

Haier

Pharmaceutical Refrigerator

Operation Manual



Model:
HYC-1378

Certificate of Quality

checker:



Haier Medical and Laboratory Products Co., Ltd.
Address: Haier Industrial Park, Economic Technology Development
Zone, Qingdao 266510.P.R.China
Web: www.haiermedical.com
Version: 1st, 2017
Dedicated code: 0270501006
V13026



0270501006

- Read the Operation Manual carefully before using your appliance.
- Keep the Operation Manual in a safe place.
- Appearance, color and layout of the door may vary.
- Translation of the original instruction.
- The scope of the Product Application: Pharmaceuticals and other related products which need a storage environment of 2°C–8°C.

EC Declaration of Conformity

according to the Machinery Directive 2006/42/EC

For the following equipment :

Product : Pharmaceutical Refrigerator

Type Designation/Trademark: HYC-1378 | Haier

Manufactures Name : Haier Medical and Laboratory Products Co.,Ltd.

Manufactures Address : Haier Industrial Park, Economic Technology
Development Zone. Qingdao 266510.P.R.China

Refer to in this declaration confirms with the following directive(s)/standards:

2006/42/EC, EN60335-1, EN60335-2-89 EN62233

Global Warming Potential

| Model | Rated voltage (VAC) | Rated frequency (Hz) | CO ₂ equivalent (Tonnes) |
|----------|-----------------------|------------------------|-------------------------------------|
| HYC-1378 | 220~240 | 50 | 0.701 |
| HYC-1378 | 220~240 | 60 | 0.701 |
| HYC-1378 | 115 | 60 | 0.701 |

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

GWP=global warming potential

| Refrigerant type | GWP |
|------------------|------|
| R134a | 1430 |

Haier quality, your trust from beginning to end.

The product is applicable to pharmacies, pharmaceutical factories, quarantine stations, health centers and hospitals, used to store biological products and those need to be stored at a temperature between 2~8℃.

- Temperature control**
 - Computer control, digital display of temperature, temperature display accuracy as 0.1℃ and temperature range as 2℃~8℃.
- Safety system**
 - Multi-fault alarm (high and low temperature alarm, power failure alarm, sensor fault alarm and door opening alarm)
 - Two alarm methods (buzzing alarm, flashing alarm)
 - All independent components are safely grounded
- Refrigeration system**
 - Refrigeration system with depth optimization, expoted compressor and main components and better refrigeration performance
- User-friendly design**
 - User-friendly design, computer control, smart and carefree, adjustment not required
 - High-performance thermal insulation layer, with excellent insulation effect
 - Glass door with electric heat, multiple anti-condensation technologies
 - Automatic evaporation of condensate water, safety door latch

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

Content:

Product Feature.....1
Content.....2
Safety Precautions.....3
Precautions for Use.....6
Product Installation7
Component Names • Control Panel.....12
Application method14
Alarm.....18
Cleaning and Maintenance.....21
FAQ.....23
Refrigeration Schematic & Circuit Diagram.....24
Specification.....26

Packing List

| Model | HYC-1378 |
|------------------|----------|
| Operation Manual | 1 |
| Plastic bag | 1 |
| Key | 4 |
| Handle kits | 2 |
| Screw | 2 |

Note: Technical information may vary from the appliance that you have just purchased due to technical improvements.

Specification

Safety Precautions

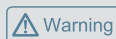
Specification

| Name | Pharmaceutical Refrigerator | | |
|----------------------------------|--|-----------------|------------|
| Model | HYC-1378 | | |
| Outside Dimensions (W×D×H) (mm) | 1440×910×1980 | | |
| Inside Dimensions (W×D×H) (mm) | 1320×700×1500 | | |
| Effective Volume | 1378L | | |
| Testing hole | 2 | | |
| Door | Glass door with electric heat | | |
| Foaming Material | Rigid polyurethane foam (fluoride-free) | | |
| Compressor | Fully enclosed compressor | | |
| Shelf | 12 | | |
| The loading of each shelf | Max:30kg/m ² | | |
| Refrigerating Method | Force-air cooling circulation | | |
| Outer Plate /Inner Plate | Cold-rolled steel with power cover | | |
| Condenser/Evaporimeter | Finned pipes / Finned pipes | | |
| Temperature Controller | Computer control system | | |
| Lamp | LED 5W | | |
| Net Weight | 310kg | | |
| Temperature of Monitoring Bottle | 2℃~8℃ | | |
| Rated Power Supply | 220V-240V~/50Hz | 220V-240V~/60Hz | 115V~/60Hz |
| Rated Power/Current | 800W/4.2A | 800W/4.2A | 950W/11A |
| Refrigerant | R134a 490g | R134a 490g | R134a 490g |
| Noise Level | 43dB(A) | | 48dB(A) |
| Foaming Agent | CP/IP | | |
| Climate Type | 4 | | |
| Type of Electric-shock Safeguard | I | | |
| Power connection type | Y | | |
| Alarm Equipment | High & low temperature alarm, sensor fault alarm, power failure alarm, Low battery alarm, door opening alarm | | |
| Duration of Outage Alarm | 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%.

