use!
- ✧ Electrical installation and maintenance must be carried out by people who are qualified under the regulations.
- ✧ Do not move the unit by the power cord!
- ✧ Always place the power cord behind the body of the unit and do not place the power cord on sharp objects!
- ✧ Inspection and repair must be carried out by a professional technician!
- ✧ The operator must not leave the site during operation!

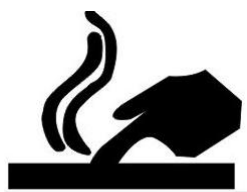




When receiving the equipment, if you find that the packaging is broken so that the equipment is damaged, please refuse to sign for it and obtain the signature of the delivery person, which will facilitate your future insurance claims. Please contact us as soon as possible!

In the event of equipment damage, our Titanium Factory will help you get replacement parts for shortages or damage.

4.3 Explanation of safety signs



Be careful of burns

After processing the steel plate, high temperature exists in the iron chips and the blade, so do not touch it with your hands;



Electric shock hazard

This indication is often found on electrical boxes and represents the need for a professional electrician to overhaul them and be aware of the risk of electric shock.



Lifting tips

When lifting, people should not stand under the machine to avoid injury or death.



Be careful not to pinch your fingers

This marking is often found at the feed end and represents a risk of hand entrapment, keep a distance of 1cm from the rotating parts.



Watch out for the sting.

This marking is often found at the feed end and represents the danger of zapping, machined bevels and iron pins can be zapped and should not be touched directly.

5. Equipment acceptance

5.1 Lifting

Step 1: Remove the wooden box first.

Step 2: Cut the steel belt that fixes the machine.

Step 3: Lift the machine according to the lifting position, which needs to be lifted slowly; when installing the wheels, the machine can be 200-250mm away from the ground; the height should not be more than 100mm when moving in the air, except when crossing the obstacles.

Step 4: The packing box is not non-recyclable, just dispose of it properly.

Note: The lifting point can be used for lifting the equipment, and the operator should ascend slowly during the lifting process. Please use intact sling during equipment lifting, lifting weight of lifting equipment should be >500kg.

5.2 Installation of travelling wheels



Equipment lifting up, that is, 200-250mm from the ground can be installed after the walking wheel, the operator to pay attention to the safety of the equipment must be held steady before the installation of the walking wheel work.

Note: Do not touch the lifting device in this process, the equipment must be stable to avoid injury to the installer.



Note: Do not touch the lifting device during this process, and the equipment must be smooth to prevent injury to the installer.

6. Installation and schematic

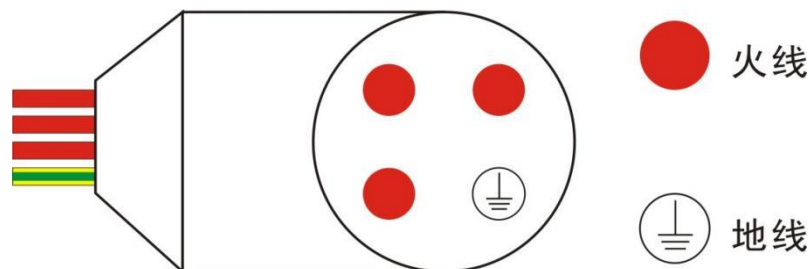


CE marking grounding wire regulations

External grounding conductors shall be of the specified size (copper conductor).	
Phase wire diameter S (mm ²)	Earth wire diameter Sd (mm ²)
$S \leq 16$	S
$16 < S \leq 35$	16
$S > 35$	S/2

7.1 Electrical installation:

1) In order to ensure the normal operation of the inverter, this machine adopts three fire wires and one earth wire connection, and the entry of zero wire may cause damage to the inverter.

