VDW
Crucial Temperature Solutions

Haier

Blood Bank Refrigerator
Operation Manual

Model
HXC-106
HXC-158
HXC-158B
HXC-358
HXC-358B
HXC-608
HXC-608B
HXC-1308
HXC-1308B

Certificate of Quality

checker:

Manufacturer: Qingdao Haier Biomedical Co., Ltd.
Address: Haier Industrial Park, Economic Technology Development Zone, Qingdao P.R. China
Web:www.haiermedical.com
Revision Date:07/2022
Version:2nd,2022
Dedicated code:0270501007A
V13026

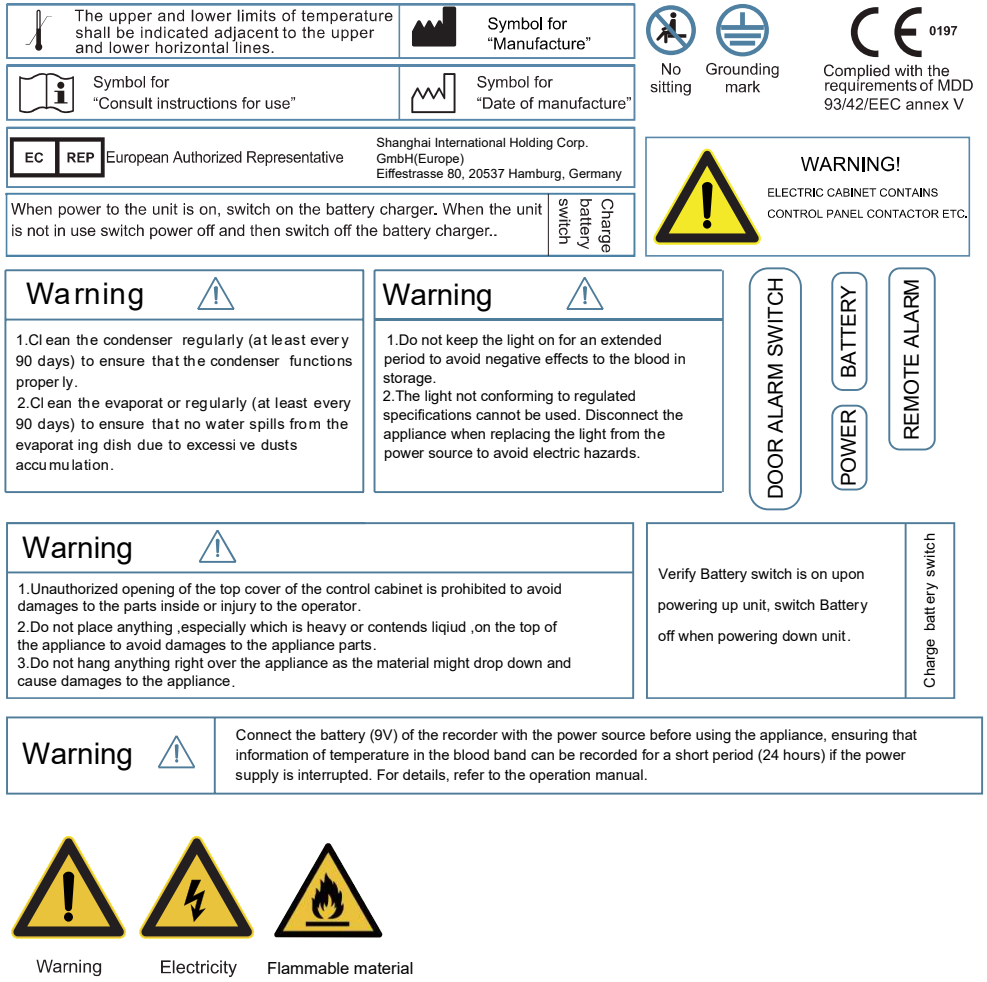
- Read the Operation Manual carefully before using your appliance.
- Keep the Operation Manual in a safe place.
- Appearance , color and layout of the door may vary.
- The scope of the product application: For providing a storage environment of 2℃ -6℃ .

Content

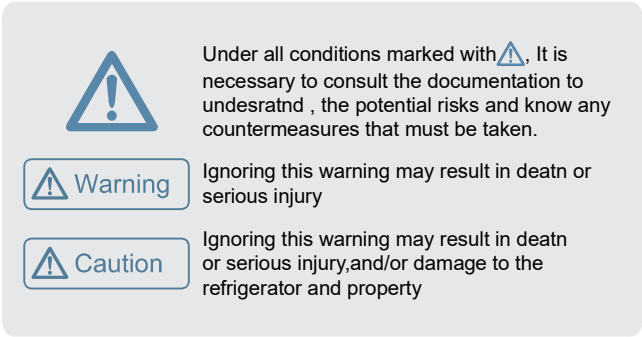
Safety Precautions

Dear Haier Customers:
Thank you for choosing 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



Safety precautions



- When there is a leak of flammable gas, turn off the gas supply valve. Open windows for ventilation and exhaust. Do not plug in your refrigerator or unplug your refrigerator as spark in these processes can cause an explosion or fire.
- We recommend the unit be installed by a professional to avoid any electrical hazard.
- Place the refrigerator on solid and flat ground to avoid tipping the unit over to cause personal injury.
- Only connect the refrigerator unit with a dedicated power outlet specified by the nameplate of the unit. This is to avoid fire or electric shock.
- If the supply voltage is out of rated voltge ±10%, an automatic voltage regulator of at least 4,000 W should be installed with the refrigerator.
- If the power cord needs to be lengthen, the cross section area of the extension line's conductor should be at least 2 mm² and the length of the extension cord should be limited to 3 m. This is to prevent electric fire or shock.
- The power cord of the unit is equipped with a 16A or 13A power plug. Do not remove the ground pin of the power plug under any circumstances. Make sure the plug is securely plugged into the power outlet to prevent fire.
- The power socket must be equipped with a ground wire to prevent electric shock. If the socket fails to be grounded, the ground wire must be installed before the refrigerator is plugged in.
- Do not use the refrigerator outdoors. Such installation may result in electric leakage if the refrigerator gets wet by rainwater.
- Do not place the refrigerator in humid places or places where the unit may get splashed on by water. This is to avoid electric shock due to deterioration of insulation.
- When this is a fire, do not pour water onto the refrigerator unit as a means to prevent electric shock or short circuit.
- Do not place containers of water or heavy objects on the refrigerator. Falling objects may cause personal injury and overflown water may damage the insulation to cause electric shock and fire.

Global Warning Potential

Model	Rated voltage(VAC)	Rated frequency(Hz)	CO_2 equivalent(Tonnes)
HXC-106	220-240V~	50/60	0.001
HXC-158	220-240V~	50/60	0.002
HXC-158B	220-240V~	50/60	0.002
HXC-358	220-240V~	50/60	0.601
HXC-358B	220-240V~	50/60	0.601
HXC-608	220-240V~	50/60	0.601
HXC-608	115V	50	0.601
HXC-608B	220-240V~	50/60	0.601
HXC-1308	220-240V~	50/60	0.701
HXC-1308B	220-240V~	50/60	0.701

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent into the atmosphere.