Dear users:

Thanks for your choice of Haier pharmaceutical 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, so as to prevent personal injuries and refrigerator damage.



Warning Ignoring this warning may result in death or serious injury



Actions or operations which are prohibited



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



Actions or operations which must be followed

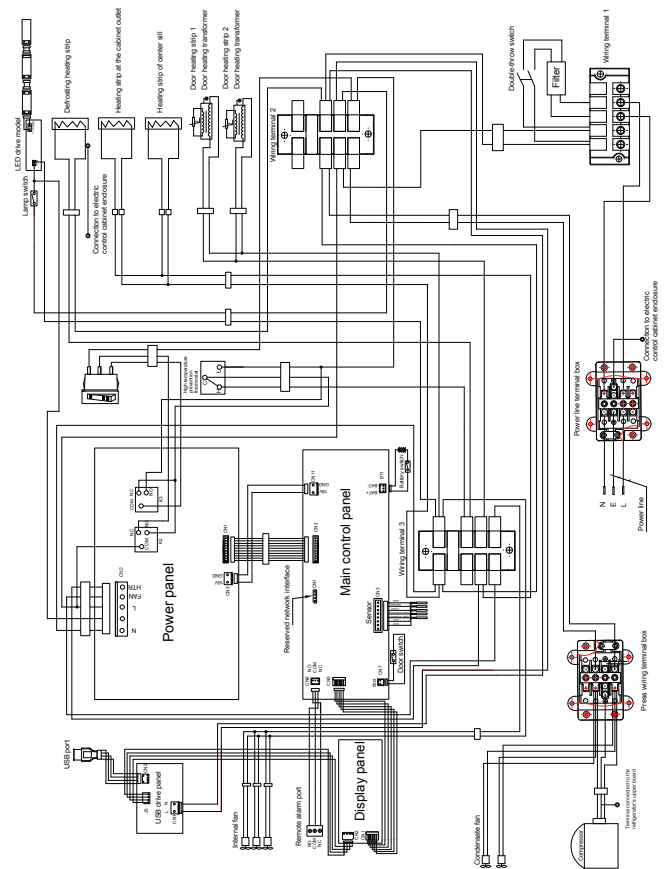


Warning

- ! In case of flammable gas leakage such as coal gas, shut off the valve of leaked gas, open windows for ventilation and exhaust; do not plug in or pull out the power plug of refrigerator to prevent explosion and fire.
- ! The refrigerator shall be installed by professional technical staffs or after-sale maintenance staffs to prevent electric shock or fire.
- ! Place the refrigerator on solid and flat ground in a stable manner. The refrigerator will be tipped over or personal injuries will be caused if the refrigerator is placed on improper ground or place.
- ! Apply the dedicated power supply marked on the nameplate of refrigerator to prevent fire or electric shock.
- ! If the voltage being used is 10% higher or lower than rated voltage, automatic voltage regulator above 4000W and appropriate for motor load shall be installed.
- ! If the power line needs to be extended, the extended line shall be no smaller than 2mm² in sectional area and no longer than 3m in length. Otherwise, fire or electric shock may be caused.
- ! The power line for this refrigerator is provided with a standard three wire (grounding) plug, which complies with 16A. Do not remove or dismantle the grounding pin of power line in any case. Make sure the power plug is securely and reliably plugged into the socket to prevent fire.
- ! Apply socket with ground wire to prevent electric shock. If the socket fails to be grounded, ground wires must be installed by professional technical staffs.
- ⊘ 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 refrigerator may suffer splashing water, to prevent electric leakage or shock due to deterioration of insulation.
- ⊘ Do not pour water on the refrigerator to prevent electric shock or short circuit.

