MiniT-H2C/MiniT-H3

Incubator

Operation Manual

Version 1.0
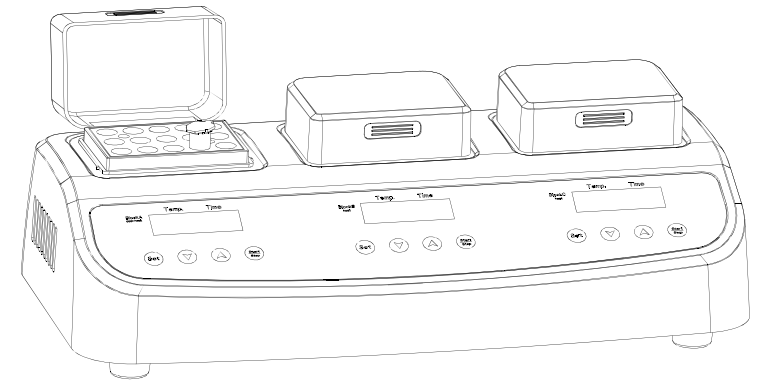
ALLSHENG

HANGZHOU ALLSHENG INSTRUMENTS CO., LTD

Foreword

Thank you for purchasing our Products: MiniT-H2C/MiniT-H3 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.
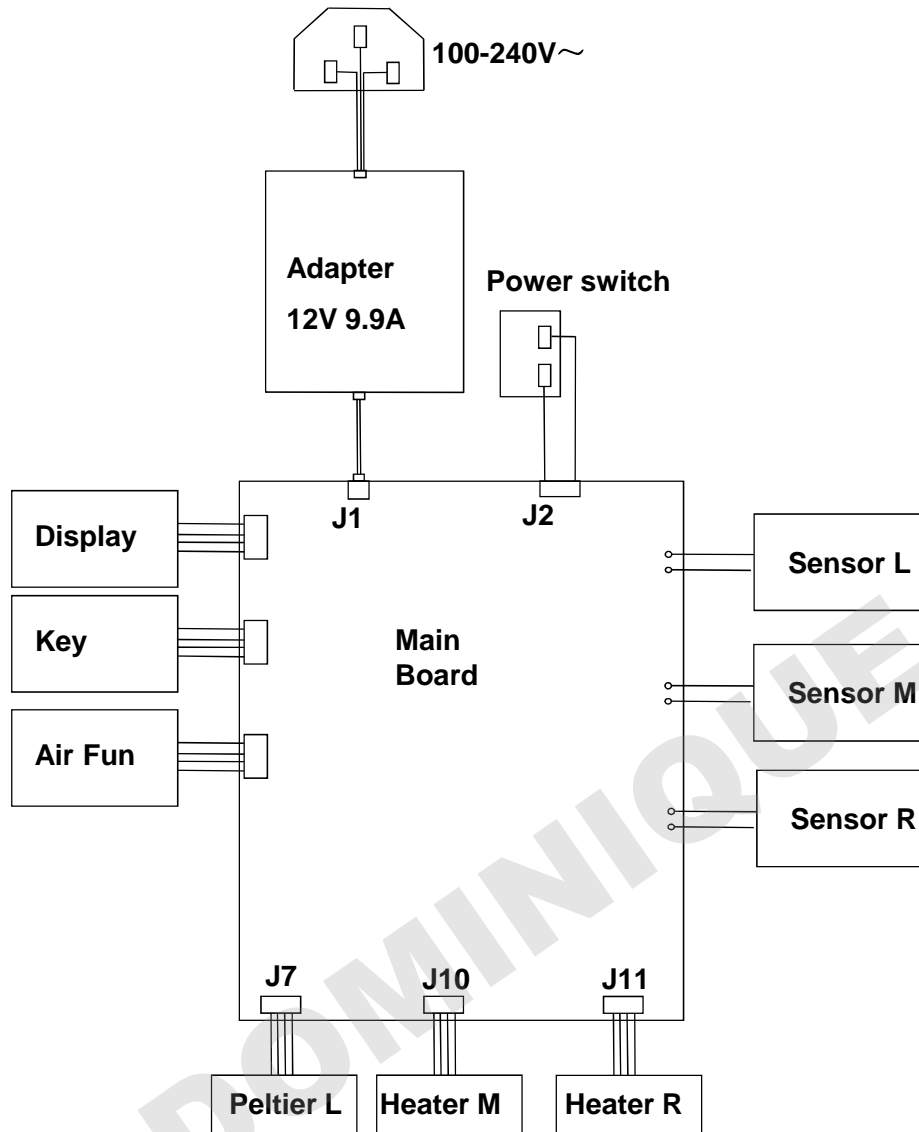
Opening Check

