



Dry Bath Incubator G100 Manual



Hangzhou Yooning Instrument Co., Ltd.

Address: 4 floor, #6 Building, No.3 Shengang Road,
Yuhang District, Hangzhou, China

Customer Service: +86-571-86907383 / 87613616

Website: www.yooning.com

Hangzhou Yooning Instrument Co., Ltd.

General Information

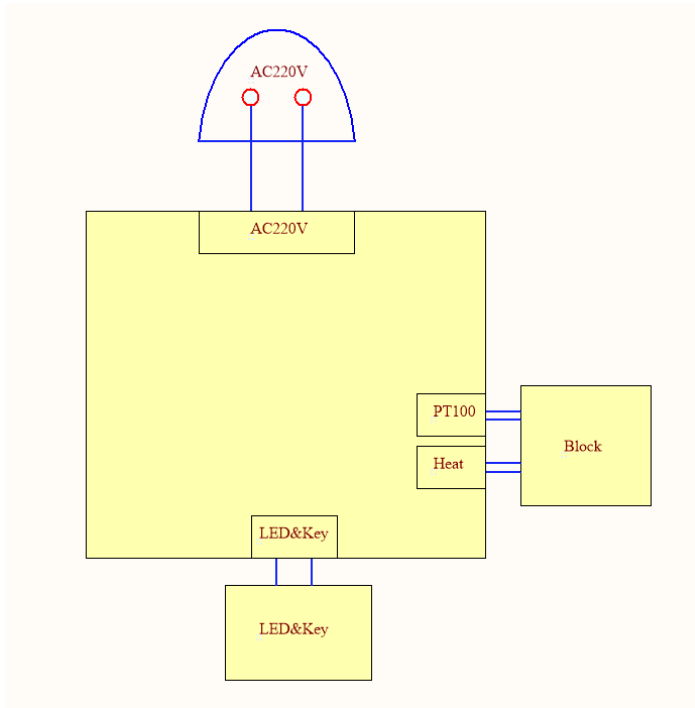
Thank you for purchasing our Product.

This Manual for users contains function and operation of the Instrument. In order to use the instrument properly, please read this manual carefully before operation.

Please check the instrument and Appendix with the packing list at the first time you open the instrument packing case.

Appendix: G100 Wiring Diagram

(Only for reference, no further notification in case of change)



Contents

1. Important Instruction.....	1
1.1 Safety Instruction.....	1
1.2 Safety.....	1
1.3 Maintenance.....	2
2. Brief Introduction.....	3
3. Product Features.....	4
3.1 Working Condition.....	4
3.2 Basic Parameter.....	4
3.3 Optional Blocks.....	4
4. Operating Instructions.....	5
4.1 Structure.....	5
4.2 Face Panel.....	6
4.3 The Buttons.....	6
5. Operation Guide.....	7
5.1 Temperature or Timer Setting.....	7
5.2 Start and Stop.....	8
5.3 Temperature Calibration.....	9
6. Replacement of Blocks.....	11
7. Troubles and Shootings.....	12
Performance Test.....	13
Packing List.....	14
Appendix:G100 Wiring Diagram.....	15

1. Important Instruction

1.1 Safety Instruction

Read this Manual carefully before using it.



Read the guidelines and directions below to prevent injury and carry out countermeasure accordingly when necessary.

1.2 Safety

The operation, maintenance and repair of the instrument should comply with the basic guidelines and the remarked warning below.

If users don't comply with them, it will have an effect on the instrument.



The general device is CE conformity, only use it in door where ventilated well.

Only trained person can operate this instrument. Users or person who are not permitted are not allowed to open device, which will lead electricity shock or other danger.

Please contact factory for maintenance.



For safety use, ensure the power supply with earth/ grounding socket.

Make sure the voltage supplied is complied with indication on label.

Exchange the power cable once it is damaged.

Packing List

No.	Item	Model/Type	Quantity	Remarks
1	Dry Bath Incubator	G100	1	
2	Screw	M3X10	2	With washer
3	Allen Wrench	M3	1	
4	Handle	M4	1	
5	Fuse	3A	2	
6	QC PASS Card		1	
7	Manual		1	
QC:		Date:		

Performance Test

Item		Dry Bath Incubator	Model	G100
Date			Serial No.	
No.	Content	Methods	Standards	Results
1	Heating up Rate	Calculagraph	≤15min (20°C to 100°C)	<input type="checkbox"/> Qualified
2	Temperature Fluctuation	Multipoint Detector	≤±0.3°C	<input type="checkbox"/> Qualified
3	Temperature Range	Thermometer	R.T.+5°C~105°C	<input type="checkbox"/> Qualified
4	Basic Function	Visual check	Valid	<input type="checkbox"/> Qualified
5	Appearance	Visual check	Pass	<input type="checkbox"/> Qualified
6	Withstand Voltage	Withstand 50Hz,1500V	Withstand 50Hz,1500V	<input type="checkbox"/> Qualified
7	Earth Leakage Current	Leakage Current Tester	≤0.75mA	<input type="checkbox"/> Qualified
8	Resistance	Ground Resistance Tester	≤100mΩ	<input type="checkbox"/> Qualified
9	Continuous Running Test	Visual check	48H without problem	<input type="checkbox"/> Qualified
Result				
Remarks				
QC:		Confirmer:		



Don't place any stuff on the power cable, hold the plug head properly when pulling the cable off from the socket.

The metal heated block can reach a high temperature during heating, probably leads to sample/liquid boiled out of tubes, which may cause injury, so it is forbidden to touch metal block by any part of your body during heating procedure.



Power off when you finish your work. Pull off the connector plug when there's long time no use of the Instrument and cover it with a cloth or plastic paper to prevent from dust.



Pull the connector plug from the jack at once in the following case, and contact the vendor:

- There is some liquid flowing into the Instrument
- Drenched or fire burned
- Abnormal operation: such as abnormal sound or smell
- Instrument dropping or outer shell damaged
- The function has obviously changed

1.3 Maintenance

The wells in the block should be cleaned by the dust-free cloth with alcohol to assure no pollution and good thermal conductivity between the wells and the tubes.

Please clean the stained instrument with a dust-free cloth.



Switch off and unplug power cord when cleaning/ disinfecting.

Don't allow any liquids or or detergent penetrate to the well.

Don't use any corrosive detergent to clean outside of equipment.

2. Brief Introduction

G100 dry bath incubator is a microcomputer-controlled device, which can be widely used in sample preservation and reaction, DNA amplification and electrophoresis pre-denaturation, serum coagulation, etc.

Features:

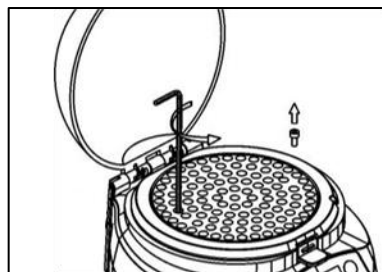
- 1 LED display with timer and temperature;
- 2 Display real-time temperature and thermostatic countdown time ;
- 3 The Blocks protect the samples from contamination;
- 4 Blocks are easy to replace for cleaning and sterilization ;
- 5 Built-in over-temperature protection device for more reliable use ;
- 6 Temperature deviation calibration ;
- 7 Buzzer will alarm after the operation is over

7.Troubles and Shooting

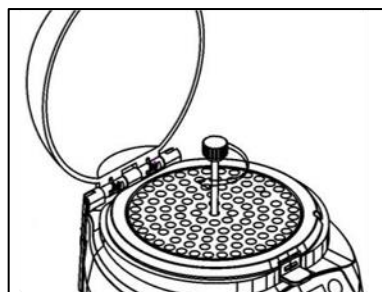
No.	Troubles	Causes	Shootings
1	No signals on the display after powers on	No power supply	Check the connection of power
		Broken fuse	Replace the fuse (250V 3A Φ 5x20)
		Broken switch	Replace the switch
		Others	Contact supplier
2	The actual and displayed temperatures are quite different	Broken sensor or bad block contact	Contact supplier
3	Temperature displayed “、”with a beeping alarm	Broken sensor or ambient temperature below 0 °C	Contact supplier
4	Block is not heated	Broken sensor	Contact supplier
		Broken thyristor	
		Broken heater	
5	The buttons don't work	Broken buttons	Contact supplier
6	“ERR1”is displayed	Sensor open circuit	Contact supplier
7	“ERR2”is displayed	Sensor short circuit	Contact supplier
8	“ERR3”is displayed	Over-temperature alarm	Contact supplier

