

GC-X3

Grinding Wheel Dressing Machine



User Guide

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1. Brief introduction

This machine is to use the principle of the speed difference between the trimmed grinding wheel and the trimmed grinding wheel to achieve the shape dressing of the trimmed grinding wheel.

The machine itself can provide simple and efficient dressing for a grinding wheel group consisting of diamond grinding wheels, CBN grinding wheels and multiple grinding wheels, dressing planes, angles, arcs and molded grinding wheels. The machine is simple to operate, with high precision and has the following characteristics:

1. The use of precision linear rail and ball wire rod produced in Taiwan, China, and the addition of several light-meter rulers, so that when the modified grinding wheel is corrected, positioning accuracy, width size and arc size can be adjusted and measured at any time.
2. The rotary shaft uses high-precision tapered roller bearings made in Japan to achieve rotation accuracy and smoothness.
3. The speed of the dressing grinding wheel, the left and right swing speed, the size of the swing stroke, and the position of the grinding wheel can be adjusted.
4. CCD photography unit with 15 to 120 x magnification and 19-inch LCD display, The arc, angle and size of the grinding wheel can be measured and tested at work.
5. The CCD and optical dimension units provide easy-to-use settings and measuring the width, position and inspection of the grinding wheel during or after dressing. The measurement accuracy can be up to 0.005 x 0.01 mm.

2. Key technical parameters

X, Y-axis grille resolution (optional)	0.001 mm
Diamond grinding wheel max diameter	Ø 250 mm
Diamond grinding wheel max diameter	Ø 80 mm
Grinding wheel max thickness	20 mm
Grinding wheel aperture	31.75 mm
Grinding wheel speed	100 to 1500 R.P.M. (speed regulation)
Grinding wheel travel around	120 mm
Front and rear travel of the grinding wheel	120 mm
Grinding wheel arc	Ø 0 ~ 15 mm
Dressing grinding wheel (SIC)	Ø 180 X 10 X Ø 31.75 mm
Dressing grinding wheel speed	1400-2800 R.P.M. Constant Speed
Total power	1.5 KW
Silicon carbide grinding wheel motor power	0.6 KW
Trimmed diamond grinding wheel motor power	0.75 KW
Back-to-back walkway motor power	0.025 K

3.Safety precautions

- 1 Open the box as indicated by the box mark and check the machine and accessories according to the checklist.
- 2 Read this "Instruction manual" in detail, according to its requirements to select or do a good job of the foundation, to be dry, according to the requirements of Chapter 4, the machine will be placed in the prescribed position.
- 3 Before the machine is wired, decommissioned and operated, it must read this Instruction manual in detail to understand the structure, performance, use, operation, etc. of the machine.
- 4 Machine operators and maintenance personnel, must read this "instruction manual" or specially trained qualified before being able to take up the post.
- 5 When the operation and maintenance personnel are not sure to troubleshoot, they shall promptly notify the manufacturer of the request for assistance and shall not deal with it without authorization.
- 6 Operators should wear appropriate clothing, not loose clothing, gloves, ties, rings, earrings, and other jewelry in case they are hung up by moving parts or electrocuted.
- 7 The operator should wrap the long hair, tie it well or wrap it with a hat.
- 8 The machine cannot be operated after taking medicine or drinking alcohol.
- 9 Do not operate the machine when guards, safety guards and interlocks are missing, or when they are not working properly.
- 10 Before you run the program in an automatic state, you should debug and troubleshoot the error.
- 11 The machine must be connected to the ground system.
- 12 Reduce the risk of non-active starting of the machine, turn off the main switch and use the specified steps to lock or use label warnings when working in the hood or in other situations where the machine needs to be switched off.
- 13 When working in the electrical cabinet, turn off the main switch and lock it.
- 14 Do not leave the machine unmanned, power off when the machine is left unattended, and do not leave the machine when the machine is not completely stopped.
- 15 The operator should never cancel or remove the interlock and the operator should not open the guard until the spindle is completely stopped.
- 16 Failure, press the red stop button until troubleshooting before restarting.

- 17 Check that the dressing grinding wheel is in place and that it is properly wound by the grinding wheel drive belt.
- 18 When operating, must concentrate, not to do anything related to processing, not to allow others to operate the grinder or allow idle people around the machine machine
- 19 Finished job, power off
- 20 Clean the tool workpiece and place it complete, and do a good job of cleaning the machine and surrounding

4. Handling and installation of equipment

1 Equipment handling: Tools: Forklift hydraulic

Minimum load: 1.5 tons



The seismic fork fork foot anti-pad

When rising, you must first carry out a test rise, the height of the rise does not exceed 40mm, check the carrying capacity of the forklift, insertion depth, machine tool level, etc. , if there is no doubt to rise, slowly rise, fall, gently placed.