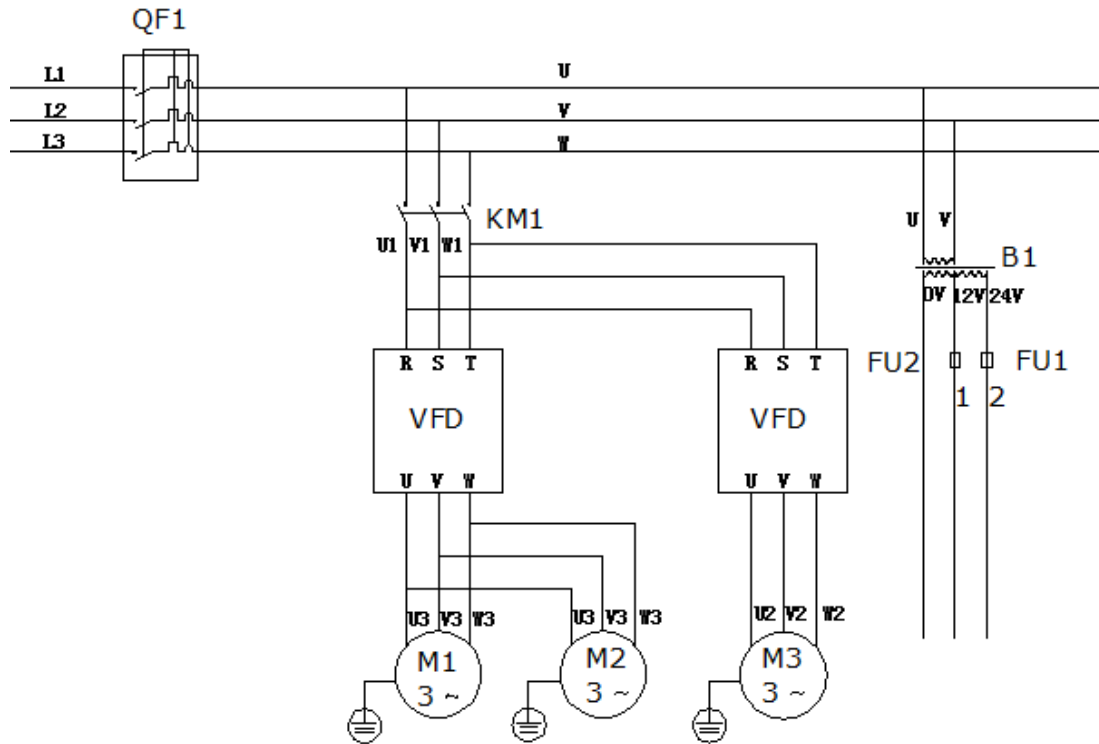


2) Check the direction of rotation of the tool, if the direction of rotation is not correct, then by switching the position of any two fire wire to change the steering can be.

7.2 Electrical symbols

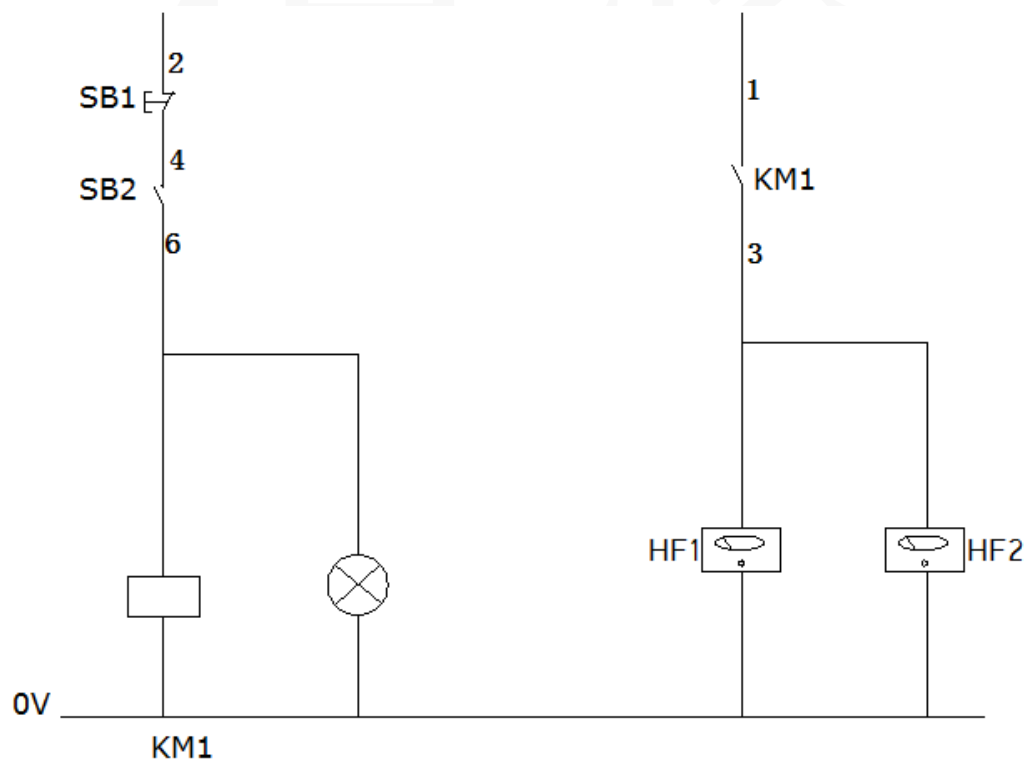
QF: power switch SB1: emergency stop KM: alternating current contactor VFD: converter
 B: transformers SB2: power switch FU: fuse wire HF: RPM gauge

7.3 Electrical box schematic



Note: The inverter and digital table have been parameterized.

