Certificate of Quality

checker:

Pharmaceutical Refrigerator
Operation Manual

Model:
2453700
2453702
2453701
2453703

•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.

Content

Packing List

Model	2453700/2453702/2453701	2453703
Operation Manual	1	1
Plastic bag	1	1
Key	2	2
Shelves	/	7
Label strip	/	7
Drain hole cap	1	1
Brackets (for rear wall distance)	/	2
Pad lock / Handle Kits	/	1/0
Power cord Kits	/	1

Global Warming Potential

Model	Rated voltage (VAC)	Rated frequency (Hz)	Tonnes CO_2 equivalent
2453700	115	60	0.0005
2453702	115	60	0.0008
2453701	115	60	0.0008
2453703	115	60	0.0016

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

GWP=global warming potential

Refrigerant type	GWP
R600a	20

Model	2453703
Exterior Dimensions (W×D×H) (inch)	26.2×28×77.4
Interior Dimensions (W×D×H) (inch)	20.9×21.9×54.3
Effective Volume(Cu. Ft)	13.8
Door	Glass door with electric heat
Insulation	CFC-Free foamed-in-place urethane
Compressor	High Quality Hermetically sealed compressor
Shelves	7
Load	≤26kg per shelf
Refrigerating Method	Force-air cooling circulation
Exterior / Interior	Cold-rolled steel sheet with powder coated /HIPS plate
Condenser/Evaporimeter	Wire tube type /Plate-type
Temperature Control	Microprocessor controlled
Interior light	LED 3W
Net Weight	116kg
Temperature Range ofsensor in glycerin bottle	2~8℃
Voltage	115V~/60Hz
Rated Power	240W
Refrigerant	R600a 80g
Noise Level(Lp)	43dB(A)
Foaming Agent	HFO-1233zde
Climate Type	4
Anti-shock Safety Classification	I
Alarm system	High & low temperature alarm, sensor error alarm, power failure alarm, low battery power alarm, door ajar alarm
Battery duration for alarm system	48 h (when the battery is fully charged)
Rechargeable Battery	DC 12V rechargeable battery

Note: Climate Type 4 means the temperature is +30℃ ,the relative humidity is 55%.

Safety Precautions

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, so as to prevent personal injuries and refrigerator damage.

⚠Warning — Ignoring this warning may result in serious injury

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

Actions or operations which are prohibited

Actions or operations which must be followed

- When there is a leak of flammable gas, shutoff the feed valve of the gas. 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 voltage being used is 10% higher or lower than the rated voltage, an automatic voltage regulator above 4000 W and appropriate for motor load shall be installed.
- 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 16 A three-prone 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.
- The refrigerator shall not conduct outdoor service. Electrical leakage or shock may be caused if 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.
- In case the 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 electricshock and fire.
- 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.
- End of life disposal of a unit should only be performed by a professional. Remove the door to avoid accidents such as suffocation.
- 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 personal 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.
- 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 handling the refrigerator.
- Be aware of the danger of tripping when working with the refrigerator to avoid managing the unit or personal injury.

