Haier

Blood Bank Refrigerator

Operation Manual

Model:

HXC-158
HXC-158B
HXC-358
HXC-358B
HXC-608
HXC-608B
HXC-1308
HXC-1308B

Certificate of Quality
_____
checker:

- Read the Operation Manual carefully before using your appliance.
- Keep the Operation Manual in a safe place.
- Appearance , color and layout of the door may vary.
- Translation of the original instruction.
- The scope of the product application: For providing a storage environment of 2℃~6℃.

Haier quality,
it merits your trust from beginning to end.

The product is applicable to the storage of blood (whole blood), medicines, biological products and those need to be stored at a temperature below 4°C, and is widely used in large and small blood stations, hospitals, colleges and universities, research quarantine stations, etc.

Temperature control

Computer panel control, digital display of temperature, temperature display accuracy as 0.1°C and temperature range as 4°C ± 1°C (temperature range of HXC-1308 and HXC-1308B as 4°C ± 1.5°c).

Safety system

- Multi-fault alarm (high and low temperature alarm, low battery alarm, power failure alarm, sensor fault alarm and door opening alarm)
- Two alarm methods (buzzing alarm, flashing alarm)
- Safe grounding of all individual components
- Standard remote alarm interface, easy to use and reliable

Refrigeration system

- Refrigeration system with deep optimization, imported compressor and main components and better refrigeration performance

User–friendly design

- User-friendly design, computer panel control, smart and carefree, adjustment not required
- High-performance thermal insulation layer, with excellent insulation effect
- Multiple condensation-proof technology including electrical-heating glass door
- Automatic evaporation of condensate water, user-friendly design of safety door latch, etc.

We apologize that the Haier blood bank refrigerator provided for you may be a little different from the figure in the manual due to product improvement. The manual may be subject to changes without further notice.

Content:

Packing List

Name	HXC-158	HXC-158B
Manual	1	1
Plastic bags	1	1
Key	2	2
Recording paper	/	/
Water hole pin	1	1
Handle assembly	1	1
USB kit	/	/

Name	HXC-358	HXC-358B	HXC-608
Manual	1	1	1
Plastic bags	1	1	1
Key	2	2	2
Recording paper	/	/	/
Water hole pin	1	1	1
Handle assembly	1	1	1
USB kit	/	/	/

Name	HXC-608B	HXC-1308	HXC-1308B
Manual	1	1	1
Plastic bags	1	1	1
Key	2	4	4
Recording paper	/	1	1
Water hole pin	1	/	/
Handle assembly	1	2	2
USB kit	/	1	1

Dear users:

Thanks for your choice of Haier blood bank refrigerator; please make sure you have carefully read and observed the contents with following signs in the manual, for better understanding of this manual and better use of this product, to prevent personal injuries and refrigerator damage.
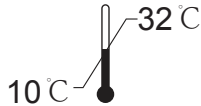
Safety Labels

Consult instructions for use   Date of manufacture   Manufacture   Temperature limitation

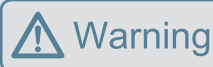Grounding mark   Complied with the requirements of MDD 93/42/EEC annex V

WARNING!
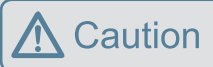ELECTRIC CABINET CONTAINS CONTROL PANEL CONTACTOR ETC.

NOTICE!
1.Freezer must be placed at least 20mm away from the wall to allow maximum air circulation.
2.Changing of Refrigerants should be done according to the Service Manual.

Safety Precautions

⚠ Warning — Ignoring this warning may result in death or serious injury

⚠ Caution — Ignoring this warning may result in death or serious injury,and/or damage to the refrigerator and property

🚫 Actions or operations which are prohibited

❗ Actions or operations which must be followed

⚠ Warning

❗ In case of flammable gas leakage such as coal gas, shut off the valve of leaked gas, open windows for ventilation and exhaust; do not plug in or pull out the power plug of refrigerator to prevent explosion and fire.

❗ The refrigerator shall only be installed by technician or after-sale maintenance staff. Otherwise it may cause electric shock or fire.

❗ Place the refrigerator on solid and flat ground in a stable manner. The refrigerator will be tipped over or personal injuries will be caused if the refrigerator is placed on improper ground or place.

⚠ Apply the dedicated power supply marked on the nameplate of refrigerator to prevent fire or electric shock.

⚠ If voltage below 198V or above 242V is applied, automatic voltage regulator above 4000W and appropriate for motor load shall be installed.

⚠ If the power line needs to be extended, the extended line shall be no smaller than 2mm² in sectional area and no longer than 3m in length. Otherwise, fire or electric shock may be caused.

⚠ The power line for this refrigerator is provided with a standard three wire (grounding) plug, which complies with 16A. Do not remove or dismantle the grounding pin of power line in any case. Make sure the power plug is securely and reliably plugged into the socket to prevent fire.

⚠ Apply socket with ground wire to prevent electric shock.
If the socket fails to be grounded, ground wires must be installed by technician.

🚫 Do not use the refrigerator outdoors. Electric leakage or shock may be caused if the refrigerator gets wet by rainwater.

🚫 Do not place the refrigerator in humid places or places where the refrigerator may suffer splashing water. To prevent electric leakage or shock due to deterioration of insulation.

🚫 Do not pour water on the refrigerator to prevent electric shock or short circuit.

🚫 Do not place containers with water or heavy stuffs on the refrigerator. Personal injuries may be caused by falling articles and electrical leakage or shock may be caused by out flowed water due to deterioration of insulation.

🚫 Do not ground the refrigerator through gas pipes, water supply pipes, telephone lines or lightning conductors. As electric shock or other dangers may be caused.

🚫 Do not touch electrical parts such as power plug or switches with wet hands to prevent electric shock.

⚠ Hold the power plug rather than the wire when pulling the plug from the socket. As electric shock or fire due to short circuit may be caused.

⚠ Pull out the power plug when the refrigerator is under abnormal performance. As electric shock or fire may be caused.

🚫 Users are not allowed to dismantle, repair or refit the refrigerator by themselves. As fire or personal injuries may be caused due to improper operation.

⚠ Disconnect the refrigerator when repairs or maintenance are performed on the refrigerator to prevent electric shock or personal injuries.

⚠ Make sure medicines or airborne particles inside or around the refrigerator will be not be inhaled during maintenance as health hazard may be caused.

⚠ The refrigerator shall be used in safe regions when toxic, harmful or radioactive articles are stored inside. As improper use may pose danger to human health or environment.

⚠ Pull out the power plug if the refrigerator is out of service for long time to prevent electric shock, leakage or fire caused by aging power lines.

⚠ If the refrigerator is left unused in areas where supervision is unavailable for a long time, make sure children will not get close to the refrigerator and the door can not be completely closed.

🚫 Do not store inflammable, explosive or volatile articles inside the refrigerator and do not use flammable sprays nearby as explosion or fire may be caused.

▌Specification

Name	Blood Bank Refrigerator	
Model	HXC-1308	HXC-1308B
External dimensions (W X D X H)（mm）	1440x925x1980	
Internal dimensions (W X D X H)（mm）	1320x700x1500	
Effective volume	1308L	
Door	Electrical heating glass door	
Insulating materials	Hard polyurethane foam (fluorine-free)	
Compressor	Totally enclosed imported compressor	
Shelf / Drawer	12 shelves / 48 baskets	12 Drawers
The loading of each shelf	Max:30kg	
Refrigeration mode	Forced Wind Cooling Circulation	
Outer plate / inner plate	Spraying steel plate / stainless steel plate	
Condenser / evaporator	Fin / fin	
Temperature controller	Computer control system	
Refrigerant	R134a 490g	
Headlamp	LED 5W	
Net weight	310kg	
Temperature of temperature measurement box	4℃±1.5℃	
Rated power supply	220-240V~/50Hz	
Rated power / current	850W/4.2A	
Noise Level	45dB(A)	
Foaming Agent	CP/IP	
Climate Type	4	
Electric shock resistance type	I	
Power connect style	Y	
USB function / temperature recorder	Standard / standard	
Alarm system	High-low temperature alarm, sensor fault alarm, power failure alarm, low battery alarm and door opening alarm	
Duration time of power failure alarm	48 hours (when battery is fully charged)	
Rechargeable battery	DC 12 V rechargeable battery	

Note: Climate Type 4 means the temperature is +30℃,the relative humidity is 55%.Technical information may vary from the appliance that you have just purchased due to technical improvements.

Specification

Name	Blood Bank Refrigerator	
Model	HXC-608	HXC-608B
External dimensions (W X D X H) （mm）	780x840x1945	
Internal dimensions (W X D X H) （mm）	680x640x1400	
Effective volume	608L	
Door	Electrical heating glass door	
Insulating materials	Hard polyurethane foam (fluorine-free)	
Compressor	Totally enclosed imported compressor	
Shelf / Drawer	6 shelves / 24 baskets	6 Drawers
The loading of each shelf	Max:30kg	
Refrigeration mode	Forced Wind Cooling Circulation	
Outer plate / inner plate	Spraying steel plate / stainless steel plate	
Condenser / evaporator	Fin / fin	
Temperature controller	Computer control system	
Refrigerant	R134a 420g	
Headlamp	LED 3W	
Net weight	204kg	
Temperature of temperature measurement box	4℃±1℃	
Rated power supply	115V/60Hz	220-240V~/50Hz/60Hz	220-240V~/50Hz/60Hz
Rated power / current	560W/7.5A	490W/3.5A	490W/3.5A
Noise Level	43dB(A)	
Foaming Agent	CP/IP	
Climate Type	4	
Electric shock resistance type	I	
Power connect style	Y	
USB function / temperature recorder	Standard / optional	
Alarm system	High-low temperature alarm, sensor fault alarm, power failure alarm, low battery alarm and door opening alarm	
Duration time of power failure alarm	48 hours (when battery is fully charged)	
Rechargeable battery	DC 12 V rechargeable battery	

Note: Climate Type 4 means the temperature is +30℃,the relative humidity is 55%.Technical information may vary from the appliance that you have just purchased due to technical improvements.

Do not store corrosive articles such as acid or alkali in the refrigerator. To prevent damage to internal components or electrical parts.

Do not place packaging plastic bags within the reach of children to prevent suffocation accidents.

Do not climb onto or place articles on the refrigerator as personal injuries or refrigerator damage may be caused due to turnover of refrigerator.

Do not plug metal articles such as iron nails or wires into the holes and gaps or vents for internal air circulation, to prevent electric shock or personal injuries due to contact of articles above with moving parts.

⚠ Caution

Check refrigerator settings when restarting the refrigerator after power failure or the power is shut off. Changes of settings may damage the articles stored.

Once the power is cut off, wait for over 5 minutes before it is reconnected to avoid damaging compressor or the system.

Wear gloves when performing maintenance to prevent personal injuries due to sharp edges or corners.

Hold the knob when closing the door to prevent finger pinching.

The angle of inclination shall not be greater than 45° when the refrigerator is handled or moved.

