

## Operation Manual



**BFCG-150-102**

## -150°C Cryogenic Freezer Chest type

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

## Index

1. Preface.....	03
2. Features.....	04
3. Precautions for Safe Operation .....	04
4. Handling considerations .....	11
5. Precautions of using .....	11
6. Ambient Conditions .....	14
7. Installation .....	14
8. Start-up of Appliance .....	15
9. Components .....	17
10. System settings .....	19
11. Failure Recovery .....	21
12. Specification .....	22
13. Performance .....	23

# 01 Preface

- Please read the Operation Manual carefully before operation for your safety.
- We do not guarantee any safety if the appliance is used for any objects other than intended use or used by any procedures other than those mentioned in this manual.
- Please keep the Operation Manual at an approachable place.
- The contents of the manual will be subjected to change without notice due to the improvement of performance or functions.
- Please contact the sales representative or agency of us if you have any question of this operation manual.
- For any damage to the instrument the user is not required under this manual caused by, or individuals not in accordance with "Safety Tips" requires in the manual caused the damage, our company has no obligation and responsibility turbot responsible.
- Proper use of protective equipment (including clothing, gloves, goggles, etc.)
- Adopt good health habits, in strict accordance with the product instructions.
- Everyone has an obligation to be responsible for their own safety.
- Not Allowed direct contact with patients, use or affect the product and in the product storage items.
- Products without sterilization.
- The product is used only for storage, not during use with other materials, Organization and Technology in combination.
- Products can not be used to measure or analysis.
- Life and storage life of the products is irrelevant.
- Some models need to regularly add supplies, such as printer paper, test tubes, etc.
- This product is non-explosion-proof products.
- Non flash freeze equipment, is limited to keeping the temperature used.
- Equipment maintenance can only be used by our company or authorized agents to complete.
- Service life: According to affect key components of the shortest life expectancy.

## 02 Features

- LCD touch screen controller, temperature range -40°C~-150°C adjustable.
- Multiple protection functions ( Compressor start delay protection, protection for high pressure of cooling system, protection of power phase sequence )
- Multiple alarm functions (inner temperature alarm, ambient temperature alarm, system pressure alarm, abnormal power supply alarm)
- This product is suitable for blood station, hospital, epidemic prevention station, university, scientific research institute, electronic chemical and other enterprise laboratory.
- This product is mainly used to store plasma, biological materials, vaccines, electronic devices and special materials for low temperature test
- If there is inconsistency between the image and the actual product, the actual product shall govern.
- This product is prohibited to store living creatures, flowers and other products with strict temperature requirements.

## 03 Precautions for safe operation

- It is imperative that the user complies with this manual as it contains important safety advice.
- Items and procedures are described so that you can use this appliance correctly and safely.
- If the precautions advised are followed, this will prevent possible injury to the user and any other person.



### **Warning**

Failure to observe "WARNING" signs could result in a hazard to personnel possibly resulting in serious injury or death.



### **Caution**

Failure to observe "CAUTION" signs could result in injury to personnel and damage to the appliance and associated property.



**< Mark on the Appliance>**

This label is on the cover in which the electrical components of high voltage are enclosed to prevent the electric shock. The cover should be removed by a qualified engineer or a service personnel only.



**< Mark on the Appliance>**

This label is on the outer surface of the device to remind the user to wear gloves to prevent frostbite when accessing the article.



**< Mark on the Appliance>**

This label is marked around the hinge of the door to remind the user to pay attention to the hand when opening and closing the door.



**< Mark on the Appliance>**

This label is marked around the rotating mechanism such as fan, gear, etc. to prevent accidental hand injury. Only qualified engineering technicians or service personnel can remove the cover.



**Prohibition**

Failure to observe "Prohibition" signs otherwise it may cause damage to the save box or endanger the personal safety of the user.



**< Mark on the Appliance>**

This label is marked around the location where the combustible gas is stored to indicate that the device may leak combustible gas. Only qualified engineering technicians or service personnel can service this equipment. Only qualified engineering technicians or service personnel can remove the cover.



**< Mark on the Appliance >**

This label is marked around the door handle to indicate the door handle's opening and closing direction.

**Warning**

**! This appliance should only be installed by qualified engineers or service personnel.** The installation by unqualified personnel may cause electric shock or fire.

**! The appliance should be installed on the solid floor with suitable measures to avoid overturning.** Otherwise, it may cause the appliance overturn or physical injury.

