Comfy Dry Bath Incubator

Operation Manual

PREFACE

Thanks for choosing Comfy Dry Bath Incubator. This operation manual describes functions of the instrument. To ensure that you could operate the instrument in a correct way, please read the manual carefully before using it.
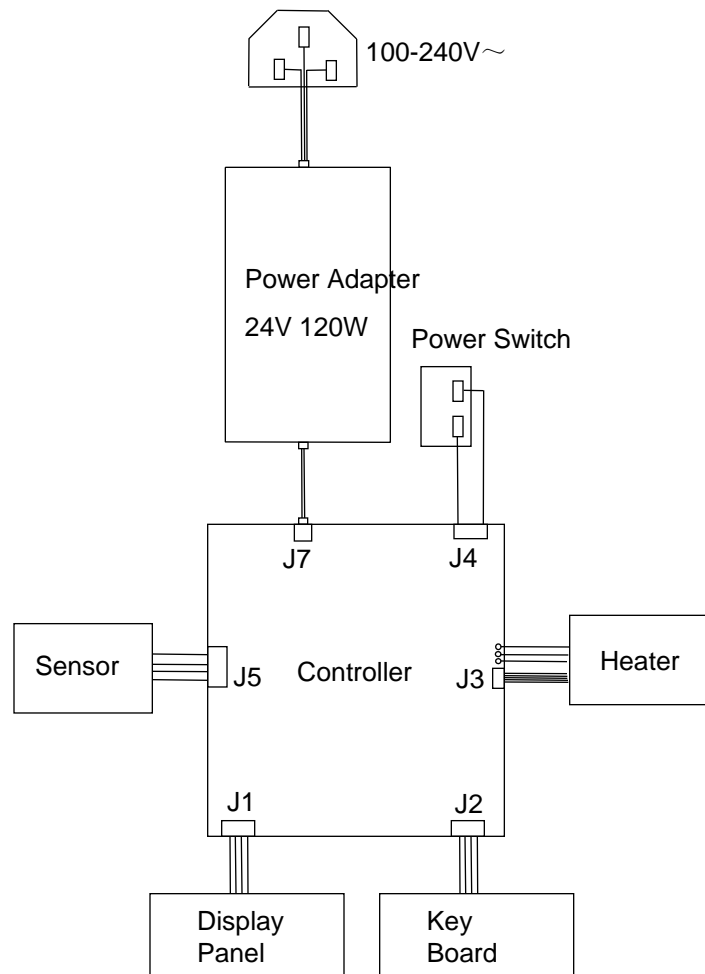
OUT OF BOX AUDIT

At the first time of opening the packing, please check the instrument and appendix with the packing list. If anything does not match with the packing list, please contact with the supplier.

PACKING LIST

serial	description	type	quantity
1	Instrument	CDBI-24	1 set
2	Power Adapter	DC24V/120W	1 piece
3	Operation Manual		1 piece
4	Warranty Card		1 piece

Appendix 1

Wiring Diagram of Comfy Dry Bath Incubator

CONTENTS

1 Introduction

Comfy Dry Bath Incubator is best designed instrument which is microprocessor-controlled. It is widespread used for samples of the preservation and reaction, DNA amplification, foreseeability of electrophoresis and so on.

Please do read this operation manual carefully before using the instrument.

1.1 Instrument Content

Comfy Dry Bath Incubator	1 set
Power Adapter	1 piece
Operation Manual	1 piece
Certificate of Quality	1piece

5 Maintenance

⚠ Please make periodic cleaning for wells in block and the surface of the instrument with alcohol mull.

⚠ Power off before cleaning the instrument. It is forbidden to decant cleaning fluid into the well of block.

6 Failure Analysis and Trouble Shooting

Phenomenon	Possible Causes	Processing Procedure
No Signals on the display when power on	No power Broken switch Broken Controller	Check the power Exchange the switch Contact with the seller
"open1" or "open2" in the temperature display with the alarm of beep	"open1": block temperature sensor is broken "open2": lid temperature sensor is broken	Contact with the seller
"short1" or "short2" in the temperature display with the alarm of beep	"short1": block sensor is broken "short2": lid sensor is broken	Contact with the seller
"err1" or "err2" in the temperature display with the alarm of beep	"err1": block sensor is broken "err2": lid sensor is broken	Contact with the seller
Press invalid	Broken film switch	Contact with the seller

4.5.3 Press "▲" and "▼" simultaneously under no operating status. The program turns to the right interface. The program auto controls temp. to 40°C, the sign"✳" flickers ceaselessly. When it achieves 40°C, cursor arises under decimal, "Adj" and "✳" flicker ceaselessly together.

