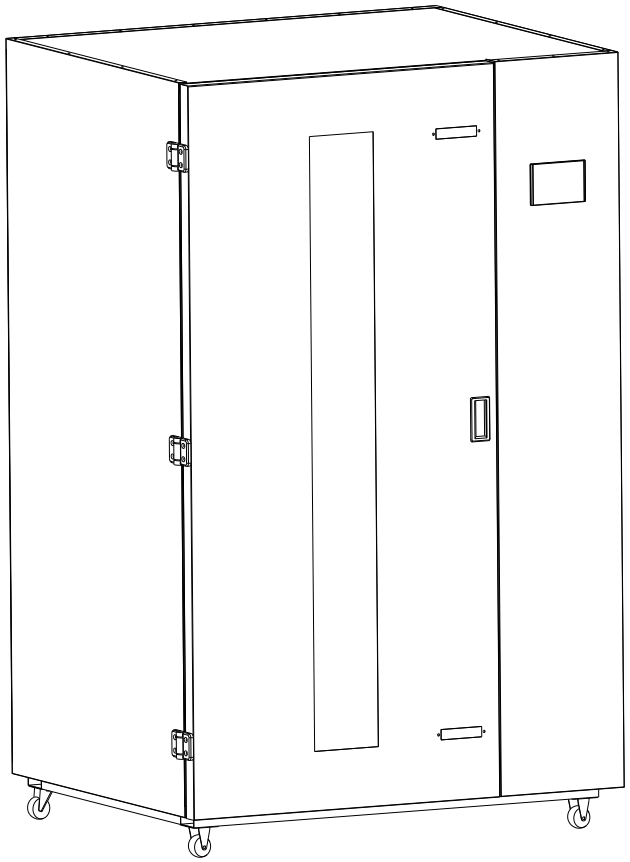
Heat Pump Dehydrator

Operating Instructions



Please read the manual carefully before use
This manual contains service guide, please keep it properly

Chapter 1 Preface

Chapter 2 Product Structure Introduction

Chapter 3 Operating Instructions

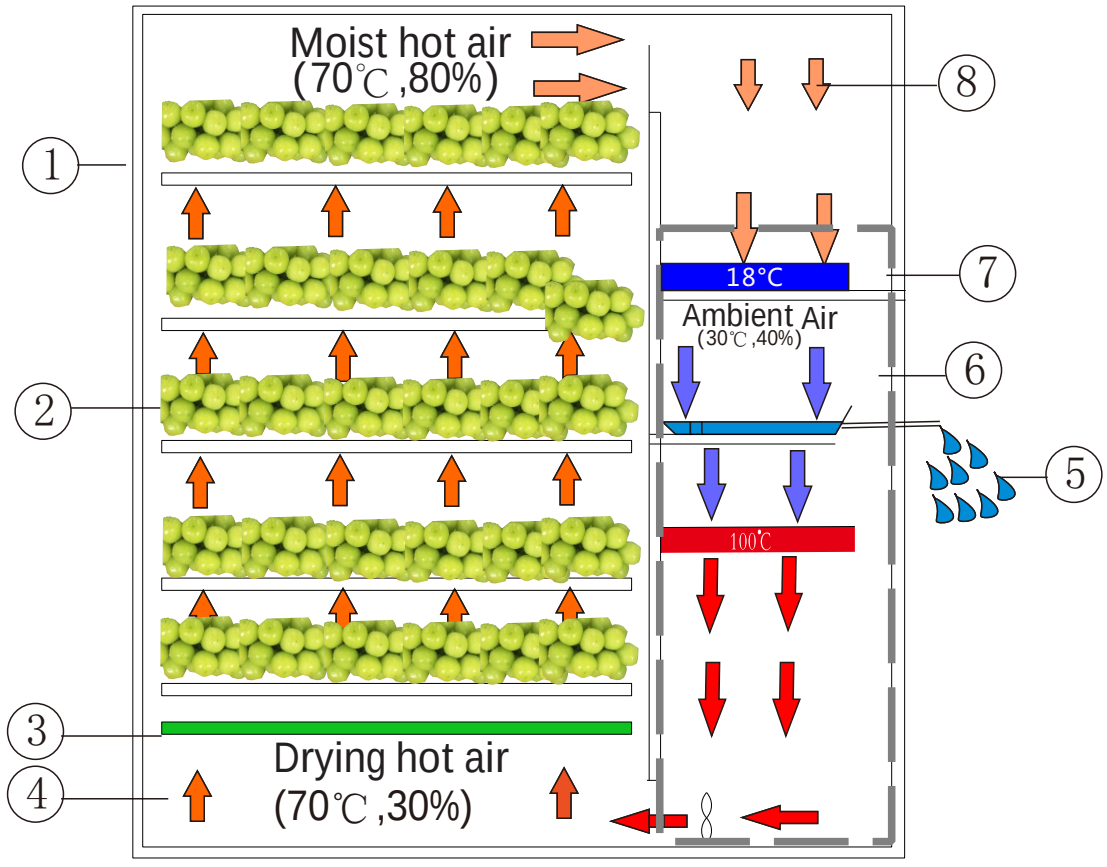
Chapter 4 Basic Parameters

1.1 Principle and advantages of the heat pump dryer

The heat pump dryer breaks through the traditional drying concept for thousands of years, replacing the traditional open-loop dehumidification method with a closed-loop dehumidification method and 100% energy recovery, and has been widely used in industries such as grain, fruit, meat products, seafood, medicine, food industry, feed industry, leather, tobacco, wood, hotel fabric, family clothing, hair salon, auto beauty, spraying, electroplating, plastics, etc., all achieving The results are beyond imagination.