7.4 Control box schematic



7.5 Common protection measures

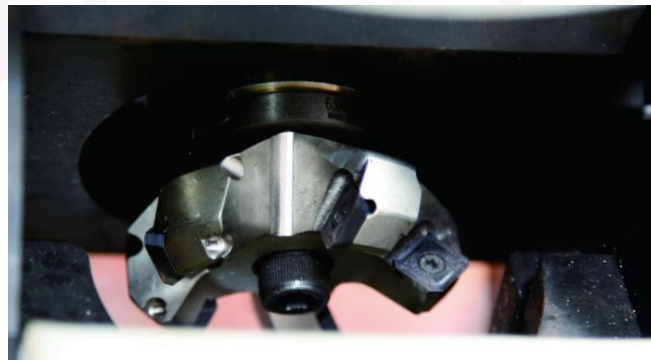
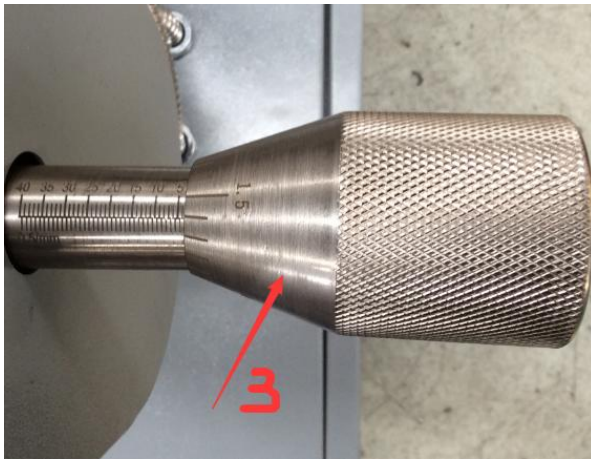
- 1) Electrical connections and protection shall be in accordance with local regulations;
- 2) This machine uses AC 380V, 50HZ power supply, please make sure it is the same as your company's power supply;
- 3) Connect one end of the cable to the aviation plug (supplied accessory) and the other end to

the power supply;

- 4) Do not use in a humid environment as this may cause danger.
- 5) Feed according to the arrow indication and rotate with the tool before contacting the machined part.

7.6 Tool installation and removal

- 1) Cut off the power supply to the whole machine.
- 2) Loosen the angle adjustment bolt and set the bevel angle to minimum;
- 3) Loosen the spindle locking bolt and rotate the feed depth handwheel
- 4) After the cutter disc is extended, use the special T15 screwdriver to insert the bolt to replace the milling blade;
- 5) Once the blades have been replaced, just reverse the previously adjusted position (all nuts must be tightened).





When removing and installing the tool, please note that the sharp cutting edge and high temperature chips will cause scratches and burns to the hand, it is recommended to blow the chips clean with an air gun before replacing them, and then wear protective gloves.