GWP=global warning potential

Refrigerant type	GWP
R134a	1430
R600a	20

Packing List

Name	HXC-106	HXC-158	HXC-158B
Manual	1	1	1
Battery	/	/	4
Key	2	2	2
Recording paper	/	/	1
Drain hole cap	2	1	1
Handle Kits	/	1	1

Name	HXC-358	HXC-358B	HXC-608
Manual	1	1	1
Battery	4	4	4
Key	2	2	2
Recording paper	1	1	1
Drain hole cap	1	1	1
Handle Kits	1	1	1

Name	HXC-608B	HXC-1308	HXC-1308B
Manual	1	1	1
Battery	4	4	4
Key	2	4	4
Recording paper	1	1	1
Drain hole cap	1	/	/
Handle Kits	1	2	2

- Do not ground the refrigerator through gas pipes, water supply pipes, telephone lines or lighting conductors. These types of connections can cause electric shock.
- Do not touch electric parts such as power plugs or switches with wet hands to prevent electric shock.
- When pulling the plug out of the power socket, hold the power plug instead of power cable. Pulling the cable can cause a damage and personal injury.
- Unplug the refrigerator unit if it malfunctions to avoid fire or personal injury.
- Dismantling, repairing and retrofitting a unit should only be performed by a professional to avoid personal injury.
- Disconnect the refrigerator when repairs or maintenance are performed on the refrigerator to prevent electric shock or personal injuries.
- Do not inhale airborne particles inside and near the refrigerator during routine maintenance. This is to avoid health hazard.
- To avoid any potential danger to human health or environment, the refrigerator should be used in safe regions to store toxic, harmful or radioactive particles.
- If the refrigerator is to be decommissioned, unplug the power cord to avoid electric shock, current leakage, or fire caused by aged power lines.
- If the refrigerator is left unused in area where supervision is unavailable for a long time, make sure children are not near the unit and the door cannot be completely closed and locked.
- Do not store flammable, explosive or volatile articles inside the refrigerator and do not use flammable sprays nearby. This is to avoid an explosion or a fire.
- Do not store corrosive articles such acid or alkali in the refrigerator. These chemicals can damage internal components or electrical parts.
- Do not place packaging plastic bags within the reach of children to prevent suffocation accidents.
- Do not climb to the top of the refrigerator or place plastic bags on top of the refrigerator. This is to prevent tip over of the refrigerator, which can cause personnel injury.
- Do not use any metal objects such as iron nails or wires into holes, gaps or vents for internal air circulation. This is to prevent personal injury due to contact of articles behind the holes.

⚠ Caution

- Always check the settings in the controller after restarting a unit from a power outage or shut off. Change of settings may cause damage to the products stored.
- If the power is shut off, let the unit sit for 5 minutes before it is powered up again to avoid damaging the compressor or the system.
- Wear gloves when performing maintenance to prevent personal injury as a result of 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 aware of the danger of tripping when working with the refrigerator to avoid managing the unit or personal injury.
- Do not use the door knob to move the unit to prevent refrigerator damage or personnel injury.
- Do not damage the refrigeration line.
- Position the refrigerator to make sure the power plug is accessible.
- The refrigerator must be placed on a solid and flat surface; otherwise there might be excessive vibration or noise.
- The refrigerator can be operated by children aged 8 and older and persons with disability if they are supervised and they understand the potential hazards involved. Children should not play with the appliance. Children should not be involved in cleaning or maintaining the unit without proper supervision.
- If the power supply cord is damaged, it should be replaced by a qualified technician to avoid a hazard condition.
- Keep the ventilation openings of the refrigerator clear of obstruction.
- If the unit is to be discarded, remove the door and leave the shelves in place. This will reduce the possibility of danger to children. Flammable materials must be disposed of by professionals.
- Keep all ventilation openings in the enclosure or, in the structure for building-in, clear of obstruction.
- Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.
- Do not damage the refrigerant circuit.
- In order to reduce flammability HAZARDS the installation of this equipment shall only be carried out by a suitably qualified person.

Name	Blood Bank Refrigerator	
Model	HXC-1308	HXC-1308B
Exterior dimensions (W x D x H) (mm)	1440x925x1980	
Interior dimensions (W x D x H) (mm)	1320x700x1500	
Effective volume	1308L	
Door	Glass door with electric heat	
Insulation	CFC-Free foamed-in-place urethane	
Compressor	High Quality Hermetically sealed compressor	
Shelves / Drawer	12 shelves / 48 baskets	12 Drawers
Load	Max:30kg per shelf	
Refrigerating Method	Forced convection cooling	
Exterior / Interior	Scratch resistant painted steel / Stainless steel	
Condenser/Evaporater	Fin tube type	
Temperature Control	Microprocessor controlled	
Refrigerant	R134a 490g	
Interior light	LED 5W	
Net weight	310kg	335kg
Temperature range	4±1℃	
Voltage	220V-240V~/50Hz	
Rated power / current	850W/4.2A	
Noise Level	45dB(A)	
Foaming Agent	HFO-1233zde	
Climate Type	N	
Anti-shock Safety Classification	I	
Power connection type	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	
Battery duration for alarm system	48 hours (when battery is fully charged)	
Rechargeable battery	DC12V Rechargeable lead-acid battery	

Note: Climate Type ST means the temperature is 18 - 38 ℃ .Due to continuous improvements, technical information on your refrigerator may be different from herein published.

Name	Blood Bank Refrigerator
Model	HXC-608(115V/60Hz)
Exterior dimensions (W x D x H) (mm)	780x840x1945
Interior dimensions (W x D x H) (mm)	680x640x1400
Effective volume	608L
Door	Glass door with electric heat
Insulation	CFC-Free foamed-in-place urethane
Compressor	High Quality Hermetically sealed compressor
Shelves / Drawer	6 shelves / 24 baskets
Load	Max:30kg per shelf
Refrigerating Method	Forced convection cooling
Exterior / Interior	Scratch resistant painted steel / Stainless steel
Condenser/Evaporater	Fin tube type
Temperature Control	Microprocessor controlled
Refrigerant	R134a 350g
Interior light	LED 3W
Net weight	204kg
Temperature range	4±1℃
Voltage	115V/60Hz
Rated power / current	560W/7.5A
Noise Level	43dB(A)
Foaming Agent	HFO-1233zde
Climate Type	ST
Anti-shock Safety Classification	I
Power connection type	Y
USB function / temperature recorder	Optional / Standard
Alarm system	High-low temperature alarm, sensor fault alarm, power failure alarm, low battery alarm and door opening alarm
Battery duration for alarm system	48 hours (when battery is fully charged)
Rechargeable battery	DC12V Rechargeable lead-acid battery

Note: Climate Type ST means the temperature is 18 - 38℃ ,the relative humidity is up to 85%.Due to continuous improvements, technical information on your refrigerator may be different from herein published.

Application guidelines

• The battery in the refrigerator may be low after the refrigerator has been in storage for a long time. Turn on the battery charge switch when the unit is powered up to allow the battery to be recharged. The battery will be in full capacity after about two days charging.

• Before loading the refrigerators, make sure the unit is at set temperature. Do not load in more than 1/3 of the storage volume to avoid thermally overloading the unit.

• The display value on the panel shows the sensor temperature located in the refrigerator. It is not necessary the same as the temperature in the center of the refrigerator. The cabinet temperature will gradually reach an equilibrium state.

• Only clean the unit with light soapy water. Never use brushes, acids, gasoline, soap powders, polishing powders or hot water to clean refrigerators as these materials may damage the interior painting and surface, parts and components. Never wide plastic parts with volatile solvents such as gasoline.

• If the unit is to be stored for a long period of time, turn off the power switch and the battery charging switch.

• To reduce the possibility of temperature fluctuation in the refrigerator, please attempt to cut down the time to open to the door to remove and load products.

• If the door is opened, the temperature of the refrigerator will warm up somewhat. That is normal. The temperature will recover to a stable condition in a short time.

• The refrigerator is designed to operate at a condition of 18 to 38 ℃ and humidity of 85%, except HXC-1308/1308B/106 at 16 to 32℃ . Small amount of condensation can occur on the surface of the unit of the actual condition is outside of this range. The storage temperature of the unit, however, is not impacted. To reduce the condensation, please improve the ventilation and drop the ambient temperature if possible.

• For HXC-106/158/158B/358/358B/608/608B,when humidity is too high,the condensation phenomenon may happen at the cabinet mouth.Open the cover of the switch board right side of machine,turn on the heater swtich,this can solve the problem.Otherwise,turn off the heater switch to save energy.

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.

Product Feature

Haier blood bank refrigerators are applicable for the storage of whole blood, medicine, biological products and other laboratory products that need to be stored at a temperature of 4℃ . Haier blood bank refrigerators are widely installed in blood stations, hospitals, colleges, universities, research quarantine stations and other research and clinical facilities.

1.Temperature control

•Computer 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).

2.Security system

•Multi-fault alarms (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.

3.Refrigeration system

•Optimized refrigeration system offers effective and efficient performance.

4.User-friendly Design

•User-friendly design, computer control, smart and carefree, adjustment not required.

•High-performance thermal insulationensures super insulation effect.

•Multiple condensation-proof technologies applied on glass doors.

•Automatic evaporation of condensate water, user-friendly design of safety door latch, etc.

Note: We apologize that the Haier blood bank refrigerator provided to 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.