The so-called closed-loop drying means that the materials to be dried are enclosed in the heat-insulated and impermeable plate room, and the water vapor is condensed on the cold sheet and discharged from the plate room through the closed air circulation to achieve the purpose of dehumidification and drying. The dehydration efficiency can be more than 5 kg/kWh, which is several times of the open-loop drying efficiency (dehydration efficiency 1.2 kg/kWh), and it is not affected by ambient temperature and humidity.

Closed-loop drying must be dehumidification, that is, by reducing the relative humidity in the board room to achieve the purpose of accelerated drying, its brief working principle is as follows



Parts Description

1: Insulation box; 2: Drying food; 3: Wind shield (no food can be placed)

4: Dry hot air; 5: Condensed water; 6: Condensed normal temperature

dry air; 7: Heat pump host; 8: Humid hot air

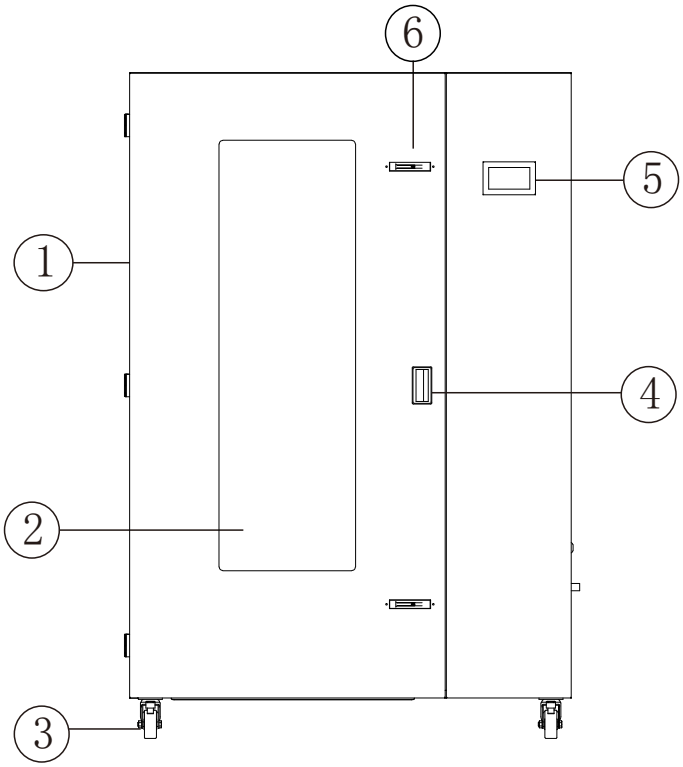
As shown above, the compressor-driven Carnot cycle forms 18-degree cold sheet and 100-degree hot sheet in the main machine, and the fan drives the circulation of air in the board room, the air passes through the hot sheet and forms 65-degree hot air, which heats the items to be dried and brings out moisture, and becomes moist 55-degree hot air, which passes through the 18-degree cold sheet and condenses into water droplets, which fall into the water collection tray and are discharged from the board room through the water pipe. After dehydration, the air passes through the 100 degree hot air sheet again and becomes 70 degree hot air, so on and so forth, continuously reducing the relative humidity in the board room to achieve the purpose of drying.

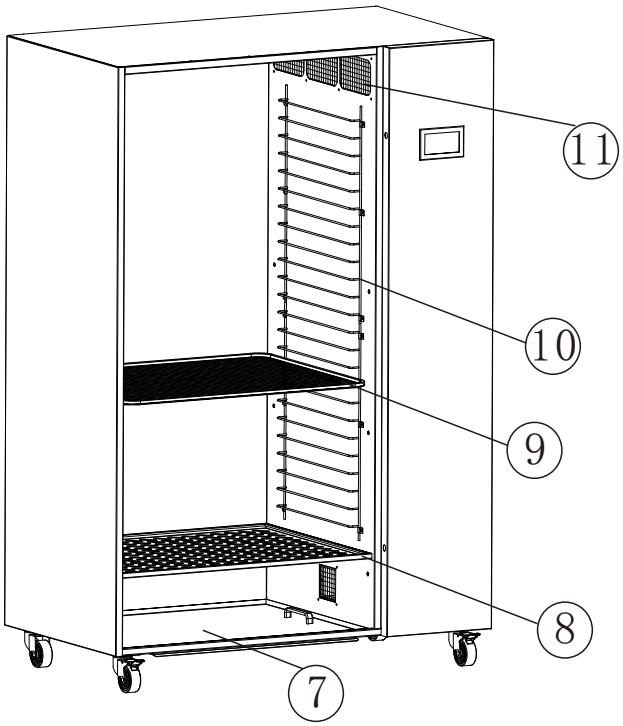
The closed-loop drying completely solves all the problems of traditional open-loop drying by absorbing energy from the cold sheet and releasing energy from the hot sheet, and has the following significant advantages:

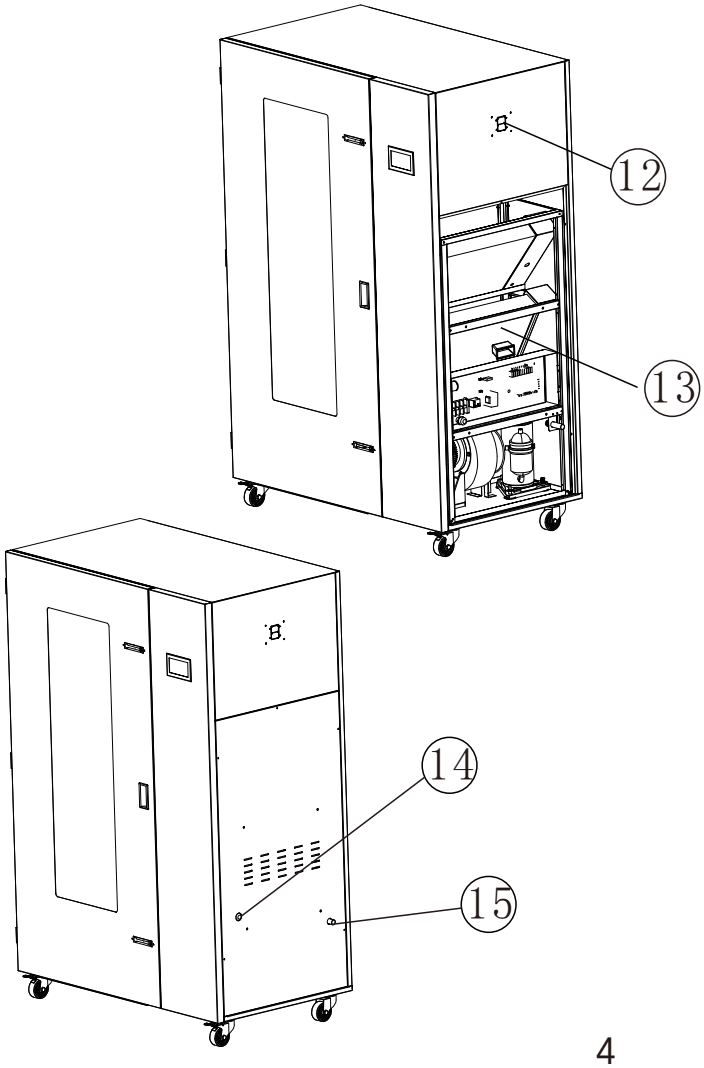
1. The discharge is only water, no energy loss, 100% energy recovery, so the efficiency is very high, several times than the open-loop method;
2. The efficiency is completely independent of the external temperature and humidity, and is always highly efficient throughout the year, suitable for all climatic conditions;
3. No outside dust can enter, clean and hygienic;
4. The active ingredients of the products will not be lost, and the quality and grade of the dried products will be greatly improved;
5. It can achieve low temperature and fast drying, without destroying the efficacy and quality of the goods;
6. No mold and no deterioration in the drying process;
7. Strong wind convection, no dead space, uniform and consistent;
8. No need to turn things over, saving labor costs;
9. Built-in or integrated design, easy installation, stable performance;
10. Programmable temperature, humidity and time control, segmented automatic control, Chinese operation menu, graphic interface;
11. Shelf design, with a variety of trays, widely used, flexible and convenient;
12. Closed-loop dehumidification heat pump dryer will completely change the traditional drying industry, creating a new situation of energy saving, environmental protection, health and safety, high quality and efficiency!

Drying is a science and art, different items correspond to different drying curves, such as temperature, humidity and time, and different drying rooms are applicable, so be sure to ask professional personnel to design and install the rooms, racks, air ducts and set the appropriate parameters, and read this manual carefully before installation and use, so that the equipment can play the best role for you.
The value of.

