Read the product instructions before installation and use.

Please keep this manual safe for future reference.

YRC-HS007 Fast Sintering Furnace Product Manual

Preface

YRC-HS007 fast sintering furnace is a new generation of fast sintering furnace designed by YUCERA company after fully investigating the market demand of dentistry, summarizing years of experience in the oral industry, and combining customer feedback suggestions.

The sintering furnace features a modular design with robust functionality, large capacity, and flexible configuration. The system incorporates a large-screen touch LCD display, offering 10 preset curves, 189 customizable curves, and 1 non-editable (cleaning program) curve to fully meet customer requirements. The YRC-HS007 fast Sintering Furnace delivers ultra-fast sintering capabilities, with a recommended heating rate of no less than 10°C per minute. Equipped with cutting-edge heating and temperature control technology, it completes the sintering process in record time. Compared to traditional equipment, this innovation significantly reduces production cycles, enabling daily processing of multiple batches of materials. This breakthrough unlocks substantial production potential for enterprises, securing valuable time advantages in market competition.

YRC-HS007 fast sintering furnace is installed on the table.

This installation instruction manual should be handled by a special person and kept properly for future reference.

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Part One Overview

YRC-HS007 fast sintering furnace introduction

Chapter 1 Introduction to YRC-HS007 fast sintering furnace

YRC-HS007 fast sintering furnace is a new generation of sintering furnace launched by YUCERA Company. It enables repair with speed and guarantees quality with intelligence, bringing more efficient and reliable sintering experience for dental restoration.

1.1. Ultra-fast burning, efficiency leading

This sintering furnace utilizes silicon-molybdenum rods as heating elements, featuring high efficiency as its core advantage. Equipped with cutting-edge heating and temperature control technologies, it completes the sintering process in an ultra-short time, achieving a maximum heating rate of 200℃/min. Its innovative dual-layer crucible design supports simultaneous sintering of up to 60 dental prostheses, significantly enhancing batch processing capacity. When combined with the YUCERA 3D Fast-Zirconium Block, it further optimizes sintering performance, achieving simultaneous improvements in efficiency and quality.

1.2. Intelligent temperature control, accurate and stable

This sintering furnace is equipped with an intelligent temperature control system that ensures uniform coloration of sintered components through PDI precision temperature regulation technology. The furnace features an alumina fiber chamber with exceptional thermal insulation performance and long-term stability. Additionally, the device incorporates a practical power-off resumption function, enabling continuous operation from any point on the sintering curve after power restoration, effectively ensuring process continuity and reliability.

1.3. Safe and reliable, durable

This sintering furnace is designed with safety, reliability, and durability in mind. Its exceptional thermal insulation ensures the equipment's outer shell temperature remains below 30℃, guaranteeing operational safety. The system continuously monitors critical parameters including temperature, current, and voltage. Any detected abnormalities trigger instant automatic alarms, providing comprehensive protection for stable equipment operation.

1.4. Easy to operate and easy to use

This sintering furnace is designed to deliver hassle-free operation through its intuitive 10-inch touchscreen interface. Featuring 10 preset sintering programs for instant startup and 189 customizable curves to meet diverse customization needs, it further optimizes workflows with its unique pre-drying function, significantly boosting overall sintering efficiency.

1.5. Key performance parameters

Number	Model	YRC-HS007
1	Size of furnace	Safety size of furnace chamber: diameter ≤105mm, height <80mm
2	outline dimension	420mm*568mm*816mm
3	net weight	73kg
4	source	220V±10%，50/60Hz，13.6A
5	power rating	3KW
6	Number of sintered pieces	Double crucible: single layer: ≤30 units, double layer: ≤60 units
7	Number of curves	200 curves: preset 10 fast burn curves/189 customizable/1 non-editable
8	temperature range	Room temperature-1650℃
9	Constant temperature accuracy	±2℃
10	thermocouple	Type B beryllium rhodium
11	heating element	4* 1850 silicon molybdenum rod
12	rate of temperature rising	≤200℃/min
13	Lump furnace material	alumina fibre
14	Copper material	Conventional crucible material alumina ceramic