**! Use a power outlet with a ground wire to prevent electric shock.** If the power outlet is not grounded, the grounding wire must be installed by qualified engineers.

**! It is necessary to install a separate overload and leakage protector for the power supply where the save box is located.**

**! Before any repair or maintenance of the equipment is performed, be sure to disconnect the equipment from electrical shock or personal injury.**

**! Make sure that you do not inhale the medicine or suspended particles inside or around the device during maintenance, otherwise it may cause health hazards.**

**! If the device is not operating properly, remove the power plug. If you continue to operate under abnormal conditions, it may cause electric shock or fire. Please reserve enough space to ensure immediate power disconnection in the event of an emergency.**

**! Once the storage box is powered off, it will take more than five minutes to turn it on again to avoid damage to the compressor or system. The mains plug must be unplugged during maintenance.**

**! When restarting the device after a power failure or when the power is turned off, check the device settings. Changes to the settings may damage the stored items.**

**! Gloves should be worn during repairs to prevent injury from sharp edges or**

corners.

❗ When removing the plug from the power outlet, hold the power plug firmly and do not pull the power cord. If you pull the cord by hand, it may cause electric shock or a short circuit that may cause a fire.

❗ After cleaning the dust from the power plug, insert the plug firmly into the socket. Improperly plugged or plugged dust may cause heat or fire.

❗ Before removing the device, unplug the power plug. Do not damage the power cord. Damage to the power cord may cause electric shock or fire.

❗ When moving the equipment, be careful not to let the equipment fall over to prevent equipment damage or personal injury.

❗ When the equipment is not used for a long period of time, unplug the power plug, otherwise it may cause electric shock, leakage or fire due to deterioration of the insulator.

❗ When storing toxic, hazardous, or radioactive objects, use this equipment in a safe area. Improper use may pose a risk to human health and the environment.

❗ Regardless of whether the device has the function of SMS alarm and remote alarm, staff must be on duty 24 hours a day or even 24 hours a day. Otherwise, equipment failure alarm may occur but cannot be found, resulting in deterioration of stored items due to overheating.

The user can adjust the temperature of the product within the allowable range according to his own needs.

❗ When adjusting, it is necessary to pay attention to conform to the national standard storage requirements, or to conform to the actual storage conditions of the stored articles, otherwise the articles may be stored and deteriorated.

❗ If the thermostat has a keypad lock function, after the adjustment is completed, the keypad must be locked to prevent the set temperature from drifting due to an incorrect operation, resulting in deterioration of stored items.

❗ Do not attempt to crack the password to enter the secondary setting menu during the use of the product, otherwise it may seriously affect the normal operation of the product, or even cause damage to the product.

❗ Users should follow the product manual and the product's own reminder label

and warning label to operate, otherwise it may be dangerous or cause performance degradation.

- ❗ The product does not emit chemical substances, waste, or liquids.
- ❗ The product does not involve the storage life limit of the stored item.
- ❗ The product does not involve prolonged or long-term use effects.
- ❗ The product itself is a non-disposable product that does not require aseptic sterilization.
- ❗ If the equipment is left unused in an unsupervised area for a long period of time, make sure that children do not approach the equipment and the door cannot be completely closed.
- ❗ Disposal of equipment should be carried out by appropriate personnel. Doors should be removed to prevent accidents such as suffocation.
- ❗ Hold the handle to open or close the door to avoid pinching your fingers.
- ❗ If the product service time is close to the product life cycle, increase the frequency of maintenance, increase the frequency of inspection records, and regularly contact the manufacturer's professional technical personnel for inspection.
- ❗ Duration: 8 years
- ⊘ Do not install the device in a wet place or in a place that may splash in water. Otherwise, it may cause leakage or electric shock due to a reduced degree of insulation.
- ⊘ This device must not be placed outdoors. If the device is wet with rain, it may cause leakage or electric shock.
- ⊘ Do not install this equipment in a place where flammable or volatile materials are stored. It may cause explosion or fire.
- ⊘ Do not install this device with an acidic or corrosive gas, otherwise it may cause leakage or electric shock due to corrosion.
- ⊘ If the container cannot be sealed, no corrosive substances such as acids and



alkalis may be stored in this equipment, otherwise it may cause corrosion of components and electrical components inside the box.