2.1 Main structure introduction



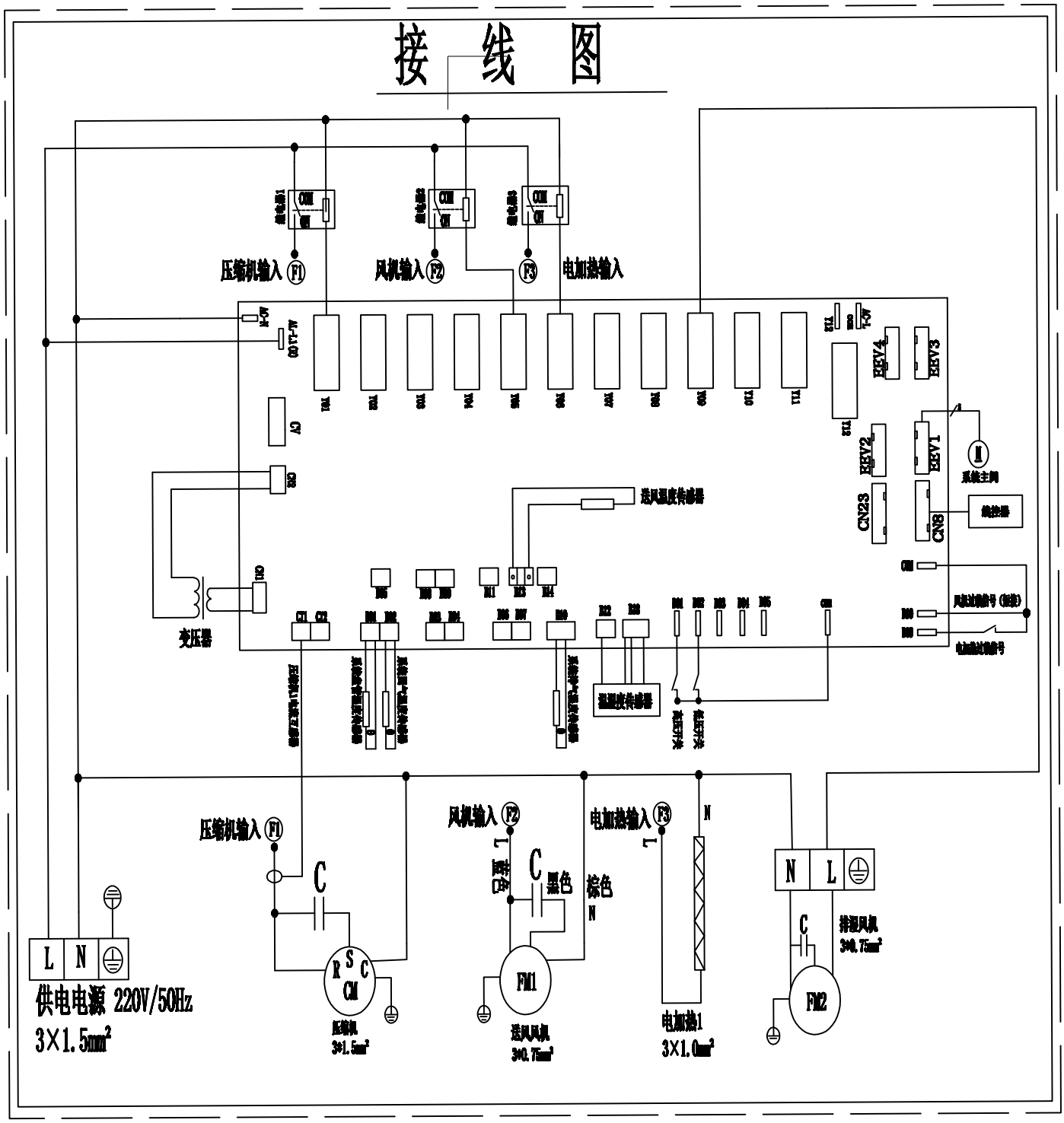




Description of main components

1: Insulation box
2: Observation window
3: Casters
4: Door handle
5: Control Panel
6: Door latch (open to the left, close to the right)
7: Oil pan
8: Wind shield
9: Tray
10: Tray support self
11: Return air inlet
12: Exhaust temperature outlet
13: Heat pump system
14: Cable
15: Condensate outlet

2.2 Partial wiring diagram of the system

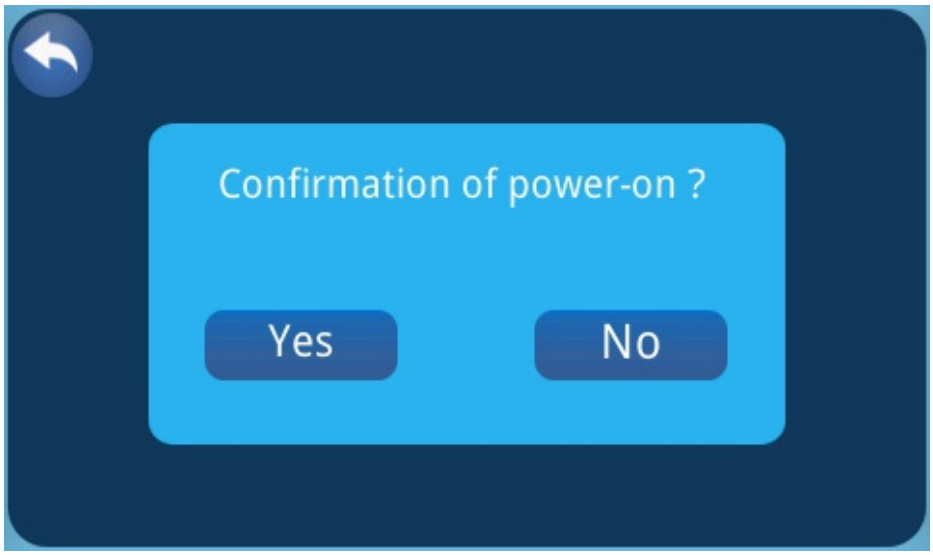


Special Note:

1. The power input is 220V/50Hz, the power supply line adopts GB/T19666-2019, GB/T 5023.5-2008, the wire diameter is at least 2.5 square copper wires, and a 16A leakage protection switch is installed, and the input power must be reliably grounded;
2. When the system is abnormal, please cut off the power in time, do not disassemble the machine to repair it by yourself, it should be repaired by professionals;
3. If there is any abnormal situation, please completely disconnect the mains power before proceeding.