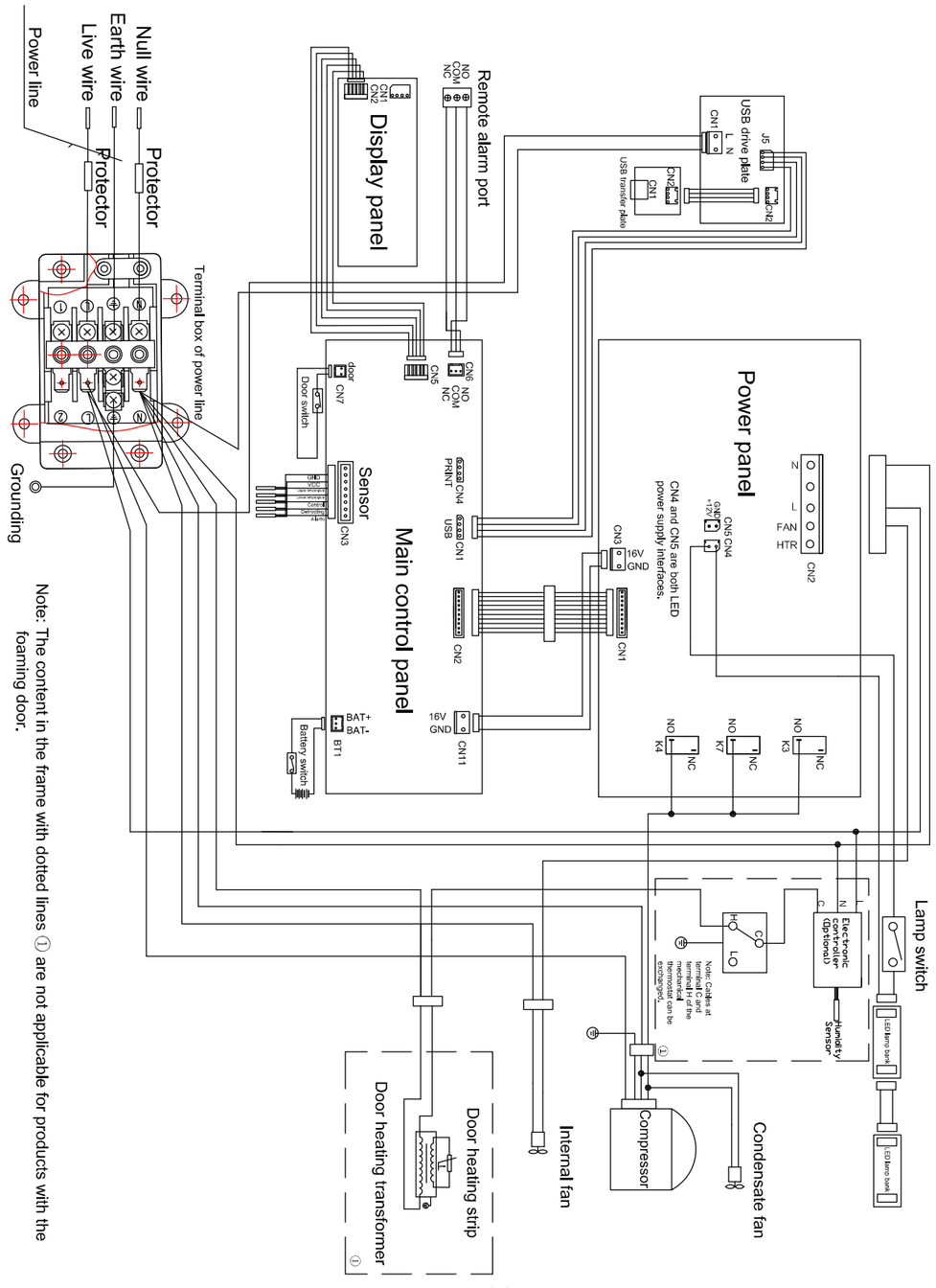
Specification

Specification

Model	2453700	2453702	2453701
Exterior Dimensions (W×D×H) (inch)	19.5×22.8×26	23.5×25×31.9	
Interior Dimensions (W×D×H) (inch)	16.3×15.2×19.9	20.3×16.3×24.8	
Effective Volume(Cu. Ft)	2.4	4.2	
Door	Glass door	Solid Door	Glass door
Insulation	CFC-Free foamed-in-place urethane		
Compressor	High Quality Hermetically sealed compressor		
Shelves/Basket	2/1	3/1	
Load	Max:10kg/m²		
Refrigerating Method	Force-air cooling circulation		
Exterior / Interior	sprayed steel plate /PS plate		
Condenser/Evaporimeter	Wire tube type /Wire tube type		
Temperature Control	Microprocessor controlled		
Interior light	LED 0.3W		
Net Weight	38kg	41kg	46kg
Temperature Range ofsensor in glycerin bottle	2~8℃		
Voltage	115V~/60Hz		
Rated Power/Current	150W/1.7A	190W/1.4A	230W/1.5A
Refrigerant	R600a 25g	R600a 40g	
Noise Level(Lp)	35dB(A)	35dB(A)	
Foaming Agent	HFO-1233zde		
Climate Type	4		
Anti-shock Safety Classification	I		
Alarm system	High & low temperature alarm, sensor error alarm, power failure alarm, door ajar alarm,low battery alarm		
Battery duration for alarm system	at least 8h (when the battery is fully charged)		
Rechargeable Battery	DC 12V rechargeable battery		

Note: Climate Type 4 means the temperature is +30℃ ,the relative humidity is 55%.

•2453703



Note: The content in the frame with dotted lines ① are not applicable for products with the foaming door.

Do not use the door knob to prevent refrigerator damage or personal injury.

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

Do not damage the refrigeration line.

Position the refrigerator to make sure the power 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 power supply cord is damaged, it should be replaced by a qualified technician to avoid a hazard condition.

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.

HFO-1233zde foaming materials are flammable, need professional processing.

Precautions for Use

•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 a week's charging.

•Before loading the refrigerators, make sure the unit is at set temperature. Do not load in more than1/3 of the storage volume to avoid thermally overloading the unit.

•The display on the panel shows the sensor temperature located in the refrigerator. It is notnecessary 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.

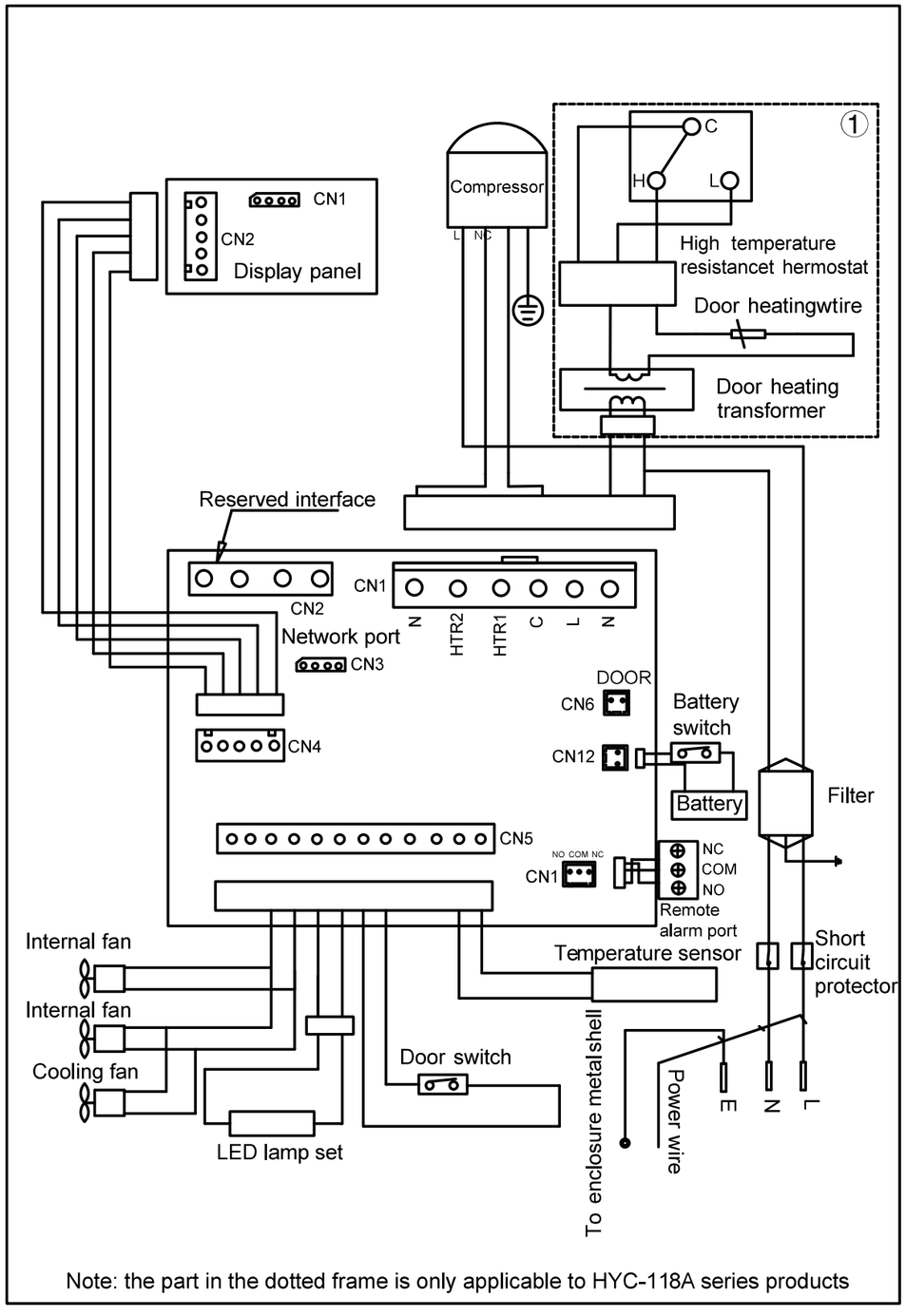
•The refrigerator is designed to operate at a condition of 16 ℃ to 32 ℃ and humidity less than 85%RH（65% RH for 2453702）. Small amount of condensation can occur on the surface of the unit if the actual condition is outside of this range. The storage temperature of the unit, however, is not impacted. To reduce the condensation, please improve the ventilation and drop the ambient temperature if possible.

