

OPERATION AND MAINTENANCE MANUAL



Image of oven for reference



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1. Preface

1.1 This instruction manual is for the operator who uses the oven. It is mainly for the technician to explain the correct use of the device. Only when you read and understand this instruction manual completely can you safely use the device and fully utilize its functions.

1.2 This machine is an industrial oven, excellent in structure, material, strength, hardness, heat preservation, etc., beautiful in appearance and easy to operate.

1.3 The operating temperature range of the oven is from $RT+20^{\circ}\text{C}$ to $\text{MAX } 250^{\circ}\text{C}$, and the heat source is evenly stirred with inside air circulation.

2. Precautions

This chapter describes the precautions for safe use of this oven. To prevent accidents of users, oven and test samples, please read this chapter and follow the relevant regulations.

2.1 Don't put these things into the oven

It is strictly forbidden to put the explosive substances, flammable substances and the substances containing them into the oven, which is listed below.

Explosive substance	Nitrified glycol, nitroglycerin, and other explosive nitrates. Trinitrobenzene, trinitrotoluene, other explosive nitro compounds. Peracetic acid, methyl ethyl ketone peroxide, other organic peroxides.
Flammable substance	Metal lithium, potassium metal, sodium metal, yellow phosphorus, phosphorus sulfide, red phosphorus, cellophane, calcium carbide, phosphide carbon, magnesium powder, aluminum powder, other metal powder, sodium sulfite.
Oxide	Potassium chlorate, sodium chlorate, ammonium chlorate, and other chlorates. Potassium perchlorate, sodium perchlorate, ammonium perchlorate, and other perchlorates. Potassium peroxide, sodium peroxide, and other inorganic peroxides. Potassium nitrate, sodium nitrate, ammonium nitrate, and other nitrates. Sodium chlorite and other chlorites. Sub-calcium chlorite and other hypochlorites.
Flammable	Ether, gasoline, acetaldehyde, propylene oxide, carbon disulfide & other substances with a burning point of less than -30°C. Ordinary hexane, ethylene oxide, carbon disulfide and other substances with a burning point greater than -30°C & less than 0°C. Methanol, ethanol, xylene, amyl acetate & other substances with a burning point greater than 0°C & less than 30°C Kerosene, light oil, turpentine, isoamyl alcohol & other substances with a burning point greater than 30°C and less than 65°C.



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Flammable gas	Hydrogen, acetylene, methane, ethane, propane, butane and other gases that are flammable at 15°C and 1 atm.
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Prohibited (Pay attention!):

Please do not put corrosive substances into the oven.

If a sample that produces corrosive substances (a substance that corrodes stainless steel and tantalum rubber) and humidified water are used, the service life of each component and door seal in the oven may be greatly reduced.

Note: Chlorine, chloride, acid, etc. are found in corrosive substances. These materials are corrosive to parts such as printed circuit boards at high temperatures and high humidity even when they are non-corrosive at normal temperature.

2.2 Protection test sample device

Note: The safety device that protects the specimen must be set to the appropriate temperature for each test. When the security device cannot be set correctly, it may be damaged in the event of a faulty sample.

Warning: Never put pressurized containers or combustibles in the oven, which may cause an explosion and cause serious injury or death.

2.3 In operation, please do not open the door unless absolutely necessary, otherwise the following adverse consequences may result:

- High-temperature rushed out of the oven very dangerous
- The inside of the door still holds high temperature.....make damage.
- High temperature air may trigger a fire alarm and cause a malfunction.

2.4 Please note that the oven must be grounded safely and reliably to avoid static

induction.

2.5 If the sample is tested in power-on, please use the external power supply for the sample power control. Do not use the power supply of oven directly.

2.6 Circuit leakage switch, temperature over-temperature protector, provide the test products of this oven to the operator's safety protection, so please check regularly.

2.7 Please read the controller manual and related manual before operating the oven.

2.8 Check the over-temperature protection device frequently, to ensure it is good.

2.9 When the oven is abnormal, please handle it in time or contact us for inspection.

3. Specification

Model	YPO-3000
Interior size	2500(W)x1020(H) x1200(D) mm
Exterior size	2700(W)x1560(H) x1990(D) mm(approx)
Temperature range	RT.+20 ~ MAX. + 250℃
Heat up time	About 23 min up to + 200℃ (empty)
Temperature control accuracy	±0.1℃
Temperature accuracy	≤ ±2%℃
Note: The above performance guarantee needs to be measured after the temperature sensing is stable for 30 minutes!	
Temperature controller	TEMI 430 Touch screen controller
Material	Stainless steel plate inside and outside
Blowing motor	TECO (Taiwan)E Class 1/2HP, 220V

Rotor	Strong multiple-wing type 7" ϕ B
Electric heater	Tailor-made black elliptical electric heating ceramic type.
Door	Double-door type, with explosion-proof door buckle.
Power supply	AC ϕ 3 380V $\pm 10\%$ 60/ 50Hz , 52KW, 79A

4. Structure description

A. Oven Structure

1. The inner box material is made of SUS#304 stainless steel plate, which is made by argon-arc welding and sealing. It is made of strong bone reinforcement, anti-bending and anti-deformation. The outer part is made of SS41#1.5t steel plate.