40.0   Adj ✳

"▼"

4.5.4 After 20 minutes, the temperature value of thermometer is 38.8°C, press "▲"or "▼" to amend the display value to 38.8. Press "Start" to confirm.

38.8   Adj ✳

Program saves the value and temperature rises to 100°C automatically. The sign "✳" flickers ceaselessly.

Press "start"

4.5.5 When temperature achieves 100°C, cursor arises   under decimal, "Adj" and "✳" flicker ceaselessly together.

100.0 Adj ✳

"▼"

4.5.6 After 20 minutes, the temperature value of thermometer is 99.0°C, press "▲"or "▼" to amend the display value to 99.0. Press "Start" to confirm.

99.0   Adj ✳

Press "start"

4.5.7 Program turns to interface for operating as the right chart.

P1   94.5 ℃   XX

After temperature calibration, the temperature display is the same as the practical temperature of block.
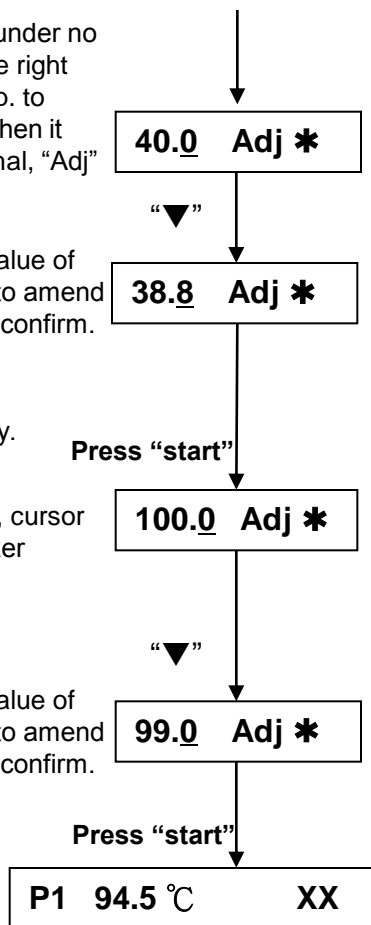
NOTICE:

☐ To ensure temperature accuracy, keep the temperature 20 minutes when it achieves adjusted temperature.

☐ During temperature calibration, press "▲" and "▼" simultaneously to cancel the calibration. The system keeps the former calibration. Do not press "▲" and "▼" simultaneously unless necessary.

