

GUSROM GSF10 Porcelain Furnace

Operation Manual



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1. Safety and cleanliness

- 1) This porcelain furnace is specially used for sintering dental ceramic materials.
- 2) The equipment should be placed at least 25-30cm away from the wall to ensure normal ventilation of the furnace. The stand should be close to the power switch and the rear dashboard should be firmly connected.
- 3) Do not operate near flammable materials.
- 4) Clean the surface of the oven with a wrung or slightly damp cloth. Do not use solvents or liquid detergents on the control panel to ensure that liquid does not flow into the porcelain furnace.
- 5) Damage to the display screen caused by improper use or cleaning operations is not included in the warranty.
- 6) In order to achieve the best working environment, it is recommended to use a dedicated circuit, and the socket should preferably have an overload protector. The dedicated line should be a three-phase circuit with a reliable grounding wire.
- 7) Before performing any maintenance, be sure to unplug the porcelain furnace from the socket.
- 8) To avoid possible serious burns, use appropriate tools to reach into or move objects from the porcelain furnace.
- 9) Do not use pliers or other tools to operate the oven, as they may damage the touch function of the screen area.
- 10) The sintering platform is the movable part (up and down). Its reciprocating movement is controlled by the program.

note:

- 11) Please read the instructions carefully before operation. If you do not operate the oven according to the methods in this manual, the service life of the porcelain furnace may be reduced.
- 12) The manufacturer does not bear any losses caused by operating errors or misunderstanding of the operating instructions.
- 13) Before moving or assembling the oven for transportation, you should first cool it down.
- 14) Pay attention to the high-temperature parts of the equipment during operation.

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- 15) The equipment is designed based on the principle of human health and safety from an artistic perspective. However, if the equipment is not used correctly, it may endanger the health of the user or the safety of a third party.
- 16) The user must not disassemble the instrument privately. Even if the lower cover is opened when the system is powered off, there may be a residual voltage of 400 volts on the main board. The manufacturer does not assume any responsibility for accidents caused by the user's private disassembly of the equipment.
- 17) The user's private disassembly of the porcelain furnace is subject to whether the fragile sticker is damaged. The warranty will not be provided if the fragile sticker is damaged due to the user's private disassembly.
- 18) The equipment must not be started to heat up when there is no workbench (baking table) placed on it.
- 19) During continuous operation (at the highest operating temperature and the longest working time), the shell of the porcelain furnace may overheat to more than 65°C.
- 20) When the system is connected to the main power supply, do not touch the furnace with your hands to prevent electric shock and burns.
- 21) The porcelain furnace must be powered by a power supply with sufficient capacity, use a solid socket, and must not be unattended during use.

2. Introduction of Porcelain Furnace

2.1 Function of porcelain furnace:

- The lightest single and double curve porcelain furnace on the market.
- P1-P25 program is single curve mode; P26-P28 is double curve mode, which provides a complete crystallization process for glass ceramic crystallization.
- 7-inch capacitive operation screen is as smooth as using a mobile phone. The minimalist operating system is quickly familiar with use.
- High-precision AI temperature adjustment function ensures that the actual temperature error is within $\pm 0.5^{\circ}$.
- High-precision linear guide rail, smooth free operation and no jitter.
- Quartz spiral furnace, German densely wound furnace wire technology, fundamentally ensures the uniformity and long-term stability of the temperature field.
- Vacuum pressure holding function, vacuum value 85-102% can be set, (set 102% for the vacuum pump to start all the time)

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- 30 custom programs and built-in programs. P29 is a cleaning and dehumidification program, and P30 is a silver wire temperature measurement program.

