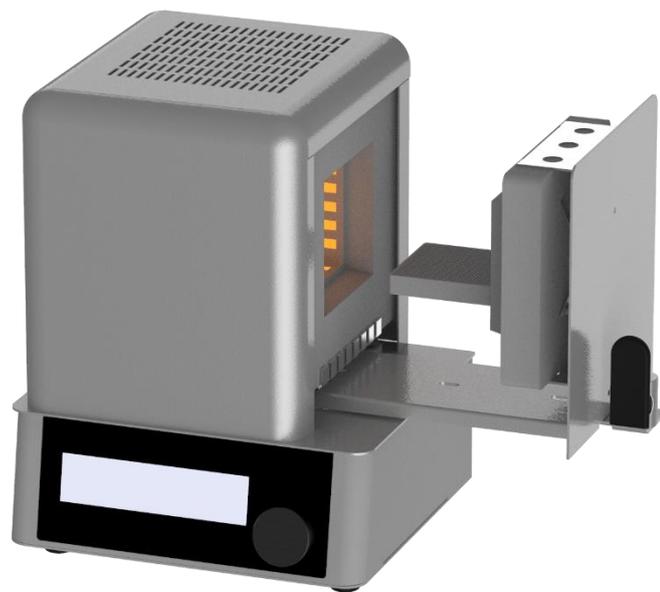


# Mini dental furnace Operating instruction



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## 1. Overview

This model mini dental oven is an economical and compact dental oven / furnace suitable for air sintering of dental restoration materials in a dental office or laboratory. This electric furnace is not used for burning off binders, organic compounds and corrosive materials. The only materials that are suitable are tooth stains and glazes.

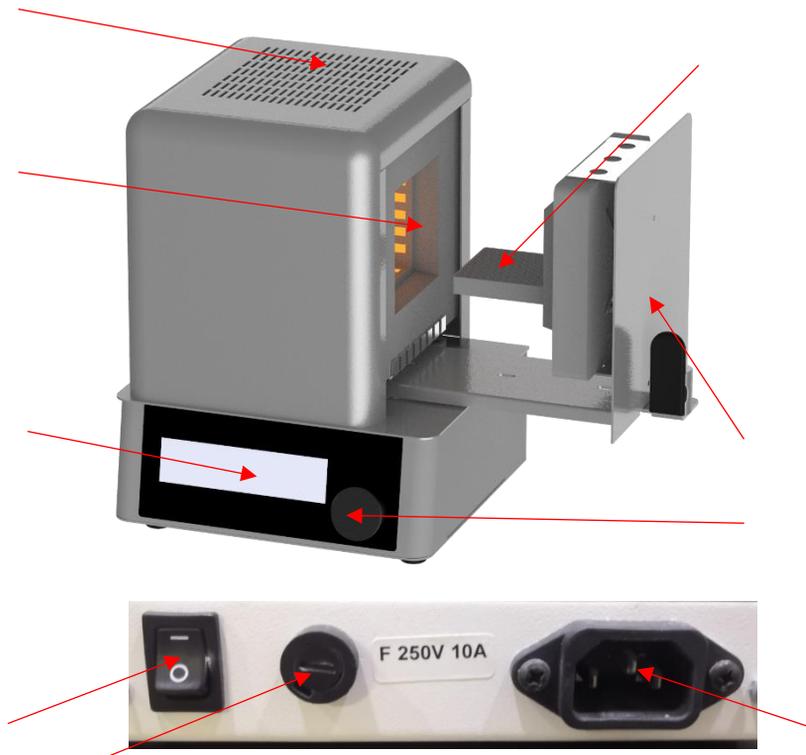
This model electric furnace has the following characteristics:

- Small footprint
- User-friendly interface and operation mode
- Larger effective hot zone for better temperature uniformity
- Full temperature range 1100 ° C (2012 ° F)
- Smooth sliding door
- Rapid heating rate up to 120 ° C / min (216 F / min)
- Energy saving
- Simple temperature adjustment operation.
- Large display, easy to read parameters

## 2. Technical Parameters

Item	Details
Supply voltage	AC220V/110V, 50Hz
Maximum power	1.5KW
Heating rate	30°C/min~120°C/min
Operating temperature	Low temperature holding temperature $\leq 600$ °C; high temperature sintering temperature $\leq 1100$ °C
Holding time	Maximum 3 minutes
Temperature control accuracy	$\pm 1$ °C
Temperature control method	AI - PID temperature control
Chamber size	60mm X 60mm X 60mm
Furnace door open	Push-pull type
Overall size	190mm X 180mm X 230mm
Total Weight	About 4 kg

### 3. Equipment composition



**Furnace back interface**

The overall structure:

- |                    |                          |                        |
|--------------------|--------------------------|------------------------|
| 1.Furnace body     | 2.Furnace chamber        | 3. Display screen      |
| 4. Adjustment knob | 5.Push-pull furnace door | 6.Honeycomb tray       |
| 7.Ship type switch | 8.Fuse                   | 9.Power cord interface |

## 4. Equipment installation and connection

### 4.1 Installation tips:

- Save the box and other packaging materials for future use when transporting the device.
- Open the box
- Remove the packaging
- Remove the plastic bag
- Remove all packing materials from inside and around the stove
- Remove the honeycomb tray and power cord



#### **Note:**

**It is strictly prohibited to place flammable and explosive materials around the furnace.**

### 4.2 Tray installation:

Place the honeycomb tray on the rear ceramic pole and rotate it down onto the front pole.