- ⊘ If the container cannot be sealed, do not store volatile or flammable substances in the device. Doing so may cause an explosion or fire.
- ⊘ Do not put the plastic bag in a place where children can get it because the plastic bag may cause a choking accident.
- ⊘ Do not splash water directly on the device. Doing so may cause electric shock or short circuit.
- ⊘ Do not use loose power cords with plugs. This type of power cord may cause fire or electric shock.
- ⊘ Users must not disassemble, repair or modify the equipment themselves. If any of the above operations is performed by an unauthorized person, fire or personal injury may result from improper operation.
- ⊘ Wet hands should not be used to touch any electrical parts such as power plugs or any switches, as this may cause electric shock.
- ⊘ Do not insert metal objects such as nails or iron wires into any openings or gaps in the device or any outlets, otherwise electric shock or injury may occur due to accidental contact of the above objects and moving parts.
- ⊘ Do not ground this equipment through gas, water pipes, telephone lines, or lightning rods. The above-mentioned grounding may cause electric shock when the pipeline is incomplete.
- ⊘ Do not drill holes on the surfaces of this storage box, otherwise it will seriously affect the refrigeration performance of the storage box.
- ⊘ Do not place containers or heavy objects with liquids on the device. If the item is dropped, it may cause injury to the person, and the flowing out of the liquid will cause the degree of insulation to decrease causing electrical leakage or electric shock.
- ⊘ Do not climb onto the device or place it on the device. Doing so can cause personal injury or damage to the device due to the device tipping over.
- ⊘ Do not put glass bottles or fillings into the cabinet as it may be damaged by freezing.

- ⊘ Do not touch stored objects directly with your hands. Direct contact with frozen objects or the inside of the equipment may cause frostbite. Wear antifreeze gloves.
- ⊘ The patient does not control or affect the use of the product.
- ⊘ The product does not extract any substance from the patient, and the patient does not come into contact with the product in any form or approach the product.
- ⊘ The product does not directly contact and store any biological material.
- ⊘ The product is not tested, measured, or analyzed.
- ⊘ The product is not agitated, crushed, etc.
- ⊘ The product is not used in conjunction with or in conjunction with other materials, components, technologies, and medical devices, nor is it in contact with other medical devices. The product does not have the function of treatment or adjuvant therapy.
- ⊘ The product does not have the function of improving the status of stored items or increasing the activity of stored items.
- ⊘ Product non-quick freezing equipment is only used to store organs, materials or articles whose temperature is close to the set temperature of the product and does not have a complete life form. At the same time, it is required that the storage items have packaging or containment containers.
- ⊘ The product does not have the functions of disinfection and sterilizing, does not possess absolute tightness, and the internal storage space is not vacuum or negative pressure. It does not have the effect of isolating radiation, and it must not directly store toxic, radioactive, and infectious substances.
- ⊘ Do not pull, strain, process, step on, squash, damage, or distort the power cord at any time to avoid leakage or even fire due to loose or damaged power cords.
- ⊘ Foreign matter must not be placed in the door gap. Otherwise, condensation or even frost may occur on the door frame due to severe cooling of the door gap. This may cause the product's cooling performance to deteriorate.
- ⊘ The power cord must not be directly on the ground in order to avoid leakage accidents.

- ⊘ Do not put your hand into the cabin space or the top space of the cabinet, otherwise there is a risk of electric shock.
- ⊘ Do not store excessively high humidity items in the product. This can cause serious frosting on the evaporator and affect the cooling performance.
- ⊘ Do not store excessively high-temperature items in the product (the temperature of the items should be close to the temperature inside the box), otherwise it will cause serious temperature rise inside the box and even cause other items stored inside the box to be damaged or deteriorated.
- ⊘ It is forbidden for personnel to enter this product, especially children, otherwise there may be casualties; if the equipment is left unattended for an extended period of time, it must be ensured that the child does not approach the equipment and the inside of the box cannot be completely closed.

## 04 Handling considerations

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- Before carrying out the unpacking, handle the forklift, use a forklift, and do not use a cart.
- If using a forklift, insert it from the bottom of the storage box and move it.
- After removing the package, the storage box must be handled and it can be pushed by the caster.
- Note: The angle of inclination of the storage box must not be greater than 45° during handling.

## 05 Precautions of using

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- After the storage box is installed or moved for the first time, let it stand for 24 hours after the storage box is in place, and let the compressor oil return fully before starting up.
- This product is equipped with phase sequence and phase loss protector. If the "power error" alarm occurs when the first power is switched on, please try to check the power condition first and then change the installation position of any two fire wires.
- Each casters at the bottom of the product has a positioning cushion. In order to prevent the box from moving at will, after the product is in place, adjust the supporting cushion screw

disk to make the supporting cushion and the floor support.