1.6. Annex

Number	Attachment type	Unit	Quantity
1	fritting furnace	tower	1
2	sintering box	individual	2
3	Stainless steel trays	individual	2
4	Brazier (top)	individual	1
5	Brazier (middle)	individual	1
6	Brazier (lower)	individual	1
7	Zircon	wrap	2
8	Plug (16A)	individual	1
9	Red handled clip	grasp	1
10	Ceramic Tweezers	grasp	1

Part Two Safety matters

YRC-HS007 fast sintering furnace safety precautions

Chapter 2 Safety precautions for YRC-HS007 fast sintering furnace

When using electrical equipment, in order to avoid electric shock, scalding, fire and other dangerous accidents, please pay attention to the following basic safety measures.

1. Please read this manual and precautions carefully before using this device. You may place this manual near the instrument for easy access.
2. Keep the appliance away from children and never let children play with the appliance, spare parts and other cables.
3. This equipment must use a power socket with reliable protection and grounding.
4. This sintering furnace is heavy, it is recommended to be placed directly on a flat surface for use. If it needs to be placed on a work table, the firmness, stability and high temperature protection of the work table must be considered.
5. Pay attention to the influencing factors of the working environment. The working temperature of this sintering furnace is high, so the surrounding should be kept in a good ventilation environment. Do not work in a humid environment to avoid accidents caused by abnormal environment.
6. No liquid is allowed inside the instrument.
7. When the equipment is running, the upper shell is in a high temperature state. Do not touch it. Please keep away from other high temperature sensitive instruments and equipment.
8. Absolutely no items should be placed on the top of the equipment.
9. Always pay attention to the operation of the equipment, and never work with faults. Pay attention to the maintenance and maintenance of the equipment.

- All components in the equipment must be correctly installed and suitable working conditions to ensure the normal and fault-free use of the equipment.
- Before using the instrument, be sure to check whether the protection function can work normally to ensure that the instrument is used without fault.
- If the instrument or parts are damaged, please inform our company to repair or replace the parts before use.

10. Do not drag the equipment with a cable. Keep the cable away from heat sources, oil and other sharp tools to avoid damage to the cable.
11. Before cleaning and maintaining the equipment, the power must be completely cut off.
12. For your safety, please use the accessories correctly.

Part Three Equipment installation

YRC-HS007 fast sintering furnace equipment installation

Chapter 3 YRC-HS007 fast sintering furnace equipment installation

3.1. Unpacking inspection

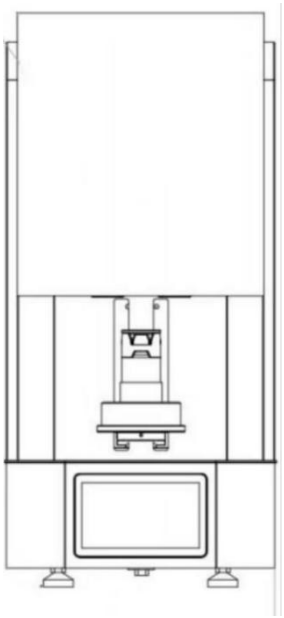
Before installation, the spare accessories of the equipment should be checked first, including sintering furnace, sintering box, crucible, silicon molybdenum rod module and instructions.

3.2. Silicon molybdenum rod inspection

Measure the resistance of silicon molybdenum rod with the ohm scale of the multimeter. The resistance should be greater than 1Ω. The surface of silicon molybdenum rod should be smooth and crack-free. The T-type ceramic should be installed tightly. After checking the error, the necessary inspection of the equipment appearance should be carried out.

3.3. YRC-HS007 installation conditions

- The installation conditions and methods of YRC-HS007 on the table are shown in the figure

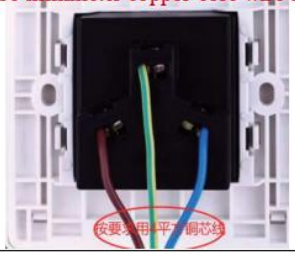


- Working period: temperature +15℃~+35℃;
- Humidity: up to 60% non-condensation;
- Maximum height above sea level 2000m;
- Non-working, storage period: temperature +10℃~+50℃, humidity: maximum 80% non-condensing.