2.2 specification introduction:

Operation:

- 1) Heating rate: 110 °C/min at most.
- 2) Maximum temperature: 1080°C (2283°F) max.
- 3) Maximum temperature holding time: up to 60 minutes.
- 4) Vacuum level setting standard: 85%-102%
- 5) Electric power: operating range: 220V 50/60HZ.
- 6) Power: 1200 W max (excluding vacuum pump)
- 7) Main specifications:
- 8) Overall dimensions: L31cm*W20.5cm*H40cm
- 9) Furnace core platform: ϕ 86 mm (3.4 inches)
- 10) Net weight: 10.5Kg
- 11) The total package weight is 28Kg (including 5kg vacuum pump).

3. Safety signs

3.1 Identification



This sign is to warn of electrical danger, and it is necessary to cut off the power connection before disassembling the shell.



This sign is a warning that the surface is very hot to prevent burns.



This sign is a warning that personal injury may occur.

4. Installation and Start

4.1 Installation position

- The porcelain furnace should be placed in a dry room, and the distance from the wall should be no less than 25 cm.
- When the temperature is lower than -15°C (such as after transportation), it should be placed at room temperature for 30 minutes before starting.
- Attention should be paid to the heat resistance of the table where the equipment is placed. The heat radiation and thermal effect released by the equipment should be

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within the non-destructive range, but slight discoloration of the furniture surface and veneer caused by long-term use of the equipment is not excluded.

- Avoid direct sunlight.
- It is strictly forbidden to place flammable items around the equipment.
- Do not place flammable items within the radiation range of the furnace.

4.2 Connection between Porcelain Furnace and Main Accessories

- 1) Take the baking furnace core out of the accessories for later use (it must be placed in a reasonable and safe place).
- 2) Plug the special wire for vacuum pump into the preset matching socket behind the porcelain furnace.
- 3) Connect the silica gel trachea to the porcelain furnace and vacuum pump. Make sure that the silicone tube is inserted more than 15mm.
- 4) Plug in the power cord of the porcelain furnace and turn on the power.
- 5) Click Login to enter the main interface, and press the down key to move the porcelain furnace platform downward (don't place any obstacles on the trajectory of the porcelain furnace sintering platform).
- 6) Assemble the baking furnace core on the baking tray.
- 7) Through the above operations, the hardware installation and configuration of the porcelain furnace is completed.

5. Porcelain furnace hardware

5.1 fuse

There is a system fuse on the back of the porcelain furnace. Please do not use different types of fuses.

5.2 exhaust fan

An exhaust fan is installed in the hearth of the porcelain furnace. The fan is used to control the temperature. The fan avoids overheating of the porcelain furnace shell and ensures the safety of the equipment. For safety reasons, the system cannot be started without a fan running. When the porcelain furnace is working, it is not allowed to block or open the upper cover and the back cover of the furnace.

5.3 Spare parts

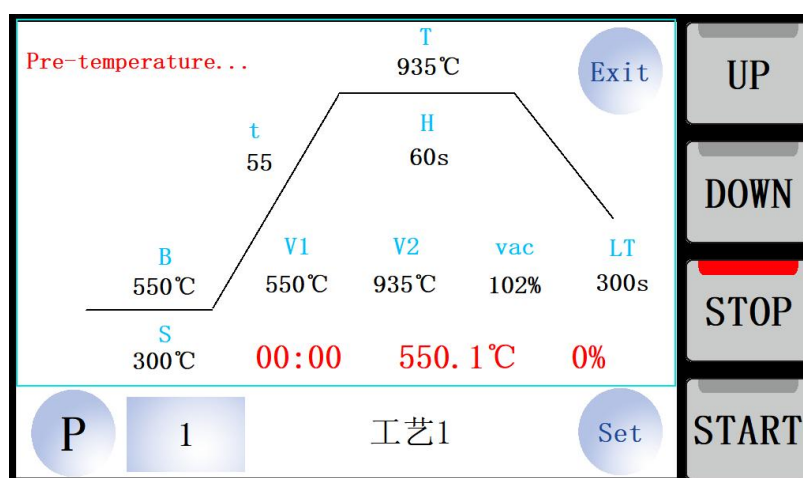
Spare parts shall be subject to the instructions attached to the specific spare parts.