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.

Packing List

No.	Item	Type	QTY
1	Incubator		1
2	Adapter	DC12V 120W	1
3	Wrench		1
4	Operation manual		1
5	Quality Certification		1

Annex 1 Wiring Diagram for Incubator MiniT-H2C

Contents

1 Introduction

This incubator is controled by mircrocomputor.Widly apply in the field of sample preservation and reaction, DNA amplification and electrophoresis, degeneration, serum solidification, etc.

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

1.1 Packing List

Incubator	1
Adaptor	1
Wrench	1
Operation Manual	1
Quality Certification	1

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 smutches 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. Main board is broken.	Plug in mains cable on both sides. Back to factory or contact service
"Err001"displayed and alarm	Temperature over 105℃	Power off or change main board
"E005" displayed and alarm	Open circuit of sensor	Back to factory or contact service
"E006" displayed and alarm	Short circuit of sensor	Back to factory or contact service
No heating or cooling of the block	Peltier or sensor broken	Back to factory or contact service.
Press invalid	Keyboard failure	Back to factory or contact service

4.5.3 Press "▲"and"▼" key simultaneously on any block, instrument shows calibration interface, top left sign " ¦ " means it is calibration at 5.0℃ for Block A area.Other two block area show ambient temp. Block A area temperature control at 5.0℃. Time show "Adj". "Adj" twintle regularly after temp reach 5.0℃. Same time not input any value on Block B or Block C.

4.5.4 After 20 mins constant temperature,"Adj" stop twinkle and decimal point of temp begin. Read value on thermometer, such as the value is 4.9℃,then press "▲" or"▼" to amend display value to 4.9℃. Press "Start/Stop" to confirm.

4.5.5 After confirmation by press "Start/Stop", all of three block area will heating to 40.0℃ automaticly and top left show "2".

4.5.6 After temperature arrive at 40.0 ℃ "Adj" twinkle regularly.

4.5.7 Ater 20 mins constant temperature,Adj" stop twinkle and decimal point of temp begin. Read value on thermometer of 3 block, such as the value is 39.8, 39.5,39.0 then press "▲" or"▼" to amend diplay value same as above. Press "Start/Stop" to confirm.

4.5.8 After confirmation by press "Start/Stop", all of three block area will heating to 99.9℃ automaticly and top left show "3".
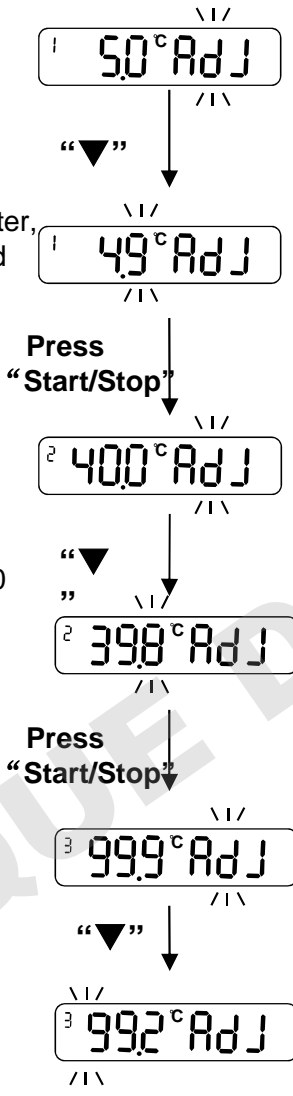
4.5.9 After temperature arrive at 99.9 ℃ "Adj" twinkle regularly.

