

USER MANUAL

AX-4-10A
Burnout Furnace
(Intelligent)

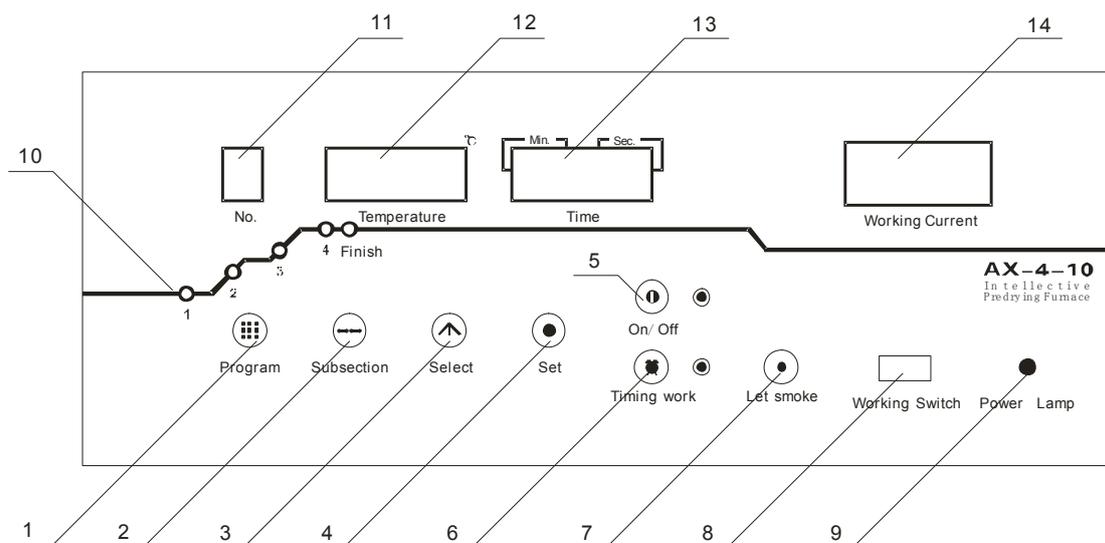
Description:

This machine is used in dentistry, it is updated from traditional burnout furnaces. Most traditional burnout furnaces have a one-level temperature control, which is not accurate, and the speed and rate of the temperature increase and the temperature preservation time cannot be controlled. However, this intelligent burnout furnace has a multi-stage temperature control, thus it does not need to be operated manually. The temperature increases and preserves automatically, and the temperature and time control are very accurate.

Specifications:

Power rating	4kW
Voltage rating	220V / 110V 50HZ / 60HZ $\pm 10\%$
Power supply phase	Single phase
Temperature rating	1,000°C
Connection method of the heating elements	Parallel connection
Heating time (empty chamber)	≤ 60 min
Power consumption (empty chamber)	≤ 1.2 kW
Heat storage	≤ 8 kW·h
Temperature difference in the chamber	≤ 15 °C
Chamber dimensions	30×20×12 (cm)
Overall dimensions	75×46×71 (cm)
Weight	120kg

Temperature control device (front view):



Functions:

1. Program button: Choose program 1 – program 6, the corresponding program number will be shown on the No. indicator.

Program 1: 200°C for 15 minutes, 400°C for 15 minutes, 600°C for 15 minutes, 900°C for 15 minutes

Program 2: 200°C for 15 minutes, 400°C for 15 minutes, 600°C for 15 minutes, 1000°C for 15 minutes

Program 3: 300°C for 30 minutes, this mode is for drying the furnace **before first use or after not being used for a long time.**

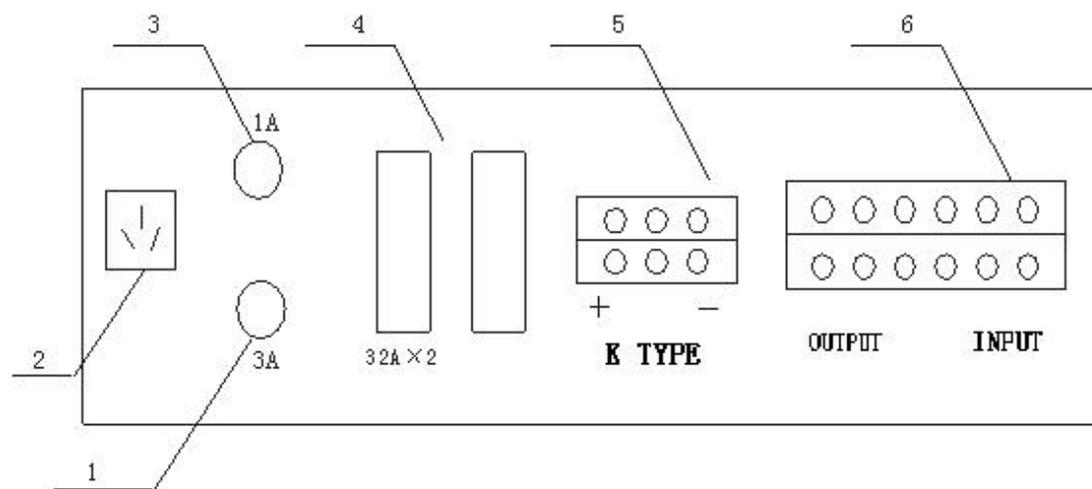
Program 4: 100°C、300°C、500°C、600°C, 15 minutes each temperature, this mode is for removing wax only.