2 Installation and use of equipment:

2.1 Machine tools should be installed in a nearby non-seismic workshop, such as: air hammers,

high-power air compressors, large presses, punches, frequently operated railways, etc.

2.2 Indoor 18°C to 28°C, but the temperature difference should not be greater than 5°C within 24 hours, indoor humidity should not be greater than 40% .

2.4 There is no strong magnetic field near the machine tool, high power equipment, etc.

3 Device installation foundation:

3.1 With no seismic sources around the workshop ground is not less than 250mm deep concrete foundation, the machine can be placed directly on the ground without reinforcing the foot bolts.

3.2 A workshop with a certain source of shock around it, or a shallow foundation depth, must make a machine base.

4 Installation of the device:

The host should adjust the level to ensure accuracy during installation. Form factor: 1420mm x 840mm x 1780mm.

Power supply: Three-phase 380V, 50Hz. (Foreign by Technical Agreement)

5. Instructions for action

① **Electrical box door** : Figure 1 ----- Figure 2

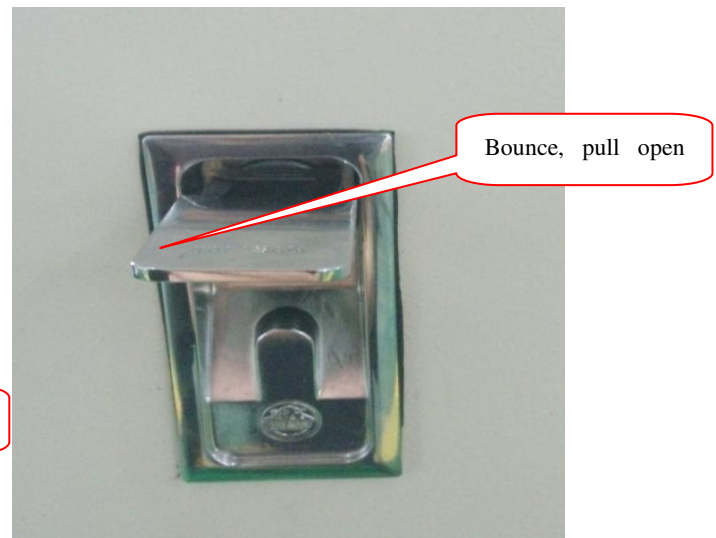


Figure 1 Figure 2

② Power

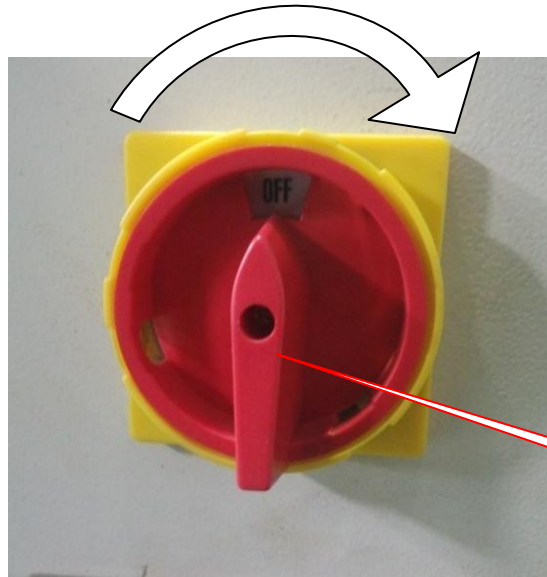
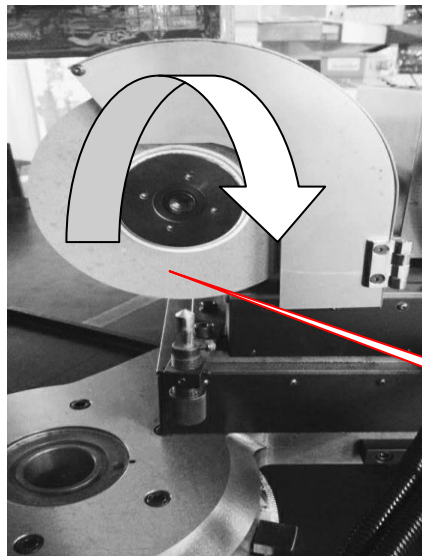