3.4 Access to power

Connect a 10KW voltage regulator to ensure stable input voltage and ensure the grounding of sintering furnace. Do not use other product power lines to replace them during installation. Connect circuit breakers to use 3C certified brand products (as shown in the figure).

If no voltage regulator is available, connect the power line to an open circuit breaker or 16A plug (as shown).

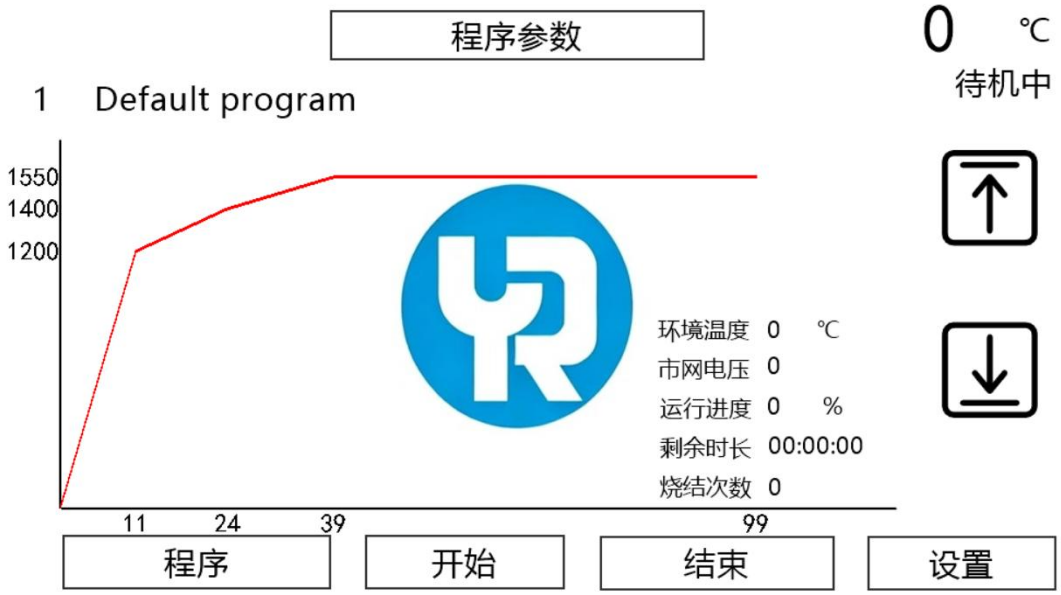
Important Notes on Equipment Power Connection	
First Wiring Method	
16A Plug Wiring Diagram	16A Outlet Wiring Diagram
	Use 4-square-millimeter copper-core wire as required. 
Second Wiring Method	
32A Circuit Breaker Wiring Diagram	
Short circuit between equipment ground and client ground 注：设备端地线与客户端地线短接	
The above accessories are recommended for clients to use brands with 3C certification：BULL、Schneider、Siemens、CHiNT、ABB、DELIXI、TENGEN、Legrand、EATON	

Part Four Description of the page

YRC-HS007 fast sintering furnace page description

Chapter 4 YRC-HS007 fast sintering furnace page description

4.1. Start up to the main interface



程序 You can check the g1---g20 program, each group of programs has a total of 10 curves

Round tray that can be raised

A downward-tilting circular tray

设置 You can access the menu

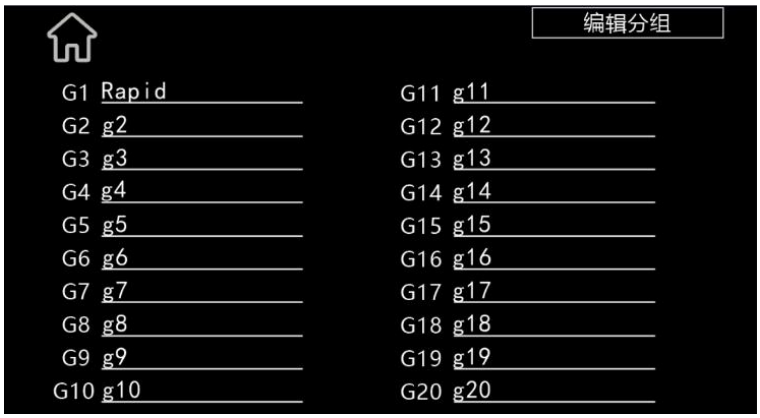
程序参数 The current sintering curve can be viewed

