

Pharmaceutical Refrigerator **Operation Manual**



Certificate of Quality

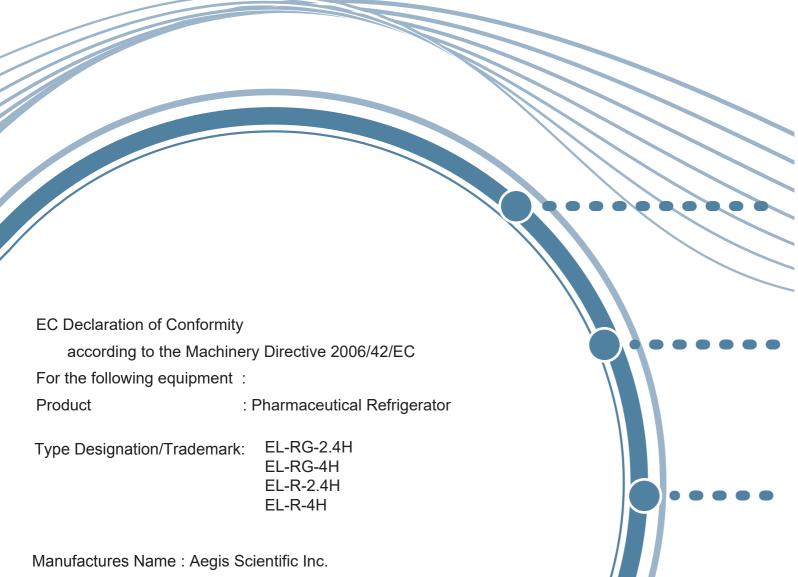
Checker:

AEGIS SCIENTIFIC 1 Ivybrook Blvd, Unit 145R, Ivyland, PA 18974, USA Tel: 1-800-796-2344 / Fax: 732 879 0248 Website: www.aegisfridge.com

- 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.
- Aegis pharmaceutical refrigerators are applicable for the storage of pharmaceutical products, medicines, and other laboratory products that need to be stored at a temperature of 2° to 8° .

Model: EL-RG-2.4H EL-RG-4H EL-R-2.4H EL-R-4H





Address	: 1 Ivybrook Blvd, Unit 145R, Ivyland, PA 18974, USA
Tel	: 1-800-796-2344 / Fax: 732 879 0248

Refer to in this declaration confirms with the following directive(s)/ standards: 2006/42/EC, EN60335-1, EN60335-2-89 EN62233

Packing List

Model	EL-RG-2.4H	EL-R-2.4H	EL-RG-4H	EL-R-4H
Operation Manual	1	1	1	1
Plastic bag	1	1	1	1
Кеу	2	2	2	2
Drain hole cap	1	1	1	1

Note: Technical information may vary from the appliance that you have just purchased due to technical improvements. Please take care of the key, if lost, please contact the seller.

Global Warming Potential

Model	Rated voltage (VAC)	Rated frequency (Hz)	CO ₂ equivalent (Tonnes)
EL-RG-2.4H	220~240	50/60	0.072
EL-RG-4H	220~240	50/60	0.129
EL-R-4H	220~240	50/60	0.122

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

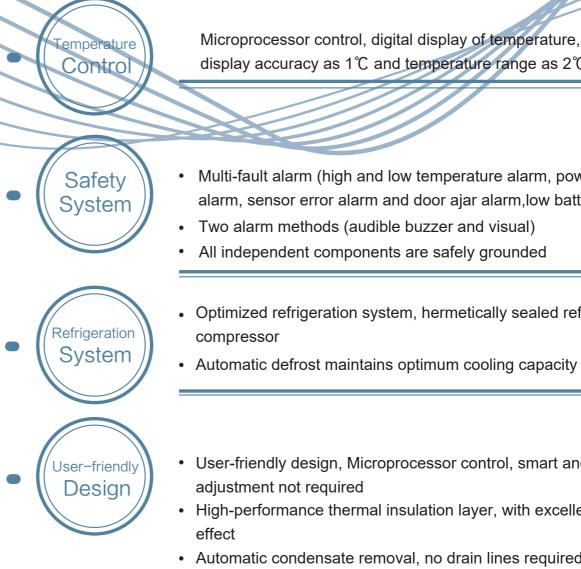
GWP=global warming potential

Refrigerant type	GWP
R134a	1430

Your trust from beginning to end.