- When the storage box is running, the surrounding of the storage box frame may become hot. This is not a malfunction. In order to prevent condensation around the box frame, a dew-proof tube was installed around the cabinet.

- Before putting the items into the storage box, make sure that the temperature inside the box has dropped sufficiently, and then put the items in batches to prevent the temperature from increasing.

- The temperature display value of the cryogenic storage box is the temperature at which the temperature sensing probe in the storage room is displayed. Although the displayed temperature sometimes differs from the actual temperature in the central part of the storage tank, it will gradually approach the actual temperature.

- Use a diluted, neutral detergent to clean the equipment (undiluted detergent will damage the plastic components. Refer to the detergent manual for the dilution method). Brushes, acids, gasoline, soap powder, polishing powder, or hot water should not be used to clean the storage tank because the above materials may damage the painted surface and plastic rubber parts. Be careful not to wipe the plastic rubber parts with volatile solvents such as gasoline.

- When the battery is tested for the first time or when it is not used for a long period of time, there may be a situation where the battery is discharged because its rechargeable battery has been completely discharged. This does not mean that a failure has occurred. In this case, to maintain sufficient battery capacity, it is necessary to keep the storage box running for about 7 days.

- After the storage tank is operated for a period of time, a layer of frost will form on the tank liner. If the frost layer is too thick, it will affect the cooling effect of the storage box and increase the power consumption. Therefore, when the frost layer reaches about 5mm at intervals, it should be defrosted.

- Before defrosting, please take the frozen items in the box and store it in another freezer to prevent the temperature inside the box from rising and damage the items.

- When the storage box is not used for a long time, the power should be turned off. Turn off the power switch and turn off the battery switch (if there is a corresponding switch).

- The speed should not be too fast every time the door is opened and closed, which may result in the difficulty of opening the door and the tightness of the door.

- The frequency of opening the door in use should not be frequent. It is better to open the door more than half an hour. Do not open the door more than 1 minute each time. Before

closing the door, wipe the ice water on the door seal to ensure a good sealing effect. Failure to do so may cause the temperature in the storage tank to remain below the set temperature, and at the same time reduce the frost on the evaporator and the inner wall of the tank.

- When an electrical fault such as a leakage or a short circuit occurs during use, immediately disconnect the power supply.
- After installing or moving the storage box for the first time, after it is in place, it needs to stand for 6 hours and then be powered on.
- When there are many items, please store them in batches. Each batch must not exceed one third of the volume of the cabinet. After placing the first batch of articles, wait for the temperature to stabilize before putting in the second batch to ensure that the temperature inside the box is stable.
- During the use of the storage box, if the door is opened for too long, the external hot air will enter the box, causing a high temperature alarm. This is a normal phenomenon. Please pay attention to reducing the time and frequency of door opening and closing as much as possible.
- In order to prolong the life of the storage box and reduce energy consumption, it is recommended that the temperature of the storage box is set between -40°C and -150°C.
- If the freezer does not cool after 2 to 3 hours of power-on, unplug it and contact the customer as soon as possible.
- Clean the condenser dust every three months to ensure the normal operation of the equipment.
- In the event of an alarm failure or other failure, please refer to the instruction manual to clear the fault according to the prompts on the display board. If you can not eliminate the fault by yourself, please do not disassemble it. Please contact the after-sale maintenance personnel to help eliminate the fault.

## 06 Ambient Conditions

- Ambient temperature : 10°C-32°C. And the maximum temperature is no more than 32°C. The ideal temperature is 18 to 25°C. If necessary, an air conditioning system should be used.

- Ambient humidity: Maximum relative humidity 80% for temperature up to 32°C, the humidity should be less than 60% RH.

- Avoid large amounts of dust.
- Avoid mechanical swing or vibration.
- The elevation shall not exceed to 2000m.
- A gap of at least 50cm should be set aside to facilitate ventilation and heat dissipation.

There is no blocking or heat source within 100cm of the front side.

- The voltage fluctuation range shall not exceed 380V  $\pm$  10% of the rated voltage.

- Cannot be installed in a narrow and confined space. The door of the room should not be smaller or lower than the product. At least the normal entry and exit of the product should be ensured so as to avoid maintenance difficulties when the machine fails. The machine cannot be repaired in time, resulting in storage of goods. The damage.