图 3

③ Dressing green
silicon carbide wheel
OFF-ON

1. Install a green silicon carbide grinding wheel and lock the screws



Screw rotation

Figure 4

2. Install the tool (diamond pen) and secure the diamond holder

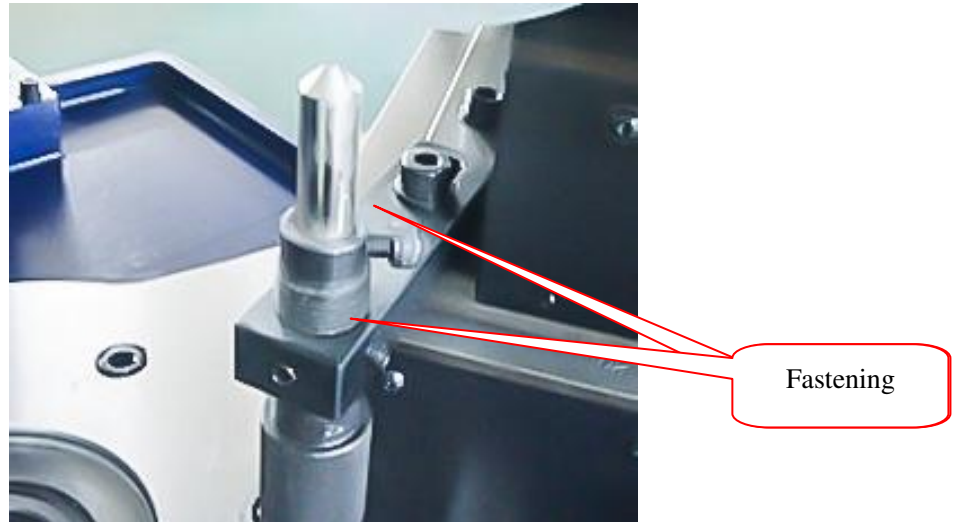


Figure 5

After the above two work is done, adjust the rotating seat to 0 digits, (Figure 6) the reciprocating motion seat adjusted to the 90-degree position (Figure Figure 7) Green silicon carbide grinding wheel spindle seat rotary panel adjusted to the grinding wheel circumference facing the quasi-diamond pen, leaving a certain safety distance (Figure 8), locking the positioning shaft (X·Y (Figure) 9) After, turn on the silicon carbide grinding wheel switch, at which point the green silicon carbide grinding wheel rotates, and then turn on the carbonized silicon grinding wheel speed switch, so that it makes back and forth the reciprocating motion, shakes into the handwheel for dressing the diamond grinding wheel outer diameter plane (plan) 10).