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7. Bevel Preparation

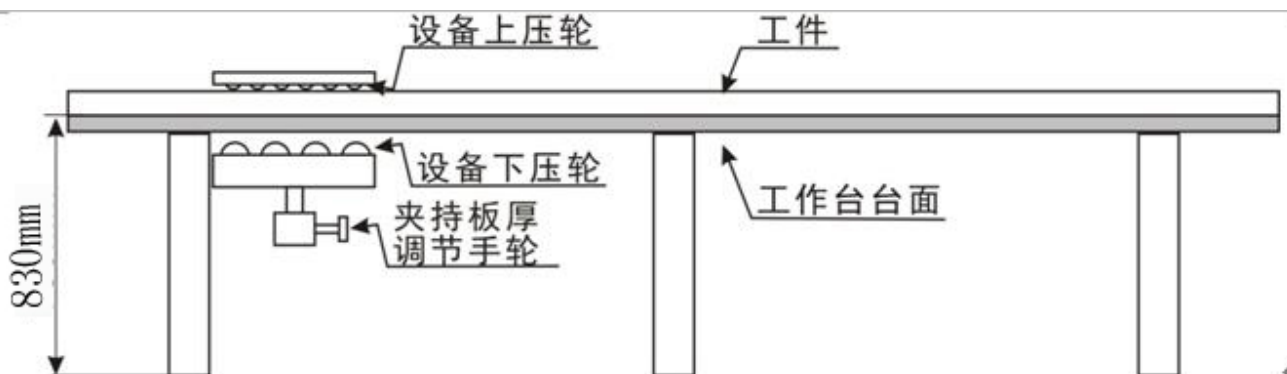
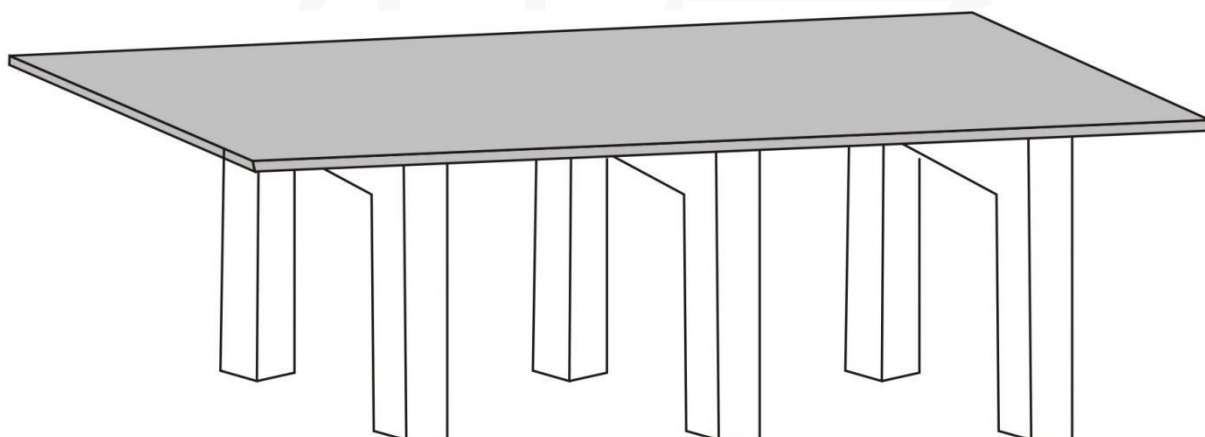


Operation process must be strictly set according to the different steel plate materials, the depth of a travelling bevel, any operation beyond the performance range of the machine will cause gear wear, tool chipping and spindle fracture and other serious equipment damage.

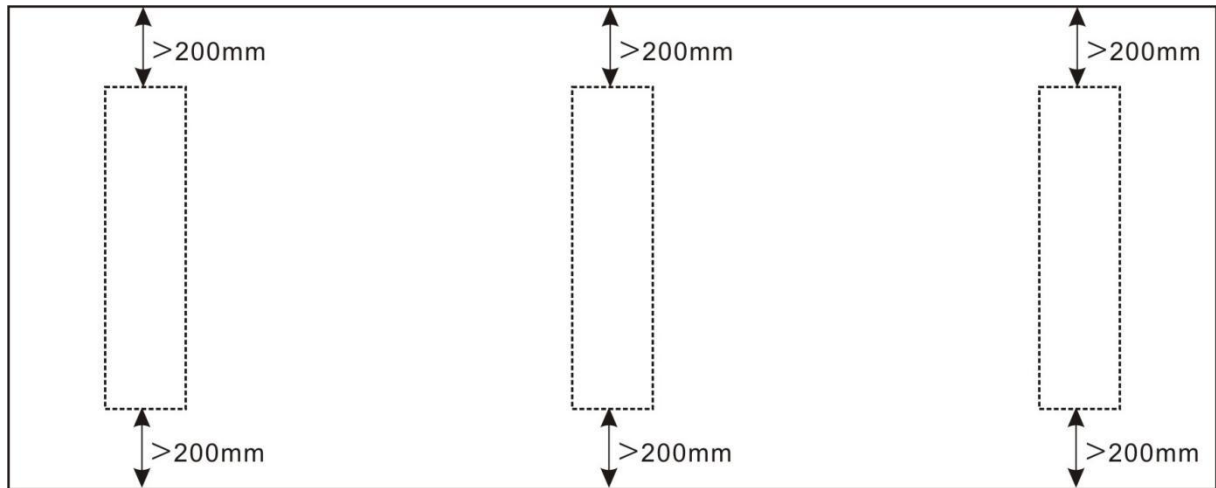
The hardness of oxygen cut parts increases after high temperature heating, so this factor should be taken into consideration when setting the bevelling parameters.