Be careful not to be tripped up by the refrigerator during handling, to prevent refrigerator damage or personal injuries.

Do not lift or handle equipment by using door knob to prevent refrigerator damage or personal injuries.

Do not damage refrigerating loop.

Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer.

The appliance must be positioned so that the plug is accessible.

The appliance must be placed on a solid and flat surface, or excessive vibration and noise may be produced when the appliance in operation.

The appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capacibilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.

If your cabinet is to be discard, you must remove the door and leave the shelves in place. This will reduce the posibility of danger to children. And the flammable foaming needs to be disposed by professional persons.

CP/IP foaming materials are flammable, need professional processing.

- The refrigerator battery may be low when the refrigerator is restarted after it has been out-of-service for a long time; make sure the battery switch is set at "ON" and charge the storage battery, which will be full after continuous running of refrigerator about a week.

- Make sure the temperature inside the refrigerator has reached the set value and put articles in the refrigerator by batch. Volumes accounted by articles shall not be greater than 1/3 of refrigerator to prevent rise of temperature.

- The temperature display value of refrigerator refers to the temperature value at the temperature sensing probe inside the refrigerator. Though the temperature displayed is different from the actual one at the center of refrigerator, it will approach to the real temperature gradually.

- Clean the freezer with neutral detergent diluted. Brushes, acids, gasoline, soap powders, polishing powders or hot water are prohibited to clean refrigerator as these materials may damage the painting surface and plastic & rubber components and parts. Never wipe the plastic & rubber components and parts with volatile solvent such as gasoline.

- Shut off the power as well as the battery switch if the refrigerator will be out-of-service for a long time.

- Reduce the time of keeping door open when storing or taking food each time, to prevent great fluctuation of the temperature and humidity inside the refrigerator.

- The refrigerator will see a sharp temperature increase in a short time when the door is opened, which is normal, and the temperature will resume 1h after the door is closed.

- The refrigerator shall operate with ambient temperature as 18 ~ 38°C
  (temperature of HXC-1308/1308B: 16 ~ 32°C) and humidity less than 85%; condensation will occur on the glass door in high temperature and high humidity condition, which is normal and will not affect the storage temperature inside the refrigerator; in the event of condensation, please improve ventilation conditions as soon as possible and reduce ambient temperature simultaneously.

Meaning of crossed –out wheeled dustbin:
Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.Contact you local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposals at least free of charge.

Specification

Name	Blood Bank Refrigerator
Model	HXC-608（115V/60Hz）
External dimensions (W X D X H)（mm）	780x840x1945
Internal dimensions (W X D X H)（mm）	680x640x1400
Effective volume	608L
Door	Electrical heating glass door
Insulating materials	Hard polyurethane foam (fluorine-free)
Compressor	Totally enclosed imported compressor
Shelf / Drawer	6 shelves / 24 baskets
The loading of each shelf	Max:30kg
Refrigeration mode	Forced Wind Cooling Circulation
Outer plate / inner plate	Spraying steel plate / stainless steel plate
Condenser / evaporator	Fin / fin
Temperature controller	Computer control system
Refrigerant	R134a 420g
Headlamp	LED 3W
Net weight	204kg
Temperature of temperature measurement box	4°C±1°C
Rated power supply	115V/60Hz
Rated power / current	560W/7.5A
Noise Level	43dB(A)
Foaming Agent	CP/IP
Climate Type	4
Electric shock resistance type	I
Power connect style	Y
USB function / temperature recorder	Standard / optional
Alarm system	High-low temperature alarm, sensor fault alarm, power failure alarm, low battery alarm and door opening alarm
Duration time of power failure alarm	48 hours (when battery is fully charged)
Rechargeable battery	DC 12 V rechargeable battery

Note: Climate Type 4 means the temperature is +30℃,the relative humidity is 55%.Technical information may vary from the appliance that you have just purchased due to technical improvements.

Specification

Name	Blood Bank Refrigerator	
Model	HXC-358	HXC-358B
External dimensions (W X D X H)（mm）	720x690x1730	
Internal dimensions (W X D X H)（mm）	620x490x1160	
Effective volume	358L	
Door	Electrical heating glass door	
Insulating materials	Hard polyurethane foam (fluorine-free)	
Compressor	Totally enclosed imported compressor	
Shelf / Drawer	5 shelves / 20 baskets	5 Drawers
The loading of each shelf	Max:25kg	
Refrigeration mode	Forced Wind Cooling Circulation	
Outer plate / inner plate	Spraying steel plate / stainless steel plate	
Condenser / evaporator	Fin / fin	
Temperature controller	Computer control system	
Refrigerant	R134a 420g	
Headlamp	LED 3W	
Net weight	158kg	
Temperature of temperature measurement box	4℃±1℃	
Rated power supply	220-240V~/50Hz/60Hz	
Rated power / current	460W/3.0A	
Noise Level	43dB(A)	
Foaming Agent	CP/IP	
Climate Type	4	
Electric shock resistance type	I	
Power connect style	Y	
USB function / temperature recorder	Standard / optional	
Alarm system	High-low temperature alarm, sensor fault alarm, power failure alarm, low battery alarm and door opening alarm	
Duration time of power failure alarm	48 hours (when battery is fully charged)	
Rechargeable battery	DC 12 V rechargeable battery	

Note: Climate Type 4 means the temperature is +30℃,the relative humidity is 55%.Technical information may vary from the appliance that you have just purchased due to technical improvements.

Installation environment

- Ambient temperature: 18°C to 38°C (temperature of HXC-1308/1308B: 16 ~ 32°C), 18°C to 25°C are optimal and air conditioning system is used as necessary.
- Ambient humidity: below 85%Rh.
- Avoid excessive dust.
- Avoid mechanical swing or vibration.
- The refrigerator shall operate at an altitude Lower than 2000m.
- Input voltage: rated voltage ± 10%.

⚠ Caution
- As it is sensitive to ambient temperature. Refrigerator can not operate normally if it is installed in environments other than those described above. Start operation after the environment is improved.
- It is prohibited to install the refrigerator outdoors. Electric leakage or shock may be caused if the refrigerator gets wet by rainwater.

Installation site

The installation site shall meet following requirements for normal operation and best performance of refrigerator:

- Do not install the refrigerator in a narrow and confined space and the door of the placement room may not be smaller or lower than that of the refrigerator, to ensure smooth entry and exit of the refrigerator as well as to prevent difficulty in maintenance and damage to the stored articles due to not timely repair of refrigerator as the installation site is not easy to be accessed.
- The ground at the installation site shall be solid and flat.
- It is well ventilated and free from direct sunshine.
- Do not share one socket with plugs of other equipment and the plug shall be securely plugged into the socket.
- Do not twist or compress the power line.
- If the power line needs to be extended, the extended line shall be no smaller than 3mm² in sectional area and no longer than 3m.
- Check the operating voltage before operation and voltage regulator appropriate for motor load may be applied in regions with unstable voltage. Ensure the normal input voltage stands at 220V±10% and the power of voltage regulator is greater than 4000W.
- The refrigerator shall be grounded in a reliable manner.
- If the socket is provided with grounding wire, check if it is well grounded before operation.
- If the socket is not provided with grounding wire, a new one shall be installed by engineering technician.
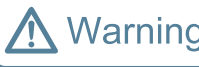
⚠ Warning
- Do not ground the refrigerator through gas pipes, water supply pipes, telephone lines or lightning conductors as electric shock may be caused.
- The power plug can be accessed after installation to ensure the power line can be pulled out in a timely manner in emergency cases. The air vent shall be free from barriers.

Preparation before use

1. Remove the packing material and packaging tape

Remove the all packing materials and packaging tapes for transportation.

⚠ **Caution**

- For safety transportation, the bottom of the product is installed with fixed connecting plate. Prior to use, users are requested to remove screws that connect the machine and blocking and then rotate the fixed connecting plate to hide it at the bottom of the machine.
- To handle the refrigerator before un-packaging, forklift or package carrier may be used. If the forklift is used, it shall be inserted at the bottom of blocking from the front or back of the refrigerator to move the refrigerator. If the package carrier is used, it shall pick up at the bottom of blocking and can only pick up the side of the refrigerator.
- After un-packaging, to handle the refrigerator, you may push wheels for handling.
- During handling, the inclination angle of refrigerator shall not be greater than 45°.

### 2. Count refrigerator accessories accompanied

Check the articles inside the refrigerator against the packing list; if any difference, contact the after-sale service.

3. Placing conditions

Leave a gap of 10cm in minimum around the refrigerator for ventilation and heat dissipation.