•Only professional people should perform maintenance work.

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.

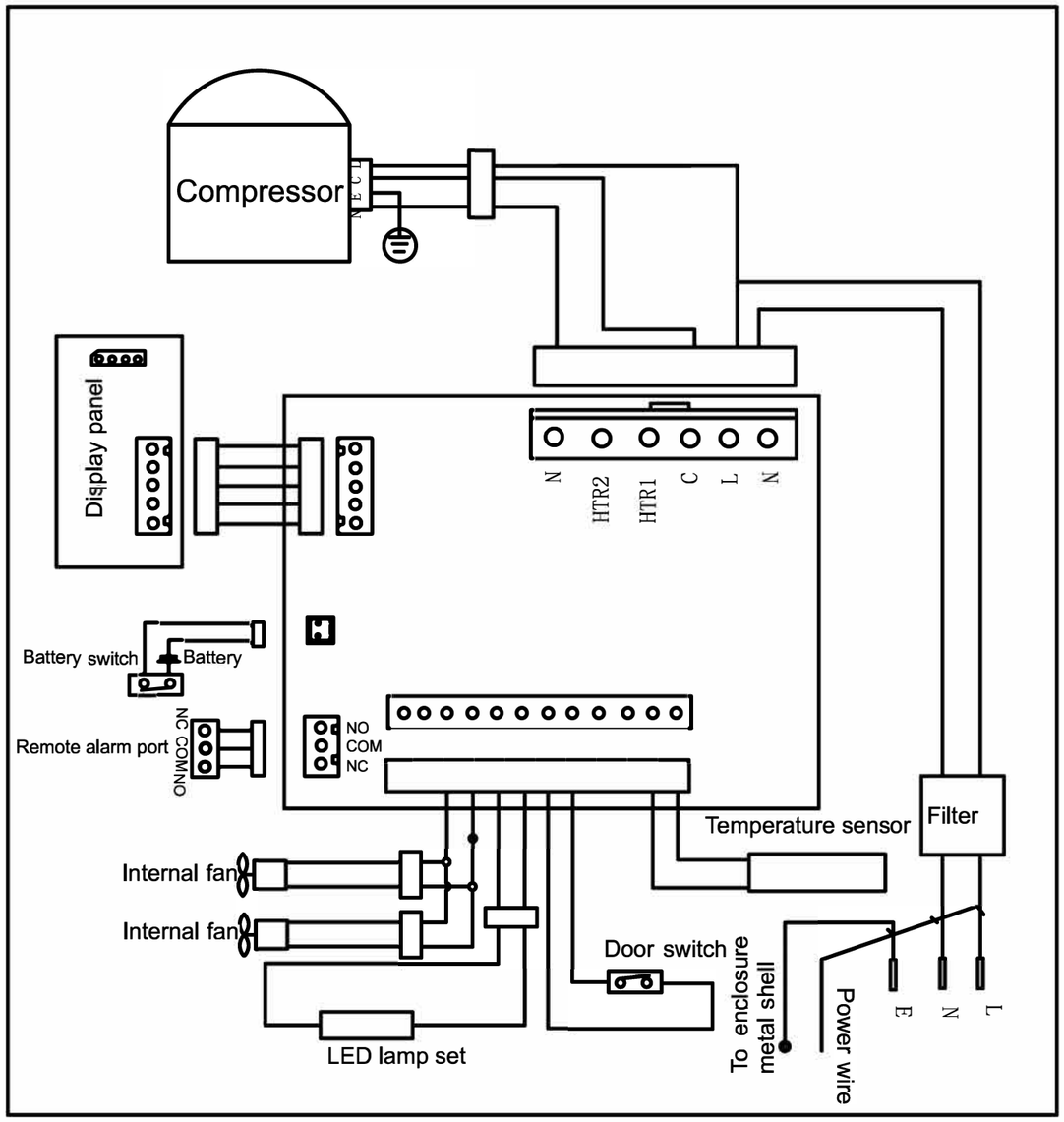
•2453702/2453701



Note: the part in the dotted frame is only applicable to HYC-118A series products

Circuit Diagram

•2453700



Product Feature

The product is applicable to pharmacies, pharmaceutical factories, quarantine stations, health centers and hospitals, used to store pharmaceuticals, medicine and other related products which need a storage environment of 2~8℃ .

