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Instruction Document of

CAMEO Fast Sintering Furnace



Aidite (Qinhuangdao) Technology Co., Ltd

2020 Make People Healthier and More Beautiful

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1. Introduction of Use Process

Welcome to use CAMEO zirconia fast sintering furnace, in order to ensure your safety and correctly use, please read and implement this article carefully.

There are six steps from preparation to use of CAMEO zirconia fast sintering furnace:

- Preparation for running environment

This part describes the necessary environmental conditions for the use of the fast sintering furnace. In order to use it safely, please meet the environment requirements.

- Unpacking inspection

This part describes how to unpack the product after arrivial, and check whether the product is damaged due to transportation and other reasons, so as to avoid delaying your use.

- Installation of silicon carbide rod

The product needs to be installed with silicon carbide rods before use, which are the heating elements.

- Operation inspection

This part describes how to conduct necessary inspection before use to avoid accidents.

- Set Sintering Curve

This part describes how to set the sintering curve.

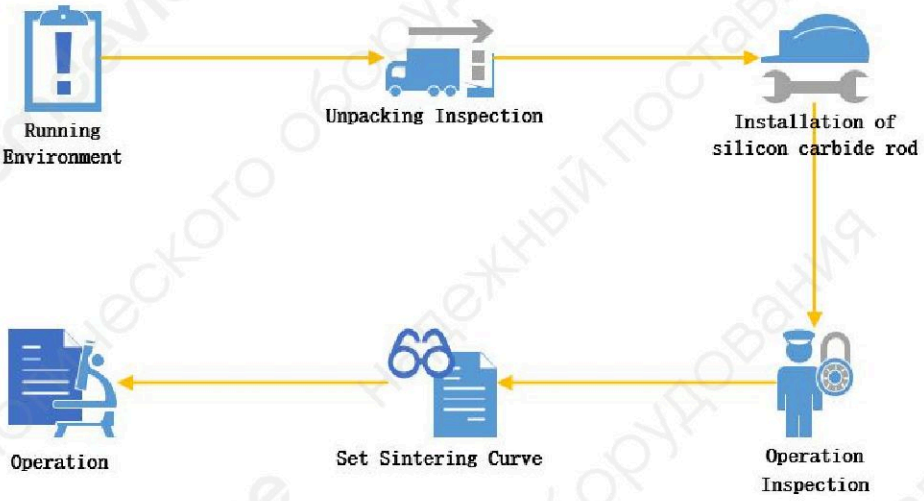
- Operation

This part describes the operation process of sintering, precautions and solutions for common problems.

The following is a flow chart of the above process:

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The following is a flow chart of the above process



2. Preparation for Running Environment

2.1 Location requirement

The location should be clean, flat, no shaking, bearing capacity of more than 100kg, ventilation with no shelter around, and avoid water leakage and damp environment, equipped with fire extinguishers, as shown in the following figure:



2.2 Power requirement

The sintering furnace needs to be matched with AC 220V. If your power supply does not match, you need to convert the corresponding power supply. The plug is 16A, which also needs to be converted. The 16A plug is shown in the following figure:



Connection sequence:

power supply → transformer → voltage regulator (3.5kw) → sintering furnace

2.3 Placement requirement

Keep a minimum distance of 30cm from the wall when placing the furnace.



When the sintering furnace is placed, the upper part shall not be covered with anything. Meanwhile, the air can be kept in normal circulation:



The sintering furnace needs to be placed independently. Do not place other equipment and articles around it:



3. Unpacking Inspection

First of all, unload the equipment according to the correct direction marked on the wooden box, do not to turn the equipment upside down. After the equipment is placed stably, observe whether the package is damaged carefully, and take photos around the wooden boxes for recording. Mark as shown in the following figure:



Secondly, remove the screws. All the screws fixed around the bottom of the wooden box need to be removed, as shown in the figure:



Thirdly, two people lift the wooden box vertically after the screws being removed. Then you will see some accessories are on the top of the sintering furnace as shown in the following figure:

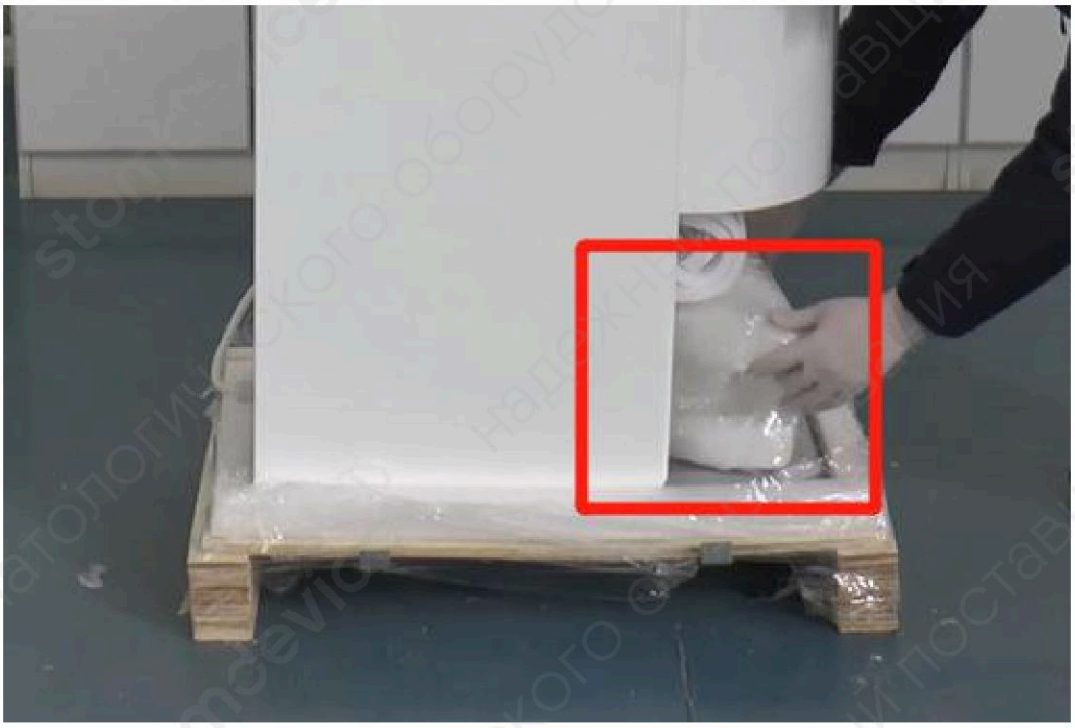


Take them down and place them safely.

