

DN-W4ZGlass-ceramic grinding machineoperating instruction



Customer know

For the safety, reliability and performance of the equipment, namely:

1. Minding head for the original factory production.
2. The gas source is oil-free dry gas source, which is composed of oil-free air compressor, three-stage filter and cold dryer. In the process of gas supply, the cold dryer is working normally, and the filter element can be replaced at least half a year.
3. All repair and replacement parts are original (original) or approved by our factory. The relevant electrical equipment meets the national standards and the requirements of this manual.
4. The relevant gas route equipment meets the national standard and the gas consumption meets the requirements of this manual. The equipment follows the instructions.
5. The operator knows and understands the description content of this manual.

For confirmation, please sign on the above points:

Catalogue

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Equipment belongs to property rights	错误! 未定义书签。
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1.1 Product characteristics

- ◆ High-precision cutting control and drive system
- ◆ Data transmission: U disk, directly connected to WiFi
- ◆ One-click start
- ◆ 4-axis (X, Y, Z, A) wet cutting processing
- ◆ Man-machine interface for simple touch operation
- ◆ Patented design of the one-key clamp system

1.2 Main uses and use occasions

① Main use: denture grinding

② Use occasions:

- section for outpatients
- dental hospital
- denture processing plant
- medical cosmetology

1.3 Model

The DN-W4Z grinding machine

1.4 Use of environmental conditions

- 1) Environmental requirements: indoor temperature 15~40 degrees Celsius; stable bench or desktop (at least 50kg);
- 2) Environment: dry, no vibration, no dust, no corrosive gas, no combustible gas, no oil pollution, no water vapor;
- 3) Air pressure: dry gas source;
- 4) Power supply: 220V AC 50Hz.

1.5 unpacking and water and electricity connection

- 1) Unpack the equipment and check the number of equipment and corresponding accessories according to the configuration list;
- 2) Correct on the power supply, compressed air and water circulation system according to the instructions;
- 3) Check whether the screen shows the current knife number after starting the origin is consistent with the position on the spindle;
- 4) With circulating water, take 250ml of stock solution with tap water to the standard liquid level;
- 5) Place the needle to the designated knife according to the serial number;

1.6 Equipment parameters

unit type:	DN-W4Z	main shaft speed:	10000-60000r/min
device type:	Desktop water cooling	The way to change the knife:	The pneumatic automatically changes the knife
Processing material:	Feldspar glass ceramics; lithium-based ceramics; Mixed material; mixed material; PMMA	Drain method:	Pneumatic push-button type, no tools are needed
		Knife Loading Number:	Three
Types of processing:	Emset; veneer; inner crown; full crown; bridge; planting crown	cutter:	Shank diameter 4mm
working temperature:	20~40°C	Ball head diameter:	0.5+1.0+2.0
productiveness:	From 15 to 30 minutes / pill	supply voltage:	220V,50/60Hz
X * Y * Z travel range:	80 * 85 * 45 (unit / mm) X.Y.Z. A semi-closed-loop drive system; Encode step + pre-ball rod	power:	The whole machine is 1.0KW
		weight:	40KG
		noise:	Working noise of ~50dB
Repeat positioning accuracy:	0.02mm	outline dimension:	465 * 490 * 370 (unit / mm)
Spindle power:	400W	Pressure requirements for knife and refueling:	Dry-out 4.5~8.5kg/cm ²

2. Start the installation

2.1 Open the packaging and check the number of accessories

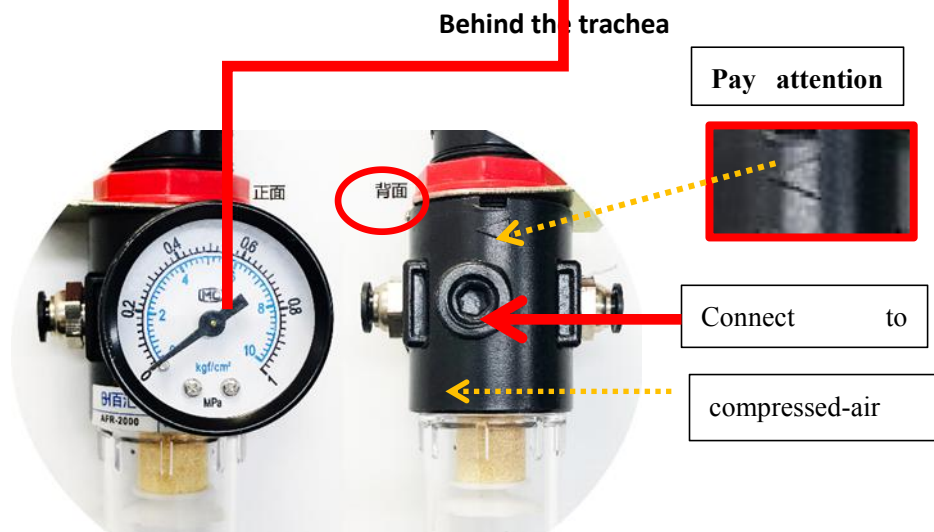
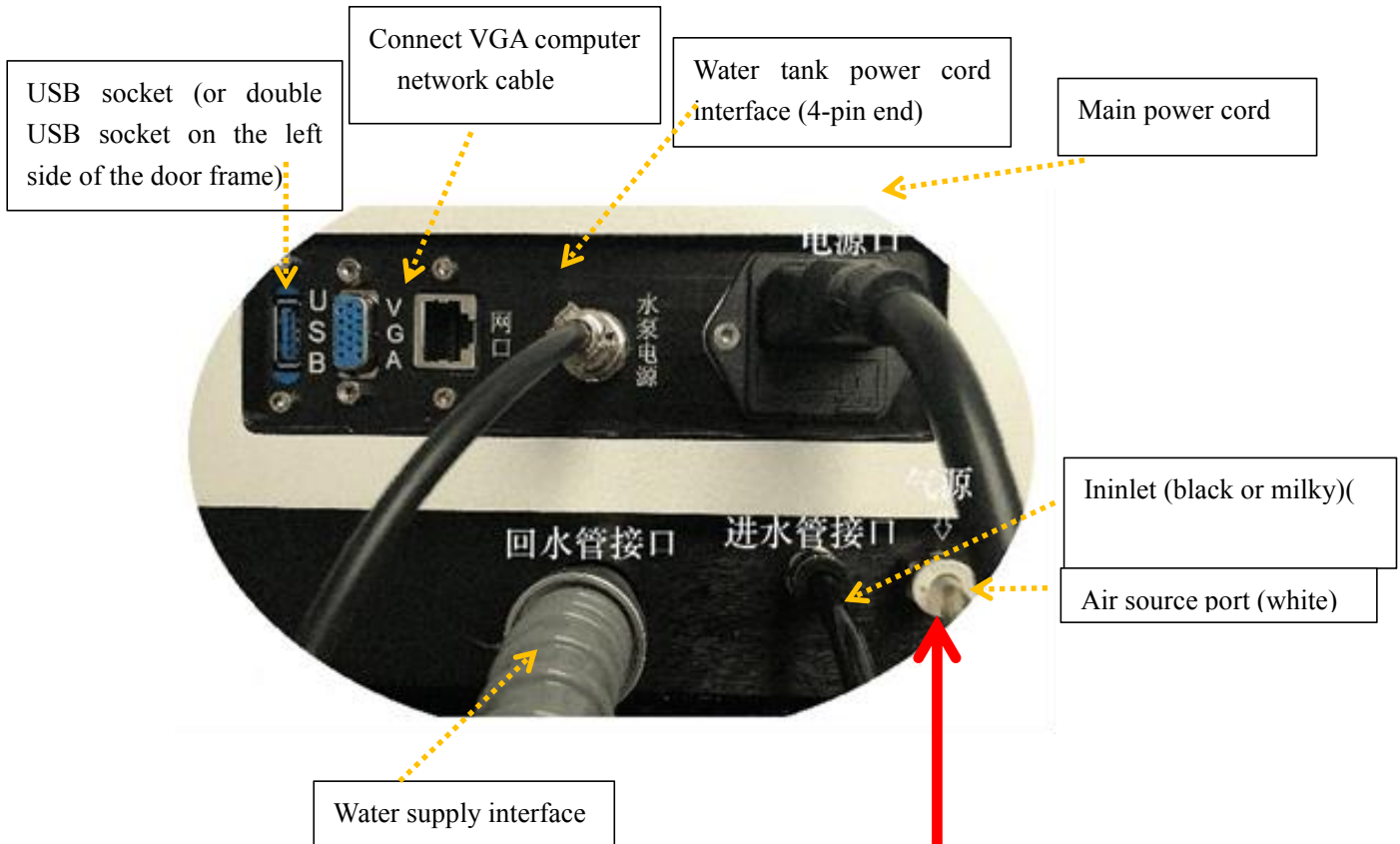
2.1.1 Packaging and disassembly process