1.Temperature Control

The unit is equipped with a computer control, digital display preset to 5°C +/- 3°C tolerance.
Temperature range 2°C - 8°C per Canadian Immunization and CDC Guidelines.

2.Safety System

•Multi-fault alarm (high and low temperature alarm, low battery alarm,power failure alarm, sensor error alarm and door ajar alarm).

•Two alarm methods(Audible buzzer alarm and flashing indicator alarm).

•All independent components are safely grounded.

3.Refrigeration System

•Refrigeration system is optimized with high quality hermetically sealed compressors and other components for a high efficiency performance.

•Automatic defrost maintains optimum cooling capacity

4.User-Friendly Design

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

•High performance thermal insulation.

•Electric heated glass door(except 2453702) with multiple anti-condensation technologies.

•Automatic removal of condensate water.

Note: Technical information might be somewhat different on your refrigerator than published due to continuous improvement.

Product Installation

Installation environment

•Ambient temperature: 10˚C to 32˚C , 18˚C to 25˚C are optimal and air conditioning system is required as necessary.

•Ambient humidity: below 85%RH（65% RH for 2453702）.

•Avoid excessive dust.

•Avoid mechanical swing or vibration.

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

•Input voltage: no greater than ±10% of rated voltage.

⚠Caution

•Normal operation will be impossible for refrigerator if it is installed in environments other than those described above as it is sensitive to ambient temperature. Start operation after the environment is improved.

•It is prohibited to install the refrigerator outdoor. 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, the 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 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.

•f the power cord needs to be extended, the cross section area of the conductor in the extended line should be no less than 2 mm^2 and no longer than 3 meter.

•Inspect the operating voltage range before operation. If the voltage supply is unstable, install a voltage stabilizer of 4000 W 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 provided with grounding wire, check if it is well grounded before operation.

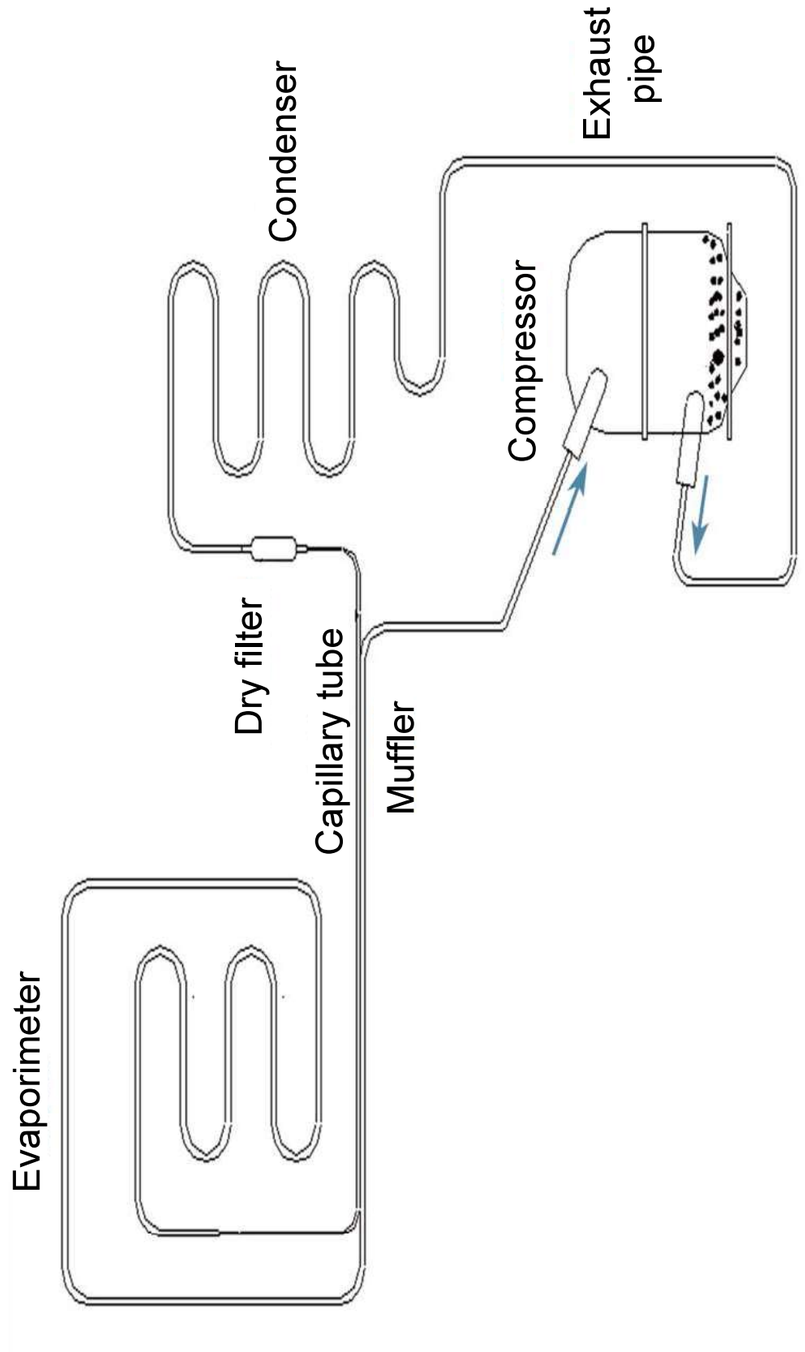
⚠Warning

•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 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 free from barriers.

Refrigeration Schematic&Circuit Diagram

Refrigeration Schematic



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 attempt to maintain or dismantle the unit by yourselves.

