Electric Powder Curing Oven Operation Manual

CAUTION
Read rules for safe operation and instructions carefully!

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Recommendation: This operating manual includes the use of this equipment, repairs and maintenance of a detailed description. To ensure your personal and property safety, installation and before the initial start, please read the entire contents of this operating manual!
1. PRODUCT DESCRIPTION

1.1 APPLICATION

Oven is mainly used in the production process of the powder curing process. The completed powder coating work-pieces placed inside the oven, the powder coating under curing temperature conditions, chemical reactions, and cross-linked cured film, become a certain physical and mechanical properties, chemical resistance is also very good polymer compound coating.

1.2 Composition and diagrams

Electric coating oven mainly consist of 4 parts: oven body, electric control unit, fan motor, inside and outside trolley. By the use of the electric heating generates heat oven to improve the internal temperature of the oven by the motor fan circulation the air inside and outside use and transport carts hung work-piece.
1.3 TECHNICAL PARAMETERS

a) Oven internal working dimensions: 1100×1800×1200mm
   (W×H×D)

b) Operating temperature: Room temperature -250°C
c) Temperature uniformity: ±5°C

d) Temperature accuracy: ±1°C

e) Fan power: 0.75kW (Multi-wing low noise centrifugal fan)

f) Heating element: material is Cr20Ni80 (1.5kw electric heating tube)

 g) Inside and outside carts driven approach: Manual

h) Door type: Double door, asbestos press the seal.

i) Power switchboard: 13.5Kw; input voltage: 3 phrase 380V, 50-60Hz

1.4 The working principle and diagrams

Electric oven forms a closed space with the rock wool insulation board. By the bottom of the oven when working electric heating generates heat to raise the internal temperature of the oven by the fan mounted on the top of the oven, so that the internal forced air convection oven to improve the uniformity of the internal temperature.
2. Installation and precautions

⚠️ suggestions: Before installation and initial start-up, familiar with the corresponding operating manual

2.1 Installation site requirements

a) The ground must be smooth.
b) Ventilated, little dirty and dust.
c) Don’t install in wet areas.
d) Don’t install in flammable and corrosive gases.
e) Ambient temperature keep 0--40°C is better.
2.2 Installation interval requirements

A) The oven front and back should be about 1 meter away from the wall in order to normal operation.
B) Between the machines should be separated away 1 meter, in order to facilitate air circulation and personal overhaul.

2.3 Installation and commission

According to the request of 2.1 and 2.2 to install and fix the oven.

a) Cabinet as shown in the following figure to connect the power cord according to the circuit diagram (reference)
b) Referring Procedure Turn on the power and set the heating temperature and holding time
c) Check whether the oven into the internal heat pipe and fan can work
d) If the fan rotation is incorrect, please L1 and L2 two FireWire swap
2.3 Installation precautions

a) Please follow the predetermined electrical specifications (three-phase 380V) to supply power
b) The voltage variation rate must be controlled in the rating ± 10V.

c) Detecting whether the 3-phase power phase, the device can not be broken phase operation.
d) The ground should not be connected to gas pipes or water pipes
e) Must not be equipped with this device electric leakage circuit breaker connected in common with the neutral line, otherwise lead to leakage switch trip, the machine does not work

⚠️ Warning: The user must maintain proper grounding of all system components!

3. Operation and precautions

3.1 Operating procedures

Press the specification requirements "2. Installation and Precautions" and plugged the number of phases and phase, installed power, according to
the following manner below the power to confirm correct installation of state power:

1) Open the door, put the workpiece material installed vehicle propulsion furnace, shut the door, careful not to collide thermocouple.

2) Press the start switch, and power light is lit and the display panel shows the boot screen

3) Through the operation panel to set the desired temperature and holding time, and turn on the heating and the fan (see 3.2 temperature settings)

4) The temperature reached after we set a good value, the time will begin to change. (You do not need to operate, it is automatically changed)

5) Time to turn off after pressing, high temperature gloves will have to bring the cured workpieces exit. Push the next batch, again to repeat the operation according to the above process.

6) During operation of the oven in case of emergency press the emergency stop button, the exclusion of the emergency reset the emergency button.