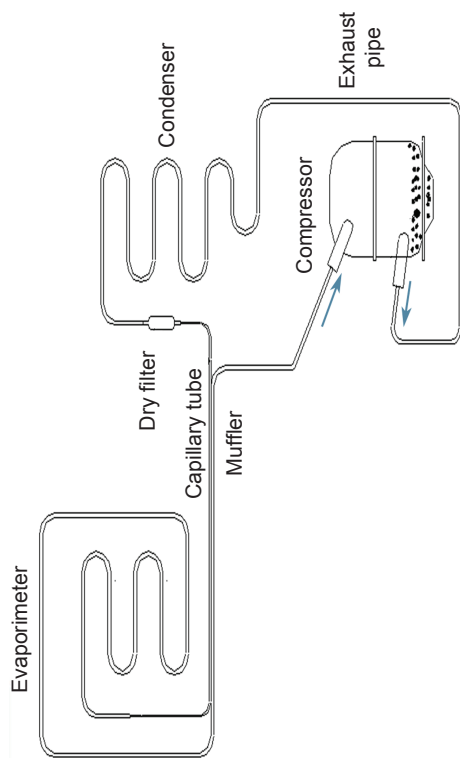
- Do not place containers with water or heavy stuffs on the refrigerator. Personal injuries may be caused by falling articles and electrical leakage or shock may be caused by out flowed water due to deterioration of insulation.
- Do not ground the refrigerator through gas pipes, water supply pipes, telephone lines or lightning conductors as electric shock or other dangers may be caused.
- Do not touch electrical parts such as power plug or switches with wet hands to prevent electric shock.
- Hold the power plug rather than the wire when pulling the plug from the socket as electric shock or fire due to short circuit may be caused.
- Pull out the power plug when the refrigerator is under abnormal performance as electric shock or fire may be caused.
- Users are not allowed to dismantle, repair or refit the refrigerator by themselves as fire or personal injuries may be caused due to improper operation.
- Disconnect the refrigerator when repairs or maintenance are performed on the refrigerator to prevent electric shock or personal injuries.
- Make sure medicines or airborne particles inside or around the refrigerator will be not be inhaled during maintenance as health hazard may be caused.
- The refrigerator shall be used in safe regions when toxic, harmful or radioactive articles are stored inside, as improper use may pose danger to human health or environment.
- Pull out the power plug if the refrigerator has been out of service for long time to prevent electric shock, leakage or fire caused by aging power lines.
- If the refrigerator is left unused in areas where supervision is unavailable for a long time, make sure children will not get close to the refrigerator and the door can not be completely closed.
- End-of-life disposal shall be performed by competent staffs. Remove the door to prevent accidents such as suffocation.
- Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.
- Do not store corrosive articles such as acid or alkali in the refrigerator to prevent damage to internal components or electrical parts.
- Do not place packaging plastic bags within the reach of children to prevent suffocation accidents.
- Do not climb on or place articles on the refrigerator as personal injuries or refrigerator damage may be caused due to turnover of refrigerator.
- Do not plug metal articles such as iron nails or wires into the holes and gaps or vents for internal air circulation, to prevent electric shock or personal injuries due to contact of articles above with moving parts.

Circuit diagram



Refrigeration Schematic & Circuit Diagram

Schematic diagram



Caution

- ! Check refrigerator settings when restarting the refrigerator after power failure or the power is shut off. Changes of settings may damage the articles stored.
- ! The refrigerator shall be reconnected after more than 5 minutes once it is shut off, to prevent damage to compressor or system.
- ! Wear gloves when performing maintenance to prevent personal injuries due to sharp edges or corners.
- ! Hold the knob when closing the door to prevent finger pinching.
- ! The angle of inclination shall not be greater than 45° when handling the refrigerator.
- ⊘ Be careful not to be tripped up by the refrigerator during handling, to prevent refrigerator damage or personal injuries.
- ⊘ Do not lift or handle equipment with door knob to prevent refrigerator damage or personal injuries.
- ⊘ Do not damage refrigerating circuit.
- ⊘ Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer.
- ! The appliance must be positioned so that the plug is accessible.
- ! The appliance must be placed on a solid and flat surface, or excessive vibration and noise may be produced when the appliance in operation.
- ! The appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- ! If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- ! Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.
- ! If your cabinet is to be discard, you must remove the door and leave the shelves in place. This will reduce the possibility of danger to children. And the flammable foaming needs to be disposed by professional persons.
- ! CP/IP foaming materials are flammable, need professional processing.