6. Replacement of Blocks

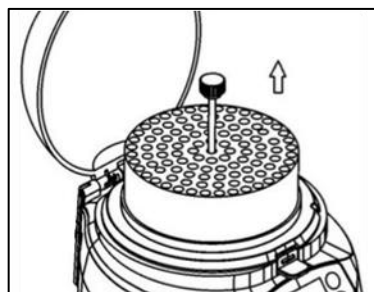
6.1 Screw out the two screws that fixing the block counterclockwise with an Allen wrench .



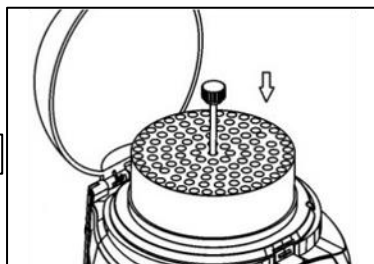
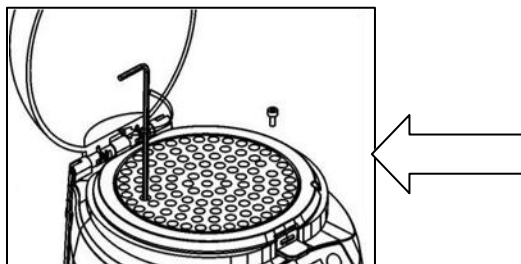
6.2 Screw the thread of M4 handle clockwise into the hole of the block to be replaced.



6.3 Pull up the handle and take out the block.



6.4 Screw out the handle and fix it on the another model to be replaced , then place it on the corresponding position of the instrument and fix the newly replaced block clockwise with wrench.



3. Product features

3.1 Working Condition

Ambient temperature: 5°C~35°C;

The relative humidity: ≤70%

Voltage: AC100-120V/200-240V, 50/60Hz

3.2 Basic Parameter

Model	G100
Temperature Range	R.T.+5°C~105°C
Heating up rate	≤10min (20°C to 105°C)
Temperature Control Accuracy	±0.3°C
Temperature Control Discrepancy@40°C	±0.3°C
Temperature Control Discrepancy@100°C	±0.3°C
Timer	0-99h59m
Temperature Display Accuracy	0.1°C
Max. Power	150W
Max. Temperature	105°C
Dimensions	160 x 176 x 121 mm
Net Weight	1.5Kg