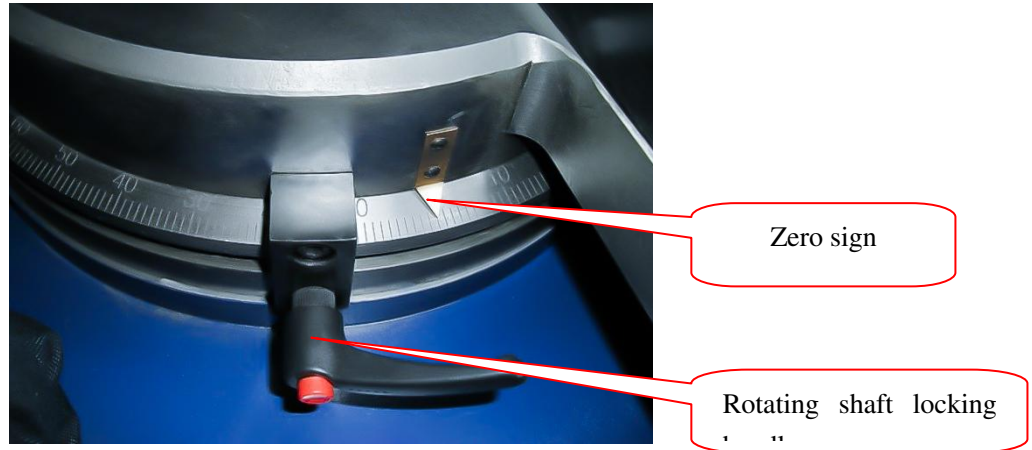


Figure 6

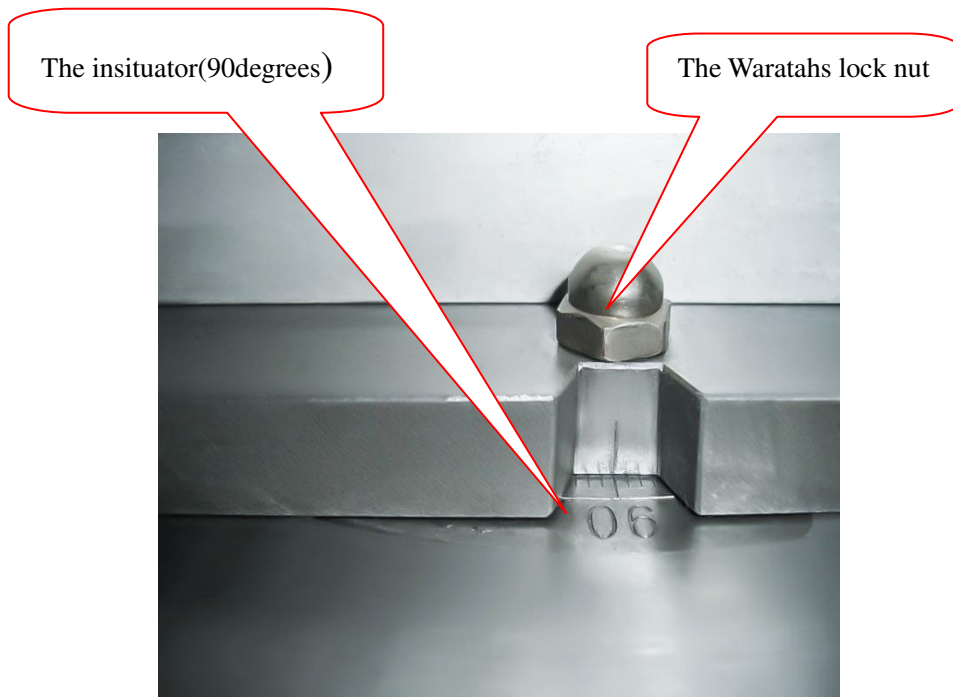


Figure 7

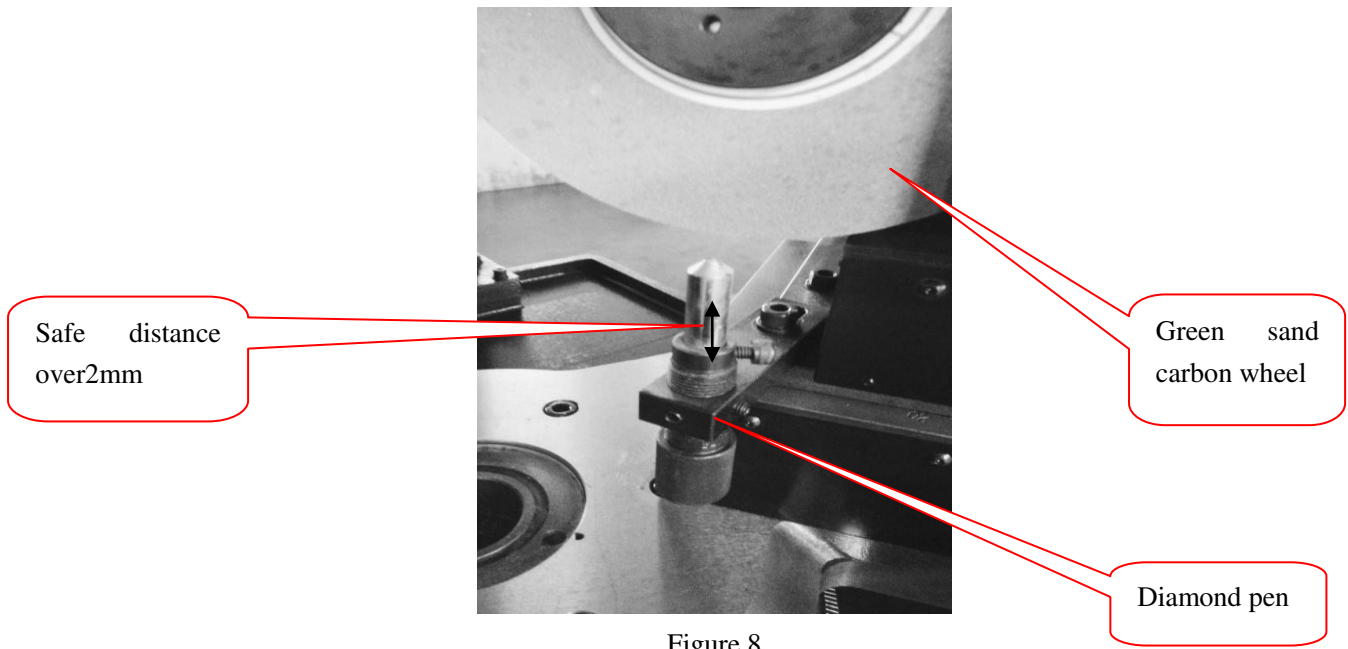


Figure 8

Adjust the center of the rotating arc

a) Adjust the projection

Turn on the lens light switch, turn the center of the lens light to the rotating center of the rotating axis, see if the projection on the display above the CCDvideo, such as ghosting, adjust the verticality and level of the barrel (Figure 11), Let the light of the lens lamp swing in different positions, and when there is a clear shadowless projection on the display, you can. (Figure12)