7.1 Placement of work on large boards

(1) You can refer to the following figure way to make a simple bracket (this figure is for reference only, can be made according to the actual situation).



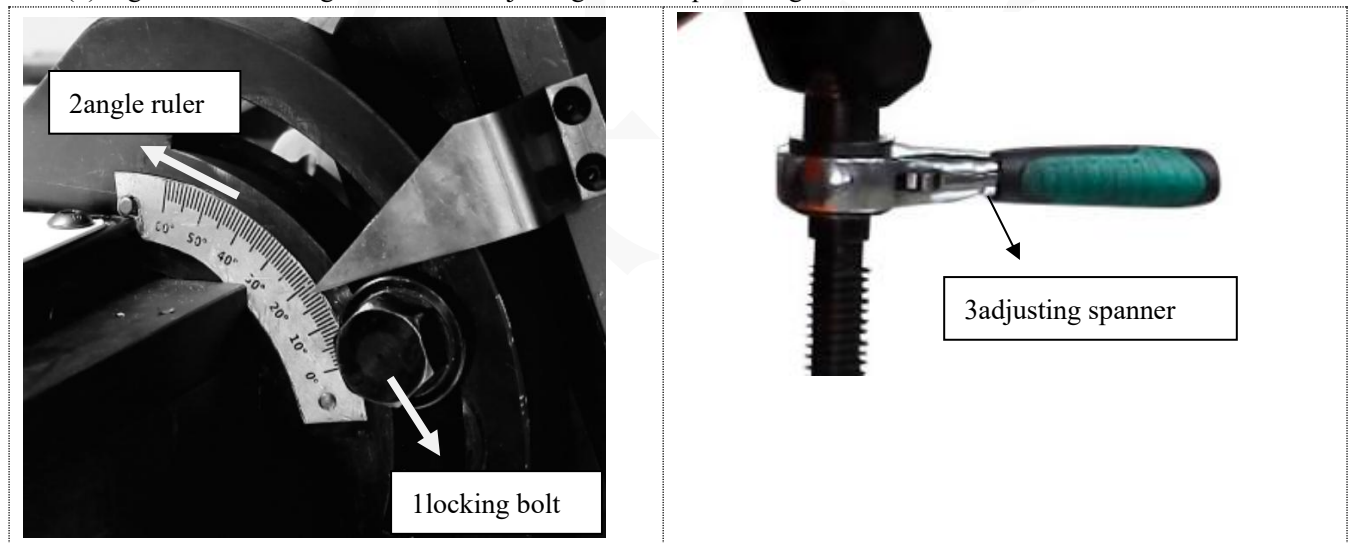
2) Place the workpiece, as shown in the figure below the steel plate to be machined is placed on the platform, the machining edge is kept 200-250mm from the support frame.



7.2 Plate cleaning: Surfaces to be bevelled must not have weld burrs or weld scars (burrs and weld scars affect tool and machine life).

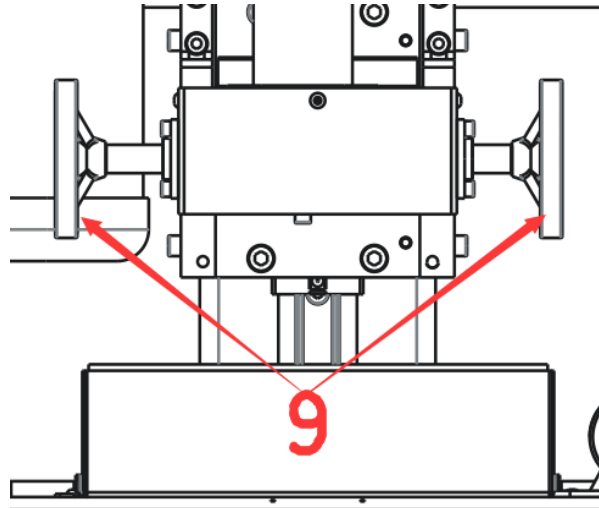
7.3 Bevel angle adjustment

- (1) Loosen the "locking bolts 1" on both sides of the device;
- (2) Turn the adjusting spanner 3 according to the angle gauge 2;
- (3) Tighten the "locking bolt 1" after adjusting to the required angle.