- Please check the operating voltage before use, voltage instability should consider the use of regulator voltage regulator. To ensure that the normal input voltage is stable at 220V  $\sim \pm$  10%, the regulator power should be greater than 3kW.

- This equipment should ensure reliable grounding.

- If the power outlet is equipped with a grounding wire, check that the grounding is good before use.

Note :

- Because the cryogenic equipment is more sensitive to the ambient temperature. If it is installed in an environment other than the above, the machine will not operate normally. Please use it after improving the environment.

- It is forbidden to install this equipment in an open air environment. When the storage tank is exposed to rain, it may cause leakage or electric shock.

## 07 Installation

7.1 Remove all packing materials and packing tapes

Open the door to ventilate the appliance. If the outside panels are dirty, clean them with soft fabric plus diluted neutral detergent. (Undiluted detergent can damage the plastic components. For the dilution, refer to the instruction of the detergent). After the cleaning with

the diluted detergent, always wipe it off with a wet cloth. Then wipe off the panels with a dry cloth.

**Warning**

- ❖ Use a power supply outlet with ground (earth) to prevent electric shock. If the power supply outlet is not grounded, it is necessary to install a ground by qualified engineers.
- ❖ DON'T ground the appliance through a gas pipe, water supply pipe, telephone line or lightning rod. Such grounding may cause electric shock in the case of an incomplete circuit.
- ❖ After the power is turned on, the power plug must be accessible to facilitate unplugging the power cord in an emergency. Any item must not cover the vent of the cryogenic storage box.

## 08 Start-up of Appliance

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Follow the procedures for the test and formal operations of the appliance:

- Keep the device stand for 24 hours at least before turn on
- Switch on, if there is "abnormal power supply" alarm, the installation position of any two fire wires shall be changed.
- Set the storage temperature as needed.
- Check the temperature in the cabinet if reached the setting temperature.
- Observation of the cabinet has normal opening and stopping for more than 24 hours, proof of normal performance of the cabinet.
- After confirmed the above, the items can be stored in the product

**Warning**

• This product shall be checked and recorded by a special person every day (every 2 ~ 4 hours). In case of product failure or shutdown, the temperature inside the product will rise. If repair is not possible within a short period of time, remove the stored items and transfer them to a place that meets storage temperature requirements to avoid storage damage.

• Before putting the stored goods into the product, the temperature required by the stored goods shall be confirmed in advance to conform to the temperature range of the product, so as to avoid damage and loss of the stored goods caused by the temperature of the product not reaching the temperature required by the goods.

- Due to the refrigeration inertia, there is a certain difference between the actual display temperature and the set temperature (the lower the set temperature, the smaller the difference will be, and vice versa), which is a normal phenomenon.

### **Prohibition**

- In order to preserve the equipment, it is strictly prohibited to put too many items that are relatively too hot at one time, otherwise the compressor will not stop for a long time and the temperature will not drop, and it is easy to burn down the compressor.

- Do not use any mechanical tools or other means to speed up the defrosting process without the manufacturer's approval.