2. Structure: It adopts advanced insulation cotton, the inner liner is directly heated, the thickness of the insulation is 100mm, and the surface temperature of the machine is low. The high temperature resistant hot glue is tight, environmental protection and pollution-free, and the strong type of door buckle is adopted.

3. Insulation: High-density 100K high-temperature insulation cotton is used, and six-sided insulation is insulated.

4. Door: double door type, American style full open button, explosion-proof door buckle, magnetically tight around the door, strong and durable.

5. Inside groove: Four groove at the the bottom of oven, suitable for cart to move in and out, equip with four carts.

6. Electric heating system: The heating element is made of Single U fin heating tube, installed in the back position of the inside oven, and the wind turbine is driven

by the circulating motor to blow the wind through the heating wire to drive the heat to the inside oven and then suck back from the other side. Form a wind circulation system.

B. Heating system

Heater: 380V 4KW*12

C. Automatic Control System:

1. Adopt TEMI 430 Touch screen controller
2. Adopt Japanese imported “K” type thermocouple sensor to ensure temperature accuracy.
3. The constant temperature time can be set arbitrarily on the controller.
4. There are two color indicators to indicate the running status of the oven.
5. The controller has input disconnection function, upper and lower temperature over-temperature alarm function, buzzer alarm function, automatic temperature overheat prevention function, and inspection number display function.

D. Protection system

1. Under-phase protector.
2. Two-way over-temperature protector, automatic alarm and shutdown function when temperature overshoot.
3. The temperature has reached the timing and shutdown alarm function.
4. Leakage protection function.
5. Heater mechanical protection function.
6. Temperature sensor disconnection alarm function.



7. No fuse control loop protection switch.

5. Installation

* The installation location should be tested for the heat dissipation rate of the unit and easy to check and maintain.

1. Place on a flat, vibration-free floor (check with a level gauge).

2. There is an air inlet and an air outlet on the oven. If the gas is harmful after baking, please take the air outlet to the outside.

3. For the connection of the power cord, please install appropriate wires and circuit breakers as required to ensure safety.

4. The oven should be kept away from heat and flammable/explosive substances.

6. Ambient air requirements do not contain high concentrations of dust, and flammable, explosive gases or dust, and there is no strong electromagnetic radiation source nearby.

7. There is no strong vibration around.

This part is the responsibility of the buyer and is ready for use on the oven!

8. Power supply: ☐ AC 220V 1 ϕ 3-WIRE 50/60HZ MAX 30A

☐ AC 220V 3 ϕ 4-WIRE 50/60HZ MAX 30A

☒ AC 380V 3 ϕ 5-WIRE 50/60HZ MAX 80A

***Note: To ensure the variation of the power supply frequency of the performance of this oven: voltage $\pm 5\%$; frequency $\pm 1\%$.**

9. With an electrician:

Please use the following method to distribute power, pay attention to the power

supply capacity, and do not use multiple power supplies at the same time, so as to avoid pressure drop affecting oven performance and even causing downtime.

9.1 According to the specification sheet = the power supply wiring voltage is:

	1 ϕ 220V 50HZ		1 ϕ 220V 60HZ		1 ϕ 220V 50HZ
	3 ϕ 220V 50HZ		3 ϕ 220V 60HZ		1 ϕ 380V 50HZ
✓	3 ϕ 380V 50HZ		3 ϕ 415V 50HZ		

9.2 The grounding end of the unit must be properly grounded. According to the technical guidelines for electrical equipment, the third type of grounding engineering should keep the grounding resistance below 50 Ω . The grounding wire diameter is:

✓	2. 5mm ²		4mm ²
	6mm ²		8mm ²

9.3 Applicable power diameter is:

	2. 5mm ²	✓	4mm ²		6mm ²
	10mm ²		16mm ²		25mm ²
	35mm ²				

9.4 If you connect the grounding wire to the water pipe, it is not a safe and effective grounding. (Not all metal pipes can be effectively grounded).