Name	Pharmaceutical Refrigerator		
Model	EL-RG-4H	EL-R-4H	
Exterior Dimensions (W×D×H) (mm)	597×635×835	597×635×835	
Interior Dimensions (W×D×H) (mm)	515×415×630	515×415×630	
Effective Volume	118L	118L	
Door	Solid door	Glass door with electric heat	
Insulation	CFC-Free foamed	l-in-place urethane	
Compressor	High Quality Hermetica	ally sealed compressor	
Shelves/Basket	3/1	3/1	
Load	Max:10kg/m ²	Max:10kg/m ²	
Refrigerating Method	Force-air cooling circulation	Force-air cooling circulation	
Exterior / Interior	sprayed steel plate /PS plate	sprayed steel plate /PS plate	
Condenser/Evaporimeter	Wire and tube / Plate type	Wire and tube / Plate type	
Temperature Control	Microprocessor controlled	Microprocessor controlled	
Refrigerant	R134a 90g	R134a 85g	
Lamp	LED 0.3W	LED 0.3W	
Net Weight	41kg	46kg	
Temperature Range	2°C~8°C	2°C~8°C	
Voltage	220V-240V~/50/60Hz	220V-240V~/50/60Hz	
Rated Power/Current	135W/1.03A	165W/1.16A	
Noise Level(Lp)	32dB(A)	32dB(A)	
Foaming Agent	CP/IP	CP/IP	
Climate Type	4	4	
Anti-shock Safety Classification	I	I	
Power connection type	Y	Y	
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)		

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℃.



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

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



Microprocessor control, digital display of temperature, temperature display accuracy as 1 °C and temperature range as 2 °C ~8 °C.

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

• Optimized refrigeration system, hermetically sealed refrigeration

• User-friendly design, Microprocessor control, smart and carefree,

• High-performance thermal insulation layer, with excellent insulation

· Automatic condensate removal, no drain lines required

Specification

Specification -

Name	Pharmaceutical Refrigerator		
Model	EL-RG-2.4H	EL-R-2.4H	
Exterior Dimensions (W×D×H) (mm)	495×580×660	495×580×660	
Interior Dimensions (W×D×H) (mm)	415×385×505	415×385×505	
Effective Volume	68L	68L	
Door	Solid door	Glass door	
Insulation	CFC-Free foamed-in-place urethane		
Compressor	High Quality Hermetic	ally sealed compressor	
Shelves/Basket	2/1	2/1	
Load	Max:10kg/m ²	Max:10kg/m ²	
Refrigerating Method	Force-air cooling circulation	Force-air cooling circulation	
Exterior / Interior	sprayed steel plate /PS plate	sprayed steel plate /PS plate	
Condenser/Evaporimeter	Wire and tube / Plate type	Wire and tube / Plate type	
Temperature Control	Microprocessor controlled	Microprocessor controlled	
Lamp	LED 0.3W	LED 0.3W	
Net Weight	38kg	38kg	
Temperature Range	2℃~8℃	2℃~8℃	
Voltage	220V-240V~ /50/60Hz	220V-240V~/50/60Hz	
Rated Power/Current	84W/0.65A	84W/0.65A	
Refrigerant	R134a 50g	R600a 22g	
Noise Level(Lp)	35dB(A)	35dB(A)	
Foaming Agent	CP/IP	CP/IP	
Climate Type	4	4	
Anti-shock Safety Classification	I	I	
Power connection type	Y	Y	
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)		

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

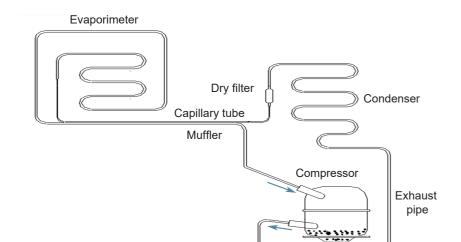
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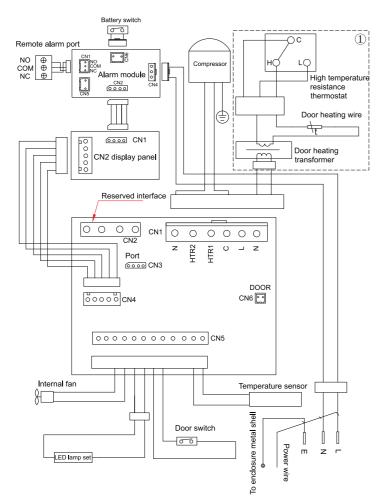
Refrigeration Schematic & Wiring Diagram

Safety Precautions

Schematic diagram



Circuit diagram



Note: The parts in the dashed box ${\scriptstyle (1)}$ are only applicable to HYC-118A series products

Dear users:

Thanks for your choice of Aegis 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



death or serious injury

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

Marning

- to prevent explosion and fire.
- staffs to prevent electric shock or fire.
- ground or place.
- or electric shock.
- caused.
- prevent fire.
- ground wires must be installed by professional technical staffs.
- caused if wet by rainwater.

