MiniB-1

Biological Indicator Incubator

Operations Manual

Foreword

Thank you for purchasing our Products: MiniB-1 biological indicator 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	MiniB-1	1
2	Adapter	24V 2A	1
3	Operations manual		1
4	Certification		1

Contents

1 Introduction

The unit is designed for single temperature incubation of biological indicators. Self-contained biological indicators consist of bacterial spores inoculated onto a paper carrier which is placed into a thermoplastic vial that servers as a culture tube. A small glass ampoule containing sterile culture medium and color indicator is also contained in the vial.

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
Operations manual	1pcs
Certification	1pcs

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.	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.
"SHORT" 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.

4.5.3 Pressing "π"and"θ" 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 minutes, the actual temperature of Thermometer is 38.8℃, then pressing "π"or "θ"key to amend the display value to 38.8, then pressing "start" key to confirm.

Then rise to 100.0℃ automatically and "*" flicker ceaselessly.

4.5.5 When the practical temperature reach 100.0,the sign "ADJ" and "*" flicker ceaselessly together.

4.5.6 After 20 minutes，the actual temperature of Thermometer is 99.0℃. pressing "π"or "θ"key to amend the display value to 99.0, then pressing "start" key to confirm.

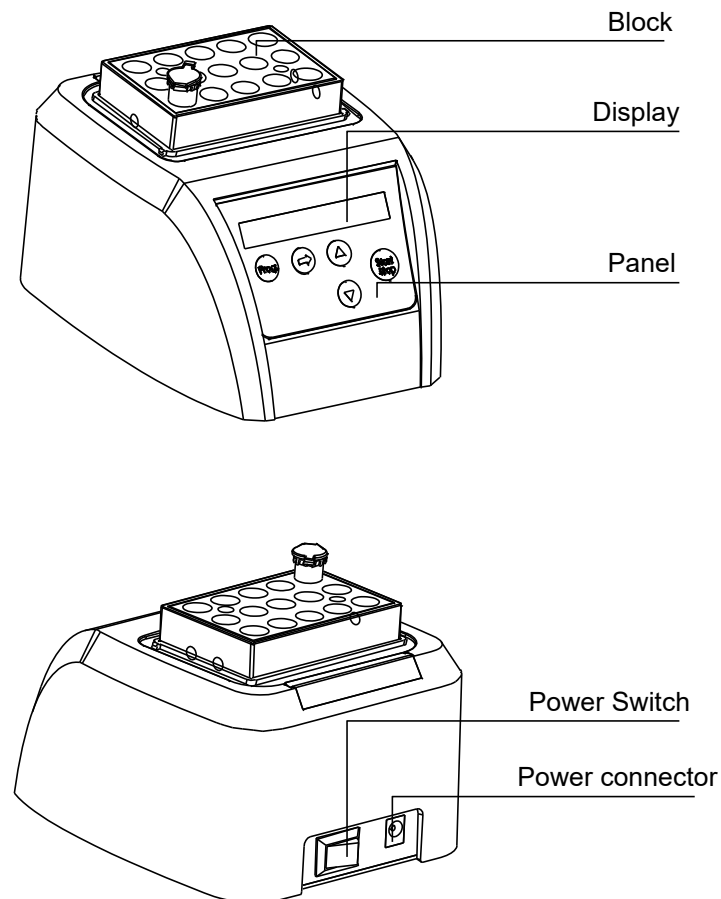4.5.7 Then the screen returns to the display as the right chart.

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

Note! During Temperature calibration, press "π" and "θ " key simultaneously to cancel the calibration. The system keeps the former calibration.
**So don't press "π"and "θ"keysimultaneously unless need calibrate the temperature!**

40.0   Adj ⏻

"θ"

38.8   Adj ⏻

Press "start"

100.0 Adj ⏻

"θ"

99.0   Adj ⏻

Press "start"

P1   74.5 ℃   NOTOK
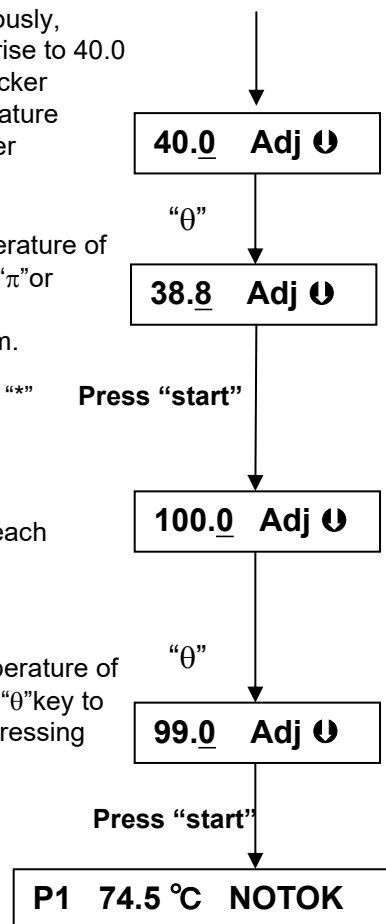
1.2 Structure Description

Block

Display

Panel

Power Switch

Power connector

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~

DC 24V
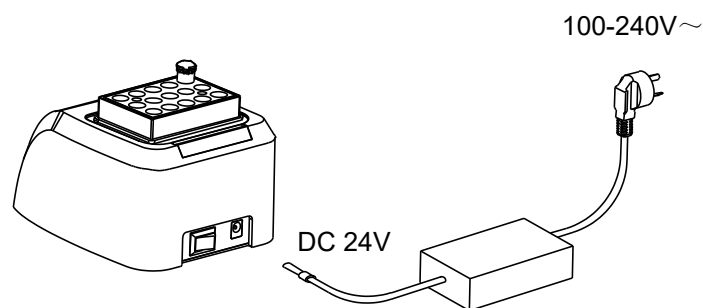
1.3.3 Power on the main switch. The incubator is ready to operate

when the display becomes visible.