3.1 Control Panel Introduction

① On/Off: Click the button in the on/off state, and the following interface will pop up to turn on/off;

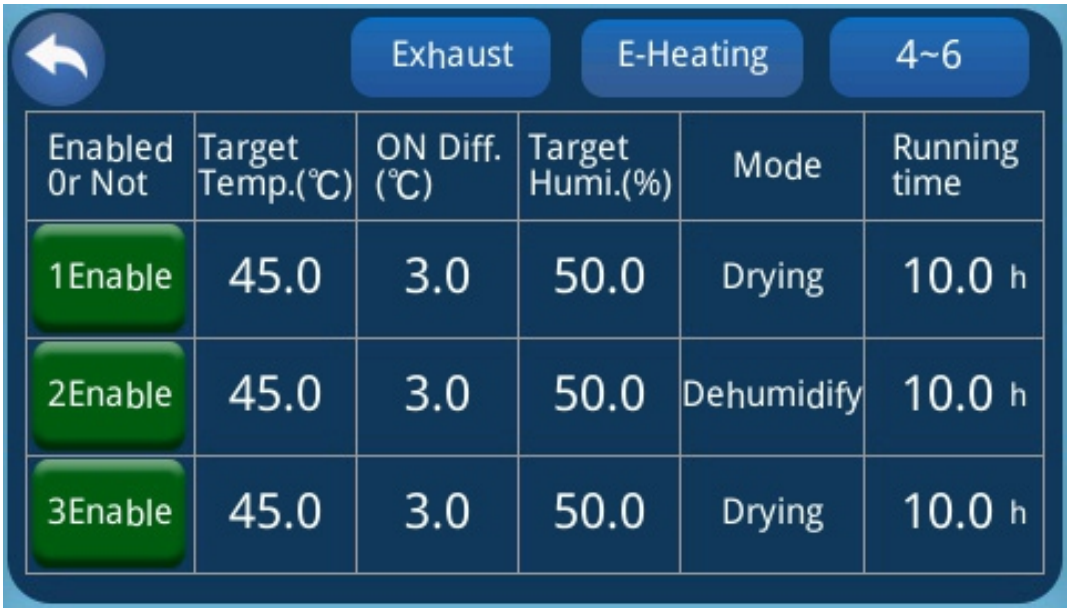


② Display target temperature and target humidity, click on the screen to directly modify the current target value;

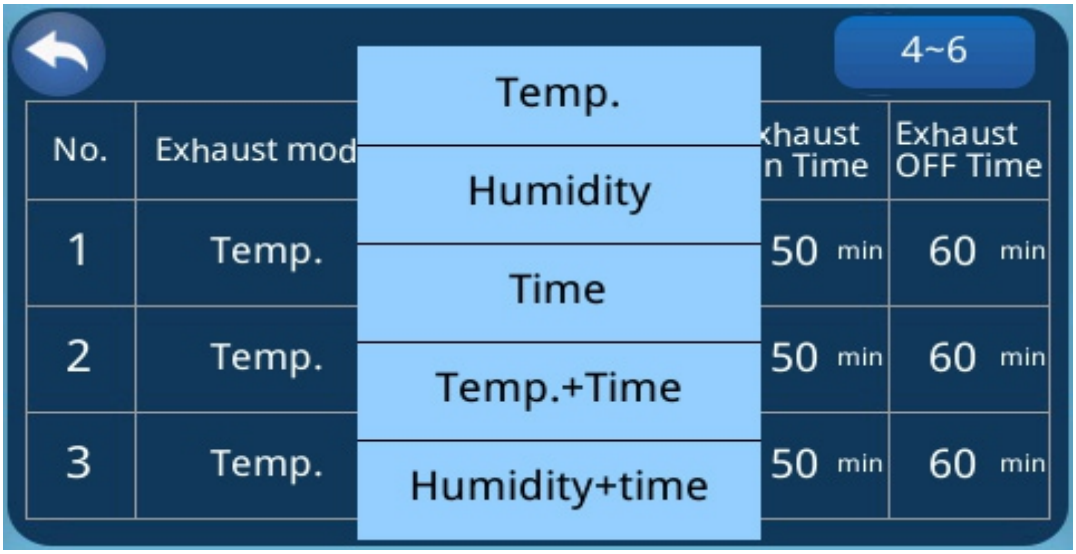
③ The operating status of the unit load, green means that the corresponding load is started, and gray means that it is off;

④ On the customer setting interface, click to enter the relevant drying process settings.