Ignoring this warning may result in



Actions or operations which are prohibited



Actions or operations which must be followed

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

The refrigerator shall be installed by professional technical staffs or after-sale maintenance

Place the refrigerator on a 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

Apply the dedicated power supply marked on the nameplate of refrigerator to prevent fire

If the voltage being used is 10% higher or lower than the rated voltage, an automatic voltage regulator above 1000 W 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

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

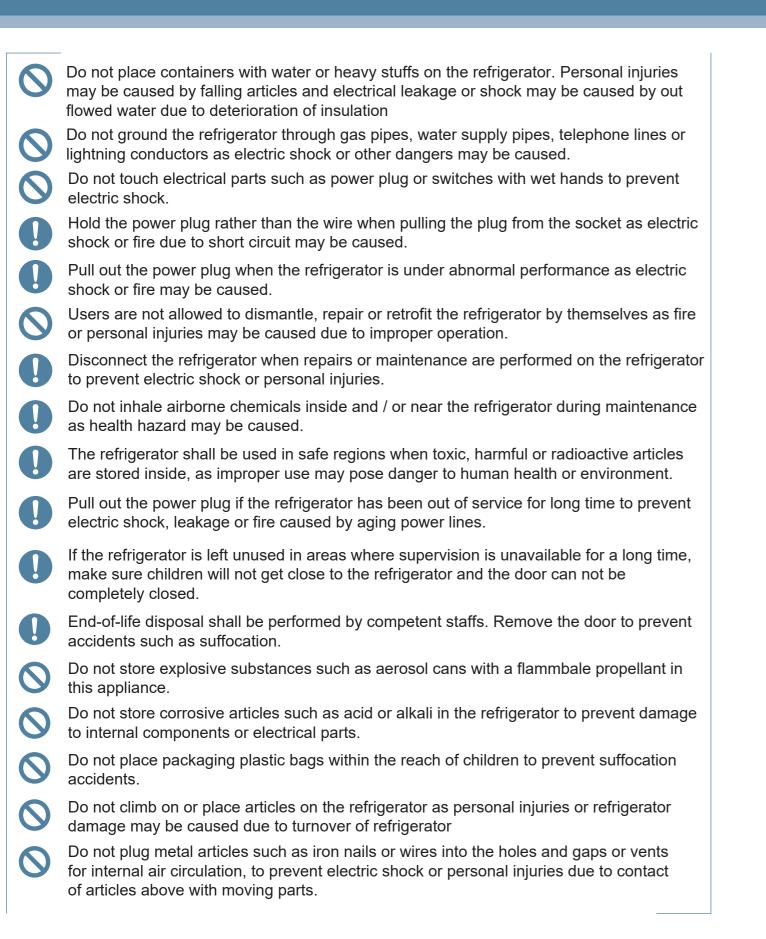
Apply socket with ground wire to prevent electric shock. If the socket fails to be grounded,

The refrigerator shall not conduct outdoor service. Electrical leakage or shock may be

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.

FAQ





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 Aegis after-sales service. Do not maintain and dismantle the refrigerator by yourself!

Fault		
		Whet
The refrigerator doe	does not work	Whe
5		Whe
		Wh
		Whether th
Refrigeration eff apparent, tempe	erature	Whether the refrigerator is
exceeds the sta	ndard	W
		Whe
		Whe
		Whether part of
Noise is too significant		The noise noted in techni without noise when the re and operates steadily after shutdown and at 1 m abo differs from stated value to closing, startup & shutdow
		Whether the articles are stabilized at 3∼7℃. The fa
	ht flashes, zer alarms	Whether the door is not
		Whether the power fails,
		Wheth