1.2 Structure

Block

Display Panel

Keyboard

Power Connector
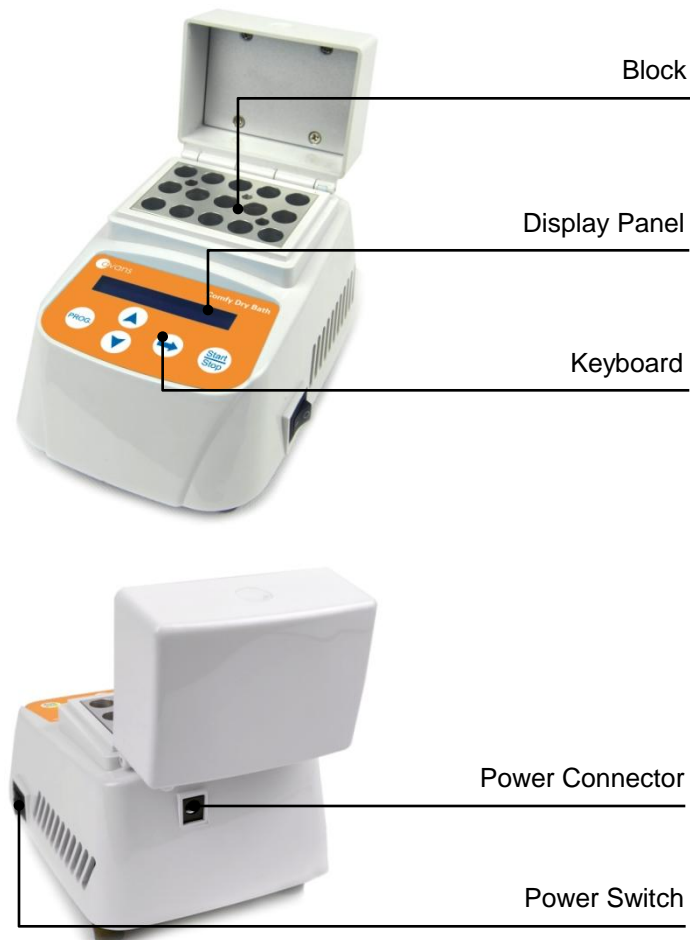
Power Switch

1.3 Installation

1.3.1 Put the instrument on the working table steady.

1.3.2 Connect power and instrument through the power adapter.
Power voltage should during 100-240V～

100-240V～

DC 24V
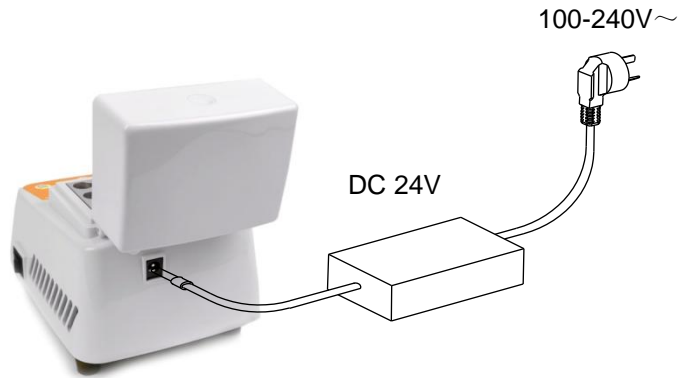
1.3.3 Turn on the power switch on the right side. The incubator runs

the program to the set temperature automatically.

1.3.4 When it achieves the set temperature, put the tubes into the

block, close the thermo lid.

Tube

3
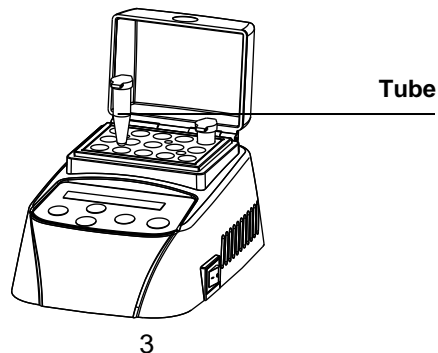
4.5 Temperature Calibration

If there is deviation between the actual temperature and the display
temperature due to some reasons, you can do as follows to calibrate it.

Notice:

□ The instrument uses two temperature adjustments to ensure its
accuracy. It is linearly adjusted on 40°C, and 100°C. The temperature
precision will be within ±0.5°C after the double temperature
adjustments.

□ Both the environmental and the block temperature should be lower
than 35°C when calibration.

□ The temperature of the instrument has been adjusted well in the
factory. Please do seriously consider before you use this function.

Adjustment Methods:

4.5.1 Start up the instrument, it enters waiting interface.

4.5.2 Inject olefin oil into one of the cone-shaped wells. Put a
thermometer into this well (the precision of the thermometer should
be 0.1. The temperature ball should be absolutely immerged into
the cone-shaped well). Heat insulation material is needed on the
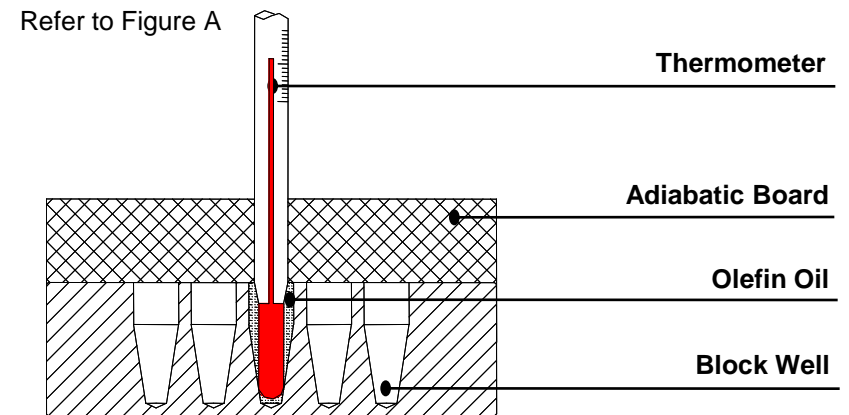block to separate it from the circumstance.

Refer to Figure A

Thermometer

Adiabatic Board

Olefin Oil

Block Well

Figure A

8

4.4 Program Start and Stop

4.4.1 Press "PROG.", nine preset programs P1,P2,P3,P4,P5,P6,P7,P8, P9 could be selected.

4.4.2 When power on, the temperature rises to set temperature of segment 1 automatically. It displays "Going…" when heating; it displays "OK" when it achieves the set temperature.