Next, remove the protective film. Pay attention not to damage the appearance of the equipment during the removal, as shown in the following figure:



After removing the protective film, take out the sintering platform and place it safely, as shown in the following figure:



In the end, remove the fixed plate. There are two fixed plate on both sides, as shown in the following figure:



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Check whether the heating elements are damaged, as shown in the following figure:



Note: do not put the sintering furnace at a high place, and then install the heating elements.

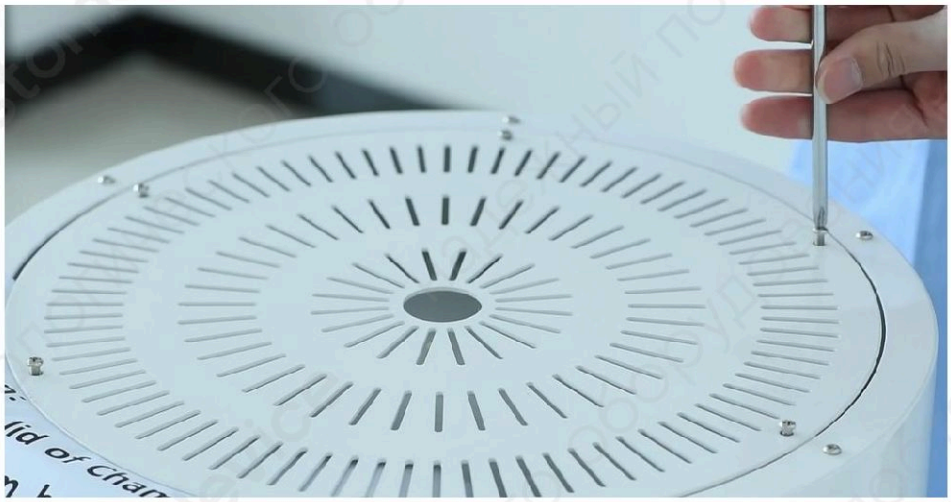
4. Installation of silicon carbide rod

The heating elements of the sintering furnace are silicon carbide rods, and then the installation guide of silicon carbide rod is carried out, as shown in the figure below:



4.1 Remove the upper cover

First, use a cross screwdriver to remove the six screws of the furnace cover and take out the paper and foam, as shown in the following figure:



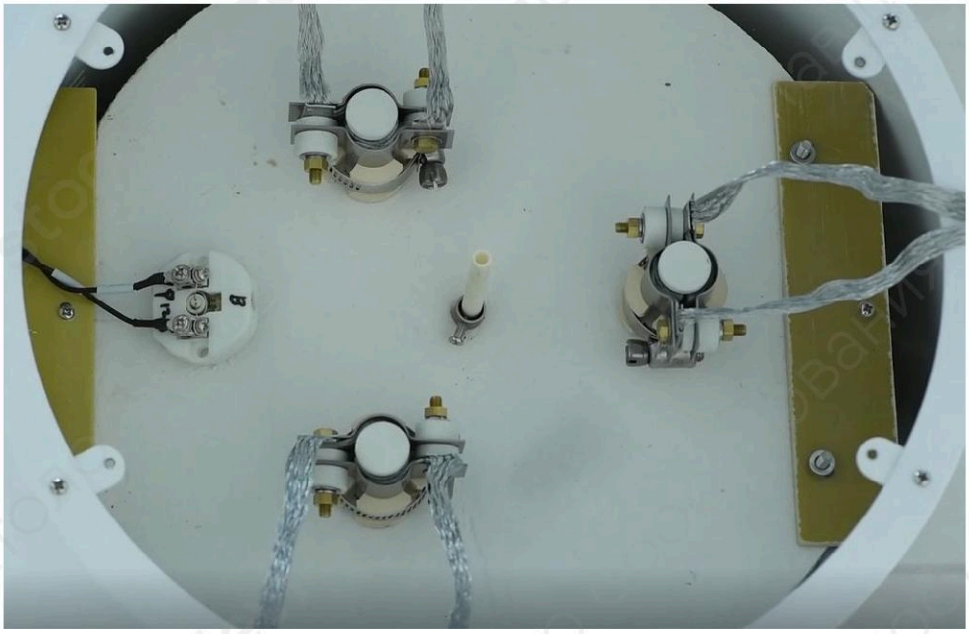
4.2 Install silicon carbide rods

Observe whether the three holes on the top of the furnace chamber are unobstructed, take the silicon carbide rod gently, and then place it slowly into the hole. Do not operate forcibly when there is resistance, and place it after find the cause, sove the problem and place it again.