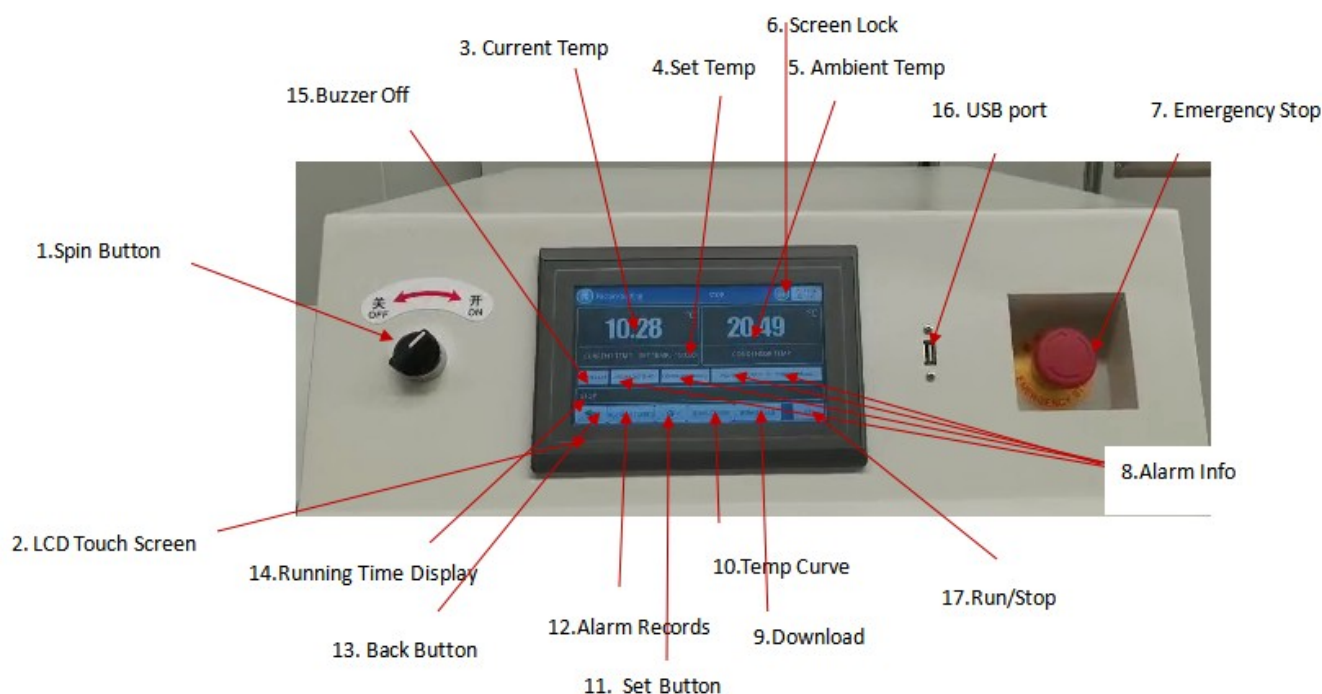
- Do not damage the refrigeration circuit.

- Do not use electrical appliances in products without the manufacturer's permission.

### **Operation after power failure**

- The product has the function of remembering the set value. After power off, the product will continue to operate according to the set parameters before power off.