- The refrigerator battery may be low when the refrigerator is restarted after it has been out-of-service for a long time; make sure the battery switch is set at "ON" and charge the storage battery, which will be full after continuous running of refrigerator for one week.
- Make sure the temperature inside the refrigerator has reached the set value and put articles in the refrigerator by batch. Volumes accounted by articles shall not be greater than 1/3 of refrigerator to prevent rise of temperature.
- The temperature display value of refrigerator refers to the temperature value at the temperature sensing probe inside the refrigerator. Though the temperature displayed is different from the actual one at the center of refrigerator, it will approach to the real temperature gradually.
- Clean the refrigerator with neutral detergent diluted. Brushes, acids, gasoline, soap powders, polishing powders or hot water are prohibited to clean refrigerator as these materials may damage the painting surface and plastic & rubber components and parts. Never wipe the plastic & rubber components and parts with volatile solvent such as gasoline.
- Shut off the power as well as the battery switch if the refrigerator will be out-of-service for a long time.
- Reduce the time of keeping door open when storing or taking articles each time, to prevent great fluctuation to the temperature and humidity inside the refrigerator.
- The refrigerator will see a sharp temperature increase in a short time when the door is opened, which is normal, and the temperature will resume 1h after the door is closed.
- The refrigerator shall operate with ambient temperature as 10~32°C and humidity less than 85%; condensation will occur on the glass door in high temperature and high humidity condition, which is normal and will not affect the storage temperature inside the refrigerator; in the event of condensation, please improve ventilation conditions as soon as possible and reduce ambient temperature simultaneously.
- The maintenance should be supplied by professional after-sales service people once the equipment is faulty.



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.



Do you have questions during using? Do you doubt that the refrigerator breaks down? Please read description here. This chapter is to give answers in respect of potential fault phenomenon as well as respective solutions. If your question is still unresolved after operation, please contact Haier after-sales service. Do not maintain and dismantle the refrigerator by yourself!

| Fault | Troubleshooting |
|--|--|
| The refrigerator does not work | Whether the input power meets the requirements |
| | Whether the plug and socket are in loose contact |
| | Whether the input line and control line break down |
| | Whether the voltage is too low |
| Refrigeration effects are not apparent, temperature exceeds the standard | Whether too much or too hot articles are stored |
| | Whether there is certain clearance among stored articles |
| | Whether the refrigerator is exposed to direct sunlight or radiation of other heat sources |
| | Whether the door is opened too often |
| | Whether the ambient temperature is too high |
| Noise is too significant | Whether the air duct is blocked |
| | Whether the refrigerator is placed steadily |
| | Whether part of the refrigerator contact external objects or wall |
| Alarm light flashes, the buzzer alarms | The noise noted in technical data is average data measured in standard laboratory without noise when the refrigerator with no stored articles is put on a rubber blanket and operates steadily after the door is closed, and data measured during startup & shutdown and at 1 m above the surface is not included. It is normal that actual noise differs from stated value because of loaded articles, environmental noise, no door closing, startup & shutdown of the compressor during using. |
| | Whether the articles are newly put in the refrigerator and the temperature is not stabilized at 3~7°C. The fault will be eliminated automatically after refrigeration for a while. |
| | Whether the door is not closed completely, which triggers alarm of door opening |
| | Whether the power fails, the refrigerator returns to normal condition after starting up for a while |
| | Whether the temperature exceeds the standard |

Battery maintenance


When the refrigerator works continuously, please test battery charge level every 15 days (please refer to "Alarm Test" on Page 18 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.

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 electric cabinet.

-  **Caution**
- There are high-voltage electrical components in electric cabinet.
 - To avoid electric shock, the cover of electric cabinet must be opened by a qualified engineer or maintener only.

b. Battery removal


- 1) Pull out the plug from the power socket.
- 2) Screw off screws on the cover of electric cabinet with a screwdriver.
- 3) Pull out the battery's connecting plug.
- 4) Remove the battery's fixing clip and take out the battery.
- 5) Recycle or properly dispose the battery as required.

Prohibition

When replacing the battery, make sure that red wire is connected to the battery's positive pole and black 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.

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.
- Avoid excessive dust.
- Avoid mechanical swing or vibration.
- The refrigerator shall operate at an altitude lower than 2000m.
- Input voltage: no greater than $\pm 10\%$ 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 and the door of the installation space may not be smaller or lower than the refrigerator, to ensure smooth entry and exit of the refrigerator as well as to prevent damage to the stored articles due to not timely repair of refrigerator as the installation site is not easy to be accessed.
- The ground at the installation site shall be solid and flat.
- It is well ventilated and free from direct sunshine.
- Do not share one socket with plugs of other equipment and the plug shall be securely plugged into the socket.
- Do not twist or compress the power line.
- If the power line needs to be extended, the extended line shall be no smaller than 3mm² in sectional area and no longer than 3m.
- Check the operating voltage before operation and voltage regulator appropriate for motor load may be applied in regions with unstable voltage. Ensure the normal input voltage stands at rated voltage $\pm 10\%$ and the power of voltage regulator is greater than 4000W.
- The refrigerator shall be grounded in a reliable manner.
- If the socket is provided with grounding wire, check if it is well grounded before operation.
- If the socket is not provided with grounding wire, a new one shall be installed by professional engineers.