Fault	Troubleshooting
The refrigerator does not work	Inspect the power supply to make sure it meets therequirement
	Inspect the connection between the power plug and the socket
	Check the power cord for any obvious damage
	Whether the voltage is too low
Refrigeration effects are not apparent, temperature exceeds the standard	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
	Part of the refrigerator leans against a 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 8℃ . The alarm condition will be automatically corrected once the temperature reaches the set value
	The door is not closed properly
	The unit lost power recently and it is in the process of cooling down
	Ambient temperature might exceed the designed range

Preparation before use

1. Remove all packaging materials.

•Remove all packaging materials and strings for transport.

•Forklift or specialty lifting equipment should be used to remove the unit off the pallet. Forklift should reach the bottom of the wood pallet for lifting.

•The unit should not be tilted at an angle of more than 45 degree.

2. Inspect standard accessories shipped with the unit

Inspect the accessories against packing list. Should there be any discrepancy, contact the after-sale department.

3. Installation

Leave a minimum space of 10 cm around the refrigerator for ventilation and heat dissipation (Fig.1) .

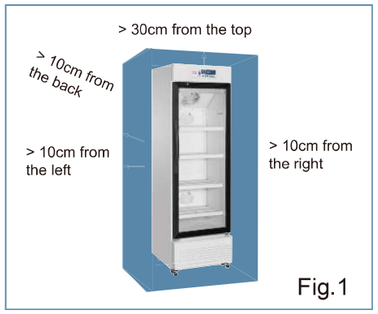


Fig.1

4. Adjust the leveling leg

Rotate the leveling legs with a wrench in clockwise to extend them out and secure them onto the ground.This is to make sure the refrigerator does not move during operation. (Fig.2)

5. Standing

Do not immediately power up the refrigerator after it is installed. Let the unit stand still for 24 hours and then power it up to ensure the unit works properly.

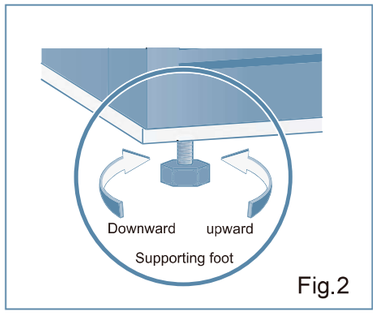


Fig.2

6.Installation of Shelves and Label strip(2453703)

After mounting the shelf and label strip, place them on the liner plate slot at the appropriate distance.

8.Back Bracket (2453703)

Remove four M5 bolts from the back of cabinet,then fix the back bracket for rear wall distance with the removed bolts.(See Fig.3)

9. Power line bracket installation (2453703)

Use two M3.5 screws to fix the power line brackets to the refrigerator. (See Fig.4)

⚠Caution For the power supply cable with loose prevention hook it is not configured clamp stand.

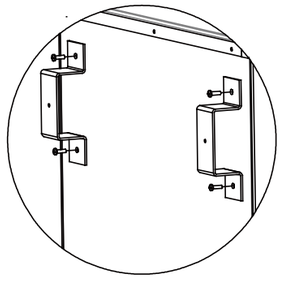


Fig.3

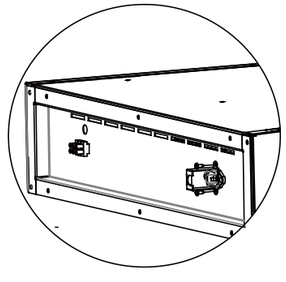


Fig.4

Rechargeable battery recycling

The refrigerator has a built-in rechargeable battery. The battery is recyclable; when its service life expires, please ask a local relevant battery recycling organization for check or discard it properly.

a.Battery location

The built-in battery of the refrigerator-freezer is used for power failure alarm and located in the electrical compartment.et.

⚠Caution
- •There are high-voltage electrical components in the electrical compartment.
- •To avoid electric shock, the cover of the electrical cabinet must be opened by a qualified technician.

b.Battery removal

1) Unplug the unit from the power outlet.
2) Remove the screws on the cover with a screw driver.
3) Unplug the battery's connecting plugs.
4) Remove the battery's holding clip and remove the battery.
5) Recycle or dispose of the used battery as required.

Prohibition

When replacing the battery, make sure that brown wire is connected to the battery's positive pole and blue wire to the battery's negative pole. Do not misconnect; otherwise the charging circuit of computer board would be burned out easily and thus the battery cannot be charged.

Cleaning and Maintenance

⚠Warning •To avoid electric shock or personnel injuries, make sure to power off the refrigerator before any repair work or maintenance is performed.

•Make sure no drug or aerosol around the refrigerator is inhaled during maintenance, otherwise your health will be threatened.

Refrigerator cleaning

•The refrigerator should be cleaned once a month to keep the appearance new and reduce the chance for gem formation.

•Use a damp cloth to clean off dust on the refrigerator. If necessary, use light detergent water to wipe off the unit if necessary. Then use a dry cloth to wipe it again.

•Do not dump water directly onto the interior of the unit to avoid damage to electrical systems.

•Compressor and other mechanical parts are hermetically sealed. They don't need lubrication.

Lamp replacement

This refrigerator is equipped with a LED lamp. To replace the lamp, please contact the service department.

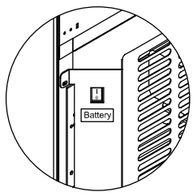
Battery maintenance

When the refrigerator works continuously, please test battery charge level every 15 days (please refer to "Alarm Test" on Page 27 for test method). In case of low battery charge level, make sure that battery switch is on and battery is charged. When the battery has been charged for consecutive 7 days, please retest battery charge level. In normal conditions, battery charge should be full. If low battery charge level remains, it is recommended to replace the rechargeable battery.The battery of power failure alarm is a consumable item with 3-year service life. If it has been used for more than 3 years, power failure alarm may not act when alarm conditions occur. It is recommended to replace the battery earlier. Please contact a Haier after-sales service technician for battery replacement.