7.4 Clamping plate thickness and chamfer depth setting

- (1) Plate thickness adjustment: Rotate the clamping handwheel "9" and stop rotating when the workpiece is clamped by the support wheel and the press wheel.



(2) Bevel depth adjustment: loosen the locking bolt, rotate the hand-wheel to the corresponding scale according to the parameter table, tighten the locking bolt.



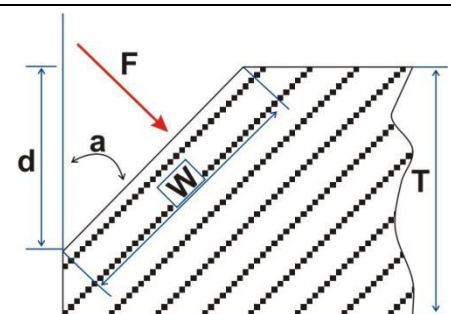
DMM-900X spindle feed reference table (F: handwheel parameters)

d: machining depth, T: clamping plate thickness, w: bevel width, a: bevel angle, F: spindle feeding

Note: 1. This parameter table is for reference data, subject to actual machining.

2. Different colours represent the maximum feed amount of the sub-feed.

3. The maximum value of single feeding can be increased or decreased according to different materials.

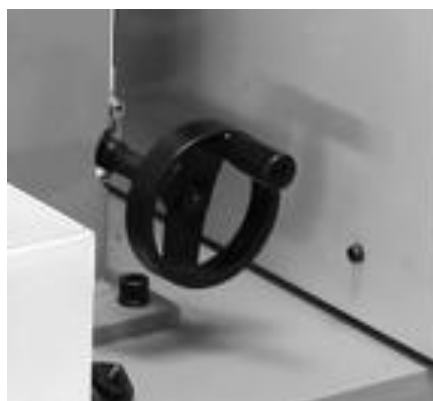


processing depth d	Bevel angle α Angle/°											
	5	10	15	20	25	30	35	40	45	50	55	60
0	11.1	9.4	7.8	6.3	4.9	3.7	2.7	1.9	1.3	0.8	0.5	0.4
4	11.5	10.1	8.8	7.6	6.6	5.7	5.0	4.5	4.1	3.9	3.8	3.9
6	11.7	10.4	9.3	8.3	7.5	6.7	6.2	5.8	5.5	5.4	5.4	5.6

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										

7. 5 Equipment height adjustment

Rotate the lift turbine handwheel for height adjustment.



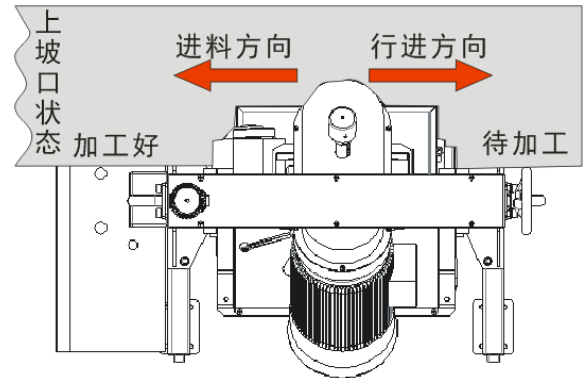
7.6 Speed control

- ✧ The cutting spindle speed of this equipment is not adjustable, if you need to adjust the speed, please buy other edge milling machine, or contact with the sales staff.
- ✧ This equipment feed speed is adjustable, in the cutting process of different materials, you can adjust the feed speed appropriately on the control panel, the control panel is equipped with a feed speed display table.

7.7 Route of travel:

The travelling path should be cleared and if the ground is not level enough, a steel plate can be laid on the ground for travelling.

Note: Before feeding, be sure to confirm that the direction of rotation of the cutter plate is the same as the specified direction, and that the blade cannot touch the steel plate.



8. Basic operation

- ✧ The equipment shall not be operated continuously for more than 4 hours
- ✧ After the equipment works for a period of time, the temperature of the gearbox increases greatly, the boiling of the grease is conducive to the heat dissipation of the machine, and the transmission mechanism as a whole is in a state of thermal equilibrium.
- ✧ If overloading occurs during machine operation, due to the increase in current value, the thermal element in the electrical switch box will be activated to automatically cut off the power, and after the cut-off, it is necessary to wait for the thermal element to cool down and reset before it can be restarted, and if it is not cooled down sufficiently, it will be automatically shut down again after working for a short distance.