开始 Run the current working curve

结束 Close the current working curve

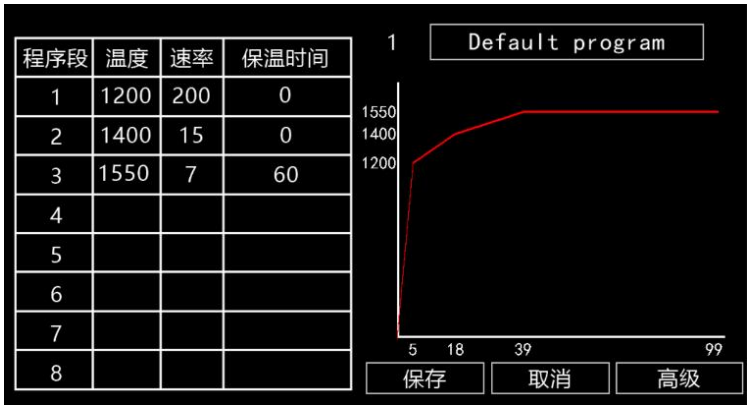
4.2. Click the "Program" button

You can view 20 groups of programs, each with 10 curves. Group G1 has 10 default fast burn curves. Edit the group to name each group and save it.



Click "G1---G20": any group can view ten curves.

Click "Edit" to enter the editing interface. After editing, click save to enter the main interface and start sintering. If there is an error in the editing, the parameters in the table will be displayed in red font. Click "Default program" on the right to name the program.



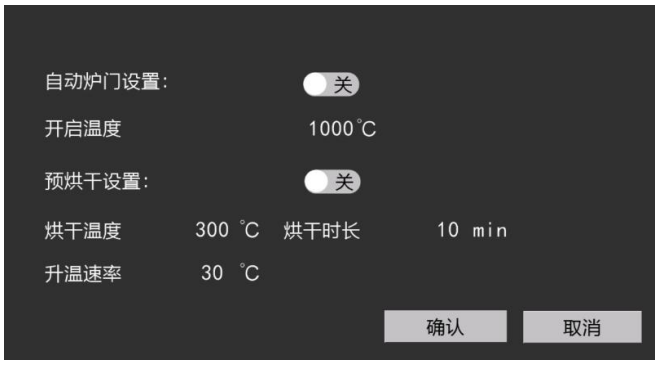
Edit the parameter definition range in the interface

Program segment	1~8	
Temperature	250~1650	℃
Heating rate within 1200°C	1~100	℃/min
Heating rate between 1200-1400°C	6~50	℃/min
Heating rate between 1400-1650°C	6~30	℃/min
Holding time	0~360	Min

This sintering furnace is for fast sintering, and the recommended heating rate should not be less than 10 degrees per minute.

Click "Advanced":

- When the automatic furnace door is set to close, the furnace temperature drops below 1000° before the furnace door can be pressed the down button, and then the furnace door is lowered step by step (the furnace door moves one step for every 30℃ temperature drop, and the furnace door is completely opened after ten steps);
- When the automatic furnace door is set to open, the opening temperature is 1000° by default (the temperature setting is between 400° and 1000°), and the furnace door opens automatically when the temperature drops to 1000°, and drops to 700° in ten steps, and the furnace door is fully open;
- When the programmed cooling temperature value is lower than the programmed furnace door opening temperature value, the furnace door opening temperature shall be based on the programmed cooling temperature value.
- When the pre-drying setting is turned on, the furnace door will stay at the furnace mouth according to the set drying temperature (the drying temperature is set between 300 and 600) for the set drying time (the drying time is set between 1 and 30). (The heating rate can be set between 20 and 100)