### 4.3 Circuit connection:

Connect the electric furnace to a power circuit or socket with 15A or 20A overcurrent protection. Please pay attention to the power supply marking on the power cord of the device. Do not introduce the power voltage that does not meet the requirements to avoid damage to the control system. Please turn off the power when not in use.



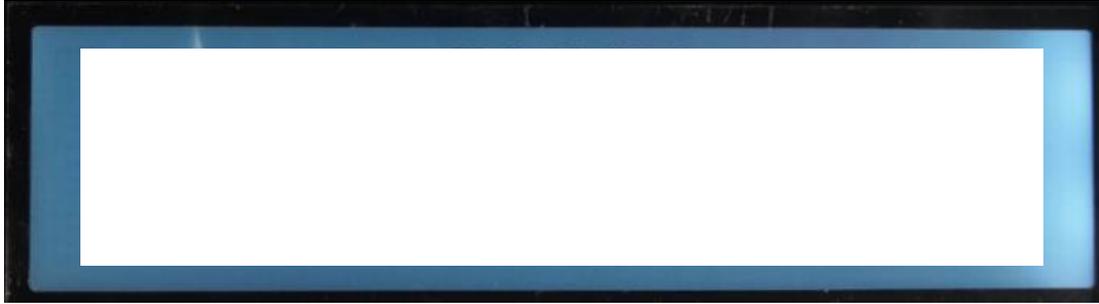
## 5. Boot operation

### 5.1 Boot operation:

Make sure the circuit is connected correctly. After the sample has been placed in the furnace, press



the boat switch on the back of the furnace body. The display lights up and the machine displays the startup page:



After the boot page is displayed for 3 seconds, it enters the boot setting program, which can set the temperature and temperature deviation:



This interface is the temperature setting interface. Turn the knob to change the system temperature unit °C/°F; press the knob to confirm the change and enter the next setting.



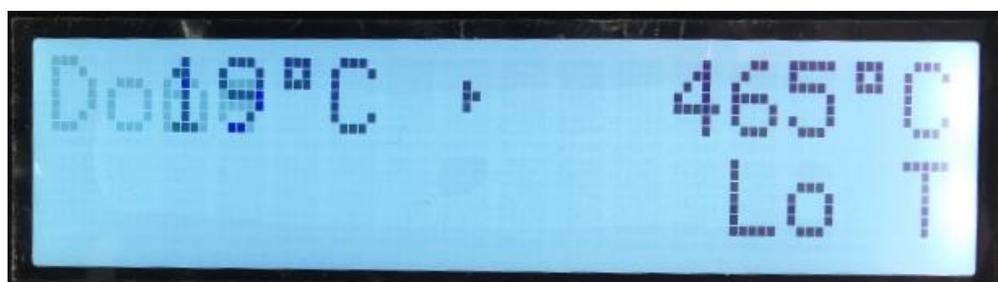
This interface is set for temperature deviation. If the customer finds that the temperature measured by the furnace temperature measurement system is slightly off after a long period of use, this function can be used to set the deviation. The specific operation method is to set the electric furnace to rise to 960 °C, open the furnace door when the electric furnace shows that it has reached 960 °C, use a standard and reliable temperature measuring instrument to measure the temperature in the furnace, and record the difference between the measured temperature and 960 °C; Turn on the

machine again to enter this interface, and turn the knob to input the recorded difference to achieve the effect of correcting the temperature measurement error. Press the knob to end the power-on setting.

If no operation is performed for about 10 seconds during the startup setting stage or after setting both settings, the interface will display the setting completion interface as follows:



After the setting is complete, the machine will automatically enter the low temperature holding state (LoT), as follows:



## 5.2 Low temperature holding mode:

After the startup process, the circuit will automatically enter the low temperature holding state (LoT). The low temperature holding state is the normal holding state when the instrument is working. When the instrument does not perform high temperature sintering, it will automatically maintain the temperature at the set holding temperature LoT ( $LoT < 600\text{ }^{\circ}\text{C}$ ).

In the LoT state, turning the knob will change the target temperature. After rotating to the new desired temperature, wait for about 3 seconds. The instrument will automatically start to rise / lower and approach the new temperature.

When the target temperature is lower than  $600\text{ }^{\circ}\text{C}$ , it changes to LoT, that is, the instrument will maintain low temperature at this temperature.

When the target temperature of the rotation is higher than  $600\text{ }^{\circ}\text{C}$ , the sintering temperature (HiT) is changed. After rotating to the required temperature, wait for about 3 seconds. The instrument will record the new sintering temperature and enter the rapid sintering mode. The interface displays as follows:



### 5.3 Rapid sintering mode:

The fast sintering mode is a mode entered from the low temperature holding mode by quickly setting the sintering temperature by turning the knob. This mode will sinter once at the default heating rate and the default holding time. If you need to set the heating rate and holding time, you should enter the programming sintering mode to change the parameters.

The operation sequence of the rapid sintering mode is as follows:

- 1) In the low temperature holding mode (LoT), turn the knob to adjust the target temperature to the required sintering temperature ( $> 600^{\circ}\text{C}$ );
- 2) After adjusting to the required temperature, wait for about 3s, the electric furnace records the new target temperature, and the interface display starts to sinter, as shown in the figure below:

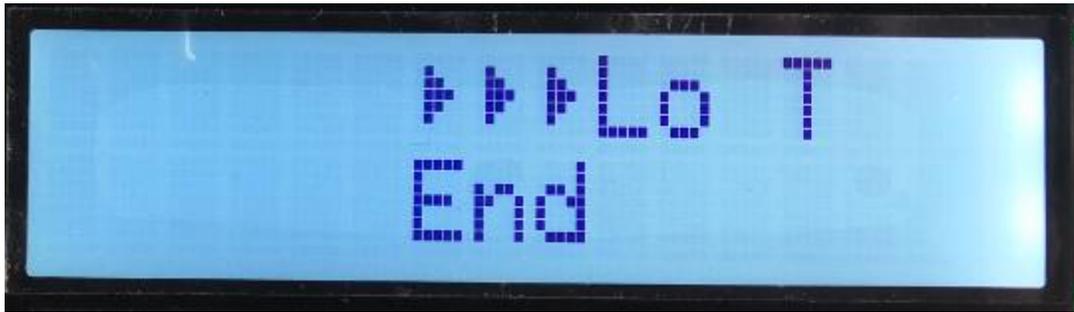


- 3) After the interface flashes, it will enter the sintering interface, as follows:

The upper part of the interface displays the current temperature and the target temperature, the middle arrow flashes to indicate that it is heating up, and it will be displayed as "==" when entering the heat preservation stage; the lower left side displays the estimated heating time of the system (the system automatically calculates it, not accurate Time, for reference only), the current program execution section is displayed in the middle: RUN means it's heating up, and Hold means it's holding. The current mode on the right is high temperature sintering mode (HiT).



- 4) When the sintering is over, the electric furnace will beep for about five seconds to remind the user. The electric furnace will automatically return to the low temperature holding mode, and the display will show the following interface:



- 5) After the interface flashes, the LoT interface will be displayed.

#### 5.4 Programming sintering mode:

The programmed sintering mode is a sintering mode performed from a low temperature holding mode by setting a sintering parameter after pressing a knob. This mode can set the sintering temperature, heating rate, and holding time. After the setting, the heating rate and holding time will also be used as the default parameters of the fast sintering mode.

The operation sequence of the programming sintering mode is as follows:

- (1) In the low temperature holding mode (LoT), press the knob to enter the sintering parameter setting interface.

This interface can change the current parameters by turning the knob, and press the knob to switch to the next parameter. There are three parameter setting interfaces in total, which are the heating rate, sintering temperature, and holding time.





- (2) After setting the holding time, the system will return to the LoT interface. At this time, long press the knob, and the system will program and sinter according to the newly set parameters. The screen appears as follows:



- (3) After sintering, it will be the same as fast sintering mode, the instrument will beep, end sintering, and automatically enter the return to LoT interface.

### 5.5 Furnace door opening protection:

When the electric furnace is in the sintering mode, the user can open the furnace door to view the real-time sintering status. When the furnace door is opened, the screen will show that the furnace door is opened as shown below:



The electric furnace will beep and timed. If the furnace door is closed within 5s, the sintering process will continue; if the furnace door is not closed within 5s, the sintering process will automatically end.

## 6. Matters needing attention

- (1) This equipment has dangerous voltage. Maintenance and repair work may only be performed by authorized service technicians.
- (2) Clean
  - Clean equipment as needed.
  - Vacuum the dust and dust in the furnace with a vacuum cleaner instead of blowing directly; this will minimize the probability of dust particles in the air entering the gap.
  - Clean the external surface with a soft, damp cloth. Do not allow water to enter the control panel or around the knobs.
  - Do not immerse in water!
- (3) Use only indoors.
- (4) Do not operate the machine near flammable materials, or place materials on top, beside or behind the machine.
- (5) The device must be grounded to a three-wire socket or socket. The electrical service provided must be a dedicated line of appropriate size in accordance with local electrical codes.
- (6) The unit must be placed in a position so that the power cord can be easily disconnected from the wall or air inlet socket.
- (7) Do not attempt to maintain the machine before reading and understanding this operation manual.
- (8) Disconnect the power cord before attempting to repair the machine.
- (9) Do not use pliers or other tools to operate the control device of the machine.
- (10) Do not use solvents or liquid cleaners on the control panel.
- (11) Do not cover the top of the machine.
- (12) If the machine is not operated in the manner specified in this manual, the protection provided by the machine may be impaired.