3.2 User Setting Instructions



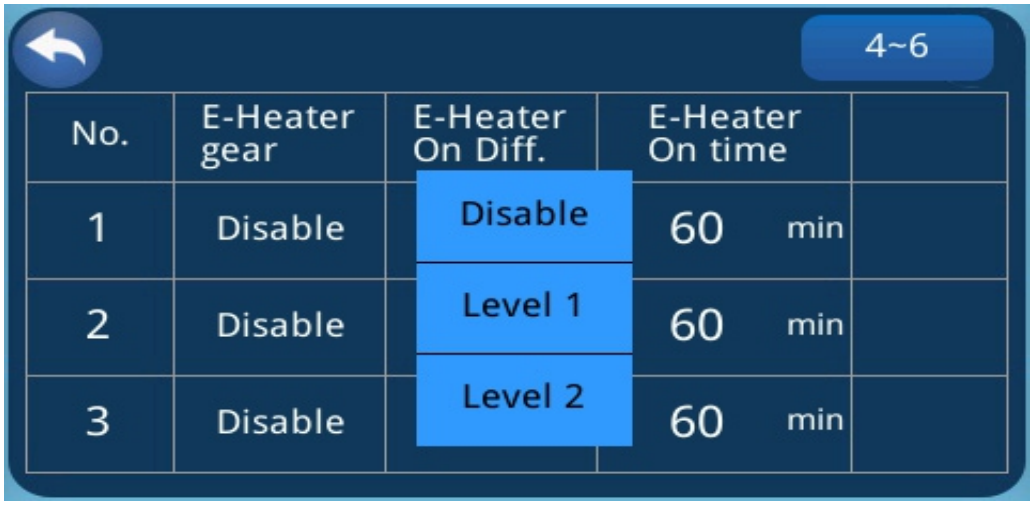
1. The unit has built-in 6-stage process curve setting, which can be set according to the characteristics of the material. Select the corresponding stage setting to enable or disable;
2. The operation mode has "drying" and "dehumidification" options, and the "drying" mode is based on the temperature control the start and stop of the compressor, and the " dehumidification" mode controls the start and stop of the compressor according to the humidity;
3. "Start-up hysteresis" refers to the control point at which the compressor starts, specifically refers to the current actual running temperature or humidity<target value-the hysteresis, for example, in drying mode, the current temperature is 40°C<Target 45°C - 3°C start-up hysteresis, the compressor will start to work;
4. Dehumidification setting can be set according to temperature or humidity or time;,



Suggested settings:
In the setting stage, the opening time of the dehumidification fan should be 20-30 minutes after starting up, so that the moisture in the ovenThe temperature can rise quickly. For example, if the first stage is set for 30 minutes, the dehumidification mode is set to " temperature" at this time, and the hysteresis Set it to 3 degrees. At this time, the dehumidification will operate according to the temperature requirements in the cabinet, and then set the dehumidification mode in the second stage to "Humidity + time", open for 5 minutes and stop for 10 minutes, so that the excess moisture accumulated in the oven will be discharged smoothly

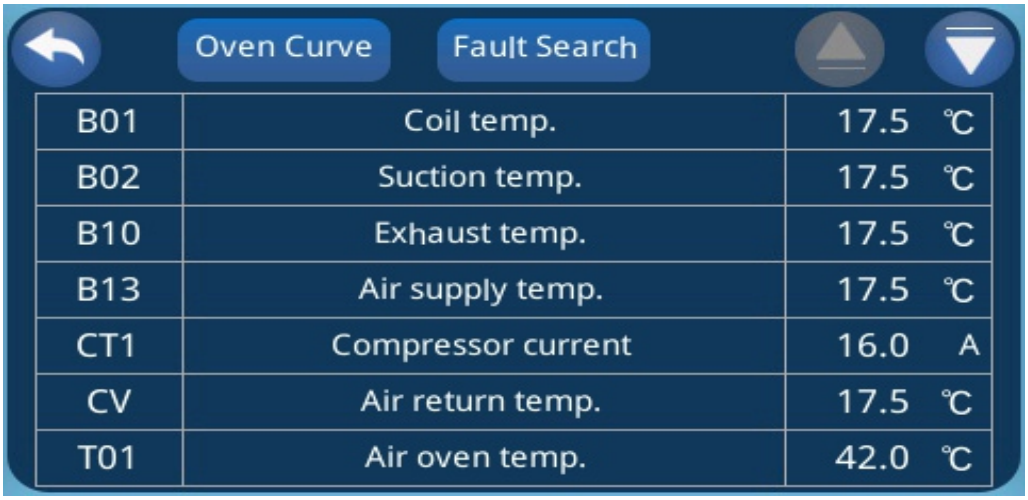
3.2 User Setting Instructions

5. Electric heating setting: electric heating can be selected and set according to the load requirements of the oven.

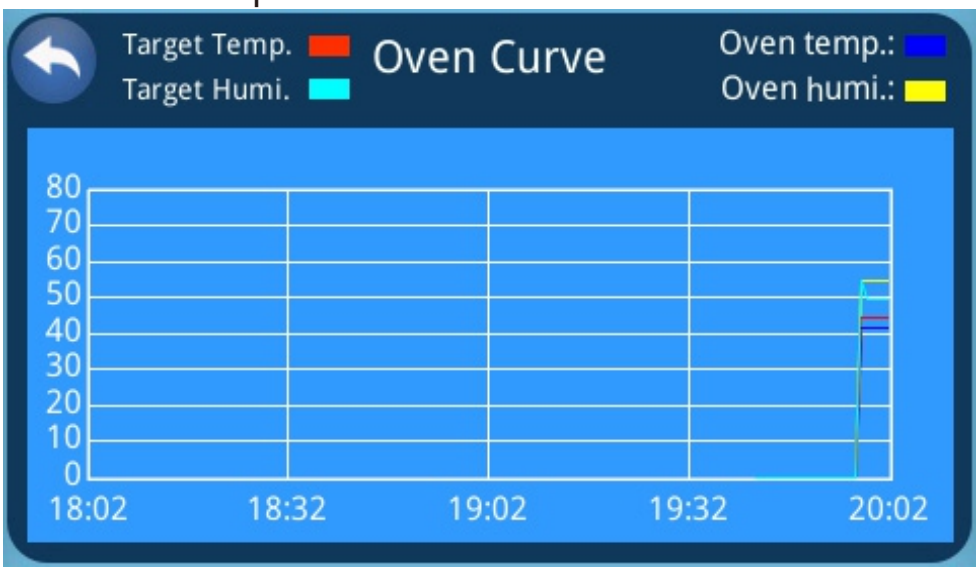


3.3 Status query

1. Click the operating status on the main interface to enter the specific operating status parameter interface of the unit, as shown in the figure below, where you can view the real-time data of each load of the current unit.