-  **Warning**
- Do not ground the refrigerator through gas pipes, water supply pipes, telephone lines or lightning conductors as electric shock may be caused.
 - The power plug can be accessed after installation to ensure the power line can be pulled out in a timely manner in emergency cases. The air vent shall free from barriers.

Preparation before use

1. Remove the packaging materials and strings
Remove all packaging materials and strings for transport.



• For safe transportation, equipment of this series is fixed on wooden base by metal flat. Please unscrew the screws and rotate the metal flat to be hidden at the bottom of equipment before using (Fig.1) .

• Forklift or chartered buses are recommended for moving the refrigerator before unpacking. For forklift, the refrigerator shall be accessed from the bottom of the wood bracket of the refrigerator box side.

For chartered buses, the refrigerator shall be accessed from the bottom of the wood bracket, and it can be clipped up from both sides of the box only.

• Casters are recommended for moving the refrigerator after unpacking.

• The maximum tilt angle of the refrigerator shall be no more than 45° during the course of movement.

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

3. Placing conditions

Leave a gap of 10cm in minimum around the refrigerator for ventilation and heat dissipation (Fig.2).

4. Adjust bracing foot

Rotate the leveling feet with wrench in clockwise direction to extend them outward and support on the ground. Make sure the refrigerator will not move during operation(Fig.3).

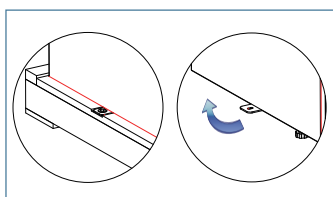


Fig.1



Fig.2

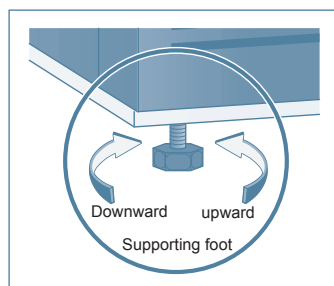


Fig.3

Component Cleaning



Warning

- To avoid electric shock or staff injuries, please switch off power of the refrigerator before conducting any repairment or maintenance.
- Make sure no drug or aerosol around the refrigerator is inhaled during maintenance, otherwise your health will be threatened.

Refrigerator cleaning

- Clean the refrigerator once a month. Regular cleaning keeps appearance of the refrigerator new.
- Wipe off dust in enclosure, inner chamber and all accessories of the refrigerator with dry cloth. If the refrigerator is dirty, sweep away dirt with cleaning cloth which has been immersed in neutral detergent and wipe off residual detergent with wet cloth, then with dry cloth.
- Do not dump water on enclosure or inner chamber of the refrigerator, otherwise electrical apparatus insulation may be damaged, causing occurrence of faults.
- The compressor and other mechanical parts are completely sealed. No lubrication is required.

Lamp replacement

The refrigerator is equipped with a LED lamp. The lamp has low energy consumption and long service life. Any doubt, please contact the after-sales service personnel for changing it.

Clean the back evaporating box

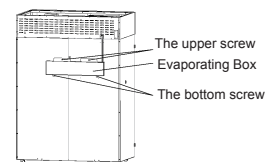
Evaporating box is installed on the back of the refrigerator.

- Remove 2 screws on the bottom, loosen the upper 2 screws (no need to remove them), lift the evaporating box and take it out.

- Clean the evaporating box.

- Reinstall the evaporating box, screw 4 screws firmly.

Clean the box every month. If the refrigerator is used in high temperature and high humidity environment, do the cleaning at least 3 times per month.



Caution

- In case of power failure, a fully charged backup battery enables the alarm function to keep working for 48 hours. The initial operation requires the refrigerator to run at least 2 days in a row, while the backup battery needs to be charged for the initial operation or after a long time of power failure.
- The buzzer beeps 3 times in 1Hz continuous sounds for every press on the "Alarm Test" key, with the alarm indicator flashing 3 times, if under non-remote hardware alarm conditions, remote alarm relay disconnect after connecting 3s alternatively, then alarm action may triggered depending on actual requirements. This shows the alarm system is under normal condition.
- When chargeable battery is closed or with too low a power, press once the alarm testing key, E6 is expected to flash 3 times on the display window at the simultaneously.
- The refrigerator shall be charged by special personnel that inspects and records its operating conditions every day, if too high or low a temperature is observed, the articles in it shall be transferred to others until it is again under normal conditions.

