Haier Biomedical

Pharmaceutical Refrigerator
Instruction Manual

Model:
HYC-1031GD
HYC-1031FD

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:03/2023
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Dedicated code:0270500000
V13026

Haier Biomedical
Makes Life Better

•Please read this manual carefully before using the appliance and keep the instruction manul for future use.
•The company reserves the right to interpret this manual.
•Product technology or software x is subject to upgrade without prior notice.
•The product appearance may vary.

Content

Precautions for Safe Operation

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, to prevent personal injuries and refrigerator damage.

Symbol Shows

The upper and lower limits of temperature shall be indicated adjacent to the upper and lower horizontal lines.	Symbol for "Manufacture"
Symbol for "Consult instructions for use"	Symbol for "Date of manufacture"

Precautions for safe operation

Under all conditions marked with ⚠, it is necessary to consult the document, so as to clarify the nature of potential risks and any countermeasures that must be taken.

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

⚠Caution — Failure to observe CAUTION signs could result in injury to personnel and damage to the unit and associated property.

Actions or operations which are prohibited

Actions or operations which must be followed

- In case of leakage of flammable gas such as coal gas, close the valve which has leakage, and open the doors and windows for ventilation. Do not plug in or out the power plug of the refrigerator, otherwise may cause explosion and fire.
- Only qualified engineers or service personnel should install the unit. The installation by unqualified personnel may cause electric shock or fire.The replacement of any spare parts(battery ect.)shall be conduct by technicians approved by manufacturer.
- Install the unit on a sturdy floor and take an adequate precaution to prevent the unit from turing over. If the floor is not strong enough or the installation site is not adequate, this may result in injury from the unit falling or tipping over.
- Connect the unit to a power source as indicated on the rating label attached to the unit. Use of any other voltage or frequency other than that on the rating label may cause fire or electric shock.

- If the voltage used is lower than 198V or higher than 264V, it is required to provide a 4000W or above automatic voltage stabilizer which is suitable for motor load.
- If the power cord needs to be lengthened, the cross-sectional area of the extension part shall not be less than 2 mm^2 and the length shall not be longer than 3 m. Otherwise may cause fire or electric shock.
- The power cord of this refrigerator is equipped with a three-wire (ground) plug and a 10A standard three-wire (ground) socket. Grounding pin of the power cord can be cut or removed under no circumstances.
- Be sure that the power plug and socket are tightly and reliably connected, otherwise may cause fire.
- Please use power socket which has grounding wire, so as to prevent electric shock. If the power socket is not grounded, be sure to install the grounding wire by a professional technician.
- Do not use the unit outdoors. Current leakage or electric shock may result if the unit is exposed to rain water.
- Never install the unit in a humid place or a place where it is likely to be splashed by water. Deterioration of the insulation may result which could cause current leakage or electric shock.
- Never splash water directly onto the unit as this may cause electric shock or short circuit.
- Do not place containers with water or heavy objects on the refrigerator. If the object falls, it may cause personal injury; and the water flowing out may cause electric leakage or electric shock due to decreased insulation.
- Do not ground the refrigerator through the gas pipe, power hose, telephone line or lightning rod. The above grounding methods can cause electric shock or other dangers.
- Do not touch any electrical parts such as power plugs or any switches with wet hands, otherwise may cause electric shock.
- When removing the plug from the power socket, hold the power plug tightly instead of pulling the plug cord. Pulling the cord with hands may cause electric shock or fire due to short circuit.
- Disconnect the power supply plug if there is something wrong with the unit. Continued abnormal operation may cause electric shock or fire.
- Never disassemble, repair, or modify the unit yourself. Any such work carried out by an unauthorized person may result in fire, or electric shock or injury due to a malfunction.
- Turn off the power switch (if provided) and disconnect the power supply to the unit prior to any repair or maintenance of the unit in order to prevent electric shock or injury.
- Ensure you do not inhale or consume medication or aerosols from around the unit at the time of maintenance.
- When storing toxic, hazardous or radioactive goods, please use the refrigerator in the safety area. Improper use may cause damages to human health or the environment.
- Disconnect the power plug when the unit is not used for long periods. Keeping the connection may cause electric shock, current leakage, or fire due to the deterioration of insulation.
- If the refrigerator is left unused for long periods in an unsupervised area, make sure that no child have access and the door cannot be closed completely.
- The scrapping disposal of the refrigerator shall be carried out by appropriate personnel. Dismantle the door to avoid accidents such as suffocation.

Cautions for Usage

• When restarting the refrigerator after it is unused for a long time, the battery may be running low. Make sure that the battery switch is in the “ON” position to charge the battery. The battery can be fully charged in about two days.

• Before placing the goods into the refrigerator, make sure that the temperature inside the refrigeratorhas reached the set temperature and then put them in batches. Do not put items which volume larger than 1/3 of the refrigerator volume each time, so as to avoid rapid temperature rise.

• The displayed temperature of the refrigerator is the temperature where the sensor located. Although the displayed temperature sometimes differs from the actual temperature at center of the refrigerator, it will gradually reach the actual temperature.

• Clean the refrigerator with diluted neutral detergent. Do not use brushes, acids, gasoline, soap powder, polishing powder or hot water to clean the refrigerator, as these materials may damage painted surfaces and plastic and rubber parts. Be aware that do not use volatile solvents such as gasoline to wipe plastic and rubber parts.

•Disconnect the power supply plug and also turn off the battery switch when the unit is not used for long periods.

•Every time when input or pickout items, please minimize the time of door opening, so as to avoid large fluctuations of temperature and humidity inside the refrigerator.

• After opening the door, the chamber temperature will rise sharply for a short time, this phenomenon is normal; and the temperature will generally recover within 1 hour after closing the door.