Check whether the outer package is damaged, check the random accessories according to the form, and contact the manufacturer in time if any abnormality is found. It is recommended to keep the outer package for at least one month.

appendix	function	usage method
parvicostellae	For DN-W4Z to the computer host	Connect the DN-W4Z to the computer, with one end inserted in the DN-W4Z network cable interface and the other end inserted in the computer network cable interface
Upper hose	Water tank grinding liquid circulation supply	Connect DN-W4Z to the tank 6mm with black holes
Water tank wire	Water tank pump power supply	Connect the DN-W4Z four-pin water pump power supply outlet to the two-pin water tank round inlet
air tube	The DN-W4Z gas source supply	Connect DN-W4Z with external air source, the air source pressure should be stable above 4 Kg and dry
test block	For the DN-W4Z calibration test	See the 4. Calibration Section
wet return	Reflux of grinding fluid	Connect the DN-W4Z outlet hole to the water tank return inlet
power line	DN-W4Z host power supply	Connect the DN-W4Z to the external power supply
Gas source filter	Filter the water gas in the external gas source and control the input air pressure	Connected between the DN-W4Z air inlet and the external air source
Grind the stock solution and the measuring cup	Measure the amount when adding the ground drug substance	Use 250ml of ground drug substance, 5-7 days or 30-50 teeth once
bit	Grinding porcelain block	For the first use, please place it in the grinder tool library according to the serial number
reserve pump	reserve	replace

2.1.2. Equipment installation and wiring

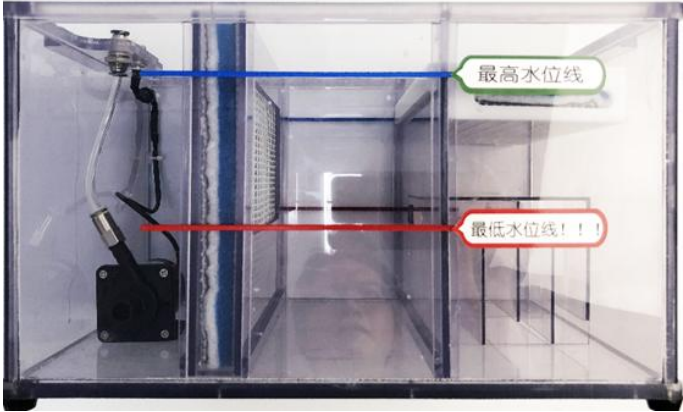
Note: DN-W4Z should be placed on a horizontal and stable surface, the water tank should be placed under the machine, not on the same plane with the machine, the recommended height difference is greater than 50cm. And the return water pipe can not bend or rise and fall.



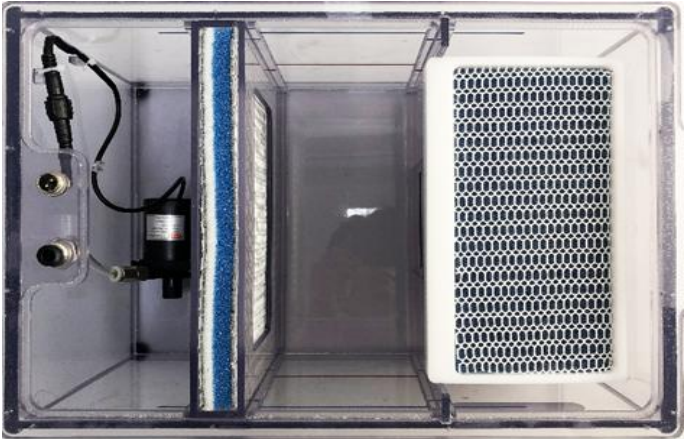
Note: The air flow direction of the air source filter is as shown in the figure, do not reverse connection