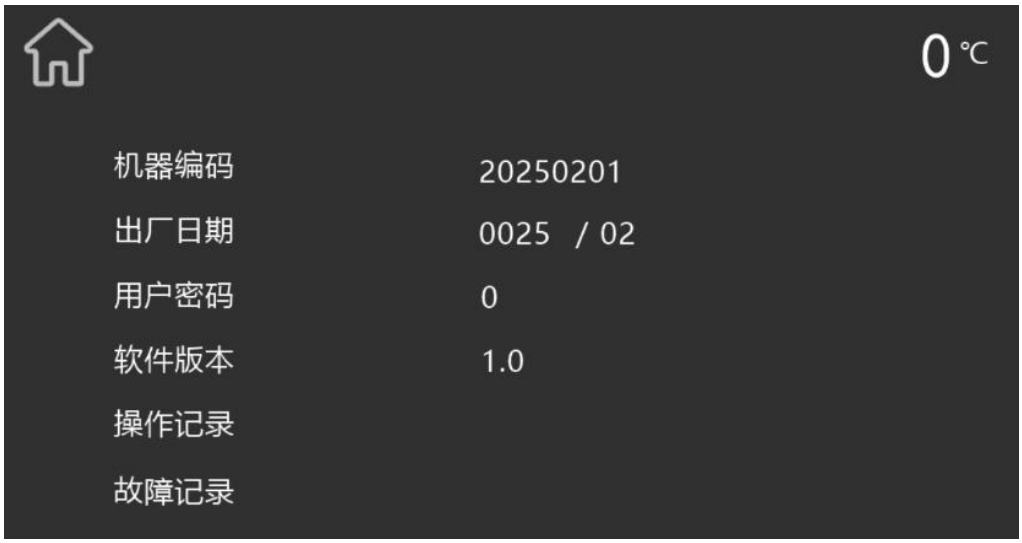
4.3. Click the Settings button

You can switch languages (Chinese, English, Russian and Spanish.) and adjust the temperature (-50~~50°)

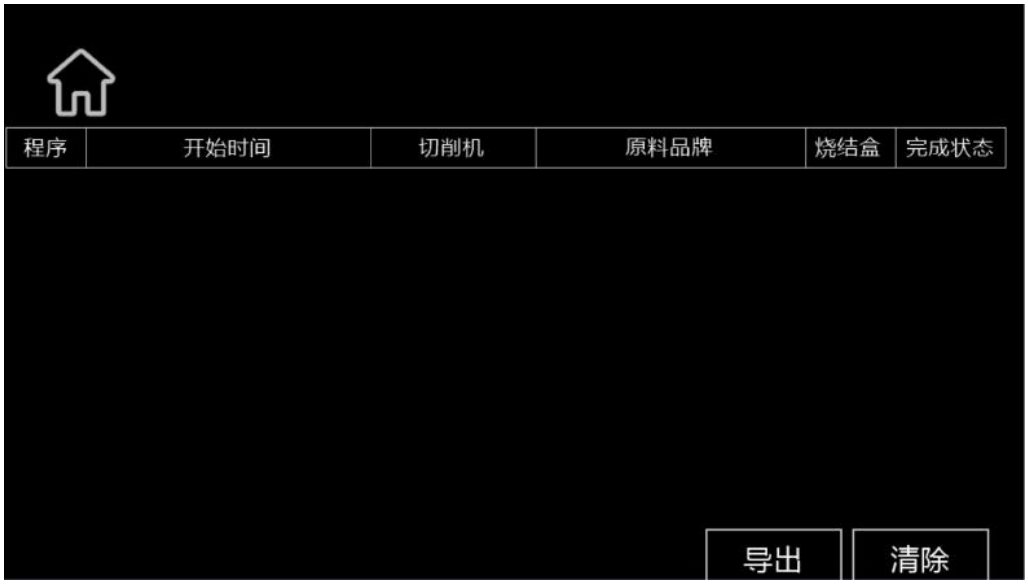
Temperature adjustment: When there is a difference between the furnace temperature of the equipment and the measured furnace temperature, this parameter can be configured:

If the measured actual furnace temperature is 10 degrees lower, set the temperature to "+10" degrees. If the measured actual furnace temperature is 10 degrees higher, set the temperature to "-10" degrees.