• The ambient temperature for application of this product is 16~35°C, and the humidity shall be below 85%. In high temperature and high humidity environment, the glass door may have condensation, which is normal and will not affect the storage temperature inside the refrigerator. Under such circumstances, please improve the ventilation condition as soon as possible and reduce the ambient temperature.

• The basic functions of the medical refrigerator include: refrigeration function inside the refrigerator if the refrigeration system operates normally; data record transmission function if the data recording system (if any) operates normally; and corresponding functions if the electronic lock (if any) operates normally;In the alarm state, there shall be buzzing / or lamp flickering and / or text display on the screen

• Disposal of unit

Waste Electirlcal and Electronic Equipment (WEEE) Directive-2012/19/EU

This symbol means that electrical and electronic equipment, at their end-of -life, should be disposed of separately from your household waste.

Please dispose of this equipment at your local community waste cleection/recycling centre.

In the European Union there are separate collection systems for used electrical and electronic products.

Please help us to conserve the environment we live in!

Do not store flammable or explosive dangerous goods or volatile goods in the refrigerator, or use flammable sprays near the refrigerator; Otherwise, it may cause explosion or fire.

Do not store corrosive goods such as acids or alkalis in the refrigerator, otherwise may damage internal components or electrical parts of the refrigerator.

Do not put the packing plastic bag within reach of children as suffocation may result.

Do not climb to the refrigerator or place objects on the refrigerator, otherwise may lead to turnover of the refrigerator and then cause personal injury or damages on the refrigerator.

Do not insert metal objects such as a pin or a wire into any vent, gap or any outlet on the unit. This may cause electric shock or injury by accidental contact with moving parts.

Check the setting when starting up of operation after power failure or turning off of power switch. The stored items may be damaged due to the change of setting.

Once the refrigerator is powered off, wait for at least five minutes before restart it, so as to avoid damage to the compressor or system.

Wear gloves when repairing it to avoid personal injury caused by sharp edges or corners.

Hold the handle to close the door to avoid being pinched by the door.

When handling the refrigerator, the titling angle shall not be more than 45°.

When handling the refrigerator, be careful not to trip over the refrigerator, so as to avoid damage to the refrigerator or personal injury.

Please do not use the door handle when lifting, pulling or handling the equipment to avoid damage to the refrigerator or personal injury.

Make sure no obstructions around the refrigerator and keep adequate ventilation.

Do not damage the refrigeration circuit.

Do not use electrical appliances in the storage compartment of the refrigerator other than the models recommended by the manufacturer.

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.

Product Features

This product is suitable for pharmacies, pharmaceutical factories, epidemic prevention stations, health centers, hospitals, etc. to store biological products and goods that need to be stored with the chamber temperature of 2~8 °C.

1.Temperature control

It adopts computer board control, digital display and temperature adjustment with an increment of 0.1 °C. The product structure and its components are: insulation box body, refrigeration system, control system (including alarm system), data recording system (optional) and partitions of which the spacing can be adjusted. It adopts air-cooling design and has light equipped inside.

2.Safety system

- •Multiple-function alarm (high/low temperature alarm, low battery alarm, power failure alarm, sensor failure alarm, door ajar alarm, dirty condenser alarm)
- •Two alarm modes featuring audible buzzer and visible flashing light
- •All individual components are safely grounded
- •It is equipped with remote alarm network interface which is convenient and has reliable performance
- •Multiple-protection functions (password protection, overcurrent protection delay)

3.Refrigeration system

Inverter compressor and adjustable-speed fan which are more energy saving with low noise

4.Ergonomic design

- •User-friendly computer board control, no need for adjustment
- •Anti-condensation design with heated membrane glass door
- •Ergonomic designs with automatic evaporation of condensed water and self-closing door
- •Safety door lock to prevent unauthorized access.

The differences between the Haier medical refrigerator you received and the diagrams in the manual is due to product improvement. The contents of this manual are subject to change without notice.

Accessory Packing List

Name	HYC-1031GD
Operation manual	1
Factory inspection report	1
Mechanical lock / electromagnetic lock keys	2
Stop support	2
Shelf	12
Price tag	12

Global Warming Potential

Model	Rated voltage (VAC)	Rated frequency (Hz)	CO_2 equivalent (Tonnes)
HYC-1031GD	220-240~	50/60	0.0003

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

GWP=global warming potential

Refrigerant type	GWP
R290	3

Name	Pharmaceutical refrigerator	
Model	HYC-1031GD	HYC-1031FD
Exterior dimension (W × D × H) (mm)	1205x730x1990	
Interior dimension (W × D × H) (mm)	1115x592x1668	
Effective volume	811L	
Test Uniformity	1.49℃	
Test Stability	1.1℃	
Soaking time (25℃)	94min	
Door	Glass door	Solid door
Insulation material	Rigid polyurethane foam (no fluorine)	
Compressor	Inverter compressor	
Drawer/Shelf / Load bearing capacity	Drawer/Shelf ≤ 30kg	
Cooling mode	Air cooling	
Enclosure / liner	Spray-coated steel plate / Spray-coated steel plate	
Condenser / Evaporator	Wire tube type / Fin type	
Temperature control mode	Computer board temperature control	
Refrigerant	R290 90g	
Light	LED 8W	
Net weight	250kg	
Noise level	39dB(A)	
Rated power supply	220-240V~/50/60Hz	
Rated power / current	380W/2.2A	
Power consumption	2.48kW•h/24h	
Electric protection type	I	
USB	Optional	
RS485	Optional	
Alarm type	High/low temperature alarm, sensor fault alarm, door ajar alarm, hot condenser alarm, battery fault alarm, power failure alarm	
Duration of power failure alarm	24 hours	
Rechargeable battery	DC12V rechargeable lead-acid battery	
Production date / Expected service life	See the barcode on the machine body/10 years	
Software version	V1	

Note: The company lays emphasis on technological innovation, and the product parameters are subject to changes without prior notice.