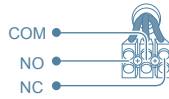
Automatic Alarm Recovery

This series of refrigerators has the automatic alarm recovery function:

- In case of an alarm, you can press the key "Silence" on the display panel to stop the alarm. (The remote alarm will not be stopped.)
- If the alarm condition still exists, the buzzer will make an alarm again automatically 30min. later.

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 alarm terminals include NO, NC and COM.
The user can choose "NO" or "NC" if needed.



Caution

It is necessary for the user to install remote alarm device to the remote alarm switch by himself

5. Standing

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

6. Installation Rack and Price Card

Take out the rack, price card and rack fastener from the refrigerator. Fix the rack fastener on the rack at the appropriate distance and height. After mounting the rack and price card, place them on the rack fastener and ensure the rack is placed flatly and firmly.

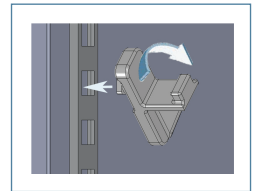


Fig.4

7. 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 bolt to fix the handle from bottom after tight installation of the handle.

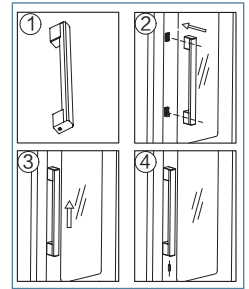


Fig.5

Initial Power-on

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

When the refrigerator is empty, connect the power line to the appropriate dedicated socket and make sure the power is rated 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 to stop alarming. The audible alarm continues to operate until the temperature of sensor reaches $5^{\circ}\text{C}\pm 3^{\circ}\text{C}$.

The refrigerator has been preset to operate at $2\sim 8^{\circ}\text{C}$ 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.

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

After operation status of refrigerator is checked thoroughly, put articles into the refrigerator.

| NO. | Alarming Events | Alarming Conditions | Beeping | Flashing | Display Requirements | Remarks |
|-----|------------------------|---|---|--|---|--|
| 3 | Sensor failure alarm | The failure code for short circuit or open circuit of the defrosting sensor is E4 The failure code for short circuit or open circuit of the alarm sensor is E5 | 1Hz Continuous beeping | Alarm light flashing | It is displayed on the display board that the upper and lower sensor temperature alternates with E4, which indicates 2s, while the temperature shows 6s. It is displayed on the display board that the upper and lower sensor temperature alternates with E5, which indicates 2s, while the temperature shows 6s. | Remote alarm startup when "beeping cancelled" is pressed down, both remove alarm and beeping are cancelled. But if it remains alarming when after a period of Fd (settable by the user, the default value is 30 mins), then beeping and remote alarm are restarted |
| 4 | Door opening Alarm | After opening the door (including a slight opening), door opening alarm is triggered | After time delayed for 2minutes (settable by the user at dAt for 1-12 minutes), 1Hz | Alarm light flashing | Temperature displayed | Remote alarm functions are not started. |
| 5 | Extra-high Temp. Alarm | When the inside temperature of the reefer inspected by high temperature control $\geq 12^{\circ}\text{C}$, the lower sensor must be inspected in a state of over temperature | As over-temperature alarm | As over-temperature alarm | Temperature displayed | As over-temperature alarm |
| 6 | Remote Alarm | (1) Either of the upper or lower sensor is over temperature (2) Any of the upper, lower, control, defrosting, alarm sensor failed; (3) Power supply AC220V/110V failed, under any of the above conditions, remote alarm shall be started. | Coupled with 1Hz continuous beeping | Take corresponding measures according to item 1,2 and 3. | Take corresponding measures according to item 1,2 and 3. | Take corresponding measures according to item 1,2 and 3. Remote alarm has normal open or normal close functions. When power failure occurs, it can be started no matter power is on or off. |

Alarm

The refrigerator possesses the alarming, safety and self-diagnosis functions listed in the table below.