The highest water level line →

Minium wte lvel line →



connect to power cable of waer tan (tw pins) →
Upper water interface of water pump (black pipe) →

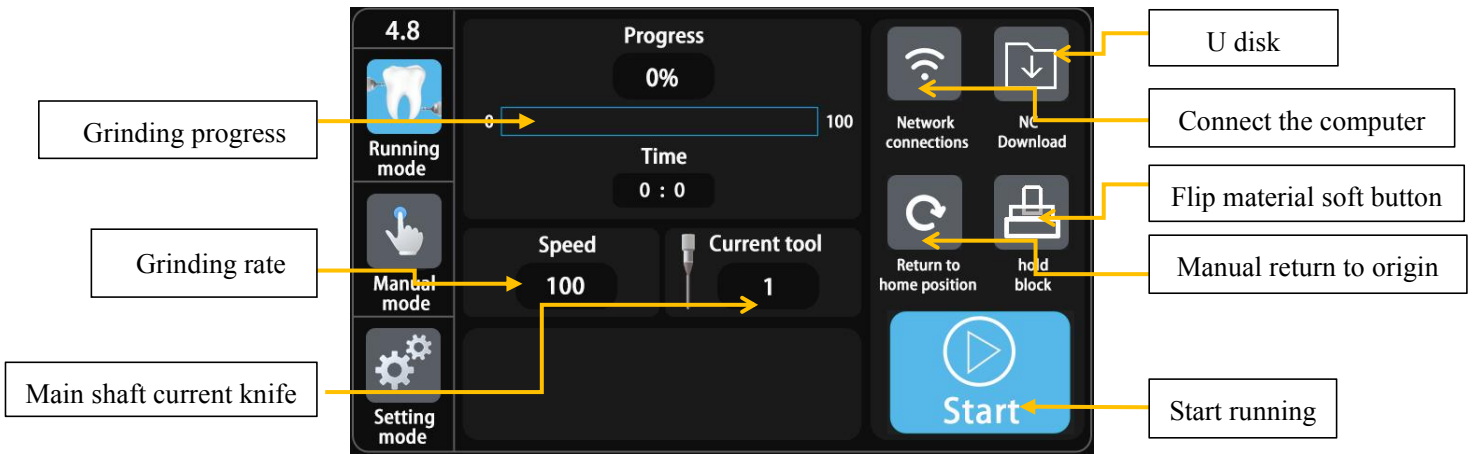


After the water tank is installed according to the aboeoperation, pour 250mL grindin riginal solution into th water tank, and then add tap water to the standard liuid level.

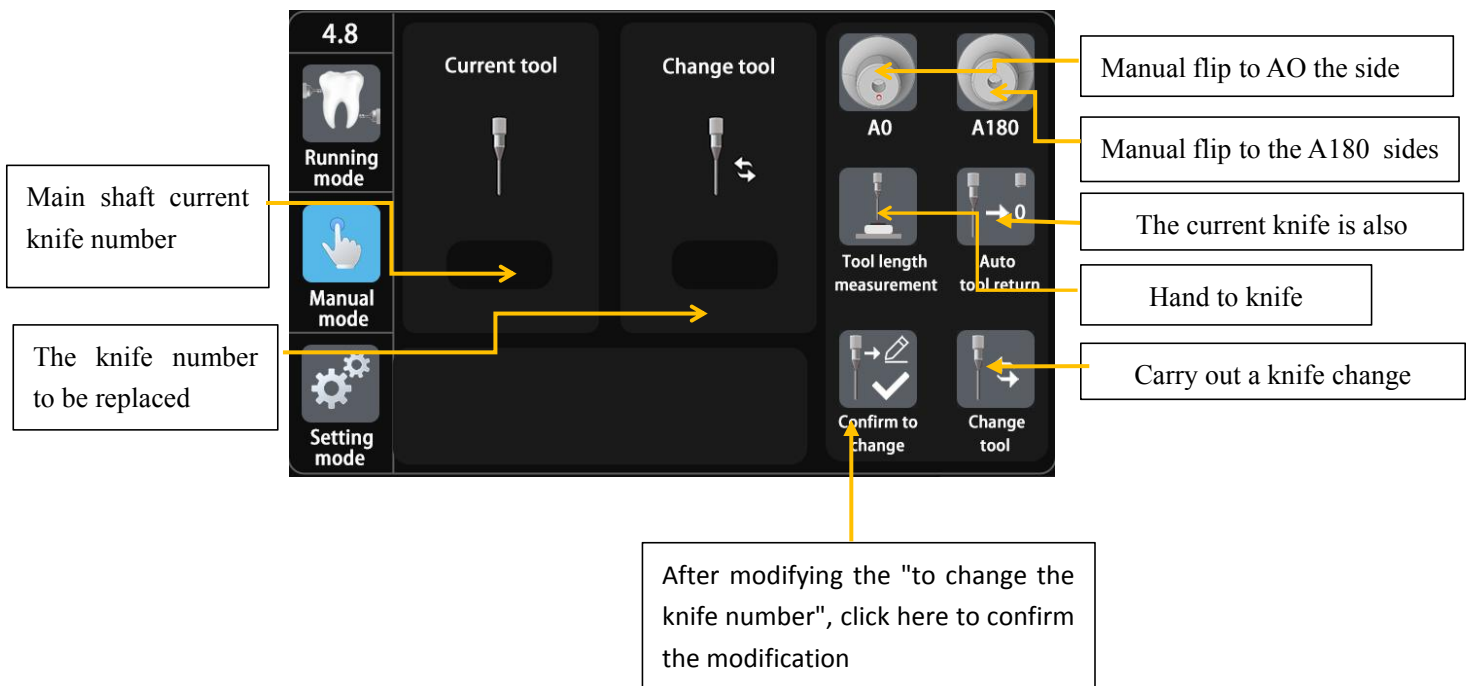
3. Screen interface function and device operation process

3.1 Introduction of the screen interface function

3.1.1 Automatic mode



3.1.2 Manual mode



3.1.3 Setting mode

(this interface is for calibration, do not operate this interface without technical personnel or without authorization)

Workpiece coordinates (mechanical)

	工件坐标	标准值	实际值	程序更新码
X	-32.855	1.000	1.000	90546
Y	-31.276	1.000	1.000	
Z	-29.755	6.000	6.000	

Actual value after

Open the spindle

Close the spindle

Manual switch the

Test block

Fill in the actual value of the test

After calibration, press the save button, the changed artifact coordinates will be

3.2.1 Start the equipment

Press the start button  to start the device



3.2.2 Start up equipment and clip material

① Turn on the rear power supply on the left side of the machine wait for the grinder to return to home position, Do not operate at his time.