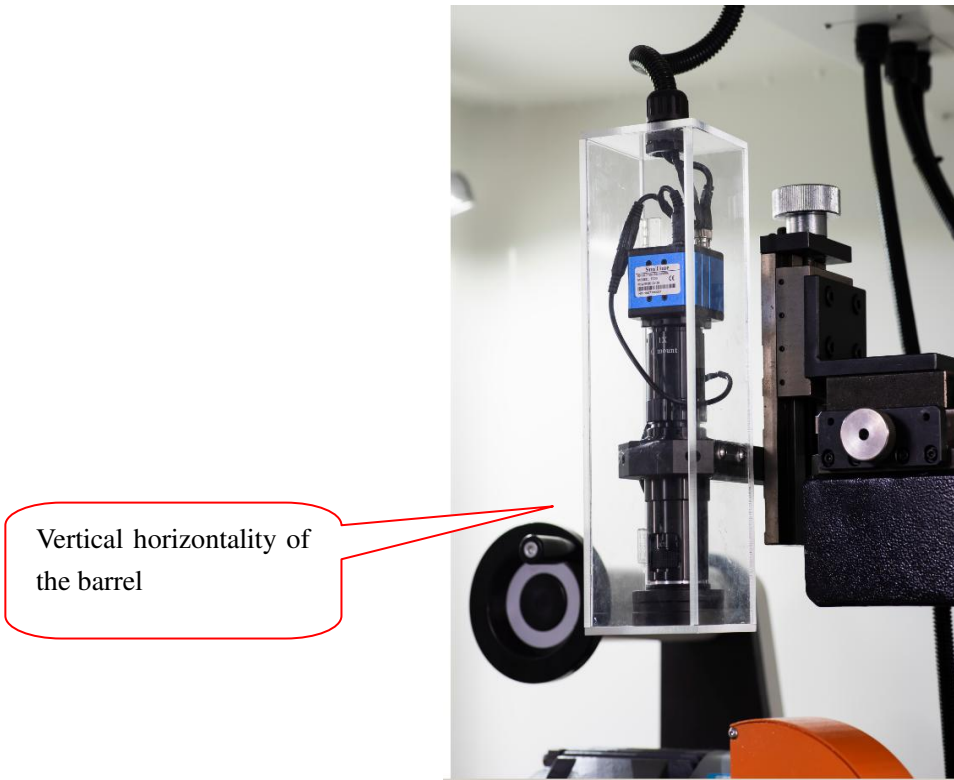


Figure 11

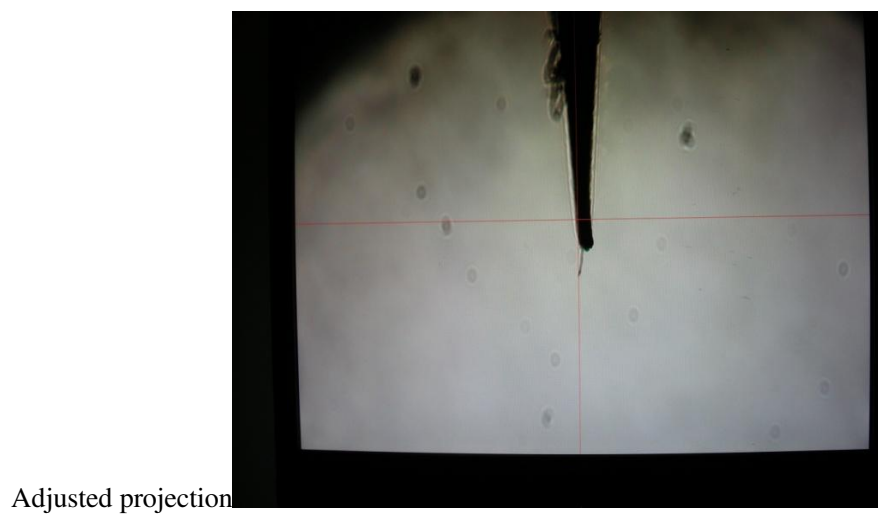


Figure 12

2. Adjust the rotating center

Pair the repaired green silicon carbide grinding wheel round plane to the horizontal line in the middle of the crosshair shard of the CCD monitor (Figure 13); Look at whether the green silicon carbide grinding wheel circumference plane is also in the middle of the crosshairs of the CCD monitor vertical line, if there is a discrepancy, when adjusting the differential head and feed handwheel, so that its green carbonized silicon grinding wheel circumference plane alignment The vertical line in the middle of the

crosshairs of the CCD monitor (Figure 14); Align the vertical line in the middle of the CCD monitor with the circular plane of the green silicon carbide grinding wheel. Several repeated adjustments can not move the differential head and feed the handwheel so that its green carbonized silicon grinding wheel circumference plane coincides with the crosshairs in the middle of the CCD monitor.