6. Warranty Responsibility

This porcelain furnace company provides one-year warranty (furnace, furnace wire, thermocouple and vacuum pump provide one-year warranty). Limited liability warranty period: the warranty period starts from the arrival of the goods at the first seller.

7. Use of porcelain furnace

7.1 Main display page



7.2 Key name:

[P]: program selection.

[Set]: parameter settings of the current program.

[Exit]: Enter the secondary menu to make other settings.

[UP]: The tray ascends.

[DOWN]: The tray descends.

[Stop]: Stop the running program.

[Start]: Run the current program.

7.3 Display interface:

P: 1: The currently selected program number is 1. Followed by the name of the current program.

00:00 countdown to program running time

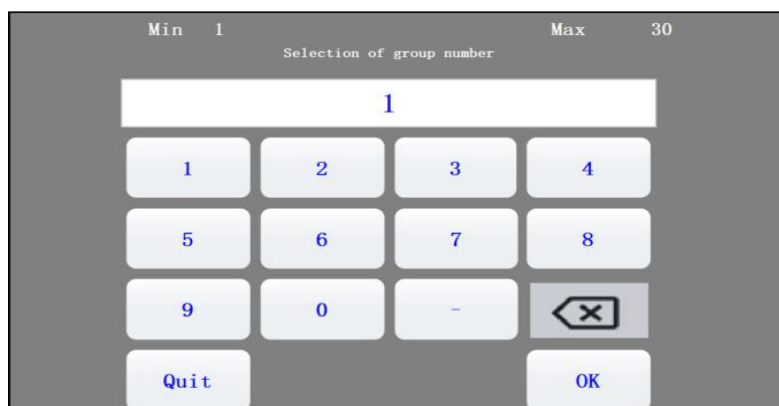
550.1°C The real temperature of the current furnace.

0% current furnace vacuum value

Pre-temperature... equipment operation in preheating

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7.4 Select a program that needs to be used.

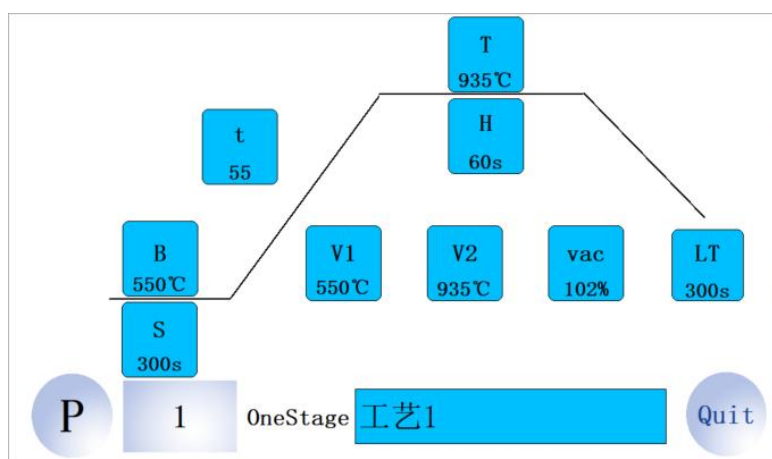


Press [p] to enter the program selection interface, as shown in the figure:

At this point, use the key 0-9 to enter a currently selected program number. When the required program number is entered, press 【OK】 to complete the selection of the current program number and [Quit] to the main interface. If there is an error in the input process, press the  key to clear the current wrong value.

7.5 Setting parameters for the current program

Press [Set] to enter the program parameter setting mode.