Progress 0%

Time 0:0

Speed 100

Current tool 1

Start


Initializing, please don't operate

② Start-up return to home position completed



- ③ Open the warehouse door, press the green clip button, Open the clamp, put the porcelain pieces into the fixture, After the porcelain block to the end, press the clip button, Porcelain blocks are locked;



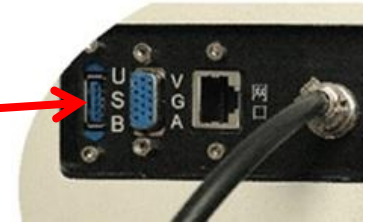
(Use the  buttons on the display to function as green physical buttons).

(When inserting the porcelain block, ensure that the positioning pin of the clamp targets the metal base gap of the porcelain block, and the metal base and the fixture face of the porcelain block are close.)

3.2.3 Transmission of data and automatic operation



③ U disk is inserted into the USB port of the grinder directly or through the HUB extension



⑤ Displays Transfer Data

④ Click to download NC, and the icon appears blue



⑥ Displays the word, Data transfer is complete



Close the warehouse door, click on the screen button, The grinding machine began to work properly.

Do not operate any buttons when the grinder runs



3.2.4 Description of tool replacement

3.2.4.1 One-key return tool for replacing the lost tool

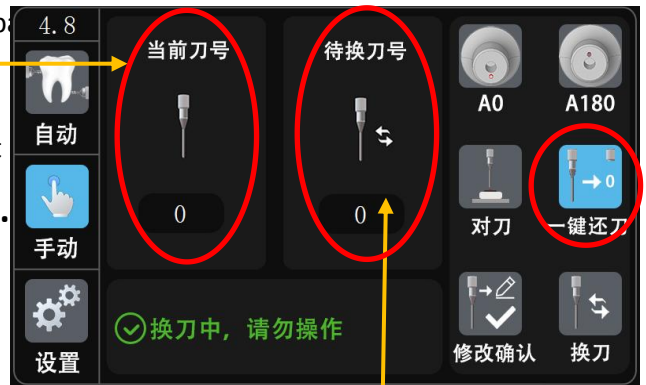
- ① Click "Return the knife"

Wait for the machine spindle to put the current tool back

The current knife number will be 0

- ② Remove the old knife from the knife library
Place the new knife in the knife library that was just

Then change the knife according to 3.2.4.



3.2.4.2 Manual knife change

- ① Click "To Change the knife number"

Click "to change"



- ② Enter the knife number to be changed (1 or 2 or 3) and click OK

- ③ Click the "Modify and confirm" button



④ Shthe number number modified successfully

⑤ Click "Chanethe knife" and wait for the completion



⑥ Click "Right knife" and wait for the completion



⑦ Manual knife replacement is complete

3.2.5 Description of equipment calibration function

Using the new No.1 (2.0mm) grinding head, select the transparent test block (the material block needs to be set) or I12 porcelain block to grind out the calibration block;

Click the machine display screen "Set" menu, use the vernier caliper to measure the actual value of XYZ as shown in the figure, and fill in the "Actual value" column of the page respectively. After clicking calibration the calibration will prompt to click again, and the device will be restarted.

③ After calibration and preservation, the artifact coordinates will be automatically updated and take effect after you restart the equipment

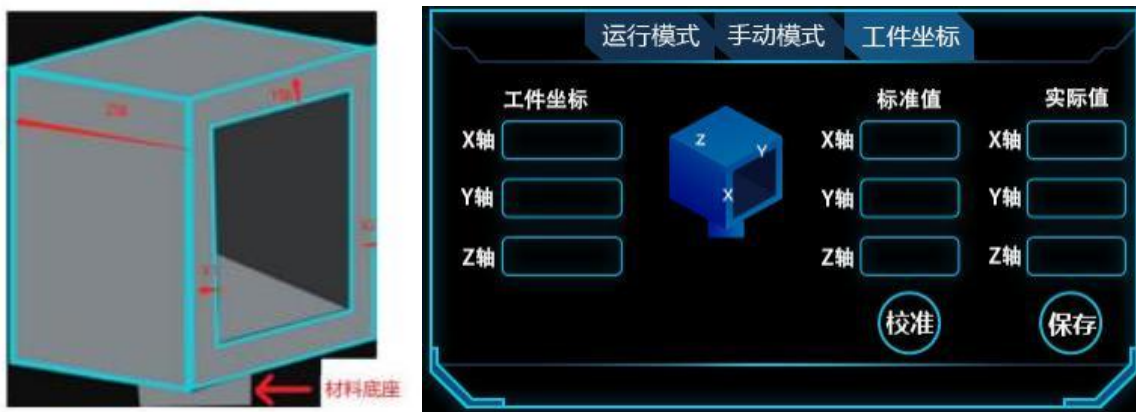
② Fill in the Actual Value column of the page separately



① A vernier caliper was used to measure the actual value of the XYZ shown in Fig

4. Automatic calibration of workpiece coordinates

Figure Figure 1 and Figure Figure 2



4.1 The calculation of X axis

As shown in Figure 1, measure X1 and X2 thickness respectively with caliper, $(X1 + X2) / 2 = X$ -axis average (recorded as X flat)

4.2. Writing and calculation of the actual value

Calcalatonmethod: $1 - (X \text{ flat} - X1) = X$ actual value (note note: enclosed To difference between positive and negative)

Example: $1 - (1 - 1.2) = 1 - (-0.2) = 1.2 = X$ Actual value $1 - (1.2 - 1) = 1 - (0.2) = 0.8 = X$ Actual value Y Actual vlue = Y axis value (as shown in Figure 1) Z Actual value = Z axis value (as shown in Figure 1)

4.3 Calibration of workcoordinates (error range of z-axis thickness is + 0.03)

After all the values are written, click the calibration button (Figure 2) click Save (Figure 2) After the calibration, the calibration is completed

Note: After the value is written, only click the secondary calibrationbutton.