CCD monitor crosshair trimmed green silicon carbide grinding wheel

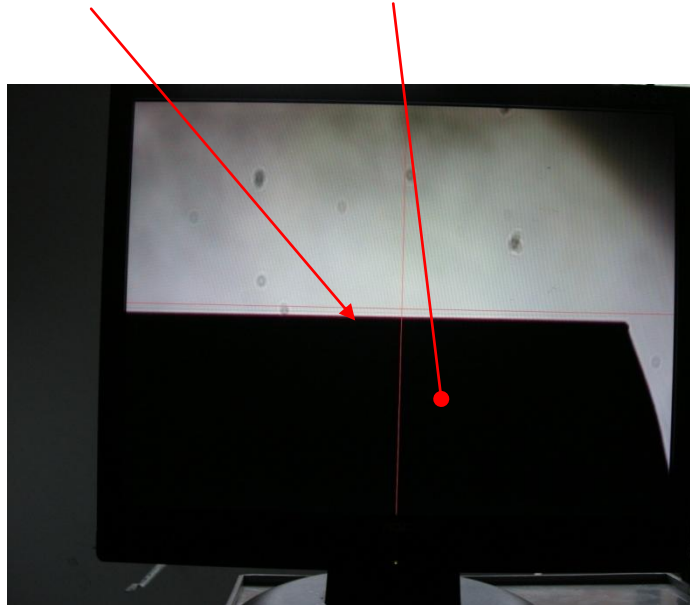


Figure 13 Front CCD monitor projection

- **Dressing diamond grinding wheel**

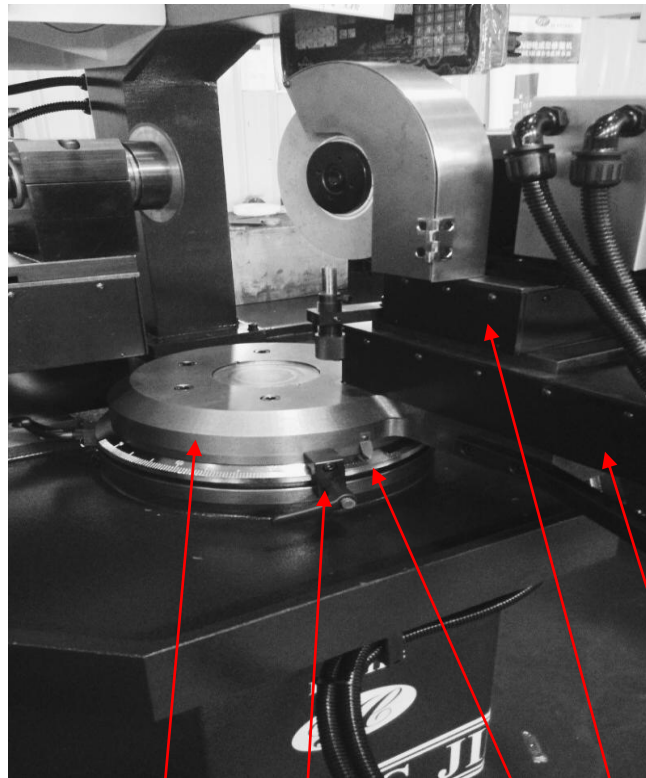
- 1) **Grinding flat grinding wheels**

Install the diamond grinding wheel, adjust the position, and install the belt to secure the spindle. Place the projection of the diamond grinding wheel in the middle of the display, lock the positioning shaft (X.Y), align the rotating panel to the 0-bit scale, lock the handle, and shake the feed handwheel so that the green silicon carbonized grinding wheel is rounded to approach the diamond grinding wheel. When there is sufficient safety distance, adjust the itinerary of the green silicon carbide grinding wheel to move back and forth so that the green silicon carbide grinding wheel can get out of both sides of the diamond grinding wheel, and start the green silicon carbide grinding wheel, the diamond grinding wheel, and the green silicon carbide grinding wheel reciprocating switch. Shake the feed handwheel to begin the normal grinding diamond grinding wheel plane

- 2) **Grinding angle grinding wheel**

Adjust the rotating panel to the angle of the trimmed wheel and lock the rotating panel; As