Name	Blood Bank Refrigerator	
Model	HXC-608	HXC-608B
Exterior dimensions (W x D x H) (mm)	780x840x1945	
Interior dimensions (W x D x H) (mm)	680x640x1400	
Effective volume	608L	
Door	Glass door with electric heat	
Insulation	CFC-Free foamed-in-place urethane	
Compressor	High Quality Hermetically sealed compressor	
Shelves / Drawer	6 shelves / 24 baskets	6 Drawers
Load	Max:30kg per shelf	
Refrigerating Method	Forced convection cooling	
Exterior / Interior	Scratch resistant painted steel / Stainless steel	
Condenser/Evaporater	Fin tube type	
Temperature Control	Microprocessor controlled	
Refrigerant	R134a 420g	
Interior light	LED 3W	
Net weight	204kg	211kg
Temperature range	4±1℃	
Voltage	220V-240V~/50Hz/60Hz	
Rated power / current	490W/3.5A	
Noise Level	43dB(A)	
Foaming Agent	HFO-1233zde	
Climate Type	ST	
Anti-shock Safety Classification	I	
Power connection type	Y	
USB function / temperature recorder	Optional / Standard	
Alarm system	High-low temperature alarm, sensor fault alarm, power failure alarm, low battery alarm and door opening alarm	
Battery duration for alarm system	48 hours (when battery is fully charged)	
Rechargeable battery	DC12V Rechargeable lead-acid battery	

Note: Climate Type ST means the temperature is 18 - 38℃ ,the relative humidity is up to 85%.Due to continuous improvements, technical information on your refrigerator may be different from herein published.

Name	Blood Bank Refrigerator	
Model	HXC-358	HXC-358B
Exterior dimensions (W x D x H) (mm)	720x690x1730	
Interior dimensions (W x D x H) (mm)	620x490x1160	
Effective volume	358L	
Door	Glass door with electric heat	
Insulation	CFC-Free foamed-in-place urethane	
Compressor	High Quality Hermetically sealed compressor	
Shelves / Drawer	5 shelves / 20 baskets	5 Drawers
Load	Max:25kg per shelf	
Refrigerating Method	Forced convection cooling	
Exterior / Interior	Scratch resistant painted steel / Stainless steel	
Condenser/Evaporater	Fin tube type	
Temperature Control	Microprocessor controlled	
Refrigerant	R134a 420g	
Interior light	LED 3W	
Net weight	158kg	165kg
Temperature range	4±1℃	
Voltage	220V-240V~/50Hz/60Hz	
Rated power / current	460W/3.0A	
Noise Level	43dB(A)	
Foaming Agent	HFO-1233zde	
Climate Type	ST	
Anti-shock Safety Classification	I	
Power connection type	Y	
USB function / temperature recorder	Optional / Standard	
Alarm system	High-low temperature alarm, sensor fault alarm, power failure alarm, low battery alarm and door opening alarm	
Battery duration for alarm system	48 hours (when battery is fully charged)	
Rechargeable battery	DC12V Rechargeable lead-acid battery	

Note: Climate Type ST means the temperature is 18 - 38℃ ,the relative humidity is up to 85%.Due to continuous improvements, technical information on your refrigerator may be different from herein published.

Product Installation

Installation environment

•Ambient temperature: 18℃ to 38℃ with exception of HXC-106/1308/1308B at 16℃ to 32℃ . Range of 18℃ to 25℃ is ideal.

•Ambient humidity: below 85% RH .

•Avoid dusty and unstable areas for installation.

•Avoid mechanical swing or vibration.

•The refrigerator shall operate at an altitude lower than 2000m.

•Input voltage: Within rated voltage ±10%.

⚠Caution

•Refrigerator units are not permitted to operate outdoors. Rough condition and rainwater can cause electrical issues and hazardous conditions.

•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 as heat may be trapped to increase ambient temperature. Additionally, a unit should not be installed in a space where the entry door way is low to prevent an easy maneuver of the unit for maintenance and operation.

•The ground at the installation site shall be solid and flat.

•The floor for the installation site should be solid and flat. It should also be well ventilated and free from direct sunshine.

•The power outlet for the refrigerator must be a dedicated power outlet. The power plug must be plugged in to the outlet securely.

•Do not twist or jam the power cord.

•If the power cord needs to be extended, the cross section area of the conductor in the extended line should be no less than 3 squared millimeters and no longer than 3 meter.

•Inspect the operating voltage range before operation. If the voltage supply is unstable, install a voltage stabilizer of 4000W or greater to ensure the supply voltage is within 10% of the rated voltage supply.

•The refrigerator must be grounded reliably.

•Check the integrity of the socket ground before power up. If it is not grounded appropriately, repair the wiring before installing the unit.

•If the socket is not provided with grounding wire, a new one shall be installed by engineering technician.

⚠Warning

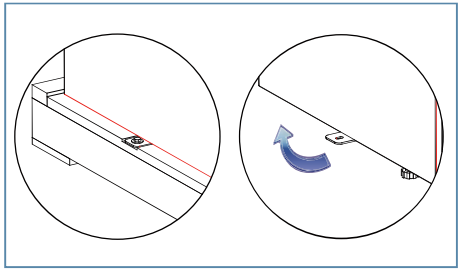
•Do not ground the refrigerator through gas lines, water lines, telephone lines, or lighting rods as these devices may cause electric shock and danger.

•The power plug and outlet should be located in a place where it can be accessed easily and immediately in case of an emergency. Air vents must be free of obstruction.

Preparation before use

1.Remove the packing material and packaging tape

Remove the all packing materials and packaging tapes for transportation.



⚠Caution

•For safe transport, the bottom of the refrigerator is secured with a mounting plate. Before installing the unit, the plate must be removed and placed under the unit.

•You may use a forklift and package carrier to unpack the unit. Use the bottom of the unit for forklifting and such equipment to move the unit.

•During handling, the inclination angle of refrigerator shall not be greater than 45°.

2.Inspect shipping accessories

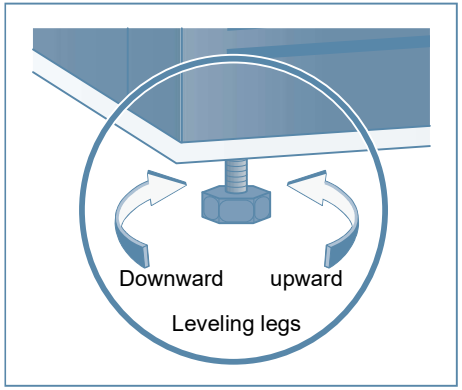
Inspect the accessories inside the refrigerator against the packing list. Contact Haier service should there any discrepancy.

3. Placing conditions

A minimum of 10 cm space must be kept around the refrigerator for ventilation and heat dissipation.