Do not make multiple points (which will cause the artifact coordinates for multiple calibration). After the calibration, always click the sve button (as shown in the figure)

5. Material measurement and material plate addition

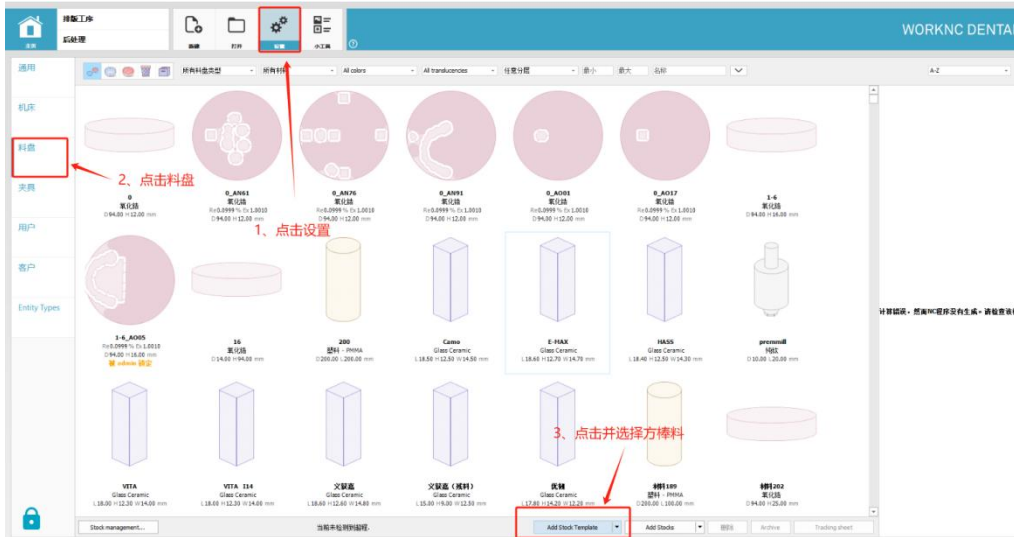
5.1 Support rod setting



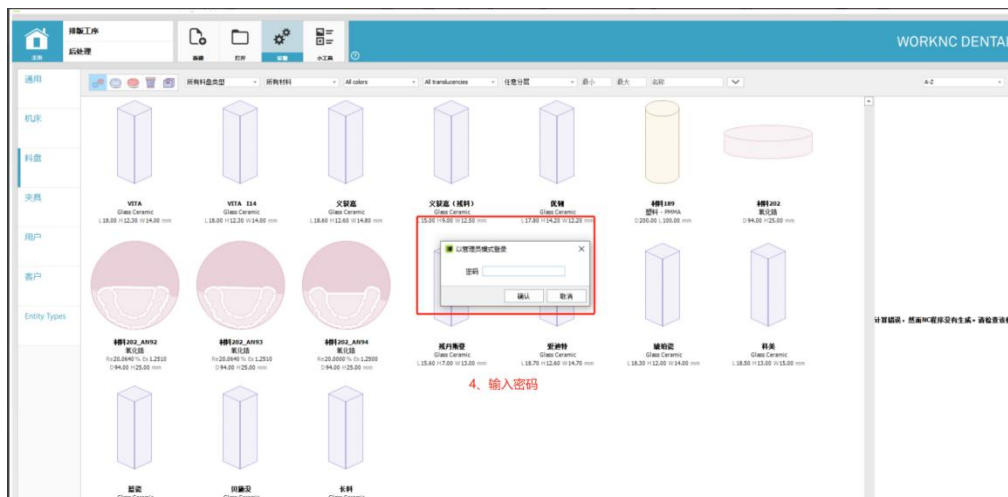
As shown in the figure above: Measure from the material base with a caliper, and the reading is 20.26mm

The material length is: $20.26\text{mm} - 2.2\text{m} = 18.06$ (rounded to 18mm)

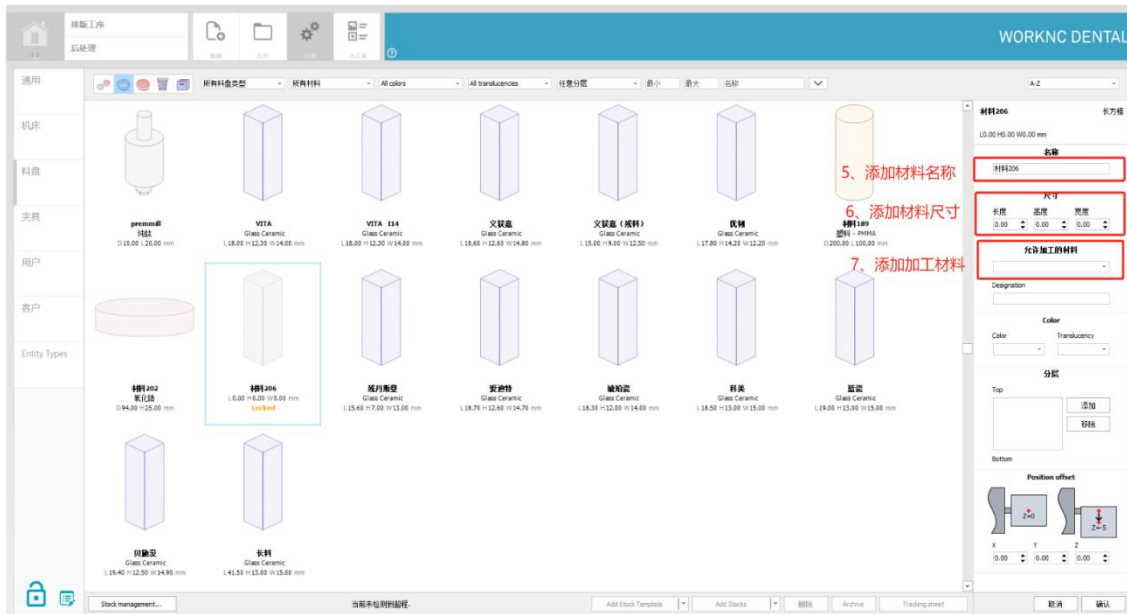
- ① Click Settings
- ② Click on the tray
- ③ Click and select the square bar material