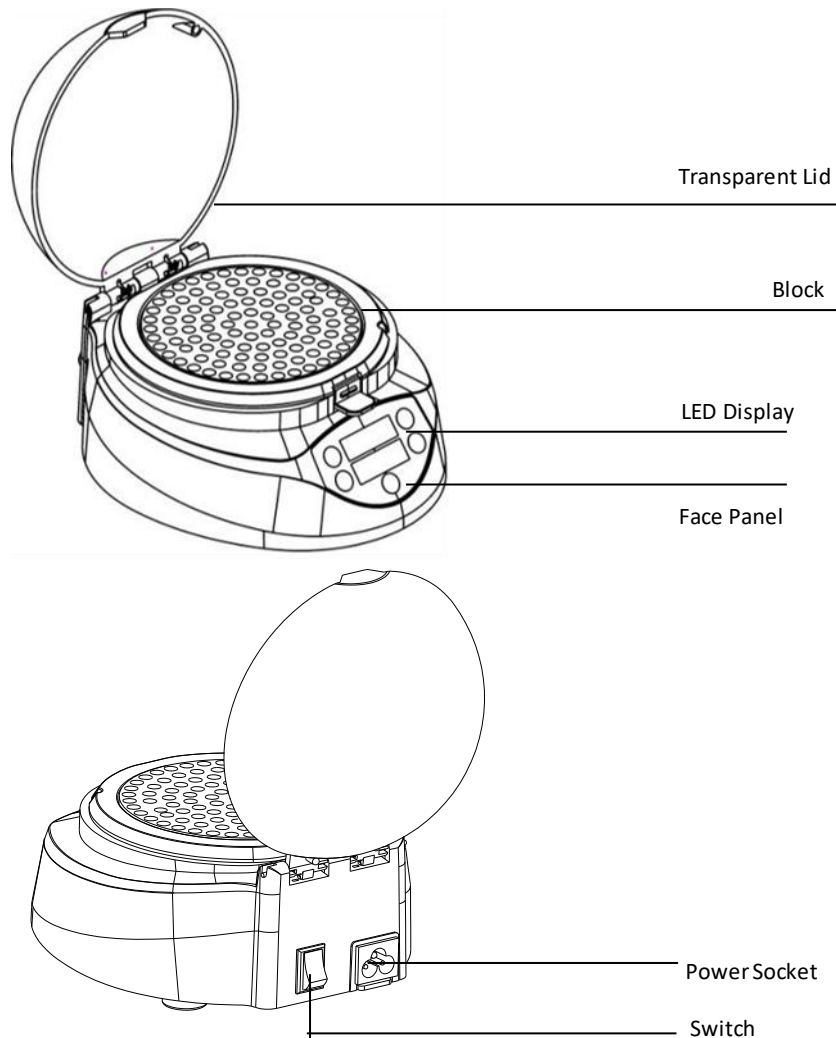
3.3 Optional Blocks



Type	Diameter	Capacity	Dimension(mm)
C1	0.2ml centrifuge tubes	96×0.2ml	Φ104.5x32
C2	0.5ml centrifuge tubes	58×0.5ml	Φ104.5x32
C3	1.5ml centrifuge tubes	39×1.5ml	Φ104.5x32
C4	2.0ml centrifuge tubes	39×2.0ml	Φ104.5x32
C5	5ml centrifuge tubes	18×5.0ml	Φ104.5x32
C6	0.5ml+1.5ml centrifuge tubes	24×0.5ml+30×1.5ml	Φ104.5x32
C7	Φ6mm	58×6mm	Φ104.5x32

4. Operating Instructions

This chapter introduces mechanical structure of G100 Dry Bath Incubator, the face panel and each button's functions and some preparations before power-on. Users should be familiar with the chapter before the thermal Shaker Incubator first use.




4.1 Structure



3) Press  and  simultaneously to enter the Calibration interface. Then Ad Jt is displayed (as shown in the below figure), indicating that the temperature calibration has been started. The displayed temperature is instant temperature, and the device will automatically heat up to 40°C.




Note: To ensure the accuracy of temperature calibration, users are advised to read the measured temperature at constant temperature for 20 minutes!

4) If the value of thermometer is 39.9 °C, press  or  to modify the displayed temperature to 39.9 °C, and press  to confirm the value.









5) Then the program will automatically heat up to the second calibration point, and repeat the above steps at the second calibration points (80 °C) to complete the data input.



After the calibration of the second point (80 °C) is completed, press the button  to confirm the input value. Then the calibration is over, the instrument can work normally after restarting.

Notes: If you want to exit temperature calibration during operation, just turn off the power switch.

2) After operation, press   or   can reset the temperature or time. Press  to run with last setting values directly.

During operation, press  to stop. Press it again to restart running.

5.3 Temperature Calibration

The instrument is calibrated before leaving the factory. But due to some reasons, there is a deviation between the actual temperature and display temperature, and the temperature error can be corrected as follows:

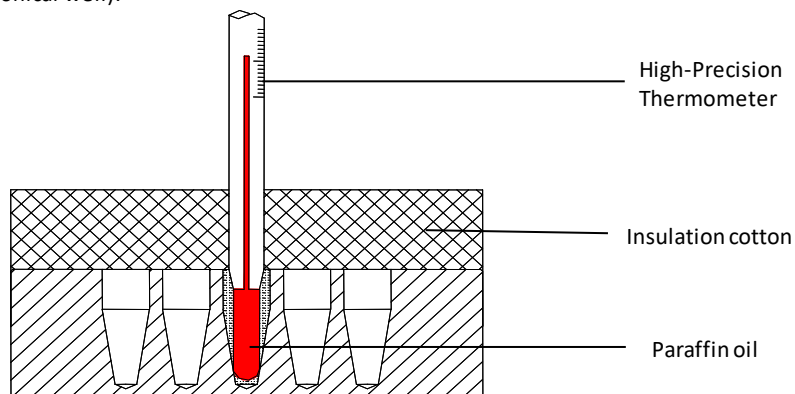
Note:

1. To ensure the accuracy of the temperature, two-point (40, 80) temperature synchronous linear calibration method was used in this instrument.
2. The temperature accuracy is $\leq \pm 0.5\text{ }^{\circ}\text{C}$ after two-point temperature calibration

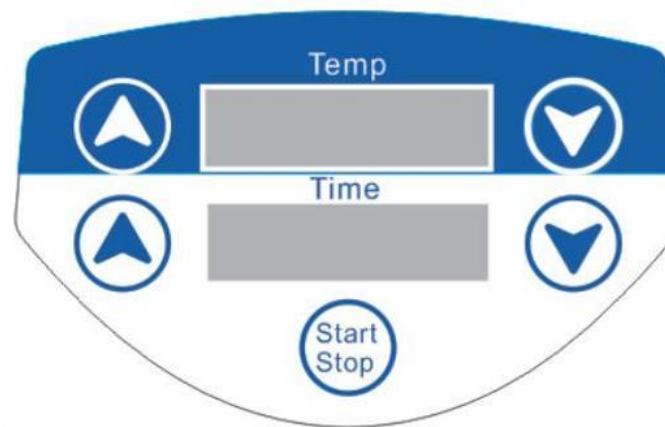
Notes: The temperature of the environment and block must be below $35\text{ }^{\circ}\text{C}$ to be calibrated.

The operation is as follows :



- 1) Turn on the instrument, please wait and make sure the displayed temperature below $35\text{ }^{\circ}\text{C}$.
- 2) Inject paraffin oil into one of the conical well, and then put one thermometer into this well (Make sure the precision of the thermometer should be within $0.1\text{ }^{\circ}\text{C}$ and the temperature sensing part should be absolutely immersed into the conical well).






4.2 Face Panel



4.3 The Buttons

  The buttons to set running time. The maximum time is 99 hours and 59 minutes.

  The buttons to set temperature. The maximum temperature is $105\text{ }^{\circ}\text{C}$.

 Start/Stop buttons. After setting the temperature and time, press the button to run. Press the button again to stop running during operation.



5.Operation Guide

5.1 Temperature or Timer Setting

1) Turn on the power, the instrument is initialized with the sound of beep;





2) About 1S later, the displayed "28.5" is the instant temperature (the temperature of the block is 28.5 °C). The displayed "00:35" is the last setting time (the running time is 35 minutes).



3) Press the buttons  or  to set temperature. As shown in the right figure, 40 °C is the last setting value, and the decimal digit flashing at the same time.






If the temperature needs to be set to 55.5°C, the operation is as follows :



Press  or  to change the decimal value from "0" to "5". Next press and hold , the flashing position will move to units digits, change the value from "0" to "5". Press and hold  again, the flashing position will move to tens digits, then change the value from "4" to "5". The temperature is set to be 55.5 °C.




If the time needs to be set to 01:20, the operation is as follows:

Press  or  to set. As shown in the right figure, 00:35 is the last setting time, and the rightmost digit flashing at the same time. Press  to change the rightmost digit from "5" to "0".





Next Press and hold , the flashing position will move to third position, change the value from "3" to "2". Press and hold  again, the flashing position will move to second digit, then change the value from "0" to "1". The time is set to be 01:20. (1 hour and 20 minutes).



4) Press , the newly setting values will be saved automatically and the instrument starts to run.

Notes: (1) Time is set to 00:00 means that the running time is not limited.
(2) The newly setting values will successfully confirm and save when the cursor stops flashing.

5.2 Start and Stop

1) Press  to start up directly. Or after setting the temperature and time setting, press , the instrument starts heating up with the beep sound. The displayed value is instant temperature, the decimal digit flashing regularly during heating up. When the temperature is reached, it stops flashing, ":" of the time screen starts flashing and the countdown starts.



When the countdown is over, the instrument stops running, the buzzer sounds an alarm, the displayed temperature is instant temperature of the block, and the displayed time is the setting value.