Installation

Installation environment

•Ambient temperature: 16 ° C to 35 ° C, and the optimal temperature range is 18 ° C to 25 ° C. Use air conditioning system when necessary.

•Ambient humidity: less than 85% Rh.

•Avoid large amounts of dust.

•Avoid mechanical swing or vibration.

•Altitude of the working position of refrigerator: below 2000m.

•Input voltage: rated voltage ±10%.

•Overvoltage category:The transient state is Category II facility.

•Pollution Degree:2

⚠ Caution

•Since the refrigerator is sensitive to ambient temperature, it cannot operate normally if is installed in an environment other than the above. Please use it after improving the environment.

•It is prohibited to install the refrigerator outdoors. If the refrigerator gets wet in the rain, it may cause electric leakage or electric shock.

•Keep it away from radiation area and avoid using radiation sensitive equipment near it.

Installation site

In order to ensure normal operation of the refrigerator and obtain the optimal performance, the installation site of the refrigerator shall meet the following conditions:

•It cannot be installed in narrow and enclosed space, and the door of the installation room shall not be smaller than this product. It should be at least ensured that the refrigerator can be moved in and out normally, so as to avoid maintenance difficulties in case of fault; otherwise the goods stored in the refrigerator may be spoiled due to delayed repair of the refrigerator.

•The floor of the installation site must be solid and flat.

•Do not share the same socket with plugs of other devices. The plug shall be securely connected to the socket.

•Do not twist or stress the power cord.

•If the power cord needs to be lengthened, the cross-sectional area of the extension part shall not be less than 2 mm^2 and the length shall not be longer than 3 m.

•Please check the working voltage before use. For areas with unstable voltage, a stabilizer that is suitable for motor load may be adopted for voltage regulating, thus ensuring that the normal input voltage maintains at rated voltage ±10% and the stabilizer power is greater than 4000W.

•The refrigerator shall be reliably grounded.

•If the power socket is equipped with a grounding wire, check if the grounding condition is good before use.

•If the outlet is not equipped with any grounding wire, be sure to install the grounding wire by a professional technician.

⚠ Warning

•Do not ground the refrigerator through the gas pipe, power hose, telephone line or lightning rod, otherwise may cause electric shock.

•After installation, the power plug must be accessible to facilitate unplugging the power cord in time in case of emergency. Do not cover the vents of the refrigerator with any objects.

Installation

1.Remove the packaging material and packaging tape

Remove all packaging materials and packaging tape used for shipping.

⚠Caution

•When handling the refrigerator before unpacking, use forklift or package lifter. When using a forklift, insert the fork from the bottom of the wood pallet from front or back of the refrigerator and then handle the refrigerator.

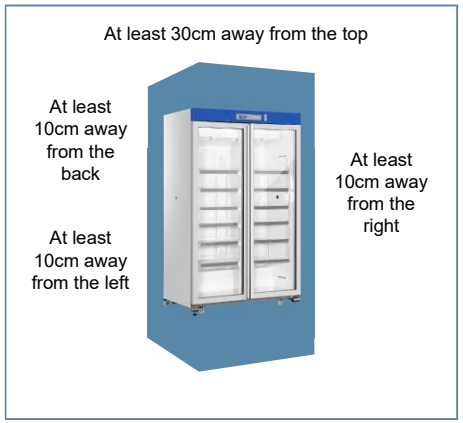
•When using a package lifter, clip the machine from the bottom of the wooden pallet. Be aware to clip the sides of the refrigerator only.

•After unpacking, use the casters of the refrigerator to handle the refrigerator.

•When handling the refrigerator, the titling angle shall not be more than 45°.

2.Check the supplied accessories.

Please check the items in the box according to the packing list. If any difference, please contact the after-sales service.

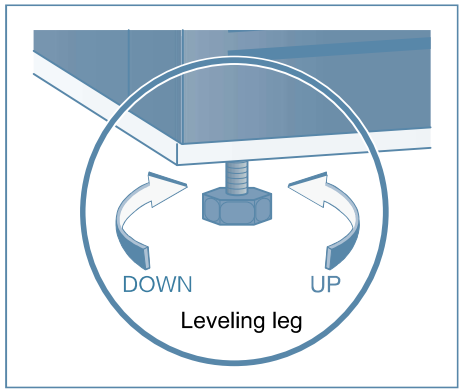


3.Location with adequate ventilation

Leave at least 10 cm of clearance around the refrigerator for ventilation.