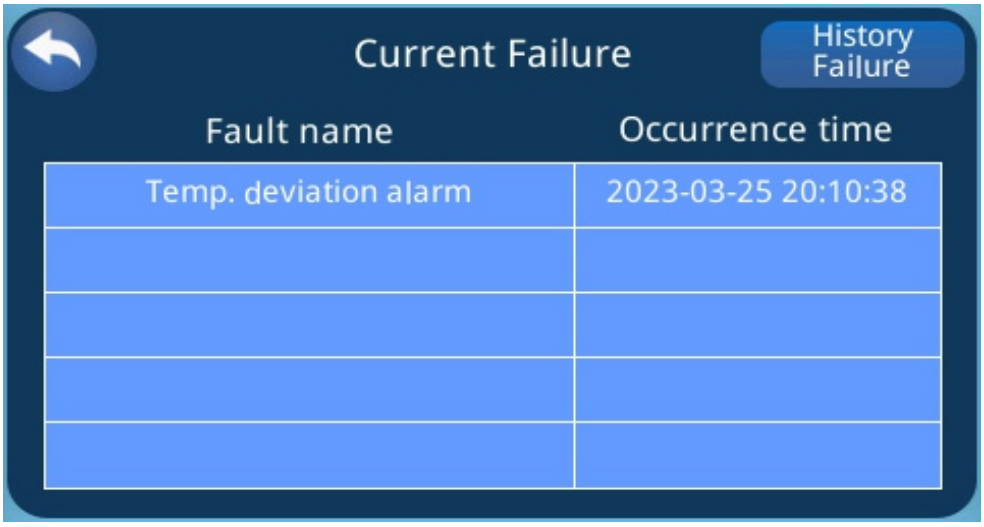


2. The oven curve can query the temperature and humidity curve of the equipment's contact operation.



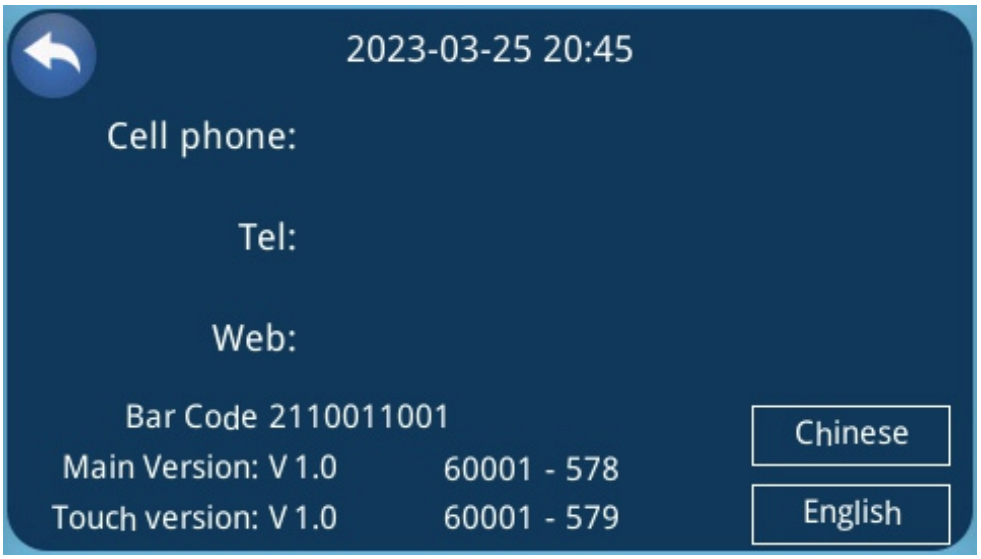
3.3 Status query

3. When the device fails, a red exclamation mark will appear in the upper right corner of the main interface to remind you, click the exclamation mark directly to view the corresponding fault information.



3.4 Help interface

1. Enter the help interface to view the manufacturer information and device control version number.



3.4 Help interface

2. The Chinese/English language display can be switched in the lower right corner of the interface.

3.4.2 Fault phenomenon and solution measures

When the system indicates a fault, you can get detailed fault information for troubleshooting by using the "FaultInquiry":