4.5.10 Ater 20 mins constant temperature,Adj" stop twinkle and decimal point of temp begin. Read value on thermometer of 3 block, such as the value is 99.2,99.0,99.1 then press "▲" or"▼" to amend diplay value same as above. Press "Start/Stop" to confirm.
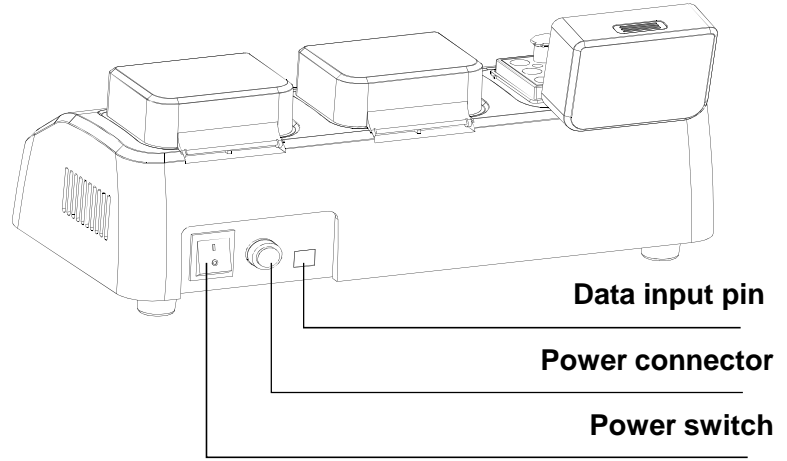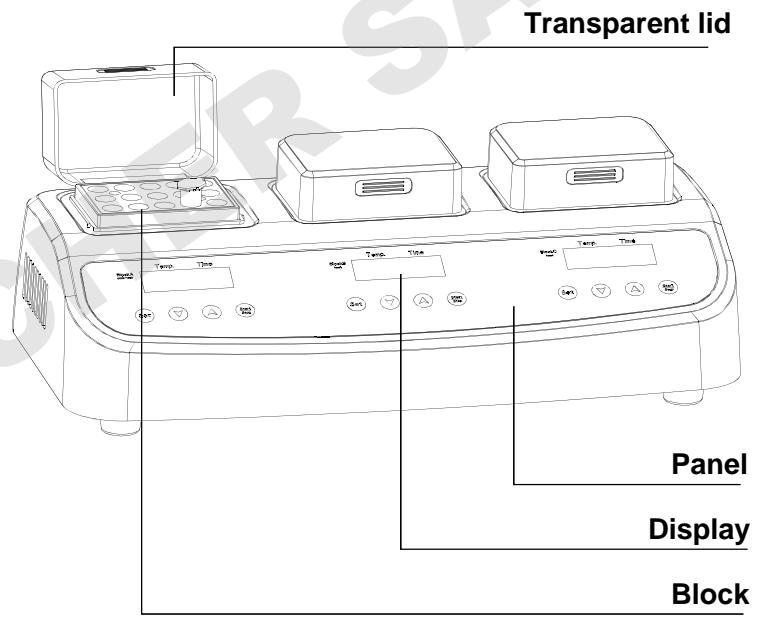
4.5.11 Screen back to start display interface and re-control temperature again to aim temp.

Note: 1. Input each data show by thermometer to every block. Only both 3 blocks' calibration ending on same temperature. Next calibration on another temperature can be done.

2.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!

¦ 5.0℃ Adj

"▼"

¦ 4.9℃ Adj

Press "Start/Stop"

² 40.0℃ Adj

"▼"

² 39.8℃ Adj

Press "Start/Stop"

³ 99.9℃ Adj

"▼"

³ 99.2℃ Adj

1.2 Structure

Transparent lid

Panel

Display

Block

Data input pin

Power connector

Power switch

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(100~240V).