4.Fixing of the casters

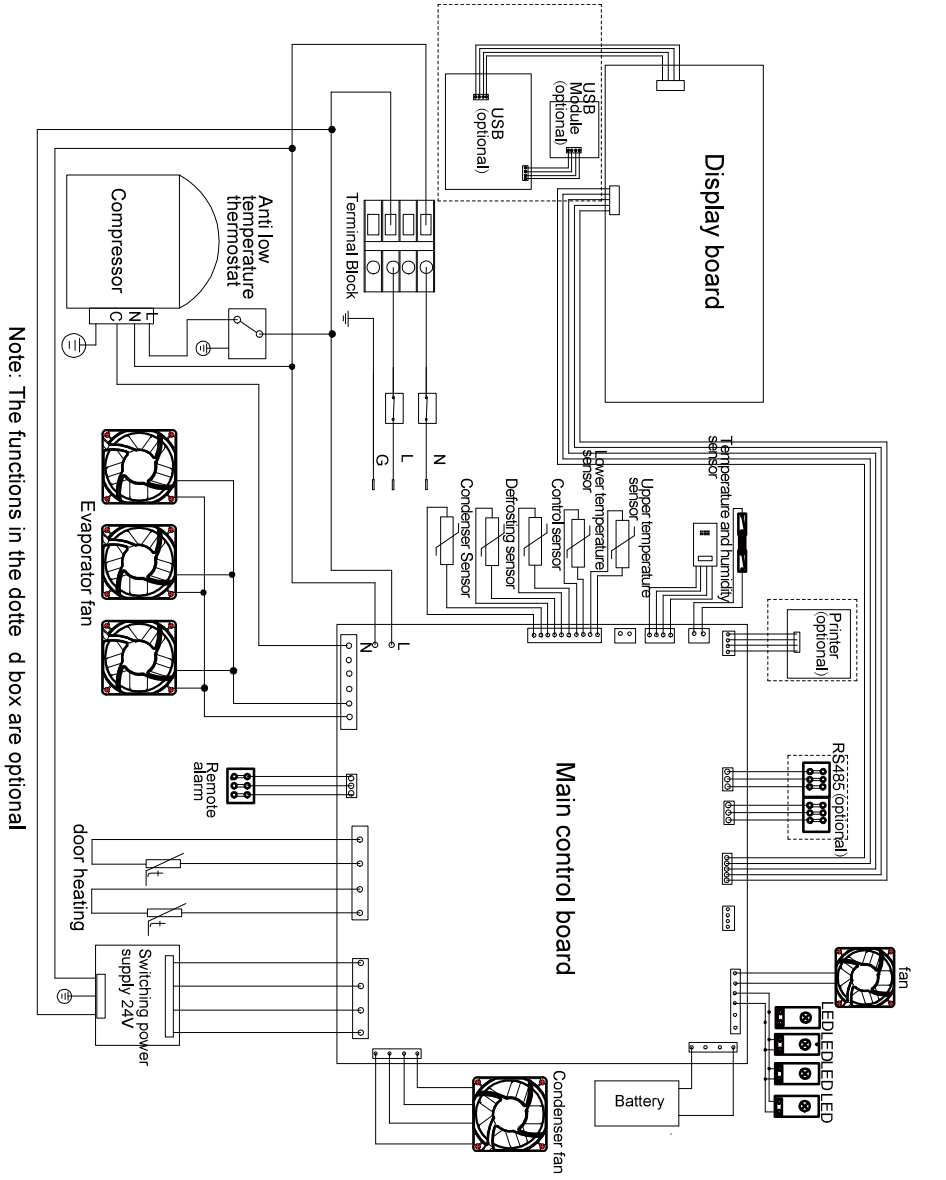
Four casters, two leveling legs.



5.Standing

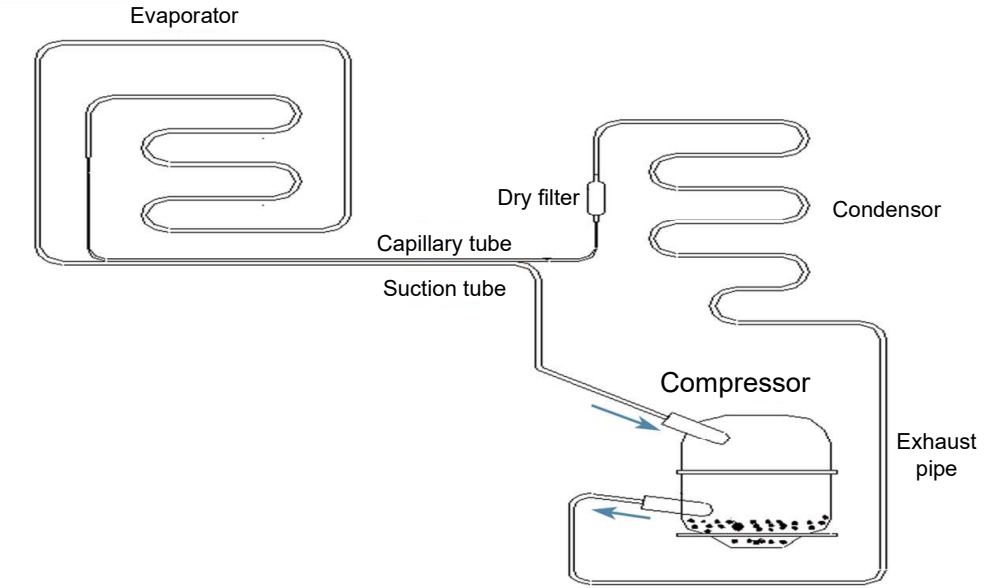
After leveling and cleaning the machine body, do not power on the refrigerator immediately. Allow the refrigerator to stand for more than 24 hours, and then power it on to ensure that it can operate normally.

Circuit diagram



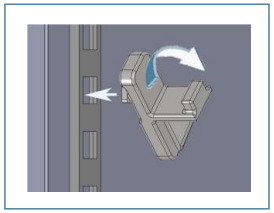
Refrigeration principle and circuit diagram

Refrigeration schematic diagram



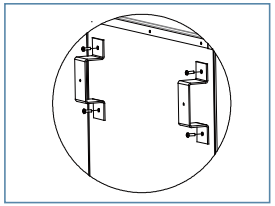
6.Installation shelf and price tag

Take out the shelves, price tag and shelf clips in the refrigerator. Fix the shelf clips to the shelf bars of the machine body at the appropriate distance, as shown on the right.



7.Back support

Remove the four M5 screws on the back panel of the machine body and then use them to fix the back support to the machine body.



Start-up of unit

Follow the below procedures for initial start-up and consequent operations of the unit:

Connect the power cord to a dedicated socket with appropriate specification with the unit empety-loaded, make sure the power supply and rating is 220V-240V/50Hz/60Hz.

Switch on the refrigerator and turn on the power switch on the electric control box on the right side of it. The alarm buzzer sometime operates, which is normal.