4. Adjust the leveling leg

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



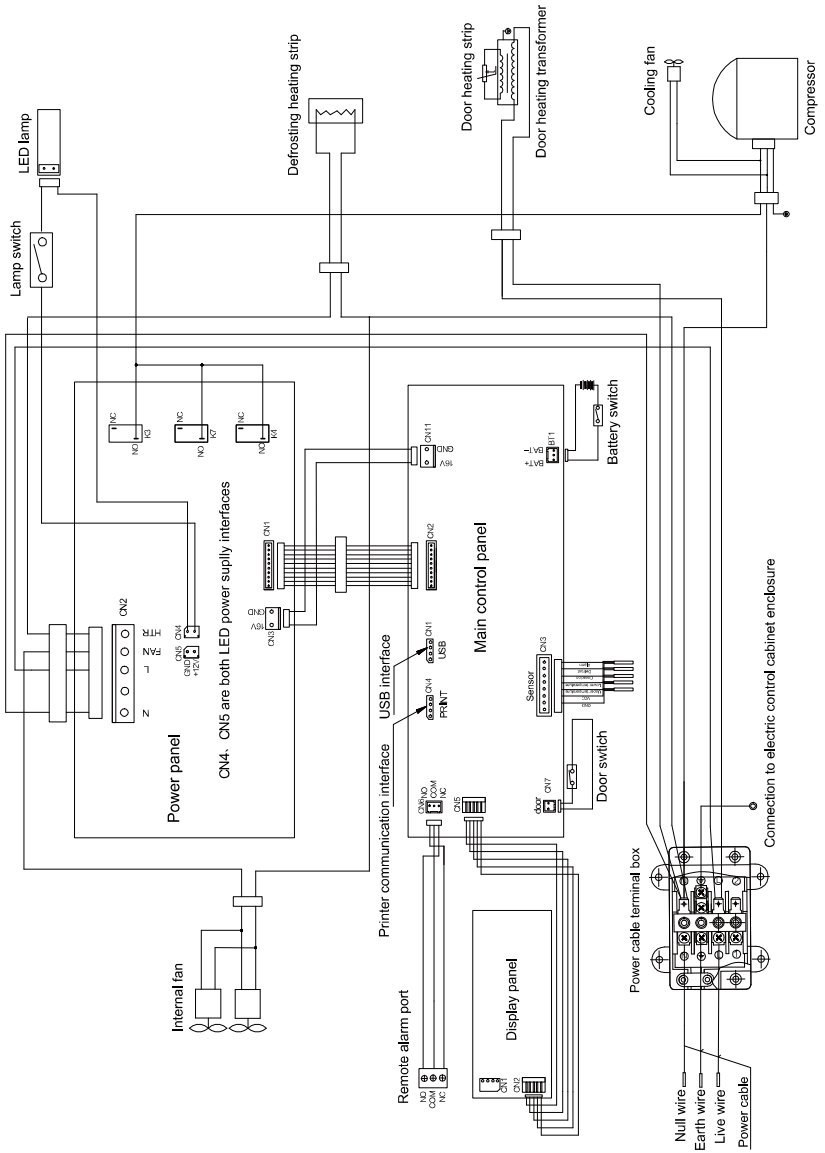
Specification • Packing List

Specification

Name	Blood Bank Refrigerator		
Model	HXC-158	HXC-158B	HXC-106
Exterior dimensions (W x D x H) (mm)	560×570×1530		500×514×1055
Interior dimensions (W x D x H) (mm)	460×370×950		430×350×830
Effective volume	158L		106L
Door	Glass door with electric heat		
Insulation	CFC-Free foamed-in-place urethane		
Compressor	High Quality Hermetically sealed compressor		
Shelves / Drawer	4 shelves / 4 baskets	4 Drawers	3 shelves / 4 baskets
Load	Max:13.5kg per shelf		Max:7.5kg per shelf
Refrigerating Method	Forced convection cooling		
Exterior / Interior	Scratch resistant painted steel / Stainless steel		
Condenser/Evaporater	Fin tube type		
Temperature Control	Microprocessor controlled		
Refrigerant	R600a 80g	R600a 80g	R600a 75g
Interior light	LED 3W		
Net weight	107kg	113kg	49kg
Temperature range	4±1℃		
Voltage	220-240V~/50Hz/60Hz		
Rated power / current	320W/1.9A	320W/1.9A	253W/1.6A
Noise Level	42dB(A)	42dB(A)	41dB(A)
Foaming Agent	HFO-1233zde		
Climate Type	ST	ST	N
Anti-shock Safety Classification	I		
Power connection type	Y		
USB function / temperature recorder	Optional / Optional	Optional / Standard	No
Alarm system	High-low temperature alarm, sensor error alarm, power failure alarm, low battery alarm and door ajar alarm		
Battery duration for alarm system	48 hours (when battery is fully charged)		
Rechargeable battery	DC12V Rechargeable lead-acid battery		

Note: Climate Type ST means the temperature is 18-38℃ ,Climate Type N means the temperature is 16-32℃ .Due to continuous improvements, technical information on your refrigerator may be different from herein published.

•HXC-106



5.Standing

Do not immediately turn on the refrigerator after it is installed in place. Let it sit for 24 hours before power up to ensure a normal operation.

6. Installation of the Handle

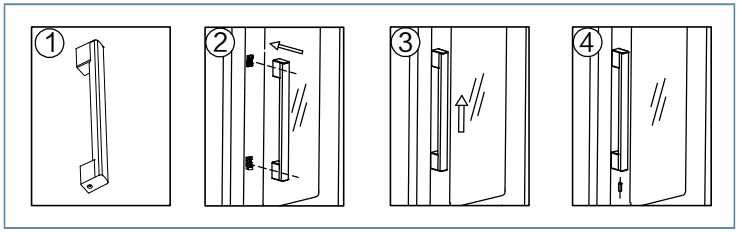
Handle installation of products shall be conducted in the following steps:

① . Orient the handle with the hole downwards;

② . Align the handle and handle guide on door;

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

④ . Use a screw bolt to fix the handle from bottom after installation of the handle.



Initially Powering Up

Initial power up and operation must meet the following procedures.

While the refrigerator is empty, plug in the power socket to a dedicated socket that meets the voltage requirement.

Once the unit is powered up, the audible alarm is turned on. Turn on the battery switch and press the buzz cancel button to silence the alarm. Visual alarm continues until the temperature in the measurement box reaches 2°C - 6°C .

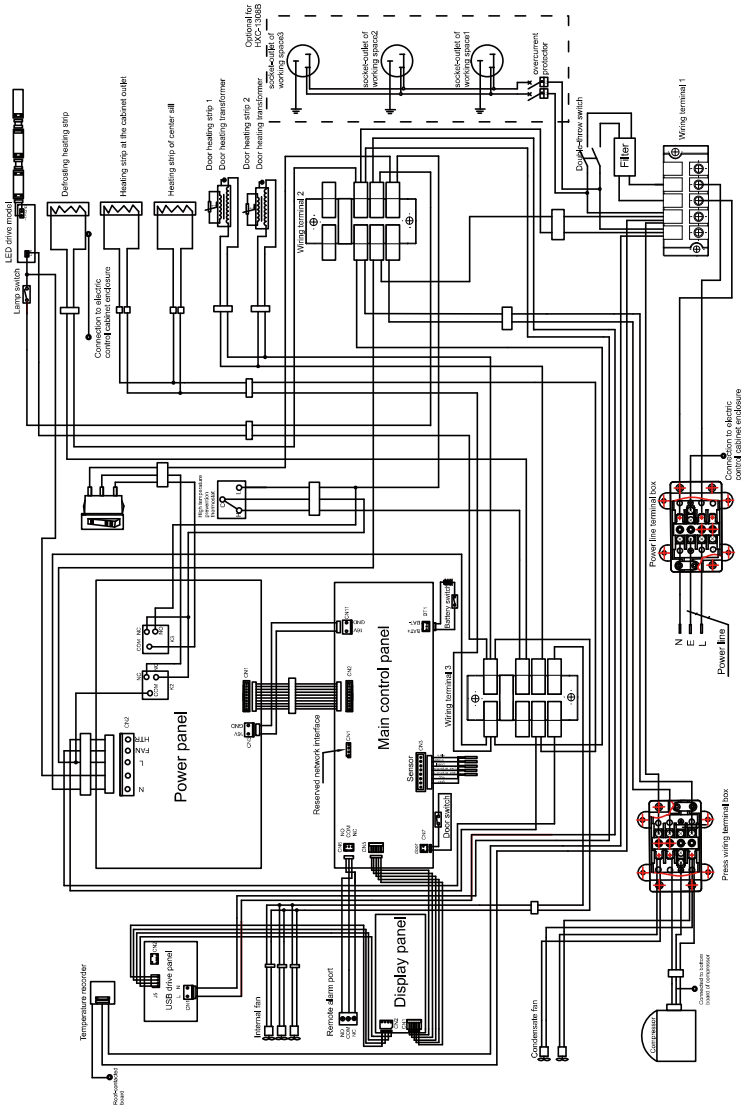
The refrigerator is set to operate at 4°C at the factory. There is no need to change the control settings.

After the unit runs for a few hours, the temperature will be stabilized at the set value. Check the temperature inside the measurement box to make sure it matches the temperature set at the controller.

Turn on the light switch, check all lamps inside the refrigerator for proper operation.

