



GENERAL PURPOSE INCUBATOR

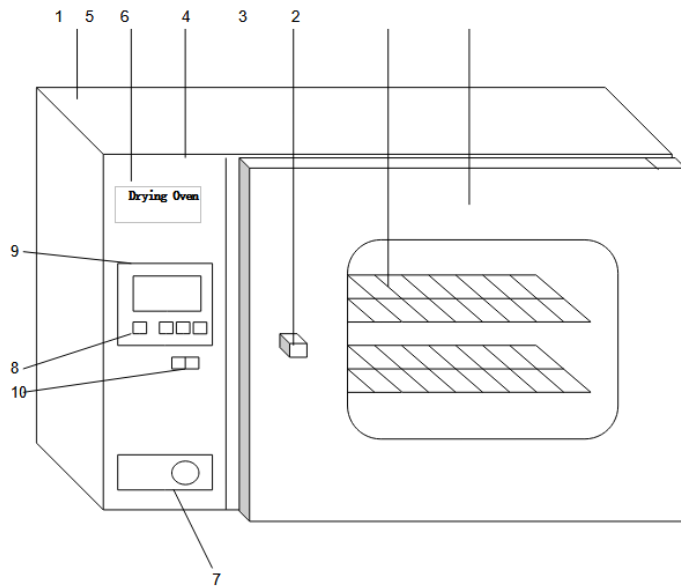
INC073-620



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1. Sketch



1. Cabinet body
2. Cabinet door
- 3.Shelf
4. Door handle
5. Nameplate
6. Control panel
7. Air door adjusting knob
8. Temperature adjusting
9. Temperature control instrument
10. Power switch

2. Scope of application

Apply to the drying, braking, wax melting and sterilization of the articles in industrial and mining enterprises, colleges and universities, scientific research and medical units, labs, etc.

3. Technical indexes

Model	INC073-620
Mains voltage of power supply	380 V, 50HZ
Temperature range	RT+10~300°C
Temperature fluctuation	1°C
Power consumed	4000W
Dimensions of the working room	8406001355m m

Table 1

4. Structural description

Drying Oven Model forced air drying cabinet includes serial products. They are divided into two categories in appearance: desk-type and vertical-type. The desk type has a relatively smaller capacity, including three types of specifications: 30L, 70L and 120L. The vertical type has a relatively bigger capacity, including 200L, 420L and 620L. The shells of drying cabinets of all specifications are made of excellent steel plates and the surfaces have baking varnishes. The working room is made of stainless steel plates and has 2~5-layered shelves made of stainless steel wires (the middle layer is filled with extra-fine glass wool for insulation). The desk-type cabinet door adopts dual-layer tempered glass door; the vertical cabinet door has dual-layer glass viewing window in the top middle, through which the heating articles in the cabinet can be clearly observed. The connection between the working room and the cabinet door is installed with heat-resistant silicone rubber sealing ring in order to guarantee the sealing between the working room and cabinet door. The power switch, power indicator light, air door adjusting knob, temperature control instrument and other operating parts of drying cabinet are all located on the control panel in the front of cabinet body. For the desk type, the control panel is on the front left side of cabinet body; for the vertical type, it is on the front top side of cabinet body. The heating constant temperature system in the cabinet mainly consists of motor with centrifugal impellers, electric heater, proper air duct structure and temperature control instrument. When switching on the drying cabinet, the motor rotates and vent upwards the heat produced by the electric heater (at the bottom of the cabinet) through air duct, which is absorbed into the fan after going through the articles to be dried in the working room. Such circulation continues until the temperature becomes even. The temperature control instrument is a universal-purpose part made meticulously by our company. It is featured by the following functions: precise temperature control; the set temperature and the temperature in the cabinet are digitally displayed; the set temperature has protective device and tracking alarm. When the temperature in the cabinet is 10°C higher than the set temperature, the tracking alarm will switch off the power supply of the heater and send out the sound and light alarms. Air door regulator can regulate the air inflow and outflow of the cabinet by starting up the air door adjusting knob.