| NO. | Alarming Events | Alarming Conditions | Beeping | Flashing | Display Requirements | Remarks |
|-----|-----------------------------------|--|------------------------|---|--|---|
| 1 | Over-temperature Alarm (high,low) | When any of upper or lower temperature displayed \geq ALH (Alarm Limit High settable by the user), high temperature alarming is triggered, while when any of upper or lower temperature shown \leq ALL (Alarm Limit Low, settable by the user), low temperature alarming is triggered. | 1Hz Continuous beeping | Alarm light flashing | Temperature displayed | Remote alarm startup when "beeping cancelled" is pressed down, both remove alarm and beeping are cancelled. But if it remains alarming when after a period of Fd (settable by the user, the default value is 30 mins), then beeping and remote alarm are restarted |
| 2 | Power Failure Alarm | When power failure or power supply (AC220V/110V) switch is closed, power failure alarm is triggered; the power is supplied by backup battery when power failure occurred. | 1Hz Continuous beeping | Both alarm light and power indicator flashing | The temperature of the upper and the lower sensors on average displayed is 5s (if only the upper or the lower sensor temperature is shown before power failure, then the same is displayed), then the screen goes black for 30s at intervals. | Remote alarm startup when "beeping cancelled" is pressed down, both remove alarm and beeping are cancelled. But if it remains alarming when after a period of Fd (settable by the user, the default value is 30 mins), then beeping and remote alarm are restarted until the power is resupplied. |
| 3 | Sensor failure alarm | The failure code for short circuit or open circuit of the upper sensor is E1 The failure code for short circuit or open circuit of the lower sensor is E2 The failure code for short circuit or open circuit of the control sensor is E3 | 1Hz Continuous beeping | Alarm light flashing | It is displayed on the display board that the lower sensor temp. alternates with E1, which indicates 2s, while the temp. shows 6s. It is displayed on the display board that the upper sensor temp. alternates with E2, which indicates 2s, while the temp. shows 6s. It is displayed on the display board that the upper and lower sensor temp. alternates with E3, which indicates 2s, while the temp. shows 6s. | Remote alarm startup when "beeping cancelled" is pressed down, both remove alarm and beeping are cancelled. But if it remains alarming when after a period of Fd (settable by the user, the default value is 30 mins), then beeping and remote alarm are restarted |

18



- This product shall be managed by specially-assigned person and checked for operating conditions every day with appropriate records. For too high or too low temperature in the refrigerator, articles shall be transferred to other storages. No articles shall be stored in the refrigerator unless troubles are shot.
- This product is pharmaceutical refrigerator with temperature ranging from 2~8°C inside. Please make sure articles to be stored conform to environment inside to avoid damages of articles and economic loss.
- Because of refrigeration inertia, display temperature of the product may differ from actual temperature and humidity inside, which is normal.



- All refrigerators are refrigerator equipments. Relatively too hot articles must not be put in the refrigerator by one time. Otherwise the compressor will not stop for a long time, no temperature fall may be apt to burn the compressor. Therefore, articles shall be put in batches and cooling shall be conducted in batch until required temperature is reached!
- Do not damage refrigerating circuit.
- Do not use electrical apparatus without production permit in the refrigerator.

Operation after Outage

The refrigerator is capable of memorizing set value. When power restores after outage, the refrigerator will continue operating according to set parameter before last outage.



Warning

- The refrigerator shall be reconnected after more than 5 minutes once it is shut off, to prevent damage to compressor or system.
- Pull out the power plug and shut down battery switch if the refrigerator has been out of service for long time to prevent electric shock, leakage or fire caused by aging power lines.
- If the refrigerator is left unused in areas where supervision is unavailable for a long time, make sure children will not get close to the refrigerator and the door can not be completely closed.

11

Component Names

HYC-1378



• Note

During setting process of 1P-5P, the parameters that need to be adjusted may be adjusted selectively by "Minus" button or "Plus" button. For example, if the inside temperature display area currently shows 1P(Year) and there is need to adjust Year(1P) or Month(2P) but date(3P), press "Plus" button to select Date(3P) and press "Set" button, then the inside temperature display area flashes Date, press "Minus" button or "Plus" button to adjust the current date, and the press "Set" button to save and confirm. Thereafter, the inside temperature display area shows Hour(4P). if necessary, press "Set" button to adjust, if not, press "Plus" button to Minute(5P) for minute adjustment, after completing settings, press "Set" for 5s to save and exit, then the inside temperature display area normally shows the inside temperature. During setting process of 1P-5P, after completing all parameter settings, and there are no other parameters needing to be adjusted, press "Set" button for 5s or there is no any operation for 10s to automatically save and exit.