6.1 Description of equipment components

1) Control Panel

- "1" Spindle speed table:: displays the rotational speed of the cutting spindle, the
- "2" Feed speed table:: displays the current feed speed, the
- "3" Spindle switch: cutting spindle switch.
- "4" speed knob: cutting spindle infinitely adjustable speed range 750-1050r/min (subject to actual).
- "5" "Forward and reverse knob: can change the feeding direction
- "6" Speed knob: feed speed adjustment, speed range in:



0-1500mm/min.

"7" Indicator light: when the equipment is powered on, it lights up (white)

"8" Safety lock: used to lock the right to use the equipment, the key is kept by the operator and the warehouse properly.

"9" Emergency stop: when the equipment encounters an emergency situation, quickly shoot the emergency stop, will be completely cut off.

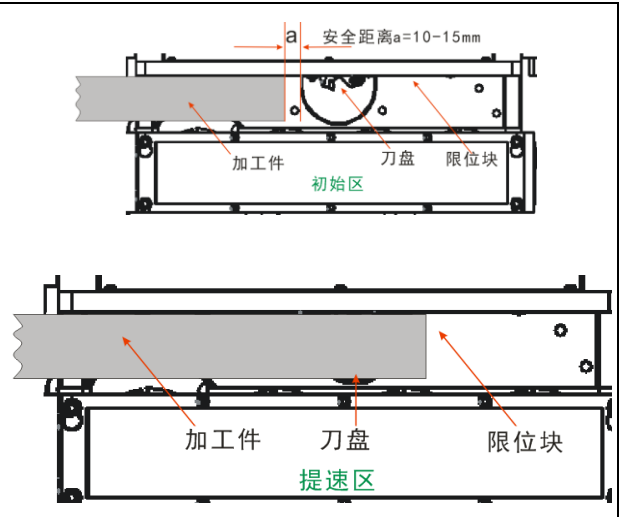
2) Whole machine

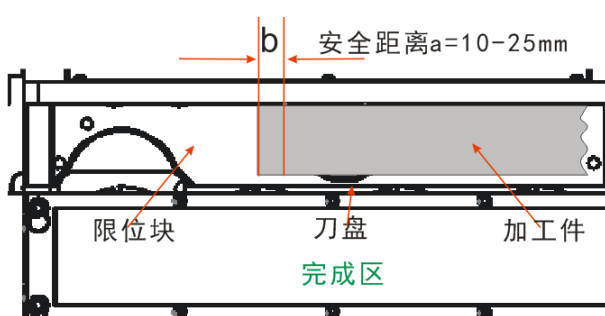
- "1" Control box: the control box is equipped with a control panel.
- "2" Motor: cutting power source.
- "3" Handle: Handle for easy pushing of the equipment.
- "4" Lower Pressure Wheel: for supporting and clamping the machined parts.
- "5" Gear set: feed power transmission.
- "6" Compacting hand-wheel: for clamping the piecework.
- "7" Chip collecting chute: for collecting iron pins during the cutting process
- "8" Base
- "9" Puller: a puller for easy pushing of the machine.
- "10" Adjustment spanner: to adjust the angle
- "11" Electrical box
- "12" Aviation plug .
- "13" Universal wheel.
- "14" Lifting turbine: to adjust the height of the machine
- "15" Support bracket



10.2 Speed setting reference table(The following table parameters are for reference only, the larger the processing bevel the lower the speed, specific to the actual operation shall prevail)

Initial zone has not entered the speed-up zone, the workpiece is in position a				
Speed up zone end of the workpiece is in contact with the wear block at the discharge end				
Wancheng District processed part is in position b				
Speed change should be slow, speed unit: r/min, plate thickness unit: mm.				
material	plate thickness	initial area	speed-up zone	completion Area
Q235	3-6	150-25	300-800	300-500



		0			 <p>安全距离a=10-25mm</p> <p>限位块 刀盘 加工件</p> <p>完成区</p>
	>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	
aluminium	3-8	150-250	300-1000	300-800	
	>8	200-300	300-1000	300-1000	
304	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	

10.3 Basic operation

Small plate chamfer.....When machining a small piece of sheet that can be moved, adjust the bevel angle, bevel depth, cutting speed, and feed rate as described in item 5 to the desired values, and start chamfer.