Click the corresponding parameter button to pop up a numerical input keyboard. Above the keyboard will be the name of the standard current parameter and the parameter input range

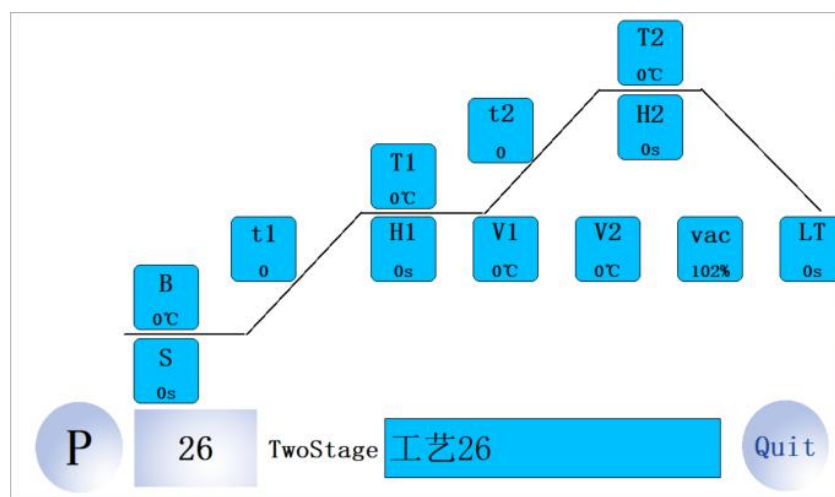
After entering parameters, click [OK] to save, and click [Exit] to give up saving and return to the parameter setting page.

Parameter prompt	English name	unit	remarks
B	drying temperature	℃	0-650 ℃
S	drying time	s	

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t	heating rate	°C/min	
T	firing temperature	°C	700-1080
H	Sintering time	s	
LT	Cooling time	s	
V1	Vacuum start temp.	°C	When the values of V1 and V2 are 0, it means that the current program is not vacuumized.
V2	Vacuum end temp.	°C	
Vac	Set vacuum value	%	85-102%, when 102 is set, the vacuum pump will work until V2 finishes releasing vacuum, and 85-100 will be sintered under pressure.
Process 1	Program naming		Free to name the current program.
Exit	Click [Exit] on the parameter page to save the current program parameters and exit to the main display interface.		

P26-P28 are hyperbolic programs.



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When you enter program parameters or other parameters, when you enter a parameter that the porcelain furnace can't reach or is logically wrong, this parameter will be automatically modified to the upper/lower limit value.

7.6 Background function interface

Press 【 Back 】 to enter the background function interface, as shown below

Parameter prompt	Corresponding Chinese name	unit	remarks
B	drying temperature	°C	0-650 degrees
S	drying time	s	
t1	First stage heating rate	°C/min	
T1	First stage firing temperature	°C	
H1	First firing time	s	
t2	Second stage heating rate	°C/min	
T2	Second stage firing temperature	°C	
H2	Second firing time	s	
LT	Cooling time	s	
V1	Vacuum start temperature	°C	When the values of V1 and V2 are 0, it means that the current program is not vacuumized.
V2	Vacuum end temperature	°C	
Vac	Set vacuum value	percentage	85-102%, when 102 is set, the vacuum pump will work until V2 finishes releasing vacuum, and 85-100 will be sintered under pressure.
Process 1	Program naming		Free to name the current program.
quit	Click Exit on the parameter page to save the current program parameters and exit to the main display interface.		

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V211. 11. KC-500 (A)
Main Menu
Back



Operation Set



Vac Detection

Engineer

Click [Operation Set] to enter the following interface.

Operation Set
Back

Temperature input correction 12.3°C	Screen sleep time 1234Min	Used Times 7
Save Energy Open 12°C	Pv Set Open	
中文 English		25.5 Delete

Name explanation:

[Temperature Input Correction]: Click the value box and enter the value on the pop-up keyboard.

If the actual temperature is high, please increase this value, if the temperature is low, please decrease this value, even negative, (correction value -100~+100).

[Save Energy]: means that the equipment will be lowered to this temperature for standby after each program, and it will not be heated to the drying temperature until the user clicks to start using it, and the program will be started. This temperature can be modified or turned off by users themselves.

[Screen sleep time]: it is the time when the screen is on. If the value is 0, it will be on all the time. If the value reaches the time, the screen will be black. However, the program will continue to run and can be awakened by the motor screen.