Turn on the battery switch and press the SET button to silent the alarm. The light alarm continues to operate until the chamber temperature reaches 2°C -8°C.

The refrigerator is set to operate at 5°C at the factory. There is no need to change the control settings.

The temperature of the refrigerator can be stabilized at 2-8°C after a few hours of running.

Turn on the light switch to check whether the lamp inside the refrigerator can work normally.

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

Trouble Shooting

If the unit malfunctions, check out the following before calling for services.
Attention:
If the malfunction is not resolved after checking the following items or if the malfunction is not shown in the table below, contact our sales representative or agent.

Malfunction	Check/Remedy
If nothing operates even when plugged in	Check if the input power supply meets the requirements
	If the plug and socket are in poor contact
	If the input and control lines are faulty
	If the voltage is too low
The refrigeration effect is not obvious, the temperature exceeds is too high	If too much or too hot goods are stored
	If there is clearance between the stored goods
	If the refrigerator is under direct sunlight or other heat source radiation
	If the door is opened frequently
	If the ambient temperature is too high
	If the air duct is blocked
Excessive noise	If the refrigerator is placed firmly
	If any part of the machine body contact with external objects or the wall
	The noise indicated in the technical data is the average data measured at 1 m from the surface in a standard laboratory without noise by placing an empty refrigerator on the rubber mat, closing the door and waiting for stable operation (startup and shutdown are not included). During use, the actual noise level may differ from the indicated value due to the effects of stored goods, ambient noise, unclosed door and starting and stopping of the compressor.
The alarm light flickers and the buzzer gives alarm	If the goods have just been stored and the temperature is not stable at 2~8 ℃; if yes, it will be automatically eliminated for a while of refrigeration.
	If the door is not closed completely; if yes, it gives the door opening alarm
	If the power supply is insufficient; if yes, it will recover after startup.
	If the temperature is too high

Recycle of Rechargeable Battery

The refrigerator has a built-in rechargeable battery that can be recycled. At the end of the battery's service life, please contact the local battery recycling agency for inspection or dispose the battery in other proper ways.

Location of the battery

The battery is used for alarm in case of power failure, and is located in the cabinet above the cabinet.

There are high voltage electrical components in the electric cabinet.

To avoid electric shock, only qualified engineer or maintenance personnel are allowed to open the cover.

Taking out the battery

1.Turn off the power switch, and pull the power plug out of the socket.

2.Use a screwdriver to remove the fixing screws on the top cover of the cabinet;

3. Loosen the plug terminal of the battery;

4. Remove the 2 screws on the battery holder and take out the battery;

5.Recycle or properly dispose the battery as specified.

When replacing the battery, make sure that the brown wire is connected to the anode of the battery, and the blue wire is connected to the cathode. It must not be reversed. Otherwise, the computer board charging circuit may be burned and as a result the computer board cannot charge the battery.

Disposal of the refrigerator

•If the refrigerator is left unused for a long time in an unsupervised area, make sure that no child can get access to it and the door is not completely closed.

•The scrapping disposal of the refrigerator shall be carried out by appropriate personnel. Be sure to dismantle the door to prevent suffocation and the like.

•This product should be inspected by a dedicated personnel every day and record its operation condition. If the temperature inside the refrigerator is out of acceptable range, transfer the goods to other refrigerators until the fault is eliminated.

•This product is a medical refrigerator and the set temperature is 5 °C. Please confirm that the stored goods match the environment inside the refrigerator to avoid damage to the goods and economic loss.

•Due to the refrigeration inertia, the displayed temperature of this product may differ from the actual temperature inside the refrigerator, which is normal.

•Please do not place any articles between the refrigerator floor and the bottom shelf of the unit, so as to avoid blocking the air duct and affecting the uniformity of the temperature inside the refrigerator.

•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 the refrigeration circuit.

•Do not use unlicensed appliances inside the refrigerator.

Operation after recovery from power failure

The refrigerator has memory of the set values. In case of power on after power failure, the refrigerator will continue to operate according to the set parameters before the power failure.

Warning

•Once the refrigerator is powered off, wait for at least five minutes before restart it, so as to avoid damage to the compressor or system.

•When the refrigerator is not in use for a long time, remove the power plug and turn off the battery switch to prevent electric shock, electric leakage or fire due to aging of the plug cord.

•If the refrigerator is left unused for a long time in an unsupervised area, make sure that no child can get access to it and the door is not completely closed.

Remote alarm terminal

This series of refrigerators are equipped remote alarm terminals:

•The remote alarm terminal is installed on the side of the electric cabinet on the back of the refrigerator, and is used for outputting alarm signals. The terminal has a load capacity of 30V DC, 2A.

•Contact output:

The remote alarm terminal is equipped with normally open, normally closed and common terminals. The user can choose normally open or normally closed terminals according to the demand. The length of remote alarm wiring shall be no more than 3 meters.

⚠Caution

•The remote alarm function requires the user to install an alarm device by himself for use in combination with the remote alarm interface.

•The remote alarm has normally open and normally closed functions. In the case of the external power failure, the remote alarm can be activated regardless of whether the battery switch is turned on.

•The remote alarm interface works in combination with the audible alarm on the refrigerator. Therefore, pressing the buzz cancel button can only clear the alarm sound, while the remote alarm status remains unchanged.

Product Maintenance

⚠Warning

•To prevent electric shock or personal injury, be sure to cut off the power supply for the refrigerator before performing any repairs to the refrigerator.

•Make sure not to inhale the medicine or suspended particles around the refrigerator during maintenance, otherwise it may cause damage to your health.

Cleaning the refrigerator

•It is recommended to clean the refrigerator once a month. Regular cleaning can keep the refrigerator new in the appearance.