9.5 Do not connect the ground wire to the oil or gas pipe.

6. Operation flow

Operation: (The following operation flow should be read in conjunction with the operation panel below)



1. Push the leakage switch on the back of the device to the open state (in the line at the rear of the device).

2. Turn on the power switch

Note: Turning on the power indicator switch is not normal. Please check the power supply phase sequence protection or the glass fuse is disconnected, or contact our technical staff.

4.Set test temperature value in the controller (More information, please check the controller manual)

5.Set test time

6.Put the sample into the oven, close the door

7. Operate the oven

Note: When any of the above is not normal, please check the circuit section or



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contact our technical staff.

8. When the timer expires, the end light alarm of the device will alarm (the heating will be automatically cut off when any alarm occurs).

Note: When any of the above is not normal, please check the circuit section or contact our technical staff.

9. Open the door and take out the test sample.

10. The circulating fan on the device operates according to the power switch on the panel, so when set temperature is zero, the fan is still working.

11. When the oven is stopped, turn off the power switch of the device and cut off the leakage switch behind the device if necessary.

12. There are 2 sound and light indicator lights on the device, end and error. When the error light is on, check the controller to see what's the problem. If the problem cannot be checked, please contact our technical staff.

*Precautions

1. The electrical circuit has grounding measures;
2. The product is not allowed to open the door in the test;
3. If there is an alarm, turn off the power switch to check the cause;
4. After the test, when opening the door, be careful of the high temperature in the oven!
5. If the fault occurs during the test, cut off the power supply in time, or contact our technical staff.

7. Alarm and configuration

1. Heating tube mechanical over-temperature alarm (automatically cut off heating when alarming), mechanical over-temperature protection setting value is the maximum operating temperature of the device +50 degrees.

2. Temperature controller over-temperature protection alarm (automatically cut off heating when alarming), over-temperature setting is the current experimental temperature +20 degrees.

3. Phase sequence protection alarm, the device power switch is invalid when the fault occurs.

4. The timer alarm function, when the timer reaches the specified time set by your company, the alarm prompts (automatically cut off the heating when the alarm occurs).

5. When the equipment circulating fan is faulty, it will be protected by current, and the alarm will be prompted (automatically cut off the heating when the alarm occurs).

8. Daily maintenance

1. Keep the outside of the cabinet clean. Wipe the inside and the appearance of the oven once a week.

2. Clean the dust on the cabinet circuit device.

3. Please check if the ground wire is off.

4. Do not place any objects on the top cover of the oven, so as not to affect the performance of the oven and block the hot exhaust port of the device.



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5. This machine is ideal for the environment, it is best to install the exhaust pipe to the outside.

6. This equipment is equipped with phase sequence control and protection device. When the line is out of phase, under voltage, and the phase sequence is wrong, the equipment will automatically cut off the control power supply, so that the protection equipment will not be damaged. When the above abnormality disappears, the equipment can be normal to use.

7. The inside of the control oven(the upper part of the oven) is cleaned once every six months, and the dust can be removed with a vacuum cleaner or air gun.

8. The rear button and the button's active part are lubricated once a year. Please use the lubricating oil for smooth operation.

9. The circulating fan is lubricated once every six months to keep the fan cover clean.

10. When handling and taking samples, pay attention to light handling and accidental collision with the equipment.

11. When cleaning the inner oven, pay attention to protect the integrity of the inner airtight strip to avoid affecting the accuracy.

***Note: The main power supply must be turned on and off during maintenance.**

9. Fan speed information

Description	TS1	TS2	TS3	TS4
Value	15Hz	30Hz	60Hz	0Hz

10. Programmable set for example

Program 1

NO.	Temp.	Time	Speed	Time	Remark
1	180 °C	30 min	Choose different speed according to test requirements	Off	
2	180 °C	30 second		30 second	Put the cart into the oven
3	180 °C	120min		120min	Curing time
4	0.0 °C	15 min		15 min	No heating, but fan still work to remove the smoke out



NO	DELAY	ON TIME	OFF TIME	CYCLE
OFF	OFF	OFF	OFF	OFF
ON	ON	ON	ON	ON
ACT1	00:00:00	00:00:30	00:00:00	0
ACT2	00:00:00	02:00:00	00:00:00	0

Program 2

NO.	Temp.	Time	Speed	Time	Remark
1	0.0 °C	1 min	TS4	30 seconds	Take the cart out

Program 3

NO.	Temp.	Time	Speed	Time	Remark
1	0.0 °C	5 min	TS2	5min	Remove all the smoke out

Program 4

NO.	Temp.	Time	Speed	Time	Remark
1	0.0 °C	1 min	TS4	30second	Take the cart out

Filter for class 10000

Size: L1145*W180*H46 mm, high temperature resistance, stainless steel material, can filter 0.5um particles.

Note: Any more questions, please feel free to contact us to confirm it. Thank you for choose us.