Troubleshooting

ther the input power meets the requirements

ether the plug and socket are in loose contact

ether the input line and control line break down

Whether the voltage is too low

nether too much or too hot articles are stored

here is certain clearance among stored articles

exposed to direct sunlight or radiation of other heat sources

Vhether the door is opened too often

ther the ambient temperature is too high

Whether the air duct is blocked

ther the refrigerator is placed steadily

f the refrigerator contact external objects or wall

ical data is average data measured in standard laboratory efrigerator with no stored articles is put on a rubber blanket er the door is closed, and data measured during startup & ove the surface is not included. It is normal that actual noise because of loaded articles, environmental noise, no door wn of the compressor during using.

e newly put in the refrigerator and the temperature is not ault will be eliminated automatically after refrigeration for a while.

t closed completely, which triggers alarm of door opening

the refrigerator returns to normal condition after starting up for a while

her the temperature exceeds the standard

Component Cleaning



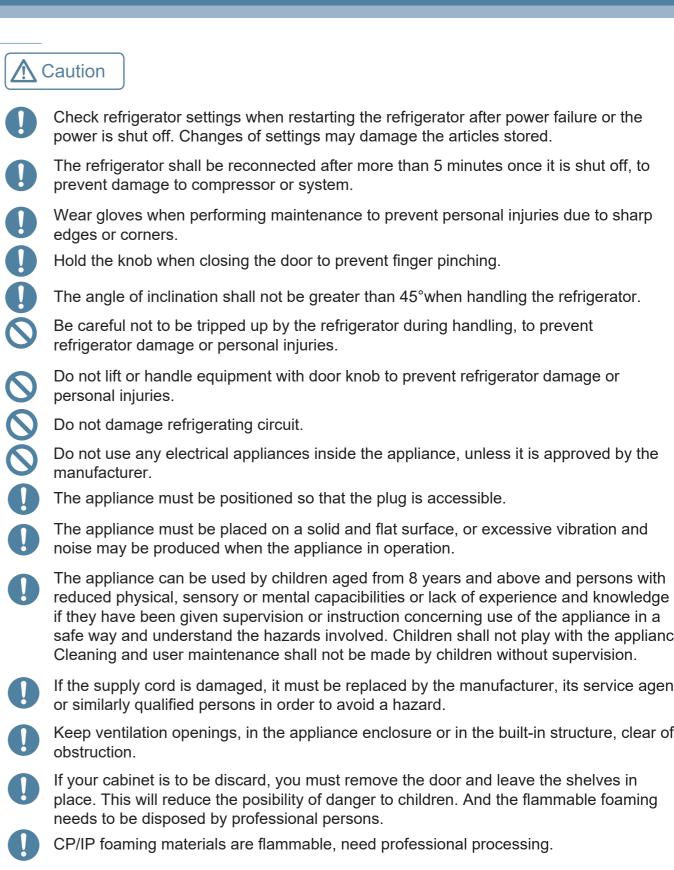
- To avoid electric shock or staff injuries, please switch off power of the refrigerator before conducting any repairment or maintenance.
- Do not inhale any air borne particles when conducting maintenance on your refrigerator.

Refrigerator cleaning

- Clean the refrigerator once a month. Regular cleaning keeps appearance of the refrigerator new.
- Wipe off any dirt with a cleaning cloth with mild detergent water.
- 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.



- safe way and understand the hazards involved. Children shall not play with the appliance.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent
- Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of

Application guidelines

- 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 mild detergent water. 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 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 16~32°C; if the humidity is higher than 70%, condensation will occur on the glass door(EL-R-2.4H) 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.
- Please keep the article inside at least 20mm away from the cabinet back wall!
- 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.

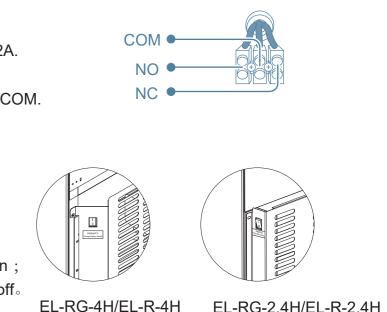
Remote Alarm Terminal

 Remote alarm terminal is 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.

Battery Switch

- Battery switch is installed on the back of the products, with "Charge Battery Switch" label;
- Battery switch "ON" indicates that battery is on ;
 "OFF" indicates that battery is off.



5.Check alarm temperature: See Fig #1

Press both "Set" and "+" buttons to check the most recent cabinet temperature. Release the buttons to return to the cabinet temperature display.