USB function

- USB interface functions:

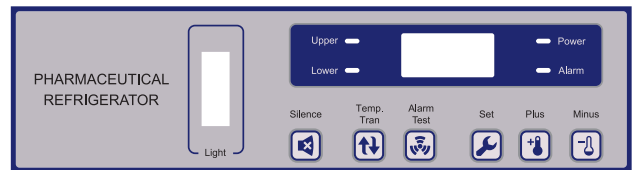
As featured with USB output function, the computer board is capable of exporting such test data as temperature within the recent 10 years via a U disk. After the U disk is plugged in, the computer board begins to automatically recognize and import data to the U disk. During data export process, press "Minus" button, the display panel flashes "USB", indicating the data export is being in progress and not completed yet; after 5 seconds of flashing, it exits and shows the actual inside temperature. If the display panel steadily shows "ALL", indicating the data export is completed, after 5s, it exits and shows the actual inside temperature. Then, remove the U disk from the USB interface and plug it into a computer's USB port to read the data.

- U disk interface data recording time setting

Press "Minus" button for 10s, the inside temperature display area steadily shows "1P"; press "Set" button, the inside temperature display area flashes Year(factory default : 10), press "Minus" button or "Plus" button, select Year from 10-99 (recycling display), e.g., to set 2013, select 13, press "Set" button to save and confirm. Thereafter, the inside temperature display area steadily shows "2P", press "Set" button, the inside temperature display area flashes Month (factory default: 01), press "Minus" button or "Plus" button, select Month from 01-12 (recycling display), after selecting the current month, press "Set" button to save and confirm. Thereafter, the inside temperature display area steadily shows "3P", press "Set" button, the inside temperature display area flashes Date(factory default: 01), press "Minus" button or "Plus" button, select Date from 01-31(recycling display), after selecting the current date, press "Set" button to save and confirm. Thereafter, the inside temperature display area steadily shows "4P"; press "Set" button, the inside temperature display area flashes Hour(factory default: 01), press "Minus" button or "Plus" button, select Hour from 00-23 (recycling display), after selecting the current hour, press "Set" button to save and confirm. Thereafter, the inside temperature display area steadily shows "5P"; press "Minus" button or "Increase" button, select Minute form 00-99 (recycling display), after selecting the current minute, press "Set" button to save and confirm. Then the inside temperature display area again shows "1P", indicating it is possible to reset 1P-5P. After completing settings, press "Set" button for 5s or there is no any operation for 10s to automatically save and exit. Thereafter, the inside temperature display area normally shows the inside temperature.

Control Panel

HYC-1378






Application method

Temperature Display

The refrigerator can automatically reach the temperature set before ex-factory.

Temperature Display

● Light on ○ Light off

| | Operation | Operating key | Normal model | Implications |
|---|--|---|---|--|
| 1 | Plug and power on | | Temperature on Average ● upper Tem. ● lower Tem. | Temperature on Average |
| 2 | Switching key |  | Tem. of the upper Tem. Box ● upper Tem. ○ lower Tem. | Temperature of the upper temperature measuring box |
| 3 | Switching |  | Tem. of the lower Tem. Box ○ upper Tem. ● lower Tem. | Temperature of the lower temperature measuring box |
| 4 | Switching |  | Temperature on Average ● upper Tem. ● lower Tem. | Temperature on Average |
| 5 | Repeat the operation from the second key | | | |

Caution

The temperature shown indicates both the upper and lower temperature of the refrigerator measured respectively. And the temperature of the sensors indicates the temperature of the refrigerator on average.

Parameter adjustment

Enter the setting mode by pressing the "Set" button 5s, and parameters are as follows:

| Parameter | Description | Minimum Value | Maximum Value | Step/Unit | Default value |
|-----------|--|---|---|-----------|---------------|
| Ts | Temperature Set | 2 | 8 | 0.1/°C | 5 |
| ALH | Alarm Limit High | 5 | 10 | 0.1/°C | 8 |
| ALL | Alarm Limit Low | 1 | 4 | 0.1/°C | 2 |
| t1 | The initial delay of the voltage unit | 0 | 10 | 1/min | 0 |
| Fd | Restart intervals after beeping cancellation | 10 | 99 | 1/min | 30 |
| dAt | Delayed Alarm Time | 1 | 12 | 1/min | 2 |
| LC | Light Control | 0 (Light not controlled by the computer panel) | 1 (Light controlled by the computer panel) | Null | 0 |

The above parameters are subject to the user's modifications, after entering the parameter table, when "Ts" is displayed, press "Plus" or "Minus" for your own parameter; and then press "Set" to enter the parameter to be set, when current value is flashing, then press "Plus" or "Minus" to adjust parameter value. After setting, press "Set" to go back and choose other parameters for the same token. With all values set, press "Set" button 5s exit and return to the normal display mode.