> 30cm from the top

> 10cm from the back

> 10cm from the left

> 10cm from the right

Downward   upward

Supporting foot

4. Adjust bracing foot

Rotate the leveling feet with wrench in clockwise direction to extend them outward and support on the ground. Make sure the refrigerator will not move during operation.
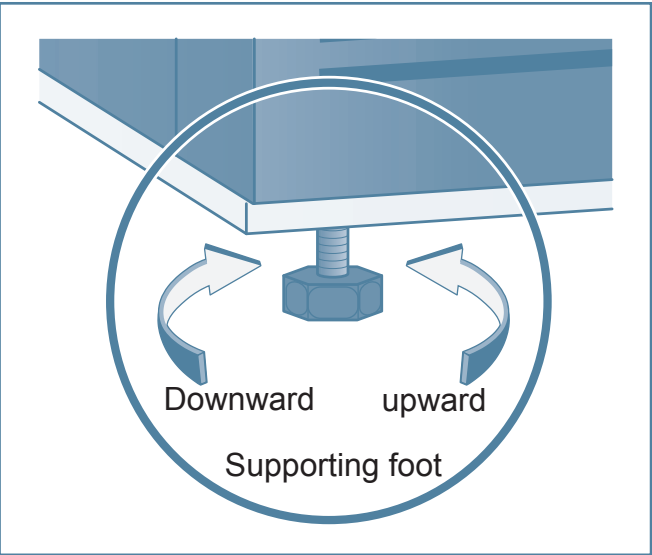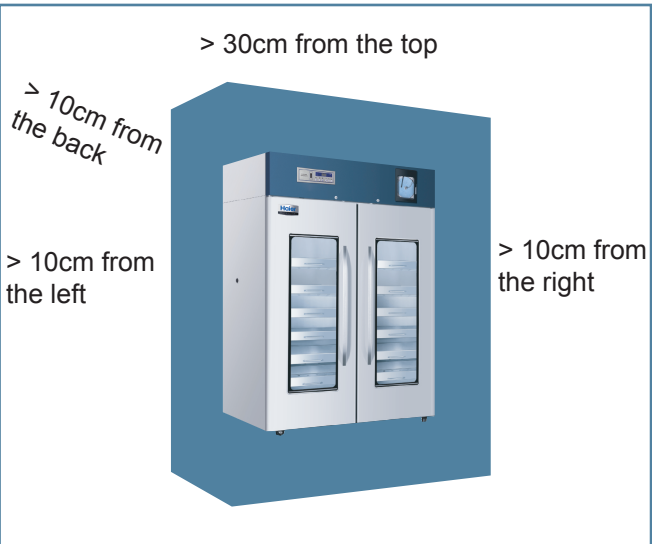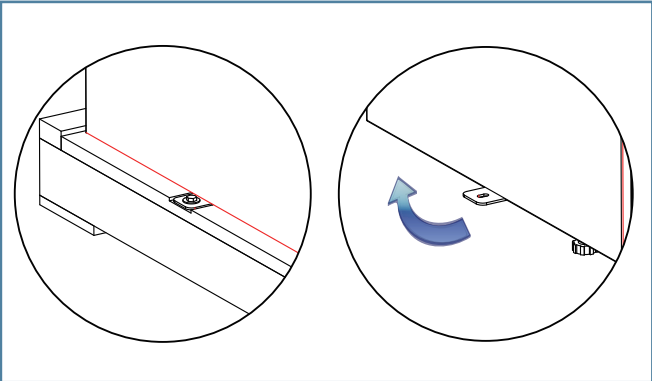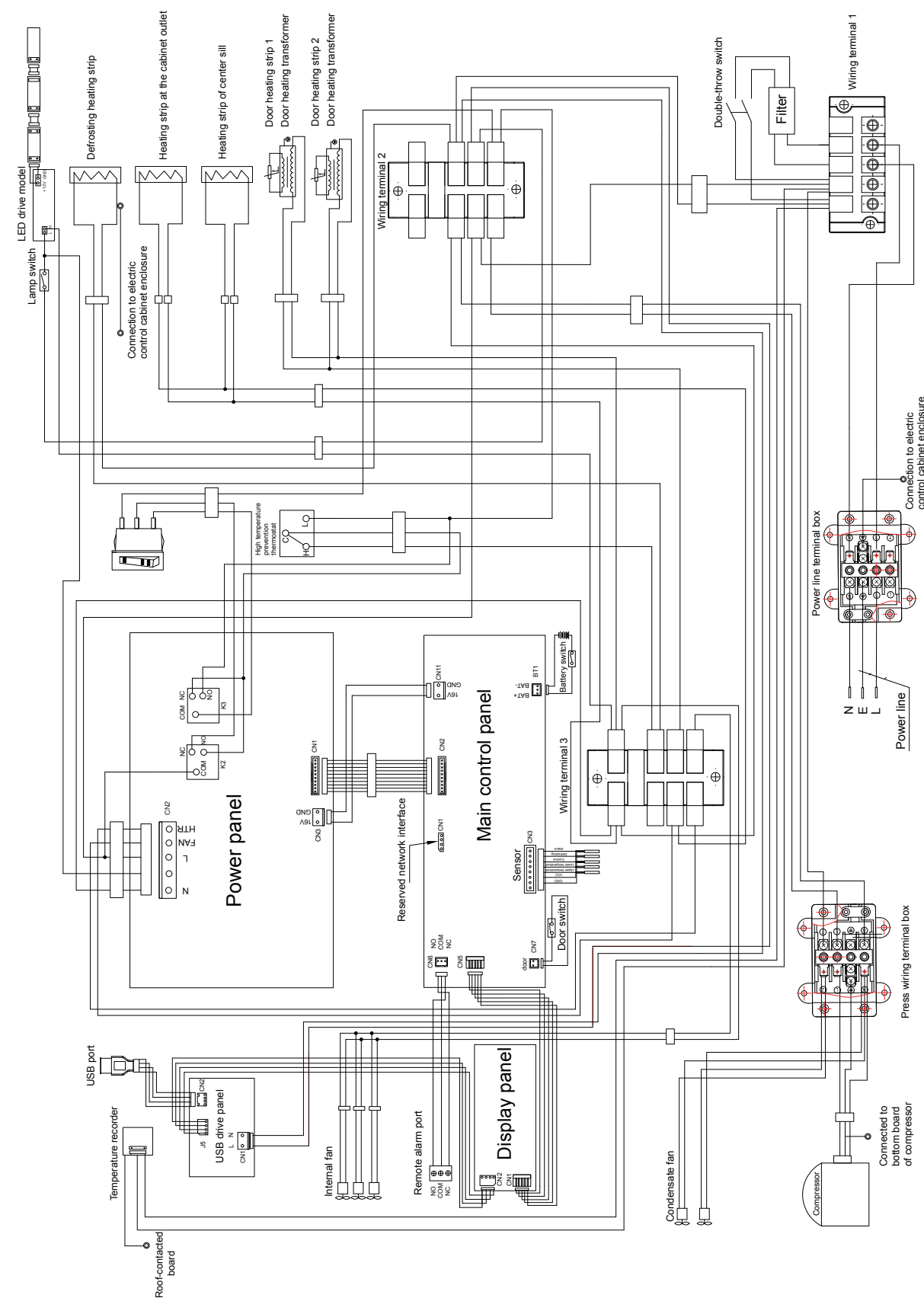
Specification

Name	Blood Bank Refrigerator	
Model	HXC-158	HXC-158B
External dimensions (W X D X H) （mm）	560×570×1530	
Internal dimensions (W X D X H) （mm）	460×370×950	
Effective volume	158L	
Door	Electrical heating glass door	
Insulating materials	Hard polyurethane foam (fluorine-free)	
Compressor	Totally enclosed imported compressor	
Shelf / Drawer	4 shelves / 4 baskets	4 Drawers
The loading of each shelf	Max:10 kg	
Refrigeration mode	Forced Wind Cooling Circulation	
Outer plate / inner plate	Spraying steel plate / stainless steel plate	
Condenser / evaporator	Fin / fin	
Temperature controller	Computer control system	
Refrigerant	R134a 270g	
Headlamp	LED 3W	
Net weight	107kg	
Temperature of temperature measurement box	4℃±1℃	
Rated power supply	220V-240V~/50Hz/60Hz	
Rated power / current	350W/2.6A	
Noise Level	42dB(A)	
Foaming Agent	CP/IP	
Climate Type	4	
Electric shock resistance type	I	
Power connect style	Y	
USB function / temperature recorder	Optional / optional	
Alarm system	High-low temperature alarm, sensor fault alarm, power failure alarm, low battery alarm and door opening alarm	
Duration time of power failure alarm	48 hours (when battery is fully charged)	
Rechargeable battery	DC 12 V rechargeable battery	

Note: Climate Type 4 means the temperature is +30℃,the relative humidity is 55%.Technical information may vary from the appliance that you have just purchased due to technical improvements.

Circuit diagram labels: LED drive model, Lamp switch, Defrosting heating strip, Heating strip at the cabinet outlet, Heating strip of center sill, Door heating strip 1, Door heating strip 2, Door heating transformer, Wiring terminal 2, Double-throw switch, Filter, Wiring terminal 1, Connection to electric control cabinet enclosure, High temperature prevention thermostat, Power line terminal box, Connection to electric control cabinet enclosure, Power panel, Main control panel, Reserved network interface, Sensor, Wiring terminal 3, Battery switch, Power line, N E L, Door switch, Press wiring terminal box, USB port, Temperature recorder, USB drive panel, Display panel, Internal fan, Remote alarm port, Condensate fan, Compressor, Connected to bottom board of compressor, Roof-contacted board

5. Standing

Do not switch on the power after the refrigerator is placed, leveled and cleaned. Switch on the power after it is put on standing for more than 24h, to ensure normal performance of refrigerator.

6. Installation of the Handle

• Handle installation of products shall be conducted in thefollowing steps:

①. Place downward the handle-end with a hole;

②. Align the handle and handle guide on door;

③. Uphold the handle after the handle is locked with the handle guide;

④. Use bolt to fix the handle from bottom after tight installation of the handle.
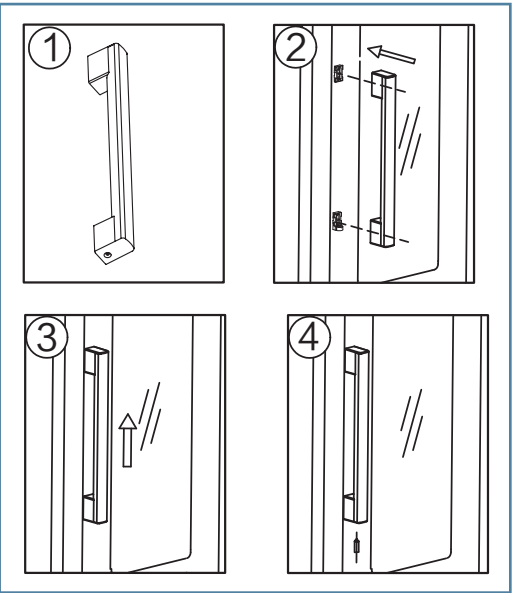
Initial Power-on

Initial start-up and continuous operation shall comply with the following regulations:

> When the refrigerator is empty, connect the power line to dedicated socket that meets the standard. Make sure that the power supply is the rated voltage.

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> After power-on, the audible alarm may ring. This is normal. Turn on battery switch, press buzzing cancel button, to eliminate the alarm. Visual alarm operates continuously until the temperature of sensor in temperature measurement box reaches 2°C-6°C .
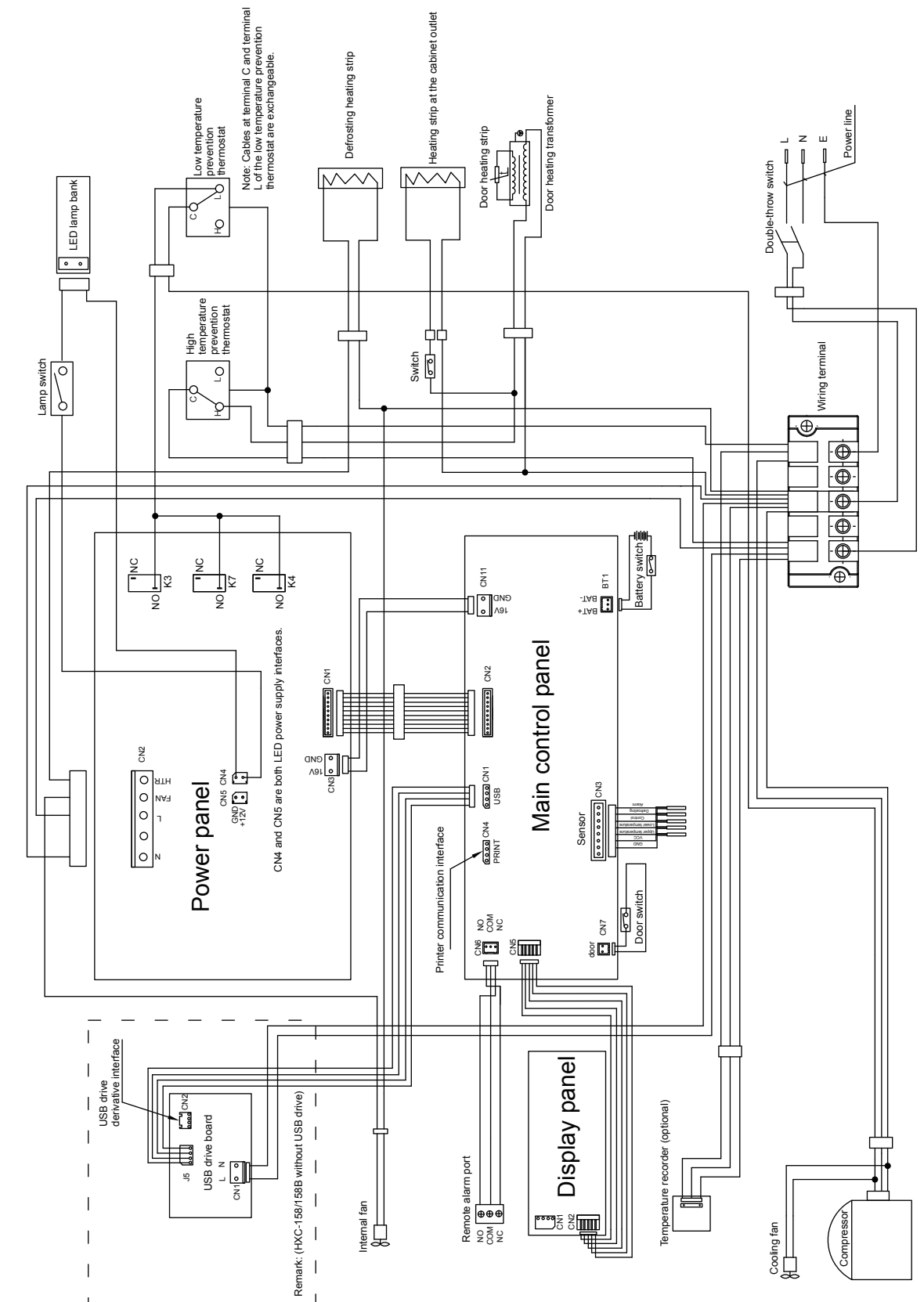
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> The refrigerator is pre-set to be operated at 4°C before leaving the factory. Temperature setting is not needed.