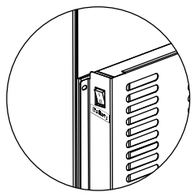
Battery Switch(2453700/2453702/2453701)

Battery switch is installed on the back of the products, with"Battery"label;

Battery switch "I" indicates that battery is on ; "O" indicates that battery is off.



2453701/2453702



2453700

Initial Power-on

Observe the rules below for initial start-up and continuous operation:

While the refrigerator is empty, connect the power line to the appropriate dedicated socket and make sure the power supply in the socket matches the required voltage and frequency.

After the power is switched on, switch on the battery switch, which may enable the audible alarm and is normal. Press the buzzer (for 2453700/2453702/2453701,press the "Alarm" to stop alarming) . The audible alarm continues to operate until the temperature of sensor reaches 5℃ ±3℃ .

The refrigerator has been preset to operate at 2~8℃ in the factory and it is not required to set temperature.

The temperature of refrigerator will stay at the preset temperature in a stable manner after hours of operation; once the temperature gets stable, check if the monitoring bottle temperature is the same with the set point.

Before products go out, the battery switch is off, the users must open it before using at the first time. Once the power failure occurs, the product can realize the function of power failure alarm.

Turn on the light switch and ensure the light inside the freezer operates properly.

When the refrigerator passes all the functional inspections, load in products in batches.

- This unit should be managed a dedicated professional person. Operating conditions should be checked and recorded using appropriate methods. When the refrigerator temperature is out of specification, take proper actions to protect the stored samples. No products should be stored in the unit unless the unit operates without issues.
- The refrigerator is a pharmaceutical refrigerator designed to operate within 2℃ to 8 ℃ . Make sur to store only products that fit this temperature range.
- Due to the refrigeration effect, the displayed temperature may be somewhat different from actual temperature and humidity. This is a normal process.
- Do not place any article in the space between liner bottom and underbed shelf of the refrigerator to avoid blocking of air duct which may affect homogeneity of temperature inside.
- Warm products should only be loaded into the units in batches to reduce the load to the cooling system. Overloading the system can cause the refrigerator temperature to rise and the compressor to work under undesirable stress, which can shorten the life of the system.
- Do not damage the refrigeration lines.
- Do not use an electrical apparatus in the refrigerator without proper approval.

Overcurrent Protection Circuit Breaker Instruction

1.Installing Location: Install the Breaker on the back of cabinet. There is a special warning label.

2.Operating Principle: It's a device that trips like a switch and opens the circuit when over loaded. This will protect the freezer's entire circuit. To restart the unit, the user needs to press down the switch and the unit will power on.

Operation after Power Outage

The control parameters are stored in the control system in the refrigerator even there is a power outage.When the power recovers after the outage, the refrigerator continues to operate in accordance to the set parameters before the power outage.

⚠Warning

•If the unit is shut off, allow a 5 minutes hiatus before powering it up again.

•If the unit is to be shut down for a long time, be sure to turn off the power switch, and the battery switch. Unplug the unit from the power outlet. This is to a hazardous condition due to aging power lines..

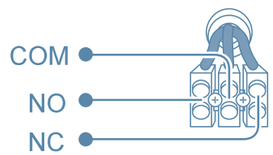
•If the refrigerator is decommissioned and left unattended, make sure children cannot get close to the refrigerator and the door cannot be closed completely.

Remote Alarm Terminals

•Remote alarm terminals are installed on the refrigerator and the alarm signal behind the compartment is output by the terminals. The bearing capacity of the terminals is DC 30V, 2A.

•Terminal output:

Remote Aterminals include NO, NC and COM.
The user can choose "NO" or "NC" if needed.



Alarm or Safety	Phenomenon	Alarm Indication	Buzzing Alarm
Sensor abnormities	Open circuit or short circuit of the upper temperature sensor	Alarm light flashes, temperature display area displays E1	Impulsive sound alarm
	Open circuit or short circuit of the lower temperature sensor	Alarm light flashes, temperature display area displays E2	Impulsive sound alarm
	Open circuit or short circuit of the control sensor	Alarm light flashes, temperature display area displays E3	Impulsive sound alarm
	Open circuit or short circuit of the defrosting sensor	Alarm light flashes, temperature display area displays E4	Impulsive sound alarm

⚠ Caution

•If alarm condition is not corrected within 20 minutes, buzzer and remote control contact will restart.

•IF there is a power outage, a fully charged emergency battery can keep the alarm function in working condition for 48 hours.

•Once the unit starts up and restarts after a long time in storage, charge the battery for to keep the alarm function for 48 hours.. Even if the battery discharges, remote alarm contact shall keep in working condition.

•Press "Alarm Test " key. For each press, the buzzer goes off thrice with frequency as 1Hz continuously. Meanwhile, the alarm indicator light flashes thrice and the remote alarm relay is disconnected after pull-in thrice, which means the alarm system functions normally.

Automatic Alarm Recovery

This series of refrigerator is has an automatic alarm recovery feature.

•When the system is in the alarm mode, you can press the “Silence” on the display panel to cancel the alarm. (The remote alarm will not be stopped.)

•If the alarm condition still exists, the buzzer will return to the alarm mode again automatically 20 minutes later.