Troubleshooting Tips	Solution Method
Temperature and humidity sensor failure	Check for broken connections or replace ambient temperature sensors
Supply air temperature sensor failure	Check if the connection wire is broken or replace the environmental humidity sensor
Return air temperature sensing failure	Check for disconnected wires or replace the return air humidity sensor
Exhaust gas temperature sensing failure	Check for disconnected wires or replace the exhaust humidity sensor
Coil temperature sensing failure	Check for disconnected wires or replace coil temperature sensor
Compressor high pressure protection	If the high pressure switch is off for 10S continuously after the compressor is turned on, the high pressure fault will shut down the corresponding compressor; if the high pressure switch fault is detected three times within one hour, the fault code will be displayed and the corresponding compressor will be shut down (must be powered off to start again) If the high voltage has been disconnected before power on, and the disconnection is detected for 10S continuously after power on, a fault alarm is displayed.
Compressor low pressure protection	If the low pressure switch is off for 10S continuously after the compressor has been turned on for 10 minutes, the low pressure will fail and the compressor will be turned off; if the low pressure switch fails three times within one hour, the fault code will be displayed and the compressor will be turned off. （The low-pressure switch is not detected during defrosting.
Exhaust protection function	Shut down the compressor when the exhaust temperature of the system is higher than 110°C (P2) Resume operation when the exhaust temperature is ≤ 80°C. If exhaust high temperature protection is detected three times within one hour, a fault code is displayed. (Must be disconnected before restarting)

3.5 Main technical parameters

Product name	**Heat pump dryer**
Model number	**RBM-A01**
Tray size	**790x620x10MM**
Total drying area	**11.8 M2**
Tray quantity	**24PCS**
Net weight	**199KGS**
Gross weight	**277KGS**
Voltage/Frequency	**220VAC/50Hz**
Input power (heat pump)	**1420 W**
Heating tube power (electric heating)	**1300 W**
Heating capacity (heat pump)	**5950 W**
Machine Maximum input power	**1710 W + 1300 W**
Maximum input current (heat pump)	**8A**
Machine maximum input current	**14A**
Dehydration rate	**3KG/H (Temperature 55℃/Humidity 70%)**
Dehydration power consumption	**1.6kg/kwh**
Air outlet temperature	**40~75℃**
Ambient temperature	**-10~45℃**
Noise	**≤65(dB)A**
Waterproof level	**IPX0**
Product size	**1180x680x1780MM**
Package size	**1260x780x1810MM**
Refrigerant/weight	**R134a/830g**
System maximum pressure	**3.0MPa**

Note:

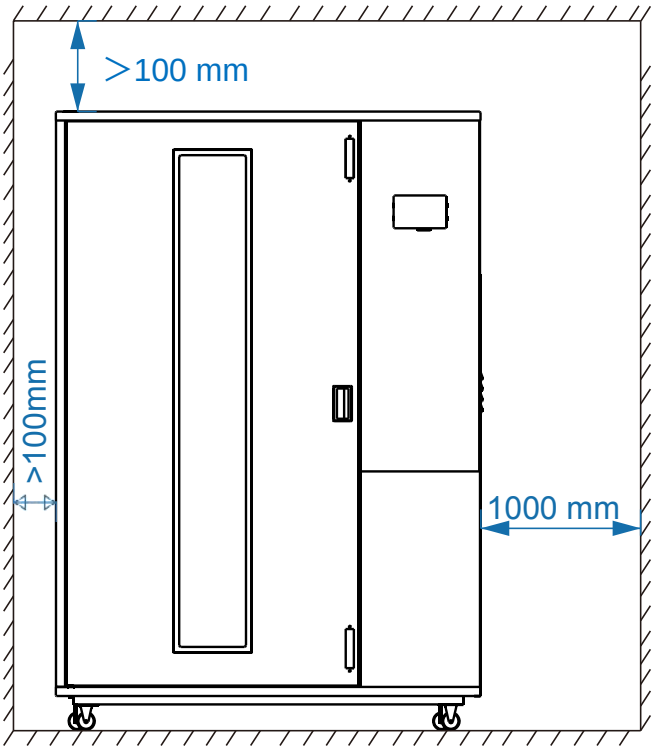
Note: The above parameters are for reference only, please refer to the product nameplate for detailed parameters

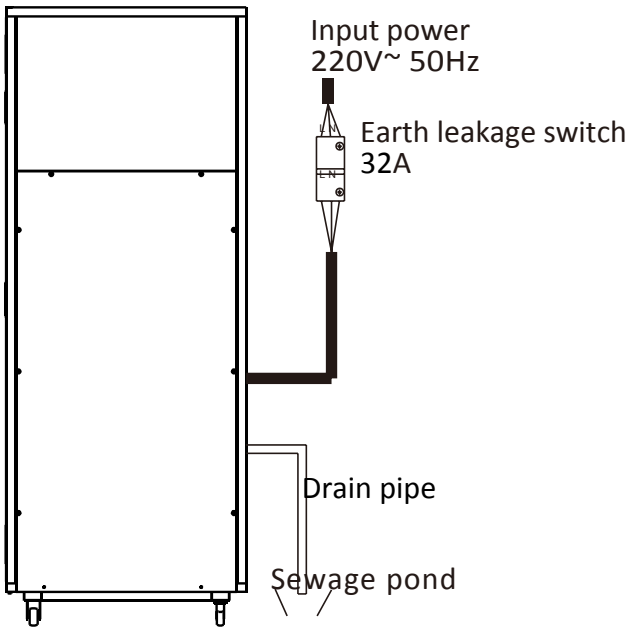
Executive standard:

GB4706.1-2005 "General Safety Requirements for Household and Similar Electrical Appliances"

GB4706.32-2012 "Special requirements for the safety of heat pumps, air conditioners and dehumidifiers for household and similar electrical appliances"

3.6 Installation schematic





3.7 Packing list

1 heat pump dryer machine	1 Set
2. Instruction manual	1 copy
3. Drain pipe	1 piece