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> After hours of operation, temperature of refrigerator will be stabilized at a set value. Once the temperature of the refrigerator is stabilized, please examine whether the temperature measurement box is in accordance with the temperature at set point.
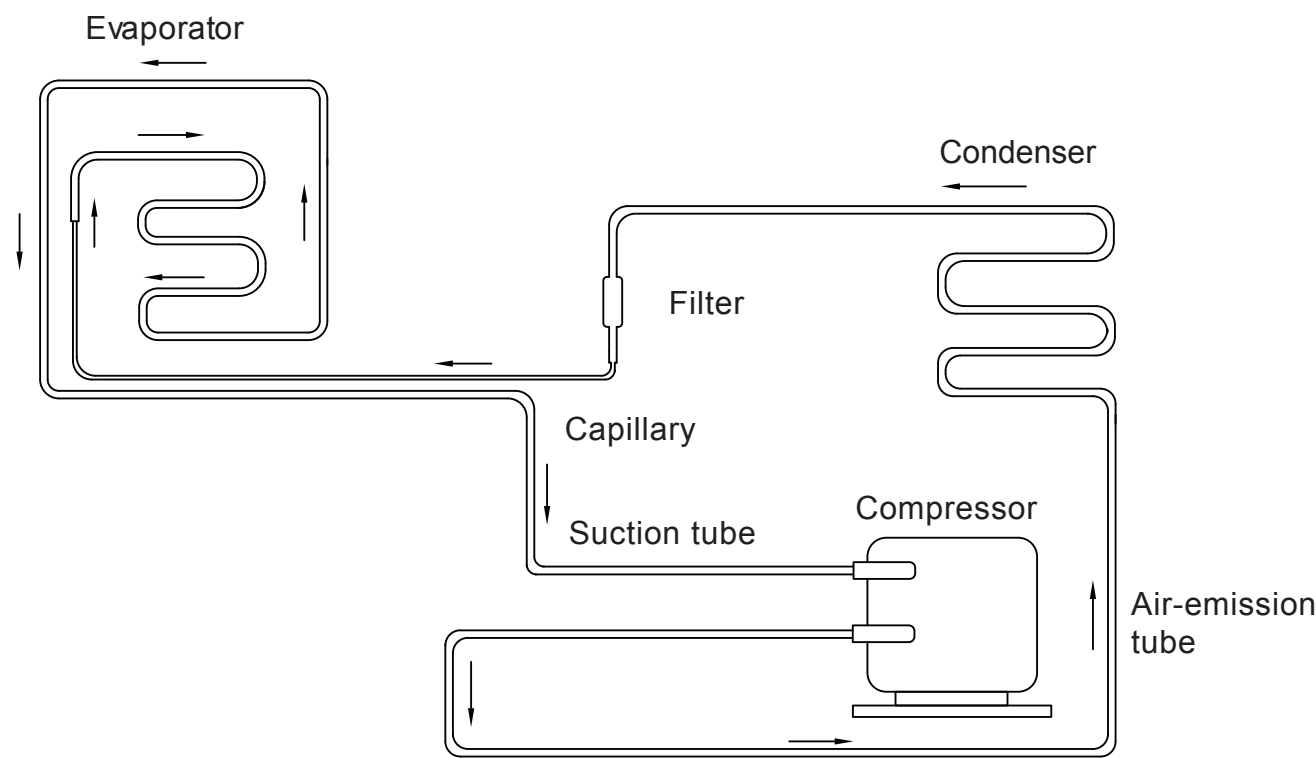
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> Turn on the light, and ensure that the lamp in the refrigerator is operated normally.

▼

> Put the articles gradually into the refrigerator, after complete examination of refrigerator.

Circuit Diagram（HXC-158/158B/358/358B/608/608B）

Refrigeration Schematic & Circuit Diagram

Refrigeration Schematic

Evaporator

Condenser

Filter

Capillary

Suction tube

Compressor

Air-emission tube

- This product shall be in charge by a specially-assigned person. The person shall examine the operating condition and record it. If the temperature is too high or too low, articles shall be transferred into other refrigerators. Storage of articles can restart until the fault is removed.
- This product is blood bank refrigerator. The temperature in the box is set as 4°C. Please make sure that the articles stored comply with environment, to avoid article damage and economic loss.
- Due to refrigeration inertance, temperature and humidity displayed have certain difference with the practical value in box. This is normal.
- Please do not place articles between the liner bottom and bottom shelf of this product, to avoid blocking of air channel, which may affect the uniformity of temperature in the box.
- All the refrigerators are storing equipment. It is prohibited to put into too many articles with relatively higher temperature at one time. If so, the compressor may not stop for a long time with temperature reducing slowly, which will reduce service life. Articles must be put in batches, and the temperature shall be reduced in steps until it reaches the temperature required.
- Do not damage refrigerating loop.
- Do not apply electronics without product permission in the refrigerator.
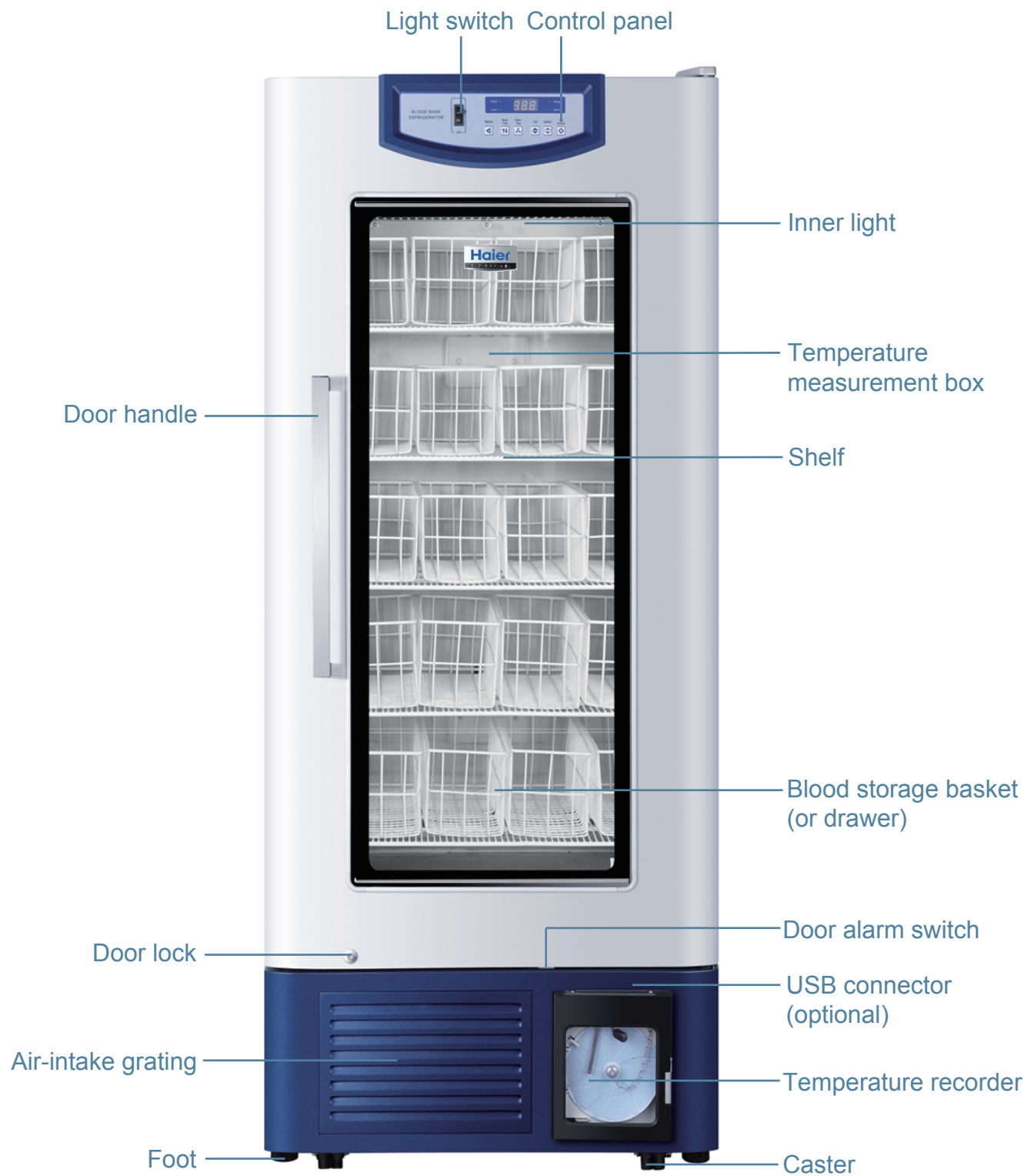
Operation after Outage

The refrigerator has memory function toward set value. When the power is connected after power outage, it will operate according to the set parameters before last power outage.

⚠ Warning
- Once the power is cut off, wait for over 5 minutes before it is reconnected to avoid damaging compressor or the system.
- If the refrigerator is not used for a long time, the power socket shall be pulled out. Meanwhile, the battery switch shall be turned off, to prevent electric shock, electric leakage or fire disaster due to aging of power line.
- If the refrigerator is placed for a long time without monitoring, make sure that no kid can get access to it. The door shall not be closed completely.

Component Names

HXC-158/158B/358/358B/608/608B

Light switch Control panel

Inner light

Door handle

Temperature measurement box

Shelf

Blood storage basket (or drawer)

Door alarm switch

Door lock

USB connector (optional)

Air-intake grating

Temperature recorder

Foot

Caster

Have questions in the process of usage? Doubt that the refrigerator has fault? Read here firstly. This chapter explains to you various faults and phenomena that are potential to happen and their solutions.
Call the Haier after-sale service if the question hasn't been resolved after operation.
Do not disassemble and repair the refrigerator by yourself.

Fault	Troubleshooting scheme
The refrigerator is not working	Examine whether the input power is in accordance with requirements
	Whether the plug and the socket are in poor connection
	Whether the input wire or the controlling wire has fault
	Whether the voltage is too low
Whether the refrigeration effect is not apparent and temperature exceeds the standard	Whether storing too many or too hot articles
	Is there certain space between stored articles
	Is there direct sunlight or other heat radiation
	Whether the door is open frequently
	Whether the ambient temperature is too high
	Whether the air duct is blocked
Whether noise level is too high	Whether the refrigerator is placed steadily
	Whether certain part of the body contacts external objects or the wall
	Noise indicated in the technical data is the mean data tested in the standard laboratory without noise, in which the refrigerator without storage of articles is laid on the rubber pad and is steadily operated after closing the door to measure out the data at 1 meter from the surface, the data do not include the value of startup and shutdown of the refrigerator. During the process of usage, it is normal that the actual noise is different from the indicated one due to the influences of loaded articles, ambient noise, not closing door, startup and shutdown of compressor, etc.
Alarm light flashes and buzzer alarms	Whether articles have been put into the refrigerator just now and the temperature is not stable at 2 ~ 6°C. It will automatically eliminated after a while of refrigeration.
	Whether the door is not closed well and it is a door opening alarm
	Whether there is an insufficient power supply and it will recover a while after startup.
	Whether the temperature exceeds the standard

Deactivate the refrigerator

• Cut off the power and switch the battery to "o" side if the refrigerator is out of service for a long time.
• Open the door of the refrigerator and take out the internal shelf;
• Make a thorough cleaning to the refrigerator;
• Clean the shelf;
• Put back the shelf into the refrigerator after the refrigerator and the shelf are dry in the air;
• Close the door of the refrigerator, and put on plastic bag before sealing up for storage.
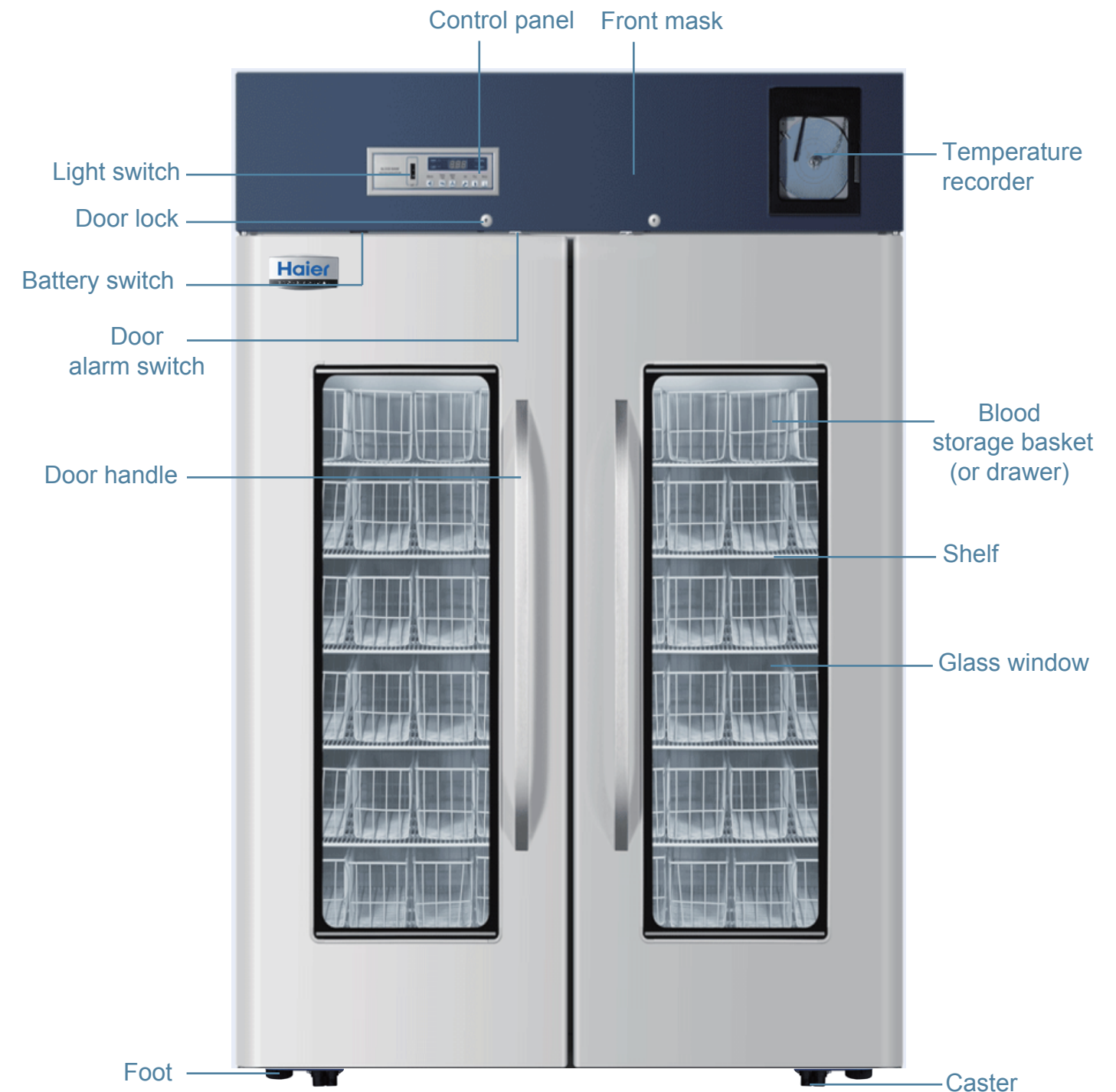
Purchasing of the recorder and its paper

The temperature recorder is optional to the product of this series (HXC-1308/1308B is standard). The recording papers used by the temperature recorder are imported and specially made papers. The accompanying one is free of charge and can be used for half a year only. You can apply to our company once they are used up. The ordering cycle is 1 ~ 2 months and it will be delivered 15 days after your money is received. Consult us by phone for detailed information.

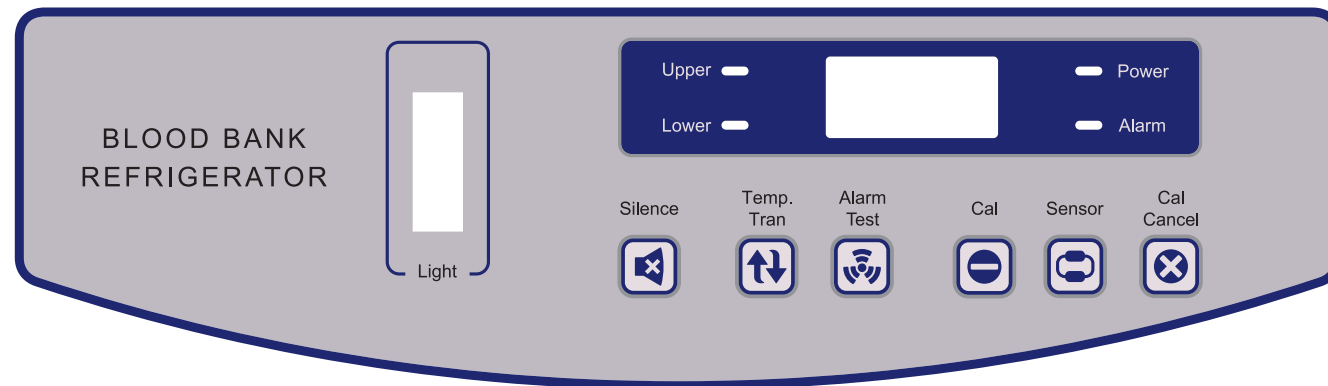## Purchasing of backup battery of the recorder

Battery in the same specification and the same brand can be purchased in proper shops (9V DC). In order to guarantee the reliability of the performance of the battery, you can apply to our company for purchasing. The ordering cycle is 1 ~ 2 months and it will be delivered 15 days after your money is received. Consult us by phone for detailed information.
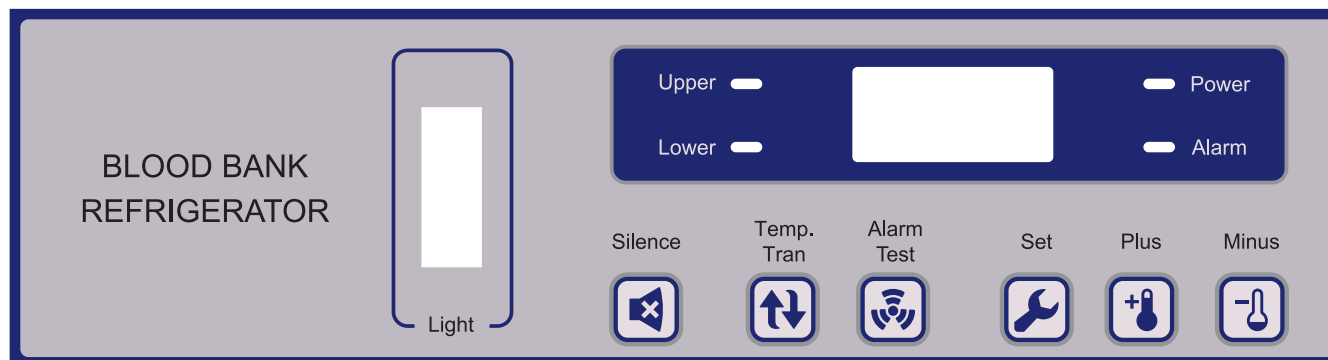
HXC-1308/1308B

Control panel   Front mask

Light switch

Door lock

Battery switch

Door
alarm switch

Door handle

Temperature recorder

Blood storage basket (or drawer)

Shelf

Glass window

Foot

Caster

Control Panel

HXC-158/158B/358/358B/608/608B

BLOOD BANK REFRIGERATOR

Light

Upper ▬   ▬ Power
Lower ▬   ▬ Alarm

Silence   Temp. Tran   Alarm Test   Cal   Sensor   Cal Cancel

HXC-1308/1308B

BLOOD BANK REFRIGERATOR

Light

Upper ▬   ▬ Power
Lower ▬   ▬ Alarm

Silence   Temp. Tran   Alarm Test   Set   Plus   Minus

Component Cleaning

⚠ Warning

- In order to prevent from getting an electrical shock or personal injury, make sure that the power of refrigerator is cut off before conducting any repair to the refrigerator.
- Make sure that you do not intake any drug or suspended particulate around the refrigerator when you are maintaining the refrigerator, or else it may be harmful to your health.

Clean the refrigerator

- Clean the refrigerator once a month. Regular cleaning can keep the appearance of the refrigerator a brand new look.
- Wipe out the dust on shell, chamber and all the accessories of the refrigerator with a dry cloth. If the refrigerator is very dirty, remove the dirt with a clean cloth dipped with neutral detergent and wipe out the residues with a wet cloth. Then wipe with a dry cloth.
- Do not pour water on the shell or in the chamber of the refrigerator. Otherwise, it may damage the insulation of the electrical equipment and may lead to the occurrence of fault.
- Compressor and other mechanical parts are in fully closed state and they do not need to be lubricated.

Replace the illumination light

The product of this series is equipped with LED light. The energy consumption of the light is low and the service life is long. Timely contact with the after-sales service personnel for the replacement if there is abnormality.

Clean the evaporation box at the rear part (HXC-1308/1308B)

Evaporation box is installed at the rear part of the refrigerator.
- Remove the 2 screws at the bottom and loosen the other 2 at the top (no need to remove). Lift the evaporation box upward and take it off;
- Clean the evaporating dish;
- Re-install the evaporation box after cleaning and tighten the 4 screws both at top and bottom. Cleaning one a month is recommended. But if it is used in a high temperature and humidity environment, cleaning for 3 times a month is recommended.

Screws at the top
Evaporation box
Screws at the bottom
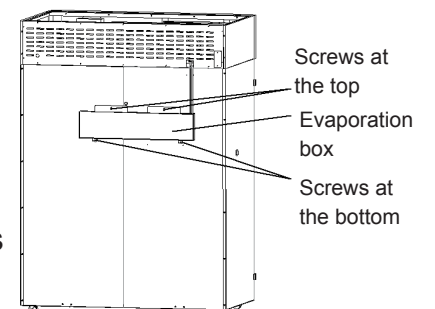
Automatic recovery of alarm

The refrigerator of this series has the function of automatic recovery of alarm:

• Press the key of buzzer cancel on the display board when there is alarm and it can stop the buzzer to alarm. (Remote alarm will not be stopped)

• If the alarm conditions still exist, the buzzer alarm will be automatically recovered after suspending for 20 min (for HXC-1308/1308B, it is 30 min).

Remote alarm terminals

The refrigerator of this series has the remote alarm terminals:

• Remote alarm terminals are installed on the switch panel of the electric control box （on the right side of the refrigerator HXC-1308/1308B locates at the upper right corner of the rear part of the refrigerator).

• Alarm signal is sent by the terminal. The bearing capacity of the terminal is DC 30 V, 2A.

Output from junction point:

Remote alarm terminals have NO, NC and COM terminals.

Users can select NO or NC as per needs.

COM
NO
NC
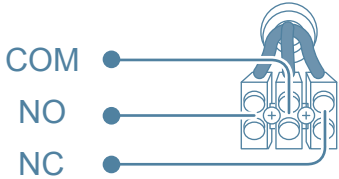
⚠ Caution

• Remote alarm function needs users to install the alarming device by themselves. The alarming device will be used coordinating with the remote alarm port.

• Remote alarm has NO and NC functions. When the power is cut off outside, no matter whether the battery switch is on or off, the remote alarm can be started.

• The remote alarm port coordinates with the audible alarm on the refrigerator. Thus, the remote alarm can be stopped by pressing the key of buzzer (outage alarm cannot be canceled).

Temperature displayer

The refrigerator is set to reach appropriate temperature automatically before leaving the factory: 4℃±1℃ （4℃±1.5℃ for HXC-1308/1308B) .

Temperature display

● Light-on   ○ Light-off

	Operation	Button operation	Display	Display mode
1	Plug in, and power-on		Average temperature of temperature measurement box ● up ● low	Average temperature
2	Press the temperature display button	⇅	Temperature of upper temperature measurement box ● up ○ low	Temperature of upper temperature measurement box
3	Press the temperature display button	⇅	Temperature of lower temperature measurement box ○ up ● low	Temperature of lower temperature measurement box
4	Press the temperature display button	⇅	Average temperature of temperature measurement box ● up ● low	Average temperature
5	Repeat the operation, starting from 2			

⚠ Caution

The displayed temperature indicates the temperature sensed by the temperature measurement box in the temperature measurement of upside and bottom of the refrigerator respectively. The displayed temperature is not always 4℃. Temperature sensor stands for the value of average temperature in the storing box.

Temperature setting

To modify the temperature set value, for example, the original set value 4°C is to be modified as 4.5°C, please operate according to the following steps:

Temperature setting

- HXC-158/158B/358/358B/608/608B

	Button operation	Display
1		Display the temperature in box
2	Press on "Sensor" and "Cal cancel" at the same time for more than 5 seconds	Original set value 4°C appears and flashes (please conduct next operation within 5s of the flashing, otherwise, the displayer will restore the temperature in the display box)
3	Click "Cal cancel" (increase 0.1°C/time) or "Sensor" (reduce 0.1°C/time)	The original set value 4°C will change accordingly until the displayed value on the display screen reaches 4.5°C
4	Stop operation after the required temperature value is set as 4.5°C	The flashing of displayed temperature value 4.5°C stops after 5 seconds. Temperature setting value is stored in the system. The displayer redisplays the temperature in box if the setting works.

SN.	Alarm items	Conditions of alarm start	Buzzing	Light flashing	Display requirements	Note
5	Alarm of super high temperature	High temperature controller detects the temperature inside the product is ≥ 12; at the time, both upper and lower sensors are bound to be detected with temperature excess.	Alarm of simultaneous temperature excess		Display the actual conditions	Alarm of simultaneous temperature excess
6	Remote alarm	(1) Temperature excess in upper or lower sensor; (2) Fault in upper, lower, control, defrosting and alarming sensors; (3) AC220V/110V power outage Enable remote alarm when any one of the above conditions is met.	Accompanied with continuous buzzing with 1 Hz	According to different alarming situations, execute corresponding to item 1, 2 and 3.	According to different alarming situations, execute corresponding to item 1, 2 and 3.	According to different alarming situations, execute corresponding to item 1, 2 and 3. Remote alarm has NO and NC functions. When the power is cut off outside, no matter whether the battery switch is on or off, the remote alarm can be started.

> ⚠ Caution

- When there is a power outage, the fully charged backup battery can enable the alarm function to keep working for 48 hours For the initial startup of the refrigerator or after a long time of power off, the battery must be fully charged and the refrigerator needs to be run for 2 days.
- Press key of "Alarm test". Each pressing will enable the buzzer to make 3 times of sound with the frequency of continuous 1 Hz, meanwhile, the alarm indicator light flashes for 3 times. When it is not in the remote hardware alarming state, the remote alarm relay will be disconnected after having operated for 3 times. Then decide which action shall be taken according to whether alarm is needed. And this indicates that the alarm system is in normal conditions, or else the alarm system has fault.
- Someone appointed shall be responsible for the refrigerator. He is in charge of examining the running status of the refrigerator and making the record. If the temperature inside the refrigerator is too high or too low or other abnormal phenomenon, he shall transfer the articles to other refrigerators which conform to the conditions till the fault has been settled and articles can be stored in that refrigerator again.
- When the battery has fault or the connecting wire has error, press "Alarm test" and "E5" is displayed in the display area. At the moment, examine whether the battery switch is open or closed and whether the connection is correct. Replace the battery if all of the above are correct (except for HXC-1308/1308B).
- When the switch of the rechargeable battery is not open or the there is less battery power, press the key of alarm test for one time, and "E6" is flashing and displaying in the displaying window for 3 times (be applicable to HXC-1308/1308B) .

SN.	Alarm items	Conditions of alarm start	Buzzing	Light flashing	Display requirements	Note
3	Fault of sensor	Control sensor is in short circuit or broken circuit, fault code: E3	1Hz Continuously Buzzing	Alarm light flashes	Display board displays the alternation between the mean value of temperature of both upper and lower sensors and E3, wherein, E3 displaying for 2s while the temperature displaying for 6s.	Start remote alarm. Pressing "Slience" will cancel the functions of buzzer and remote alarm. If it is still in an alarming state after a period of Fd (user parameters can be set, the default value is 30 min), the buzzer and remote alarm will be restarted.
		Defrosting sensor is in short circuit or broken circuit, fault code: E4			Display board displays the alternation between the mean value of temperature of both upper and lower sensors and E4, wherein, E4 displaying for 2s while the temperature displaying for 6s	
		Alarming sensor is in short circuit or broken circuit, fault code: E5			Display board displays the alternation between the mean value of temperature of both upper and lower sensors and E5, wherein, E5 displaying for 2s while the temperature displaying for 6s.	
4	Door opening alarm	Opening the door (including slight opening) enables the function of door opening alarm.	Delay 2 min (delay 1 – 12 min is adjustable, set by user parameter dAt, the buzzer will continuously buzz with 1Hz)	Alarm light flashes	Display the actual conditions	Function of remote alarm isn't started.

- HXC-1308/1308B

	Button operation	Display
1		Display the temperature in box
2	Long press the "SET" for 5s	Display"TS"（Please do the next operation within 60s. Otherwise the display panel will return to the inner temperature）
3	Press the "SET"	The original temperature set value 4 ℃ flickers.(Please do the next operation within 60s. Otherwise the display panel will return to display "TS")
4	Press "Plus"(0.1℃ higher/time) or "Minus"(0.1℃ lower/time)	The original temperature set value 4℃ changes accordingly，until the temperature displayed on the display panel is 4.5 ℃
5	Press "Set" to return to the previous level, and then long press "Set" for 5s, the new temperature will be saved and back to the normal display mode	Return to previous level, display "TS", and then back to the normal mode, display the inner temperature

Automatic Defrosting

There are two defrosting periods in the refrigerator, and they are automatic.

1. Periodical Defrosting

Temperature of the refrigerator shall be kept stabilized and the cycling switch of refrigerating compressor be kept operated. When the compressor stops operating, a small heater will be powered-on and thaw the frost layer on the refrigerating coil. This has no obvious influence on temperature in the inner chamber.

2. Forced Defrosting

When the ambient humidity is high or large amount of wet articles are placed in the box, periodical defrosting may be unable to remove all the frost on refrigerating coil. The machine will automatically enter forced defrosting period. Once the forced defrosting is finished, the refrigerator will restore normal operation and the temperature in the box may rise 1-2 ℃ during the defrosting period.
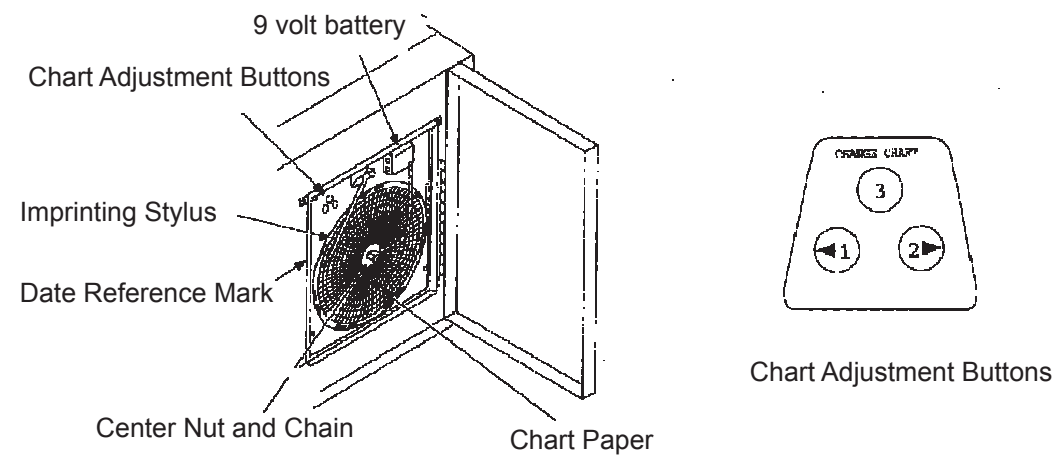
Refrigerator temperature recorders of 6-inch standard panel can be chosen for HXC-158/158B/358/358B/608/608B to record the temperature change in box.

• Installation and Operation

In order to operate and use the recorder in a right way, please follow the steps below:

1. Open the door of recorder. You can see the recorder;

2. Switch on the 9V DC-battery on the right corner of the recorder. The battery is emergency power supply;

3. Examine the recording paper. If it needs to be changed, please change the recording paper according to the operation steps in P19;

4. Pull off the plastic cap from recording pen and close the door of recorder

⚠ Caution　　The recorder will not operate before the temperature in the box reaches the recording scope.

9 volt battery
Chart Adjustment Buttons
Imprinting Stylus
Date Reference Mark
Center Nut and Chain
Chart Paper
Chart Adjustment Buttons

• Power supply

The recorder power is supplied by alternating current (AC) in normal condition when the refrigerator operates. If AC power supply breaks down, LED indicator lamp on the recorder flashes and alarm indicates power supply is abnormal. The recorder continues recording of temperature in box with power supply from emergency battery. Each emergency battery can sustain for about 30h (Note: Low-power battery shall be replaced in time, to avoid corrosion of battery button. In order to save battery, please cut off battery button when the refrigerator is not used. In normal application process, please install emergency battery to guarantee normal recording when the power is outaged). LED indicator lamp of the recorder continues to flash until the main power (AC) is connected and the emergency battery is changed. When the power of emergency battery is low, flashing of LED indicator lamp on the recorder indicates that the battery needs to be changed.

SN.	Alarm items	Conditions of alarm start	Buzzing	Light flashing	Display requirements	Note
1	Over temperature alarm (high and low temperature alarm)	When any temperature of upper and lower display temperature is no lower than ALH (the alarm temperature is of upper limit and the user parameter can be set), high temperature alarm starts; when any temperature of upper and lower display temperature is no higher than ALH (the alarm temperature is of lower limit and the user parameter can be set), lowtemperature alarm starts.	1Hz Continuously Buzzing	Alarm light flashes	Display actual temperature	Start remote alarm, and buzzing alarm and remote alarm function will be canceled after "Slience" is pressed. If the machine is still in alarm status after Fd time (user parameter can be set and the default value is 30min), the buzzing alarm and remote alarm will restart.
2	Power failure alarm	When power outage or the power switch is not turned on, the outage alarm occurs. In case of power outage, the computer board will be powered by standby rechargeable battery.	1Hz Continuously Buzzing	The power indicator lights of alarm light flash at the same time	Display the average temperature of upper and lower sensors in refrigerator for 5s (after power outage, the average temperature of upper and lower sensor also display for 5s) and the screen turns black for 30s, which is alternative.	Start remote alarm. Buzzing can be canceled after pressing "Slience". If the refrigerator is still in alarm status after Fd time (user parameter can be set and the default value is 30min), the buzzing alarm will restart until the outage is solved.
3	Fault of sensor	Upper sensor is in short circuit or broken circuit, fault code: E1	1Hz Continuously Buzzing	Alarm light flashes	Display board displays the alternation between the temperature of lower sensor and E1, wherein, E1 displaying for 2s while the temperature displaying for 6s.	Start remote alarm. Pressing "Slience" will cancel the functions of buzzer and remote alarm. If it is still in an alarming state after a period of Fd (user parameters can be set, the default value is 30 min), the buzzer and remote alarm will be restarted.
		Lower sensor is in short circuit or broken circuit, fault code: E2			Display board displays the alternation between the temperature of upper sensor and E2, wherein, E2 displaying for 2s while the temperature displaying for 6s.	

HXC-158/158B/358/358B/608/608B

Alarm or safety	Phenomenon	Alarm indication	Buzzer alarm	Safe operation
High temperature	If the upper or lower temperature sensor perceives that the refrigerator temperature is higher than 6℃	Alarm light flashes	Pulse sound alarm	Trigger remote alarm contact
Low temperature	If the upper or lower temperature sensor perceives that the refrigerator temperature is lower than 2℃	Alarm light flashes	Pulse sound alarm	Trigger remote alarm contact
Power cut	Refrigerator is in power outage status	The temperature display area displays the temperature in refrigerator for 60s, then stops displaying for 60s, and they will conduct alternatively	Within 48h of power outage, pulse sound alarm occurs	Trigger remote alarm contact
The door is open slightly	The outside door is open slightly or fully	After delay for 10min, alarm light flashes	After delay for 10min, pulse sound alarm occurs	Trigger remote alarm contact
Sensor abnormal	Open circuit or short circuit occurs on upper temperature sensor	The alarm light flashes and E1 is displayed in temperature display area	Pulse sound alarm	Trigger remote alarm contact
	Open circuit or short circuit occurs on lower temperature sensor	The alarm light flashes and E2 is displayed in temperature display area	Pulse sound alarm	Trigger remote alarm contact
	Open circuit or short circuit occurs on control sensor	The alarm light flashes and E3 is displayed in temperature display area	Pulse sound alarm	Trigger remote alarm contact
	Open circuit or short circuit occurs on defrosting sensor	The alarm light flashes and E4 is displayed in temperature display area	Pulse sound alarm	Trigger remote alarm contact
	The rechargeable battery voltage is too low or not connected.	The alarm light is on constantly. "E5" is displayed in temperature display area for 3 times and 3s each time.	Pulse sound alarm	Uninfluenced

- Maintenance and change of emergency battery of the recorder

When the green LED of recorder flashes, there are two checking methods:

1. Discharge the emergency battery. If the LED lamp is off and the recorder stops operation, it indicates that there is problem on the recorder main power (220V/50HZ). Please check whether there is power outage, short circuit or loose wiring. Install the emergency power when the recorder operates normally after maintenance of main power. If LED lamp stops flashing, it indicates that the emergency power is normal. If the LED lamp continues flashing, it indicates that power of emergency battery is low. Emergency battery needs to be changed until the LED green lamp stops flashing.

2. Discharge the emergency power. LED lamp of power supply continues flashing and recorder operates normally, which indicates that the main power is normal and the power of emergency battery is so low that it needs to be changed until LED green lamp works and stops flashing.

- Change Recording Paper

Change of recording paper shall be conducted in the following steps:

1. Find the compress button (3#) on the left corner and in front of recorder panel;

2. Press the button (3#) for about 1 second until the recording pen starts moving to the left side;

3. Loosen the middle bolt when the recording pen moves outside the recording paper. Replace the old paper with a new one. Align the time line on paper with the time groove on the panel (there is a small groove on left side of the panel);

4. Tighten the central bolt again. Press the button-3# for about 1 second, to reset the recording pen and start recording temperature;

5. Examine that whether the recording pen operates well on the paper. If not, beam of the recording pen can be adjusted to make the nib contact with recording paper. (Note: Do not damage the nib and beam. If the adjustment is difficult, screw-driver can be used to discharge the beam. Install the beam after curving the beam through slight force. Repeat the above operations);

6. Accurate recording of the recording pen shall be guaranteed. Calibrate accuracy of the recording pen after exchange of paper. The method is as follow: Press button (3#) until recording pen leaves the paper. And press button (3#) again until the pen returns to the paper. At this moment, the pen will pause at the most external temperature scaling line of the recording paper (this scaling line does not have to be marked with temperature value, but must be the one at the most external circle). If the pen does not pause at the above position, you can use 1# or 2# arrow key to adjust the position within 5 seconds, to align the nib to the scaling line at the most external circle. If position of the pen is not adjusted well within 5 seconds, please repeat Step 6.

- Adjustment of Calibration of the Recorder

The recorder is accurately adjusted before leaving the plant. It will not be affected even if the power is cut off. If adjustment is required, please conduct it according to the following procedures:

1. Operate the refrigerator continuously. Use the recorder to continuously record the temperature curve for at least 2 hours after the refrigerator has reached a steady state (fluctuation of displayed temperature is regular).

2. Put a standard thermoelectric couple into a solution bottle with 100ml of glycerol (10%). And place the bottle in the box together with sensor of the recorder (sensor of the recorder can not contact any solution);

3. Compare the temperature values of standard thermoelectric couple and recorder when the bottle is placed in the box for about 4 hours and the temperature of glycerol is the same with that in the box. If temperature value of the recorder is different with that of standard thermoelectric couple, press the button on the left of the panel (1#) or on the right side (2#) to adjust the temperature value on the recorder and to make it in accordance with indicated value of the thermoelectric couple.

Note: The recording pen starts moving after the button is released for 5 seconds.

⚠ Caution	The recorder was calibrated before leaving the plant. Please do not adjust it in non-special situation.

> **Temperature recorder (HXC-1308/1308B)**

The front upper right of HXC-1308 is equipped with disk-type temperature recorder with USB connector for recording the change of temperature in the box. In order to use the disk recorder in a right and reasonable way, please read the instruction bellow carefully.