5. Method of use

1. Put the articles to be dried into the drying cabinet, close well the door and turn the air door adjusting knob to “ ” position.
2. Move the power switch to “ON”. The power indicator light lights up and figures appear on the temperature control instrument.
3. Select the required set temperature, the numeric temperature displayed at the moment is the temperature in the cabinet and the heating indicator light lights up, showing that the instrument has been in the heating and temperature-rising state. After a period of time, when the displayed temperature is near to the set temperature, the heating indicator light is flickering for many times. Under usual conditions, after heating for 90 minutes, the temperature control will be the constant temperature state.
4. When the required working temperature is lower, adopt the two-stage set method. For example, if the required temperature is 80°C, first set 70°C and after the overshoot temperature starts to drop back, then set 80°C, which can reduce and even eliminate the phenomenon of overshoot temperature, thus enable the inside cabinet to attain the temperature-constant state as early as possible.
5. Select the different drying times according to the different humidity of different articles, e.g., the articles to be dried are more humid, turn the air door adjusting knob to “三” position so as to vent the humid air in the cabinet.
6. When the drying process being over, if not to immediately take the articles out, first turn the air door adjusting knob to close the air door, or let open the air door and move the power switch to “OFF”, then opening the cabinet door immediately to take out articles, but take care not to be scalded.

6. Precautions

1. The shell of the drying cabinet shall be well grounded to guarantee the safe use.
2. The drying cabinet shall be placed inside one well-ventilated room, surrounding which no inflammable and explosive articles are available.
3. The drying cabinet has no explosion-proof device, so never place inflammable and explosive articles inside for drying.
4. The articles in the cabinet shall not be too crowded. Certain space shall be left so as to facilitate the circulation of hot air.
5. Always keep the internal and external of the cabinet clean. In case it will not be used for a long time, please cover it with a plastic thin film dirt shroud and put it in a drying room.

7. Operating methods

7.1. Preparation before use

The product should work under the following conditions of use:

- 1 Ambient temperature: 5°C~40°C.
- 2 The relative humidity is not more than 85%.
- 3 Atmospheric pressure: (86~106) KPa.
- 4 The altitude is not higher than 2000 meters.
- 5 There is no strong vibration source and strong electromagnetic field around.
- 6 It should be placed on a stable, level, without serious dust, indoors without direct sunlight and no corrosive gas.
- 7 Leave enough space around the product, as shown in the upper right figure, and should not be placed under the fire alarm.
- 8 The power supply voltage of the product is shown in the technical indicators (Attached Table 1 to Table 3).
- 9 Place reasonably, adjust the position and quantity of the shelves, and put in the work items. It is necessary to maintain a certain gap (>100mm) around the upper and lower sides, and the weight should be such that the shelves are not deformed by bending.

7.2 Commands and description

1.(PV) display

Display measured value

Various prompts are displayed according to the status of the instrument.

2.(SV) display

Display set value

Display various parameter values according to the status of the instrument.

3.AT (running indicator light): It lights up when the controller is working, flashes during auto-tuning, and goes off when it stops.

4.HEAT (heating indicator light): It lights up when there is heating output.

5. ALM (alarm indicator light): Lights up when there is an alarm output, and the buzzer sounds.

6.COLD (refrigeration indicator light): on when there is refrigeration output. (Note: this product has no COLD refrigeration function)

7.Used to adjust various parameter values or enter the auto-tuning state.

8. Used to adjust the internal parameter value or enter the self-tuning state.

9. Shift key: used to shift the set value, internal parameter and observe the timing running time.

10. Function keys:

Setting value modification.Recall of parameter symbols and confirmation of parameter modification.