Press both "Set" and "-" buttons to check the most recent cabinet temperature. Release the buttons to return to the cabinet temperature display.

6.Check recent highest and lowest cabinet temperature: See fig #1

Press both "Set" and "+" buttons to check the most recent cabinet temperature. Release the buttons to return to the cabinet temperature display.

Press both "Set" and "-" buttons to check the most recent cabinet temperature. Release the buttons to return to the cabinet temperature display.

7.Adjust alarm temperature range: See fig #1

The method sets high temperature alarm "HA" and low temperature alarm "LA".

Press "Alarm" button for 10 seconds. LED display code "HA", press "Set" button again (quickly), code "HA" flash, adjust the set-temperature by both pressing "+" and "-" buttons and increment 1 $^{\circ}$ C, adjustment range should't be 6°C higher than pre-set cabinet temperature, press "Alarm" button to return the former menu(each press of "Alarm" button will return one step back to former menu until display cabinet temperature) and LED display "HA" . Press both "+" and "-" to choose another parameter "LA", "LA" setting method like "HA", and its adjustment range shouldn't be 6 ℃ lower than pre-set cabinet temperature.

8.Defects display

The control panel only can display one sensor error, when the sensor error happens . LED display "EE", and alarm at the same time. The refrigerator will keep working according to the defect safety model, and you should put the stored goods to other refrigerator as soon as possible, and contact the after-sales department quikly.

9.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.

10.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.

Installation environment

- Ambient temperature: 16℃ to 32℃, 18℃ to 25℃ are optimal and air conditioning system is required as necessary.
- Ambient humidity: EL-R-2.4H: below 70%Rh;EL-RG-2.4H: below 75%Rh;EL-RG-4H/EL-R-4H
- 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 ±10% of rated voltage.

Caution

- 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:

- 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.
- the outlet securely.
- 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.
- 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 400W.
- 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

- free from any obstruction.

 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

 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

• Do not share the same power outlet with other equipment. The power plug must be plugged into

• Check the operating voltage before operation and voltage regulator appropriate for motor load may

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 should be accessed after installation to ensure the power line can be pulled immediately in case of an emergency. The air vents should be

Application method

Preparation before use

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

A Caution

- The maximum tilt angle of the refrigerator shall be no more than 45° during the course of movement.
- Transportation and relocation requirement: clamp truck or forklift truck.

2. Count refrigerator accessories accompanied

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

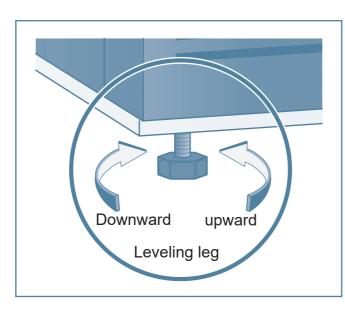


3. Placing conditions

Choose the appropriate distance according to the space requirement.

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.



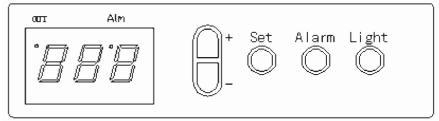
5. Standing

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.

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. Unlock operation instructions

If there is no operation in 20s, the keys for temperature setting & parameter setting & high/low temperature setting will be locked, the keys for alarm & light & highest/lowest temperature checking & high/low temperature alarm checking will still be available.Unlock:press "+", the display screen blinking displays "01", then press "+" or "-" to choose the password, then press "Set" to unlock.Once unlock successfully, the buzzer beeps once and the display screen displays the temperature normally.If the password is wrong, the display screen will flicker and it will quit the system automatically if there is no operation in 5s.