Component Names•Control Panel

Component Names

•2453702

•2453700

Alarm

2453700/2453702/2453701

Alarm or Safety	Phenomenon	Alarm Indication	Buzzing Alarm
High temperature	If upper temperature sensor or lower temperature sensor perceives temperature of the refrigerator ≥9˚C	Alarm light flashes	Impulsive sound alarm
Low temperature	If upper temperature sensor or lower temperature sensor perceives temperature of the refrigerator < 2˚C	Alarm light flashes	Impulsive sound alarm
Outage	Outage of the refrigerator	/	Impulsive sound alarm
Door ajar	Outer door ajar or open	Alarm light flashes after 1 min delay	Impulsive sound alarm after 1 min delay
Sensor abnormities	Open circuit or short circuit of temperature sensor	Alarm light flashes, temperature display area displays EE	Impulsive sound alarm

2453703

Alarm or Safety	Phenomenon	Alarm Indication	Buzzing Alarm
High temperature	If upper temperature sensor or lower temperature sensor perceives temperature of the refrigerator ≥8˚C	Alarm light flashes	Impulsive sound alarm
Low temperature	If upper temperature sensor or lower temperature sensor perceives temperature of the refrigerator < 2˚C	Alarm light flashes	Impulsive sound alarm
Outage	Outage of the refrigerator	Temperature Display displays inside temperature for 60s and stop displaying for 60s, then repeat	Impulsive sound alarm within 48h outage
Door ajar	Outer door ajar or open	Alarm light flashes after 10 min delay	Give impulsive sound alarm after 10 min delay

•Time setting of USB interface data recording (time system current setting):

Press the “Cal” for 10s and the display area of inner temperature shows “1P” stably. Press the “Cal ”,and the display area of inner temperature blinks the year. Press the “Sensor ” (decrease) or “Cal Cancel” (increase) to choose the year. It displays 10 to 99 recurrently. For example, to set 2013,choose 13 and press the “Cal ” to save it. And then the display area of inner temperature shows "2P" stably. Press the “Cal”, and the display area of inner temperature blinks the month . Press the “Sensor ” (decrease) or “Cal Cancel” (increase) to choose the month. It displays 01 to 12 recurrently.When the current month comes out, press the “Cal ” to save it. And then the display area of inner temperature shows “3P” stably. Press the “Cal ”, and the display area of inner temperature blinks the date . Press the“Sensor ” (decrease) or “Cal Cancel” (increase) to choose the date. It displays 01 to 31 recurrently. When the current local date comes out, press the “Cal ” to save it. After that, the display area of inner temperature shows “4P” stably. Press the “Cal ”, and the display area of inner temperature blinks the hour.Press the “Sensor ” (decrease) or “Cal Cancel” (increase) to choose the hour. It displays 00 to 23 recurrently. When the current local hour comes out, press the “ Cal ” to save it. After that, the display area of inner temperature shows “5P” stably. Press the “ Cal ”, and the display area of inner temperature blinks the minute. Press the “Sensor ”(decrease) or “Cal Cancel” (increase) to choose the minute. It displays 00 to 59 recurrently. When the current local minute comes out, press the “Cal ” to save it. After that, the display area of inner temperature Note: during the said 1P-5P setting process, parameters can be specifically regulated via the“Sensor ” (increase) or “Cal Cancel” (decrease) keys. For example,in the case that current display area of inner temperature shows 1P (year), and the year (1P)and month (2P) need not regulation, press the “Cal Cancel” to choose the date (3P) so as to reset the date directly. Then press the “Cal ”and the display area of inner temperature blinks the date. Press the “Sensor ”(decrease) or “Cal Cancel” shows“1P” once again. Users can set 1P-5P again. After the setting, press the “Cal ” for 5s, and all settings will be automatically saved. And then the display area of inner temperature shows the inner temperature normally.

Note: during the said 1P-5P setting process, parameters can be specifically regulated via the “Sensor ” (increase) or “Cal Cancel” (decrease) keys. For example,in the case that current display area of inner temperature shows 1P (year), and the year (1P)and month (2P) need not regulation, press the “Cal Cancel” to choose the date (3P) so as to reset the date directly. Then press the “Cal ”and the display area of inner temperature blinks the date. Press the “Sensor ”(decrease) or “Cal Cancel” (increase) to regulate the current date. And then press the “Cal ” to save it. After that, the display area of inner temperature shows the hour (4P). If hour setting is necessary, press the “Cal ” to regulate. Otherwise press “Cal Cancel” (increase) to enter the minute (5P) setting.Upon the finish of setting, press the “Cal ” for 5s to save it and exit. Then the display area of inner temperature shows the inner temperature normally. During the said 1P-5P setting process, after setting any parameter, if other parameters do not need to set, press the“Cal ” for 5s to save it and exit.

⚠ Caution Please checking the time before use, if the time is not right, follow the upper method to adjust the time.

• 2453701

•2453703

TEMP. SET

	Key Operation	Display
1		The temperature in the refrigerator displays.
2	Press both “Sensor” and “Cal Cancel” for 5s at the same time.	The original temperature set value 5℃ appears and flickers.(Please follow the following steps in 5s since the value flickers. Otherwise, the display panel will return to the temperature in the refrigerator)
3	Click “Cal Cancel” (0.1℃ higher/time) or “Sensor”(0.1℃ lower /time)	The original temperature set value 5℃ changes accordingly, until the temperature displayed on the display panel is 5.5℃ .
4	After the demanded temperature 5.5℃ is set, stop the operation.	The temperature value 5.5℃ stops flickering after being displayed and flickering for 5s and then is saved in the system. After successful setting, the display panel will display the temperature in the refrigerator again.

3.Defrost Cycle

Forced defrost cycle:

When the environmental humidity is too high or the products loaded into the refrigerator emit much moisure.The equipment will start the forced defrost cycle. Once the frost is thawed, the refrigerator will resume normal operation.