3.2 Temperature setting

3.2.1 Turn the power switch into the boot page

Then press ▲ or ▼ button, Enter the main interface
Operation Home Page Display:

F1: Oven TEMP set
F2: Spray booth valve set
F3: Oven work page
F4: Spray booth work page

Press ESC to exit the home page

3.2.2. Oven TEMP set

Press F1: enter the Oven TEMP set page

Display:

Set:

1. Press set button, then set the temp you need, then press confirm button to store in system.

2. Press set button, then set the holding time you need, then press
confirm button to store in system.

3. After setting, press F5 back to last page (the home page)

3.2.3. Oven work page set

Press F3: enter the oven work page

Display:

```
FAN ON/OFF: F3  HEATING: F4  
CLOSE TO FINISH: 21 MIN
CURRENT TEMP: 31°C ESC F5
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Set:

1. Press F3 button, then the light sign is break 🟢, fan is on.
2. Press button again, then the light sign is white ⬜, fan is off
3. Press F4 button, then the light sign is break 🟢, heating is on. Then when the temperature is up to the required temp, then the light sign is white ⬜, you can’t turn off the heating by manual when you start the heating.
3. Press F5 back to last page

3.3 Operation precautions

1) Never connect the explosives, pressurized container placed in an electric furnace or combustible materials, combustible materials include:
flammable, oxides, igniters and flammable gas, as this may result in an explosion caused serious industrial disasters.

2) The maximum furnace temperature 250 °C, over-temperature use is strictly prohibited.

3) When an electric furnace operating at high temperatures, should be carefully, carefully check the door is closed, to prevent the hot-air blowing injuring the operator.

4) We must ensure that the equipment is properly grounded

5) When servicing non-powered operation, it must cut off the power supply before maintenance

6) The oven should be used in a personal care, attention should be next to the fire and flammable and explosive materials
### 4. Daily maintenance

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Content</th>
<th>Maintenance cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric oven</td>
<td>Keep the oven clean</td>
<td>whenever</td>
</tr>
<tr>
<td>Ventilation mesh plate</td>
<td>Keep the vent clear</td>
<td>whenever</td>
</tr>
<tr>
<td>Ground wire</td>
<td>Holding ground state</td>
<td>whenever</td>
</tr>
<tr>
<td>Temperature sensing wire</td>
<td>Determining the induction line did not fall off</td>
<td>whenever</td>
</tr>
<tr>
<td>Mounted-bearing</td>
<td>Lubricating regularly</td>
<td>weekly</td>
</tr>
</tbody>
</table>
5. Maintenance Troubleshooting Machine

⚠️ WARNING: When servicing non-powered operation, you must cut off the power supply before maintenance!

<table>
<thead>
<tr>
<th>Failure phenomena</th>
<th>Analysis of causes</th>
<th>Elimination method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot boot after power on</td>
<td>1. Power does not meet the requirements of specifications 2. There may not be connected to the neutral line</td>
<td>1. Power does not meet the requirements of specifications 2. Correctly connect the neutral line</td>
</tr>
<tr>
<td>The switch is not open, but the temperature is still rising</td>
<td>1. Heating AC contactor contact bonded together, cannot be disconnected</td>
<td>1. Replace the contacter</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Furnace temperature uniform, unusually high</td>
<td>1. Thermocouple insensitive reaction</td>
<td>1. Change the thermocouple</td>
</tr>
<tr>
<td>2. Work-piece placed unreasonable</td>
<td>2. Change place method</td>
<td></td>
</tr>
<tr>
<td>3. Door did not shut well</td>
<td>3. Close the door well</td>
<td></td>
</tr>
<tr>
<td>Open the heating switch, power trip</td>
<td>1. Electric heating short circuit</td>
<td>1. Apart around the inside of the furnace, the subject</td>
</tr>
<tr>
<td>2. The total capacity of the power brake switch is too small</td>
<td>Poor heating pipe wiring and correct</td>
<td></td>
</tr>
<tr>
<td>3. The main power switch box installed leakage protection switch, but incorrectly wired</td>
<td>2. Replace high-capacity switch</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Check wiring and correct</td>
<td></td>
</tr>
</tbody>
</table>
6. Oven circuit schematics:

⚠️ Warning: Please contact a qualified electrician to connect the circuit areas!