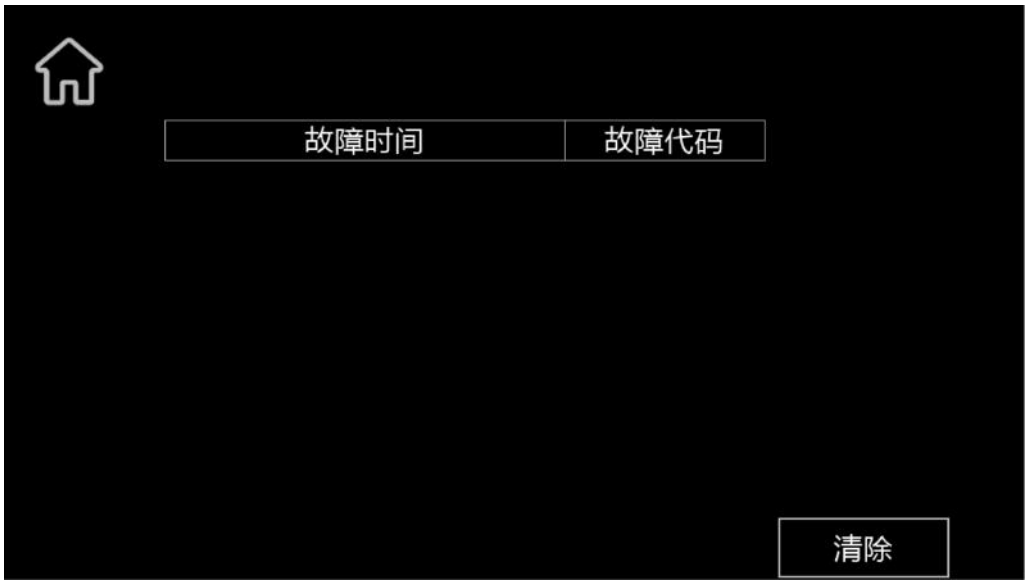
Click "This machine information": can view machine code, factory date, operation record, fault record



Click "Operation Record": can view 100 recent use records of sintering furnace



Click "Fault Records": You can view 100 fault records



4.4. Click the "Program Parameters" button

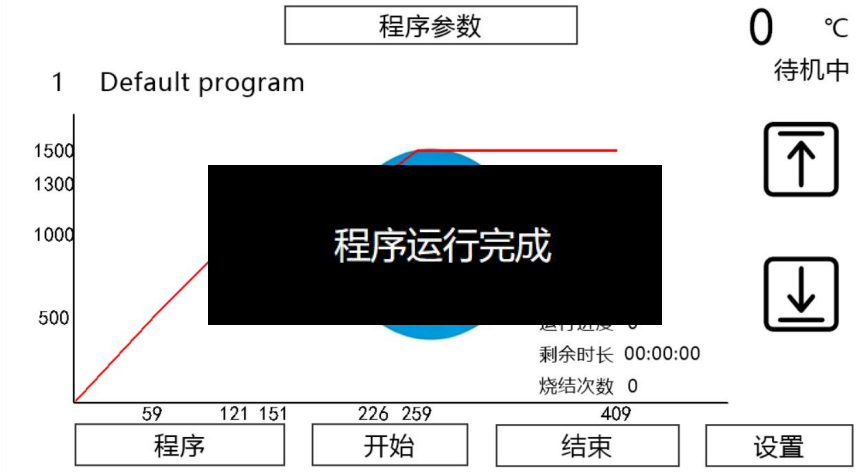
Click program parameter in the main interface: you can view the current sintering curve

4.5. Click the Start button

You can edit the brand of raw material and the number of sintering boxes currently being sintered. After editing, click "run the program" and the program will start sintering.

4.6. Click the End button

Please do not click on the sintering process, so that the working teeth can not be cooked. When the sintering curve is completely finished, the main interface will prompt the program to run complete.



4.7. Power-off warning

When a power outage occurs during sintering, after restarting the system, the interface will display the temperature at which the process was interrupted. If the furnace temperature exceeds 1400° upon power failure, the operation will be halted. If the temperature drops below 1400°, the system will automatically detect the current temperature upon reboot. Clicking "Continue" allows you to resume sintering based on the real-time temperature.