•Use a dry cloth to wipe off the dust from the refrigerator case, the inner compartment and all accessories. If the refrigerator is dirty, use a cleaning cloth soaked in neutral detergent to remove dirt and then wipe off any remaining detergent with a damp cloth, and wipe with a dry cloth at last.

•Do not pour water onto the refrigerator case or into the refrigerator compartment, otherwise may damage the electrical insulation and cause malfunctions.

•The compressor and other mechanical parts are completely sealed and require no lubrication.

Replacement of the light

This series of products is equipped with LED light. This kind of light has low energy consumption and long service life. If there is any abnormality, please contact the after-sales service personnel for replacement.

Outage the refrigerator

•If the refrigerator needs to be left used for a long time, cut off the power and switch the battery switch to terminal O;

•Open the door of the refrigerator and take out the inner shelves or drawers;

•Clean the refrigerator thoroughly;

•Clean the shelves or drawers;

•After the refrigerator and shelves or drawers are dried, put the shelves or drawers back into the refrigerator;

•Close the door and pack it with plastic bag for sealing and safekeeping.

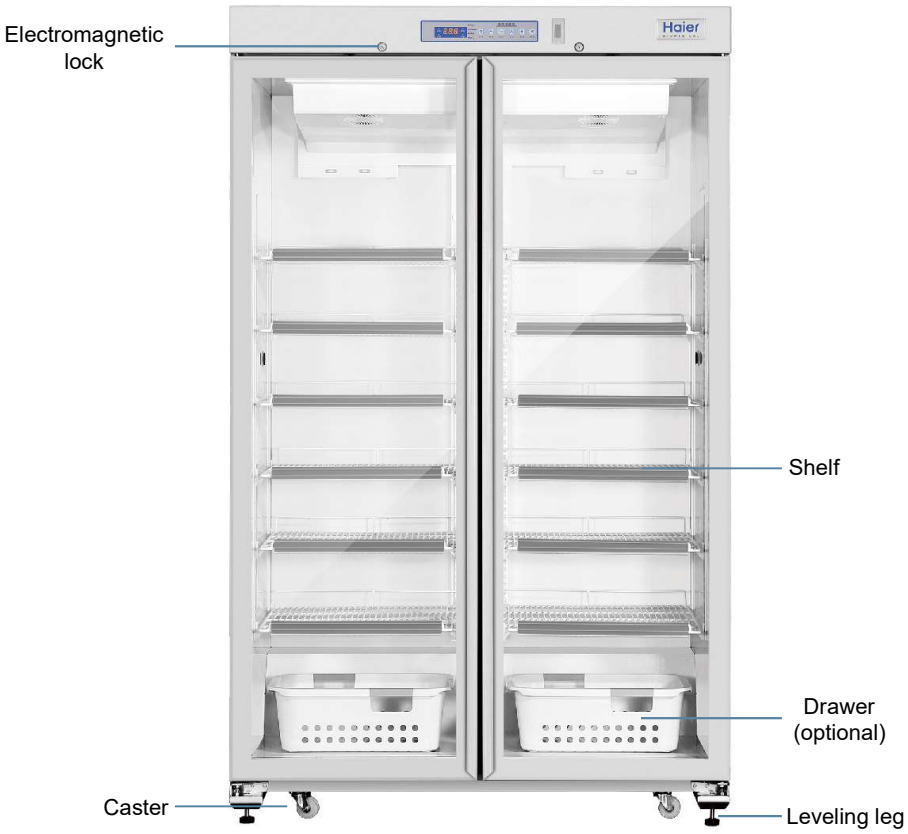
Battery maintenance

•If low battery is detected, please make sure that the battery switch is in the “ON” position and the battery will be charged. When charging for one week continuously, re-test the battery. Under normal circumstances, the battery should be sufficient at this time. If the battery is still low, it is recommended to replace the rechargeable battery.

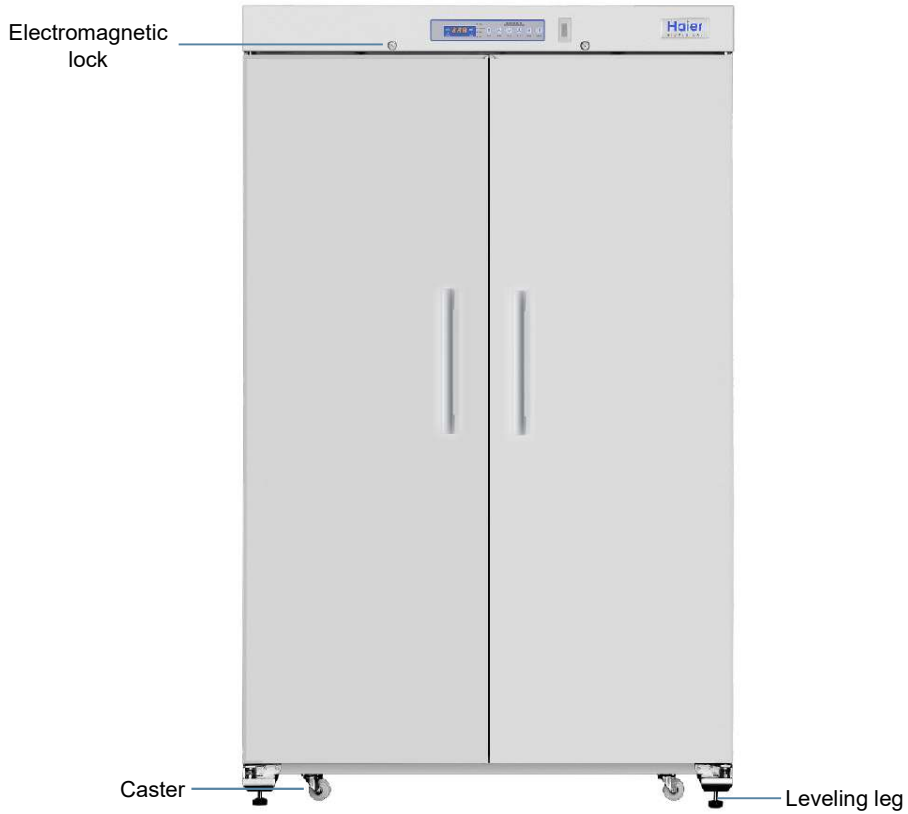
•The battery is a kind of consumables and its service life is about 2 to 3 years. If the battery is used for more than 3 years, it may fail to give alarm in case of power failure. It is recommended to contact the after-sales service personnel in advance.