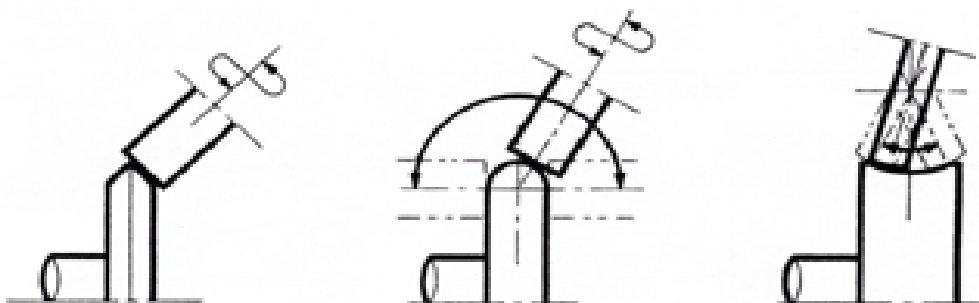
shown:

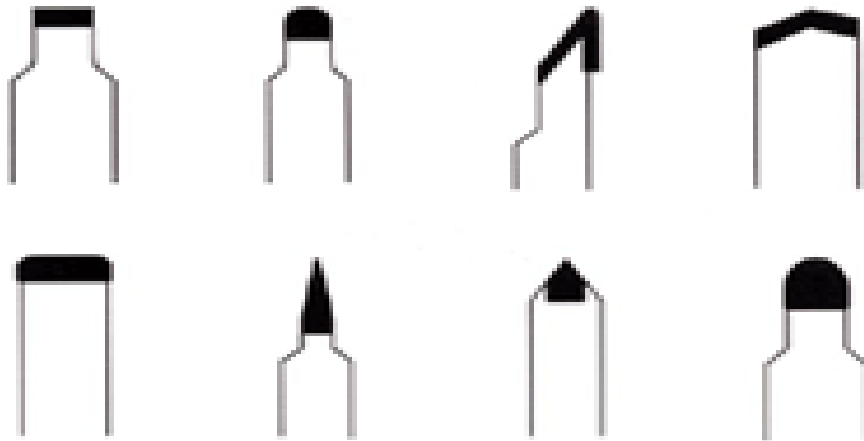


1 2 3 4 5

- 1. Rotating Panel 2. Locking handle
- 3. Determined angle 4. Back-to-back slide
- 5. Feed slide

3) The machine can also be repaired as follows a number of shapes of grinding wheels, the grinding method is simple and convenient:





6. Instructions for major accessories

1. Video microscope: optical magnification 0.7x4.5 continuous variable, with 0.5 x eyepiece, electronic magnification 15 It's about 130 times, with ten subwires and 2 million CCDs.
2. Display: Dell 17-inch LCD.
3. The visual microscope cross installation measurement platform has an optional 2-axis spectre with a resolution of 0.001mm.
4. Bearings are made of precision-grade bearings and rails are guided by precision ball guides.
5. Feed the handwheel resolution of 0.02 mm.
6. Dressing the grinding wheel swing and grinding wheel rotation using a high-quality domestic AC speed control motor.
7. Square steel welding base, parts paint.

7. equipment fault treatment instructions

1 Misdoing errors can easily cause software programs and equipment burned out or abnormal start-up problems?

1. Please follow the switching equipment operating procedures, otherwise it is easy to cause the CCD software program is not normal or the equipment burned out!
2. Power-on order: (1) The total power switch of the device is on, (2) the emergency stop switch knob is on, the power switch is on, the power switch is on, the computer is turned on , (5) turn on the CCD Software.

2. Shutdown order: (1) Turn off CCD software, (2) Mouse click on the screen to turn off the computer, (3) power switch knob off, (4) turn off the device

The total power switch.

3. Open VMM2.2C software to display blue screen problem?

Check that the CCD lens power cord is properly connected, and then check that the AV line CCD is properly connected to the computer host, AV. The cable can be tested on the computer host AV1 interface or AV2 interface.

4. Open the VMM2.2C software computer screen to show blank problems?

1. Open the measurement software, display image if not displayed, click on the menu CCD settings-Video Acquisition Card (Carriage Return)-Video Card Type Selection, After DirectShow, point ok, restart the software.



2. If the . Turn on the measurement software, Display image if not displayed, Please click on the menu CCD Set-Video capture card (carriage return)-Display when video card type selection



, the acquisition card drive and acquisition card should be checked for installation.

5. Is there a loose issue with the CCD lens?

During operation the lens is loose, check that the screws of the lens components are loose and tighten the screws slightly.