- ④ Enter password



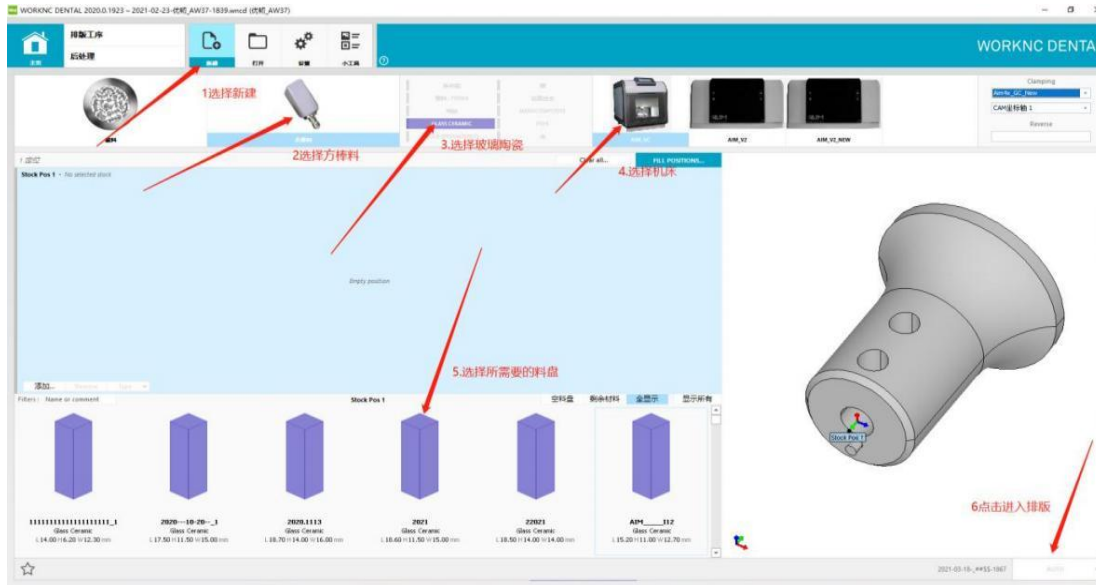
- ⑤ Add material name
- ⑥ Add material size
- ⑦ Add processing materials **Note: Selection of processing materials Glass Ceramic (material name)**



6. Typography instructions

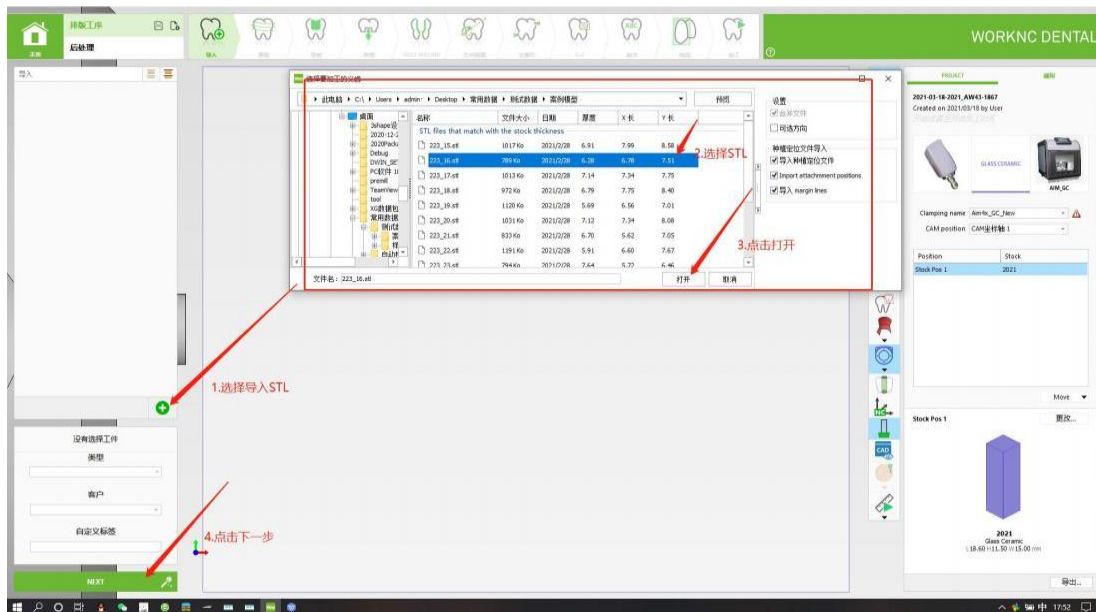
6.1 Typography design

- ① Open the typesetting software, click new, select, select material, select material type, select the machine tool.
- ② Select the desired material plate
- ③ Click AUTO to enter the typesetting interface



6.2 Import the STL data

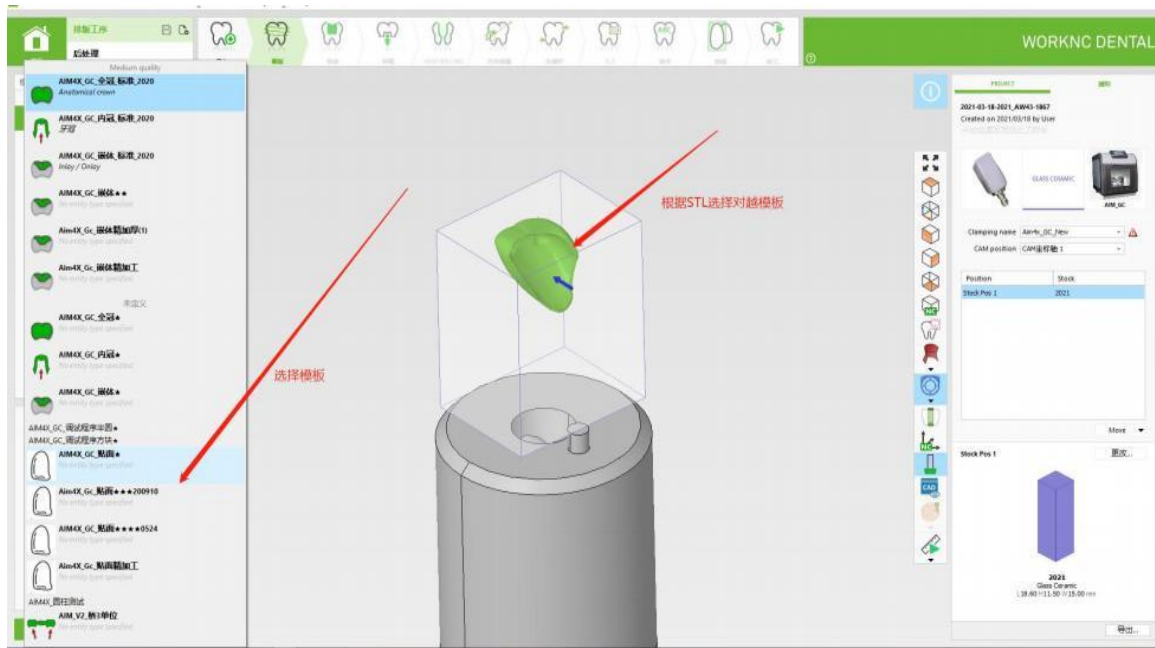
- Click "+" to add the required typesetting STL data
- Click on NEXT for the next step