[English]: Chinese-English language switching

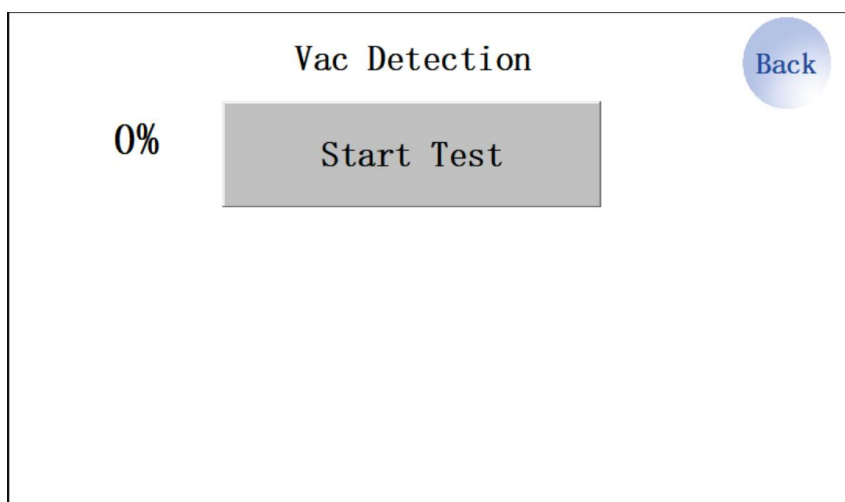
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[Used Times]: Record the usage times of this equipment to count the service life.

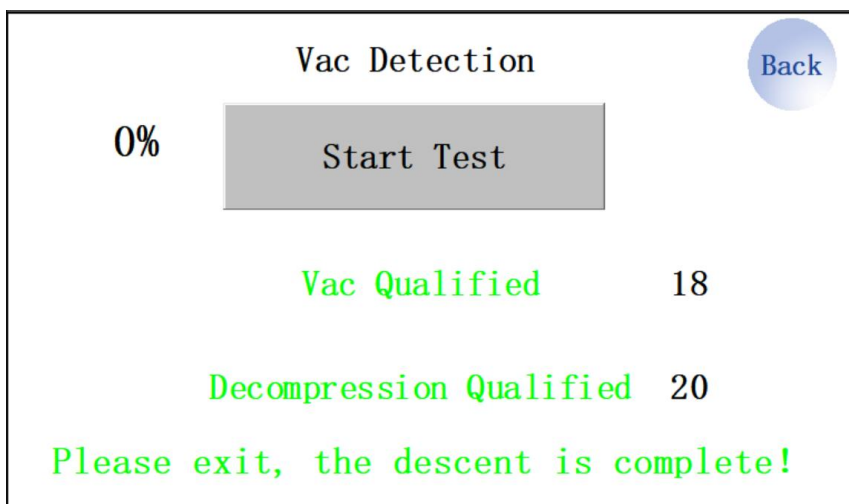
[Pv set]: open or close Vacuum mode,

[Back]: Return to the previous interface.

7.7 Click Vacuum Detection to enter the interface below.



Press [Start Test] to start the vacuum test. Press "Back" to return to the interface at the next higher level. Vacuum detection is started automatically with one button, and there is no stop function in the middle.



[Vacuum is qualified]: if the vacuum reaches 93% within 180 seconds, it is qualified. If it is unqualified, please contact the dealer for maintenance.

Decompression qualified: if the vacuum value drops to 0% within 60 seconds, it is judged to be qualified. If it is judged to be unqualified, please contact the dealer for maintenance.

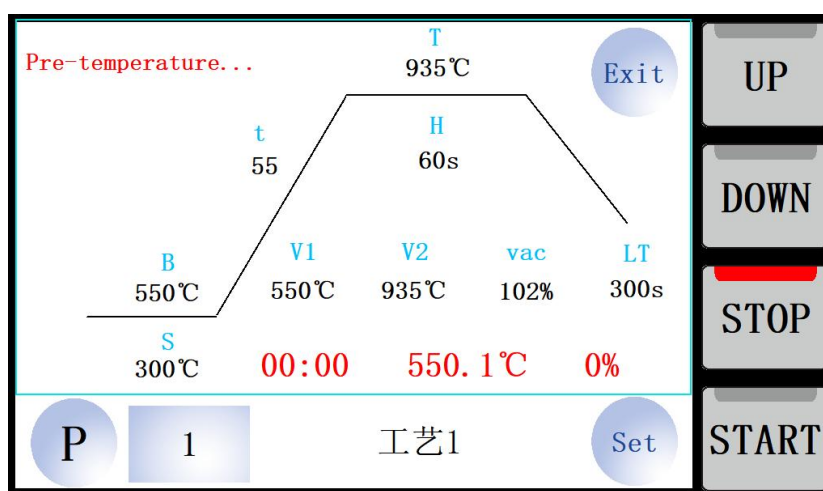
After the detection is completed, the hearth will be automatically lowered. Please click the [back] button to exit the current page.

7.8 Cleaning and dehumidification procedures

Please put activated carbon on the tray, select P29 program, and press [Start] to run the program automatically.

Users must properly dispose of the residual activated carbon, and throw it away at will, which may cause fire.

7.9 Start a sintering process.



When the system is in standby state, click [P] to select a good program and then press [Start] to start a sintering program. The started sintering program is the program pointed by the current program number. At this time, the sintering table will automatically lower to the bottom. You can put the teeth to be sintered on the baking tray, and the porcelain furnace will automatically complete the sintering process. When the sintering process is over, the porcelain furnace will automatically send out an alarm to prompt the sintering to be completed.

7.10 Stop a single curve/hyperbolic sintering process.

During a sintering process, press 【 STOP 】 to stop a sintering process. After the sintering process is terminated, the temperature will drop to the energy-saving preheating temperature (when this function is turned on) or the drying temperature. When the program stops halfway, the tray will not drop automatically, and the user can drop it manually.

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8. Deal with the fault

In case of the following faults, please contact after-sales service:

Fault prompt	failure cause	solution
Heating failure	The heating wire is broken or the temperature control relay is burnt out.	Contact the manufacturer or distributor
Ascending fault	The motor is broken or the guide rail is stuck	
Fault reduction	The motor is broken or the guide rail is stuck	
Vacuum fault	This alarm is issued when the vacuum fails to reach the predetermined vacuum value at 700 degrees.	Check to ensure that the vacuum pump pipe is connected with the interface of porcelain furnace. Check the safety tube of the vacuum pump connected with the switch. Detect the wet gas in the furnace. Perform a vacuum test to check whether the pump is on. Confirm that the power cord of vacuum pump is connected to the socket of porcelain furnace. Check the vacuum line and pipeline connection for leakage. Check the O-ring on the oven platform for cracks or particles that may cause leakage, and check the mating surface. Check the vacuum pump with an external instrument. Check whether the platforms are aligned, so as to ensure that the furnace is a closed space. If the vacuum pump itself is checked for faults, the following scheme shall be applied: Check the O-ring on the oven platform for cracks or particles that may cause leakage, and check the mating surface. Check whether the circuit and gas path of vacuum pump are independent. Check the air inlet of the oven for debris and particles blocking the pipeline.
Pressure relief fault	This alarm is issued if it fails to reach the value of 0 for more than 60 seconds during pressure relief.	Check whether the pressure relief solenoid valve is stuck and the pipeline is blocked.

9 Packing list:

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No.	items	Qty
1	porcelain furnace host	1pc
2	Roasting base	1pc
3	power cord	1pc
4	baking support	1c
5	Roast 20 ceramic nails.	1 bag
6	Temperature measuring silver wire	5 pcs
7	Vacuum pump	1pc
8	vacuum tube	1pc
9	connecting wire	1pc