Code		Description	Alarm indication
E00	High Temperature	Temperature of the upper or lower temperature sensor is higher than High Temperature Alarm Setpoint for 1 minute	Buzzer + Alarm indicator flashes + Remote Alarm
E01	Low Temperature	Temperature of the upper or lower temperature sensor is lower than Low Temperature Alarm Setpoint for 1 minute	Buzzer + Alarm indicator flashes + Remote Alarm
E02	High Ambient Temperature	Temperature of the Ambient Temperature Sensor is higher than High Ambient Temperature Alarm Setpoint for 30 seconds	Buzzer + Alarm indicator flashes
E06	Condenser Fan Error	Condenser Fan Error	Buzzer + Alarm indicator flashes + Remote Alarm
E10	Control Sensor Error	Control Sensor Error (Open Circuit or Short Circuit)	Buzzer + Alarm indicator flashes + Remote Alarm
E11	Sensor Error	Evaporator Sensor Error (Open Circuit or Short Circuit)	Alarm indicator flashes
E12	Ambient Temperature & Humidity Sensor Error	Ambient Temperature & Humidity Sensor Error (Open Circuit or Short Circuit)	Alarm indicator flashes
E13	Condenser Sensor Error	Condenser Sensor Error (Open Circuit or Short Circuit)	Alarm indicator flashes
E14	Upper Temperature Sensor Error	Upper Temperature Sensor Error (Open Circuit or Short Circuit)	Buzzer + Alarm indicator flashes + Remote Alarm
E15	Lower Temperature Sensor Error	Lower Temperature Sensor Error (Open Circuit or Short Circuit)	Buzzer + Alarm indicator flashes + Remote Alarm
E20	Battery disconnection	Battery disconnection	Alarm indicator flashes
E21	Battery Reversal	Battery Reversal	Buzzer + Alarm indicator flashes
E22	Low Battery	Battery Voltage is lower than 10.5V	Alarm indicator flashes
E30	Power Failure	The main power supply is cut off	Buzzer + Alarm indicator flashes + Remote Alarm
E31	Control Board Error	The power supply of control board is cut off	Buzzer + Alarm indicator flashes + Remote Alarm
E40	Door Ajar	The door is open for 5 minutes	Buzzer + Alarm indicator flashes + Door Open Indicator flashes + Remote Alarm
E50	Condenser Overheat	Condenser Overheat	Buzzer + Alarm indicator flashes + Condenser Overheat Indicator flashes
E60	USB Communication Error	The temperature data could not be sent to USB module for 1 minute	Alarm indicator flashes + Remote Alarm

•HYC-1031GD



•HYC-1031FD



Display, Alarms and Self-Diagnonis

LED Type Display (HYC-1031GD)

Connect the power supply for the refrigerator and switch the power switch to the “ON” position to enter into power-on state.

1.Working status prompt of the display panel

•“Upper” indicator light: when the light is ON, the digital tube displays the temperature of the upper sensor.

•“Lower” indicator light: when the light is ON, the digital tube displays the temperature of the lower sensor. (When the upper and lower temperature sensor indicators are ON at the same time, it displays the average value of the upper and lower temperature sensors).

•“Power” indicator light: when the light is ON, it indicates that it is in the main power supply state; when the light flickers, it indicates that it is in the main power failure state.

•“Alarm” indicator light: when the light flickers, it indicates that there is a fault or abnormal condition.

•“Door open” indicator light: when the door is opened, this light is ON; when the door alarm is activated, the light flickers; when the door is closed, the light is OFF.

•“Hot condenser” indicator light: when the light flickers, it indicates that the condenser is too dirty and needs to be cleaned in time.

•“Network” indicator light: when the light is ON, it indicates that it is in the networking state; during communicating, the light flickers.

•“NFC” indicator light: when the light is ON, it indicates that the NFC card reading board is connected; when the light is OFF, it indicates that the NFC recording board is not connected; when the light flickers, it indicates that the door lock is opened.

2.Alarms and Self-Diagnonis

Press “ ” or “ ” to select the parameter to be modified, press “Set” to enter the selected parameter and the present parameter value will flickers, and then adjust the parameter by “ ” or “”. After completion of setting, press “Set” to confirm and save. After completion of parameter setting, press the “Alarm Test” button to exit the parameter setting interface and back to the normal display mode.

USB Data Export

1.The computer board can automatically collect and store test data such as temperature. The data is collected every 6 minutes by default and automatically saved after collection (can be saved for 10 years). After the data storage space is full, the latest stored data will automatically replace the earliest stored data. Data such as temperature, event and alarm records during the operation of the machine can be exported by using and USB. You may also select derivative mode to export the data of the last 1 month, 6 months or 1 year according to the actual demand.

2.Plug in the USB, and it will automatically recognize the USB and import data. During the data export process, the decimal point at the lower right corner of the rightmost digital tube starts to flicker, indicating that the data export is in progress and has not been completed. If the decimal point at the lower right corner of the rightmost digital tube is normally ON, it means that the data export is complete and the USB can be removed from the USB interface.

