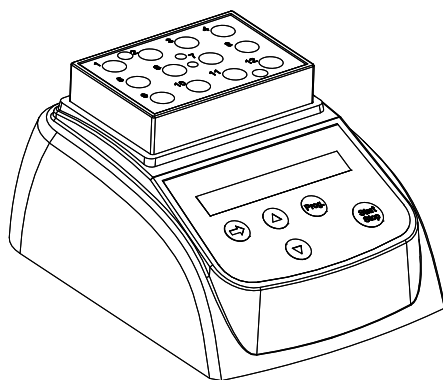


INCUBATOR

Operations Manual

Version 1.0



Foreword

Thank you for purchasing our Products: INCUBATOR, This Manual for users contains function and operation of the Instrument. In order to use the instrument properly, please read this manual carefully before using the Instrument.

Opening Check

Please check the Instrument and Appendix with the packing list when you first open the instrument packing case. If you find there is something wrong with the Instrument and the Appendix, do contact the vendor or the producer.

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1 Introduction

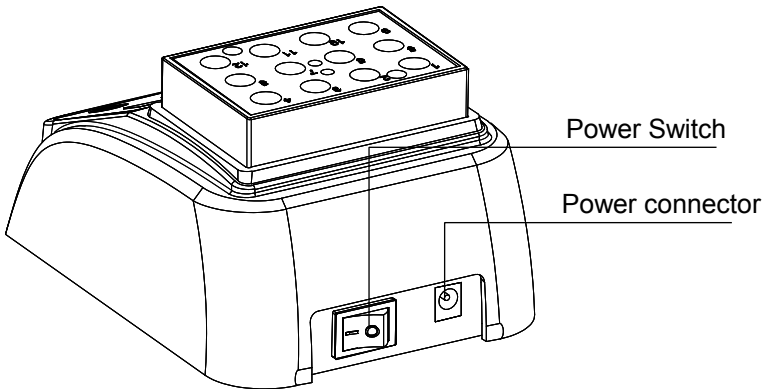
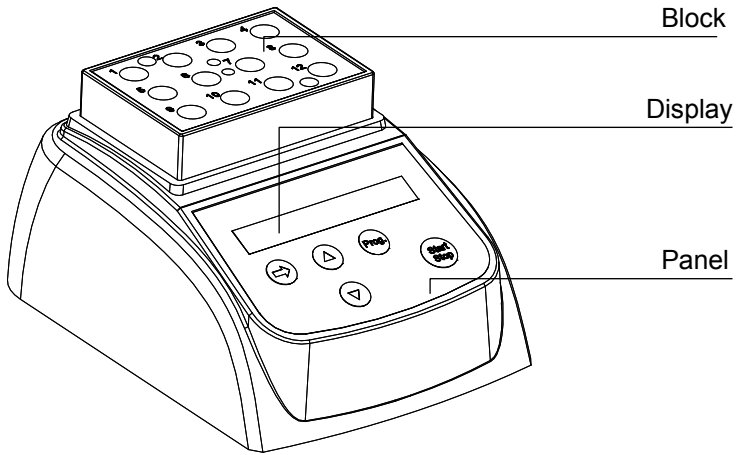
This Incubator designed for workstations in training and research laboratories in the fields of bioscience, medicine and chemistry.

Before starting up this incubator for the first time, please read the rest of this operations manual.

1.1 Delivery package

Incubator	1pcs
Adapter	1pcs
Wrench	1pcs
Operations manual	1pcs
Certification	1pcs

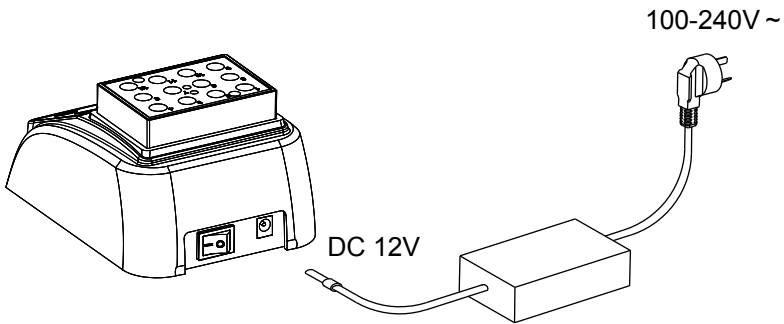
1.2 Structure Description



1.3 Installing the device

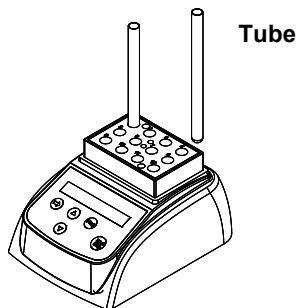
1.3.1 Place the incubator onto a level , horizontal surface.