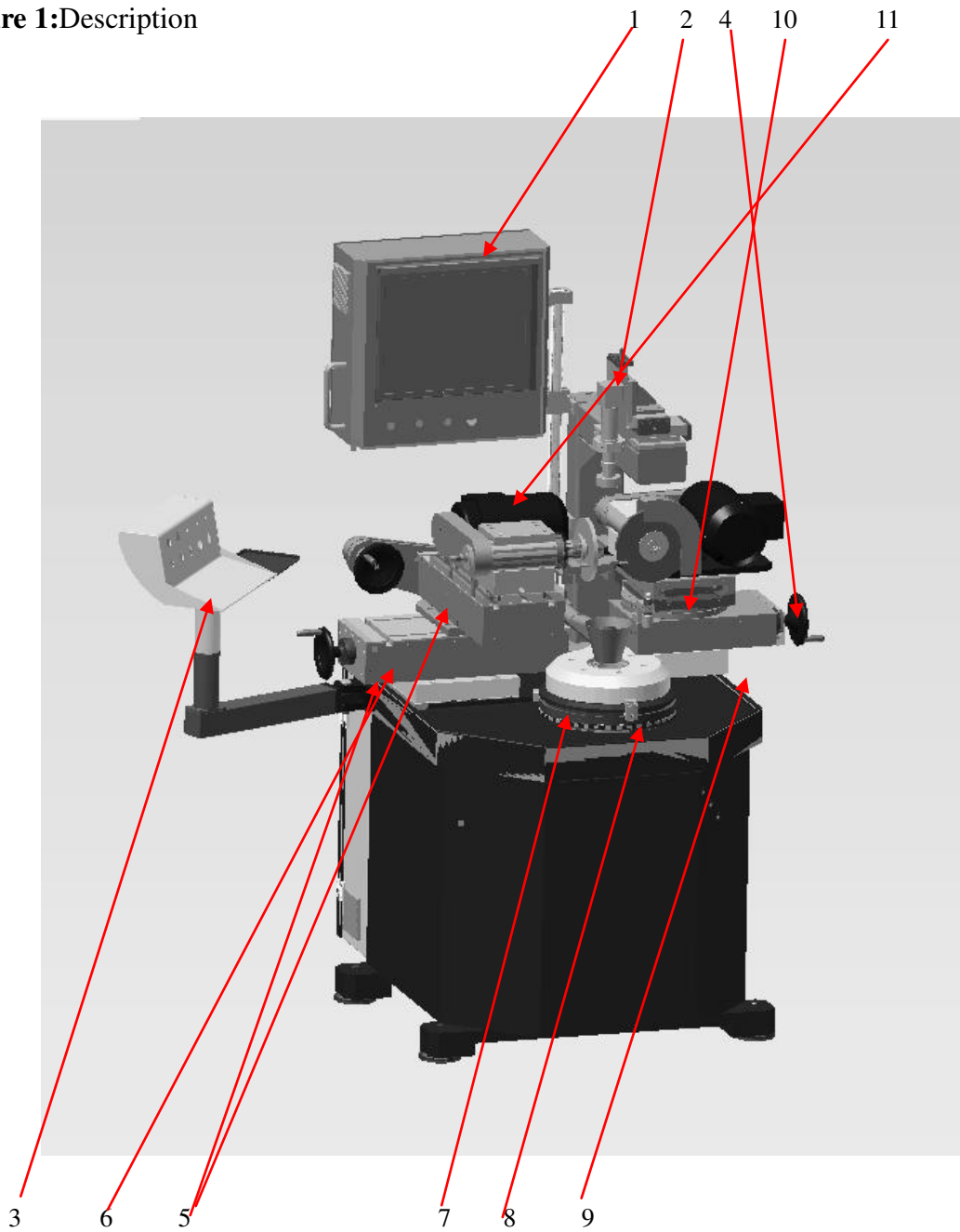
6. operational fault problems?

1. After the diamond grinding wheel is positioned well, secure the X and Y axes to avoid being moulded or hit by the grinding wheel.

2. When rotating the scale pointer at zero, the angle number display table is zeroed by RST, otherwise the trimmed angle is not correct.

3. The reciprocating trip is good before the dressing angle, so as not to break the grinding wheel and safety fault

Figure 1:Description



- | | |
|-------------------------------|-------------------------------|
| 1. LCD | 2.CCD Optical Measuring Head |
| 3. Control Panel | 4.In-knife handle |
| 5.X axis, Yaxis | 6.Magnetic grid |
| 7.A-axis | 8.A-axislocking wheel |
| 9. Feed axisX1 | 10.Back and forthFeed shaftY1 |
| 11.Trimd grinding wheel motor | |