6.3 Select the template

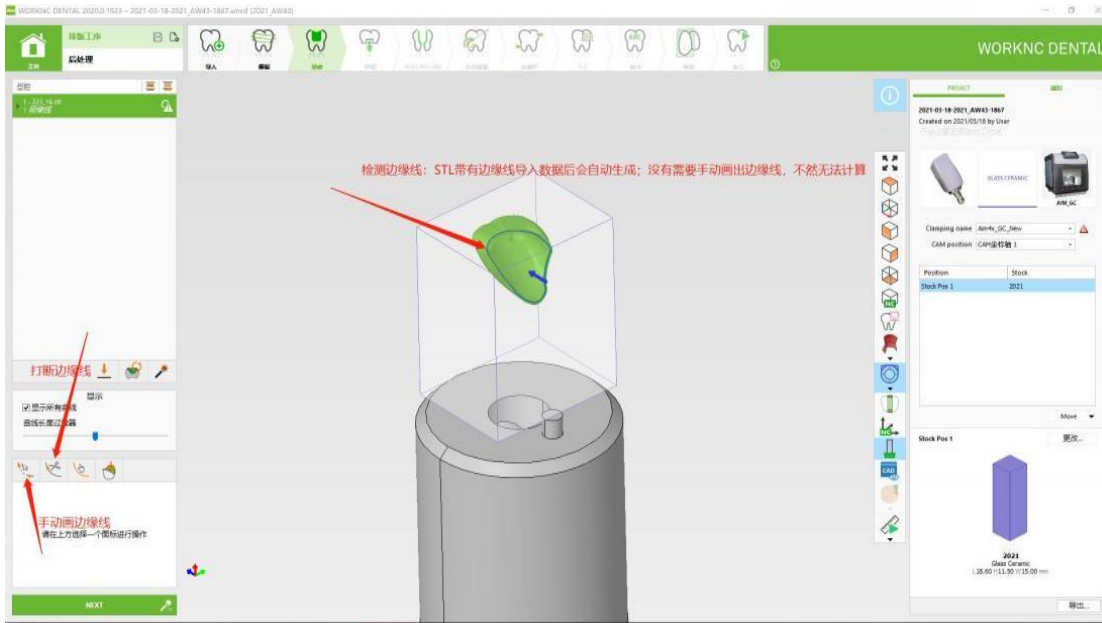
- Double-click the material, when the material turns green, click the right mouse button and select the corresponding template

- Click on NEXT for the next step



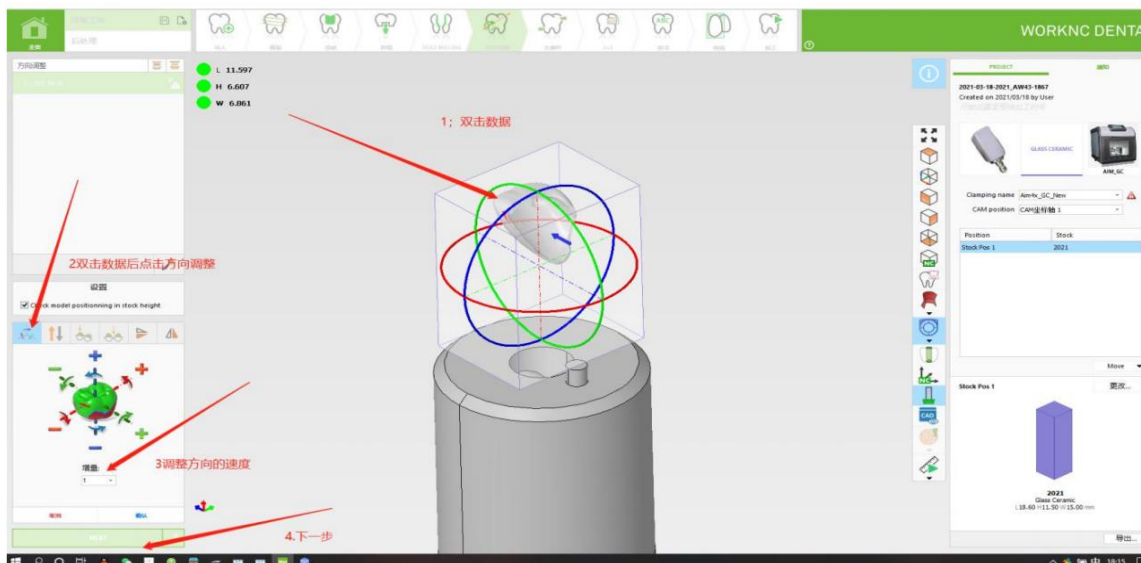
6.4 Edge line detection

- Doubleclick the material and the edge line automatically detects and imports
- If the edge line is incomplete or there is an overlapping part, you need to manually connect or break the edge line
- **Note: If the material shows multiple edge lines, select any of them, not more**
- 4. Click on NEXT for the next step