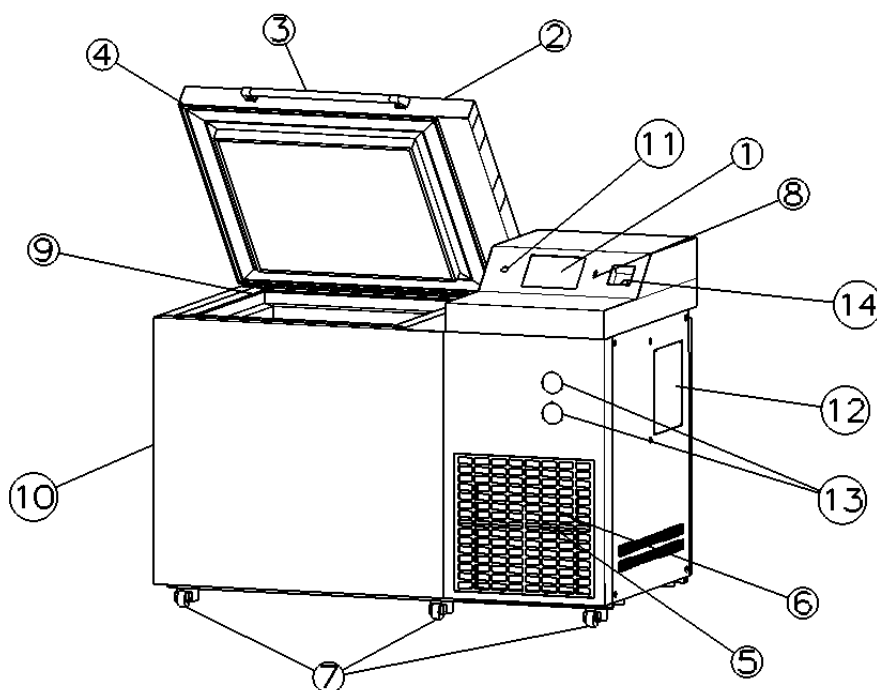




## 09 Components

- 1 Spin Button : Spin to right-ON, Spin to left-OFF,(no Standby state).If the machine stops for a long time, please turn off the switch at the power supply °
- 2 LCD Touch Screen: display all information, change set parameter
- 3 Current Temp: the actual temperature inside the cabinet.
4. Set Temp: When the screen is unlocked, click here to change the setting temperature.
5. Condenser Temp: actual ambient temperature.
- 6 Screen lock: Lock the screen and unlock the screen. Password is required to unlock the screen. Under the locked state, "15 alarm buzzer switch" can be operated. Other parameters can be checked but cannot be changed.
7. Emergency stop switch: In case of emergency stop, press it to disconnect the power supply. The reset and power on can be put on after clockwise rotation.
8. Alarm signs: "Abnormal temperature in the cabinet", "abnormal condensation temperature", "excessive system pressure", "power supply error" respectively. When the corresponding alarm occurs, the corresponding area will turn red and there will be buzzer alarm.
9. Download: Data can be exported through USB port.
10. Temperature curve button: You can check the temperature curve after the last power on.
11. Set Button: Enter the system parameter setting interface. (Engineer mode, not recommended to enter and change, password required)
12. Alarm Records: Check all alarm information, including power off and on.
13. Back button: used when setting by manufacturer.

- 14. Running time display: the total time of this power on.
- 15. Buzzer Off: Temporarily shut off the buzzer when alarming.
- 16. USB port: It can be connected to a U disk for data export.
- 17. Run/Stop: A run or stop operation can be performed.



Control panel: to display temperature setting and operation status.

2. Outer door: the hinge of the door can only hover at the maximum opening, and cannot hover during the opening process.

3. Handle: Always hold the handle when opening and closing the outside door.

4. Door seals: Tightly seal the door and prevent leakage of cold air. Please keep it clean.

5. Inlet grille: Do not plug this opening to maintain normal cooling performance.

6. Condenser strainer (behind the grid) : This strainer prevents dust accumulation on the condenser. Dust - filled filters may cause refrigeration equipment damage. The filter should be cleaned once a month.

7. Casters: The height of the box can be adjusted by casters. Keep the device in a horizontal state during installation. And make sure the rubber blocks inside the casters are in close contact with the ground.

8. USB data interface: Temperature data can be read on a U disk.

9. Inner door panel: This panel can be removed for cleaning or defrosting. See "Daily Maintenance" on page 15.

10. Test hole (on the left side of the cabinet) : can be used to pass the test cable and sensor, or the nozzle leading to the cabinet by auxiliary cooling device.

11. Spin Button : spin to right - ON, spin to left - OFF (no standby state), for daily shutdown.

12. Electric control box: do not open it without authorization. It must be opened by qualified engineers or professional maintenance personnel.
13. High and low pressure meter: display the high and low pressure value of the unit system.
14. Emergency stop switch: In case of emergency stop, press it to disconnect the power supply.

## 10 Routine Maintenance

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### **Warning**

- Warning: Always disconnect the power supply to the appliance prior to any repair or maintenance in order to prevent electric shock or injury.
- Make sure you will not inhale medicine or suspended particles around the appliance at the time of maintenance; these possibly be harmful to your health.

### **15.1 Clean the Cabinet**

- Please clean the cabinet once a month. Periodical cleaning keeps the appliance looking new.
  - Use a dry cloth to wipe off small amounts of dirt on the outside and inside of the appliance and all accessories. If the appliance is dirty, clean it with a diluted neutral dish washing detergent. (Undiluted detergent can damage the plastic components. For the dilution, refer to the instruction of the detergent.) After the cleaning with the diluted detergent, always wipe it off with a wet cloth. Then wipe off the cabinet or accessories with a dry cloth.
  - Never pour water onto or into the appliance. Doing so can damage the electric insulation and cause failure.
  - The compressor and other mechanical parts are completely sealed and the appliance requires absolutely no lubrication.
- The fan is installed behind the compressor, so please be very careful when insert the hand in this part.

## **15.2 Clean condenser filter**

Filter replacement instructions, Please following the steps to clean the filter :

- a. As shown in the picture, pull out the flip
- b. Get out of the filter net
- c. Clean the strainer with water and dry it
- d. Put the filter back in place and install the flip.
- e. Check if the alarm has been canceled if the condenser temperature alarm occurs before

**Note:** Do not touch the condenser directly when cleaning the filter. The hot surface may be damaged.

## **15.3 Defrosting**

The frost is built at the upper portion of the appliance and inner door. The excessive frost possibly make some gap between the cabinet and door gasket, which may cause poor cooling. Remove the frost on the inner door with a scraper enclosed with the appliance. Defrost the cabinet with following steps.