1.3.4 Put the test tube into the block, then put on the lid.

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℃ and 100℃ two points. The temperature veracity will be within ±0.3℃ after the double temperature adjustment.
The circumstances should be lower than 35℃.
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℃. If the temperature is higher than 35℃, you should wait until the temperature is below 35℃.
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℃and the temperature ball should be absolutely immerged into the cone-shaped well). Heat insulation material is needed on the block to separate it from the circumstance. 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.
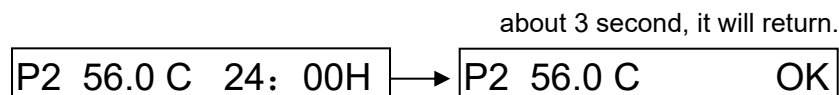

Fig a

Thermometer

Adiabatic Board

Mineral oil

cone-shaped well
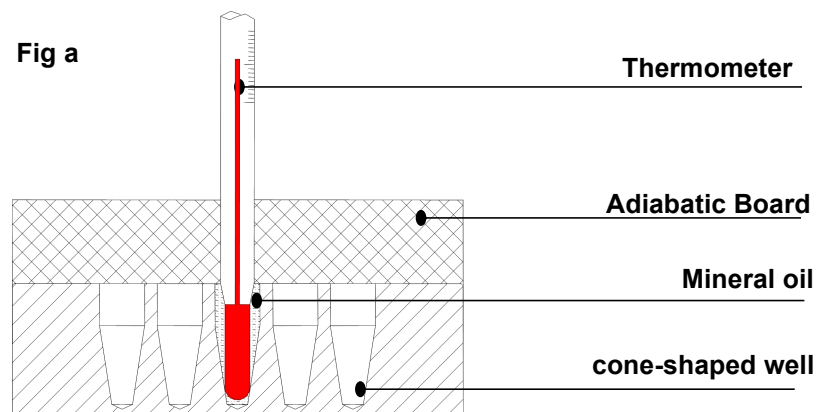
4.4 Run and Stop

4.4.1 Press "PROG." key to select the program, you can select P1,P2,P3,P4,P5,P6,P7,P8 and P9.
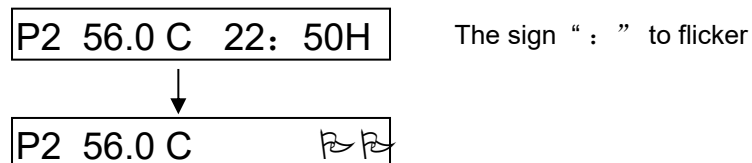
4.4.2 The instrument start to heat automatically according to the previous set temperature, it shows "XX" at the display. When it reach the target temperature, it shows "OK" at the display.

P2 35.5 C XX	→	P2 56.0 C OK
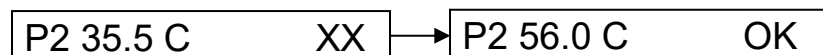
4.4.3 When you press "PROG." key again , It will display the timing time too.

about 3 second, it will return.

P2 56.0 C 24：00H	→	P2 56.0 C OK

4.4.4 Press "Start/Stop" key, the program start to count down.

| P2 56.0 C 22：50H | The sign " ： " to flicker

↓

| P2 56.0 C   ☞☞ |

When the time count down to "00:00", it will display "☞☞" ,and the buz -zer alarm "du. du." 2 voices. If the program P8 is over , the buzzer will alarm "du.du. …du." 8 voices, and so on.

4.4.5 Press "START/STOP" key for 2 seconds continuously to stop the program.

4.4.6 All programs P1,P2,P3….and P9 are separated, you can run any program when you need.

2 Technical data

Model	MiniB-1
Power supply	DC24V 2A
Temperature range	RT+5 ℃ ～ 100 ℃
Timing range	1min ～ 99h59m
Accuracy of the temperature	≤± 0.3℃
Display accuracy	0.1℃
Heating time (from 25 ℃ to 56℃)	≤6min
Ambient temperature	5℃ ～ 35℃
Dimensions（mm）	107×162×110mm
Weight	0.8 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 connectoris on the rear of the device, DC24V 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

πθ ----------------for setting the temperature and the time

➡ ----------------remove the cursor

4.2 Setting the timing time

press "PROG." key to select various programs, from P1 to P9 default. If select P2,then press ➡ key to remove the cursor ,press πθ key to set timing time ,

```
P2  56.0C  12：30H
```

```
P8  56.0C          OK
```

About 3 seconds, the curse will disappear, exit setting interface.

4.3 Setting the temperature

The default of the temperature is 56.0℃,if you need another temperature, you can press "PROG." key and "π" key simultaneously. Then come in the bellow interface.

```
SetTemp:    56.0C
```

then press ➡ key to remove the cursor, and press πθ key to set the temperature you need. About 5 seconds, the system confirm the new temperature value, and exit the setting interface.