Program 5: 200°C, 400°C, 600°C and 900°C, 10 minutes for each temperature. This is the fast drying mode.

Program 6: Users can set temperatures and heating time for the four Subsections. The settings will be saved into the furnace, and it will not be erased after the power is off.

2. Subsection button: Press this button to display the temperature and heating time of the four subsections in a program, the corresponding subsection indicator will be on.
3. Select button: While setting Program 6, this button is for choosing temperature and time. While in the time delay mode, this button is for choosing hour or minute.
4. Set button: This button is for customizing the temperature. Press this button to change the settings of Program 6.
5. On/Off button: Press this button to start or stop the furnace, the indicator will be on and off accordingly.
6. Timing work: Press this button to run in the time delay mode, and the timer starts to count down, when the timer becomes 0, the furnace starts automatically.
7. Let smoke indicator: The fan indicator should be on while the ventilation fan is working. To install a ventilation fan, insert the plug into the socket on the back of the back panel, and turn on the switch on the right side of the furnace.
8. Working switch: after connecting the furnace to the power supply, press this button to start the furnace, press it again to stop working.
9. Power lamp: This indicator is on after the furnace is connected to a power supply.
10. Indicator lights of the four heating subsections: the indicators will be on according the heating subsections, all four indicators and the Finish indicator will be on.
11. Program indicator: It displays the program number chosen from 1-6.
12. Temperature indicator: While setting the temperatures, it displays the temperature which is being set. While the furnace is working, it indicates the actual temperature. While the furnace is in the time delay mode, it indicates the hour of the timer.
13. Time indicator: The first two digits indicate minutes, the last two digitals indicate seconds. While in the setting mode, it indicates minute, the second is 0. In the time delay mode, it indicates the countdown time.
14. Working current: While the furnace is working, it indicates the current. The unit is Ampere. It should indicate 0 while the furnace stops heating.

Temperature control device (back view):



1. Fuse socket (3A) of the ventilation fan and the cooling fan.
2. Socket for ventilation fan.
3. Fuse socket (1A) of the power supply.
4. Connecting terminal: Connects to the temperature sensor (type k thermocouple).
5. Connecting terminal: Connects to the electric cord and the heating wires.

Temperature control guide:

1. Choose a program by pressing the Program button, press it continuously to switch among programs, the program number will be shown on the No. indicator.
2. Check the settings of the four subsections. Press the Subsection button to check the temperature and time for each subsection.
3. Press the On/Off button to start the furnace, the Power lamp will be on. The furnace works according to the program chosen, start from the 1st Subsection to the 4th Subsection. When the four subsections are finished, all of the four indicators and the Finish indicator will be on, and there is a beep sound. Press the On/Off button to stop the furnace.
When the process is finished, take out the work-piece. If the work-piece is not taken out and the Start-Stop button is not pressed (the indicators are on), the furnace will remain working in the 4th Subsection (the furnace will automatically heat if the temperature drops). To stop the furnace, press the On/Off button.
4. Set Program 6: Press the Set button to begin setting.
Press Subsection button to choose a heating subsection.
Press Select button to choose the temperature and time for the subsection.
Press On/Off button to increase the numbers.
Press Timing work button to decrease the numbers.
The temperature range is from 0°C to 1,000°C (the temperature increases by 100°C each time the button is pressed).
The time range is from 1 minute to 30 minutes (the time increases by 5 minutes each time the button is pressed).