1.3.2 Insert the column connector of the adapter to power connector of the device ,and insert another connector of the adapter to mains power supply.



1.3.3 Power on the main switch. The incubator is ready to operate when the display becomes visible.

1.3.4 Put the test tube into the block.



2 Technical data

Model	INCUBATOR
Power supply	DC12V
Power	35 W
Temperature range	RT+5 °C ~ 80 °C
Timing range	1sec ~ 999sec or 1min ~ 999min
Accuracy of the temperature	≤± 0.5°C
Display accuracy	0.1°C
Heating time (from 20 °C to 80 °C)	≤12min
Ambient temperature	5°C ~ 35°C
Dimensions (W×D×H)	110mm×150mm×80mm
Weight	0.5 kg

3 Safety precautions



This product is a normal and an indoor Instrument.



Read the Manual carefully before operation, The expert of wiring equipment can operate this Instrument.



The operator should not open or repair the Instrument by himself, which will result in losing the qualification of repair guarantee or occur accident. If there is some wrong with the Instrument, the company will repair it.



The Instrument should be put in the place of low temperature, little dust, no water and no sun or strong lamp. What's more, the place should be good aeration, no corrosively gas or strong disturbing magnetic field, far away from central heating, camp stove and other hot resource. Don't put the Instrument in wet and dusty place.



Mains switch is on the rear of the device, push "I" to power on the device, and push "O" to power off the device.



Power connector is on the rear of the device, DC12V input, inside is "+", Outside is "-".



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.

4. Operation guide

4.1 Control elements

START/STOP----for start or stop the procedure

PROG.-----select various programs

▲▼ -----for setting the temperature and the time

➡ -----remove the cursor

4.2 Create a new program

press “PROG.” key to select various programs, from P1 to P9 default. If select P8,then press ➡ key to remove the cursor ,press ▲▼ key to set new value, we can set, first temperature ,first timing time ,second temperature and second timing time . The sign “ ■ ” is first temperature and first time ,the sign “ ■ ” is second temperature and second time.

P8 50.0 003min ■

First temperature and time

P8 40.0 006min ■■

Second temperature and time

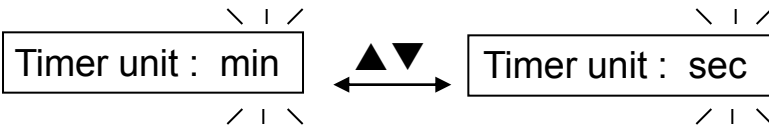
About 8 seconds, the curse will disappear, exit setting interface.

P8 36.2 °C NOTOK

➡ show room temperature

4.3 Min or sec

At setting interface ,the timer unit can select one of the Minute or Second. Press ➡ key for 2 seconds continuously.

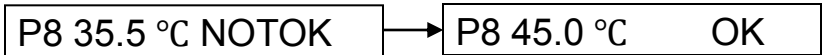


Then press ▲▼ to select min or sec, then press ➡ key to confirm.

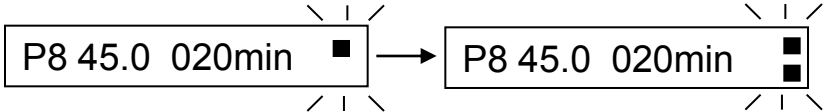
4.4 Run and Stop

4.4.1 Press “PROG.” key to select the program.

4.4.2 The instrument start to heat automatically according to the previous set temperature, it shows “NOTOK” at the display. When it reach t he target temperature, it shows “OK” at the display. Then pressing the START/STOP key to run,



When the first temperature over ,it will run second temperature autom-atically.