100～240V

DC 12V
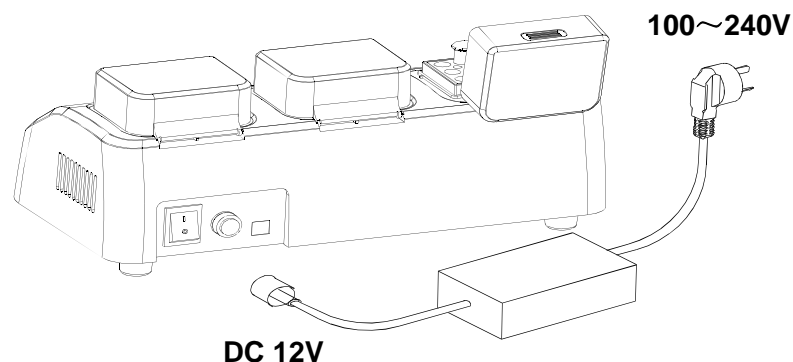
1.3.3　Power on the main switch. Current temperature will be displayed.

1.3.4　After temperature reach the aim one. Put the test tube into the block,

then put on the lid.

4.5 Temperature calibration

Temperature of the instrument has been calibrated before out of factory.But if there is deviation between the actual temperature and the displayed temperature due to some reasons, you can do as follows to calibration.

Notes: The Instrument uses three temperatures adjustment to ensure its veracity. This means it is linearly calibrated on5℃, 40℃ and 99.9℃ three points. The temperature veracity will be within ±0.5℃ after the three temperature adjustment.

（MiniT-H3 is calibrated on 40℃and99.9℃ two point linearly calibration）
Temperature of circumstances and both 3 blocks should be lower than30℃.

Notice:Calibration have been done before factory delivery,only do this when necessary.

Adjustment methods as follows:

4.5.1 Power on the instrument, and emerge the waiting interface
4.5.2 Inject mineral oil into one of the cone-shaped wells of each block, and then put thermometer into thess wells (Make sure the precision of the thermometer should be within 0.1℃and the temperature ball should be absolutely immerged into the cone-shaped well). Seeing from Fig a.
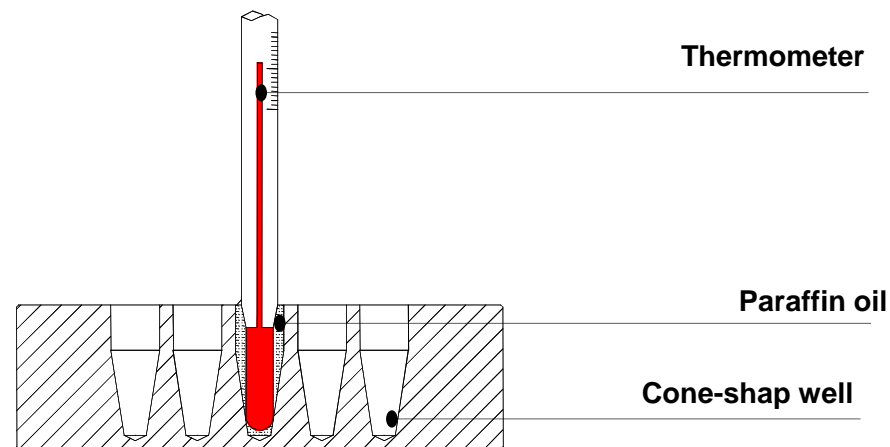
Thermometer

Paraffin oil

Cone-shap well

Fig a.

4.4 Run and Stop

4.4.1 After temperature and time settle down, instruments heating automtacticly. Press"Start/Stop" after reach the setting value. Same time, constant temperature begin timing and " ▪ "twinkle in the up right.
Note:Decimal point twinkle regularly stand for instrument is still in heating process. Press "Start/Stop" instruments will count down after a constant temperature.
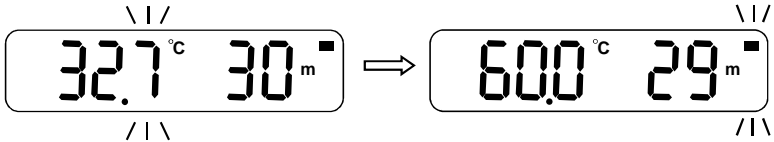
4.4.2 It will stop after long press "Start/Stop" 2s during instrument running . Press this key again, then re-start.