Caution: For removing the frost, do not use a tool with sharp edge such as a knife or a screwdriver

- Please turn off the backup cooling system if have.
- Take out and transfer all the objects to another cabinets or containers which is refrigerated by liquid carbon dioxide or dry ice.
- Turn off power switch of the freezer.
- Open the external door and internal door. Hold up the internal door and take it away.
- Keep the external door open to defrost for a moment.
- Clean the water with dry fabric from the bottom of the cabinet.
- After cleaning the cabinet and internal door, put the internal door back; please restart the appliance according to the "Switch on the Appliance".
- Put the objects into the thoroughly refrigerated cabinet.
- Turn on the back-up system if it is provided.

# 11 Failure Recovery

Please check the fault as following before notifying the repair service:

Faults	Checking/Solutions
<b>The cabinet is not fully cooled</b>	<ul style="list-style-type: none"> <li>✓ Check the appliance if connect to the power supply?</li> <li>✓ Check if the power voltage is too low?</li> <li>✓ (Under this condition, please notify the electrician.)</li> <li>✓ Check if the power switch is turned on?</li> <li>✓ Check if the fuse blowing?</li> <li>✓ Check if too much objects are stored in the cabinet?</li> </ul>
<b>Poor cooling performance</b>	<ul style="list-style-type: none"> <li>✓ Check if the ambient temperature is too high?</li> <li>✓ Check if the internal door is completely closed? Check if the external door is closed firmly?</li> <li>✓ (The frost or ice between the cabinet and door gasket possibly prevents door seal)</li> <li>✓ Check if the air inlet grille is blocked?</li> <li>✓ Check if the filter is dirty and blocked? When the condenser alarm indicator lights on, please clean the filter and condenser.</li> <li>✓ Check if the internal door is installed correctly?</li> <li>✓ Check if the temperature is set correctly?</li> <li>✓ Check if the grille is jammed?</li> <li>✓ Check if the cabinet is far from direct sunlight?</li> <li>✓ Check if the cabinet is near the heat source?</li> <li>✓ Check if the rubber cover and insulating material of the cable port are installed correctly?</li> <li>✓ Check if too much objects are stored in the cabinet?</li> </ul>

Caution: If the problem is not solved or the problem is not listed in the above table, please contact with the after-sale technicians.

## Disposal of Abandoned Appliance

### Warning

- If the appliance is to be stored unused in the open area for an extended period, ensure that children don't approach the appliance and the cabinet door can not be closed completely.
- The abandoned appliance shall be handled by appropriate personnel. Remove the cabinet doors to avoid accidents such as suffocation.

## 12 Specification

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<b>Name</b>	Cryogenic Freezer
<b>Model</b>	BFCG-150-102 -150°C
<b>External Dimension(mm)</b>	1560×957×1178(mm)(W*D*H)
<b>Internal Dimension(mm)</b>	500×450×578((W*D*H))
<b>Effective Volume</b>	128L
<b>Exterior</b>	Painted Steel Panel
<b>Interior</b>	Stainless steel
<b>Outer Door</b>	Painted Steel Panel
<b>Inner Door</b>	Stainless steel
<b>Shelf</b>	NO
<b>cable Port</b>	25mm Diameter, 1 hole (Left)
<b>Insulation</b>	Special hard Rigid polyurethane foamed
<b>Compressor</b>	1
<b>Refrigerant</b>	Mixed
<b>Controller</b>	Microcomputer control system
<b>Temperature display</b>	LCD display
<b>Temperature Sensor</b>	Platinum resistance (Pt 100)
<b>Alarm</b>	high-temperature alarm, low-temperature alarm, abnormal voltage alarm, sensor malfunction alarm, condenser filter check alarm, ambient temperature alarm, condenser malfunction alarm.
<b>Remote Alarm Terminal</b>	Max capacity: AC220V, 10A
<b>Accessories</b>	Defrosting scoop
<b>Net Weight</b>	245kg

<b>Optional Parts</b>	NO
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**Caution:**

- Design specifications are subject to change without prior notice.
- The battery for power failure alarm is consumable; it is suggested to replace it every 3 years for once. To replace the battery, please contact the representative of us, agent or after-sale service.

## 13 Performance

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<b>Model</b>	<b>BFCG-150-102 -150°C</b>
<b>Cooling Performance</b>	cabinet center-150°C(Ambient temperature 32°C, no-load)
<b>Temperature Control Range</b>	-40°C~-150°C(Ambient temperature 32°C, no-load)
<b>Rated Voltage</b>	AC380V,50Hz
<b>Rated power Consumption</b>	2550W
<b>Noise level</b>	/

**Caution:**

- Performance: when the ambient temperature is 32°C, the temperature in the cabinet reaches -150°C (Unload).



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