4.4.3 When the second time reach 0, the buzzer alarm “du. du. du... ..” and the display appear PROGRAM END. The controller hold the second temperature. Pressing any key to return, and pressing the START key to run again.

PROGRAM END



Pressing any key

P8 45.0 °C OK

Press START to run again

4.4.4 Press “START/STOP” key for 1 seconds continuously to stop the program.

4.5 Temperature calibration

The temperature of the instrument has been calibrated before it is sold out. But if there is deviation between the actual temperature and the displayed temperature due to some reasons, you can do as follows to correct the error.

Notes: The Instrument uses double temperatures adjustment to ensure its veracity. This means it is linearly calibrated on 40°C and 80°C two points. The temperature veracity will be within $\pm 0.5^\circ\text{C}$ after the double temperature adjustment.

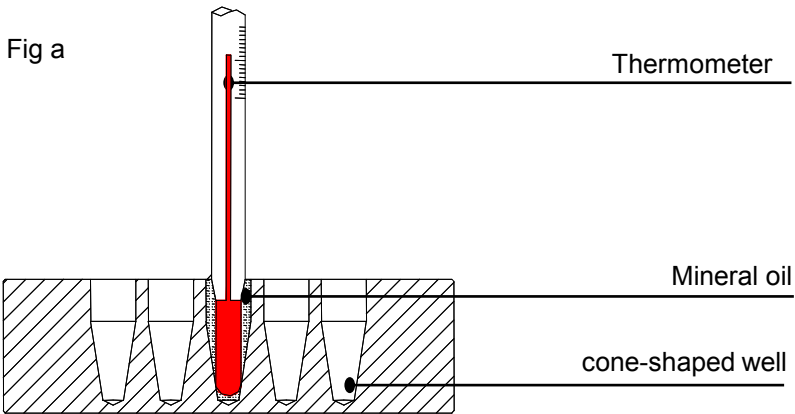
The circumstances should be lower than 35°C.

Adjustment methods as follows:

4.5.1 After the startup of the Instrument, it enters waiting interface. Make sure the temperature in display is below 35°C. If the temperature is higher than 35°C, you should wait until the temperature is below 35°C.

4.5.2 Inject olefin oil into one of the cone-shaped wells, and then put a thermometer into this well (Make sure the precision of the thermometer should be within 0.1°C and the temperature ball should be absolutely immersed into the cone-shaped well). Seeing from Fig a.

Note! The temperature can be corrected only after the instrument reaches the set temperature for 20 minutes to ensure the precise of the temperature.



4.5.3 Pressing “▲”and“▼” key simultaneously, practical temperature shows 20.5, and rise to 40.0 at once, at the same time the sign “*” flicker ceaselessly. When the practical temperature reach 40.0, the sign “ADJ” and “*” flicker ceaselessly together.

4.5.4 After 20 mintues, the actual temperature of Thermometer is 38.8°C, then pressing “▲”or “▼”key to amend the display value to 38.8, then pressing “start” key to confirm.

Then rise to 80.0°C automatically and “*” flicker ceaselessly.

4.5.5 When the practical temperature reach 80.0,

the sign “ADJ” and “*” flicker ceaselessly together.

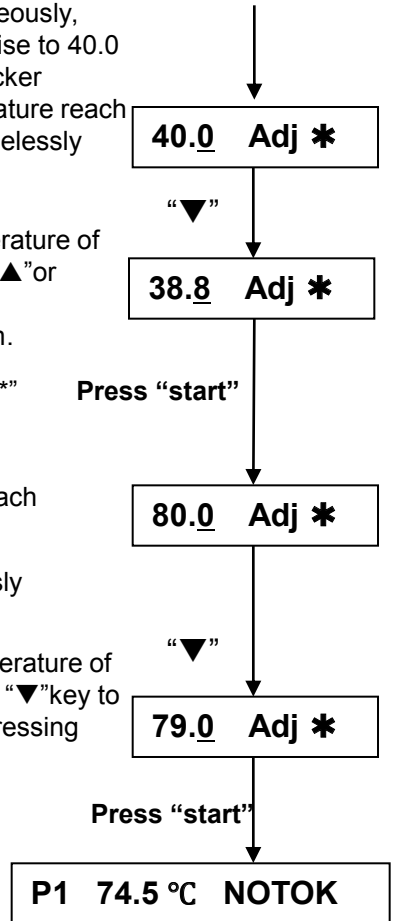
4.5.6 After 20 mintues , the actual temperature of Thermometer is 79.0°C. pressing “▲”or “▼”key to amend the display value to 79.0, then pressing “start” key to confirm.