P2 35.5 C Going…	→	P2 37.0 C OK
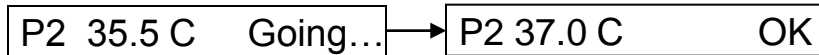
4.4.3 Press "START" to run the segment 1. "■" which indicates segment 1 flickers. When segment 1 finishes, the program starts segment 2. "■" which indicates segment 2 flickers, and it begins to count down.

P2 37.0 020min ■	→	P2 45.0 020min ▪▪
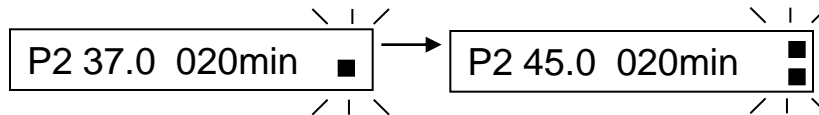
4.4.4 Buzzer alarm when it counts to 0 at segment 2. "PROGRAM END" displays on LCD. The incubator keeps the temperature of segment 2.

PROGRAM END

⇩ Press any key to return

P2 43.3   Going….
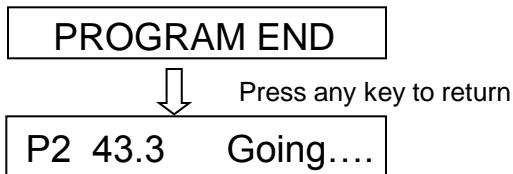
Press any key to return to the operating interface. It turns to the set temperature of the current segment. When it achieves, "OK" is displayed on LCD. Press "START" to run the program again.

4.4.5 Press "START/STOP" continuously for 1 second, program stops, timing ends.

2 Specification

Model	Comfy Dry Bath Incubator
Power Input	DC24V
Maximum Power	120 W
Temperature Range	-10 ℃ - 100 ℃
Timing Range	1min - 999min or 1sec - 999 sec
Temp. Control Accuracy	≤± 0.5℃
Display Accuracy	0.1℃
Heating Time (from 20 ℃ to 100 ℃)	≤15min
Ambient Temperature	5℃ ～ 35℃
Dimension（W×D×H）	110mm×156mm×100mm
Net Weight	1.4Kg

3 Safety Warning

⚠ The incubator is a normal and an indoor using instrument.

⚠ Read operation manual carefully before operation. Only the expert of wiring equipment can operate this instrument.

⚠ The operator should not open or repair the instrument by himself. Otherwise, the instrument will lose the qualification of repair guarantee or cause accidents. The company will repair the instrument based on warranty description.

⚠ The instrument should be put in the place where of low temperature, little dust, no water, no sunshine or hard light, and of good aeration, no corrosively gas or strong disturbing magnetic field, and far away from central heating, camp stove and other hot resource. Do not put the instrument in wet and dusty place.

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

⚠ Power input interface is on the rear of the instrument. Power voltage input is DC24V. Input is anode, outer ring is cathode.

⚠ Power off when operation finished. If long period do not use the instrument, pull off the connector plug, cover a cloth on the instrument to prevent from dust.

4. Operation Guide

4.1 Key Function

START/STOP----Start or stop the operation program

PROG.-------------Select operation program

▲▼ ----------------Set Temperature or Timing value

➡ ----------------Enter value set or move cursor

4.2 Programming

Press "PROG.", select option program, e.g. P2. Press "➡" to enter temp setting. Press "➡" to move cursor. Press "▼" or "▲" to set timing. Two segments could be set in each program. " ■" indicates temp. or timing of segment 1. " ▪▪" indicates temp. or timing of segment 2.

| P2 37.0 003min ▪ | Temp. and Timing of Segment 1

| P2 4̲5.0 006min ▪▪ | Temp. and Timing of Segment 2

4.3 Time Unit Changing

Press " ➡ " 2 seconds under timing setting, timing unit alternatively changes between min and sec.

| Timer unit : min | ◀▲▼▶ | Timer unit : sec |
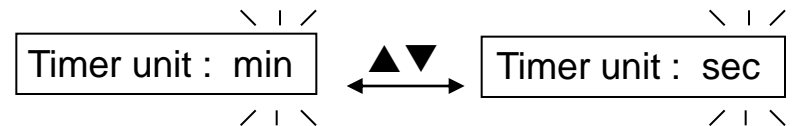
Press ▲▼ to select min or sec. Press " ➡" to confirm.