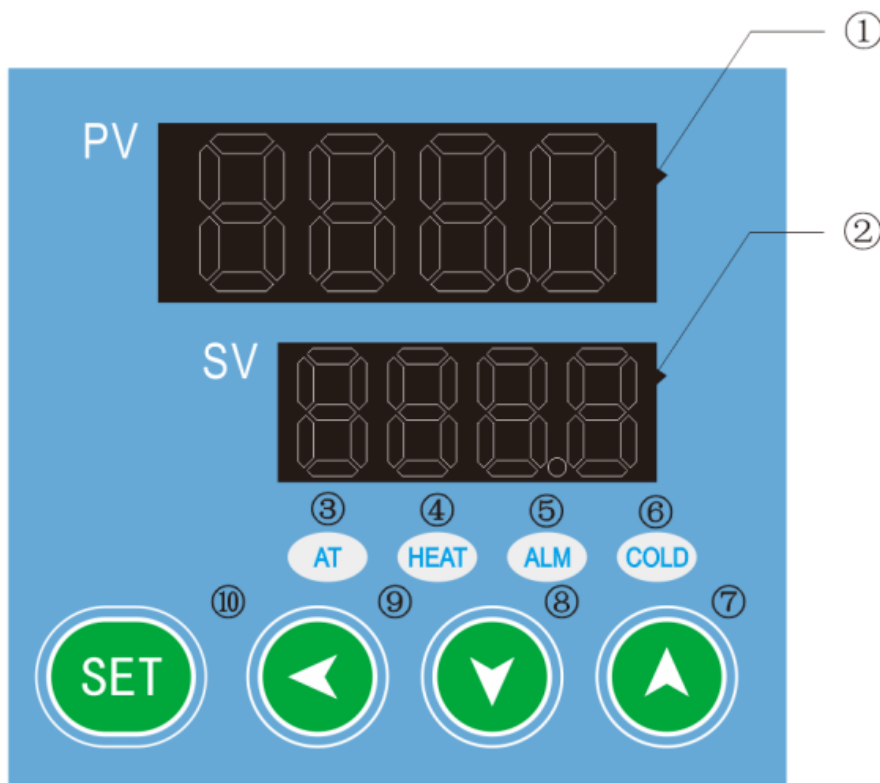


Figure 1

1. The  button permits the working parameters setting.
2. The  button permits to change quickly the digital value (Program, units, tens, etc.) of the parameter you are editing.
3. In combination with the  key allows access to menus with password.
4.  and  adjustment buttons allow you to increase or decrease the value of the operating parameter being edited.

7.3. Operation

Switching on the instrument

1. Connecting the power cord to a power outlet with a protective ground connection.
2. Turn on the instrument by pressing the ON / OFF Button and the display will light up. The display shows the initialization sequence and then the instrument is ready for use.

NOTE: Every time you turn the instrument beeps intermittently, the icon of visual alarm and the word "end" appear on the display, indicating that a heating cycle had been done before. Press any button to silence the audible signal and the icon appears.

Setting of parameters

Working temperature

1. When the instrument is switched on, pressing  button, to set temperature value PV shows . Set the desired temperature value (in Celsius degrees) pressing keys.
2. It's possible a quick movement between the digits using the  button.

3. Confirm the set value with another press of  button.

Working time

1. After confirming the temperature, the last value of the set time (timer), PV shows  Set the desired value, by pressing  or  keys. It's possible a quick movement between the digits using the  button.
2. Confirm the set value with another press of  button.
NOTE: the value indicates the operating mode "continuous", that means once you start the operating cycle by the START / STOP button, it continues maintaining the set temperature until it is stopped manually (START/STOP)
3. If you set a value of time, such as 1 hour, the instrument will reach the set temperature and maintain it for an hour.

Start/stop heating cycle

1. After setting the operating parameters, pressing  and  for few seconds button with long pressure (4-5 seconds), the heating cycle starts for the defined time in hh:mm or continuous (00:00). The word "end" at the top right corner of display disappears, the message RUN appears in the bottom left corner and display shows contemporary: timer, temperature measured inside the chamber, set temperature and fan speed if present (see Picture 4).
2. At any time, you can always manually stop the cycle by pressing the pressing  and  button with long pressure (4-5 seconds).
3. Once the set time or after manual stop, the instrument beeps intermittently, the icon of visual alarm and the word "end" appear on the display. Pressing any button, it's possible to silence the audible signal and the icon appears.
NOTE: the acoustic signal will not end until it is stopped by the operator, but the heating cycle is terminated so for the samples inside the instrument will remain exposed to the internal temperature the chamber.

Functions with password access

Access to menu with password

1. Simultaneously pressing the  for 4 seconds, you can access some functions and parameters that are password protected.
2. To access these sub menus and avoid mistakenly entering in the operating parameters setting, it is recommended to firstly press the SHIFT key, keep it pressed, and then press the SET / PROG for few seconds.
3. After have made this keys combination, on the right top part of display instead of word TIME, "Lk" (lock) appears close to "0003" (password).
Below the passwords and access sequence to the various parameters/functions.