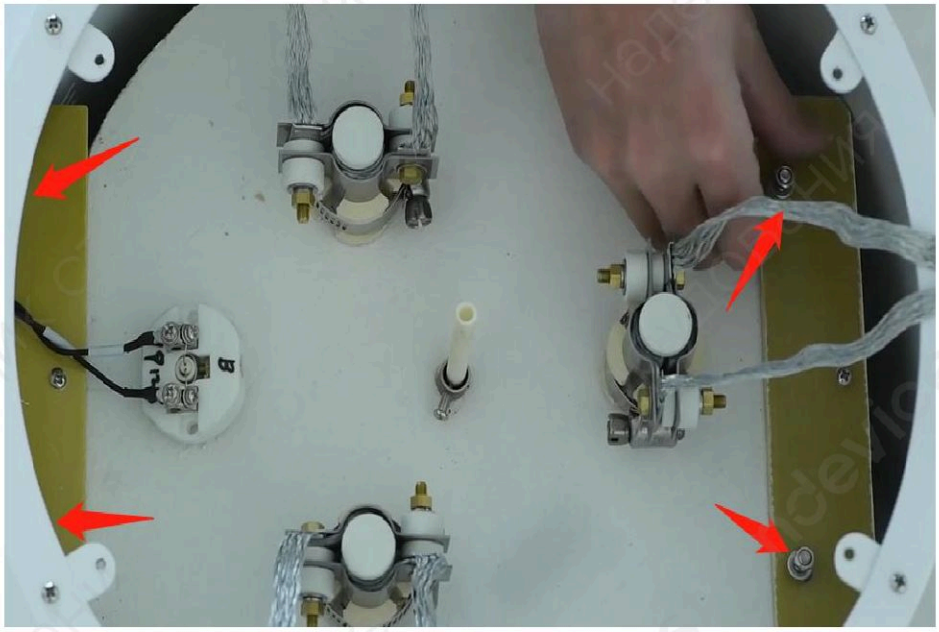


Note that there are also three corresponding holes at the bottom of the furnace, and the silicon carbide rod also needs to be placed into the hole.

The three silicon carbide rods are installed successfully, as shown in the figure:

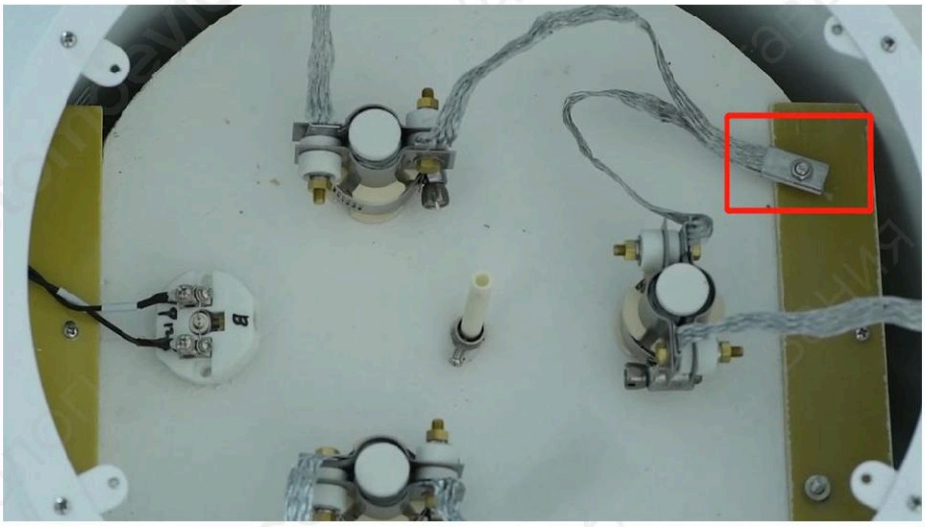


Next, remove one nut and one gasket from each bolt. The bolts position are shown in the figure:

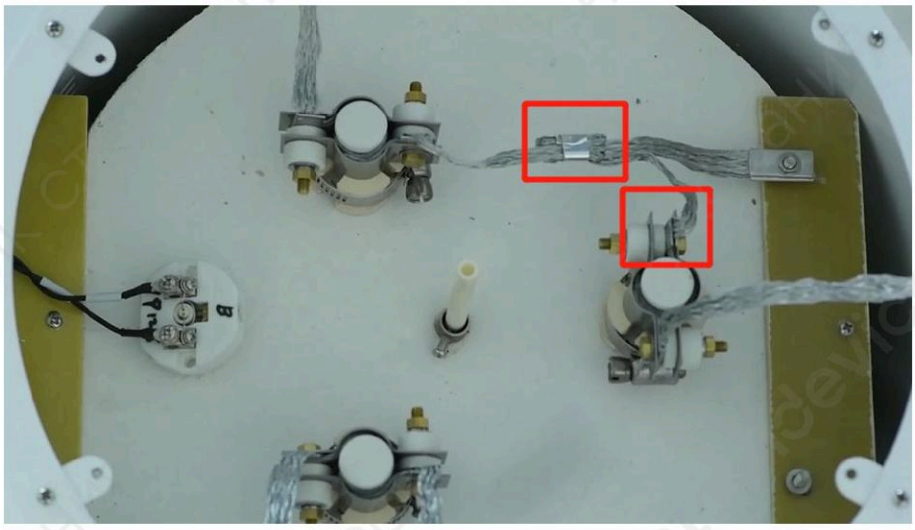


Then, connect the aluminum strip and fix it with the gasket and nut, as shown

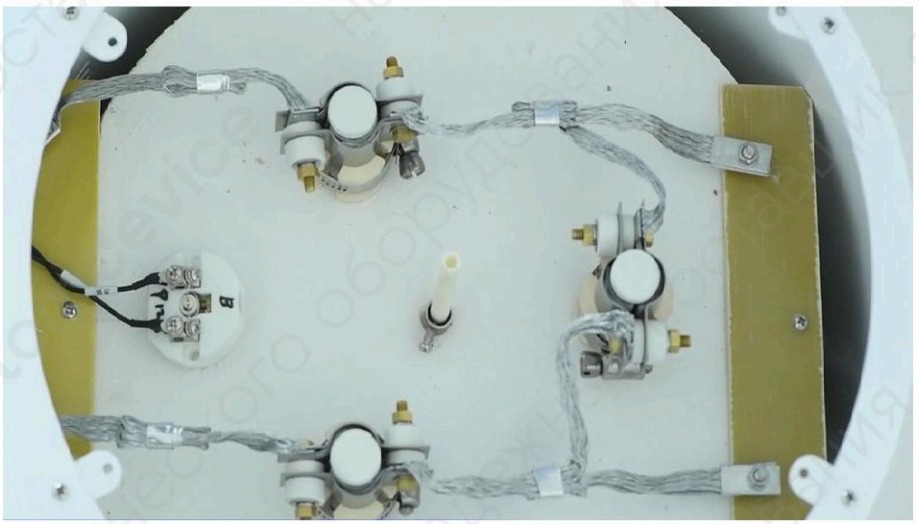
in the figure:



Fold and bind aluminum strips with aluminum sheets neatly. And pay attention that the aluminum strips do not touch the wires on the opposite side, as shown in the figure:



Three silicon carbide rods are connected in series, and connect four lines in sequence, as shown in the figure:



Finally, replace the furnace cover and tighten the screws. Pay attention that the aluminum strip shall not be too high to avoid accidents caused by contact with the furnace cover.

5. Operation Inspection

As mentioned in the "Preparation for Running Environment" above, after connecting the power supply in the order of "power supply → transformer → voltage regulator (3.5kw) → sintering furnace", click the white button, at this time, the equipment has been powered, and then click the green button, the control screen will move outward, as shown in the figure:



In the control panel, "CN" is the Chinese option, "EN" is the English option, "Up" is the sintering platform moving upward, "Down" is the sintering platform

moving downward, "Hold" is the suspension during the platform moving up and down, which does not mean to stop sintering, "Monitor" is the sintering function operation, "Menu" is the setting sintering curve, as shown in the figure:



Next, please click the "Down" button to check whether the sintering platform can descend and stop normally, and then click the "Up" button to check whether the sintering platform can rise and stop normally. Lower the platform and place the sintering platform and the sagger. The sagger can be placed in two layers at most. Pay attention that the placing platform is flat and free of inclination, and the sagger can not exceed the range of the sintering platform with suspended state, as shown in the figure：



After the sintering platform being raised, check the tightness between the

platform and the bottom of the furnace chamber. The gap is about 1mm, as shown in the figure:



Inspection complete.

6. Set Sintering Curve

First click the "Menu" button, as shown in the figure:



Enter the function selection interface and select the sintering curve, as shown in the figure:



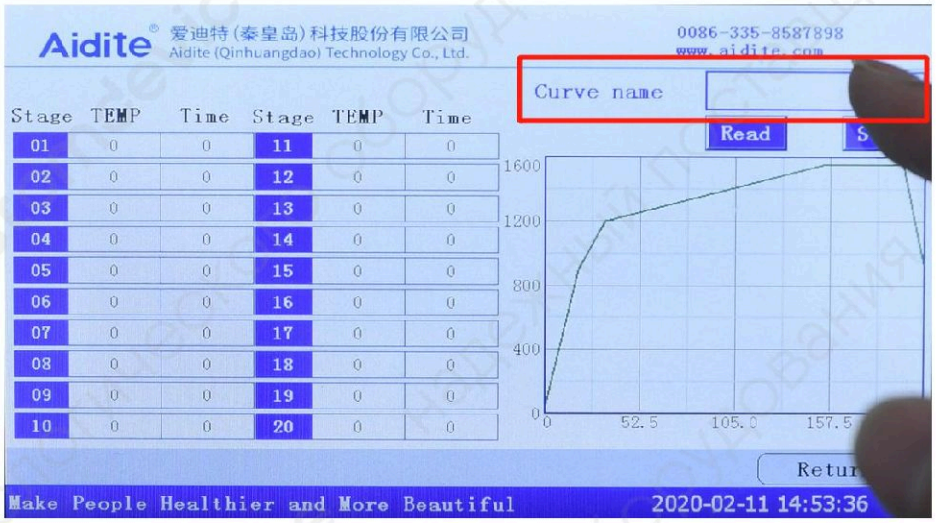
Input the password "111", as shown in the figure：



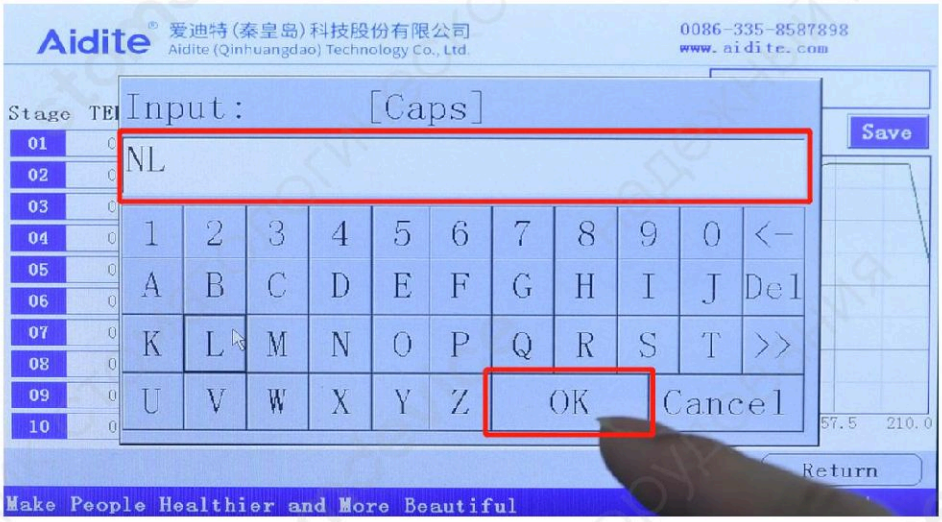
Enter the sintering curve selection interface after inputing password, please click any blank option, as shown in the figure:



Click the "Curve Name" input field, as shown in the figure：



Enter the name of the curve in the input field, and click the "OK" button, as shown in the figure:



Then, click the temperature input field, input the corresponding temperature, input the corresponding time in the same line, and input the whole curve in turn, as shown in the figure:



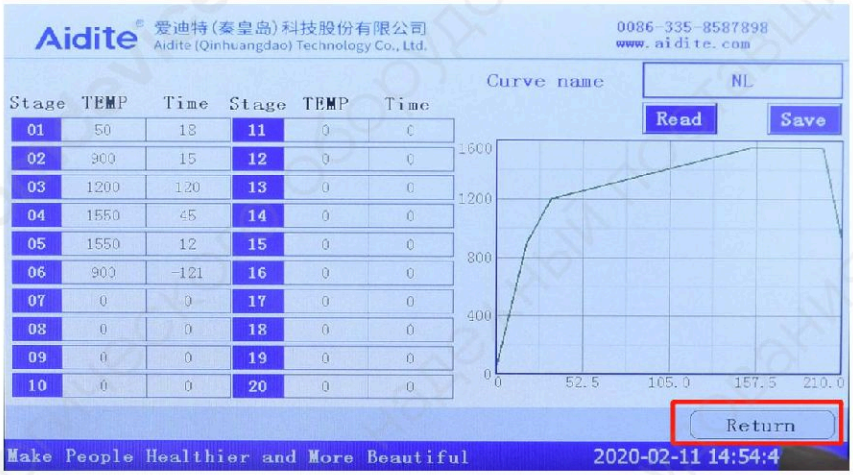
Note that "-121" must be entered at the end of the curve, as shown in the figure:



Next, click the "Save" button, and then click the "OK" button, as shown in the figure:



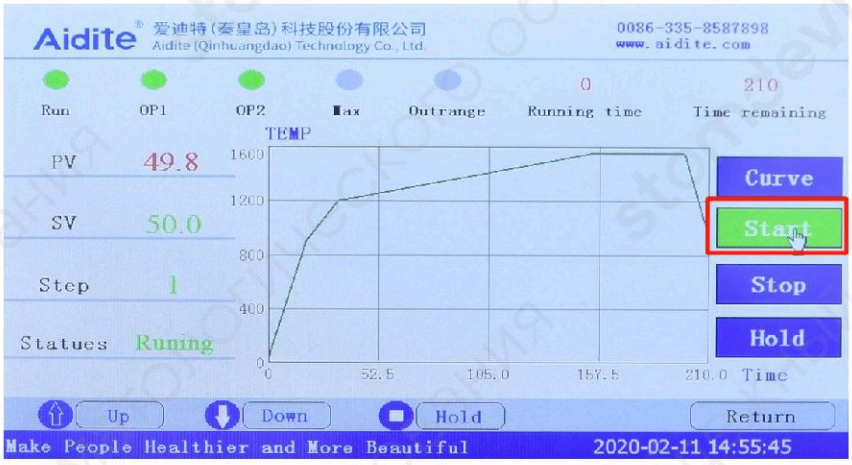
After setting the curve, click "Return" button in turn until returning to the main interface, as shown in the figure:



After returning to the main interface, we will select the curve just set to see if there is any problem. Click the "Monitor" button, as shown in the figure:



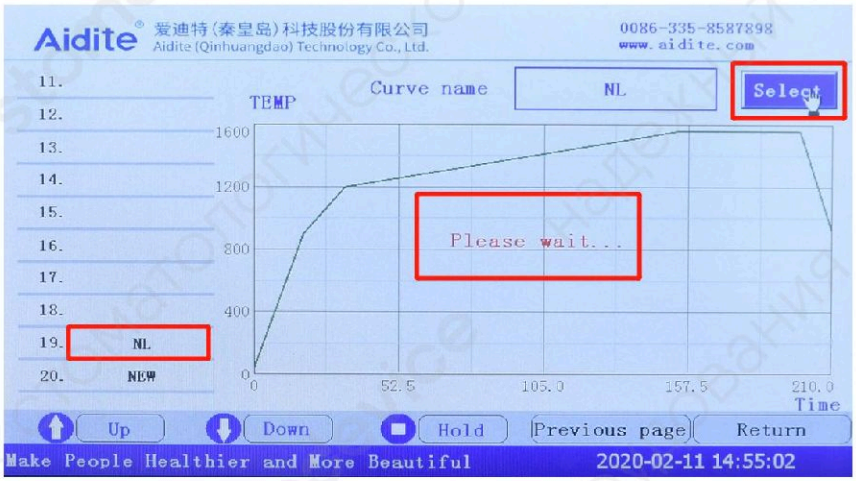
Enter the control interface and click the "Curve" button, as shown in the figure:



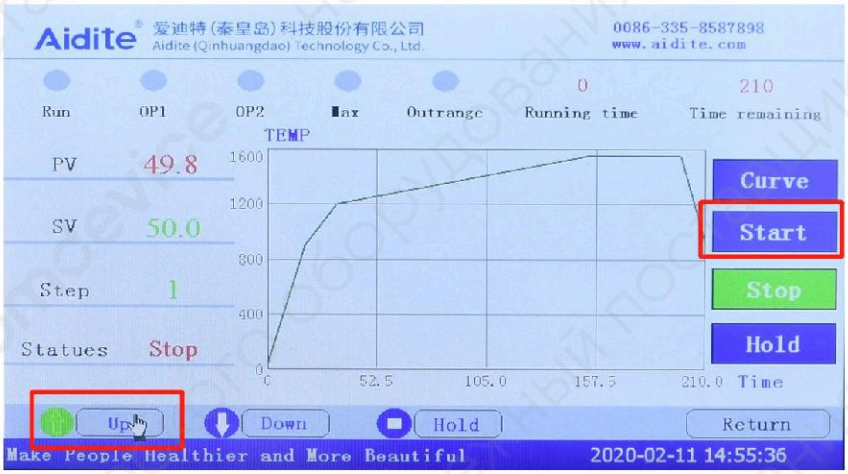
The displayed interface does not have the curve we set, please click the "Next page" button, as shown in the figure:



After the created curve is displayed, click the curve name, then click the "Select" button, wait a moment, and then click the "Return" button to return to the operation interface, as shown in the figure:



After entering the control interface, if the sintering platform is not at the highest point, please click the "Up" button. If the platform has risen in place, directly click the "Start" button to start the normal sintering, as shown in the figure:



Setting sintering curve completed.

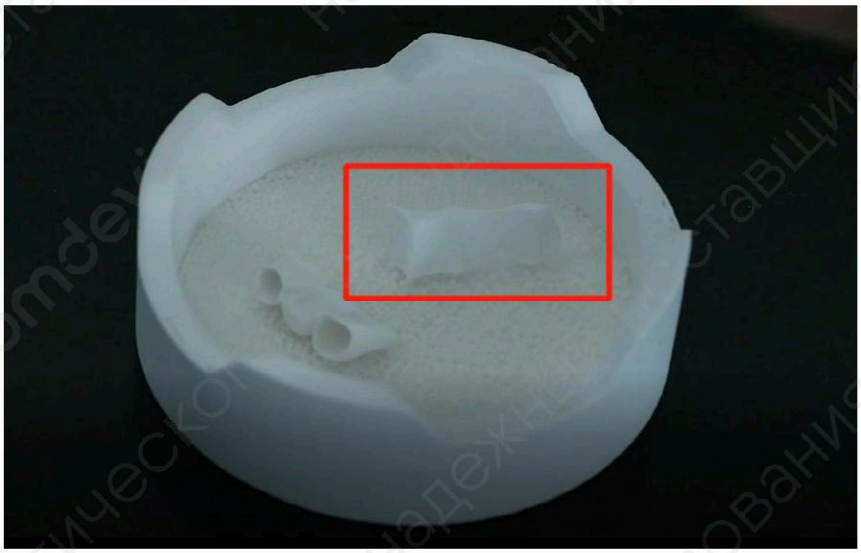
7. Operation

First, pour the zirconium beads into the saggar slowly, and cover the bottom of the sagger, as shown in the figure:



Then shake the zirconium beads in the sagger evenly.

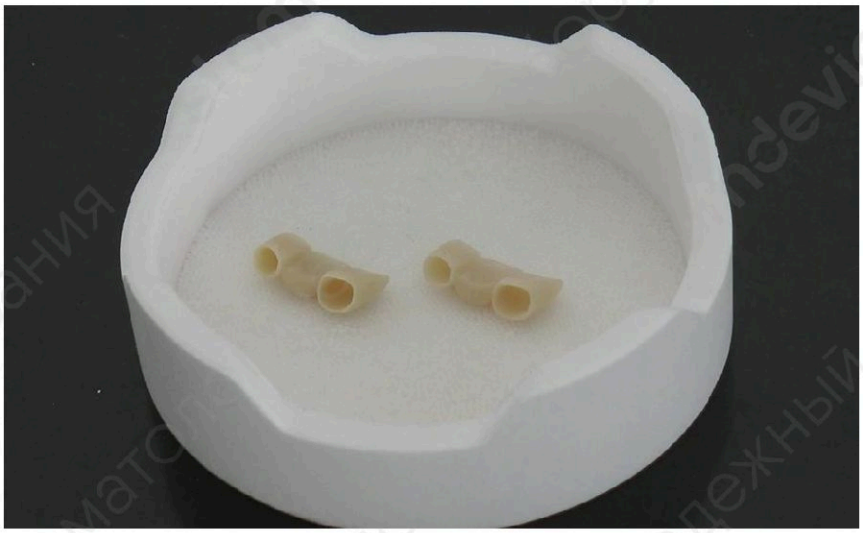
Next is how to place the waste material and the restoration. The sintering furnace needs to burn the waste material before the restoration is formally sintered. In addition, the sintering furnace also needs to burn the waste material after being out of service for about a week. The following is the method of placing the waste material. Just put the waste material directly on the zirconium beads, as shown in the figure:



Next is the placement method of single crown and short bridge, as shown in the figure:



The placement method of anterior teeth, as shown in the figure:



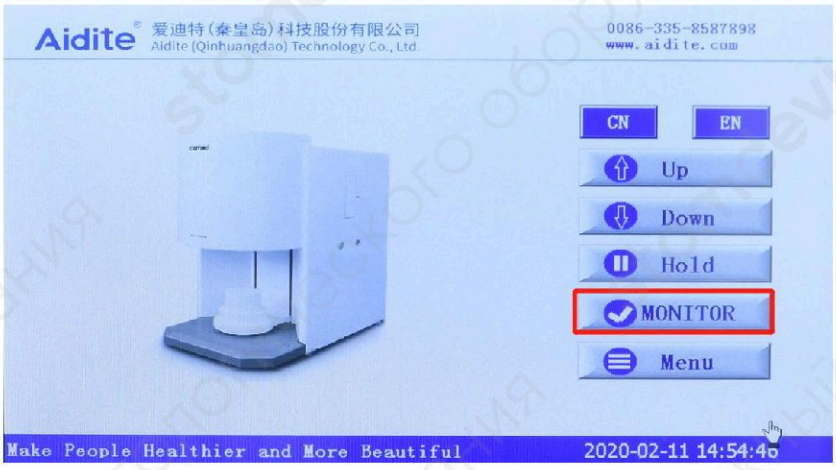
The placement method of long bridge, as shown in the figure:



Place the restoration well, as shown in the figure:



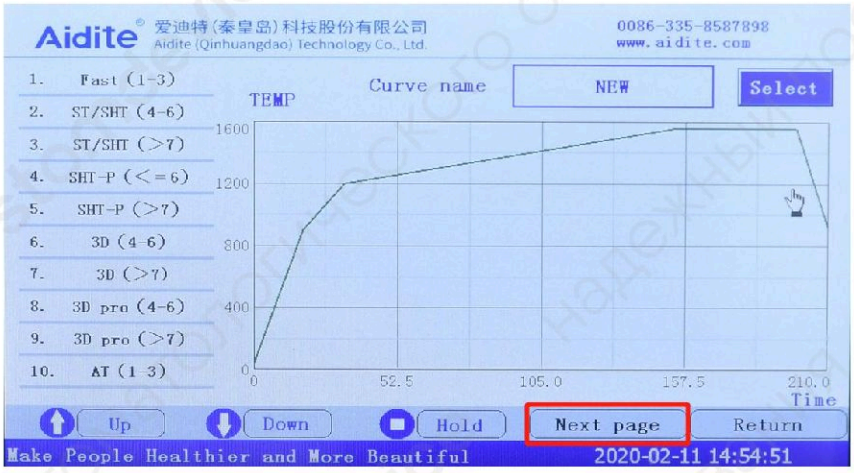
Next, carry out sintering. After returning to the main interface, click the "Monitor" button, as shown in the figure:



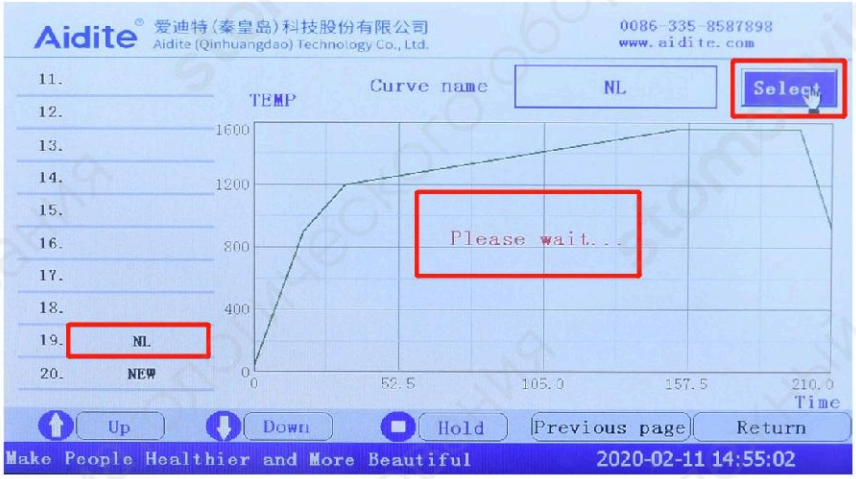
Enter the control interface and click the "Curve" button, as shown in the figure:



Directly choice the sintering curve we need, or click the "Next page" button, as shown in the figure:



Click the curve, then click the "Select" button, wait a moment, and then click the "Return" button to return to the control interface, as shown in the figure:



After entering the control interface, if the sintering platform is not at the highest point, please click the "Up" button. If the platform has risen in place, directly click the "Start" button to start the normal sintering, as shown in the figure:



After sintering, it is recommended that when the furnace temperature drops to room temperature, click the "Down" button, the platform will move downward. Take out the restoration together with the sagger, as shown in the figure:

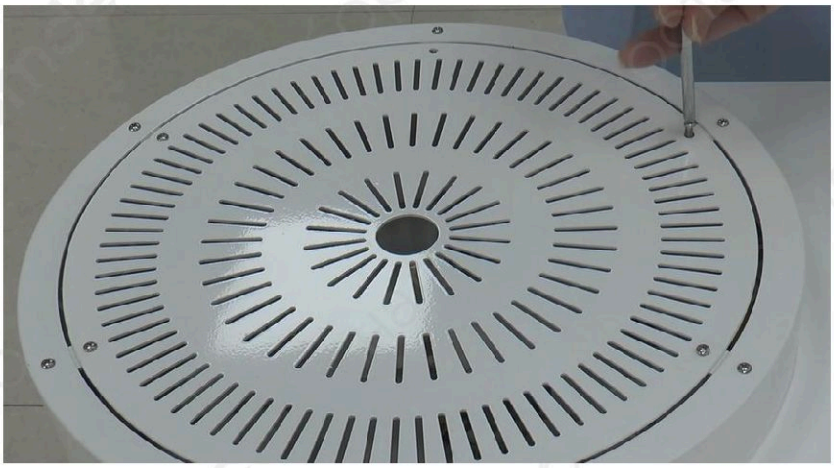


Note: when the process of sintering is completed, the sintering platform will not move downward by itself; in addition, when the furnace temperature drops to 300 ℃, the restoration can be taken out together with the sagger, but the corresponding tools shall be used to avoid scalding. After the restoration is taken out or the sintering furnace is idle, the platform needs to be raised.