4.USB Function

•Functions of USB interface

The computer has a USB function.USB port, (DC 5V, 500mA), is used only for data transmission. Test data can be exported via the USB port. The computer can automatically collect and store the test data within the recent 10 years. It collects data every other 6 minutes and stores them automatically. The latest data will automatically replace the earliest data when the data storage is full.With a USB port plugged in, the computer will automatically identify it and start to export data to the USB port.In the data exporting process, if you press “Cal ”, the screen will blink “USb”, which indicates the data are now exporting and not finished yet. After blinking 5s, it exits and displays the actual temperature in the case.If the displays “ALL” stably, the data export is finished. It exits 5s later can displays the actual temperature in the case.The USB port can be removed at this point. The exported data are in the following formats:

No.	Time	Setting Temp.	Inner Temp.
0	20130425	5	5.6
1	20130425	5	5
2	20130425	5	4.9
...	...	...	...

2453703

1.Temperature display

This refrigerator has been set capable of reaching appropriate temperature (2~8 ℃) automatically before delivery.

Display Temperature ●Light on ○Light off

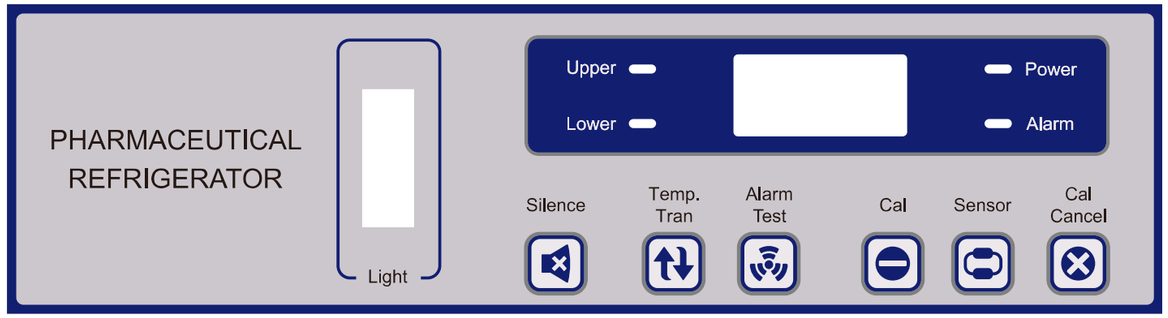
	Operation	Key Operation	Display	Display Mode
1	Plug in, switch on power		Average temperature of monitoring bottle ●up ●low	Average temperature
2	Press Display Temperature key	⇅	Temperature of upper monitoring bottle ●up ○low	Temperatur of upper monitoring bottle
3	Press Display Temperature key	⇅	Temperature of lower monitoring bottle ○up ●low	Temperatur of upper monitoring bottle
4	Press Display Temperature key	⇅	Average temperature of monitoring bottle ●up ●low	Average temperature
5	Repeat operation from 2			

⚠Caution The displayed temperatures indicate upper and lower temperatures of the refrigerator perceived by the sensor in glycerin bottle. It is not always of 5℃ . Temperature sensor indicates average temperature inside the refrigerator.

2.TEMP.SET

If you want to reset the temperature, for example, 5℃ is set originally and you want to change the temperature to 5.5℃ , please operate according to the following steps:

Control Panel



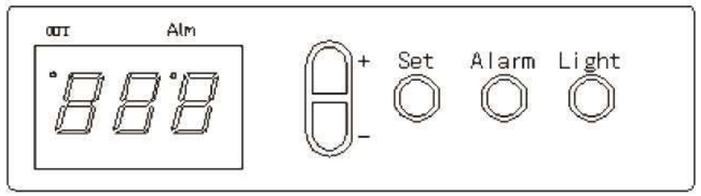
Application method

2453700/2453702/2453701

1.Microprocessor temperature controller

Adjust the cabinet temperature easily by the micropressor temperature controller in control panel installed on the top of the refrigerator. Don’t do any adjustment in the first 30 mins when you first power the refrigerator.

LED displays the cabinet temperature.



2. Temperature adjustment

Factory pre-set to 5℃ .

Set inner temperature: Press “Set” button for 5 seconds, LED dispalys “TS”. Press “Set” again, the current set temperature value flashes. Make adjustment to specified value through Up Key "+" and Down Key"-". Press “Set” to save and return.

The set temperature will be reached after running for a period of time.

3.Error display

When there is error of sensor, the LED displays “EE” and alarms. The refrigerator would still cool in error safety mode in a short period of time. Please move the stored things to other proper refrigerator ASAP to avoid loss. Then call for service.

4.High/low temperature alarm

When the inner temperature exceeds the range of high and low alarm temperature limits, alarm light flashed and buzzer sounds. Press “Alarm” button to silent the alarm but the alarm light keeps flashing until inner chamber temperature within alarm limits.

5.Check recent highest and lowest inner temperature

Press both “Alarm” and “+” buttons to check the recent highest inner temperature. Release the buttons to return to the inner cabinet temperature display.

Press both “Set” and “-“ buttons to check the recent lowest inner temperature. Release the buttons to return to the inner cabinet temperature display.

6.Set values of high temperature alarm “ALH” and low temperature alarm “ALL”

Press “Set” button for 5 seconds. LED dispalys “TS”. Press “+” button to show “ALH”. Press “Set” again, the current high alarm temperature value flashes. Make adjustment to specified value through Up Key "+" and Down Key"-". Press “Alarm” to return.

Press “+” button or “-” to show “ALL”. Set low temperature alarm value in the same way.

7.Inner light

In order to see the stored goods clearly, a LED light has been installed in the cabinet. You can control light “on” or “off” by “light” button to save energe, please turn off the light after observing the stored goods in the refrigerator.

The light is on when the door is open; The light is off when the door is closed.

8.Power failure alarm function

When the power is down, power-off alarm function is activated, buzzer with 1 Hz frequency continuously beeps,at the same time alarm indicator light of the board flashes, if alarm equipment is connected to the remote alarm port, it will alarm synchronously and last at least 8 hours. Press the "ALARM" button to cancel the power off alarm, while the remote alarm function is cancelled.