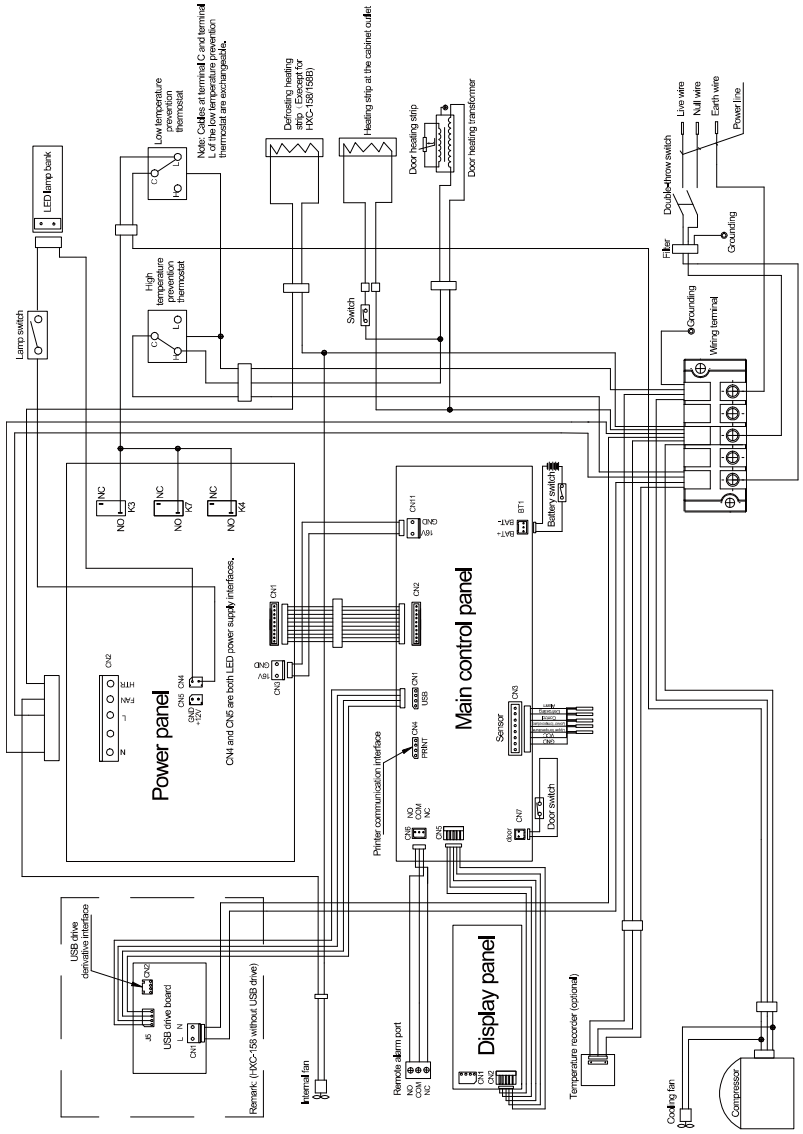
Once the refrigerator has reached the stable condition and all functions are normal, load in the products in batches.

•HXC-1308/1308B



Wiring diagram

•HXC-158/158B/358/358B/608/608B



•This refrigerator should be maintained by a dedicated personnel. The person in charge should examine the operating condition and record it. If the stored temperature is out of acceptable range, remove the products, correct the faults and reload the unit.

•This refrigerator is a blood bank designed to operate at 4℃ . Please ensure your stored products are meant to be stored at this temperature to avoid damage of the samples and economic loss.

•The displayed temperature and humidity are sometimes different from the actual real time readings inside the refrigerator. That is normal.

•Please do not place any articles between the refrigerator floor and the bottom shelf of the unit.

•Refrigerators are designed for storing products. Do not load in too much warm product at one time. Overloading the refrigerator will reduce the system's expected life. Therefore, product and samples should be placed into the refrigerator in batches.

•Do not damage refrigeration lines.

•Do not operate an electronic device inside a refrigerator.

Operation after a Power Outage

The controller in the refrigerator can store the temperature control parameters when the unit loses power. When the power recovers, the unit will automatically resume operation based on the last set parameters.

⚠Warning

•When the power to the system is disconnected, allow the system to idle for 5 minutes before it is powered up again.

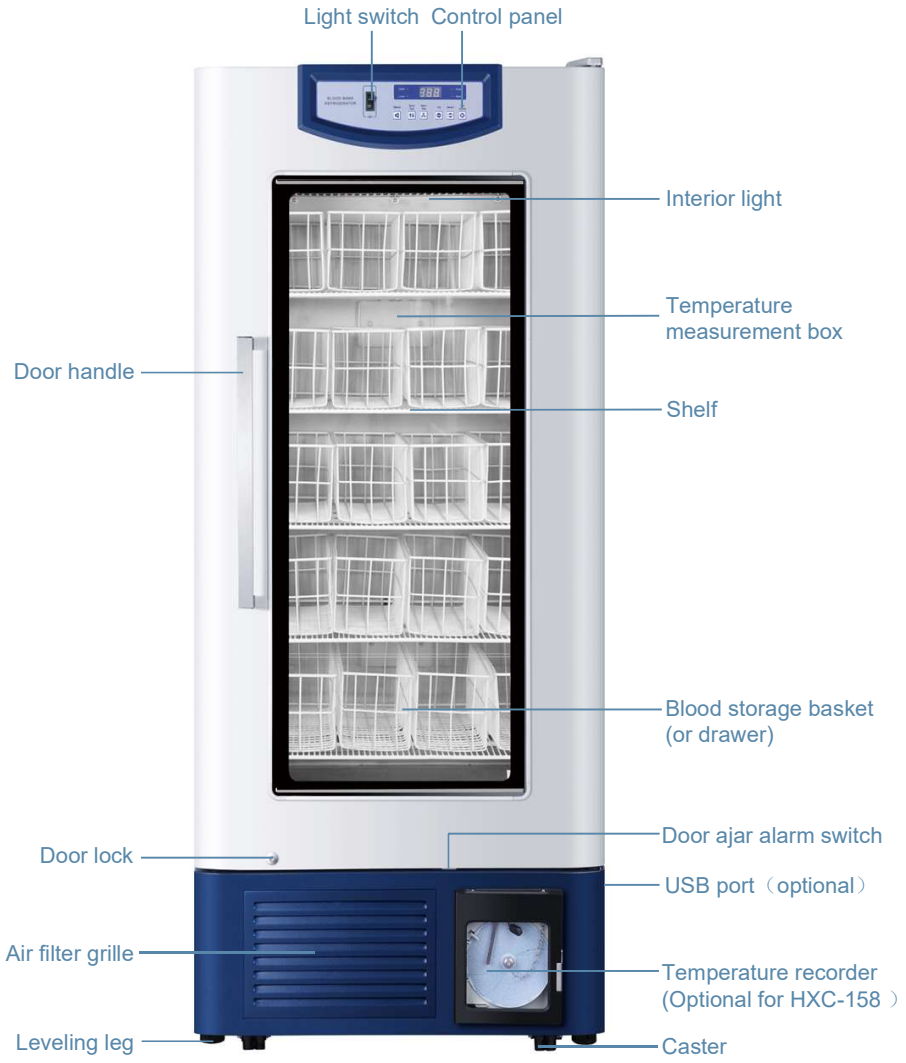
•If a refrigerator is out of commission for a long time, unplug the power plug, turn off the battery switch. This is to avoid electric leakage and fire due to damaged power line.

•If a refrigerator is to be stored for a long time without monitoring, make sure no children will get access to it. Leave the door open.

Component Names●Control Panel

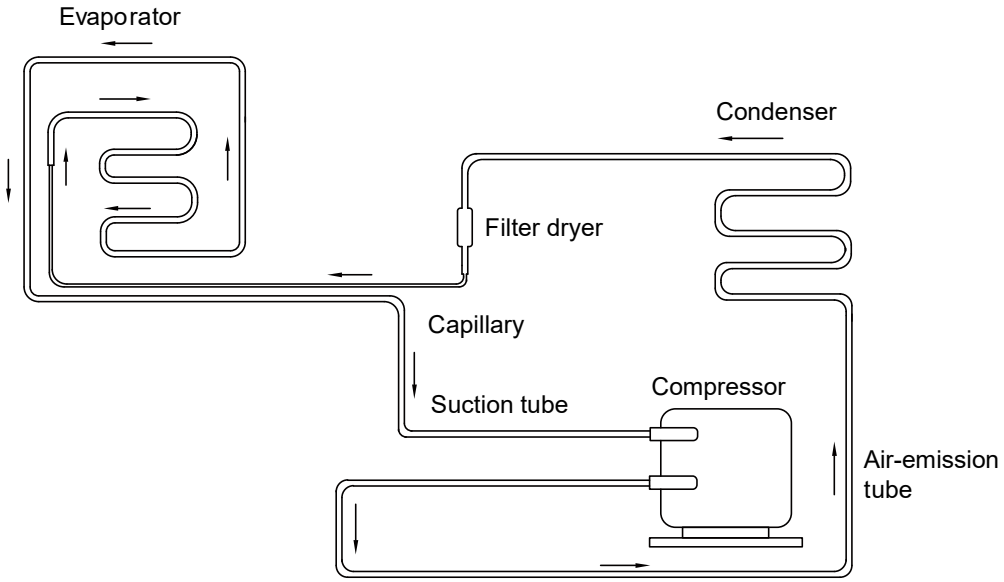
Component Names

•HXC-158/158B/358/358B/608/608B



Refrigeration Schematic • Circuit Diagram

Refrigeration diagram

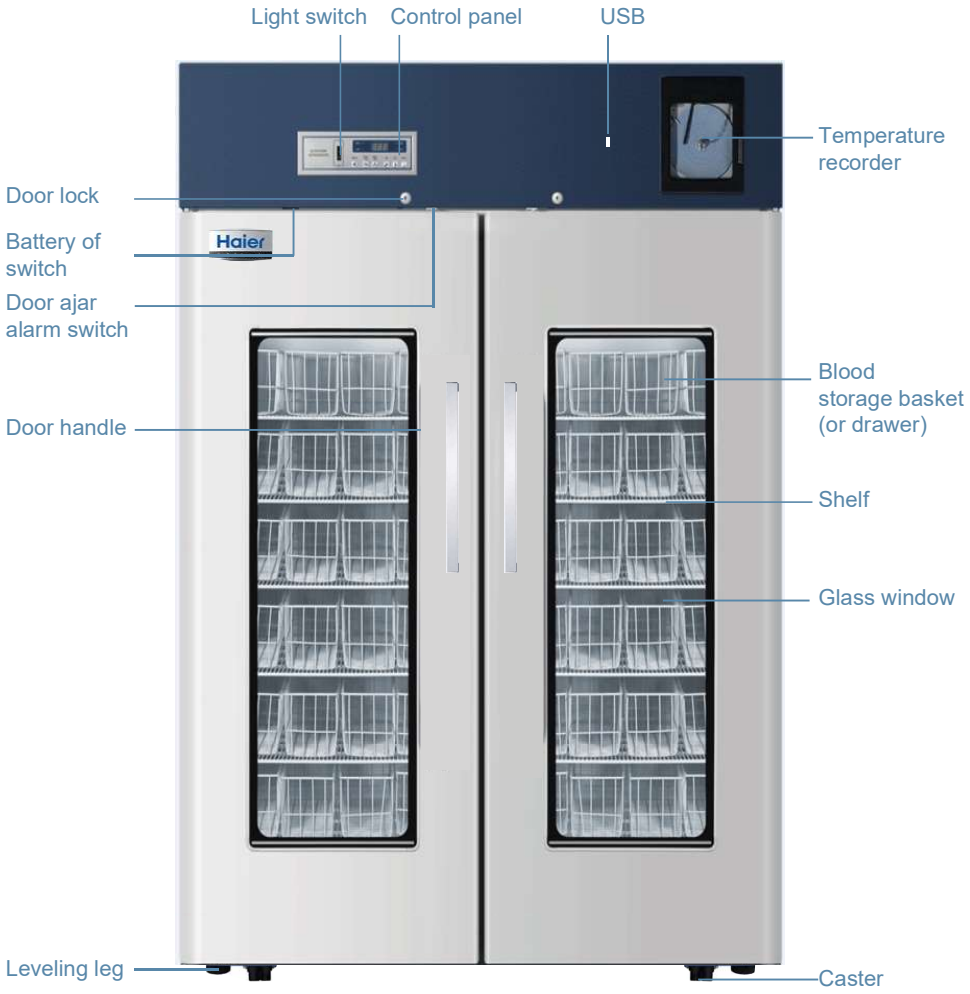


FAQ

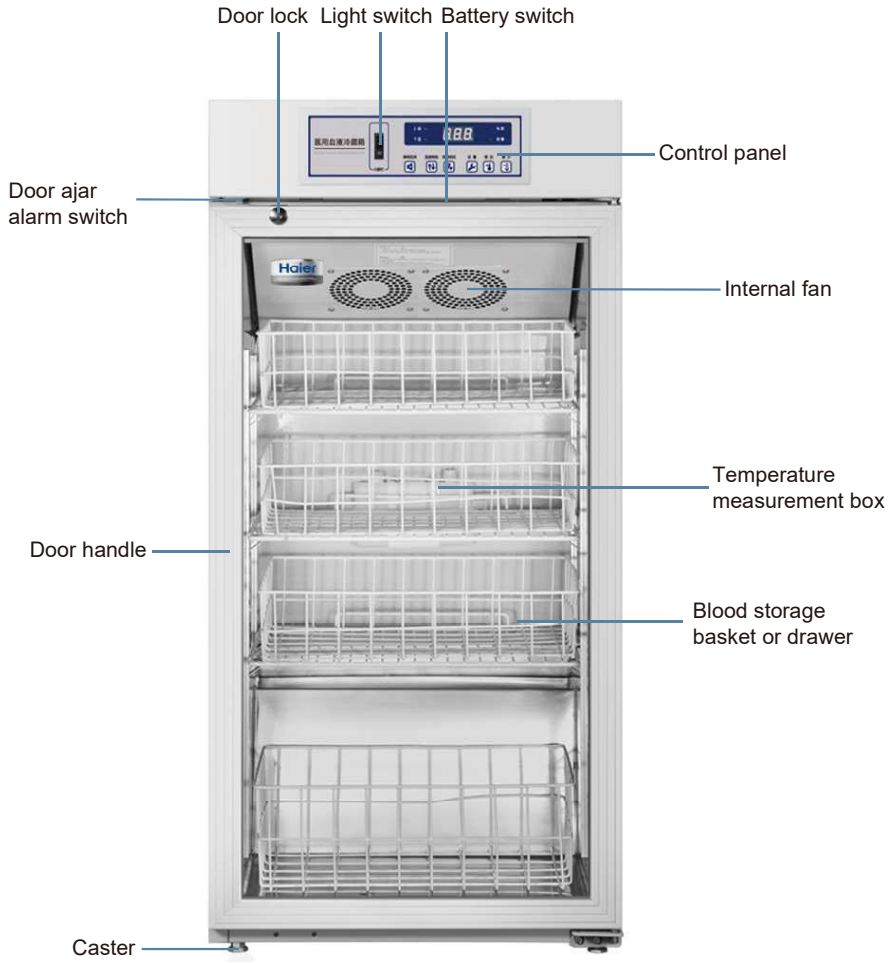
If you have any questions about the operation of the refrigerator, please refer to the table frequent asked questions as follows. Call Haier technical support if you still have questions.
Do not disassemble and repair the refrigerator by yourself.

Fault	Troubleshooting scheme
The refrigerator is not working	Inspect the power supply to make sure it meets the requirement.
	Inspect the connection between the power plug and the socket.
	Check the power cord for any obvious damage.
	Whether the voltage is too low
The refrigeration effect is weak and temperature exceeds upper limit.	The unit is loaded with too much warm sample and product.
	There is a lack of space between stored samples.
	There might be a direct sunlight or other heat radiation energy on the refrigerator.
	The door is opened too frequently.
	Ambient temperature is too high.
	Air duct is blocked.
Unit seems to emit too much noise.	Check the installation of the unit to make sure the unit does sit on a solid floor without vibration.
	Whether certain part of the body contacts external objects or the wall
	As a reference, the published sound data is obtained at specific laboratory condition. It is normal that the actual sound level in the field differs due to subtle installation and operation conditions.
Alarm light flashes and alarm buzzer sounds	Warm products have been placed into the unit recently and the refrigerator has not stabilized yet at 2℃ to 6℃ . The alarm condition will be automatically corrected once the temperature reaches the set value.
	The door is not closed properly.
	Power supply is too low to sustain the operation.
	Whether the temperature exceeds the standard

•HXC-1308/1308B



•HXC-106



Temperature recorder and chart paper

•The temperature recorder is standard on the product (optional for HXC-158). If additional chart paper is needed, please contact Haier Biomedical. The ordering cycle is 1 ~ 2 months. Consult us by phone for detailed information.

•Rechargeable battery

The 9V DC rechargeable battery is replaceable. You may contact the factory for battery that ensures the quality.

Cleaning and Maintenance

⚠Warning •Before serving a refrigerator, please make sure the power is disconnected to prevent electrical shock or personal injury.

•Avoid inhaling any particles around the refrigerator when you perform maintenance work as it can be harmful to your health.

Clean the refrigerator

•Clean the refrigerator once a month if possible.

•Wipe the unit interior and exterior with light detergent water if necessary. Then wipe it again with a dry cloth.

•Do not pour water directly on the shell of the refrigerator or into the chamber as it can damage the insulation of the electrical equipment and may lead to problems.

•Do not attempt to lubricate the compressor as it is a hermetically sealed compressor.

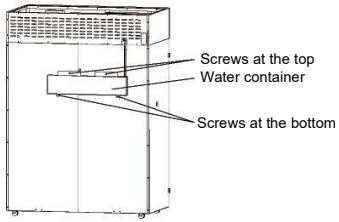
Replace the illumination light

LED light bulbs are standard in the refrigerator. They consume little energy and are reliable. Should there be a need for replacement LED lights, please contact the after-sales service personnel.

Clean the evaporation box (HXC-1308/1308B)

Condensate evaporator is located in the back 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 water container;

•Reverse the procedure and install the water container back in place. At normal conditions, clean the box once a month is sufficient. However, at high ambient and humidity conditions, clean the box 3 times a month.

Decommissioning of the refrigerator

•Turn off the power switch and the battery charge switch.

•Remove the shelves.

•Clean the interior thoroughly.

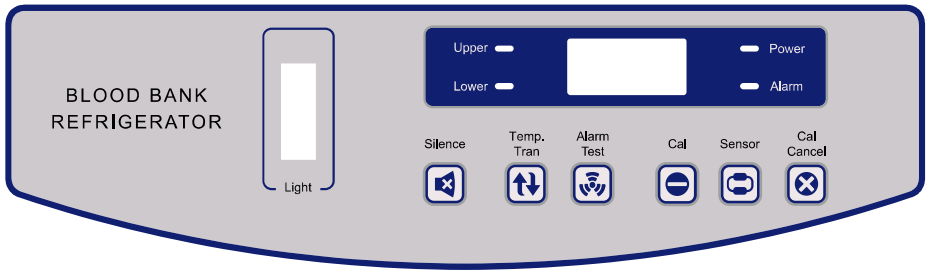
•Clean the shelves.

•Place the shelves back in the refrigerator after unit and the shelves are dry.

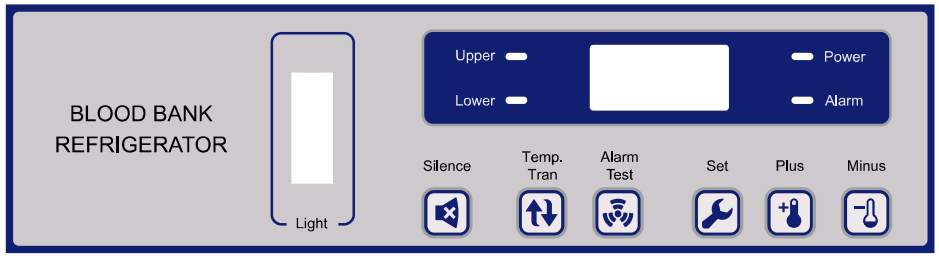
•Close the door and place a plastic bag over the unit for storage.

Control panel

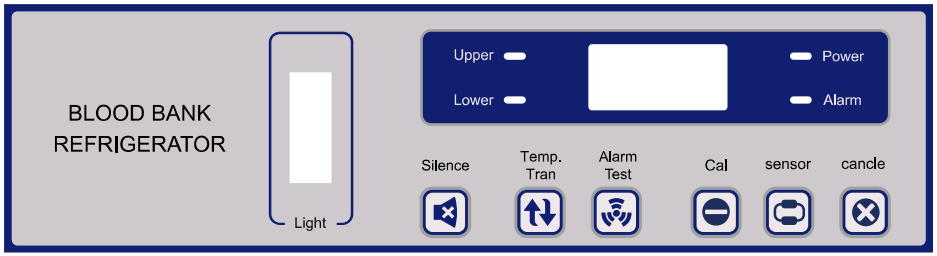
•HXC-158/158B/358/358B/608/608B



•HXC-1308/1308B



•HXC-106



Application method

Temperature display

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

NO.	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

Displayed temperature on the front panel is the temperature of the temperature measurement box located either in the upper area or the bottom area of the refrigerator. The displayed temperature is not always 4℃ . It however, shows the bulk temperature inside the temperature measurement boxes.

Automatic recovery of alarm

The audible alarm of this series of refrigerator has the following characteristics.

•When the system is in a n alarm mode, press the Buzzer Cancel key on the display board and the audible alarm is silenced temporarily. Remote alarm condition will not be affected.

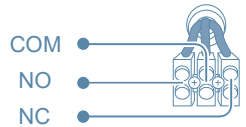
•After 30 minutes, if the alarm conditions still persist, the audible alarm will resume. On HXC-1308/1308B, the resumption time for the audible alarm is 20 minutes.

Remote alarm terminals

The refrigerator of this series has the remote alarm terminals:

•Remote alarm terminals are located on the switch panel of the electrical control box.On HXC-1308/1308B, they are located at the upper right corner on the back side of the unit. Remote alarm can be activated via the actuation of the remote alarm terminal contacts. The terminals are rated for 30V DC and 2 A.

•Remote terminals include a common terminal, a normally Open terminal and a normally close terminal. Once the unit is in alarm mode, the terminals will reverse their status and hence activate the remote alarm.



⚠ Caution

•Selecting and installing a remote alarm device is a customer’s responsibly. The alarm device must be connected with proper alarm terminals.

•When there is a loss of power supply, the remote alarm will be activated even though the battery switch is not turned on.

•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).

SN.	Alarm items	Initiation of Alarm	Buzzing	Light flashing	Display requirements	Note
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.
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.	The same as "high temperature alarm"		Display the actual conditions	The same as "high temperature alarm"
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 sustain the alarm function for 48 hours. If the unit has been powered off for a long time, the battery should be charged by turning the charge switch to On position. The battery will be fully charged in 2 days.

•Press the key "Alarm test". The audible buzzer will sound three times at the frequency of 1 Hz. The alarm indicator will flash three times as well.

•We recommend a dedicated person be responsible for the well-being of the refrigerator. The person in charge should examine the operation status of the refrigerator and keep record of the temperature. If the temperature is out of specification for the specific application, take proper actions in a timely manner to protect the samples.

•When there is a fault in the battery, E5 will show after pressing "Alarm test". Check the battery charge switch to make sure it is in the "On" position. If it is "Off", turn on the charge switch to make sure the battery is charged. If all is checked out and the fault still persists, replace the battery (except HXC-1308/1308B)

•If the battery charge switch is in "Off" mode and there is less battery power, press the "Alarm test" key one more time, E6 code will flash for 6 more times(applicable HXC-1308/1308B)

TEMP.SET

•HXC-158/158B/358/358B/608/608B/106

To change the control setting from the original 4 ℃ to 4.5 ℃ , perform the procedures as follow.

NO.	Button operation	Display
1		Display the temperature in box
2	Press and hold "Sensor" and "Cal Cancel" simultaneously for 5 seconds.	Factory preset value of 4℃ appears on the control panel. Please follow the next step within 5 seconds to make a change before the temperature resumes displaying the temperature in the temperature box.
3	Press "Cal Cancel" to increase the value 0.1℃ each time or press "Sensor" to decrease the value 0.1℃ each time.	The set value will change accordingly to a new desired value.
4	Stop pressing any key once the required value is reached.	Flashing of the new value continues for 5 seconds. New temperature setting is stored into the control system. Display resumes showing the temperature in the measurement box.

•HXC-1308/1308B

Press "Set" for 5s to enter users setting mode. See the following form.

NO.	Key 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 each time) or "Minus" (0.1℃ lower each 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 automatic defrosting periods controlled by the controller.

1.Periodical Defrosting

The evaporator is embedded with electric heaters. During normal cycle off, the heaters are powered to raise the evaporator above 0 ℃ to thaw out the ice. There is no impact to the refrigerator temperature during this time.

2.Forced Defrost

When the ambient condition is severe to allow excessive moisture enter the refrigerator, the refrigerator will automatically initiate a forced defrost cycle. Once the defrost cycle is completed, the unit will resume normal operation. During the forced defrost time frame, it is expected to have the refrigerator temperature rise by about 1 to 2℃ .

Temperature recorder

Refrigerator temperature recorder of 6-inch standard panel is standard for our products(except HXC-106/158) 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 the emergency power supply for the recorder;

3. Examine the recording paper. If it needs to be changed, please change the recording paper according to the operation steps in P20;

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.

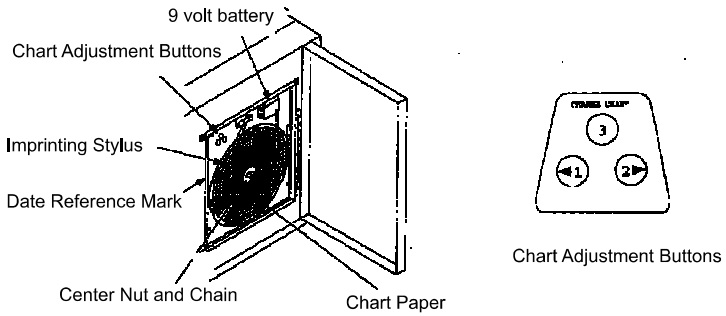


Chart Adjustment Buttons

HXC-1308/1308B

SN.	Alarm items	Initiation of Alarm	Buzzing	Light flashing	Display requirements	Note
1	Over temperature alarm (high and low temperature alarm)	When the temperature of upper or lower temperature measurement box is warmer than the high alarm set point, the alarm starts. When the temperature of the upper and lower temperature measurement box is lower than the low temperature alarm set point, temperature alarm starts.	1Hz Continuously Buzzing	Alarm light flashes	Display actual temperature	Remote alarm contacts reverse and audible alarm starts. Remote alarm can be cancelled after pressing “Silence” button. If the alarm condition persists after 30 minutes, the remote alarm and audible alarm resume.
2	Power failure alarm	When there is a loss of AC power to the unit or the power switch is in Off position, the power outage alarm will trigger. The rechargeable battery will power the display and alarm system.	1Hz Continuously Buzzing	The power indicator lights of alarm light flash at the same time	Alternatively display the upper and lower temperature in the measurement boxes for 5 seconds. The screen turns blank for 30 seconds, and resumes displaying the temperature.	Remote alarm contacts reverse and audible alarm starts. Remote alarm can be cancelled after pressing “Silence” button. If the alarm condition persists after 30 minutes, the remote alarm and audible alarm resume.
3	Fault of sensor	Upper sensor is in short circuit or open circuit, fault code: E1	1Hz Continuously Buzzing	Alarm light flashes	Display board alternatively shows E1 for 2 seconds and the temperature in the lower sensor for 6 seconds.	Remote alarm contacts reverse and audible alarm starts. Remote alarm can be cancelled after pressing “Silence” button. If the alarm condition persists after 30 minutes, the remote alarm and audible alarm resume.
		Lower sensor is in short circuitor open circuit, fault code: E2			Display board alternatively shows E2 for 2 seconds and the temperature in the upper sensor for 6 seconds.	
		Control sensor is in short circuit or open circuit, fault code: E3			Display alternates showing E3 for 2 seconds and both temperatures in the upper and lower temperature boxes for 6 seconds.	
		Defrosting sensor is in short circuit or open circuit, fault code: E4			Display alternates showing E4 for 2 seconds and both temperatures in the upper and lower temperature boxes for 6 seconds.	
		Alarming sensor is in short circuit or open circuit, fault code: E5			Display alternates showing E5 for 2 seconds and both temperatures in the upper and lower temperature boxes for 6 seconds.	

Display and alarm

HXC-158/158B/358/358B/608/608B/106

Alarm or safety	Phenomenon	Alarm indication	Buzzer alarm	Safe operation
High temperature	The temperature in either the upper or lower temperature box reached 6℃ .	Alarm light flashes	Pulse sound alarm	Trigger remote alarm contact
Low temperature	The temperature in either the upper or lower temperature box reaches 2 ℃ .	Alarm light flashes	Pulse sound alarm	Trigger remote alarm contact
Power cut	Refrigerator is in power outage status	Temperature display shows the temperature for 60 seconds and turns blank for 60 seconds. This process repeats.	Pulse audible alarm runs for 48 hours.	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
Abnormal sensor	Open circuit or short circuit occurs on upper temperature sensor	Alarm light flashes and E1 is shown on the display.	Pulse sound alarm	Trigger remote alarm contact
	Open circuit or short circuit occurs on lower temperature sensor	Alarm light flashes and E2 is shown on the display.	Pulse sound alarm	Trigger remote alarm contact
	Open circuit or short circuit occurs on control sensor	Alarm light flashes and E3 is shown on the display.	Pulse sound alarm	Trigger remote alarm contact
	Open circuit or short circuit occurs on defrosting sensor	Alarm light flashes and E4 is shown on the display.	Pulse sound alarm	Trigger remote alarm contact
	The rechargeable battery voltage is too low or not connected.	Alarm light is turned on, E5 is displayed on the temperature panel for 3 times and 3 seconds each.	Pulse sound alarm	Uninfluenced

•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 the temperature in the refrigerator with the battery power. Each emergency battery can sustain recorder's operation for about 30h (Note: Low-power battery shall be replaced in time, to avoid corrosion of battery button. In order to save battery, please remove the battery when the refrigerator is not used. In normal application process, please install an 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.

•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 . Please check whetherthere 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. Locate (3#) on the left corner and in front of recorder panel;

2. Press the button (3#), the recording pen starts moving to the left side;

3. Loosen the middle but 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 nut again. Press the button 3# , to reset the recording pen and start recording temperature;

5. Examine that whether the recording pen operates well on the paper. If not, the arm for recording pen can be adjusted to make the nib contact with recording paper. (Note: Do not damage the nib and arm. If the adjustment is difficult, use a screw-driver for adjustment. Install the arm after curving the arm 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 outer most external temperature scale line of the recording paper (this scale line does not have to be marked with temperature value, but must be the one at the outer 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 3 seconds, to align the nib to the scaling line at the most external circle. If position of the pen is not adjusted well within 3 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 perform a calibration 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;

3. Compare the temperature values of standard thermoelectric couple and recorder when the bottle is placed in the refrigerator 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.

USB function module

• USB function is (optional for HXC-158/158B/358/358B/608/608B).

The control panel has a USB port, which allows extraction of temperature data and other test data via a jump drive. It can automatically collect and store the test data within the recent 10 years. The latest data will automatically replace the earliest data when the data storage is full. Plug in a jump drive, the unit will automatically identify it and start to export the data into the jump drive. While data are being transferred, press “Minus” (“Cal”), the display panel flashes “USB”, which indicates the data are now exporting and not finished yet. After 5 seconds, the display will return to the temperature mode. If the display shows “ALL”, indicating the data export process is completed. The jump drive can be removed and it can be plugged into a computer to read the data. The exported data are in the following formats:

No.	Time	Setting Temp.	Inner Temp.
00000	20130425 11:40	4	4.6
00001	20130425 11:46	4	4
00002	20130425 11:52	4	3.9

•Time setting of the record data (the present time setting of system):

Press and hold the “Minus” (“Cal”) key for 10 seconds, “1P” is shown on the display. Press “Set” (“Cal”) key, and the selection of year is in flashing mode. Press “Minus” or “Plus” (“Sensor” or “Cal cancel”) key to enter the current year, for example, 16, which means 2016. Press “Set” (“Cal”) to save and confirm. Next “2P” is displayed, repeat the same process to enter the month. Next repeat the same process to enter the date for “3P” mode. Repeat the same procedure to enter hour and minute under “4P” and “5P”. After all entries are completed, press and hold “Set”(“Cal”) key for 5 seconds or there is no operation in 10 seconds, the new data will be saved, the control exits back to temperature mode.

•Note:

Among the setting procedures of aforementioned 1P-5P, parameters can be adjusted selectively through “Minus” or “Plus”(“Sensor” or “Cal cancel”) key. For example, if the year(1P) is displayed in display area, and the year (1P) and month (2P) do not need to be adjusted, reset the date (3P) directly, you can Press “Plus” (“Cal cancel”) key to choose the date (3P), then press “Set“(“Cal”) key, at this time, the display area flashes date, then press “Minus” or “Plus”(“Sensor” or “Cal cancel”) key to adjust the present date, then press “Set” (“Cal”) key to save and confirm. When parameter setting is completed, press and hold “Set” (“Cal”) key for 5s or no operation within 10s to save data and exit automatically.

⚠Caution Before the USB function, please confirm the time of record data of jump drive interface. If the time does not match, please make an asdjustment using the aforementioned method.