4.4.3 End of the timing, buzzer alarm 5 times. Temperature is setting value(Factory default mode" On ") Time is shown as" End "

4.4.4 End of instrument running, it shows as ending interface. Press any key to back program interface.

2 Technic data

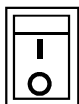| Model / Parameter	MiniT-H2C			MiniT-H3		
Block	Block A	Block B	Block C	Block A	Block B	Block C
Temeperature range	0°C~99.9°C	Room temperature +5°C ~ 99.9°C				
Ambient temperature	5°C ~ 30°C					
Heating and cooling time	≤25min (from 20℃ to 0℃)	≤20min (from25℃ to 99.9℃)				
Block quantities	3			3		
Timing range	1 ~999 hrs 1 ~999 min 1 ~999 sec					
Power supply	DC12V					
Power	120W					
Temperature accuracy	≤ ±0.5 °C					
Temperature Uniformity	≤ ±0.5 °C					
Display accuracy	±0.1°C					
Dimensions（W×D×H）	360mm×180mm×150mm					
Weight（kg）	3.0					

NOTE:This Dry Bath can reach to 0℃ when the ambient temperature less than 25℃ and can reach to 4℃ when the ambient temperature less than 30℃.

3 Safety warning

⚠ This product is for indoor use.

⚠ Read the Manual carefully before operation, Device must be used by skilled personnel with the appropriate trainning.

⚠ The operator should not open or repair the instrument by yourself, this will result in losing the qualification of repair guarantee or occur accident.If there is some wrong with the instrument, factory 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 g ood aeration, no corrosively gas or strong disturbing magnetic field, far a way from central heating, camp stove and other hot resource. Don't put t he Instrument in wet and dusty place.

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

⚠ Power connector is on the rear of the device, DC12V inp ut, 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 Operation and key

Start/Stop----start or stop the program

Set-------------set the program

▲ ▼ ----------------set temperature and time

note: Panel control field correspondence with each block

4.2 Mode setting

Press "Set" and "▼" at same time in any block field. Powen on instrument and there is "On" show in screen. Means temperature is setting temperature after instrument run.(This is default setting out of factory). Press "▲" or "▼" to change mode，if display "OFF" means temperature down to ambient temperature automatic after run. It will exist setting mode 3S later.

 ⟹ Means temperature is setting temperature after instrument run

 ⟹ Means temperature down to ambient temperature automatic after run
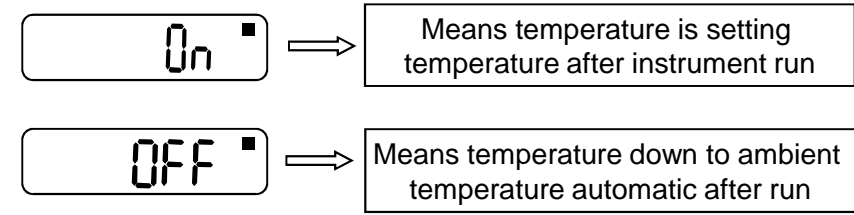
4.3 Temperature and time setting

Power on instrument, Display glitter 3 times and with voice"di", instruments go into initialization status. Press"Set"Key, temperature is glitter,then press "▲" or "▼" to change the temperature. Keep press "set" time is glitter, then press "▲" or "▼" change time.Continue press"Set"unit of time begin to glitter, press "▲" or "▼" to change time unit（"h" stands for hour,"m" stands for minute,"S" stands for second). Press"Start/Stop" to confirm and exist setting mode or just wait 3 seconds , it will exist automatic.

Note:Users can long press " ▲ " or " ▼ " to change the setting value.

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