Part Five Operational steps

YRC-HS007 fast sintering furnace operation steps

Chapter 5 Operating steps of YRC-HS007 fast sintering furnace

5.1. Pre-sintering preparations

Open the furnace door, place the furnace on the center of the furnace, place the sintered dentures in the sintering box, pay attention to the appropriate spacing between each denture, and then place the sintering box on the center of the furnace; Open the furnace door, place the furnace on the

center of the furnace, place the sintered dentures in the sintering box, pay attention to the appropriate spacing between each denture, and then place the sintering box in the center of the furnace;

5.2. Closure of furnace doors

Close the furnace door, set the sintering temperature, heating rate and insulation time and other parameters to be saved and named;

5.3. Starting equipment

Start the equipment, click "start", the equipment will be heated, kept warm and cooled according to the set program;

5.4. Safe operation

During the sintering process, do not open the furnace door at will to avoid affecting the sintering effect and causing safety risks;

5.5. Standardized operations

After sintering is completed, the furnace door can be opened when the temperature in the furnace drops to a safe range, and the sintering box can be picked up with special tools to remove the dentures.

Part Six Maintenance and precautions

YRC-HS007 fast sintering furnace maintenance and precautions

Chapter 6 Maintenance and precautions for YRC-HS007 fast sintering furnace

- It is recommended to set up a room dedicated to the sintering furnace, which is well ventilated, dry and free of corrosive gas;
- Do not operate the sintering furnace without training personnel, and do not pile inflammable and explosive products around the sintering furnace;
- To prevent any accidental use, place the sintering furnace out of reach of children and animals;
- Connect 10KW voltage stabilizer to ensure stable input voltage and ensure sintering furnace grounding. Do not use other product power cord to replace it during installation. Connect circuit breaker with 3C certified brand products.

Part 7 Common faults and troubleshooting methods

YRC-HS007 fast sintering furnace common faults and troubleshooting methods

Chapter 7 Common faults and troubleshooting methods of YRC-HS007

Code	Failure Cause	Resolvent
1	Temperature sensor damaged	Change the temperature sensor or connect the wire
2	The polarity of the temperature sensor is wrong	Adjust temperature sensor wiring
3	Heater malfunction	Check the regulator and corresponding lines or replace them
4	The furnace is sealed poorly, the temperature leakage is too large, and the heating capacity is weakened	Change the furnace and check whether there is oxidation in the heating rod connection link
5	City grid voltage abnormality	It is recommended to install a voltage stabilizer when checking the input voltage
6	Work tray rise fault	Check the upper limit switch or drive motor.
7	Work tray drop fault	Check the lower limit switch or drive motor.
8	The thermostat communication is abnormal	Check the thermostat or connection cable
9	The voltage regulator communication is abnormal	Check the regulator or connection
10	Power outage tips	Follow the interface prompts
11	Regulator abnormality: thyristor fault	The voltage regulator is returned to the factory for maintenance or replacement
12	Regulator abnormality: overheating fault	The voltage regulator is returned to the factory for maintenance or replacement
13	Regulator abnormality: overcurrent fault	The voltage regulator is returned to the factory for maintenance or replacement
14	Voltage regulator abnormality: frequency fault	The voltage regulator is returned to the factory for maintenance or replacement
15	Regulator abnormality: fan failure	The voltage regulator is returned to the factory for maintenance or replacement
16	Voltage regulator abnormality: overvoltage fault	The voltage regulator is returned to the factory for maintenance or replacement
17	Regulator abnormality: system failure	The voltage regulator is returned to the factory for maintenance or replacement

18	Regulator abnormality: unknown fault	The voltage regulator is returned to the factory for maintenance or replacement
19	System crashes	Power off and restart the fast burn furnace

Part Eight Electrical parameters

YRC-HS007 fast sintering furnace electrical parameters

Chapter 8 Electrical parameters of YRC-HS007 fast sintering furnace

Table of furnace electrical parameters Electrical parameter table of sintering furnace			
rated voltage Rated voltage	220V±10%	**rated frequency** Rated Frequency	50Hz/60Hz
power rating Rated Power	3000 W	**levels of protection** Protection Level	IP21
outline dimension Dimentions cm	39*54.6*82.8	**net weight** Net Weight	73Kg
packing measurement Package Dimensions cm	55*69*99	**rough weight** Gross Weight	95.4Kg

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