PASSWORD	FUNCTION / PARAMETER	DESCRIPTION
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0003	tm	Safety temperature limiter for samples protection
	Po	Restart mode after absence of power supply
	AL	Temperature range for over temperature alarm
	Pb	Temperature offset on single point
	PK	Temperature offset on the entire ramp
	LK	Input the password LK=3, the above parameters can be updated.

Table 2

Please don't change parameter value not listed above.

8. Wiring diagram

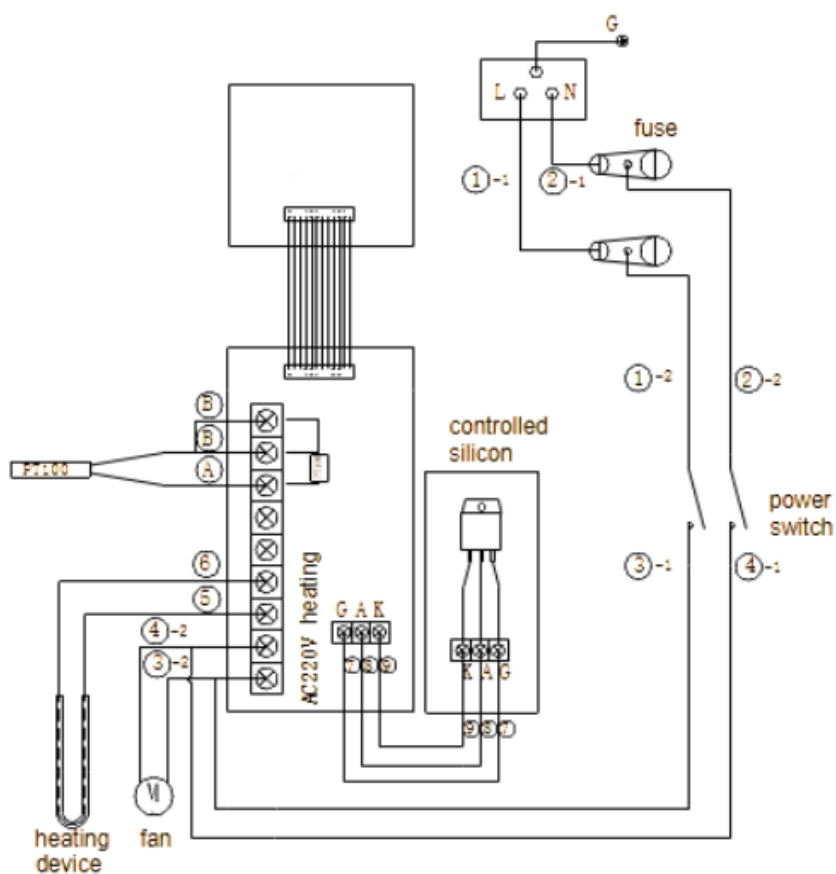


Figure 2

9. Trouble shooting

Problems	Causes	Handling methods
1. No supply	1. The plug is not inserted well or the wire is disconnected.	1. Insert the plug and connect the wire.
	2. Fuse is open.	2. Replace the fuse.
2. The temperature in the cabinet does not increase.	1. The set temperature is low.	1. Adjust the set temperature.
	2. The electric heater does not work.	2. Replace the electric heater.
	3. The temperature control instrument does not work.	3. Replace temperature control instrument.
	4. The cyclic fan does not work.	4. Replace the fan.
3. The set temperature has a big difference from the temperature in the cabinet.	1. The temperature sensor does not work.	1. Change temperature sensor.
	2. The fine tuning potentiometer for setting temperature is not adjusted well.	2. Adjust the potentiometer.
4. The over-temperature alarm is abnormal.	1. The set temperature is low.	1. Adjust the set temperature.
	2. The temperature control instrument does not work.	2. Replace the temperature control instrument.

Table 3

Packing List

No.	Type	Name	Unit	Qty.	Remarks
1	Document	Operating instructions		1	
2	Document	Packing list		1	
3	Spare part	Fuse core		2	
4	Spare part	Shelf		2	

Table 4

LABSTAC

Labstac LLC

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