- Get familiar with your temperature recorder
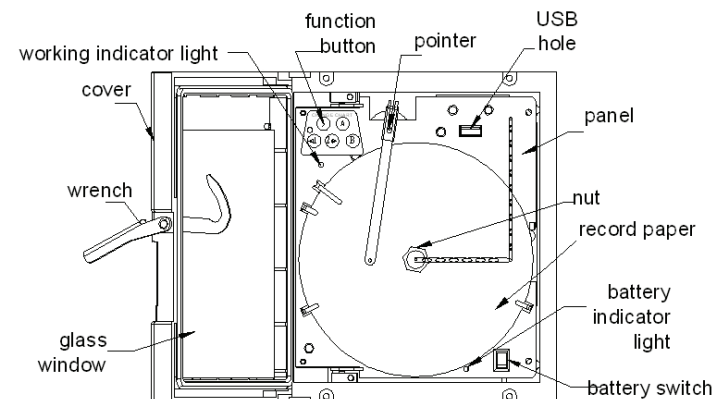
Apply standard recording paper of 7 inches for the disk-type temperature recorder. Derive the recording data through recording paper and U-disk. Please refer to the above figure to get familiar with your temperature recorder:

- Note:

Among the setting procedures of aforementioned 1P-5P, they can be adjusted by selecting parameter to be adjusted through "Sensor" key or "Cal cancel" key. If 1P (year) is displayed in the temperature display area of refrigerator, and the year (1P) and month (2P) do not need to be adjusted, reset the date (3P) directly. Press "Cal cancel" key to choose the date (3P), then press "Cal" key, at this time, the date will be displayed in the temperature display area of refrigerator in flashing mode, press "Sensor" key or "Cal cancel" key to adjust the present date then press "Cal" key to save and confirm. And next, the hour (4P) is displayed in the temperature display area of refrigerator, if it needs to be adjusted, press "Cal" key to start set. If not, press "Cal cancel" key to enter minute (5P) then the minute (5P) can be set. After the setting is completed, press and hold "Cal" for 5s to save and exit, then the temperature in refrigerator will be displayed in the temperature display area normally. Among the setting procedures of 1P-5P aforementioned, after any parameter setting is completed, if other parameters do not need to be adjusted, press and hold "Cal" key for 5s or no operation within 10s to save data and exit automatically.

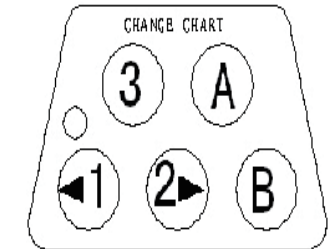| ⚠ Caution	• Before using, please confirm the time of record data of U-disk interface. If the time is not corresponding, please adjust according to aforementioned methods. • HXC-158/1308/1308B has no function module of USB.

USB function module (optional)

• USB interface function

The computer panel has USB output function which can make use of U-disk to export temperature and other test data. Plug in U-disk, the machine begins to automatic identification and import data into U-disk. During data import, press "Conform calibration" key, the flashing display of "USB" on display panel represents the data export is being on and not yet complete. After flashing for 5s, it exits and displays the actual temperature in refrigerator. If the display panel displays ALL in flashing mode, it means data export has been completed, and the U-disk can be removed from USB interface at this time and plugged in the USB interface of computer to read data.

• Time setting of record data of U-disk interface (the present time setting of system):

Press and hold the "Cal" key for 10s then "1P" is displayed in the temperature display area of refrigerator stably, press the "Cal" key then the year is displayed in the temperature display area in flashing mode (the factory value is 10), press the "Sensor" key or "Cal cancel" key to adjust the year in recycling display from 10 to 99. For instance, set the year as 2013, select 13, press "Cal" key to save and confirm. And next, "2P" is displayed in the temperature display area of refrigerator stably, press the "Cal" key then the month is displayed in the temperature display area of refrigerator in flashing mode (the factory value is 01), press the "Sensor" key or "Cal cancel" key to adjust the month in recycling display from 01 to 12, select the present month, and press "Cal" key to save and confirm. And next, "3P" is displayed in the temperature display area of refrigerator stably, press the "Cal" key then the date is displayed in the temperature display area of refrigerator in flashing mode (the factory value is 01), press the "Sensor" key or "Cal cancel" key to adjust the date in recycling display from 01 to 31, select the local present date, and press "Cal" key to save and confirm. And next, "4P" is displayed in the temperature display area of refrigerator stably, press the "Cal" key then the hour is displayed in the temperature display area of refrigerator in flashing mode (the factory value is 01), press the "Sensor" key or "Cal cancel" key to adjust the hour in recycling display from 00 to 23, select the local present hour, and press "Cal" key to save and confirm And next, "5P" is displayed in the temperature display area of refrigerator stably, press the "Cal" key then the minute is displayed in the temperature display area of refrigerator in flashing mode (the factory value is 01), press the "Sensor" key or "Cal cancel" key to adjust the minute in recycling display from 00 to 59, select the local present minute, and press "Cal" key to save and confirm. Then "5P" will be displayed in the temperature display area of refrigerator again and 1P-5P can be reset. After completing these settings, press and hold "Cal" key for 5s or no operation within 10s to save data and exit automatically. Then the temperature in refrigerator will be displayed in the temperature display area normally.

➤ Head cap and lock latch – protect the temperature recorder. Uplift the lock latch slightly and pull the head cap to open it. Press the lock latch after closing the door to fasten the head cap;

➤ Film button – be used for basic operation like setting;

1# button: Choose temperature range or left adjustment;

2# button: Choose recording period or right adjustment;

3# button: Setting button;

A button: Reading of U-disk data

B button: Time setting;

➤ Operating indicator light-different colors represent different temperature measurement tap position. When in regular use, the operating indicator light should be green; when the operating indicator light is flashing, it means the machine is recording temperature;

➤ Scriber-the tip of scriber records data through the tight connection with record paper. The metal bar of scriber has some elasticity to guarantee clear scribing. When leaving factory, the scriber is equipped with protective sheath. If you need to use it, it is recommended to retain the sheath to protect the scriber during long time of non-use;

➤ USB interface-the matched storage card can be plugged into it to set time and export data;

➤ Gland nut and record paper-screw the gland nut clockwise and the record paper can be changed after gland nut is unscrewed;

➤ Charge indicator light-charge indicator light being on constantly represents it is in quick charge status; charge indicator light flashing represents quick charge has been completed and it is in trickle charge status; and charge indicator light being off represents charge is completed.

➤ Key-this switch is the switch for charge battery. When in regular use, this switch must be turned on. Under the condition of full charge of battery, after the external power supply is cut off, the recorder can record temperature for 24 hours continuously by emergency battery.

• First use

➤ After normal power-on, please open the door of recorder and turn battery switch of recorder to the "I" end to switch on the back battery of recorder;

➤ The recorder itself is equipped with a piece of record paper. Please inspect the status of this paper. If it needs to be changed, please refer to the description in Page 22;

➤ In order to protect recorder pen, the recorder pen has a plastic protective cap. Please remove the plastic protective cap before use;

➤ According to the requirements of machine and yourself, adjust the temperature measurement tap position and record time period of temperature recorder, in which the tap position represents the temperature measurement scope of the temperature, record time period represents the time used for recording a piece of paper by temperature recorder. After adjustment, the recorder will record the current tap position setting and record period automatically and re-adjustment is not required.

- The adjustment modes of temperature measurement tap position and record period.
- ➤ After normal power-on of machine, press and hold Key 3# for at least about 5s, when a "click" is heard, the pointer of recorder stops walking, which means the recorder switches to the set mode;
- ➤ Press Key 1# to switch over temperature measurement tap position and the color of indicator light shown in following figure will change with each press. Different colors represent different tap positions, and the corresponding of color and tap position is as follows:

  Green: -40°C~+30°C (applicable to this product and must be selected)

  Yellow: -115°C +50°C

  Red: -200°C~+0°C

  Note: According to aforementioned temperature tap position, before the temperature reaches the record scope, the recorder won't work.
- ➤ Press Key 2# to select record period. There are two kinds of record period in total to choose and they should be distinguished according to the sound made by machine:

  The record period is 24h: rapid, short buzzing made by machine;

  The record period is 7 days: Continuous short buzzing made by machine: (recommended period and saving paper)
- ➤ Adjust tap position and period in place and press Key 3# to exit setup.
- Paper calibration
- ➤ After power-on, tap position and period adjustment, for the accuracy of test, the setting of tap position and period will take effect after paper calibration on equipment. If tap position and period are not adjusted after power-on, 5s later, the machine will enter paper calibration mode automatically and the paper calibration mode is as follow:

  After pressing 3#, the scriber will move to the mark position of -40t firstly and stay here for 3s. check whether pointer position and the scale of paper are matched at this time. If not, the pointer can be adjusted finely by pressing 1# or 2#.
- ➤ 3s later, the scriber will: Move to the position of -20°C from that of -40°C. And stay here for 3s. At this time, the pointer also can be adjusted finely according to aforementioned method;
- ➤ Then the scriber will move from the position of -20℃ to scale position of 0℃ to be measured and stay here for 3s, and the pointer position can also be adjusted finely;
- ➤ 3s later, the scriber will slide to appointed scale according to the present perceived temperature, then the calibration ends.
- Change Recording Paper

  The record paper must be replaced by a new piece of paper after a record period, and see the steps of changing record paper below:
- ➤ Press Key 3#, the scriber will move to the outer side;
- ➤ After the scriber has moved away from the record paper totally, release the hold-down bolt and change new record paper, and please align the starting time scale of record paper with the reference line of panel carefully;

- ➤ After retightening hold-down bolt and pressing Key 3# again, the recorder will switch to the process of paper calibration. Please refer to the explanation of last page to calibrate the installation of paper;
- ➤ After calibration, the temperature recorder will switch to normal record status.
- Time and ID (serial no. of recorder) setting of recorder
- ➤ Insert the storage card of recorder into the recorder, the indicator light of storage card flashes.
- ➤ Press Key B, if the time and ID of storage card has been set, the recorder will update the time and ID, and eliminate all internal records such as temperature and time record.
- ➤ After operation is complete, the indicator light of storage card will be on constantly, otherwise the light keep flashing status;
- Data reading of recorder
- ➤ Insert the storage card of recorder into the recorder, the indicator light of storage card begins to flash;
- ➤ Press Key A, if there is enough space in storage card, the data will be transferred into storage card, and the indicator light will be on constantly after successful transfer. If the data fails to be transferred, the indicator light of storage card will maintain flashing status.
- ➤ Remove the storage card and connect it with computer to view data through equipped USB kit.

⚠ Caution
- The recorder saves data in storage card every 1h and can keep 2 weeks of data at most. When the usable space is full, the new data will cover the earliest hour of record.
- After the storage card has read out data, the recorder will still save the collected data. Only when ID or real time is reset, the data can be cleared.

- Calibration adjustment of recorder

Connect the temperature recorder to power supply and put temperature sensing probe in a stable temperature environment (e.g. 0℃ of ice water mixture), after the temperature recorder enters temperature status, press and hold 1# or 2# (for about 5s), the recorder will enter temperature calibration status after a "click" made by buzzer. Apply 1# and 2# to conduct lateral adjustment to make the pointer align with the temperature scale on record paper, stop adjustment, press Key 3# to confirm or for 5s, after a "click" made by buzzer, the temperature recorder will exit temperature calibration status automatically and return to temperature record status.

⚠ Caution
- The recorder has been calibrated before leaving factory. Please do not adjust the recorder unless special circumstances.
- When the refrigerator is not energized and discontinued, please be sure the key of recorder is in the "0" end, avoid over discharge of the battery of recorder to damage the battery.