4.5.7 Then the screen returns to the display as the right chart.

After Temperature calibration, the temperature displayed is the same with the practical temperature of block.

Note! During Temperature calibration, press “▲”and“▼”key simultaneously to cancel the calibration. The system keeps the former calibration.

So don't press “▲”and “▼”key simultaneously unless need calibrate the temperature!



5 Maintenance and cleaning



The well in the block should be cleaned by the cloth stained with alcohol to assure good heat translation between the block and the test tube and no pollution. If there are smudges on the Instrument, clean them with cloth.

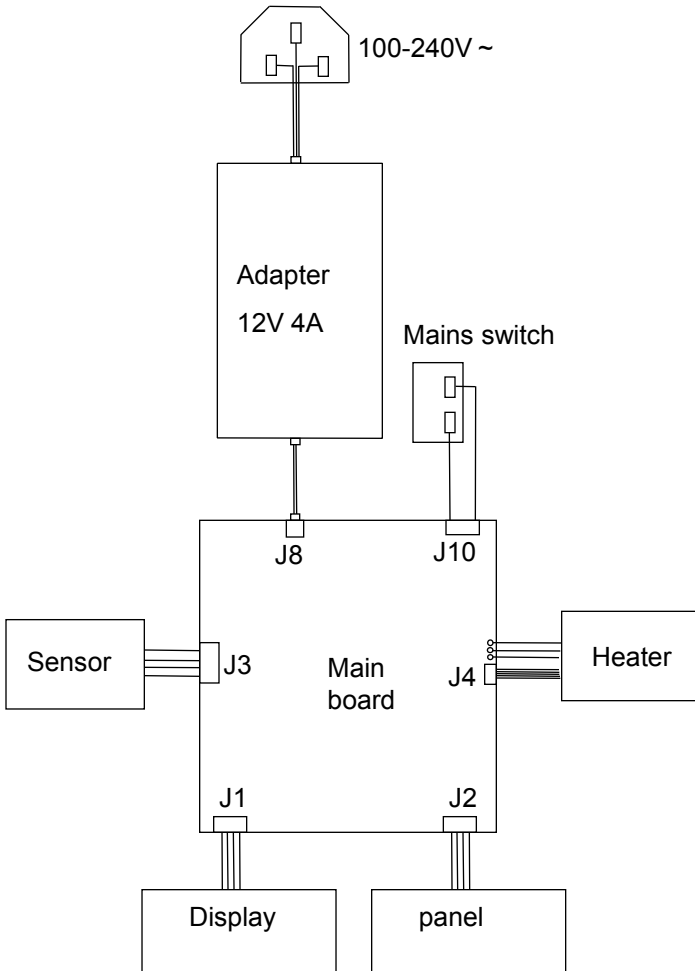


Power off when cleaning the Instrument.
When cleaning the well, don't drop the cleaning liquid in the well.
Corrosive cleaning liquid is strongly prohibited.

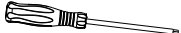
6 Troubleshooting

Error	Cause	Solution
No display	No main power connection. Power failure.	Plug in mains cable on both sides. Check the mains fuse
“OPEN” in the display with the alarm of “du...”	Broken sensor or loose contact of the module	Contact service.
“SHO” in the display with the alarm of “du...”	The sensor is short	Contact service.
No heating of the block	Heater failure	Contact service.
Press invalid	Keyboard failure	Contact service.

Annex 1 Wiring Diagram for Incubator



Packing List

No	Item	Type	QTY
1	Incubator	INCUBATOR	1
2	Adapter	12V 4A	1
3	Wrench		1
4	Operations manual		1
5	Certification		1

Hygiena

**941 Avenida Acaso
Camarillo, CA 93012
805-388-8007**