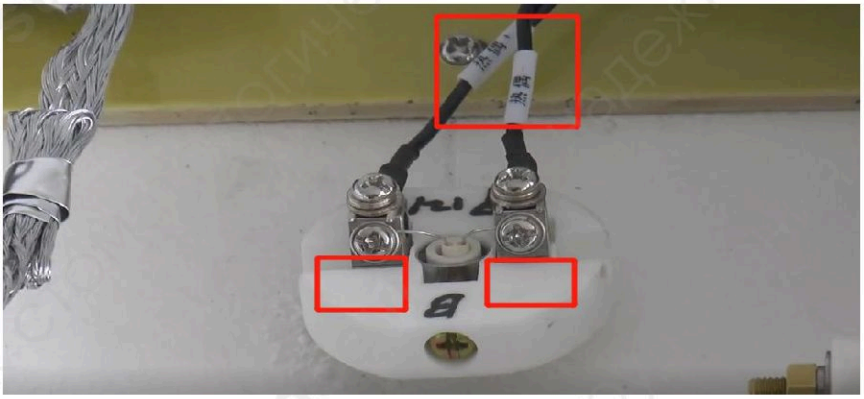
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8. Replacement of Thermocouple

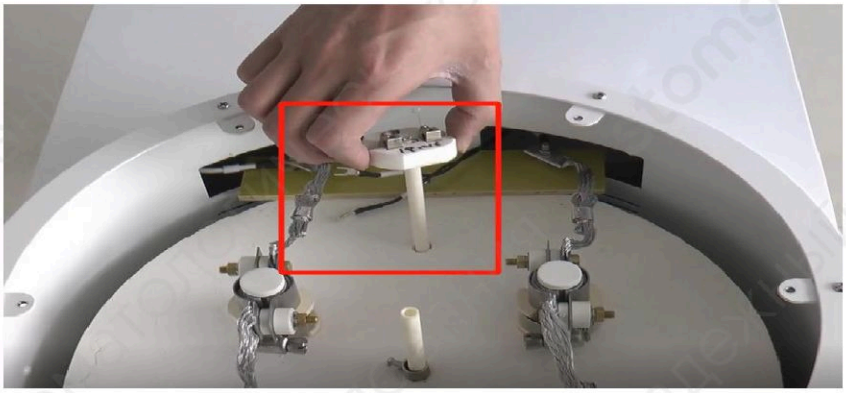
To replace the thermocouple, first remove the furnace cover and remove six screws, as shown in the figure:



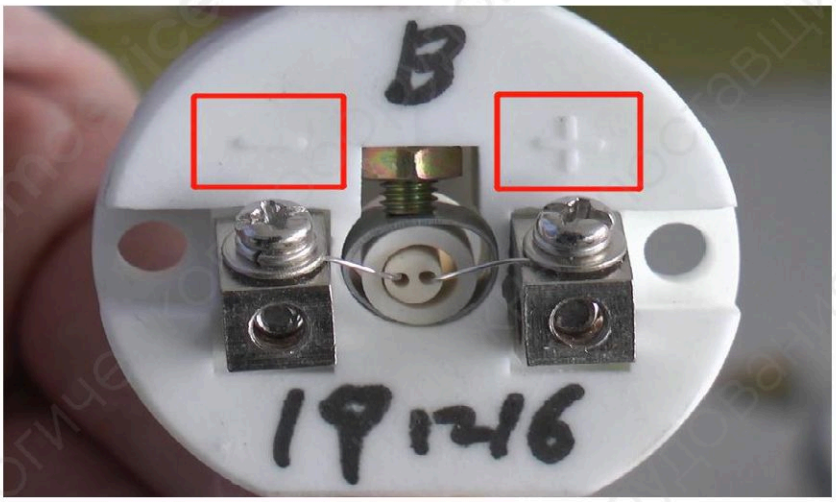
Next, remove the thermocouple screws. The thermocouple has the positive and negative pole. Please take photos and make records before disassembly. The disassembly method is shown in the figure:



Remove the screws, pull out the two cables, and then pull out the thermocouple slowly, as shown in the figure:



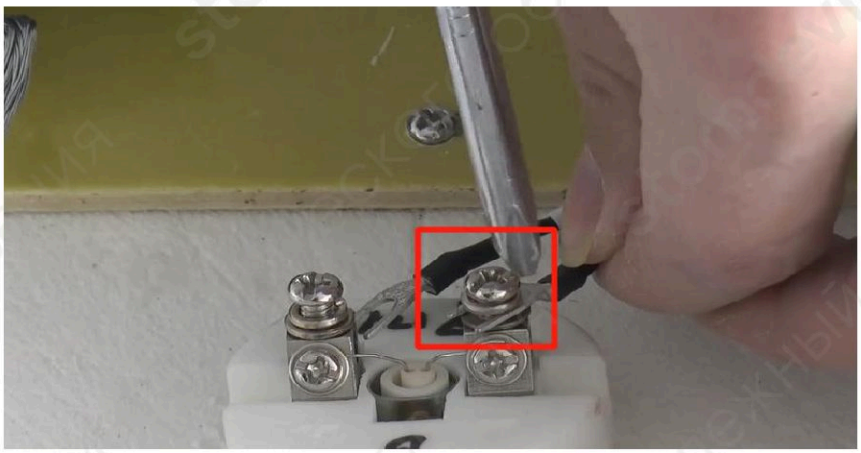
Display of positive and negative poless of thermocouple, as shown in the figure:



When installing the new thermocouple, pay attention to the tilt angle, and slowly put it into the hole, as shown in the figure:



Select the corresponding pole to install after placing, and pay attention to the wire placed between the two gaskets, as shown in the figure:



Status of thermocouple after replacement, as shown in the figure:



Finally, install the cover of sintering furnace and it can be used normally, as shown in the figure:

