

# Operation Manual



**BBBF-106**

## Blood Bank Refrigerator

Thank you for Choosing Biolab products. Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation.

Thank you for buying 4°C storage refrigerator freezer!

For your personal safety and better performance of this unit, please read this Operation Manual thoroughly and save it properly for future reference.

Failure to read, understand and follow the instructions in this manual may result in damage to the unit, injury to operating personnel and poor equipment performance.

The material in this manual is for information purposes only. The contents and the product it describes are subject to change without notice.



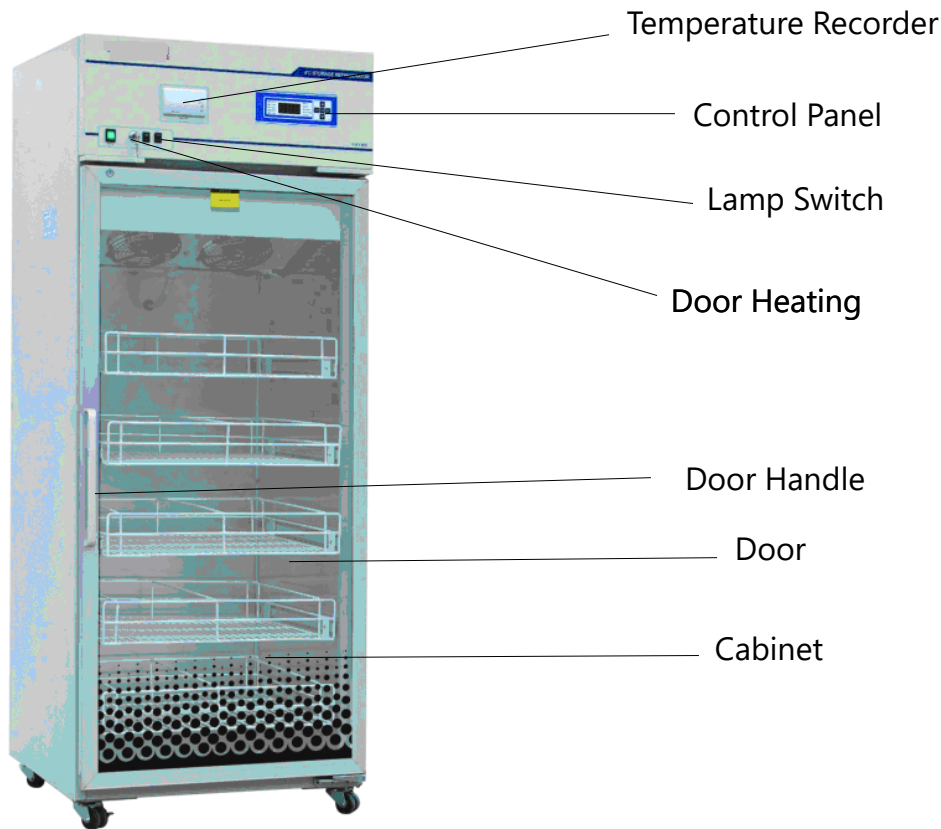
### **Safety Notice:**

- ✓ Please read this manual carefully when use our machine at the first time.
  - ✓ The one who operate 4°C storage refrigerator should be trained and authorized
  - ✓ Should be check-up and maintenance to the refrigerator at regular intervals
  - ✓ The 4°C Storage Refrigerators have fixed 1 roll print paper, if you need more please buy the same type.
- 
- Always use the proper protective equipment (clothing, gloves, goggles etc.), Avoid hurt from low temperature.
  - Always follow good hygiene practices.
  - Each individual is responsible for his or her own safety.
  - If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.
  - This appliance is not intended for use by persons (including children) with lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
  - Keep childrens away from machine.
  - The appliance must be positioned so that the plug is accessible.
  - When the lamp is damaged, Please call the after-service engineer.
  - Please accord to local regulations regarding disposal of the appliance for its flammable refrigerant and blowing gas. Before you scrap the appliance, please take off the doors to prevent childrens trapped.

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# 01 Schematic Picture and Description



Because the freezer amelioration and the model different, the actual product may not the same as the photo, please follow the actual refrigerator.

Series of 4°C storage refrigerator is the professional equipment in the scientific industry.

Designed to store the goods which be reserved at 4°C, the internal temperature in cabinet can be easily adjusted through the keys in control panel. All operations are convenient and reliable.

## 02 Pre Installation

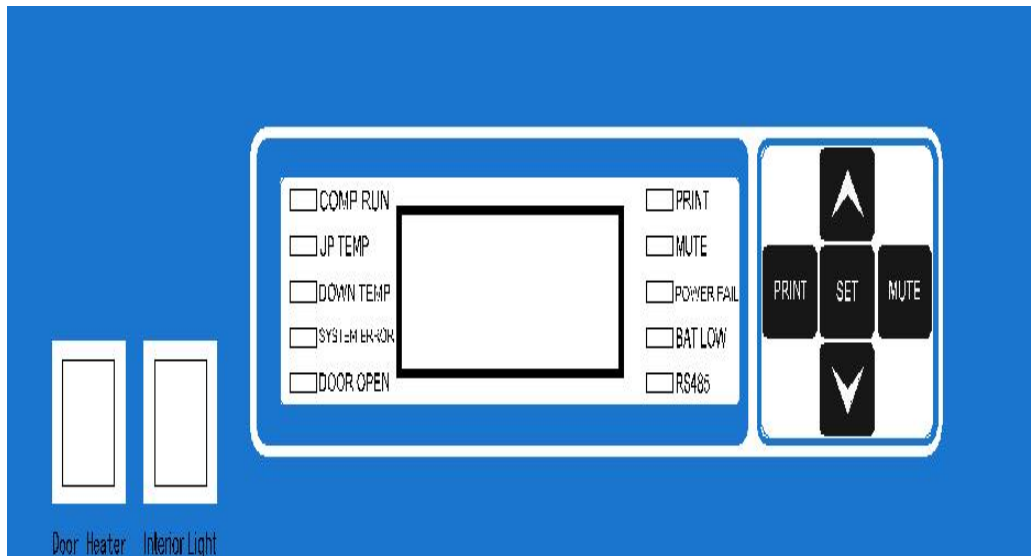
1. How to transport: Pick up the unit from the bottom of tank and a slant plane within 45° is acceptable. All transportation should be carefully.
  2. Remove all wrappers.
  3. Check accessories and documents according to package list.
  4. Clean the unit thoroughly before any operation.
  5. Installing location: Do not position the unit in direct sunlight or near heating diffusers, radiators, or other sources of heat. The ambient temperature should not exceed 32°C. A minimum 20cm space on the sides, rear and top should be provided for better air circulation and heat discharge. Location where is too cold and place with high humidity or can be easily splashed by water are forbidden.
- **The freezer working condition:**
  - **The environment temperature: 18°C~32°C**
  - **The relative humidity: ≤80%**
  - **No strong shake and causticity gas around.**
  - **No sunshine and other cold/hot power effect.**

### Safety Introduction

1. Power supply: This freezer is designed operating under 220~240VAC , 50HZ power supply.
2. Must provide one single exclusive plug receptacle with credible grounding to unit. Don't lengthen the line randomly. If you need, please use 2.5mm<sup>2</sup> copper line, you should keep 4mm<sup>2</sup> line to connect the electrical outlet.
3. Inflammable and explosive materials, as well as high corrosive acid and alkali must be strictly prohibited in cabinet.
4. For liquid temperature measurement, the bottles are filled with a 250 ml solution of 10 parts water and 1 part glycerol. The probes must extend at least 80mm into the solution and the bottle cap must fit tightly to minimize evaporation.
5. Keep the lamp off in use for saving energy sources and stabilization temperature in cabinet.

# 03 Operation Direction

## (1) Function Introduction for Display Panel



1. With unit °C under normal running condition and display different hint string under set condition: (Refer follows for details)
2. Comp RUN: when compressor running, will light.
3. UP TEMP: for up room sensor temperature
4. DOWN TEMP: for down room sensor temperature
5. SYSTEM ALARM: when system abnormal, will alarm
6. DOOR OPEN: when door open more than one minute, will alarm
7. PRINT, When have printer, will work normally.
8. Mute: when alarm, please press "MUTE", will keep alarm sound as mute.
9. Power failure: when power cut, will alarm.
10. BAT LOW: when printer battery low, will alarm
11. RS485: for remote alarm.
12. "▲"、"▼": Function adjustment pads
13. "SET": Press this key to set the function adjustment parameter;

## (2) First Use

1. Connect the power supply and switch the on-off on the back of freezer working status;
2. Set temperature: the default temperature is set as 4°C in factory. Please don't set any other temperature value.
3. "LTL": When the actual temperature is lower 2°C than the low temperature limit (LTL) setting, The code is LO
4. "HTL": When the actual temperature is higher 7°C than the low temperature limit (LTL) setting, The code is HI. (During the initial start-up, a "HTL" alarm is normal operation. After the temperature is stabilized and the "HTL" alarm stops you can put goods in your freezer);
5. upper Probe: show the upper cabinet temperature.
6. Lower probe: show the lower cabinet temperature.
7. Interior light
8. Sensor failure: Any sensor temperature  $\leq$  or  $\geq 50^{\circ}\text{C}$ , Show E1, SYSTEM ERROR will light.
9. When the rechargeable battery existences, when the power source supply disruption, the screen still lightened, showed the real-time cabinet temperature, recorded the number of door opening, LTL and HTL alarm. But the ventilator, the lamp and the refrigeration system does not work. (If the freezer has not been used for long time, the battery does not have electric quantity, it is normal that the window have no display. When freezer power source puts through, electrification completes automatically.)



**Please close the power switch on the back of the box when the power cut for a long time( longer than three hours), otherwise the electric quantity loses and affects the battery service life!**

## (3) Functions Settings

1. Time set: Press SET, Will show time set. N07 mean year 2007, then press "▲" or "▼" 1 time to add or down the time(range from 01-99), , SET confirmed and then show Y01, mean month 01, range from 01 - 12, Analogy like date R01, range from 01~29, S01 mean time 01, range from 01 - 12, F01 mean minute, range from 00~60 , After Confirmed please back off.
2. Auto print:

Press the "Print" key, the system switches to auto print mode. Now AUTO displays in the LCD window and the print indicator lamp changes into normally bright. Under this mode press the

print key of printer to automatically print recorded data. All data are printed per 5 miniatures with a format as "Year, Month, Day, Time, temperature. When the print finishes, the buzzer buzzes for 5 seconds, then the system exits the print mode. To cancel print midway, press "Print" again.

### 3. Manual print

Press "Print" twice within 3 seconds, the system switches to manual print mode. Now the display window shows "----1" and the print indicator lights. Then press the print key of printer to print the current recorded data. Press "▲" once to print the data of previous day and the display window shows "----2". Similarly, the recorded data of others days can be printed manually. All data are printed at an interval of 5 miniatures in a format as "Year, Moth, Day, Time, Temperature". When the print completes, the buzzer buzzes for 5 seconds, then the system exits the print mode. To cancel print midway, press "Print" again.

### 4. Set work temperature:

Press the "Set" key 5seconds, The Numeral tube display the "TP1", and press "▼" come to the "SET", The tube show the current temperature, Use"▼"、"▲"to adjust. At the course of setting, The Numeral tube glinting, Press the "SET" to make the data be effective.

 **Please don't place the goods to wall up the fan wind hole, Or else will effect the chamber temperature.**



## 04 Unused-Maintenance

1. Leave Unused: If the unit is not used for long time, please disconnect power supply and maintain as the following procedures. For next time operation, ensure there is not any water around the liners to avoid the seal of door is frozen.
2. Note: Any electric heater, metal tool or edge tool CAN NOT be used during defrost operation.
3. Note: DO NOT sprinkle water on the faces of cabinets, which may decrease insulating property of electric parts and rust metal parts.

**DO NOT use hot water, corrosive cleanser and organic solvent!**

## 05 Service After Sale

Some unexpected failures may arise during running. Please pay attention to the running status of your ULT freezer. If any exceptional case arises, please check and solve it according to the following introductions. If the problem is not solved well, please contact our service center for details.

Problem	Possible Cause
4°C storage refrigerator does not operate	<ul style="list-style-type: none"> <li>● Power outage has occurred.</li> <li>● The plug is bad or not securely plugged-in.</li> <li>● Fuse is blown.</li> </ul> Voltage is too low or too high.
Compressor does not work	<ul style="list-style-type: none"> <li>● Power in control panel is off.</li> <li>● Temperature setting is wrong.</li> </ul>
Temperature is higher	<ul style="list-style-type: none"> <li>● Frost in inner wall is too thick</li> </ul>

than setting	<ul style="list-style-type: none"> <li>● The door is not closed properly or is opened too frequently.</li> <li>● Overfull materials are put into chamber.</li> <li>● Ambient temperature is too high.</li> </ul>
Too great noise	<ul style="list-style-type: none"> <li>● Freezer is not leveled well.</li> <li>● Freezer leans upon the wall.</li> </ul>

Below are normal operation:

1. There are some light clashes when the compressor starts up and stops.
2. During rainy and watery season some frost may accumulate on the surfaces of cabinets. Please clean it with dry rag.
3. Long times power cut, and have not close the general power switch, Will cause the accumulator lose electricity, and work abnormally when power on. Now you need close the general power, and turn on after 1minute.

**Notice:** Before call the service engineer, Please clean and disinfect the freezer.

Condition: Can not shake heavily, strike, prevent to drenching.

Storing environment temperature: -40°C~+55°C, Relative humidity: 10%~90%.

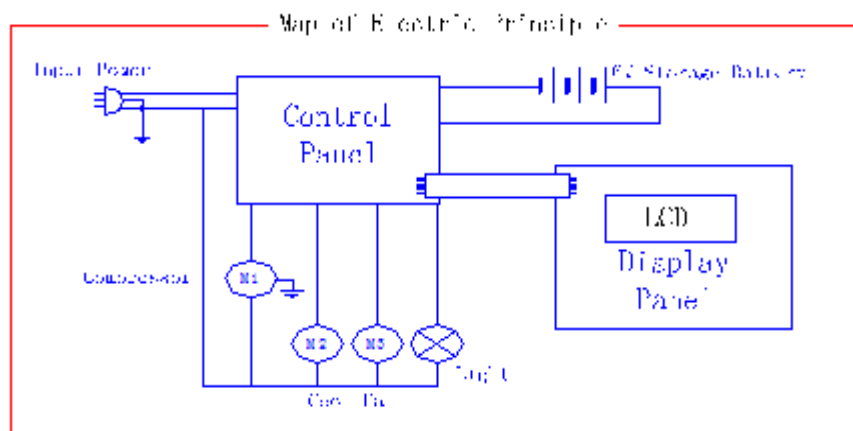
## 06 Specifications

Model	BBBF-106	Internal Temp.	4(±1)°C
Valid Capacity	588 L	Climate Type	N
Input Power	400 W	Refrigerant	R134a
Exterior Dimensions	760Lx800Wx1977 H mm	Rated Voltage (V~)	220
		Rated Power (Hz)	50

**Package List:**

Name	Operation Manual	Quality Certificate	Key	Plastic Bag
Amount	1	1	2	1

# 07 Circuit Diagram



**All technical parameters and circuit diagram in nameplate are final ones for your units.**



**BIOLAB SCIENTIFIC LTD.**

3660 Midland Avenue, Suite 300, Toronto, Ontario M1V 0B8 Canada

Email: [contact@biolabscientific.com](mailto:contact@biolabscientific.com) Tel: +1 707 533 1445

Website: [www.biolabscientific.com](http://www.biolabscientific.com)