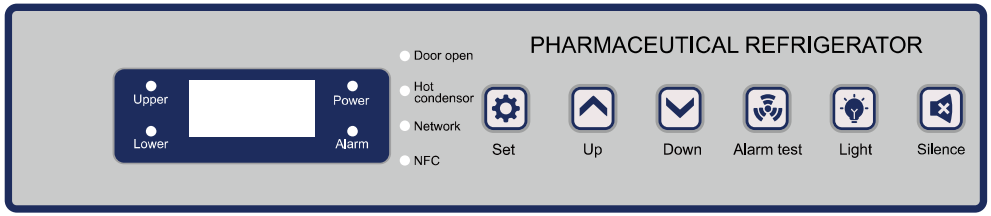
3.Data time setting (current time setting of the system):

Select the USB time selection parameter “T2”, press the “Set” button and the temperature display area of the refrigerator will display “P1” steadily. Press the “Set” button again and the inside temperature display area will flicker and display the year (factory default 10). Select the year which is displayed from 10 to 99; for example, select 18 to set 2018. At last, press the “Set” button to save and confirm. After that, the inside temperature display area displays “P2” steadily. Press the “Set” button and the inside temperature display area will flicker and display the month (factory default 01). Press the “Down” button or the “Up” button and the value will switch over from 01 to 12. After selecting the current month, press the “Set” button to save and confirm. After that, the inside temperature display area displays “P3” steadily. Press the “Set” button and the inside temperature display area will flicker and display the date (factory default 01). Press the “Down” button or the “Increase” button and the value will switch over from 01 to 31. After selecting the current date, press the “Set” button to save and confirm. After that, the inside temperature display area displays “P4” steadily. Press the “Set” button and the inside temperature display area will flicker and display the hour (factory default 01). Press the “Down” button or the “Up” button and the value will switch over from 00 to 23. After selecting the current local time (hour), press the “Set” button to save and confirm. After that, the inside temperature display area displays “P5” steadily. Press the “Set” button and the inside temperature display area will flicker and display the minute (factory default 01). Press the “Down” button or the “Up” button and the value will switch over from 00 to 59. After selecting the current local time (minute), press the “Set” button to save and confirm. And then, the temperature display area of the refrigerator will display “P1” again, and now you can set P1-P5 again. After completion of setting, press the “Alarm test” button again and the inside temperature display area will display the refrigerator in the temperature normally.

Control panel

•LED Type Panel (HYC-1031GD / HYC-1031FD)

LED Type Panel



Control Specification - LED Type Panel (HYC-1031GD / HYC-1031FD)

Functions of the buttons

“  ” button: When the buzzer alarms, press it once to clear the buzz. Press it and hold for 5 seconds to enter the user setting mode. The parameters can be set by the user as needed in this mode.

“  ” button: In the normal display mode, the temperature display will switch over between “upper sensor temperature” and “average temperature” once this button is pressed, and the corresponding LED indicator light will also change; during parameter setting by the user, press this button to increase the value to be adjusted or enter into the next parameter.

“  ” button: In the normal display mode, the temperature display will switch over between “lower sensor temperature” and “average temperature” once this button is pressed, and the corresponding LED indicator light will also change; during parameter setting by the user, press this button to decrease the value to be adjusted or enter into the previous parameter.

“  ” button: it is used for alarm test. The buzzer makes sounds for 3 times at frequency of 1Hz continuously once it is pressed, and the alarm indicator light flickers 3 times in synchronization. In the case of faults, each fault code is displayed in turn for 1s, and the light is OFF for 1s. In the normal condion, it displays the highest temperature and lowest temperature.

“  ” button: it is used for control of the light inside the refrigerator. The status of the light will change when it is pressed each time.

“  ”button : it is used for cancel the alarm noise.

User parameter setting

The parameters of the refrigerator have been set before delivery. It is recommended to use the default parameters. If it needs to adjust any parameter in special conditions, follow the steps below:

Press and hold the “Set” button for 5 seconds, it displays “Ts” and enters the user setting mode (two levels: common setting level and user management level). The user-oriented parameters are as shown in the following table:

Parameter	Description	Min. value	Max.value	Step size / Unit	Default
TS	Inside temperature set value	2	8	0.1/℃	5
ALH	High temperature alarm value	(TS+1)	TS+6	0.1/℃	8
ALL	Low temperature alarm value	1	(TS-1)	0.1/℃	2
T1	USB access cycle	1	30	1/Min	6

T2	USB time	Year (P1:10 to 99) / Month (P2:01 to 12)/Day (P3:01 to 31)/Hour (P4:00 to 23)/ Minute (P5:00 to 59)		1	/
P6	USB derivative mode (0 is all, 1 is the last 1 month, 2 is the last 2 months, and so on)	0	12	1/Month	0
SS	User management level parameter setting	Press “Set” button, 000 flickers and it requires to enter the registration / user management lever password of the IC card. Enter the correct password and then press “Set” to enter the user management level parameters. If you enter the wrong password for 3 times in a row, it will exit and redisplay the temperature inside the refrigerator.			8
The followings are user management level parameters					
IC	IC card registration / user management level password modification	000	999	1	008
CL1	IC card logout (all IC cards)	Press the “Set” button, 000 flickers and it requires to enter the registration password. Enter the correct password and then press “Set” to execute the order. The CL1 flickers for 3 times and there is a buzz sound, which means that the logout is completed. If you enter the wrong password for 3 times in a row, it will exit and redisplay the temperature inside the refrigerator.			
dA	Door opening buzz alarm delay time	1	30	1/Min	5
FA	Buzzer volume	1	3	1	3
S1/S2	Ozone sterilization control parameter	Reserved function, not enabled			
TT	Temperature unit	0 (Celsius)	1 (Fahrenheit), reserved function, not enabled		0
EC	Display control panel password	000	999	1	001