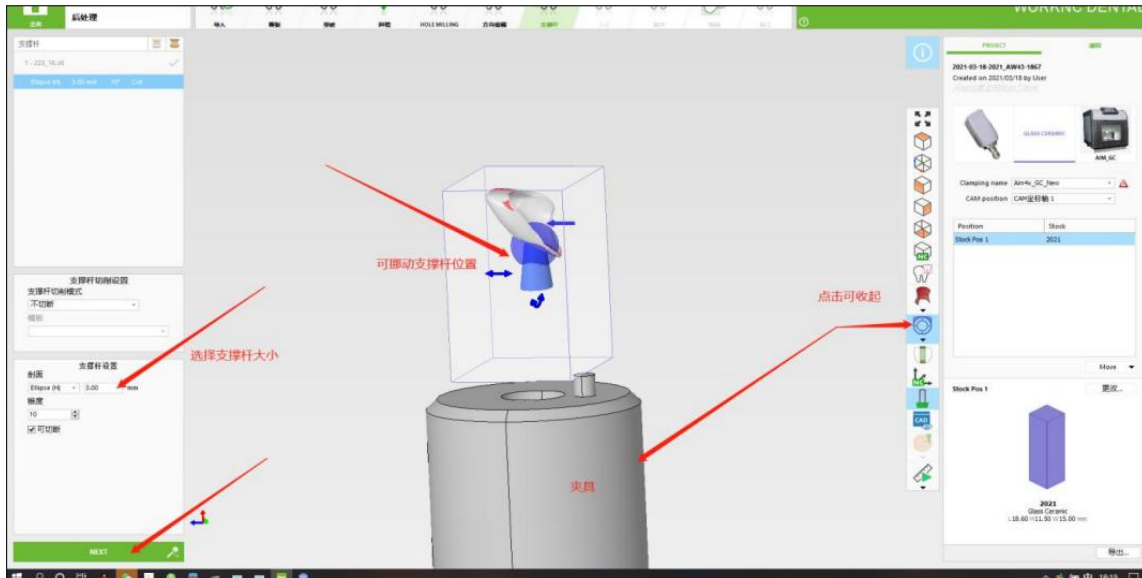
6.5 Direction adjustment

- Double-click the material and the edge line automatically detects and imports
- If the edge line is incomplete or there is an overlapping part, you need to manually connect or break the edge line
- **Note: If the material shows multiple edge lines, select any of them, not more**
- Click on NEXT for the next step



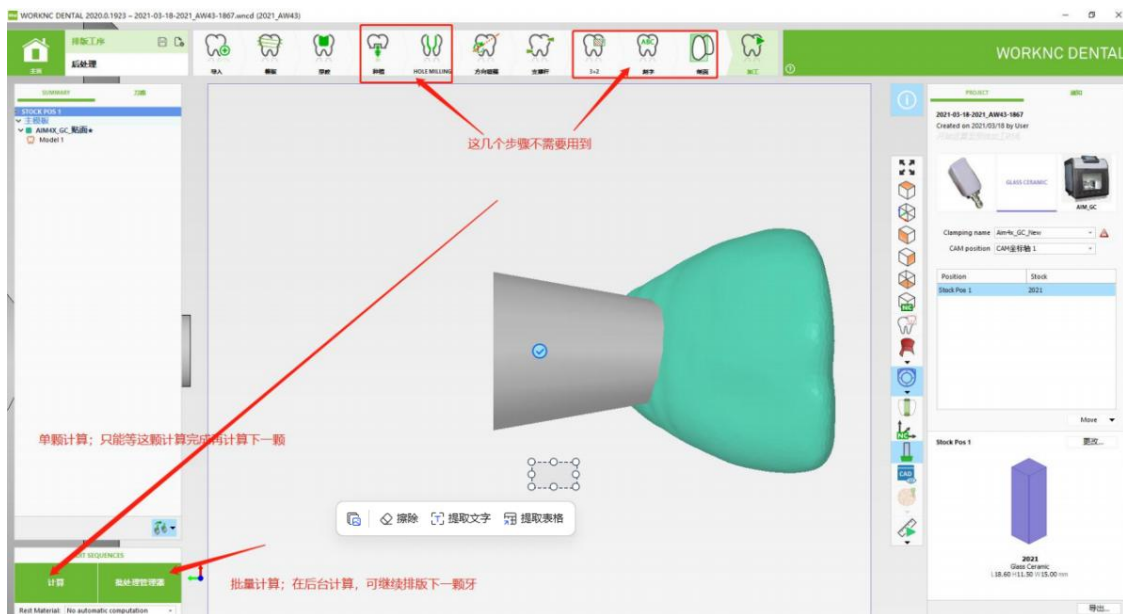
6.6 Support rod setting

- 1. Select the required support rod size (default 3mm)
- 2. Drag the arrow to place the support rod in place
- 3. Click on NEXT for the next step



6.7 Settings

- 1. Click the calculation and wait for the NC file to be generated
 - 2. After the calculation is completed, click postprocessing and click the NC document to see the NC file and the location of the file
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- 1. Click the calculation and wait for the NC file to be generated
 - 2. After the calculation is completed, click postprocessing and click the NC document to see the NC file and the location of the file



7 Operation precautions

- ① Before the machine operation, ensure the tool number on the spindle and on the control screen The "current knife number" is consistent, and the tools in the knife library are placed correctly and neatly according to the serial number;
- ② Check the water level of the water tank and the return water pipe before the machine is running, or hinder the water due to bending, or higher than the level of the machine;
- ③ After manual knife must click "knife";
- ④ The current knife number can be changed in manual mode, and must be consistent with the actual knife number of the spindle;
- ⑤ During the operation, the warehouse door can not be opened, otherwise it will be stopped; After power failure, the data should be retransmitted before operation;
- ⑦ After the grinding process is interrupted for various reasons, the porcelain blocks are not being removed, and the same data can be imported and run again.

Debugging

8. Protection and maintenance services

You note that even during the warranty period, the product needs to be repaired due to the following reasons, the standard warranty period of the product is one year, during the warranty period, the products can enjoy free after-sales service. Charge for maintenance service fee for human damage, you need to pay for maintenance fee and spare parts fee:

1. Improper use
2. Unirresistible natural disasters
3. Replace or use unapproved accessories, grinding or repair by non-Australian science professionals
4. Other faults not caused by the product itself

(Note: After the warranty expires, provide paid maintenance service)