Large plate chamfer.....When chamfer large size steel plates, these plates need to be placed on an auxiliary stand, and then the machine is set to the required: bevel angle, bevel depth, feed speed, cutting speed, and the chamfer operation can be completed.

10.4 Operating procedures:

- 1) Blade steering All equipment requires confirmation of blade steering;
- 2) Workpiece placement 1 The side of the workpiece is in close proximity to the limit block at the feed end
- 3) Workpiece placement 2 The front of the workpiece is kept 10-15mm away from the cutter plate (the "initial zone" as shown above is the clamping state);
- 4) Workpiece placement 3 Press the workpiece as described in item 5;
- 5) Start milling first turn on the spindle 10-15 seconds after the spindle speed is stable, use the feed speed switch to adjust the speed as specified.
- 6) Finish milling In turn, switch off the feed, switch off the spindle, release the hold-down wheel and move the machine away from the machining area.




- Do not energize when clamping;
- The side of the workpiece must be close to the limit block and ensure the distance between the end and the cutter plate;
- Before turning on the feed button, please set the feed speed to 0 position
- After finishing machining, please set the feed speed to 0 position.

9. Lubrication and maintenance

Lubrication position	Lubrication method	Cycle time
Complete machine	Spray anti-corrosion oil, clean the iron pin, add dust cover, and put it in a dry place.	3 months or long periods of non-use
Compression guide	Clean pins with compressed air	After each walk
	Fill with guide oil or lubricant.	3-6 months (wet, dry environment requires attention to maintenance)
Lifting guide rails	Clean pins with compressed air	After each walk
	Fill with guide oil or lubricant.	3-6 months (wet, dry environment requires attention to maintenance)
Around the machine	Use broom to clean up in time, so as not to pile up too high to affect the work of the equipment.	Cleaning according to the actual situation
Reduction gear	Clean pins with compressed air	When iron pins are found
	Fill gear oil	Lifetime maintenance-free
Control box/electrical box	Cover with dust proof and rainproof cover	Long period of non-use
Blades	Replace the blades and screws when damage is found	See item 7
Blade screws	If broken in the cutter disc, please use a bench drill to take out	See item 7

10. Common faults and repairs

No.	Malfunction	Repair and Maintenance
1	Power equipment does not respond	Check whether there is power in the line
2	The line has power, the equipment is still unresponsive	Whether the "emergency stop" button is raised, or the circuit breaker in the control box is tripped.
3	The feed gear has a strange noise	Fill the gear lubricant, generally the gear will not break teeth
4	Pressure wheel cannot be pressed	Check whether there is iron pin attached to the pressure wheel or steel plate
5	Steel plate ejected	See if the feeding direction is consistent with the equipment regulations
6	Steel plate inserts shattered	Check whether the tool has been in contact with the workpiece when it is not rotating

7	Blade breaks after milling starts	Reduce the amount of tool draft
8	Electrical control part malfunction or other reasons	Communicate with the manufacturer in time
9	Difficulty in rotating angle	Check whether the locking bolt is loosened and whether there are iron chips deposited in the rotating hole
Note		
 <ul style="list-style-type: none"> ✧ According to the processing material, feed depth, cutting speed and other factors, timely change the direction of the insert and fixed screw; ✧ It is recommended that the blade angle be changed once every 30-100 metres to avoid crashing the blade; ✧ It is recommended that the blade screws be replaced once every 30-100 metres, as there is a risk of breakage due to reduced strength. <p>Note: If the screws are broken, please consult a professional plumber (driller), depending on the situation can be removed, serious cases may lead to the cutter disc can not be used normally.</p>		

11. Packing List

No.	Project	Model number	Quantities	Unit	Note
1	Edge milling machine	DMM-900X	1	Table	
2	Blades	DMM-900X	1	One.	Placed on the cutting spindle
3	Blade	DMM-900X	1	Sets.	Placed on the machine's cutterhead
4	Control box		1	Sets.	On the machine
5	Electrical box		1	Sets.	On the travelling machine
6	Hexagonal spanner		1	Sets.	
7	Spanner		1	One.	
8	Knife removal spanner	T15	1	One.	For replacement blades
9	Industrial Plugs		1	Sets.	Socket on electrical box
10	Tool box		1	One.	
11	Universal Wheel		4	One.	Travelling wheels at the bottom of the machine
12	Screws	M8*16	16	One.	Fixed universal wheels at the bottom of the machine
13	Packing box	Crate	1	One.	Packaging
14	Operating instructions		1	portions	