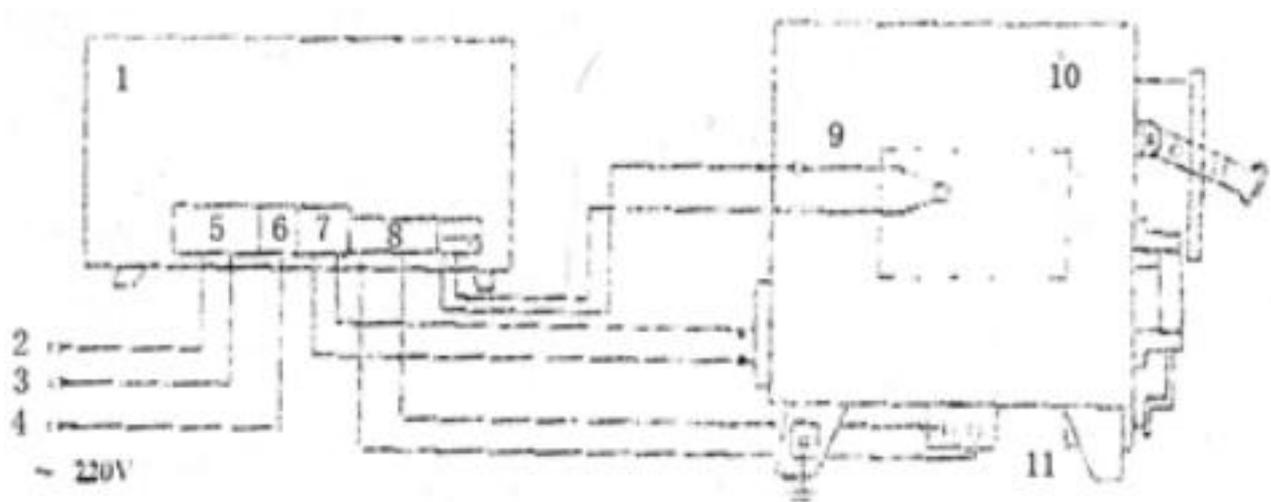
5. Timing work: Press the Timing work button to start the furnace under the time delay mode. The last two digits of the temperature indicator indicates hour, the Time indicator indicates minute and second.
- The timer starts to count down, when it indicates 0, the furnace starts working automatically.
- When the furnace is in the time delay mode, the time can be set at any time.
- Use Select button to choose hour and minute.
- Press On/Off button to change the settings continuously.
- Time range: Hour: 0-24 hours, Minute: 0-30 minutes.

Structure:

The case of this burnout furnace is made of thin bent and welded steel sheets. The inside of the furnace is a complete whole and it is made of high-alumina refractory materials. The spiral heating components in the chamber walls are made of iron-chromium-aluminum alloy which can improve the heating speed and accuracy. The lining has an open structure, and the bricks and the door are made of light-weight refractory materials. The material between the lining and the case are heat insulating materials such as refractory fiber, expanded perlite etc.

The furnace door is fixed on the furnace panel by a floating hinge which makes the furnace door very smooth. To close the door, just pull down the handle to clamp the door, and the chamber is sealed tightly. To open, just pull up the handle to release the door, rotate the door to the left.

Insert and fix the thermocouple on the back of the furnace.



1. Temperature control
2. Phase
3. Center
4. Ground
5. Power supply
6. Ground
7. Furnace
8. Safety switch
9. Thermocouple
10. Furnace
11. Safety switch of the furnace door

Installation and usage:

1. No special installations are needed for this furnace. It can be placed on a flat floor or on working benches or shelves. Avoid shocking the temperature control device, and keep a safe distance between the temperature control device and the furnace to prevent malfunction, which could be caused by overheating.
2. Put the thermocouple into the chamber by inserting it through the small hole in the bracket. Fill the gap between the thermocouple and the hole with asbestos ropes, tighten the nut and leave the thermocouple 10-15cm out of the chamber.
3. Remove the cover of the temperature control, connect the power supply, furnace, thermocouple, safety switch of the furnace door following the connecting instructions and the signs on the back of the temperature control.

Make sure the phase wire and the center wire is correctly connected before connecting to a power supply, otherwise, it will affect the function of the temperature control and could cause electric shock. The electric cord should be plugged into an electric socket with switch in order to control the electricity.

The wires connecting the thermocouple and the temperature control should be extension wires, in order to prevent problems caused by the temperature difference. Make sure the anode and cathode are correctly connected.

The furnace and the temperature control must have a good grounding in order to assure the safety of the users.

4. Check if all the wires are connected correctly, then set the temperature using the rotary temperature switch, and the furnace starts to heat. Read the Temperature Control Guide for more details.

Maintenance and Cautions:

1. The furnace should be dried before the first use or after not being used for a long time.

Drying temperature	Time
Room temperature --- 200°C	4 hours (keep the door open while drying)
200°C --- 400°C	4 hours

2. The temperature of the chamber cannot exceed the temperature rating to avoid damaging the components. Do not fill liquid or molten metal into the chamber directly. Clean the metal dust and oxide in the chamber regularly.
3. Examine the furnace regularly and see if the temperature control is connected properly.
4. Suitable working environment:
 - 1) The altitude shouldn't be above 1,000m.
 - 2) The ambient temperature should be between 5°C and 40°C
 - 3) The maximal monthly average relative humidity shouldn't be above 90%, and the minimum monthly average temperature shouldn't be above 25°C.
 - 4) No conductive dust, explosive gas, and corrosive gas in the ambient air of the furnace.
 - 5) No obvious vibration and shaking.
5. Our company will repair or replace the furnace or its part free of charge if there is any quality problem which is not caused by users' mistakes while carrying, operating, or installing within the warranty period. The warranty time is six months starting from the day of delivery.

Cautions:

1. Please read this manual carefully before operating.
2. The furnace can be connected to 220V, 50Hz power supplies, it should have a good grounding, the diameter of the wire should be compatible with this machine, and the maximum power should not exceed 40kW.
3. Please leave a gap of 20cm on the two sides for better cooling.
4. Change the fuse sockets according to the requirements.
5. Unplug the power cord before taking out or putting in workpieces.

Accessories:

Manual	1
Thermocouple	1