3. Password setting

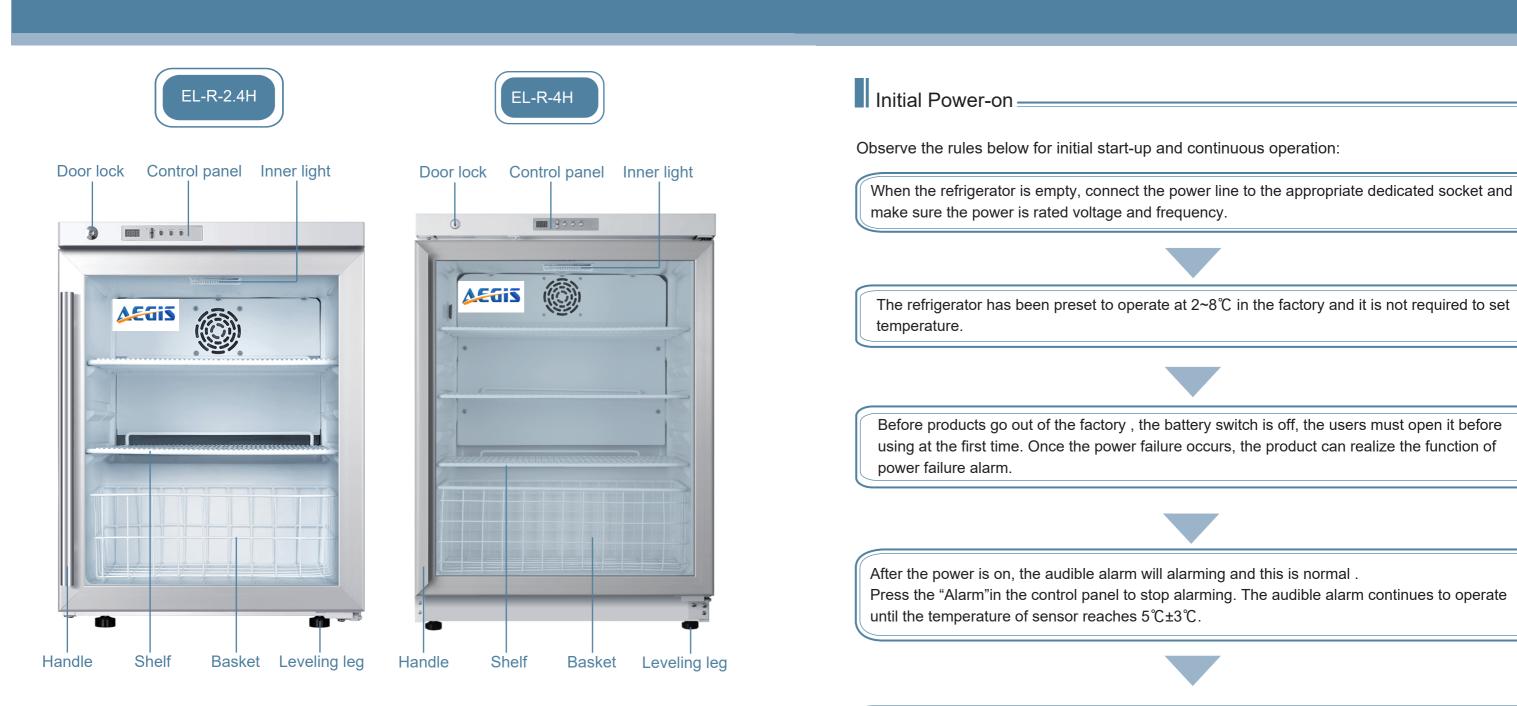
The default unlock password is "06".After unlock,press "Set" and "Alarm" at the same time for 5s,the display screen displays "06",then press "+" and "-"to set the password.Press"Set" to save the setting.If there is no operation in 5s,password setting will be saved automatically. The password could be selected from 05_{\circ} 06_{\circ} 07_{\circ} 29_{\circ} 30. When setting the parameters and high/low temperature alarm value,it will quit the system automatically if there is no operation in 10s and display the inner temperature again.

4.Temperature adjustment: See fig #1

Factory pre-set to 5° . Set cabinet temperature: Press "Set" button and loosen quikly, LED dispaly the pre-set temperature and flash.

Adjust the cabinet temperature with the buttons "+" or "-" and increment 1°C when the temperature flash. Automatically quit the system after 10 seconds no operation and display the cabinet temperature again(no flash). The cabinet temperature will reach pre-set temperature after a while. High and low temperature alarms:

The alarms are activated when the cabinet temperature is warmer than the high alarm temperature or lower than the low temperature. Press the "Alarm" button to end the buzzer, the flashing light continues until the cabinet temperature recovers to the normal operating range.



The temperature of refrigerator will stay at the preset temperature in a stable manner after hours of operation.

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

- This unit should be managed by a dedicated person. Inspection should be performed daily to keep appropriate records. When the temperature is out pf specification, action should be taken to move the products to a safe place.
 - This product is pharmaceutical refrigerator with temperature ranging from 2~8℃ 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 ٠ 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.

Marning

- 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 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.





